



## California Sportfishing Protection Alliance

*"An Advocate for Fisheries, Habitat and Water Quality"*

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20 April 2012

Mr. Ken Landau, Assistant Executive Officer  
Ms. Diana Messina, Supervising WRCE  
Ms. Gayleen Perreira, Sr. 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: Renewal of Waste Discharge Requirements (NPDES No. CA0079901) for City of Nevada City Wastewater Treatment Plant, Nevada County

Dear Mesdames Messina and Perreira and Mr. Landau,

The California Sportfishing Protection Alliance (CSPA) has reviewed the proposed Waste Discharge Requirements (NPDES No. CA0079901) for City of Nevada City Wastewater Treatment Plant (Permit) and 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 Nevada County.

**A. The proposed Permit fails to contain mass-based effluent limits for Chlorine, Dichlorobromomethane and Lead as required by Federal Regulations 40 CFR 122.45(b).**

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. Mass limits are critically important to assure that the facility is properly designed and capable of removing individual pollutants and to assure that the treatment facilities are not overloaded with the individual pollutant. The Regional Board's approach to priority pollutants is that treatment plants are designed to remove BOD, TSS and pathogens and that the removal of other priority pollutants is incidental; hence their removal of mass limitations from permits. This approach may have been generally successful prior to adoption of the National and California Toxics Rules which established stringent numerical limitations for priority pollutants. It is easy to recognize the failure of relying on conventional treatment plant design for addressing priority pollutants by the number of Time Schedule Orders and Cease and Desist Orders for noncompliant treatment systems regulated by the Central Valley Regional Board. This is also evidenced by the number of NTR and CTR noncompliant wastewater treatment plants in California's Central Valley. The design flow for priority pollutants is different for each individual pollutant and is different again from the conventional design flow for BOD and TSS. The treatment plant design flow for BOD and TSS removal is not the design flow rate for individual priority pollutants and toxic constituents such as ammonia and aluminum. A prime example of the requirements for individual pollutant removal is ammonia removal or nitrification; the design of activated sludge systems has been modified from simply being designed for BOD removal to achieve nitrification in many cases by providing extended aeration. This is likely why the proposed Permit contains mass limits for ammonia. Failure to include mass limits and design flows for priority pollutants maintains the incidental nature of past compliance and will not reliably achieve compliance with water quality standards for priority pollutants. For Chlorine, Dichlorobromomethane and Lead the proposed Permit does not specify the design flow and does therefore not comply with the requirements of 40 CFR 122.45(b).

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.”

In addition to the above citations, on June 26<sup>th</sup> 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 must be amended to include mass limitations for Chlorine, Dichlorobromomethane and Lead. The design flow for each of the listed pollutants should be individually specified in the proposed Permit to confirm compliance with 40 CFR 122.45(b). Failure to include mass limitations for these pollutants will result in another inadequately designed treatment plant that will be noncompliant for the listed pollutants.

**B. Effluent Limitations for specific 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 as an annual average contrary to the cited Federal Regulation. Establishing the Effluent Limitations for 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 EC is impracticable.

**C. The proposed Permit does not contain Effluent Limitations for chronic toxicity and therefore does not comply with Federal regulations, at 40 CFR 122.44 (d)(1)(i) and the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP).**

Domestic wastewater treatment plants, by their nature, contain numerous toxic constituents and present a reasonable potential to exceed the Basin Plan's narrative Toxicity water quality objective. Even a well maintained and operated wastewater treatment plant can experience upsets and bypass resulting in toxic discharges. Infrequent, monthly or quarterly, toxicity testing is not sufficient to state that a domestic wastewater treatment plant has not discharged toxic constituents in toxic concentrations during a five year life of an NPDES permit.

Proposed Permit, State Implementation Policy states that: "On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000 with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP."

The SIP, Section 4, Toxicity Control Provisions, Water Quality-Based Toxicity Control, states that: "A chronic toxicity effluent limitation is required in permits for all dischargers that will cause, have a reasonable potential to cause, or contribute to chronic toxicity in receiving waters." The SIP is a state *Policy* and 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.

Federal regulations, at 40 CFR 122.44 (d)(1)(i), require that limitations must control all pollutants or pollutant parameters which the Director determines are or may be discharged at a level which will cause, or contribute to an excursion above any State water quality standard, including state narrative criteria for water quality. There has been no argument that domestic sewage contains toxic substances and presents a reasonable potential to cause toxicity if not properly treated and discharged. The Water Quality Control Plan for the Sacramento/ San Joaquin River Basins (Basin Plan), Water Quality Objectives (Page III-8.00) for Toxicity is a narrative criteria which states that all waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. An effluent limitation for chronic toxicity must be included in the Order. In addition, the Chronic Toxicity Testing Dilution Series should bracket the actual dilution at the time of discharge, not use default values that are not relevant to the discharge.

Proposed Permit is quite simply wrong; by failing to include effluent limitations prohibiting chronic toxicity the proposed Permit does not "...implement the SIP". The Regional Board has commented time and again that no chronic toxicity effluent limitations are being included in NPDES permit until the State Board adopts a numeric limitation. The Regional Board explanation does not excuse the proposed Permit's failure to comply with Federal Regulations, the SIP, the Basin Plan and the CWC. The Regional Board's Basin Plan, as cited above, already states that: "...waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses..." Accordingly, the proposed Permit must be revised to prohibit chronic toxicity (mortality and adverse sublethal impacts to aquatic life, (sublethal toxic impacts are clearly defined in EPA's toxicity guidance manuals)) in accordance with Federal regulations, at 40 CFR 122.44 (d)(1)(i) and the Basin Plan and the SIP.

**D. The Permit fails to require that analysis of water quality be performed by a certified laboratory contrary to the California Water Code Section 13176.**

The proposed Permit, page E-2, C, allows for the analysis of water quality parameters to be performed by a non-certified laboratory.

### **Legal Requirements**

The law states that:

**CWC § 13176. Certified laboratories** (a) The analysis of any material required by this division shall be performed by a laboratory that has accreditation or certification pursuant to Article 3 (commencing with Section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code. (b) No person or public entity of the state shall contract with

a laboratory for environmental analyses for which the State Department of Health Services requires accreditation or certification pursuant to this chapter, unless the laboratory holds a valid certification or accreditation.

**CWC § 13383. Monitoring requirements** (a) The state board or a regional board may establish monitoring, inspection, entry, reporting, and recordkeeping requirements, as authorized by Sections 13160, 13376, or 13377 or by subdivisions (b) and (c) of this section, for any person who discharges, or proposes to discharge, to navigable waters, any person who introduces pollutants into a publicly owned treatment works, any person who owns or operates, or proposes to own or operate, a publicly owned treatment works or other treatment works treating domestic sewage, or any person who uses or disposes, or proposes to use or dispose, of sewage sludge.

(b) The state board or the regional boards may require any person subject to this section to establish and maintain monitoring equipment or methods, including, where appropriate, biological monitoring methods, sample effluent as prescribed, and provide other information as may be reasonably required.

(c) The state board or a regional board may inspect the facilities of any person subject to this section pursuant to the procedure set forth in subdivision (c) of Section 13267.

**California Health and Safety Code (HSC) section 100825 (b)** Laboratories that perform analyses on any combination of environmental samples, ...for regulatory purposes shall obtain a certificate of accreditation pursuant to this article.

**HSC section 100825 (c) (3)** “Certificate” means a document issued to a laboratory that has received certification or accreditation pursuant to this article.

**HSC 100825 (c) (16)** “Regulatory purposes” means a statutory or regulatory requirement of a state board, office, or department, or of a division or program that requires a laboratory certified under this article or of any other state or federal agency that requires a laboratory to be accredited.

The laws included in both the California Water Code and the Health and Safety Code is clear in the requirement that laboratories doing environmental analyses be certified.

### **A matter of routine/Underground Regulation**

Since there is no explanation of exempting a Discharger from using certified laboratories to conduct required monitoring; recently adopted permits for other Dischargers were reviewed for similar exemptions.

Sacramento Regional County Sanitation District, Order No. R5-2010-0114, page E-2 No. C exempts the Discharger from lab certification for pH, turbidity, temperature and chlorine residual.

([http://www.swrcb.ca.gov/centralvalley/board\\_decisions/adopted\\_orders/sacramento/r5-2010-0114\\_npdes.pdf](http://www.swrcb.ca.gov/centralvalley/board_decisions/adopted_orders/sacramento/r5-2010-0114_npdes.pdf))

City of Auburn, Wastewater Treatment Plant, Order No. R5-2010-0090-01, page E-1 No. C: “In the event a certified laboratory is not available to the Discharger, analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory.”

([http://www.swrcb.ca.gov/centralvalley/board\\_decisions/adopted\\_orders/placer/r5-2010-0090-01.pdf](http://www.swrcb.ca.gov/centralvalley/board_decisions/adopted_orders/placer/r5-2010-0090-01.pdf))

<b>Discharger</b>	<b>Date Adopted</b>	<b>Delete Certified Labs for pH temp... ?</b>
Port of Stockton	3-Feb-11	No, certified lab required
Sacramento Regional WWTP	10-Dec-10	Yes, page E-2
City of Auburn	23 Sept 10 - considered	Yes, page E-2
Placer County, SMD-1	23 Sept 10 - considered	Yes, page E-2
City of Redding, Clear Creek	23-Sep-10	Yes, page E-2
City of Davis	23-Sep-10	Yes, page E-1
City of Galt	23-Sep-10	Yes, page E-1
Rio Alto Water District	23-Sep-10	Yes, page E-2
City of Corning	29-Jul-10	No, certified lab required
City of Rio Vista	29-Jul-10	Yes, page E-2
Shasta County, Cottonwood	27-May-10	Yes, page E-2
Shasta Gold Corporation	27-May-10	Yes, page E-2
Paradise Irrigation District	27-May-10	Yes, page E-2
South Feather Water and Power Agency, Miners Ranch	27-May-10	Questionable language
Oroville sewerage Commission	27-May-10	Questionable language
Olivehurst PUD	27-May-10	Yes, page E-2
AAF McQuay Inc	27-May-10	Questionable language
The Boeing Company	27-May-10	Yes, page 17

The permits are located at:

[http://www.swrcb.ca.gov/centralvalley/board\\_info/meetings/](http://www.swrcb.ca.gov/centralvalley/board_info/meetings/)

Based on a review of the above regional Board permits the Regional Board has exempted almost all wastewater Dischargers from the legal responsibility of conducting compliance monitoring at a certified laboratory. An explanation of the technical or legal authority for such exemption could not be located in the permits. Virtually every NPDES permit adopted by the Regional Board within the last 18 months has deleted the legal requirement for laboratory certification.

Not only does the Regional Board fail to comply with the cited law, but the Central Valley Regional Board uses the same language in each of its permits as an Underground Regulation. "Regulation" means every rule, regulation, order, or standard of general application or the amendment, supplement, or revision of any rule, regulation, order or standard adopted by any state agency to implement, interpret, or make specific the law enforced or administered by it, or to govern its procedure. (Government Code section 11342.600)

**E. The proposed Permit contains Effluent Limitations less stringent than the existing permit contrary to the Antibracksliding requirements of the Clean Water Act and Federal Regulations, 40 CFR 122.44 (I)(1).**

WDR Order No. R5-2008-0177 contained effluent limitations for carbon tetrachloride, chronic whole effluent toxicity, copper, dichlorobromomethane, nitrate plus nitrite, nitrite, settleable solids, and zinc which have been removed in the proposed Permit. The antibracksliding discussion in the proposed Permit does not discuss compliance with the federal regulations which would allow bracksliding. For copper and zinc effluent limitations were removed simply because the Regional Board used the higher hardness effluent, rather than the significantly lower hardness receiving water, in determining reasonable potential to exceed water quality standards. The Regional also failed to utilize the CTR equations for toxic metals and instead used the "Emerick" equation which utilizes assimilative capacity. For the other constituents, the Regional Board failed to utilize all of the available and relevant data in assessing reasonable potential. The Regional Board failed to use the data used to develop Order R5-2008-0177 although there has been no change in the treatment capability of the wastewater treatment plant or the character of the waste stream. There is no "new" data which was unavailable at the time Order No. R5-2008-0177 was written other than routine monitoring data; which is not a valid reason for allowing bracksliding.

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 antibracksliding 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 antibracksliding rule are met. The antibracksliding 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 cursory and conclusory statements in the proposed Permit do not address a single exception to the federal regulations which would allow for backsliding. The proposed Permit must be revised to restore the effluent limitations for carbon tetrachloride, chronic whole effluent toxicity, copper, dichlorobromomethane, nitrate plus nitrite, nitrite, settleable solids, and zinc.

**F. The proposed Permit establishes Effluent Limitations for metals based on the hardness of the effluent as opposed to the ambient instream receiving water hardness and fails to use the mandated equations as required by Federal Regulations, the California Toxics Rule (CTR, 40 CFR 131.38(c)(4)).**

The proposed Permit uses the effluent hardness of 75 mg/l, rather than the upstream ambient hardness of 14 mg/l, in determining reasonable potential for hardness dependant metals and for establishing limitations.

### **Introduction**

Several toxic metals are currently regulated in the California Toxics Rule (CTR) based on the hardness of the water column. This regulation is based on the fact that these metals exhibit greater toxicity to aquatic life in lower hardness waters. To reflect the hardness/toxicity relationship, US EPA developed an equation for metals limitations using hardness as a variable. Use of the CTR equation with the lowest observed hardness will result in the most protective limitation for hardness dependant toxic metals. In most instances, the upstream surface water hardness is lower than the effluent hardness. Hence, US EPA in writing the CTR (40 CFR 131.38(c)(4) stated 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.”* Clearly, by stating that the ambient hardness of the surface water shall be used in the equations to develop metals limitations; the CTR prohibits the use of the effluent hardness.

Confirming that US EPA requires use of the upstream (ambient) hardness the Federal Register, Volume 65, No. 97/Thursday, May 18<sup>th</sup> 2000 (31692), adopting the California Toxics Rule states that: *“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.”*

In their biological opinion of the CTR the US Fish and Wildlife Service (Service) and the National Marine Fisheries Service (NMFS) concluded that: *“The CTR should clearly state that to obtain a site hardness value, samples should be collected upstream of the effluent source(s).”*

Following adoption of the CTR, a local consulting engineer, Dr. Robert Emerick, worrying whether his newly designed and constructed treatment plant at Lincoln would be able to comply with stringent metals limitations developed a technical paper evaluating the metal toxicity/hardness relationship. The “Emerick” paper concluded that hardness values other than the most restrictive surface water values could be used with modified equations to establish less restrictive metals limitations. The “Emerick” paper concluded that the metals limitations could be less restrictive while protecting aquatic life and the method eliminated the development of overly protective limitations.

Further reading of the Service’s and NMFS biological however shows that the lower limits obtained using the lowest observed hardness were not “overly protective: *“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.”*

Using the latest available science to develop new copper criteria US EPA concluded that the use of the hardness alone often resulted in limitations that were not fully protective of aquatic life even using the most restrictive hardness and that one could not predict whether the hardness based equations would result in limitations that were overly or under restrictive. U.S. EPA’s latest ambient criteria for copper (*Aquatic Life Ambient Freshwater Quality Criteria—Copper 2007 Revision*), utilizes the other constituents that affect metal toxicity. Since EPA published the hardness-based recommendation for copper criteria in 1984, new data have become available on copper toxicity and its effects on aquatic life. The Biotic Ligand Model (BLM) – a metal bioavailability model that uses receiving water body characteristics to develop site-specific water quality criteria – utilizes the best available science and serves as the basis for the new national recommended criteria. The BLM requires ten input parameters to calculate a freshwater copper criterion (a saltwater BLM is not yet available): temperature, pH, dissolved organic carbon (DOC), calcium, magnesium, sodium, potassium, sulfate, chloride, and alkalinity. The BLM is used to derive the criteria rather than as a post-derivation adjustment as was the case with the

hardness-based criteria. This allows the BLM-based criteria to be customized to the particular water under consideration. EPA states in the Federal Register (Federal Register / Vol. 72, No. 35 / Thursday, February 22, 2007 / Notices, 7985) that: *“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”*.

The water quality standard and aquatic toxicity specialists from the Service, NMFS and US EPA determined that the metals limitations based solely on hardness could not be shown to be overly protective. This conclusion is contrary to the central premise of the “Emerick” paper which relies solely on hardness. Hardness based toxic metal limitations cannot be shown to be overly protective without evaluating the discharge specific impacts of temperature, pH, dissolved organic carbon (DOC), calcium, magnesium, sodium, potassium, sulfate, chloride, and alkalinity. The Regional Board has relied on the “Emerick” methodology to develop limitations for hardness dependent toxic metals in NPDES permits citing that use of the lowest observed hardness and use of the CTR equation would result in overly protective limitations. The Regional Board has commented that the Services’ and NMFS comments were directed at CTR development and have ignored the science. The Regional Board has also refused to use US EPA’s new criteria for copper (a CTR toxic metal) that utilizes all the parameters that can impact the toxicity of a metal. The “Emerick” method and the Regional Board’s adherence to that method does not eliminate “overly protective” limitations but instead develops limits that are less restrictive than prescribed by the CTR and are in most instances not protective of aquatic life.

The Regional Board rarely requires NPDES wastewater Dischargers to sample for of dissolved organic carbon (DOC), calcium, magnesium, sodium, potassium, sulfate or chloride. Each of these parameters can be significantly altered in the receiving stream by wastewater discharges. Therefore, based on the latest science and advice from the water quality standards and toxicity experts they could not even make an intelligent guess whether limitations for toxic hardness dependant metals are overly protective. This complete lack of data also precludes the Regional Board from using US EPA’s latest ambient criteria for copper, a hardness dependant toxic metal. The Regional Board’s dependence on a single study (Emerick) that only evaluates hardness with regard to metals toxicity to reach a conclusion that using the lowest observed hardness and the CTR equations is overly protective is without merit and is not supported by the latest available science.

The “Emerick” paper, page 4, states that: *“As depicted, because of the concave downward relationship between the copper water quality objective and hardness, assimilative capacity is always produced when two waters of differing hardness are mixed. Therefore, it is appropriate and protective to assign copper (and any other contaminant exhibiting a concave downward relationship) water quality objectives based on the hardness of the effluent.”* As is detailed by the US Fish and Wildlife Service, the National Marine Fisheries and US EPA in their updated copper criteria, using hardness alone one cannot state that the hardness based metals limitations are sufficiently stringent, let alone to conclude that there is “assimilative capacity” within the receiving stream. Since the “Emerick” paper is solely based on hardness and does not evaluate all the other parameters that can impact toxicity, the conclusions that metals limitations are overly stringent and there is assimilative capacity for metals is simply wrong. The Regional Board has no knowledge that hardness based limitations are overly restrictive when using the CTR equations and the lowest observed hardness to develop discharge limitations for metals. The single and sole reason for using the “Emerick” method is to relax discharge limitations for toxic metals.

The California Toxics Rule (CTR) 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).

When developing effluent limitations for hardness dependant metals that:

- (1) The hardness of the surface water must be used;
- (2) Use of the effluent hardness is prohibited; and
- (3) The term ambient means that the hardness must be taken from outside the area where the effluent mixes with the receiving stream.

### **The Effluent Hardness Was Used in the Revised Permit**

Throughout the text in the proposed Permit discussing the development of effluent limitations for hardness dependant metals, the discussion is limited to the effluent and upstream ambient hardness.

In the proposed Permit, the metals discussions, are all based on the lowest observed effluent hardness of 75 mg/l. The proposed Permit discussion focuses on the effluent hardness. This can be observed where the input value He represents the lowest observed effluent value. The data in the Tables are based on equation 4 are therefore also based on the effluent hardness.

The development of effluent limitations for hardness dependant metals in the proposed Permit is based on the effluent hardness or a combination of the effluent and upstream hardnesses. The

use of the effluent hardness rather than the CTR prescribed “actual ambient hardness of the surface water” is contrary to the requirements of the CTR.

### **The Wrong Equations Were Used**

The California Toxics Rule (CTR) 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).

The CTR requires the use of the equations presented in paragraph (b)(2) of 40 CFR 131.38 for the development of effluent limitations for hardness dependant metals. The required CTR equation is:

$$\text{CTR Criterion} = \text{WER} \times (\exp(m[\ln(H)]+b))$$

where: H = hardness (mg/L as CaCO<sub>3</sub>), WER = water-effect ratio (with a default value of 1) and m, b = metal and criterion specific constants.

The CTR equation is cited as “equation 1” in the proposed Permit (page F-18). The proposed Permit cites a 2006 technical paper prepared by Robert Emerick (see footnote 7 on page F-18) as the source of the equations used by the Regional Board in developing the Permit effluent limitations for some hardness dependant metals (see Table F-6 footnote 2). Dr. Emerick’s equation 4 is presented on page F-23 of the proposed Permit. Equation 4 is not the same as equation 1 which is prescribed by the CTR.

The use of equations other than those prescribed by the CTR for development of effluent limitations for hardness dependant metals is contrary to the requirements of the CTR.

### **The “ambient” hardness was not used**

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).

The common dictionary definition of *ambient* is “in the surrounding area”, “encompassing on all sides”.

CSPA has argued that the common definition of ambient of surrounding would eliminate any areas that included the wastewater effluent in consideration of the hardness used in determining

criteria for hardness dependant metals. 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."

CSPA's view regarding the term ambient is also supported by a biological opinion issued by the US Fish and Wildlife Service (Service) and the National Marine Fisheries Service (NMFS) on March 24<sup>th</sup> 2000. 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 Regional Board has argued however that they had discretion to redefine “ambient” and were not constrained by common dictionary definitions. The Regional Board’s definition of “ambient” included the wastewater effluent.

The proposed Permit continues to utilize the wastewater effluent hardness when establishing criteria for hardness dependant metals. This can best be observed by review of Tables in the Fact Sheet in which the “Fully Mixed Downstream Ambient Conditions” are based on the “Effluent Fraction” which ranges from 1% to 100%. This is also confirmed in the text regarding hardness in the Fact Sheet and by “equation 4” which is partly based on the “lowest observed effluent hardness”.

The Regional Board in the proposed Permit continues to use the effluent as “ambient” in their calculation of criteria for hardness dependant metals contrary to common definition, the language in the SIP, guidance from the US Fish and Wildlife Service and the National Marine Fisheries Service and a ruling by the Superior Court.

### **Use of the “Surface Water Hardness”**

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).

As is stated above, the proposed Permit continues to utilize the wastewater effluent hardness when establishing criteria for hardness dependant metals. This can best be observed by review of Tables in the Fact Sheet in which the “Fully Mixed Downstream Ambient Conditions” are based on the “Effluent Fraction” which ranges from 1% to 100%. This is also confirmed in the text regarding hardness in the Fact Sheet and by “equation 4” which is partly based on the “lowest observed effluent hardness”.

The wastewater effluent is not “surface water”. The Regional Board has not argued this point but has steadfastly refused to acknowledge or discuss the CTR requirement that the hardness of the surface water be used in calculating the criteria for hardness dependant metals. The proposed Permit is again based on the hardness of the effluent, not surface water, for hardness dependant metals.

### **The “Emerick” Paper cannot be used**

The proposed Permit relies on the “Emerick” paper in developing effluent limitations for hardness dependant metals. The “Emerick” paper is inappropriate for use based on the following:

- The “Emerick” paper does not utilize the hardness of the surface water but also heavily relies on the effluent hardness. Recall that 40 CFR 131.38 requires use of the actual ambient hardness of the surface water.
- The “Emerick” paper does not solely use the equations specified in 40 CFR 131.38(c)(4).
- The “Emerick” paper does not utilize the ambient hardness also heavily relies on the effluent hardness.
- The “Emerick” paper ignores the other important water qualities that affect metal toxicity (e.g., pH, alkalinity, dissolved organic carbon, calcium, sodium, chloride, etc.) and focuses solely on hardness. As can be seen the U.S. EPA’s latest ambient criteria for copper (*Aquatic Life Ambient Freshwater Quality Criteria—Copper 2007 Revision*), the latest science utilizes these other quality that affect metal toxicity. Since EPA published the hardness-based recommendation for copper criteria in 1984, new data have become available on copper toxicity and its effects on aquatic life. The Biotic Ligand Model (BLM) – a metal bioavailability model that uses receiving water body characteristics to develop site-specific water quality criteria – utilizes the best available science and serves as the basis for the new national recommended criteria. The BLM requires ten input parameters to calculate a freshwater copper criterion (a saltwater BLM is not yet available): temperature, pH, dissolved organic carbon (DOC), calcium, magnesium, sodium, potassium, sulfate, chloride, and alkalinity. The BLM is used to derive the criteria rather than as a post-derivation adjustment as was the case with the hardness-based criteria. This allows the BLM-based criteria to be customized to the particular

water under consideration. The Regional Board failed to utilize the latest science in developing the proposed Permit.

### **Establishing a protective limitation**

For the great majority of wastewater discharges to surface waters the hardness of the effluent is much greater than the hardness of the upstream surface water. In such cases, use of the higher hardness of the effluent to calculate discharge limitations for hardness dependant metals results in significantly less stringent discharge limitations. The “Emerick” method uses the higher effluent hardness to determine criteria as the effluent mixes with surface water. The Regional Board has used the “Emerick” method to generate these less stringent limitations stating that the methodology only eliminates what would have otherwise been overly protective limitations<sup>1</sup>. Adherence to the required CTR methodology using the lower surface water hardness would, under these circumstances, produce more stringent criteria. In reviewing the Central Valley Regional Board’s NPDES permits it can be seen that use of the “Emerick” method is used by default, ignoring the mandated CTR method of calculating criteria for hardness dependant metals. It has been questioned whether the Regional Board’s default use of the “Emerick” method constitutes an underground regulation. "Regulation" means every rule, regulation, order, or standard of general application or the amendment, supplement, or revision of any rule, regulation, order or standard adopted by any state agency to implement, interpret, or make specific the law enforced or administered by it, or to govern its procedure.” (Government Code section 11342.600).

The Regional Board cannot produce a technical defense that use of the CTR prescribed methods is overly protective. To the contrary, the US Fish and Wildlife Service and the National Marine Fisheries Service in their biological opinion and U.S. EPA in developing new ambient criteria for copper, all state that the use of hardness alone, ignoring temperature, pH, dissolved organic carbon (DOC), calcium, magnesium, sodium, potassium, sulfate, chloride, and alkalinity, may not be protective of water quality. The agencies, in their biological opinion, state that only the lower upstream hardness should be used to account for the inaccuracies of using hardness alone. The Regional Board does not present any technical information to rebut the technical fisheries and water quality standards development experts at US Fish and Wildlife Service, the National Marine Fisheries Service or U.S. EPA. The Regional Board has refused to discuss the technical

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<sup>1</sup> See permits for Sacramento Regional ([http://www.swrcb.ca.gov/centralvalley/board\\_decisions/adopted\\_orders/sacramento/r5-2010-0114\\_npdes.pdf](http://www.swrcb.ca.gov/centralvalley/board_decisions/adopted_orders/sacramento/r5-2010-0114_npdes.pdf), at pages F-22 and 23), The City of Auburn ([http://www.swrcb.ca.gov/centralvalley/board\\_decisions/adopted\\_orders/placer/r5-2010-0090-01.pdf](http://www.swrcb.ca.gov/centralvalley/board_decisions/adopted_orders/placer/r5-2010-0090-01.pdf), page F-23 “An ECA based on a lower hardness (e.g., lowest upstream receiving water hardness) would also be protective, but would result in unreasonably stringent effluent limits considering the known conditions.”), Placer County SMD-1 ([http://www.swrcb.ca.gov/centralvalley/board\\_decisions/adopted\\_orders/placer/r5-2010-0092.pdf](http://www.swrcb.ca.gov/centralvalley/board_decisions/adopted_orders/placer/r5-2010-0092.pdf), page F-26, “Use of a lower ECA (e.g., calculated based solely on the lowest upstream receiving water hardness) is also protective, but would lead to unreasonably stringent effluent limits considering the known conditions.”)

merits of the opinions given by the US Fish and Wildlife Service, the National Marine Fisheries Service and U.S. EPA, stating only that the opinions address the CTR and are not applicable to individual permitting actions.

The Regional Board's consistent use of the "Emerick" method, and the Regional Board's assessment that use of the CTR prescribed methodology using the lowest observed hardness is overly protective, are without technical or legal merit.

**G. The proposed Permit contains no antidegradation analysis and 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.**

The proposed Permit states that: *"In August of 2010, the Discharger began using lime addition to the treatment process on a continuous basis. The lime addition is accomplished via an automated auger lime feed system located in the headworks following screening and grit removal. The Discharger found that adding lime significantly improved the reliability of the nitrification/denitrification process within the Facility. Operationally, Facility staff target maintaining an alkalinity of 75 mg/L and a pH of 7.0 standard units in the selector basin. This change has ultimately saved the Discharger operation costs by reducing the quantity of sodium bicarbonate needed for denitrification and has raised the effluent hardness to a minimum of 75 mg/L without significantly increasing the salinity of the discharge."*

Hard water interferes with almost every cleaning task, from doing the laundry to washing dishes to taking a shower. Clothes can look dingy and feel rough and scratchy. Dishes and glasses get spotted and a film may build up on shower doors, bathtubs, sinks and faucets. Washing your hair in hard water may leave it feeling sticky and dull. Finally, hard water can cause a residue to build-up in pipes that can lower water pressure throughout the house. Hardness also reduces the toxicity of hardness dependant metals and the Regional Board's use of the effluent hardness has resulted in significant relaxation of the proposed Permit. Hardness in itself is considered a pollutant as it degrades water quality. The intentional act of adding a pollutant to the wastestream cries out for a full antidegradation analysis.

The Regional Board has removed effluent limitations for carbon tetrachloride, chronic whole effluent toxicity, copper, dichlorobromomethane, nitrate plus nitrite, nitrite, settleable solids, and zinc. The removal of effluent limitations for these constituents allows for a discharge above of previously regulated limit. In review of the *Compliance History* section of the proposed Permit it is stated that the discharge has been compliant with Interim Limitations, which clearly exceed the prescribed effluent limitations.

The Regional Board has used the effluent hardness of 75 mg/l for developing limitations for hardness dependant metals as opposed to the ambient surface water hardness of 14 mg/l; as was used in the previous Permit; allowing for a discharge of a substantially higher concentration and mass of metals to be discharged to surface waters.

The Regional Board has allowed for a mixing zone for human health criteria; yet an antidegradation analysis has not been completed.

The antidegradation analysis in the proposed Permit is not simply deficient, it is literally nonexistent. The brief discussion of antidegradation requirements, in the Findings and Fact Sheet, consist only of skeletal, unsupported, undocumented conclusory statements totally lacking in factual analysis.

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.

Any antidegradation analysis must comport with implementation requirements in State Board Water Quality Order 86-17, State Antidegradation Guidance, APU 90-004 and Region IX Guidance. The conclusory, unsupported, undocumented statements in the Permit are no substitute for a defensible antidegradation analysis.

The antidegradation review process is especially important in the context of waters protected by Tier 2. See EPA, Office of Water Quality Regulations and Standards, *Water Quality Standards Handbook*, 2nd ed. Chapter 4 (2nd ed. Aug. 1994). Whenever a person proposes an activity that may degrade a water protected by Tier 2, the antidegradation regulation requires a state to: (1) determine whether the degradation is “necessary to accommodate important economic or social development in the area in which the waters are located”; (2) consider less-degrading alternatives; (3) ensure that the best available pollution control measures are used to limit degradation; and (4) guarantee that, if water quality is lowered, existing uses will be fully protected. 40 CFR § 131.12(a)(2); EPA, Office of Water Quality Regulations and Standards, *Water Quality Standards Handbook*, 2nd ed. 4-1, 4-7 (2nd ed. Aug. 1994). These activity-specific determinations necessarily require that each activity be considered individually.

For example, the APU 90-004 states:

“Factors that should be considered when determining whether the discharge is necessary to accommodate social or economic development and is consistent with maximum public benefit include: a) past, present, and probably beneficial uses of the water, b) economic and social costs, tangible and intangible, of the proposed discharge compared to benefits. The economic impacts to be considered are those incurred in order to maintain existing water quality. The financial impact analysis should focus on the ability of the facility to pay for the necessary treatment. The ability to pay depends on the facility’s source of funds. In addition to demonstrating a financial impact on the publicly – or privately –

owned facility, the analysis must show a significant adverse impact on the community. The long-term and short-term socioeconomic impacts of maintaining existing water quality must be considered. Examples of social and economic parameters that could be affected are employment, housing, community services, income, tax revenues and land value. To accurately assess the impact of the proposed project, the projected baseline socioeconomic profile of the affected community without the project should be compared to the projected profile with the project...EPA's Water Quality Standards Handbook (Chapter 5) provides additional guidance in assessing financial and socioeconomic impacts"

There is nothing resembling an economic or socioeconomic analysis in the Permit. There are viable alternatives that have never been analyzed. The evaluation contains no comparative costs. As a rule-of-thumb, USEPA recommends that the cost of compliance should not be considered excessive until it consumes more than 2% of disposable household income in the region. This threshold is meant to suggest more of a floor than a ceiling when evaluating economic impact. In the Water Quality Standards Handbook, USEPA interprets the phrase "necessary to accommodate important economic or social development" with the phrase "substantial and widespread economic and social impact."

There is nothing resembling an analysis buttressing the unsupported claim that BPTC is being provided. An increasing number of wastewater treatment plants around the country and state are employing reverse-osmosis (RO), or even RO-plus. Clearly, micro or nano filtration can be considered BPTC for wastewater discharges of impairing pollutants into critically sensitive ecological areas containing listed species that are already suffering serious degradation. If this is not the case, the antidegradation analysis must explicitly detail how and why a run-of-the-mill secondary or tertiary system that facilitate increased mass loadings of impairing constituents can be considered BPTC.

There is nothing in the Permit resembling an analysis that ensures that existing beneficial uses are protected. The proposed Permit fails to discuss how and to what degree the identified beneficial uses will be impacted by the discharge. In fact, there is almost no information or discussion on the composition and health of the identified beneficial uses. Any reasonably adequate antidegradation analysis must discuss the affected beneficial uses (i.e., numbers and health of the aquatic ecosystem; extent, composition and viability of agricultural production; people depending upon these waters for water supply; extent of recreational activity; etc.) and the probable effect the discharge will have on these uses.

The antidegradation analysis in the proposed Permit is not simply deficient, it is literally nonexistent. The brief discussion of antidegradation requirements, in the Findings and Fact Sheet, consist only of skeletal, unsupported, undocumented conclusory statements totally lacking

in factual analysis. NPDES permits must include any more stringent effluent limitation necessary to implement the Regional Board Basin Plan (Water Code 13377). The proposed Permit fails to properly implement the Basin Plan's Antidegradation Policy.

**H. The proposed Permit fails to contain an Effluent Limitation for aluminum in accordance with Federal Regulations 40 CFR 122.44, US EPA's interpretation of the regulation, and California Water Code, Section 13377.**

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 Basin Plan contains a narrative water quality objective for toxicity that states in part that "[a]ll waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life" (narrative toxicity objective). 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. U.S. EPA developed National Recommended Ambient Water Quality Criteria for protection of freshwater aquatic life for aluminum to prevent toxicity to freshwater aquatic life. The recommended ambient criteria four-day average (chronic) and one-hour average (acute) criteria for aluminum are 87 µg/l and 750 µg/l, respectively.

Aluminum in the effluent has been measured as high as 120 ug/l µg/l. Freshwater Aquatic habitat is a beneficial use of the receiving stream.

However, Federal regulations, 40 CFR § 122.44(d)(1)(ii), state "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 procedures for computing variability are detailed in Chapter 3, pages 52-55, of USEPA's *Technical Support Document For Water Quality-based Toxics Control*. The Regional Water Board conducted the RPA in accordance with Section 1.3 of the SIP. The proposed Permit states that: "Although the SIP applies directly to the control of CTR priority pollutants, the State Water Board has held that the Regional Water

Board may use the SIP as guidance for water quality-based toxics control” but fails to discuss compliance with 40 CFR § 122.44(d)(1)(ii). The State and Regional Boards do not have the authority to override and ignore federal regulation. A statistical analysis results in a projected maximum effluent concentration (MEC) based on laboratory variability and the resulting MEC is greater than was obtained from the actual sampling data. The result of using statistical variability is that a greater number of constituents will have a reasonable potential to exceed water quality standards and therefore a permit will have a greater number of effluent limitations. The intentional act of ignoring the Federal regulation has a clear intent of limiting the number of regulated constituents in an NPDES permit. The failure to utilize statistical variability results in significantly fewer Effluent Limitations that are necessary to protect the beneficial uses of receiving waters. The reasonable potential analyses for aluminum constituents are flawed and must be recalculated.

US EPA’s 87 ug/l chronic criterion was developed using low pH and hardness testing. The pH and hardness of this receiving stream are low as were the levels used in some parts of EPA’s ambient criteria development document. Contributory streams, especially foothill streams, have also been sampled and shown to contain even lower hardness levels. US EPA recognized in their ambient criteria development document, (Ambient Water Quality Criteria for Aluminum, EPA 440/5-86-008) that the pH was in the range 6.5 to 6.6 and that the hardness was below 20 mg/l. Typical values for pH and hardness in the Central Valley alone warrant use of the chronic ambient criteria for aluminum. Despite the hardness and pH values used in the development of the criteria; U.S. EPA’s conclusions in their *Ambient Criteria for the Protection of Freshwater Aquatic Life* recommends that application of the ambient criteria as necessary to be protective of the aquatic beneficial uses of receiving waters in lieu of site-specific criteria.

The Regional Board and their proposed Permit cites US EPA’s *Ambient Criteria for the Protection of Freshwater Aquatic Life for Aluminum* (criteria) as not being representative or necessary because the chronic criteria were based on a low hardness and low pH. The Regional Board cites one section of the criteria development document but ignores the final recommendation to use the recommended criteria absent a site-specific objective for aluminum. The Regional Board then defaults to the US EPA recommended acute criteria of 750 ug/l. The Regional Board’s citation of the criteria development document is incomplete its review, for example the *criteria* development document (EPA 440/5-86-008) also cites that:

169 ug/l of aluminum caused a 24% reduction in the growth of young brook trout, for which rainbow trout show similar sensitivities.

174 ug/l of aluminum killed 58% of the exposed striped bass.

Bioaccumulation factors ranged from 50 to 231 for young brook trout exposed to aluminum for 15 days.

Aluminum at 169 ug/l caused a 24% reduction in the weight of young brook trout.

US EPA recommends that understanding the *Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses* is necessary in order to understand the text, tables and calculations of a criteria document. The Regional Board's assessment of the use of low hardness and low pH clearly shows they did not heed EPA's advice in reviewing the criteria development procedures for water quality criteria or the final recommendations. The Regional Board occasionally cites individual aluminum toxicity testing at Yuba City; again individual testing is not a valid replacement for developing fully protective criteria. A prime example of a state utilizing good water quality standards development techniques for developing a site specific standard for aluminum is the state of Indiana where a final chronic criterion of 174 ug/l was established in 1997. In 2003, Canada adopted pH dependant freshwater aquatic life criteria for aluminum that ranges from 84 ug/l to 252 ug/l. Ignoring the final recommendation of the criteria misses the protective intermediate measures to protect against mortality and reductions to growth and reproduction. The Regional Board's single use of the acute criteria for aluminum is not protective of the beneficial uses of the receiving stream.

The drinking water maximum contaminant level (MCL), which is included as a Basin Plan Water Quality Chemical Constituents Objective, for aluminum is 1,000 as a primary MCL and 200 µg/l as a secondary MCL.

The effluent data has exceeded the 87 ug/l chronic criteria.

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." 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 valid, reliable, and representative effluent data or instream background data are available they MUST be used in applicable reasonable potential and limits derivation calculations. Data may not be arbitrarily discarded or ignored." 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. A water quality standard for Failure to include an effluent limitation for aluminum in the proposed permit violates 40 CFR 122.44 and CWC 13377.

The Arid West Report is not applicable to this discharge.

1. The Arid West Report clearly states this is the case by presenting the map on page 3-1. The map clearly shows that the central valley is excluded from the report.
2. Page 3-2 characterizes the applicable water bodies for which the report is developed. Deer Creek does not meet either case.

“The hydrology of arid west streams can affect the application of water quality standards, especially for ephemeral and effluent-dependent waters. For example:

*Flashy nature of flow in ephemeral streams means that they are dry for significant lengths of time and then temporarily filled with water. Accordingly, the exposure duration assumptions inherent in federally recommended criteria may not be appropriate, and as such could be modified.* Deer Creek flows year round. The Deer Creek Wastewater treatment plant is mandated by the State Board, division of water rights to discharge a minimum flow year round. This is supported by the California Department of Fish and Game in stating that if a habitat is created it must be maintained.

*Effluent-dependent streams are artificially created habitats where the ecological community present is, by definition, adapted to the flow regime, i.e., the existing aquatic life use is dependent on the nature of the waterbody created. The extent to which aquatic life becomes established in an effluent-dependent stream will be influenced by the duration and frequency of the effluent discharge. For example, some wastewater facilities are designed primarily to provide reclaimed water for reuse. However, occasionally these facilities may have to discharge to an ephemeral waterbody for a few days or weeks. The expectations for the aquatic community that develops downstream of these intermittently discharging facilities systems will be quite different from the community that develops in a waterbody that receives effluent all of the time.*

The Arid West report states on page 3-4 that: “*Effluent-dependent streams support valuable riparian communities with high biodiversity of terrestrial plants and animals. In arid west waters, the differences between terrestrial vegetation upstream and downstream of a discharge can be striking, especially where the water is effluent-dependent.*” Again, this is not the case at Deer Creek; the terrestrial vegetation cannot be distinguished upstream from downstream.

The Arid West Report states on page 4-13 that: “*Although AWQC are designed to protect most species nationwide, criteria are derived from toxicity tests primarily with surrogate laboratory*

*organisms. These surrogates are usually those species encountered in perennial streams in mesic environments, e.g., the eastern U.S., the Pacific Northwest, and the intermountain Rocky Mountains, such as rainbow trout. A much smaller body of toxicological knowledge exists for stream biota characteristic of the arid parts of the West. The responses of species adapted to effluent-dependent waters to discharged pollutants are even less well understood. EPA regulations and guidance documents provide a procedure to recalculate site-specific water quality criteria that reflect local, unique conditions, or exposed populations."* Deer Creek support a population of rainbow trout unlike the waterbodies described in the Arid West Report.

The Arid West Report conclusion is a recalculation procedure to modify the ambient criteria resulting in site-specific objectives. The Arid West Report states that: "**Recalculation Procedure User's Guide** *To assist in the possible application of these methods, a User's Guide was prepared for the Recalculation Procedure to aid dischargers and permit holders in applying a Recalculation Procedure given the unique biological conditions often present in effluent-dependent waters. This document includes a discussion of the derivation of national AWQC and evaluation of the use of the WER method versus the Recalculation Procedure and Resident Species Procedure in effluent-dependent waters. In addition, the User's Guide includes a discussion on the role AWQC in regulating water quality via the NPDES program of the Clean Water Act. A rough cost-benefit analysis for the resulting modified criterion is also provided."* The Regional Board does not follow the Arid West Report in attempting to revise the criteria based on a scientific study, but attempts to avoid the regulatory requirements by simply using the Arid West Report conclusions as gospel and using the recommended numbers as illegal criteria. Pages 4-19 and 4-20 of the Arid West Report clearly spell out that the goal of the Report is to provide information to modify and develop water quality standards; again the Regional Board is developing illegal water quality standards by implementing the data from the Arid West Report without going through the procedures for developing standards or objectives.

The Regional Board has cited *Evaluation of the EPA Recalculation Procedure in the Arid West Technical Report* (May 2006). The title of the document infers recalculation of water quality criteria with the intent of developing site specific water quality criteria. This is confirmed in the *Forward* of the report presented on page ii which states that:

*"The purpose of this fifth report, Evaluation of EPA Recalculation Procedure in Arid West Effluent Dependent Waters, ("Recalculation Procedure Study") was to evaluate use of the Recalculation Procedure on selected water quality criteria with different modes of toxicity in specific arid West waters. In addition, based on the findings from this evaluation, a User's Guide for Development of Site-Specific Water Quality Standards in Arid West Effluent-dependent Streams Using USEPA's Recalculation Procedure was also prepared as a practical guide for water quality standards practitioners regarding use of the Recalculation Procedure for developing site-specific water quality standards."*

The Regional Board has not however recalculated the criteria and begun the legally required process of modifying the water quality criteria. The Regional Board has circumvented the legal water quality standards development process and applied the recommended water quality levels for Arid West waterbodies in NPDES permits. This is not only contrary to the stated intent of the report but conflicts with federal and state requirements for developing water quality standards, including site-specific standards. The Regional Board has failed to follow the legally required procedures for developing water quality standards, 40 CFR Part 131. The Regional Board has also failed to comply with the California Water Code, Porter Cologne Section 13241.

**I. The proposed Permit fails to contain an Effluent Limitation for nitrate in accordance with Federal Regulations 40 CFR 122.44, US EPA's interpretation of the regulation, 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 Basin Plan contains a chemical constituent's water quality objective which includes Title 22 drinking water standards by reference. There are drinking water maximum contaminant levels for nitrate, which by reference are included in the Basin Plan.

For chlorine, the proposed Permit states that: "*The Discharger uses chlorine for disinfection, which is extremely toxic to aquatic organisms. The Discharger uses a sulfur dioxide process to dechlorinate the effluent prior to discharge to Deer Creek. Due to the existing chlorine use and the potential for chlorine to be discharged, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC.*" The proposed Permit also contains a similar argument for ammonia. Ammonia is converted to nitrate through a proper wastewater treatment process. There is no indication in the proposed Permit that sampling for nitrate was conducted during a period when full nitrification was being achieved; which is the period when nitrate levels would be at their maximum. Nitrate carries the same level of threat for exceeding water quality criteria as does chlorine and ammonia. The proposed Permit fails to include an effluent limitation for nitrate.

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 with a large initial "B".

Bill Jennings, Executive Director  
California Sportfishing Protection Alliance