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For Petitioner California Sportfishing Protection Alliance

BEFORE THE STATE WATER RESOURCES CONTROL BOARD

**In the Matter of Waste Discharge Requirements For)
City of Auburn Wastewater Treatment Plant;)
California Regional Water Quality Control Board –) PETITION FOR REVIEW
Central Valley Region Order No. R5-2010-0090;)
NPDES No. CA0077712)**

Pursuant to Section 13320 of California Water Code and Section 2050 of Title 23 of the California Code of Regulations (CCR), California Sportfishing Protection Alliance (“CSPA” or “petitioner”) petitions the State Water Resources Control Board (State Board) to review and vacate the final decision of the California Regional Water Quality Control Board for the Central Valley Region (“Regional Board”) in adopting Waste Discharge Requirements (NPDES No.

CA0077712) for City of Auburn Wastewater Treatment Plant, on 22 September 2010. See Order No. R5-2010-0090. The issues raised in this petition were raised in timely written comments.

1. NAME AND ADDRESS OF THE PETITIONERS:

California Sportfishing Protection Alliance
3536 Rainier Avenue
Stockton, California 95204
Attention: Bill Jennings, Executive Director

2. THE SPECIFIC ACTION OR INACTION OF THE REGIONAL BOARD WHICH THE STATE BOARD IS REQUESTED TO REVIEW AND A COPY OF ANY ORDER OR RESOLUTION OF THE REGIONAL BOARD WHICH IS REFERRED TO IN THE PETITION:

Petitioner seeks review of Order No. R5-2010-0090, Waste Discharge Requirements (NPDES No. CA0077712) for the City of Auburn Wastewater Treatment Plant. A copy of the adopted Order is attached as Attachment No. 1.

3. THE DATE ON WHICH THE REGIONAL BOARD ACTED OR REFUSED TO ACT OR ON WHICH THE REGIONAL BOARD WAS REQUESTED TO ACT:

22 September 2010

4. A FULL AND COMPLETE STATEMENT OF THE REASONS THE ACTION OR FAILURE TO ACT WAS INAPPROPRIATE OR IMPROPER:

CSPA submitted a detailed comment letter on 22 August 2010. That letter and the following comments set forth in detail the reasons and points and authorities why CSPA believes the Order fails to comport with statutory and regulatory requirements. The specific reasons the adopted Orders are improper are:

A. The City of Auburn fails to provide a minimum of Secondary Treatment as required by federal regulation, 40 CFR 133 and allows for bypass of treatment processes contrary to federal regulation 40 CFR 122.41(m)(1).

The Permit, page F-4, states that: "During extreme wet weather events when all of the equalization ponds are full, combined storm water and wastewater flows in excess of the hydraulic capacity of the secondary process of about 3 MGD are directed through the pond

system, combined with flows from the secondary clarifiers, and directed to the tertiary filters and disinfection facilities.”

As is stated above, domestic wastewater is allowed to bypass the biological secondary treatment process is diluted in the pond system, combined with secondary wastewater, filtered and disinfected. Federal regulation 40 CFR 133.1(k) defines significant biological treatment; dilution is not an acceptable alternative to providing secondary treatment. Bypass of the secondary biological process also violates 40 CFR 122.41(m)(1) which prohibits diversion of wastestreams from any portion of a treatment facility. The City can accurately state that such a discharge is allowed under the Permit since the Finding appears to allow the bypass and Discharge Prohibition No. A states that: “A. Discharge of wastewater at a location or in a manner different from that described in the Findings is prohibited.”

The Permit, Section IIE, page F-10, discusses *Planned Changes* to the treatment processes at the treatment plant. The limited capacity of the secondary system is 3 million gallons per day. The only listed modification to the secondary process is the addition of a secondary clarifier and a brush aerator. A secondary clarifier will not increase the capacity of the biological process. A brush aerator will provide additional capability by adding more air to the biological process; however there is no information of the hydraulic retention reduction achieved for the process. Overall the Planned Changes are questionable as to whether the bypass of the secondary biological process will be eliminated.

The Permit, page F-45 states that: “Order No. R5-2005-0030 did not require the Discharger to meet the stringent tertiary treatment requirements for BOD₅, TSS, total coliform organisms, and turbidity when 20:1 dilution was available. However, the beneficial uses of the Auburn Ravine include municipal and domestic supply, water contact recreation, and agricultural irrigation supply, and there is, at times, less than 20:1 dilution. To protect these beneficial uses under all flow conditions, the Regional Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. The method of treatment is not prescribed by this Order; however, wastewater must be treated to a level equivalent to that recommended by DPH.”

Under the conditions described above, tertiary treatment is not achieved and not even full secondary treatment is provided. This condition threatens each beneficial use of the receiving water including aquatic life and public health. There is no indication that the City of Auburn has conducted any sampling during bypass of the secondary biological process to assess the quality and the threat and impacts to beneficial uses under high flow conditions and during bypass of the secondary biological process.

The Permit states, as cited above, that tertiary treatment is required at all times which conflicts with the Finding that the biological process is bypassed during high flow events. The Permit

must be modified or clarified that bypasses are prohibited and any level of treatment less than full tertiary is unacceptable. Since compliance is apparently not immediately achievable an appropriate enforcement action should be adopted along with the Permit addressing this issue.

B. The Permit fails to contain mass-based effluent limits for chlorine, diazinon, beta-Endosulfan, chlorodibromomethane, dichlorobromomethane, endrin aldehyde, heptachlor, lead, aluminum, manganese and nitrate 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 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, diazinon, beta-Endosulfan, chlorodibromomethane, dichlorobromomethane, endrin aldehyde, heptachlor, lead, aluminum, manganese and nitrate the 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 26th 2006 U.S. EPA, Mr. Douglas Eberhardt, Chief of the CWA Standards and Permits Office, sent a letter to Dave Carlson at the Central Valley Regional Water Quality Control Board strongly recommending that NPDES permit effluent limitations be expressed in terms of mass as well as concentration.

It should be noted that the Regional Board does a great disservice to the Dischargers it regulates when they allow new or expanded treatment system to be built that are in immediate noncompliance with discharge limitations; this can be remedied by requiring the submittal of individual pollutant design parameters be submitted by the design engineers. The Permit must be amended to include mass limitations for chlorine, diazinon, beta-Endosulfan, chlorodibromomethane, dichlorobromomethane, endrin aldehyde, heptachlor, lead, aluminum, manganese and nitrate. The design flow for each of the listed pollutants should be individually specified in the 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.

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

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. The Permit contains a narrative Effluent Limitation prohibiting the discharge of chronically toxic substances: however a *Compliance Determination* has been added to the Permit: “Compliance with the accelerated monitoring and TRE/TIE provisions of Provision VI.C.2.a shall constitute compliance with effluent limitations contained in sections IV.A.1.d and IV.B.1.d of this Order for chronic whole effluent toxicity “. The *Compliance Determination* nullifies the Effluent Limitation and makes toxic discharges unenforceable.

The Permit, page 20 No. 2a, includes the following: “I. Chronic Whole Effluent Toxicity; “For compliance with the Basin Plan’s narrative toxicity objective, this Order requires the Discharger to conduct chronic whole effluent toxicity (WET) testing, as specified in the Monitoring and Reporting Program (Attachment E, section V).”

The Basin Plan narrative Toxicity Objective states that: “All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, or aquatic life. This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Board.”

Monitoring cannot possibly comply with a limitation that a wastewater discharge shall not cause toxicity within the receiving stream.

According to the Basin Plan toxicity sampling is required to determine compliance with the requirement that all waters be maintained free of toxic substances. Sampling does not equate with or ensure that waters are free of toxic substances. The Tentative Permit requires the Discharger to conduct an investigation of the possible sources of toxicity if a threshold is exceeded. This language is not a limitation and essentially eviscerates the Regional Board's authority, and the authority granted to third parties under the Clean Water Act, to find the Discharger in violation for discharging chronically toxic constituents. An enforceable effluent limitation for chronic toxicity must be included in the Order.

D. The Permit fails to implement the requirements of CCR Title 27 where the wastewater treatment and disposal operations have been previously shown to have degraded groundwater quality contrary to the requirements of the Basin Plan. The City of Auburn and the Permit have failed to implement the Antidegradation Policy requirement that best practicable treatment and control (BPTC) of the wastewater discharge be provided.

CCR Title 27 §20090. "SWRCB - Exemptions. (C15: §2511): The following activities shall be exempt from the SWRCB-promulgated provisions of this subdivision, so long as the activity meets, and continues to meet, all preconditions listed: (a) **Sewage**—Discharges of domestic sewage or treated effluent which are regulated by WDRs issued pursuant to Chapter 9, Division 3, Title 23 of this code, or for which WDRs have been waived, and which are consistent with applicable water quality objectives, and treatment or storage facilities associated with municipal wastewater treatment plants, provided that residual sludges or solid waste from wastewater treatment facilities shall be discharged only in accordance with the applicable SWRCB-promulgated provisions of this division. (b) **Wastewater**—Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leachfields if the following conditions are met: (1) the applicable RWQCB has issued WDRs, reclamation requirements, or waived such issuance; (2) the discharge is in compliance with the applicable water quality control plan; and (3) the wastewater does not need to be managed according to Chapter 11, Division 4.5, Title 22 of this code as a hazardous waste."

The Regional Board's water quality control plan (Basin Plan) requires that:

WATER QUALITY OBJECTIVES FOR GROUND WATERS

The following objectives apply to all ground waters of the Sacramento and San Joaquin River Basins, as the objectives are relevant to the protection of designated beneficial uses. These objectives do not require improvement over naturally occurring background concentrations. The ground water objectives contained in this plan are not required by the federal Clean Water Act.

Bacteria

In ground waters used for domestic or municipal supply (MUN) the most probable number of coliform organisms over any seven-day period shall be less than 2.2/100 ml.

Chemical Constituents

Ground waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At a minimum, ground waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in the following provisions of Title 22 of the California Code of Regulations, which are incorporated by reference into this plan: Tables 64431-A (Inorganic Chemicals) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Tables 64449-A (Secondary Maximum Contaminant Levels- Consumer Acceptance Limits) and 64449-B (Secondary Maximum Contaminant Levels-Ranges) of Section 64449. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect. At a minimum, water designated for use as domestic or municipal supply (MUN) shall not contain lead in excess of 0.015 mg/l. To protect all beneficial uses, the Regional Water Board may apply limits more stringent than MCLs.

Tastes and Odors

Ground waters shall not contain taste- or odor producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

Toxicity

Ground waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial use(s). This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances.

The prior NPDES permit, R5-2005-0030, for the City of Auburn contained the following Findings and Provision regarding groundwater:

“Finding No. 5 states that: “5. The Discharger utilizes unlined equalization ponds. The quality of the raw domestic wastewater contained in the unlined equalization ponds is largely uncharacterized. Available monitoring of the water contained in the ponds indicates an average ammonia concentration of 13 mg/l, an average chloride concentration of 29 mg/l, and an average total dissolved solids concentration of 200 mg/l. Raw domestic wastewater also contains high concentrations of pathogens. The unlined nature of the ponds allows the percolation of raw wastewater into the underlying soil and,

potentially, to groundwater. Based on groundwater monitoring data submitted by the Discharger, pollutants have migrated to groundwater.”

R5-2005-0030, Findings No. 51, 52, 53, respectively found that:

“Based on information included in analytical laboratory results submitted by the Discharger as part of its quarterly groundwater monitoring reports, the raw domestic wastewater contained in the unlined ponds has degraded underlying groundwater for total dissolved solids (TDS).”

“Based on information included in analytical laboratory results submitted by the Discharger as part of its quarterly groundwater monitoring reports, the raw domestic wastewater contained in the unlined ponds has degraded underlying groundwater for nitrate and caused an exceedance of the Basin Plan groundwater chemical constituents objective of 10 mg/l.”

“Based on information included in analytical laboratory results submitted by the Discharger as part of its quarterly groundwater monitoring reports, the raw domestic wastewater contained in the unlined ponds has degraded underlying groundwater for total coliform organisms and caused an exceedance of the Basin Plan groundwater bacteria objective of 2.2 MPN/100 ml.”

“Finding No. 54: The degradation of groundwater by constituents specified in the groundwater limitations in this Order, and by constituents that can be effectively removed by conventional treatment (*e.g.*, oxygen-demanding substances, nutrients, bacteria) is inconsistent with Resolution 68-16. The Regional Board finds that BPTC is not being provided for the land disposal of wastewater at this facility. Waste treatment and control at this facility could include, but is not necessarily limited to, lining of the pond(s) regularly containing untreated or partially treated wastewater. The ponds provide for emergency storage and equalization of the influent flow; technology is readily and cost-effectively available to achieve these worthwhile goals, without allowing percolation to groundwater. This Order contains Provision G.6, which includes a time schedule requiring the Discharger to implement BPTC.”

“Provision No. 6. **BPTC Evaluation Tasks.** The Discharger shall propose a work plan and schedule for providing BPTC as required by Resolution 68-16. The technical report describing the work plan and schedule shall contain a preliminary evaluation of each component and propose a time schedule for completing the comprehensive technical evaluation. Following completion of the comprehensive technical evaluation, the Discharger shall submit a technical report describing the evaluation’s results and

critiquing each evaluated component with respect to BPTC and minimizing the discharge's impact on groundwater quality. Where deficiencies are documented, the technical report shall provide recommendations for necessary modifications (e.g., new or revised salinity source control measures, WWTP component upgrade and retrofit) to achieve BPTC and identify the source of funding and proposed schedule for modifications. The schedule shall be as short as practicable but in no case shall completion of the necessary modifications exceed four years past the Executive Officer's determination of the adequacy of the comprehensive technical evaluation, unless the schedule is reviewed and specifically approved by the Regional Board. The technical report shall include specific methods the Discharger proposes as a means to measure processes and assure continuous optimal performance of BPTC measures. The Discharger shall comply with the following compliance schedule in implementing the work required by this Provision..."

The wastewater discharge has degraded groundwater quality in violation of the Basin Plan and does therefore not meet the requirements for an exemption from CCR Title 27.

The Permit, Page 22, instead of properly applying the requirements of CCR Title 27, states that:

c. Best Practical Treatment or Control (BPTC). The Discharger shall propose a work plan and schedule for providing BPTC as required by Resolution 68-16 for iron in the groundwater underlying the equalization ponds. The technical report describing the work plan and schedule shall contain a preliminary evaluation of each component and propose a time schedule for completing the comprehensive technical evaluation."

Page F-59: "Order No. R5-2005-0030 established quarterly groundwater monitoring and a requirement to perform a BPTC evaluation. To comply with the BPTC requirements, the Discharger lined Pond 1A in 2007 with a plastic liner and implemented procedures to empty the remaining ponds as soon as practicable after storm flows subside. The Discharger submitted a *Background Evaluation Report, City of Auburn Wastewater Treatment Plant, Auburn, California* (BSK Associates) dated 20 May 2010, to determine natural background quality and compare measured concentrations in downgradient monitoring wells to monitor impacts from the equalization ponds against natural background concentrations. Based on the statistical evaluation in the report, the Discharger concluded that there has likely been a release of the metals barium, copper, iron, manganese, nickel, strontium, and vanadium from the ponds to the downgradient groundwater; however, only iron exceeds the applicable water quality objective (i.e., the Secondary MCL) and the background concentration in the downgradient wells. Iron also exceeded the Secondary MCL in the upgradient well.

The Regional Water Board is concerned with the high concentrations of iron in both the upgradient and downgradient monitoring wells and the possibility that the natural background quality is acidic, which naturally results in higher iron concentrations. Restricting discharges of iron to groundwater may not reduce the impact to groundwater. Thus, groundwater limitations for iron will not be established at this time. This Order requires the Discharger to conduct a BPTC study to further evaluate natural background quality, how discharges from the ponds are impacting groundwater, and a work plan and schedule for providing BPTC as required by Resolution 68-16 for iron in the groundwater underlying the equalization ponds, which may include, but is not limited to, lining of the equalization ponds.

The City of Auburn has degraded groundwater and has not met the Antidegradation Policy requirement that best practicable treatment and control (BPTC) of the wastewater discharge be provided. The Discharger has not only degraded groundwater quality as detailed in Order No. R5-2005-0030 for TDS, nitrate and coliform, but has also degraded groundwater quality with barium, copper, iron, manganese, nickel, strontium, and vanadium. The discharge of wastewater has caused exceedance of the Basin Plan water quality objectives in some instances and has degraded groundwater quality in others. The degradation of groundwater is not allowed under the Antidegradation Policy, Resolution 68-16, which is a part of the Basin Plan unless the degradation is in the best interest of the people of California and BPTC has been provided. BPTC has not been provided as detailed in the previous and Permit. In no case does the Antidegradation Policy allow for an exceedance of water quality objectives. The wastewater discharge is not in compliance with the water quality control plan (Basin Plan) and therefore cannot be exempted from CCR Title 27.

The Permit, page 14, contains: “B. Groundwater Limitations, Release of waste constituents from any storage, treatment, or disposal component associated with the Facility shall not, in combination with other sources of the waste constituents, cause groundwater within influence of the Facility to contain waste constituents in concentrations in excess of natural background quality or that listed below, whichever is greater:” Normally, background groundwater quality does not exceed water quality standards, which appears to be the case at the City of Auburn. Under this circumstance, the Permit allows the Discharger to degrade water quality to the point where it equals the water quality standard. This is contrary to the Antidegradation Policy, which first requires the Discharger show that ANY degradation is in the best interest of the people of California and that BPTC is being provided. The Permit puts the cart before the horse and allows degradation to water quality standards absent compliance with the Antidegradation Policy. The Permit cited paragraph should be revised to state “whichever is less” in accordance with the Antidegradation Policy.

- E. The Central Valley Regional Water Board (Region 5) NPDES Permits establish Effluent Limitations for metals based on the hardness of the effluent and/or the downstream water and rarely use the ambient upstream receiving water hardness as required by Federal Regulations, the California Toxics Rule (CTR, 40 CFR 131.38(c)(4)).**

The Permit contains the following:

“The upstream receiving water hardness in Auburn Ravine ranged from 10 mg/L to 110 mg/L, based on 43 samples from September 2006 to March 2010. Thus, a minimum upstream receiving water hardness of 10 mg/L (as CaCO₃) represents the reasonable worst-case upstream hardness and was used to adjust the criterion when comparing the maximum receiving water background concentration to the criterion. For comparing the MEC to the applicable criterion, in accordance with the SIP, CTR, and Davis Order, the reasonable worst-case downstream hardness was used to adjust the criterion. The procedures for determining the applicable criterion after proper adjustment using the reasonable worst-case downstream hardness is outlined in subsection ii below.” (Permit page F-20)

“As demonstrated in Table F-5, using a hardness of 70 mg/L (as CaCO₃) to calculate the ECA ensures the discharge is protective under all discharge and mixing conditions.” (Permit page F-22)

“Using Equation 3 to calculate the ECA for all Concave Up Metals will result in WQBELs that are protective under all potential effluent/receiving water mixing scenarios and under all known hardness conditions, as demonstrated in Table F-6, for lead. In this example, the effluent is in compliance with the CTR criteria and any mixture of the effluent and receiving water is in compliance with the CTR criteria. 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. Therefore, Equation 3 has been used to calculate the ECA for all Concave Up Metals in this Order.” (Permit page F-24)

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 definition of ambient is “in the surrounding area”, “encompassing on all sides”. It has been the Region 5, Sacramento, NPDES Section, in referring to Basin Plan objectives for temperature, to define ambient as meaning upstream. It is reasonable to assume, after considering the definition of ambient, that

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

The Regional Board has used the effluent hardness and the instream effluent hardness measured immediately downstream of the point of discharge, calling such "ambient". Ambient is defined as "surrounding," not "in the middle of". Regional Board staff has begun to define any hardness used (effluent, upstream and downstream) as being "ambient". The result of using a higher effluent or downstream hardness value is that metals are toxic at higher concentrations, discharges have less reasonable potential to exceed water quality standards and the resulting Permits have fewer Effluent Limitations.

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

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

The Federal Register, Volume 65, No. 97/Thursday, May 18th 2000 (31692), adopting the California Toxics Rule in confirming that the ambient hardness is the upstream hardness, absent

the wastewater discharge, states that: “A hardness equation is most accurate when the relationship between hardness and the other important inorganic constituents, notably alkalinity and pH, are nearly identical in all of the dilution waters used in the toxicity tests and in the surface waters to which the equation is to be applied. If an effluent raises hardness but not alkalinity and/or pH, using the lower hardness of the downstream hardness might provide a lower level of protection than intended by the 1985 guidelines. If it appears that an effluent causes hardness to be inconsistent with alkalinity and/or pH the intended level of protection will usually be maintained or exceeded if either (1) data are available to demonstrate that alkalinity and/or pH do not affect the toxicity of the metal, or (2) the hardness used in the hardness equation is the hardness of upstream water that does not include the effluent. The level of protection intended by the 1985 guidelines can also be provided by using the WER procedure.”

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

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

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

The CTR should clearly state that to obtain a site hardness value, samples should be collected upstream of the effluent source(s). Clearly stating this requirement in the CTR would avoid the computation of greater-than-intended site criteria in cases where samples

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

The CTR proposes criteria formulas that use site water hardness as the only input variable. In contrast, over twenty years ago Howarth and Sprague (1978) cautioned against a broad use of water hardness as a “shorthand” for water qualities that affect copper toxicity. In that study, they observed a clear effect of pH in addition to hardness. Since that time, several studies of the toxicity of metals in test waters of various compositions have been performed and the results do not confer a singular role to hardness in ameliorating metals toxicity. In recognition of this fact, most current studies carefully vary test water characteristics like pH, calcium, alkalinity, dissolved organic carbon, chloride, sodium, suspended solids, and others while observing the responses of test organisms. It is likely that understanding metal toxicity in waters of various chemical makeups is not possible without the use of a geochemical model that is more elaborate than a regression formula. It may also be that simple toxicity tests (using mortality, growth, or reproductive endpoints) are not capable of discriminating the role of hardness or other water chemistry characteristics in modulating metals toxicity (Erickson et al. 1996). Gill surface interaction models have provided a useful framework for the study of acute metals toxicity in fish (Pagenkopf 1983; Playle et al. 1992; Playle et al. 1993a; Playle et al. 1993b; Janes and Playle 1995; Playle 1998), as have studies that observe physiological (e.g. ion fluxes) or biochemical (e.g. enzyme inhibition) responses (Lauren and McDonald 1986; Lauren and McDonald 1987a; Lauren and McDonald 1987b; Reid and McDonald 1988; Verbost et al. 1989; Bury et al. 1999a; Bury et al. 1999b). Even the earliest gill models accounted for the effects of pH on metal speciation and the effects of alkalinity on inorganic complexation, in addition to the competitive effects due to hardness ions (Pagenkopf 1983). Current gill models make use of sophisticated, computer-based, geochemical programs to more accurately account for modulating

effects in waters of different chemical makeup (Playle 1998). These programs have aided in the interpretation of physiological or biochemical responses in fish and in investigations that combine their measurement with gill metal burdens and traditional toxicity endpoints.

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

SWRCB presidential Order No. WQ 2008-0008 (Corrected) regarding a petition for consideration of the City of Davis' NPDES Permit states and concludes that:

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

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

The Regional Board cited the State Board's Water Quality Order (WQO)(No. 2008 0008) for the City of Davis as allowing complete discretion in utilizing the downstream hardness in deriving limits for toxic metals. WQO 2008 0008 in requiring the Regional Board to modify their permit states: "Revise the Fact Sheet to include a discussion of the appropriate hardness to use to protect from acute toxicity impacts (which can occur in short-term periods including storm events) in the receiving waters. The Fact Sheet should also state that the lowest valid upstream receiving water hardness values of 78 mg/l for Willow Slough Bypass and 85 mg/l for Conaway Ranch Toe Drain should be used to determine reasonable potential for the effluent to exceed the hardness-dependent metal CTR criteria, unless additional evidence and analysis, consistent with this Order, demonstrates that different hardness values are appropriate to use and are fully protective of water quality." The Regional Board did not use the lowest observed upstream hardness as required in WQO 2008 0008. The Regional Board has not provided additional evidence and analysis demonstrating that different hardness is fully protective of beneficial uses. To the contrary, the Regional Board does not address the March 24, 2000 the US Fish and Wildlife Service (Service) and the National Marine Fisheries Service (NMFS) CTR Biological Opinion cited above stating that the use of hardness alone is not protective of beneficial uses and recommending the sole use of the ambient upstream hardness in developing limits for toxic metals.

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

The Regional Board states that: "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." This statement is unsupported by any factual information in the record. The Regional Board does not submit a single technical or legal document to support their position that limitations based on the lowest observed upstream ambient hardness is overly protective. To the contrary, the above quoted biological opinion by toxicity experts at the US Fish and Wildlife Service (Service) and the National Marine Fisheries Service (NMFS) state that the use of hardness alone is not protective of beneficial uses and recommending the sole use of the ambient upstream hardness in developing limits for toxic

metals. To this end, the US EPA has altered the ambient criteria for copper to utilize all the various factors cited by the Service and NMFS in addition to hardness. Despite EPA's modification of the ambient criteria for copper, the Regional Board ignores the new criteria, clinging to their methodology at developing fewer and less restrictive effluent limitations. In any case, the Regional Board must comply with the Regulations; while there may be regulatory flexibility to be more restrictive, there is no such flexibility to be less restrictive than promulgated regulations.

The issue is that the Regional Board fails to comply with the regulatory requirement to use the ambient instream hardness for limiting hardness dependant metals under the CTR. Failure to utilize the upstream ambient hardness for determining reasonable potential and developing limitations results in fewer and less restrictive Effluent Limitations.

F. The Discharger altered the character of the wastewater discharge, did not apply for a revision of the Permit to accommodate the change and did not undertake any Antidegradation Policy assessment for the addition of substances that alter the discharge hardness resulting in the lowering of water quality.

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 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. Iterations 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.”

As predicted by the Services in their biological opinion, the Permit states that:

“The Discharger began manually adding lime to the secondary treatment process in specific doses in February 2009 to enhance denitrification, resulting in an increase of the effluent hardness. The Discharger added an automatic lime feed system in March 2010. Addition of the automatic lime feed system, which is necessary to achieve adequate denitrification, is a permanent change to the treatment system and the Discharger does not anticipate taking the system offline during the term of the permit. Thus, only effluent monitoring for hardness conducted since the modification to the treatment system in February 2009 was considered. The minimum effluent hardness was 70 mg/L (as CaCO₃), based on 14 samples from February 2009 to March 2010, while the upstream receiving water hardness varied from 10 mg/L to 110 mg/L (as CaCO₃), based on 43 samples from September 2006 to March 2010.” (Permit pages F-21 and 22)

Instead of heeding the advice from the “services”, the Regional Board proposes to reward the Discharger for their degradation of water quality by granting Effluent Limitations for hardness dependant metals which are significantly relaxed due to the use of effluent hardness in a degraded state.

In advanced wastewater treatment plants, lime precipitation may be employed in tertiary processes in which phosphorus is precipitated as complex calcium phosphates along with other suspended and dissolved solids. Due to the high pH of 10.5-11.0 maintained by lime, the stripping of nitrogen, another nutrient is facilitated. Lime will react with carbon dioxide to regenerate calcium carbonate.

Hard waters are less desirable than soft principally due to the reduction of the effectiveness of soaps, staining and particle buildup in plumbing pipes and fixtures. Water softeners and the associated salt discharges are well documented throughout California to control hard water. The addition of hardness to water is widely considered degradation.

G. The Permit contains absurd and technically unsound statements regarding pathogen levels, disinfection and the drinking water beneficial use of the receiving water leaving it clear that the beneficial use is not protected contrary to the California Water Code and Federal regulation.

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.

The Permit contains the following statements regarding the drinking water beneficial use:

"Total coliform organisms are an indicator of the level of pathogens in the effluent. Therefore, effluent limitations for total coliform organisms are necessary to control the discharge of pathogens, and have been included in this Order. In site-specific situations where a discharge is occurring to a stream with a downstream water intake used as a domestic water supply without treatment, the DPH has recommended the same Title 22 tertiary treatment requirements for the protection of MUN, as well as protecting REC-1 and AGR. DPH has also recommended a 20:1 dilution ratio in addition to the Title 22 tertiary treatment requirement where there are existing domestic water users of raw water near the treatment plant outfall. In this case, there are no such known uses that could be affected by the discharge, so tertiary treatment plus 20:1 dilution is not necessary to protect the MUN, REC-1 or AGR uses." (Emphasis added)

"For public water supplies, State and federal law require residual chlorine and/or UV disinfection of surface water. (See, e.g., Surface Water Treatment Rule, 40 C.F.R. Part 141, Subpart H; Cal. Code of Regs. Title 22, section 64447.) Treating pathogens to a level more stringent than tertiary treatment requires a chlorine residual in the effluent that is toxic to aquatic life in the receiving water. Pathogens are not bio-accumulative, so discharges at the permitted levels in this Order do not threaten potential uses of the receiving water for untreated domestic use. Therefore, the requirement to implement tertiary treatment only when 20:1 dilution is not available adequately protects beneficial uses and is appropriate for this discharge under the case-by-case approach." (Emphasis added)

The Permit cites that sometimes the Department of Public Health recommends that tertiary treatment plus a twenty to one dilution ratio is necessary to protect the drinking water beneficial use; sometimes they don't. The Permit fails however to cite the Department of Public Health's

official position on the matter. Direct ingestion is a more sensitive use of water than contact recreation uses or eating food crops irrigated with treated sewage. In 1987 DPH issued the *Uniform Guidelines for the Disinfection of Wastewater* (Uniform Guidelines) as recommendations to the Regional Water Quality Control Boards regarding disinfection requirements for wastewater discharges to surface waters. The Uniform Guidelines recommend a “no discharge” of treated domestic wastewater to freshwater streams used for domestic water supply. Where is not possible to prevent a wastewater discharge: the Uniform Guidelines recommend that no discharge be allowed unless a minimum of a twenty-to-one in stream dilution is available. The DPH has reiterated the recommendations of the Uniform Guidelines to the Central Valley Regional Board on numerous occasions: specifically a 1 July 2003 letter to the Executive Officer (Thomas Pinkos); a 28 September 2000 Memorandum to regional and district engineers from Jeff Stone; and cite specific recommendations for the City of Jackson’s wastewater discharge. A discharge of tertiary treated domestic wastewater to an ephemeral stream is not protective of the domestic and municipal beneficial uses of the receiving stream.

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

The Basin Plan, Implementation, Page IV-24-00, prohibits the discharge of wastewater to low flow streams as a permanent means of disposal and requires the evaluation of land disposal alternatives, Implementation, Page IV-15.00, Policies and Plans (2) Wastewater Reuse Policy. The Basin Plan, Implementation, Page IV-24-00, Regional Water Board prohibitions, states that: “Water bodies for which the Regional Water Board has held that the direct discharge of waste is inappropriate as a permanent disposal method include sloughs and streams with intermittent flow or limited dilution capacity.” The Permit characterizes the receiving stream as low flow, or ephemeral, with no available dilution. The Permit does not discuss any efforts to eliminate the discharge to surface water and compliance with the Basin Plan Prohibition. Federal Regulation 40 CFR 122.4 states that no permit shall be issued for any discharge when the conditions of the permit do not provide for compliance with the applicable requirements of the CWA and are inconsistent with a plan or plan amendment.

The Permit states that there are no known water intakes for domestic or municipal uses; however there is no evidence that the Regional Board conducted ANY investigation into the actual

instream uses prior to making the unsupported conclusory statement. There is also no record of a site-specific consultation with DPH. Had the Regional Board actually investigated any actual uses they may have reached the same conclusion which was reported in the Sacramento Bee on March 11th 2009 which quoted: "Vicky Whitney, deputy director of the State Water Resources Control Board, said officials know little about the amount of water consumed by so-called "riparian" water rights holders. Riparian rights, usually attached to properties that border streams, are the most senior category of water entitlement in California. Riparian rights holders must annually report to the state how much water they divert. But Whitney said only about 10 percent do so, and her agency does not have the power to enforce compliance." It is unlikely that the Regional Board has any information regarding the actual uses of the receiving stream; but has chosen to error on the side of the wastewater producer rather than water quality.

The Permit states that: "Treating pathogens to a level more stringent than tertiary treatment requires a chlorine residual in the effluent that is toxic to aquatic life in the receiving water." This is simply incorrect; Reverse osmosis, nanofiltration and ultra filtration are capable of removing pathogens beyond the molecular and macromolecular ranges.

The Permit states that: "Pathogens are not bio-accumulative, so discharges at the permitted levels in this Order do not threaten potential uses of the receiving water for untreated domestic use." This statement is wrong. Pathogens can regrow in a warm-blooded host. Pathogens can also remain viable in surface waters and the environment for extended periods of time. Contact and regrowth of pathogens not only could be considered to equate to or exceed bioaccumulation but also bio-magnification. The often-cited Beach Standard, which is likely the source of the Basin Plan's coliform objective, allows for an acceptable illness rate of 8 swimmers out of every 1,000; which was derived based on economics. This standard or objective does not account for domestic or municipal uses. An exact illness rate for tertiary treatment and surface water discharges has not been assessed.

Drinking water (MUN) and domestic uses (DOM) are designated beneficial uses of the receiving stream. The Permit virtually admits that the beneficial uses are not protected since "there are no known water intakes for domestic or municipal uses." The Regional Board cannot choose whether to protect a beneficial use, such is required by the CWC and Federal Regulation. Dedicating the beneficial uses is a formal Basin Planning procedure, which cannot be undertaken, in the permitting process.

The Regional Board's discussion of drinking water has only included pathogens. The *National Water Research Institute, Final Project Report, Orange County Water District, Source, Fate, and Transport of Endocrine Disruptors, Pharmaceuticals, and Personal Care Products in Drinking Water Sources in California* (May 2010) reported that: "Of the 126 samples analyzed for the project, one sample (American River at Fairbairn drinking water treatment plant [DWTP])

intake collected in April 2008) had no detectable levels of any EDCs, PPCPs, or OWCs. All other samples had one or more analytes detected at or above the corresponding MRLs. The five most frequently detected PPCPs were caffeine, carbamazepine, primidone, sulfamethoxazole, and tris(2-chloroethyl) phosphate (TCEP). At the sample sites upstream of WWTP discharges in all three watersheds, the concentrations of selected PPCPs, except for caffeine, were low (i.e., \leq 13 ng/L), pointing to WWTP discharges as the main source of most PPCPs and OWCs in the environment.” 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. The Regional Board’s Permit does not address toxicity and possible detrimental physiological impacts to humans in the domestic and drinking water supply as a result of the upstream wastewater discharge. The Regional Board does not have sufficient information to determine that the beneficial uses of the receiving stream are protected.

The Permit does not protect the drinking water beneficial use of the receiving stream as is required by Federal Regulations 40 CFR 122.4, 122.44(d) and the California Water Code, Section 13377 and in accordance with these requirements cannot be issued. At a minimum, the permit must be amended to require that the Discharger develop a workplan to eliminate the wastewater discharge to surface water in accordance with the Basin Plan.

H. The Permit fails to utilize the latest EPA recommended criteria for copper and instead utilized an outdated water quality standard and water effects ratio (WER) in developing and effluent limitation for copper contrary to Section 122.44(d) of 40 CFR which 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.

EPA has issued revised national recommended freshwater aquatic life criteria for copper (*Aquatic Life Ambient Freshwater Quality Criteria—Copper 2007 Revision*). In adopting the copper criteria EPA stated that:

“Copper is an abundant naturally occurring trace element found in the earth’s crust that is also found in surface waters. Copper is a micronutrient at low concentrations and is essential to virtually all plants and animals. At higher concentrations copper can become toxic to aquatic life. Mining, leather and leather products, fabricated metal products, and electric equipment are a few of the industries with copper-bearing discharges that contribute to manmade discharges of copper into surface waters. Municipal effluents may also contribute additional copper loadings to surface waters.

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.

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. We expect that application of this model will result in more appropriate criteria and eliminate the need for costly, time-consuming site-specific modifications using the water effect ratio.”

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On Page 13 (C) and repeated on pages 216 and 232 of the biological opinion it is required that:

“By June of 2003, EPA, in cooperation with the Services, will develop a revised criteria calculation model based on best available science for deriving aquatic life criteria on the basis of hardness (calcium and magnesium), pH, alkalinity, and dissolved organic carbon (DOC) for metals.”

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.

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The CTR proposes criteria formulas that use site water hardness as the only input variable. In contrast, over twenty years ago Howarth and Sprague (1978) cautioned against a broad use of water hardness as a “shorthand” for water qualities that affect copper toxicity. In that study, they observed a clear effect of pH in addition to hardness. Since that time, several studies of the toxicity of metals in test waters of various compositions have been performed and the results do not confer a singular role to hardness in ameliorating metals toxicity. In recognition of this fact, most current studies carefully vary test water characteristics like pH, calcium, alkalinity, dissolved organic carbon, chloride, sodium, suspended solids, and others while observing the responses of test organisms. It is likely that understanding metal toxicity in waters of various chemical

makeups is not possible without the use of a geochemical model that is more elaborate than a regression formula. It may also be that simple toxicity tests (using mortality, growth, or reproductive endpoints) are not capable of discriminating the role of hardness or other water chemistry characteristics in modulating metals toxicity (Erickson et al. 1996). Gill surface interaction models have provided a useful framework for the study of acute metals toxicity in fish (Pagenkopf 1983; Playle et al. 1992; Playle et al. 1993a; Playle et al. 1993b; Janes and Playle 1995; Playle 1998), as have studies that observe physiological (e.g. ion fluxes) or biochemical (e.g. enzyme inhibition) responses (Lauren and McDonald 1986; Lauren and McDonald 1987a; Lauren and McDonald 1987b; Reid and McDonald 1988; Verbost et al. 1989; Bury et al. 1999a; Bury et al. 1999b). Even the earliest gill models accounted for the effects of pH on metal speciation and the effects of alkalinity on inorganic complexation, in addition to the competitive effects due to hardness ions (Pagenkopf 1983). Current gill models make use of sophisticated, computer-based, geochemical programs to more accurately account for modulating effects in waters of different chemical makeup (Playle 1998). These programs have aided in the interpretation of physiological or biochemical responses in fish and in investigations that combine their measurement with gill metal burdens and traditional toxicity endpoints.

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

Hardness as a predictor of copper toxicity: Lauren and McDonald (1986) varied pH, alkalinity, and hardness independently at a constant sodium ion concentration, while measuring net sodium loss and mortality in rainbow trout exposed to copper. Sodium loss was an endpoint investigated because mechanisms of short-term copper toxicity in fish are related to disruption of gill ionoregulatory function. Their results indicated that alkalinity was an important factor reducing copper toxicity, most notably in natural waters of low calcium hardness and alkalinity. Meador (1991) found that both pH and dissolved organic carbon were important in controlling copper toxicity to *Daphnia magna*. Welsh et al. (1993) demonstrated the importance of dissolved organic carbon in affecting the toxicity of copper to fathead minnows and suggested that water quality

criteria be reviewed to consider the toxicity of copper in waters of low alkalinity, moderately acidic pH, and low dissolved organic carbon concentrations. Applications of gill models to copper binding consider complexation by dissolved organic carbon, speciation and competitive effects of pH, and competition by calcium ions, not merely water hardness (Playle *et al.* 1992; Playle *et al.* 1993a; Playle *et al.* 1993b). Erickson *et al.* (1996) varied several test water qualities independently and found that pH, hardness, sodium, dissolved organic matter, and suspended solids have important roles in determining copper toxicity. They also suggested that it may be difficult to sort out the effects of hardness based on simple toxicity experiments. It is clear that these studies question the use of site calcium + magnesium hardness only as input to a formula to derive a criterion for copper because pH, alkalinity, and dissolved organic carbon concentrations are key water quality variables that also modulate toxicity. In waters of moderately acidic pH, low alkalinity, and low dissolved organic carbon, the use of hardness regressions may be most inaccurate. Also, it is not clear that the dissolved organic carbon in most or all waters render metals unavailable. This is because dissolved organic carbon from different sources may vary in both binding capacity and stability (Playle 1998).”

In the Biological Opinion the Services required that: “*B. “EPA, in cooperation with the Services, will issue a clarification to the Interim Guidance on the Determination and Use of Water-Effect Ratios for Metals (USEPA 1994) concerning the use of calcium-to-magnesium ratios in laboratory water, which can result in inaccurate and under-protective criteria values for federally listed species considered in the Services’ opinion. EPA, in cooperation with the Services, will also issue a clarification to the Interim Guidance addressing the proper acclimation of test organisms prior to testing in applying water-effect ratios (WERs)”*. There is no indication in the Permit that a revised or clarified Guidance was used to develop the WER. As detailed by the Services failure to develop WERs in accordance with their revisions to the Guidance may result in unprotective metal criteria.

The Permit must be revised to state whether a modified method for conducting the WER was utilized. As was required in the biological opinion, EPA has updated the water quality criteria for copper as cited above. Failure to utilize the updated criteria for copper in the Permit conflicts with the requirements of Section 122.44(d) of 40 CFR which 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. Both EPA, in adopting the new criteria for copper, and the “Services” in issuing their biological opinion cite that the use of translators and the old hardness based standard for copper is likely not protective of the aquatic life beneficial use.

I. The Permit fails to contain an Effluent Limitation for bis(2-ethylhexyl)phthalate despite a clear reasonable potential to exceed waste quality standards in violation of Federal Regulations 40 CFR 122.44.

Bis(2-ethylhexyl)phthalate exceeds water quality standards in the receiving stream at 6.0 µg/l, above the CTR Water Quality Standard of 1.8 µg/l. Bis(2-ethylhexyl)phthalate has been detected in the wastewater effluent at 4.6 µg/l, also above the CTR Water Quality Standard. The Permit Fact Sheet states that the receiving water and effluent sampling data for bis(2-ethylhexyl)phthalate is subject to error and is being discarded. If as the Regional Board contends, that the samples were contaminated by laboratory equipment or plastic sampling bottles, this would be revealed in analysis of the sampling or travel blank analysis or documentation from the laboratory quality assurance/quality control (QA/QC) documents. Apparently, all in place standard practices that would reveal any sampling and analysis errors have been ignored. Bis(2-ethylhexyl)phthalate is used in the formation of plastics and has been documented in the available literature to be present in plastic pipes, bottles, bags and widely distributed throughout the environment. The Regional Board total disregards scientific methods, specifically sampling and laboratory QA/QC methodologies, in throwing out data points that would lead to a reasonable potential for a pollutant to exceed water quality standards when the burden should properly be placed on wastewater Dischargers to conduct proper sampling and analysis. 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. 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 Regional Board has failed to use valid, reliable and representative data in developing limitations, contrary to the cited Federal Regulation. Failure to include an effluent limitation for bis(2-ethylhexyl)phthalate in the Permit violates 40 CFR 122.44 and CWC 13377.

J. The Permit contains no Effluent Limitations for copper, methyl tertiary butyl ether, Methylene blue active substances, nickel, oil and grease, persistent, chlorinated hydrocarbon pesticides, settleable solids, silver and zinc and is therefore less stringent than the existing permit contrary to the Antidegradation requirements of the Clean Water Act and Federal Regulations, 40 CFR 122.44 (l)(1).

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

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

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

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

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

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

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

In removing the Effluent Limitations for chloroform, copper, methyl tertiary butyl ether, Methylene blue active substances, nickel, oil and grease, persistent, chlorinated hydrocarbon pesticides, settleable solids, silver and zinc the Permit does not cite a single applicable exception to the Federal Antidegradation regulation. There is nothing in the Permit that shows: material or substantial alteration to the WWTP that would change the character of the effluent for the cited constituents; no new information that would invalidate the original information used to establish effluent limitations; no change in the character of the influent. The Permit allows for illegal backsliding and must be amended to include proper Effluent Limitations for chloroform, copper, methyl tertiary butyl ether, Methylene blue active substances, nickel, oil and grease, persistent, chlorinated hydrocarbon pesticides, settleable solids, silver and zinc at least as stringent as the current permit.

K. The Permit contains an inadequate antidegradation analysis that does not adequately address the removal of Effluent Limitations contained in the existing

NPDES permit or the allowance to degrade groundwater quality comply with the requirements of Section 101(a) of the Clean Water Act, Federal Regulations 40 CFR § 131.12, the State Board's Antidegradation Policy (Resolution 68-16) and California Water Code (CWC) Sections 13146 and 13247.

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

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

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

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

The Regional Board must apply the antidegradation policy whenever it takes an action that will lower water quality (State Antidegradation Guidance, pp. 3, 5, 18, and Region IX Guidance, p. 1). Application of the policy does not depend on whether the action will actually impair beneficial uses (State Antidegradation Guidance, p. 6). Actions that trigger use of the antidegradation policy include issuance, re-issuance, and modification of NPDES and Section 404 permits and waste discharge requirements, waiver of waste discharge requirements, issuance of variances, relocation of discharges, issuance of cleanup and abatement orders, increases in

discharges due to industrial production and/or municipal growth and/or other sources, exceptions from otherwise applicable water quality objectives, etc. (State Antidegradation Guidance, pp. 7-10, Region IX Guidance, pp. 2-3). Both the state and federal policies apply to point and nonpoint source pollution (State Antidegradation Guidance p. 6, Region IX Guidance, p. 4).

The Permit contains no Effluent Limitations for chloroform, copper, methyl tertiary butyl ether, Methylene blue active substances, nickel, oil and grease, persistent, chlorinated hydrocarbon pesticides, settleable solids, silver and zinc and is therefore less stringent than the existing permit which must be addressed in an Antidegradation Policy assessment.

The City of Auburn has degraded groundwater and has not met the Antidegradation Policy requirement that best practicable treatment and control (BPTC) of the wastewater discharge be provided. The Discharger has not only degraded groundwater quality as detailed in Order No. R5-2005-0030 for TDS, nitrate and coliform, but has also degraded groundwater quality with barium, copper, iron, manganese, nickel, strontium, and vanadium. The discharge of wastewater has caused exceedance of the Basin Plan water quality objectives in some instances and has degraded groundwater quality in others. The degradation of groundwater is not allowed under the Antidegradation Policy, Resolution 68-16, which is a part of the Basin Plan unless the degradation is in the best interest of the people of California and BPTC has been provided. BPTC has not been provided as detailed in the previous and Permit. In no case does the Antidegradation Policy allow for an exceedance of water quality objectives. The wastewater discharge is not in compliance with the water quality control plan (Basin Plan) and therefore cannot be exempted from CCR Title 27.

The Permit, page 14, contains: “B. Groundwater Limitations, Release of waste constituents from any storage, treatment, or disposal component associated with the Facility shall not, in combination with other sources of the waste constituents, cause groundwater within influence of the Facility to contain waste constituents in concentrations in excess of natural background quality or that listed below, whichever is greater:” Normally, background groundwater quality does not exceed water quality standards, which appears to be the case at the City of Auburn. Under this circumstance, the Permit allows the Discharger to degrade water quality to the point where it equals the water quality standard. This is contrary to the Antidegradation Policy, which first requires the Discharger show that ANY degradation is in the best interest of the people of California and that BPTC is being provided. The Permit puts the cart before the horse and allows degradation to water quality standards absent compliance with the Antidegradation Policy. The Permit cited paragraph should be revised to state “whichever is less” in accordance with the Antidegradation Policy.

L. The Permit fails to implement the requirements of the Basin Plan, *Implementation, Policy for Application of Water Quality Objectives* with regard to additive toxicity.

Permit contains final effluent limitations for several constituents, including aluminum, lead and manganese. The Permit also removes limitations for copper, nickel, silver and zinc. Although we disagree with the removal of effluent limitations for the cited metals; the concentrations still present a potential for exhibiting additive toxic effects. The Basin Plan, Implementation, Policy for *Application of Water Quality Objectives* requires that: “Where multiple toxic pollutants exist together in water, the potential for toxicologic interactions exists. On a case-by-case basis, the Regional Water Board will evaluate available receiving water and effluent data to determine whether there is a reasonable potential for interactive toxicity. Pollutants which are carcinogens or which manifest their toxic effects on the same organ systems or through similar mechanisms will generally be considered to have potentially additive toxicity.”

M. The Permit contains an inadequate reasonable potential by using incorrect statistical multipliers as required by Federal regulations, 40 CFR § 122.44(d)(1)(ii).

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 Permit states that: “The Regional Water Board conducted the RPA in accordance with Section 1.3 of the SIP. 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. The SIP states in the introduction “*The goal of this Policy is to establish a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency.*” Therefore, in this Order the RPA procedures from the SIP were used to evaluate reasonable potential for both CTR and non-CTR constituents.” 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 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 fact that the SIP illegally ignores this fundamental requirement does not exempt the Regional Board from its obligation to consider statistical variability in compliance with federal regulations. 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 CTR constituents are flawed and must be recalculated.

5. THE MANNER IN WHICH THE PETITIONERS ARE AGGRIEVED.

CSPA is a non-profit, environmental organization that has a direct interest in reducing pollution to the waters of the Central Valley. CSPA's members benefit directly from the waters in the form of recreational hiking, photography, fishing, swimming, hunting, bird watching, boating, consumption of drinking water and scientific investigation. Additionally, these waters are an important resource for recreational and commercial fisheries. Central Valley waterways also provide significant wildlife values important to the mission and purpose of the Petitioners. This wildlife value includes critical nesting and feeding grounds for resident water birds, essential habitat for endangered species and other plants and animals, nursery areas for fish and shellfish and their aquatic food organisms, and numerous city and county parks and open space areas. CSPA's members reside in communities whose economic prosperity depends, in part, upon the quality of water. CSPA has actively promoted the protection of fisheries and water quality 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 declining aquatic resources. CSPA member's health, interests and pocketbooks are directly harmed by the failure of the Regional Board to develop an effective and legally defensible program addressing discharges to waters of the state and nation.

6. THE SPECIFIC ACTION BY THE STATE OR REGIONAL BOARD WHICH PETITIONER REQUESTS.

Petitioners seek an Order by the State Board to:

A. Vacate Order No. R5-2010-0090 (NPDES No. CA0077712) and remand to the Regional Board with instructions prepare and circulate a new tentative order that comports with regulatory requirements.

B. Alternatively; prepare, circulate and issue a new order that is protective of identified

beneficial uses and comports with regulatory requirements.

7. A STATEMENT OF POINTS AND AUTHORITIES IN SUPPORT OF LEGAL ISSUES RAISED IN THE PETITION.

CSPA's arguments and points of authority are adequately detailed in the above comments and our 22 August 2010 comment letter. Should the State Board have additional questions regarding the issues raised in this petition, CSPA will provide additional briefing on any such questions. The petitioners believe that an evidentiary hearing before the State Board will not be necessary to resolve the issues raised in this petition. However, CSPA welcomes the opportunity to present oral argument and respond to any questions the State Board may have regarding this petition.

8. A STATEMENT THAT THE PETITION HAS BEEN SENT TO THE APPROPRIATE REGIONAL BOARD AND TO THE DISCHARGERS, IF NOT THE PETITIONER.

A true and correct copy of this petition, without attachment, was sent electronically and by First Class Mail to Ms. Pamela Creedon, Executive Officer, Regional Water Quality Control Board, Central Valley Region, 11020 Sun Center Drive #200, Rancho Cordova, CA 95670-6114. A true and correct copy of this petition, without attachment, was sent to the Discharger in care of: Mr. Bernie Schroeder, Public Works Director, City of Auburn, 1225 Lincoln Way, Room 3, Auburn, CA 95603.

9. A STATEMENT THAT THE ISSUES RAISED IN THE PETITION WERE PRESENTED TO THE REGIONAL BOARD BEFORE THE REGIONAL BOARD ACTED, OR AN EXPLANATION OF WHY THE PETITIONER COULD NOT RAISE THOSE OBJECTIONS BEFORE THE REGIONAL BOARD.

CSPA presented the issues addressed in this petition to the Regional Board in a 22 August 2010 comment letter that was accepted into the record.

If you have any questions regarding this petition, please contact Bill Jennings at (209) 464-5067 or Michael Jackson at (530) 283-1007.

Dated: 20 October 2010

Respectfully submitted,



CSPA Petition, Review of Order No. R5-2010-0090, City of Auburn Wastewater Treatment Plant.
20 October 2010, page 38 of 38.

Bill Jennings, Executive Director
California Sportfishing Protection Alliance

Attachment No. 1: Order No. R5-2010-0090