



California Sportfishing Protection Alliance

"An Advocate for Fisheries, Habitat and Water Quality"

3536 Rainier Avenue, Stockton, CA 95204

Tel: 209-464-5067, Fax: 209-464-1028, E: deltakeep@aol.com

14 June 2007

Dr. Karl Longley, Chairman
Ms. Pamela Creedon, Executive Officer
Mr. Kenneth Landau, Assistant Executive Officer
Mr. Dave Carlson, Env. Program Manager, NPDES
Ms. Diana Messina, Sr. WRC Engineer
Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670-6144

VIA: Electronic Submission
Hardcopy if Requested

RE: Waste Discharge Requirements (NPDES No. CA0079529) for City of Colfax
Wastewater Treatment Plant, Placer County

Dear Messrs. Longley, Landau, Carlson and Mesdames Creedon and Messina:

The California Sportfishing Protection Alliance and Watershed Enforcers (CSPA) has reviewed the Central Valley Regional Water Quality Control Board's (Regional Board) tentative NPDES permit (Order or Permit) for City of Colfax Wastewater Treatment Plant (Discharger) and submits the following comments.

- 1. The proposed Permit fails to contain Effluent Limitations for iron that are protective of the Basin Plan's toxicity and color water quality objectives in violation of Federal Regulation 40 CFR 122.44 and the California Water Code (CWC). The proposed Permit Effluent Limitation for iron which is prescribed as an annual average is not protective of the domestic and municipal uses of the receiving stream and has a reasonable potential to exceed the Basin Plan objectives for *toxicity, color and taste and odors* in violation of the CWC and Federal Regulations. The proposed Permit limitation for iron as an annual average violates 40 CFR 122.45(d).**

The proposed Permit contains an Effluent Limitation for iron of 300 ug/l based on the drinking water maximum contaminant level (MCL) which is prescribed as an annual average. The discharge has been sampled to contain iron as high as 3,690 ug/l. The receiving stream has been sampled to contain iron as high as 2,600 ug/l. EPA has recommended *ambient water quality criteria for the protection of freshwater aquatic life* (ambient criteria) for iron at 1,000 ug/l. Both the wastewater discharge and the receiving stream exceed the recommended toxicity based ambient criteria. The State of California and the Federal Government have established drinking water maximum contaminant levels (MCLs) for color at 15 color units, which have been incorporated into the Basin

Plan by reference. The discharged levels of iron present a reasonable potential to discolor water (above 300 ug/l). Section 122.44(d) of 40 CFR requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where numeric water quality objectives have not been established, 40 CFR §122.44(d) specifies that WQBELs may be established using USEPA criteria guidance under CWA section 304(a), proposed State criteria or a State policy interpreting narrative criteria supplemented with other relevant information, or an indicator parameter. 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..." Federal Regulation, 40 CFR 122.4 (a), (d) and (g) require that no permit may be issued when the conditions of the permit do not provide for compliance with the applicable requirements of the CWA, or regulations promulgated under the CWA, when imposition of conditions cannot ensure compliance with applicable water quality requirements and for any discharge inconsistent with a plan or plan amendment approved under Section 208(b) of the CWA. The proposed Permit fails to include Effluent Limitations for iron which are protective of the Basin Plan objective for toxicity and color in violation of 40 CFR 122.44 and contrary to Federal Regulation, 40 CFR 122.4 (a), (d) and (g) and CWC Section 13377.

The proposed Permit contains an Effluent Limitation for iron, which is prescribed as an annual average. Federal Regulation 40 CFR 122.45(d) requires that Effluent Limitations for POTWs be prescribed as average weekly and monthly averages. The proposed Permit limitation for iron as an annual average violates 40 CFR 122.45(d).

The proposed Permit contains an Effluent Limitation for iron, which is prescribed as an annual average. The Effluent Limitation for iron is based on the Basin Plan Chemical Constituents water quality objective which incorporates drinking water maximum contaminant levels (MCLs) by reference. The MCL for iron is based on taste and odor and discoloration. Taste and odor are instantaneous; concentrations above 300 ug/l will degrade the municipal beneficial use of the receiving stream. By allowing an annual average, it is assured by definition of "average" that concentration of iron will exceed 300 ug/l. Discoloration particularly applies to clothing and water fixtures as it applies to the MCL, however discoloration of receiving waters and sediments due to elevated iron concentrations can also be readily observed throughout Region 5.

EPA's *ambient water quality criteria for the protection of freshwater aquatic life* (ambient criteria) is recommended as 1,000 ug/l as a four-day average.

The Central Valley Regional Board has traditionally implemented MCLs as monthly averages in NPDES permits, as evidenced by the nitrate limit in the proposed Permit. Incorporation of the MCL for iron as an annual average would allow shorter-term discharges well above the 300 ug/l limitation. EPA's *Technical Support Document For Water Quality-Based Toxics Control* (TSD) includes methods for statistical analysis and projection of maximum effluent values, as is commonly used for establishing interim

effluent limitations, which would show that is reasonable to project values significantly above the 300 ug/l limitation for iron possibly exceeding 1,000 ug/l (toxic levels). As is stated above, the effluent has been sampled to contain concentrations of iron as high as 3,690 ug/l.

Establishing the effluent limitation for iron at the water quality objective as an annual average also presents a reasonable potential to cause the ephemeral water body downstream of the City of Colfax' wastewater treatment plant to be listed as impaired (303d listed).

There are riparian water users immediately downstream of the City of Colfax' WWTP, the Edwards family. The downstream water users have riparian water rights. The downstream users have the reasonable right to utilize the water in the ephemeral Creek, which flows past their home for domestic purposes unimpaired by the City of Colfax. Establishing the effluent limitation for iron at the water quality objective as an annual average threatens to impair the domestic beneficial use. According to the proposed Permit Fact Sheet, additional domestic and municipal water rights have been issued by the State Board downstream of the Colfax' WWTP prior to receiving waters gaining any significant dilution.

Establishing the effluent limitation for iron at the water quality objective as an annual average threatens the downstream municipal and domestic beneficial uses, and threatens to exceed the Basin Plan water quality objectives for toxicity, color and tastes and odors. Establishing the effluent limitation for iron at the water quality objective as an annual average also threatens to cause violation of Receiving Water Limitations within the proposed Permit for toxicity, color and tastes and odors which are not subject to the averaging period which is proposed for the Effluent Limitation. The proposed Permit is not protective of the beneficial uses of the receiving stream and should not be adopted in accordance with Federal Regulation, 40 CFR 122.4 (a), (d) and (g) and CWC Section 13377.

2. The proposed Permit fails to contain Effluent Limitations for manganese that are protective of the beneficial uses of domestic and municipal and irrigated agriculture in violation of Federal Regulation 40 CFR 122.44 contrary to Federal Regulations and the California Water Code. The proposed Permit limitation for manganese as an annual average violates 40 CFR 122.45(d).

The proposed Permit contains an Effluent Limitation for manganese of 50 ug/l based on the drinking water maximum contaminant level (MCL) which is prescribed as an annual average. The discharge has been sampled to contain manganese as high as 2,310 ug/l. The receiving stream has been sampled to contain manganese as high as 2,180 ug/l. Ayers and Westcott, United Nations, Irrigation and Drainage Paper No. 29, have recommended an agricultural water quality standard for manganese at 200 ug/l. Both the wastewater discharge and the receiving stream exceed the recommended agricultural water quality standard and the MCL.

The Central Valley Regional Board has traditionally implemented MCLs as monthly averages in NPDES permits, as evidenced by the nitrate limit in the proposed Permit. Incorporation of the MCL for manganese as an annual average would allow shorter-term discharges well above the 50 ug/l MCL based limitation. EPA's *Technical Support Document For Water Quality-Based Toxics Control* (TSD) includes methods for statistical analysis and projection of maximum effluent values, as is commonly used for establishing interim effluent limitations, which would show that is reasonable to project values significantly above the 50 ug/l limitation for manganese also exceeding the irrigated agriculture standard of 200 ug/l. As is stated above, the effluent has been sampled to contain concentrations of manganese as high as 2.310 ug/l.

Section 122.44(d) of 40 CFR requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where numeric water quality objectives have not been established, 40 CFR §122.44(d) specifies that WQBELs may be established using USEPA criteria guidance under CWA section 304(a), proposed State criteria or a State policy interpreting narrative criteria supplemented with other relevant information, or an indicator parameter. 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..." Federal Regulation, 40 CFR 122.4 (a), (d) and (g) require that no permit may be issued when the conditions of the permit do not provide for compliance with the applicable requirements of the CWA, or regulations promulgated under the CWA, when imposition of conditions cannot ensure compliance with applicable water quality requirements and for any discharge inconsistent with a plan or plan amendment approved under Section 208(b) of the CWA. The proposed Permit fails to include Effluent Limitations for manganese which are protective of the Basin Plan objective for Chemical Constituents (MCL) and the beneficial use of irrigated agriculture in violation of 40 CFR 122.44 and contrary to Federal Regulation, 40 CFR 122.4 (a), (d) and (g) and CWC Section 13377.

There are riparian water users immediately downstream of the City of Colfax' WWTP, the Edwards family. The downstream water users have riparian water rights. The downstream users have the reasonable right to utilize the water in the ephemeral Creek, which flows past their home for irrigation purposes unimpaired by the City of Colfax. Establishing the effluent limitation for manganese at the drinking water quality objective as an annual average, with no agricultural limit threatens to impair the irrigated agriculture beneficial use. According to the proposed Permit Fact Sheet, additional irrigation water rights have been issued by the State Board downstream of the Colfax' WWTP prior to receiving waters gaining any significant dilution.

The proposed Permit contains an Effluent Limitation for manganese, which is prescribed as an annual average. Federal Regulation 40 CFR 122.45(d) requires that Effluent Limitations for POTWs be prescribed as average weekly and monthly averages. The proposed Permit limitation for manganese as an annual average violates 40 CFR 122.45(d).

3. **The proposed Permit fails to protect the beneficial uses of the receiving stream and is misleading with regard to the currently provided level of treatment in violation of California Water Code (CWC), Section 13377 and Federal Regulation, 40 CFR 122.4 (a), (d) and (g).**

The proposed Permit contains the following statements with regard to the City of Colfax Wastewater Treatment Plant (emphasis added):

“The beneficial uses of the unnamed tributary of Smuthers 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, the Regional Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. The principal infectious agents (pathogens) that may be present in raw sewage may be classified into three broad groups: bacteria, parasites, and viruses. Tertiary treatment, consisting of chemical coagulation, sedimentation, and filtration, has been found to remove approximately 99.5 percent of viruses. Filtration is an effective means of reducing viruses and parasites from the waste stream. The wastewater must be treated to tertiary standards (filtered), or equivalent, to protect contact recreational and food crop irrigation uses.

Previously, the wastewater was treated by a treatment system consisting of headworks and two ponds and stored in a storage pond for land application. To comply with the Cease and Desist Order, the Discharger upgraded the old wastewater treatment system with an interim tertiary treatment system. The Facility ceased to discharge wastewater to land. The Facility is planning to install a permanent wastewater treatment system by the summer of 2008.

In response to the Orders, the Discharger constructed the interim tertiary treatment plant with an unusual configuration. Effluent from aerated ponds, including collected seepage from below a storage dam, is dosed with chlorine for disinfection and polymer for coagulation, and the chlorine contact channel is used simultaneously for chlorine contact and secondary sedimentation. The effluent is then passed through sand filters that are more typically used in agricultural operations, and then is dechlorinated prior to discharge. The Discharger also lined a drainage ditch to minimize runoff from entering the treatment ponds. The plant has generally achieved compliance with effluent limitations. Compliance with the permit, CDO and ACL Orders is being evaluated.

In October 2006, representatives from the Department of Health Services (DHS) inspected the interim tertiary treatment facility at the request of Regional Water Board staff. By letter dated 11 December 2006 to the Regional Water Board, DHS reported that the configuration and operation of the facility does not provide adequate disinfection even though it may comply with bacterial standards. Also,

DHS stated the filtration system over time is likely to develop problems. DHS recommended that the City modify the facilities to (1) provide post-filtration disinfection and (2) replace the existing filtration equipment with a process proven to be effective for filtering sewage effluent.

On March 1, 2007 the Discharger submitted to the Regional Water Board, facility plans for a wastewater treatment plant upgrade and a construction documents project manual for city approval and authorization to bid. The Discharger plans to build an upgraded treatment plant by the summer of 2008. The Discharger stated in a Reasonable Potential and Anti-Degradation Analysis and Infeasibility Report, dated February 21, 2007, that, "The City currently is in the final stages of the new WWTP that will produce Title 22 equivalent discharge. Solicitation of bids is tentatively scheduled to begin after the City Council meeting of February 27, 2007 for the New WWTP. The City has applied for SRF grant and loan funds to finance the New WWTP."

As is cited above the proposed Permit details that: 1, the wastewater must be treated to tertiary standards (filtered), or equivalent, to protect contact recreational and food crop irrigation uses; 2, the effluent [in the interim "tertiary" system] is then passed through sand filters that are more typically used in agricultural operations, and then is dechlorinated prior to discharge; 3, DHS reported that the configuration and operation of the facility does not provide adequate disinfection even though it may comply with bacterial standards. Also, DHS stated the filtration system over time is likely to develop problems. DHS recommended that the City modify the facilities to (1) provide post-filtration disinfection and (2) replace the existing filtration equipment with a process proven to be effective for filtering sewage effluent; and 4, The Discharger plans to build an upgraded treatment plant by the summer of 2008. Surely the City of Colfax, with budget constraints, would not build a "new" tertiary treatment plant if the existing "interim" wastewater treatment system provided an equivalent to Title 22 tertiary treatment. The interim treatment system does not provide tertiary treatment, which is equivalent to the requirements of Title 22 for reclamation systems. The proposed Permit and Fact Sheet continuously cite that the interim wastewater treatment system provides tertiary treatment. The proposed Permit Fact Sheet states that: "Title 22 is not directly applicable to surface waters; however, the Regional Water Board finds that it is appropriate to apply an equivalent level of treatment to that required by DHS' reclamation criteria because the receiving water is used for irrigation of agricultural land and for contact recreation purposes." The term "tertiary treatment" is not well defined in the literature; however its use in the context of this proposed permit is at best misleading leading one to believe that the beneficial uses are protected by the level of treatment provided by the interim system. Rather than continually cite that the interim system provides tertiary treatment, the Regional Board, as a responsible state agency, should alert downstream water users that the current quality of water is unfit for specific designated uses.

As is shown above the proposed Permit cites the beneficial uses of the receiving stream as including domestic and municipal uses. The proposed Permit then states that

the proposed level of treatment required will protect contact recreation and irrigated agriculture, domestic and municipal uses are excluded. The recent NPDES Permit for Lake Shasta's wastewater treatment plant incorrectly cited an April 8, 1999 DHS letter to Kenneth Landau as stating that secondary treated sewage with an instream dilution ratio of 20-to-1 is protective of the domestic and municipal beneficial uses of the receiving stream. The reference to drinking water is properly excluded from similar Findings throughout the proposed Permit and the Fact Sheet. Actually, the Finding should be elaborated to state that DHS has commented on the Stockton, Jackson and Placer County permits that tertiary treatment plus a dilution ratio of 20-to-1 is protective of the domestic and municipal beneficial uses of the receiving stream. The permit should be amended to state that the level of treatment provided is not protective of the municipal and domestic beneficial uses of the receiving stream. California Water Code, section 13377, requires that: "Notwithstanding any other provision of this division, the state board and the regional boards shall, as required or authorized by the Federal Water Pollution Control Act, as amended, issue waste discharge and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the act and acts amendatory thereof or supplementary, thereto, together with any more stringent effluent standards or limitations necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance." Federal Regulation, 40 CFR 122.4 (a), (d) and (g) require that no permit may be issued when the conditions of the permit do not provide for compliance with the applicable requirements of the CWA, or regulations promulgated under the CWA, when imposition of conditions cannot ensure compliance with applicable water quality requirements and for any discharge inconsistent with a plan or plan amendment approved under Section 208(b) of the CWA. The proposed level of treatment prescribed in the proposed Permit does not protect the domestic and municipal beneficial uses of the receiving stream.

4. **The proposed permit contains an inadequate reasonable potential by not using statistical multipliers contrary to Federal regulations, 40 CFR § 122.44(d)(1)(ii) which, as prescribed by EPA in the TSD, would likely have resulted in additional Effluent Limitations for arsenic, chlorodibromomethane, chromium VI, dichlorobromomethane, mercury and methylene blue activated substances (MBAS). Failure to include Effluent Limitations when a proper reasonable potential exists violates Federal Regulations 40 CFR 122.44 and the permit should not be adopted in accordance with California Water Code Section 13377.**

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.)

Attachment G: The reasonable potential analysis fails to consider the statistical variability of data and laboratory analyses as explicitly required by the federal regulations. The procedures for computing variability are detailed in Chapter 3, pages 52-55, of EPA's *Technical Support Document for Water Quality-based Toxics Control* (TSD). The Regional Board's reasonable potential analysis simply used a test of whether the constituent's maximum effluent concentration exceeds the standard or objective in determining whether an Effluent Limitation was prescribed, which is the method prescribed in the SIP. The use of proper statistical analyses, as prescribed by EPA in the TSD, would likely have resulted in additional Effluent Limitations for arsenic, chlorodibromomethane, chromium VI, dichlorobromomethane, mercury and methylene blue activated substances (MBAS).

In addition, the reasonable potential analyses for CTR constituents are flawed by failing to consider statistical variability and must be recalculated. 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. A state Policy does not override Federal Regulations.

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

5. The proposed Permit fails to include mass based effluent limitations for all constituents except BOD and TSS contrary to Federal Regulations 40 CFR 122.45(f).

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:
 - a. For pH, temperature, radiation or other pollutants which cannot be expressed by mass;
 - b. When applicable standards and limitations are expressed in terms of other units of measurement; or
 - c. 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.

6. **The proposed Permit fails to include an Effluent Limitation for electrical conductivity that is protective of the irrigated agriculture and municipal and domestic beneficial uses of the receiving stream contrary to Federal Regulations 40 CFR 122.44. Substantial economic hard has been caused to downstream neighbors that have water rights for irrigation by the Regional Board's failure to adequately regulate EC. This causes crop yield losses at concentrations above 700 ug/l.**

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

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

For EC, *Ayers R.S. and D.W. Westcott, Water Quality for Agriculture, Food and Agriculture Organization of the United Nations – Irrigation and Drainage Paper No. 29, Rev. 1, Rome (1985)*, levels above 700 $\mu\text{mhos/cm}$ will reduce crop yield for sensitive plants, beans and strawberries, etc. The University of California, Davis Campus, Agricultural Extension Service, published a paper, dated 7 January 1974, stating that there will not be problems to crops associated with salt if the EC remains below 750 $\mu\text{mhos/cm}$. Substantial economic hard has been caused to downstream neighbors that have water rights for irrigation by the Regional Board's failure to adequately regulate EC, which cause crop yield losses at concentrations above 700 ug/l.

The wastewater discharge maximum observed EC was 993 $\mu\text{mhos/cm}$. Clearly the discharge exceeds the MCLs for EC presenting a reasonable potential to exceed the water quality objective. The proposed permit contains an effluent limitation for EC of 993 $\mu\text{mhos/cm}$, as a monthly average that also exceeds the MCL. The effluent and the proposed EC limitation clearly exceed the agricultural water quality goal and the MCL for EC. The proposed Order fails to establish an effluent limitation for EC that are

protective of the Chemical Constituents water quality objective. The City's wastewater discharge increases concentrations of EC to unacceptable concentrations adversely affecting the agricultural beneficial use. The wastewater discharge not only presents a reasonable potential but it actually violates the Chemical Constituent Water Quality Objective in the Basin Plan. The available literature regarding safe levels of EC for irrigated agriculture mandate that an Effluent Limitation for EC is necessary to protect the beneficial use of the receiving stream in accordance with the Basin Plan and Federal Regulations. Failure to establish effluent limitations for EC that are protective of the Chemical Constituents water quality objective blatantly violates the law.

7. The proposed Permit contains an Effluent Limitation for acute toxicity that allows mortality that exceeds the Basin Plan water quality objective and does not comply with Federal regulations, at 40 CFR 122.44 (d)(1)(i).

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. 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. This section of the Basin Plan further states, in part that, compliance with this objective will be determined by analysis of indicator organisms.

The Tentative Permit requires that the Discharger conduct acute toxicity tests and states that compliance with the toxicity objective will be determined by analysis of indicator organisms. However, the Tentative Permit contains a discharge limitation that allows 30% mortality (70% survival) of fish species in any given toxicity test.

The Regional Board has looked hard and long to find some citation as to the source of the limitation that would allow or recommend 10% and 30% mortality, such a find however does not eliminate the more restrictive applicable Basin Plan objective that simply prohibits the discharge from causing mortality in the receiving stream.

For an ephemeral or low flow stream, such as the case here, allowing 30% mortality in acute toxicity tests allows that same level of mortality in the receiving stream, in violation of federal regulations and contributes to exceedance of the Basin Plan's narrative water quality objective for toxicity. Accordingly, the proposed Permit must be revised to prohibit acute toxicity in accordance with Federal regulations, at 40 CFR 122.44 (d)(1)(i).

8. The proposed Permit does not contain Effluent Limitations for chronic toxicity and therefore does not comply with Federal regulations, at 40 CFR 122.44 (d)(1)(i) and the SIP.

The proposed Permit, State Implementation Policy, states that: “On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000 with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.” The SIP, Section 4, Toxicity Control Provisions, Water Quality-Based Toxicity Control, states that: “A chronic toxicity effluent limitation is required in permits for all dischargers that will cause, have a reasonable potential to cause, or contribute to chronic toxicity in receiving waters.”

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. 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 Proposed Permit states that: “...to ensure compliance with the Basin Plan’s narrative toxicity objective, the discharger is required to conduct whole effluent toxicity testing...”. However, sampling does not equate with or ensure compliance. 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 effluent limitation for chronic toxicity must be included in the Order. In addition, the Chronic Toxicity Testing Dilution Series should bracket the actual dilution at the time of discharge, not use default values that are not relevant to the discharge.

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

impacts are clearly defined in EPA's toxicity guidance manuals)) in accordance with Federal regulations, at 40 CFR 122.44 (d)(1)(i) and the Basin Plan and the SIP.

9. The wastewater discharge from the City of Colfax has degraded Groundwater quality and is not properly regulated in accordance with the Antidegradation policy.

The proposed Permit, Fact Sheet Antidegradation Analysis pages F-44 and 45, states that:

“The Discharger utilizes aeration and storage ponds. Domestic wastewater contains constituents such as total dissolved solids (TDS), specific conductance, pathogens, nitrates, organics, metals, and oxygen demanding substances (e.g. BOD). Percolation from the ponds may result in an increase in the concentration of these constituents in groundwater. The increase in the concentration of these constituents in groundwater must be consistent with Resolution 68-16. Any increase in pollutant concentrations in groundwater must be shown to be necessary to allow wastewater utility service necessary to accommodate housing and economic expansion in the area and must be consistent with maximum benefit to the people of the State of California. Some degradation of groundwater by the Discharger is consistent with Resolution 68- 16 provided that: i. the degradation is limited in extent; ii. the degradation after effective source control, treatment, and control is limited to waste constituents typically encountered in municipal wastewater as specified in the groundwater limitations in this Order; iii. the Discharger minimizes the degradation by fully implementing, regularly maintaining, and optimally operating best practicable treatment and control (BPTC) measures; and iv. the degradation does not result in water quality less than that prescribed in the Basin Plan. Groundwater monitoring results, submitted as part of the Report of Waste Discharge, show that total coliform organisms has degraded groundwater quality when compared to background.”
(Emphasis added)

The proposed Permit Fact Sheet further states that:

“Monitoring of the groundwater must be conducted to determine if the discharge has caused an increase in constituent concentrations, when compared to background. The monitoring must, at a minimum, require a complete assessment of groundwater impacts including the vertical and lateral extent of degradation, an assessment of all wastewater-related constituents which may have migrated to groundwater, an analysis of whether additional or different methods of treatment or control of the discharge are necessary to provide best practicable treatment or control to comply with Resolution No. 68-16. Economic analysis is only one of many factors considered in determining best practicable treatment or control. If monitoring indicates that the discharge has incrementally increased constituent concentrations in groundwater above background, this permit may be reopened and modified. Until groundwater monitoring is sufficient, this Order contains

Groundwater Limitations that allow groundwater quality to be degraded for certain constituents when compared to background groundwater quality, but not to exceed water quality objectives. If groundwater quality has been degraded by the discharge, the incremental change in pollutant concentration (when compared with background) may not be increased. If groundwater quality has been or may be degraded by the discharge, this Order may be reopened and specific numeric limitations established consistent with Resolution 68-16 and the Basin Plan.

Groundwater has been degraded by the City of Colfax wastewater discharge. Clearly the Regional Board does not know to what degree the groundwater has been degraded. The Regional Board fails to identify that the City of Colfax has unsuccessfully tried to install additional groundwater monitoring wells due to fractured bedrock that underlies the wastewater treatment area. It is doubtful that additional attempts to monitor groundwater in fractured bedrock will be successful. The percolating wastewater to fractured bedrock is likely to receive little in any treatment due to the lack of soils structure and can flow great distances with little dilution, threatening the beneficial uses of groundwater over a large area. The Regional Board has failed to undertake a serious antidegradation analysis with respect to groundwater. Any such analysis would show that, especially since the design and construction of a new wastewater treatment plant is being undertaken by the City, that continued discharge to land is not best practicable treatment and control (BPTC) of the discharge as is required by the Antidegradation policy. A thorough Antidegradation Policy analysis would likely show that all percolating wastewater to groundwater must be eliminated and prohibited. The fact that the Regional Board has not undertaken an Antidegradation Policy analysis with regard to groundwater is best evidenced by the fact that the proposed Permit, *BPTC Evaluation Tasks* page 24, requires the analysis be conducted and submitted by the Discharger following permit adoption.

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

The proposed Permit allows for a flow increase from 0.2 mgd to 0.275 mgd. The increase in flow will increase the mass of pollutants being discharged to surface waters. The antidegradation analysis in the proposed Permit is simply deficient and virtually nonexistent. The brief discussion of antidegradation requirements, in the Fact Sheet, consists only of skeletal, unsupported, undocumented conclusory statements totally lacking in factual analysis. The proposed Permit Fact Sheet discusses the Antidegradation Policy in part as follows: *“This Order provides for an increase in the volume and mass of pollutants discharged to accommodate the new wastewater treatment plant. The increase will not have significant impacts on aquatic life or human health, which is the beneficial use most likely affected by the pollutants discharged (BOD5, TSS, chlorine residual, ammonia, and inorganics). The increase will not cause a violation of water quality objectives. The increase in the discharge allows the Discharger to provide the utility service necessary to accommodate housing and economic expansion in the*

area, and is considered to be a benefit to the people of the State. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge.”

The antidegradation analysis does not discuss iron, manganese and EC, which are discharged at problematic concentrations as detailed in the above comments. The antidegradation analysis does not discuss bioaccumulative pollutants such as mercury and copper. The antidegradation analysis does not discuss domestic and municipal uses for which water rights have been issued downstream before any significant dilution is achieved in the receiving stream.

Section 101(a) of the Clean Water Act, 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 Act 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 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 (40 CFR § 131.12(a)).

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 William Attwater, SWRCB to Regional Board Executive Officers, “federal Antidegradation Policy,” pp. 2, 18 (Oct. 7, 1987) (“State Antidegradation Guidance”).) As part of the state policy for water quality control, 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 State Board's APU 90-004 specifies guidance to the Regional Boards for implementing the state and federal antidegradation policies and guidance. The guidance establishes a two-tiered process for addressing these policies and sets forth two levels of analysis: a simple analysis and a complete analysis. A simple analysis may be employed where a Regional Board determines that: 1) a reduction in water quality will be spatially localized or limited with respect to the waterbody, e.g. confined to the mixing zone; 2) a reduction in water quality is temporally limited; 3) a proposed action will produce minor effects which will not result in a significant reduction of water quality; and 4) a proposed activity has been approved in a General Plan and has been adequately subjected to the environmental and economic analysis required in an EIR. A complete antidegradation analysis is required if discharges would result in: 1) a substantial increase in mass emissions of a constituent; or 2) significant mortality, growth impairment, or reproductive impairment of resident species. Regional Boards are advised to apply stricter scrutiny to non-threshold constituents, i.e., carcinogens and other constituents that are deemed to present a risk of source magnitude at all non-zero concentrations. If a Regional Board cannot find that the above determinations can be reached, a complete analysis is required.

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

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

The antidegradation review process is especially important in the context of waters protected by Tier 2. See EPA, Office of Water Quality Regulations and Standards, Water Quality Standards Handbook, 2nd ed. Chapter 4 (2nd ed. Aug. 1994). Whenever a person proposes an activity that may degrade a water protected by Tier 2, the antidegradation regulation requires a state to: (1) determine whether the degradation is "necessary to accommodate important economic or social development in the area in which the waters are located"; (2) consider less-degrading alternatives; (3) ensure that the

best available pollution control measures are used to limit degradation; and (4) guarantee that, if water quality is lowered, existing uses will be fully protected. 40 CFR § 131.12(a)(2); EPA, Office of Water Quality Regulations and Standards, Water Quality Standards Handbook, 2nd ed. 4-1, 4-7 (2nd ed. Aug. 1994). These activity-specific determinations necessarily require that each activity be considered individually.

For example, the APU 90-004 states:

“Factors that should be considered when determining whether the discharge is necessary to accommodate social or economic development and is consistent with maximum public benefit include: a) past, present, and probably beneficial uses of the water, b) economic and social costs, tangible and intangible, of the proposed discharge compared to benefits. The economic impacts to be considered are those incurred in order to maintain existing water quality. The financial impact analysis should focus on the ability of the facility to pay for the necessary treatment. The ability to pay depends on the facility’s source of funds. In addition to demonstrating a financial impact on the publicly – or privately – owned facility, the analysis must show a significant adverse impact on the community. The long-term and short-term socioeconomic impacts of maintaining existing water quality must be considered. Examples of social and economic parameters that could be affected are employment, housing, community services, income, tax revenues and land value. To accurately assess the impact of the proposed project, the projected baseline socioeconomic profile of the affected community without the project should be compared to the projected profile with the project...EPA’s Water Quality Standards Handbook (Chapter 5) provides additional guidance in assessing financial and socioeconomic impacts”

There is nothing resembling an economic or socioeconomic analysis in the Permit. In the Water Quality Standards Handbook, USEPA interprets the phrase “necessary to accommodate important economic or social development” with the phrase “substantial and widespread economic and social impact.”

There is nothing resembling an analysis buttressing the unsupported claim that BPTC is required. An increasing number of wastewater treatment plants around the country and state are employing reverse-osmosis (RO), or even RO-plus. Clearly, micro-filtration can be considered BPTC for wastewater discharges. If this is not the case, the antidegradation analysis must explicitly detail how and why run-of-the-mill tertiary system that facilitate increased mass loadings can be considered BPTC.

There is nothing in the Permit resembling an analysis that ensures that existing beneficial uses are protected. Nor does the Permit analyze the incremental and cumulative impact of increased loading of non-impairing pollutants on beneficial uses. In fact, there is almost no information or discussion on the composition and health of the identified beneficial uses. Any reasonably adequate antidegradation analysis must discuss the affected beneficial uses (i.e., numbers and health of the aquatic ecosystem; extent, composition and viability of agricultural production; people depending upon these

waters for water supply; extent of recreational activity; etc.) and the probable effect the discharge will have on these uses.

Alternatively, Tier 1 requires that existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected. By definition, any increase in the discharge of impairing pollutants to impaired waterways unreasonably degrades beneficial uses and exceeds applicable water quality standards. Prohibition of additional mass loading of impairing pollutants is a necessary stabilization precursor to any successful effort in bringing an impaired waterbody into compliance.

NPDES permits must include any more stringent effluent limitation necessary to implement the Regional Board Basin Plan (Water Code 13377). The Tentative Permit fails to properly implement the Basin Plan's Antidegradation Policy. The discharge must be capable of achieving 100% compliance with Effluent and Receiving Water Limitations prior to allowing the expanded discharge.

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

Sincerely,



Bill Jennings, Executive Director
California Sportfishing Protection Alliance

Attachments: Letter from David P. Spath, Ph.D., P.E., Department of Health Services, to Kenneth Landau, CVRWQCB, dated 8 April 1999
Letter from Joseph Spano, P.E., Department of Health Services, to Gary M. Carlton, CVRWQCB, dated 12 May 2000
Letter from Joseph Spano, P.E., Department of Health Services, to Gary M. Carlton, CVRWQCB, dated 25 May 2000