

Regional Water Quality Control Board
Central Valley Region
Board Meeting – 21/22 September 2006

Response to Written Comments for City of Shasta Lake Water Treatment Plant
Tentative Waste Discharge Requirements

The following are responses to written comments received from interested parties in response to the Tentative Waste Discharge Requirements (NPDES No. CA0083828) for the Clear Creek Community Services District (CSD) (Potable) Water Treatment Plant issued on 18 August 2006. Written comments from interested parties on the proposed Order were required to be received by the Regional Water Quality Control Board (Regional Water Board) by 20 September 2006 in order to receive full consideration. Comments were received by the due date from the following parties:

1. California Sportfishing Protection Alliance (CSPA)

Written comments from the above interested parties are summarized below, followed by the response of the Regional Water Board staff.

CALIFORNIA SPORTFISHING PROTECTION ALLIANCE (CSPA) COMMENTS

CSPA –COMMENT #1: The Discharger should provide BPTC in accordance with the Regional and State Board’s Antidegradation Policy and Federal Regulations and eliminate the wastewater discharge.

RESPONSE

The Discharger is considering improvements to recycle a portion of the filter backwash. The California Department of Health Services will not allow the Discharger to recycle 100% of the filter backwash without making extensive modifications and improvements to the facility. The facility is in a rural area, and there is no regional wastewater treatment plant anywhere in the area. The water treatment process and the filter backwash settling process do not add pollutants to the waste stream, other than chlorine and flocculant, both of which are removed prior to discharge. The source water for the water treatment plant is the same as the receiving water—the outflow from Whiskeytown Reservoir (Clear Creek). Large and continuous water supply and bypass releases are made from Whiskeytown Reservoir year-round, resulting in significant dilution of the settled filter backwash discharge. The discharge is not affecting beneficial uses of Clear Creek, and elimination of the discharge is not feasible or warranted.

CSPA –COMMENT #2: The Discharger may be discharging waste to surface water without a permit.

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RESPONSE

The discharge from the water treatment plant is authorized pursuant to Waste Discharge Requirements (WDRs) Order No. 5-01-081, adopted on 27 April 2001. A complete Report of Waste Discharge application for permit renewal was received from the Discharger on 10 March 2006. The Order's expiration date was 1 April 2006, however, because the Discharger applied for renewal before the Order expired, the Order is considered to remain in effect until a renewal has been adopted. Pursuant to WDRs Order No. 5-01-081, Provision G.14, and 40 CFR 122.21(d) (Duty to reapply), the Discharger should have submitted the renewal application at least 180 days prior to the expiration date, or approximately 1 October 2005. While a technical violation occurred, the application was still made prior to expiration. No water quality impacts were threatened or occurred. Board staff considers the Discharger to be currently covered by WDRs Order No. 5-01-081.

CSPA –COMMENT #3: The Discharger is only required to sample for chlorine twice monthly (grab samples), when continuous monitoring is BPTC.

RESPONSE

Chlorine is only utilized in the production of potable water at the facility. Chlorine is not used in the filter backwash settling process. The settling ponds provide a physical holding time before discharging. The detention time and dilution that occurs in the ponds creates a compositing effect so that continuous monitoring is not necessary. Therefore, the grab sample monitoring frequency is appropriate for the purpose of monitoring compliance. No toxicity has been observed in the discharge.

CSPA –COMMENT #4: The proposed Permit contains a flawed Reasonable Potential Analysis for priority pollutants and an inadequate wastestream characterization.

RESPONSE

There is insufficient information to determine if Reasonable Potential exists for the subject pollutants. The Discharger is required to conduct additional monitoring for priority pollutants, and as this additional data becomes available the Reasonable Potential analysis will be revisited, and the proposed Order will be reopened to establish effluent limits, if appropriate. The facility only takes source water from Clear Creek, removes unwanted constituents, and delivers the potable water to its customers. The main concern with the filter backwash is to ensure that chlorine is dissipated before the settled backwash is returned to Clear Creek. Due to the detention time in the ponds, this has never been a problem. As verification, the proposed Order requires regular chlorine monitoring

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in both the settled backwash water discharge, and the upstream and downstream receiving water. The polymer used to enhance potable water filter efficiency also enhances settling in the ponds. No toxicity has ever been detected in the discharge. The frequency of required monitoring considers the need for data, the character and quantity of the discharge, the potential threat to water quality, and the cost to the Discharger of conducting the monitoring. For priority pollutants that have not been detected in the effluent, only infrequent monitoring is required. For priority pollutants that have been detected in the effluent, monitoring is required much more frequently to develop an adequate record to determine if effluent limits are necessary.

CSPA –COMMENT #5: The proposed Permit Fact Sheet Finds Reasonable Potential for Dichlorobromomethane to exceed CTR water quality standards but fails to include an effluent limitation in violation of Federal Regulations and the SIP.

RESPONSE

As explained above, there is insufficient information to determine if Reasonable Potential exists for dichlorobromomethane. Only two effluent samples were available. One sample was non detect, and the other indicated dichlorobromomethane present barely over the water quality criterion. The Discharger is required to conduct additional monitoring for all priority pollutants, including dichlorobromomethane in particular, and as this additional data becomes available the Reasonable Potential analysis will be revisited, and the proposed Order will be reopened to establish effluent limits, if appropriate.

CSPA –COMMENT #6: The proposed Permit Fact Sheet Finds Reasonable Potential for aluminum to exceed recommended ambient criteria protective of the narrative toxicity water quality objective but fails to include an effluent limitation in violation of Federal Regulations.

RESPONSE

As explained above, there is insufficient information to determine if Reasonable Potential exists for aluminum. Only one effluent and one background sample were available. The effluent sample was only 1% over the chronic criteria. The background receiving water sample was 86% higher than the chronic criteria. This indicates that the filters and settling ponds removed 85% of the naturally occurring aluminum and actually improved the quality of the receiving water. Both the discharge and receiving water samples were approximately 5 times lower than the acute criteria. Aluminum is not a priority pollutant, however the Discharger is required to conduct additional monitoring for all priority pollutants, and additionally aluminum. As this additional data becomes available the

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Reasonable Potential analysis will be revisited, and the proposed Order will be reopened to establish effluent limits, if appropriate.

CSPA –COMMENT #7: The proposed Permit contains a flawed Reasonable Potential Analysis for bis(2-ethylhexyl)phthalate.

RESPONSE

Bis(2-ethylhexyl)phthalate is a plasticizer that has been repeatedly detected in both upstream receiving waters and effluent from many facilities. In most cases, it is unlikely that the contaminant is actually present in the source water. When the samples are collected and processed with minimal contact with plastics, the contaminant is rarely detected. The use of glass sampling containers has been particularly successful in reducing this problem. In this case, the pollutant was detected one time in the upstream receiving water only. It has not been detected in the effluent. The proposed Order gives the Discharger the opportunity to modify sampling procedures. If bis(2-ethylhexyl)phthalate continues to be detected in the receiving water, or in the effluent, at a concentration above the criteria, then the proposed Order will be reopened to establish an effluent limit, if appropriate.

CSPA –COMMENT #8: The proposed Permit Fact Sheet Finds Reasonable Potential for iron to exceed the [secondary] drinking water MCL protective of the municipal beneficial use of the receiving stream and the chemical constituents water quality objective but fails to include an effluent limitation in violation of Federal Regulations.

RESPONSE

The comment is incorrect. Both the effluent and receiving water samples indicated iron concentrations 2 to 6 times lower than the secondary MCL. No Reasonable Potential exists for iron. Iron is not a priority pollutant, however the Discharger is required to conduct additional monitoring for all priority pollutants, and additionally iron. As this additional data becomes available the Reasonable Potential analysis will be revisited, and the proposed Order will be reopened to establish effluent limits, if appropriate.

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CSPA –COMMENT #9: The proposed Permit Fact Sheet Finds Reasonable Potential for manganese to exceed the [secondary-Consumer Acceptance] drinking water MCL protective of the municipal beneficial use of the receiving stream and the chemical constituents water quality objective exceed [*sic*] recommended ambient criteria protective of the narrative toxicity water quality objective but fails to include an effluent limitation in violation of Federal Regulations.

RESPONSE

As explained above, there is insufficient information to determine if Reasonable Potential exists for manganese. Only one sample was available. The secondary MCL criteria being applied is applicable to drinking water at the tap and reflects the Consumer Acceptance level only. Clear Creek is not a direct drinking water source. The drinking water supply for the area is treated at the subject potable water treatment plant. Manganese is not a priority pollutant, however the Discharger is required to conduct additional monitoring for all priority pollutants, and additionally manganese. As this additional data becomes available the Reasonable Potential analysis will be revisited, and the proposed Order will be reopened to establish effluent limits, if appropriate.

CSPA –COMMENT #10: The proposed Permit contains a flawed Reasonable Potential Analysis for electrical conductivity (EC).

RESPONSE

The maximum observed effluent concentration for EC in the discharge was 95 umhos/cm. The maximum receiving water sample concentration was 93. The lowest agricultural water quality goal is 700 umhos/cm. Following the SIP procedures, Reasonable Potential does not exist for EC.

CSPA –COMMENT #11: The Permit does not contain protective limitations for Acute Toxicity.

The focus of this comment is on the appropriateness of the acute toxicity effluent limitation. CSPA contends that the acute toxicity effluent limitation is inappropriate because 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 an exceedance of the Basin Plan's narrative water quality objective for toxicity.

RESPONSE

The acute toxicity effluent limitations are consistent with numerous NPDES permits issued by the Central Valley Regional Water Board and throughout

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the state and are appropriate. The proposed Order, as a whole, contains several mechanisms designed to ensure that the discharge does not cause toxicity in the receiving water. The Order contains a Receiving Water Limitation that prohibits the discharge from causing toxicity in the receiving water. Additionally, end-of-pipe effluent limits are included for all toxic pollutants with reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. Where appropriate, these limits are developed based on aquatic life toxicity criteria.

In addition to chemical-specific effluent limitations, the proposed Order requires chronic whole effluent toxicity (WET) testing that identifies both acute and chronic effluent toxicity. WET testing is necessary because chemical-specific effluent limitations do not address synergistic effects that may occur when the effluent mixes with receiving waters, synergistic effects of mixtures of chemicals, or toxicity from toxic pollutants for which there are no aquatic life toxicity criteria. To address toxicity detected in WET testing, the proposed Order includes a provision that requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate, effluent toxicity. If the discharge exhibits a pattern of toxicity, the Discharger is required to initiate a Toxicity Reduction Evaluation and take actions to mitigate the impact of the discharge and prevent reoccurrence of toxicity.

The acute toxicity effluent limitations establish additional thresholds to control toxicity in the effluent: survival in one test no less than 70% and a median of no less than 90% survival in three consecutive tests. Some in-test mortality can occur by chance. To account for this, the test acceptability criteria for the acute test allow ten percent mortality (requires 90% survival) in the control. Thus, the acute toxicity effluent limitation allows for some test variability, but imposes ceilings for exceptional events (i.e. 30% mortality or more), and for repeat events (i.e., median of three events exceeding mortality of 10%).

CSPA –COMMENT #12: The Permit does not contain protective limitations for Chronic toxicity.

RESPONSE

The SIP contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limits. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region¹ that contained numeric chronic

¹ In the Matter of the Review of Own Motion of Waste Discharge Requirements Order Nos. R4-2002-0121 [NPDES No. CA0054011] and R4-2002-0123 [NPDES NO. CA0055119] and Time Schedule Order Nos. R4-2002-0122 and R4-2002-0124 for Los Coyotes and Long Beach

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toxicity effluent limitations. As a result of this petition, the State Water Board adopted WQO 2003-012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-012:

“In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits.”

The process to revise the SIP is currently underway. Proposed changes include clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process. The proposed Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.

CSPA –COMMENT #13. The Groundwater Limitation is not protective against degradation of water quality and violates the State and Regional Board’s Antidegradation Policy and Federal Regulations.

RESPONSE

State Board Resolution No. 68-16 requires in part that:

- 1) High quality waters be maintained until it has been demonstrated that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies; and
- 2) Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a

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pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.

The coagulants added to the ponds create an impervious layer and leaching is eliminated or greatly reduced. In addition natural groundwater quality in the area is poor, and consequently the groundwater is not used for domestic or municipal supply.

Nevertheless limited degradation of groundwater is warranted when the cost of total compliance to the Community Services District and its effect on the costs of water to the local residents is considered.

CSPA –COMMENT #14: New Discharge.

RESPONSE

The comment refers to low threat discharge requirements in the proposed Order. These discharges include scheduled and unscheduled work on the potable water distribution system during which potable water may be discharged to surface waters. Such discharges could already be covered under existing Central Valley Water Board NPDES Order No. 5-00-175, General Waste Discharge Requirements for Dewatering and Other Low Threat Discharges to Surface Waters, however for convenience and simplicity, the requirements of the General Order have been included in the proposed Order for the water treatment plant. There is no difference between regulation and compliance determination for a general permit versus an individual permit, and there will be no difference in resulting water quality.

CSPA –COMMENT #15: The Basin Plan prohibits the discharge of wastewater to low flow streams as a permanent means of disposal.

RESPONSE

Although the Discharger has not conducted a formal dilution study, the potable water treatment plant is located on Clear Creek, just below Whiskeytown Reservoir. Whiskeytown Reservoir is a water supply reservoir, and makes significant releases year round for water supply, flood control, and environmental uses. Therefore, significant dilution of the settled filter backwash water always occurs in Clear Creek. The Discharger has been encouraged to conduct a mixing zone/dilution study in Clear Creek, and it is expected that any pollutants of concern, attributable to the water treatment plant, will ever be detected in the downstream receiving water.