

Central Valley Regional Water Quality Control Board
4/5 October 2012 Board Meeting

Response to Written Comments on
Tentative Waste Discharge Requirements for
City of Dunsmuir
Dunsmuir Wastewater Treatment Plant
Shasta and Siskiyou County

At a public hearing scheduled for 4/5 October 2012, the Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) will consider adoption of tentative Waste Discharge Requirements (NPDES No. CA0078441) for the City of Dunsmuir Wastewater Treatment Plant. This document contains responses to written comments received from interested parties in response to the Tentative Order. Written comments from interested parties were required to be received by the Central Valley Water Board by 27 August 2012 in order to receive full consideration. Comments were received prior to the deadline from:

1. City of Dunsmuir (Discharger) (received 24 August 2012)
2. U.S. EPA (received 24 August 2012)
3. Central Valley Clean Water Association (CVCWA) (received 27 August 2012)
4. Chris Raines, Dunsmuir City Council member (received 27 August 2012)

Comments were received after the deadline from:

1. City of Dunsmuir (Discharger) (received 4 September 2012)

Written comments from the above interested parties are summarized below, followed by Central Valley Water Board staff responses.

DISCHARGER (CITY OF DUNSMUIR) COMMENTS

DISCHARGER COMMENT #1

The Discharger states that the Tentative Order erroneously states the existing wastewater treatment plant does not provide nitrification (Item Vii on page F-29, Item i.b on page F-48). The Discharger states that the Facility does provide seasonal, although irregular, conversion of ammonia to nitrate via the extended aeration oxidation ditch.

RESPONSE:

Central Valley Water Board staff concurs that the discharge provides limited, seasonal nitrification. The language in the above referenced sections has been updated to reflect the facility's nitrification abilities.

Please see response to CVCWA comment #1 for new language provided in Fact Sheet Section IV.C.2.c.(vii).

In addition, Central Valley Water Board staff has added language to Reopener Provision 1.a.ii (see Section VI.C.1.a.ii) that references seasonal effluent limitations. The new reopener language is provided in the response to Discharger comment #5.

DISCHARGER COMMENT #2

The Discharger states that the use of the maximum pH of 8.5 in the establishment of the ammonia criteria is “unreasonably conservative.” The Discharger states that wastewater effluent is typically less than 7.0.

RESPONSE:

Staff concurs that that the effluent pH is typically below 7.0. Acute ammonia criterion was calculated in the proposed permit using the maximum permitted effluent pH value of 8.5 s.u. Utilizing the maximum observed effluent pH would require the permitted maximum effluent pH limit to be changed from 8.5 to 7.4. The Discharger did not specifically request that the maximum effluent pH limit to be tightened to match the historic high of 7.4; and doing so may lead to effluent pH violations during the next permit term. On 4 September 2012 the Discharger requested the maximum effluent pH limit be reduced from 8.5 to 8.0 in order to use a pH of 8.0 to calculate the acute criterion for ammonia. As a result the proposed permit has been revised and the maximum pH effluent limit is now 8.0 and the applicable acute criterion has changed from 2.14 mg/L to 5.62 mg/L.

The following language has been added to the Antidegradation discussion in the Fact Sheet (Fact Sheet section IV.D.4):

In addition the maximum pH effluent limitation has been reduced to 8.0 s.u. from 8.5 s.u. in the previous Order. The reduction was at the request of the Discharger, in order to allow for an increase in the acute aquatic-life criterion for ammonia applicable to the facility and therefore a less stringent final effluent limitation for ammonia. The effluent limitation for pH may, in the future, be adjusted back to 8.5 s.u., if justified and appropriate.

DISCHARGER COMMENT #3

The Discharger requests that a reopener provision be added to the proposed permit to allow for the addition or modification of final ammonia effluent limitations and/or mixing zone, as appropriate.

RESPONSE:

Central Valley Water Board has revised the permit to allow for a mixing zone for ammonia (see response to CVCWA comment #1). Dilution credits have been granted, however the final limit is based on historic plant performance. The revised tentative permit contains a reopener provision as follows (Section VI.C.1.k):

k. Performance-Based Effluent Limitations. This Order allows dilution credits for ammonia, copper, dichlorobromomethane, and nitrate for development of water quality-based effluent limits. However, the amount of dilution allowed has been reduced, based on the Facility's performance to control these pollutants. Maximum daily performance-based effluent limits were calculated for ammonia, copper, and dichlorobromomethane based on effluent data from 2008 to 2011. The performance-based effluent limit for nitrate was based on effluent data from 2008 to 2012. If the Discharger submits new monitoring results that justify a different performance-based effluent limit for ammonia, copper, dichlorobromomethane, and/or nitrate, this Order may be reopened to modify the effluent limitations for these pollutants.

DISCHARGER COMMENT #4

The Discharger requests that the Initial Investigative TRE Workplan and all related TRE requirements be suspended until State Board staff revise the toxicity control provisions in the SIP.

RESPONSE:

Central Valley Water Board staff does not concur. The workplan is for an *initial investigative TRE* and as the tentative permit states; this document is typically only 1 to 2 pages. No effluent limits for chronic whole effluent toxicity have been included. Depending on the outcome of future State Board revisions to the SIP, changes to this permit and other permits may be required.

DISCHARGER COMMENT #5

The Discharger requests a chronic whole effluent toxicity dilution credit to be granted so as to prevent easily triggering a TRE at a substantial cost to the City.

RESPONSE:

The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring and potentially initiate a TRE when the effluent exhibits toxicity. During regular chronic toxicity testing, if the monitoring trigger is exceeded, the Discharger is required to initiate "accelerated monitoring," **not** a TRE. The TRE is initiated only after toxicity is confirmed during the

accelerated monitoring. The purpose of accelerated monitoring is to quickly determine whether there is a pattern of toxicity before requiring the implementation of a TRE as it may not be appropriate to require a discharger to initiate a TRE if the initial toxic sample was a result of a one-time event that is not recurring.

The Discharger's whole effluent toxicity testing on the discharge did not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective, based on annual test results since 2008. Therefore, there is no justification for granting a dilution credit for the monitoring trigger at this time.

In response to Discharger comment #5, Central Valley Water Board staff have added language to reopener provision 1.a(ii) (see Section VI.C.1.a(ii)):

- i. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance, including justification for seasonal limitations. For example, modifications to the Chronic Whole Effluent Toxicity Accelerated Monitoring Trigger, or the effluent limitations for ammonia, may be appropriate.

DISCHARGER COMMENT #6

The Discharger estimates the total annual laboratory analysis cost (if performed by an outside lab) for the proposed monitoring program is \$60,000. The Discharger refers to Attachment I (Priority Pollutants) and Attachment J (Dioxin and Furans) as containing pollutants that are unlikely present in the discharge. The Discharger requests that grant funding be made available to disadvantaged communities (such as Dunsmuir) to pay for the analyses.

RESPONSE:

Central Valley Water Board staff has removed the monitoring requirements outlined in Attachment J, Dioxin and Furan Sampling. The Discharger conducted dioxin and furan sampling in 2002 and congeners were not detected in the discharge. The proposed permit contains justification for the required monitoring.

DISCHARGER COMMENT #7

The Discharger requests the elimination of the Compliance Schedule for the I&I Reduction Project and Wet Weather Capacity Improvements as reduction efforts and capacity improvements are already underway as part of the CWSRF Project. The Discharger states that eliminating the compliance schedule will 1) save the City money in document preparation costs (i.e. work plans and semi-annual reports) and 2) fend off potential civil litigation if I&I reduction is not achieved. The Discharger states that

success with I&I Reduction in the collection system hinges on replacing/repairing sewer laterals on private property which the City has limited jurisdiction over.

RESPONSE:

Central Valley Water Board staff has removed the I&I Reduction Project from the compliance schedule.

The I&I Reduction Project has been removed from the compliance schedule in Section VI.7.b and reference to the I&I Reduction Project has been removed from the Fact Sheet (see Fact Sheet Section VII.7.a.). The requirement for wet weather WWTP capacity improvements remain because the WWTP has a history of permit violations due to insufficient capacity.

DISCHARGER COMMENT #8 (LATE REQUEST)

On 4 September 2012 the Discharger supplied recent effluent nitrate data (from August 2012) and requested that the Central Valley Water Board include the data in the record for the purpose of evaluating the facility's performance on nitrate removal. The data set includes a maximum nitrate effluent concentration of 35 mg/L.

RESPONSE:

The Central Valley Water Board has incorporated the recently submitted effluent nitrate data into the tentative permit. Inclusion of the data has resulted in a change to the final nitrate effluent limitations from 15.5 mg/L to 44.1 mg/L. All references to the final effluent limitations have been updated to result this change, including the RPA discussion in the Fact Sheet section IV.C.3.d.iii. In addition, nitrate statistics have been amended in the Performance-based Effluent Limitations section in the Fact Sheet (see Fact Sheet Section IV.D.6) as a result of the inclusion of the new nitrate data.

U.S. EPA COMMENTS

USEPA COMMENT #1

U.S. EPA states that the compliance schedule for ammonia in the proposed permit does not comply with the State Water Board Policy for Compliance Schedules in NPDES permits (Resolution No. 2008-0025). The interim milestones for the compliance schedule should be based on actions, such as obtaining permits for construction of upgraded treatment facilities, rather than report-based.

RESPONSE:

The compliance schedule for ammonia has been removed from the tentative permit as the schedule is no longer necessary for compliance purposes (see response to CVCWA comment #1). Nonetheless, the ammonia compliance schedule did comply with the State Water Board compliance schedule policy and other applicable requirements.

The compliance schedule required the Discharger to submit a compliance schedule workplan within 6 months from the adoption of the permit. Following approval of the workplan, the Discharger was required to report annually to the Central Valley Water Board on their progress towards compliance with the permit. These annual reports must detail the steps that have been implemented towards achieving compliance with the permit, such as studies conducted, construction progress, evaluation of measures that have been implemented, and/or recommendations for additional measures as necessary to achieve full compliance by the final compliance date.

CVCWA COMMENTS

CVCWA COMMENT #1

CVCWA states that the tentative permit implies that the Central Valley Water Board is requiring that all WWTPs build new treatment facilities to remove ammonia and that the denial of a mixing zone for ammonia in this tentative permit, based on “facility type,” is improper. CVCWA requests that a dilution credit for ammonia be provided.

RESPONSE:

The tentative permit has been revised to include a dilution credit for ammonia. Permit references to denying a mixing zone have been removed from the Fact Sheet (Fact Sheet Section IV.C.2.c and IV.C.3.d).

Specifically, changes to Fact Sheet IV.C.2.c.vii are as follows:

~~Ammonia – While the acute or chronic mixing zone meets the mixing zone requirements of the SIP, the~~ The waste water treatment plant does provide limited, seasonal conversion of ammonia to nitrate via the extended aeration oxidation ditch. Ammonia concentrations in the summer, during the no-surface water discharge period, are typically less than <1 mg/L. Ammonia concentrations in the winter period are higher and correlate with the winter low temperatures ~~not provide nitrification or otherwise provide for the removal of ammonia. The Discharger is currently modifying the planned upgrades for the facility in order to add practicable improvements to the facility in order to reduce the ammonia concentrations in the effluent. The Facility discharges to a high quality receiving water that supports a world-renown recreational fishing industry. Ammonia is toxic to aquatic life at relatively low concentrations. The Central Valley Water Board finds that it is reasonable for the Discharger to make practicable efforts towards ammonia reductions at the Facility prior to considering granting a mixing~~

~~zone for ammonia. Such ammonia reduction in the effluent will inherently result in minimizing the size of any future ammonia mixing zone taken under Central Valley Water Board consideration and result in less degradation to the receiving water. Furthermore, the Central Valley Water Board finds that granting a dilution credit for ammonia could allocate an unnecessarily large portion of the receiving water's assimilative capacity of ammonia and could violate the Antidegradation Policy. Therefore, acute and chronic aquatic life dilution credits for ammonia have not been granted.~~

Based on existing effluent data from January 2008 through June 2011 it appears that the Facility cannot meet end-of-pipe effluent limitations for ammonia of 2.1 mg/L and 5.6 mg/L, as an AMEL and MDEL, respectively. Assimilative capacity is available for ammonia in the receiving water, and, as discussed above, the acute mixing zone meets the requirements of the SIP and Basin Plan. Table F-11, below, shows the WQBELs calculated with the allowance of acute and chronic aquatic life dilution, end-of-pipe effluent limitations using a reasonable worst-case steady-state approach, and the Facility's performance, therefore, dilution credits have been allowed for ammonia.

Table F-11. WQBELs for Ammonia

	<u>Average Monthly Effluent Limitation (mg/L)</u>	<u>Maximum Daily Effluent Limitation (mg/L)</u>
<u>50' Mixing Zone (acute 13:1, chronic 16:1)</u>	<u>28.8</u>	<u>76.8</u>
<u>End-of-pipe (no dilution)</u>	<u>2.11</u>	<u>5.6</u>
<u>Facility Performance¹</u>	<u>21.9</u>	

1. Based on normally distributed data where 99.9% of the data points will lie within 3.3 standard deviations of the mean (ammonia effluent data from January 2008 through June 2011)

In addition, new ammonia language has been added to the Performance-based Effluent Limitations section in the Fact Sheet (see Fact Sheet Section IV.D.6).

As a result of the inclusion of a dilution credit for ammonia (and the pH adjustment and resulting new acute criterion for ammonia discussed in Discharger comment #2) all references to the final ammonia effluent limitations have been changed from a AMEL and MDEL of 0.8 mg/L and 2.14 mg/L, respectively, to 21.9 mg/L. Also, the ammonia compliance schedule and interim ammonia effluent limitations references have been removed from the tentative permit.

In addition, the following Special Provisions has been added to the tentative permit (Section VI.C.2.f):

f. Ammonia Reduction Study. 180 days prior to the expiration date of this Order, the Discharger shall submit an ammonia reduction study. The study shall include a description of ammonia reduction measures implemented during the current permit cycle and/or scheduled for future implementation, site-specific constraints, if any, related to effluent ammonia reduction, and an evaluation of whether there are additional practicable ammonia reduction measures that may be implemented at the facility in order to reduce ammonia concentrations in the effluent and minimize the size of the ammonia mixing zone. If additional ammonia concentration reductions are practicable then the size of future mixing zones and dilution credits for ammonia may be reduced until such practicable concentration reductions have been achieved.

Also, the following language has been added to the Proposed Changes section in the Fact Sheet (Fact Sheet Section II.E):

In August 2012, the Discharger notified the Central Valley Water Board that the following modifications to the planned upgrades were under consideration for the purposes of increasing ammonia reduction at the facility:

1. An anoxic selector for denitrification and filamentous control.
2. Mixed liquor recycle to the anoxic selector for nitrate removal.
3. Conversion of a 35-ft. diameter secondary clarifier into an aerobic digester to treat side-stream discharge of supernatant high in ammonia from the anaerobic sludge storage basins and filtrate from the sludge drying beds.
4. Construction of a 60 ft. diameter secondary clarifier to improve solids capture rate throughout the year.
5. Addition of a pH-controlled alkalinity dosing station to improve the nitrification process.
6. Addition of powdered activated carbon to remove compounds that are inhibitory to the nitrification process.

-
7. Nitrifier bioaugmentation of the mixed liquor through supernatant recycle from the aerobic digester, especially during the winter.

CVCWA COMMENT #2

CVCWA states that it is inappropriate to conclude that a certain type of facility alone creates reasonable potential. CVCWA requests that the Central Valley Water Board revise the tentative permit to remove references with respect to Step 7 of the SIP [Step 7 – “other information”] and the discussion regarding the facility following the statement. CVCWA states that “reasonable potential here should be based solely on Step 4 and the inclusion of *other information* (emphasis added by staff) is inappropriate.” [Step 4 – maximum effluent concentration is greater than the criteria]

RESPONSE:

Central Valley Water Board staff has amended the tentative and removed references to “Step 7” in the ammonia RPA discussion (see Fact Sheet section IV.C.3.d.i).

CVCWA COMMENT #3

CVCWA states the tentative permit fails to include the dilution credit in setting the chronic toxicity accelerated monitoring trigger. CVCWA recommends that the Central Valley Water Board staff work with the City to determine what is an appropriate dilution credit for chronic toxicity, and include the dilution credit in setting the chronic toxicity monitoring trigger.

RESPONSE:

The Discharger’s whole effluent toxicity testing on the discharge did not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan’s narrative toxicity objective and therefore a mixing zone/dilution credit for the chronic toxicity monitoring trigger is not necessary. The Discharger has not supplied information that would justify applying a dilution credit for the monitoring trigger. (See response to Discharger comment #5)

CHRIS RAINE (DUNSMUIR CITY COUNCIL) COMMENTS

CHRIS RAINE COMMENT #1

Mr. Raine states that Dunsmuir is an economically disadvantaged community. Mr. Raine refers to the City’s WWTP Improvements Preliminary Engineering Report (PER) and highlights a statement from the PER that says if I&I is not addressed on private property, then overall I&I in the collection system will not be significantly reduced. Mr. Raines states that I&I repairs to private sewer laterals will place an economic burden on many households.

RESPONSE:

The compliance schedule for the I&I Reduction Project has been removed from the tentative permit. Please refer to Discharger comment #7.

CHRIS RAINE COMMENT #2

Mr. Raine states that pressure from the Central Valley Water Board in the “form of more stringent regulations as well as increased costs for monitoring purposes is untimely and unaffordable for Dunsmuir.” Mr. Raine respectfully objects to all of the Central Valley Water Board findings in the tentative permit.

RESPONSE:

The cost of compliance has been considered, where appropriate. Central Valley Water Board staff has removed the monitoring requirements proposed in Attachment J (see Discharger comment #6) and made other adjustments to the tentative permit that will result in less costly compliance. The City of Dunsmuir has secured 75% grant funding for its proposed improvement projects.