



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, CA 94105-3901

June 20, 2003

Ms. Celeste Cantú  
Executive Director  
State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812-0100

Dear Ms. Cantú:

Thank you for submitting the Basin Plan Amendments containing total maximum daily loads (TMDLs) for nitrogen compounds and related effects and associated implementation plans for Calleguas Creek, Mugu Lagoon, and several tributaries. The TMDL and implementation plan submittal, which contains portions of the State Board and Regional Board administrative records, was dated June 4, 2003. The State adopted nitrogen compound TMDLs for the following waterbodies:

Arroyo Las Posas R1, R2;  
Arroyo Simi R1, R2;  
Beardsley Channel;  
Revolon Slough;  
Calleguas Creek R1, R2, R3;  
Conejo Creek/Arroyo Conejo North Fork;  
Conejo Creek R1, R2, R3, R4;  
Arroyo Conejo South Branch; and  
Mugu Lagoon.

The State's TMDLs address each of the waters and pollutants identified in Analytical Unit #1 specified in the consent decree in *Heal the Bay v. Browner*.

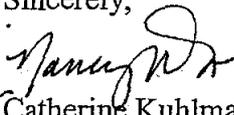
Based on EPA's review of the TMDL submittal under Section 303(d), I have concluded that the TMDLs adequately address the pollutant of concern and, upon implementation, will result in attainment of the water quality standards adopted by the State. These TMDLs include wasteload and load allocations as needed, take into consideration seasonal variations and critical conditions, and provide adequate margins of safety. The State has provided adequate opportunities for public review and comment on the TMDLs and demonstrated how public comments were considered in the final TMDLs. All required elements are adequately addressed; therefore, the TMDLs are hereby approved pursuant to Clean Water Act Section 303(d)(2).

The TMDL submittal also contains a detailed plan for implementing the TMDLs. Current federal regulations do not define TMDLs as containing implementation plans; therefore, EPA is not taking action on the implementation plan provided with the TMDLs. EPA commends the Regional Board's commitment to implement the TMDLs and review the TMDLs and associated data and information in the future.

We would like to continue working with you and the Regional Boards to ensure that future TMDLs are adopted and submitted to EPA on schedule and, in particular, ensure that TMDLs required under the consent decrees are adopted by the State in time to meet the relevant deadlines.

The enclosed review discusses the basis for this decision in greater detail. I appreciate the State and Regional Board's work to adopt these TMDLs and look forward to our continuing partnership in TMDL development. If you have questions concerning this approval, please call me at (415) 972-3435 or David Smith at (415) 972-3416.

Sincerely,

  
for Catherine Kuhlman  
Acting Director  
Water Division

enclosures

cc: Dennis Dickerson

**TMDL Checklist**

State: **California**  
 Waterbodies: **Calleguas Creek, Tributaries and Mugu Lagoon**  
 Pollutant(s): **Ammonia, Oxidized Nitrogen, Algae & Dissolved Oxygen**  
 Date of State Submission: **June 4, 2003**  
 EPA Reviewer: **Cindy Lin & David Smith**

Review Criteria	Comments
<p>1. Submittal Letter: State submittal letter indicates final TMDL(s) for specific water(s)/ pollutant(s) were adopted by state and submitted to EPA for approval under 303(d).</p>	<p>Letter dated June 4, 2003. TMDLs were adopted by the Los Angeles Regional Water Quality Control Board (Regional Board) through Resolution No. 02-017 on October 24, 2002, and approved by the State Water Resources Control Board (State Board) through Resolution No. 2003-0023 on March 19, 2003. The State Office of Administrative Law approved the TMDLs on June 5, 2003.</p> <p>The State adopted nitrogen compounds and related effects TMDLs for each segment in the Calleguas Creek watershed listed on the 1998 Section 303(d) list for ammonia, oxidized nitrogen, algae and dissolved oxygen (Staff TMDL report, pp.37 and letter dated June 4, 2003). EPA found that the TMDLs cover all of the segment-pollutant combinations covered in Analytical Unit #1 specified in the consent decree in <i>Heal the Bay v. Browner</i>.</p> <p>In addition, we note that the TMDL submission identified designated beneficial uses for each of the waters addressed in the TMDLs and indicated that State water quality standards apply to each of them (Staff TMDL Report, Table 3A &amp; 3B, pp. 24-31).</p>
<p>2. Water Quality Standards Attainment: TMDL and associated allocations are set at levels adequate to result in attainment of applicable water quality standards.</p>	<p>The Staff TMDL Report, dated August 30, 2002, and Basin Plan Amendment Summary. The TMDLs are designed to implement the existing numeric and narrative objectives for ammonia, nitrate, dissolved oxygen and algae (Staff TMDL Report, pp. 25). The State interpreted these WQS objectives to include ammonia, nitrate, nitrite+nitrate, algae, and dissolved oxygen, and found that these pollutants cause impairments of designated beneficial uses.</p> <p>The TMDLs focus primarily on nitrogen compounds, but scientific analysis provided in the TMDL report indicates that addressing the nitrogen compounds is expected to result in attainment of objectives relative to dissolved oxygen and algae.</p> <p>The State reasonably concluded that attainment of the specified numeric targets and associated TMDLs, load allocations, and wasteload allocations which call for the effective reduction of targeted pollutant loads, will result in elimination of the adverse effects associated with nitrogen compounds and related effects in the water and bring about</p>

<p><b>3. Numeric Target(s):</b> Submission describes applicable water quality standards, including beneficial uses, applicable numeric and/or narrative criteria. Numeric water quality target(s) for TMDL identified, and adequate basis for target(s) as interpretation of water quality standards is provided.</p>	<p>attainment of the applicable numeric and narrative standards.</p> <p>The Staff TMDL Report dated August 30, 2002, pp. 26-33, and Basin Plan Amendment Summary. TMDLs implement numeric WQS for ammonia and nitrate, and narrative WQS for dissolved oxygen and algae. The Staff TMDL Report analysis concludes that excessive ammonia, nitrate, and nitrite+nitrate and algae loads, and low dissolved oxygen levels can adversely affect beneficial uses including municipal supply, groundwater recharge, recreation and aquatic habitat.</p> <p>Numeric targets are expressed as ammonia, dissolved oxygen, nitrite and nitrate concentrations. Based on evidence reviewed as part of the TMDLs, the Staff TMDL Report concludes that water quality in the vicinity of POTWs exceeds the chronic and acute water quality criteria for ammonia and the nitrate and nitrite standards in the ambient waters of Calleguas Creek (pp. 39). Consequently, to eliminate further adverse effects, the State set an ammonia chronic range from 1.7 mg/L to 3.5 mg/L and an acute range from 3.2 mg/L to 9.5 mg/L depending on location (pp. 42). Targets for oxidized nitrogen are based on the Basin Plan and are set at 10 mg/L for nitrate-N+nitrite-N, 10 mg/L for nitrate-N, and 1 mg/L for nitrite-N (pp. 41). The dissolved oxygen target is an average of 7 mg/L but not less than 5 mg/L.</p> <p>The State concluded that the numeric targets adequately address narrative objectives for biostimulatory substances (i.e., algae). However, these TMDLs establish additional studies to determine if the nitrogen compound numeric targets are able to eliminate related effects impairments, such as algae. If the proposed targets do not eliminate the related effect impairments, the additional studies will support development of a site-specific objective for nitrogen to further address biostimulatory substances (pp. 41)</p> <p>The State's approach is a reasonable and environmentally protective approach for accounting for uncertainty in the relationship between pollutant loading levels and attainment of water quality standards, as required by the CWA Section 303(d)(1)(C), especially in the absence of specific, accurate studies or information which would support establishment of a higher numeric target. The Regional Board TMDL document describes this approach in the numeric target, TMDL, and margin of safety sections (Staff TMDL Report, Section 2).</p>
<p><b>4. Source Analysis:</b> Point, nonpoint, and background sources of pollutants of concern are described, including the magnitude and location of sources. Submittal demonstrates all significant sources have been considered.</p>	<p>Staff TMDL Report, pp. 43. The TMDL analysis considered existing information concerning the sources of nitrogen compounds impairing Calleguas Creek and Mugu Lagoon. Source analysis identifies all potential sources and determined that the principal point sources of nitrogen into Calleguas Creek are discharges from the POTWs in the watershed. The major nonpoint sources of nutrients are runoff from agricultural activities, stormwater and urban surfaces in the watershed (Staff TMDL Report, pp. 43-52). The source analysis provides an effective basis for targeting nitrogen loads in the watershed and appropriate controls to prevent the impairment caused by excessive</p>

	nitrogen compounds in the watershed.
<p>5. Allocations: Submittal identifies appropriate wasteload allocations for point sources and load allocations for nonpoint sources. If no point sources are present, wasteload allocations are zero. If no nonpoint sources are present, load allocations are zero.</p>	<p>Staff TMDL Report, pp. 61-64 and Basin Plan Amendment Summary. The TMDLs include both specific wasteload allocations and general load allocations. The TMDLs and associated wasteload and load allocations are expressed in terms of concentrations of different nitrogen compounds. This approach is appropriate for the pollutants of concern because it is sensitive to the variability in ammonia and nutrient loading and potential for short term adverse beneficial effects associated with exposure to high ammonia concentrations in the receiving waters. This approach is consistent with the TMDL definition at 40 CFR 130.2(I), which provides that TMDLs are to be expressed as "mass loads per time, toxicity, or other appropriate measure."</p> <p><u>Wasteload Allocations</u></p> <p>The Basin Plan Amendment includes concentration based waste load allocations for 4 nitrogen compounds for each of 6 POTWs regulated under NPDES permits:</p> <ul style="list-style-type: none"> <li>• Hill Canyon WWTP</li> <li>• Simi Valley WQCP</li> <li>• Moorpark WWTP</li> <li>• Camarillo WRP</li> <li>• Camrosa WWTP</li> <li>• Olsen Rd. WRP</li> </ul> <p>The POTWs have been identified as the major sources of nitrogen compounds in the Calleguas Creek Watershed. The ammonia allocations are based on the average monthly effluent limit as calculated in accordance with Resolution 01-011. The State adopted wasteload allocations for all six POTWs in the watershed (Staff TMDL Report, Table 18 &amp; 19). This approach is permissible because the State found evidence that significant levels of nitrogen compounds are discharged into waters which flow to the segments for which TMDLs are adopted.</p> <p>The TMDLs include no wasteload allocations for nitrogen compound discharges from any stormwater, CalTrans, construction site, or industrial sources regulated under NPDES permits. These sources are characterized in the TMDL report as insignificant nitrogen sources.</p> <p><u>Load Allocations</u></p> <p>The Basin Plan Amendment containing the TMDL decisions includes a table describing the elements of the adopted TMDLs (Table 7-7.1). The Staff TMDL Report shows that agricultural discharge is a significant non-point source of oxidized nitrogen to Calleguas Creek and its tributaries. The concentration based load allocations for nitrate-N + nitrite-N are established for agriculture and other non-point sources (Table 20). Although additional monitoring is needed to refine the estimates of ammonia and oxidized nitrogen contributions, current</p>

	<p>estimates are sufficient to address the non-point source loads. If future monitoring data show loads are greater than assumed, than BMPs may be required to address dry weather runoff from urban areas, such as runoff from fertilizers from lawns (pp. 64).</p> <p>Based on the information in the Staff TMDL Report, Basin Plan Amendment, and the letter of June 4, 2003, EPA concludes that the TMDLs include as appropriate wasteload and load allocations which are consistent with the TMDLs and with the provisions of the Clean Water Act and federal regulations. The State's TMDL document acknowledges the presence of excessive ammonia and oxidized nitrogen loads from both point and non-point sources. TMDL is defined in the federal regulation as the sum of all wasteload allocations for point sources and load allocations for nonpoint sources and natural background (40 CFR 130.2(i)). The State's TMDLs focus permissibly, and in EPA's view properly, on point source loadings of ammonia and oxidized nitrogen from six POTWs, and nonpoint source loadings of oxidized nitrogen from agricultural activities.</p>
<p><b>6. Link Between Numeric Target(s) and Pollutant(s) of Concern:</b> Submittal describes relationship between numeric target(s) and identified pollutant sources. For each pollutant, describes analytical basis for conclusion that sum of wasteload allocations, load allocations, and margin of safety does not exceed the loading capacity of the receiving water(s).</p>	<p>Staff TMDL Report, pp. 52. The State provided adequate linkage between nitrogen sources and the in-stream water quality by employing a one dimensional, steady state, mass balance based model that is based on a detailed evaluation of recent hydrodynamic and water quality data. The model is conservative because it accounts for point and nonpoint sources during dry weather conditions when effluent discharges and agricultural drainage provide most of the stream flow. The model defines the storm flow conditions and adequately accounts for critical conditions (i.e., dry weather months) and allows estimation of an implicit margin of safety associated with loading under critical conditions (Staff TMDL Report, pp. 55). Also, the model was calibrated against critical conditions and monitoring data to verify its range of accuracy (Response to Comments, pp.3, October 18, 2002).</p> <p>EPA concludes the analysis sufficiently describes the link between numeric targets and the pollutant sources in Calleguas Creek and its tributaries.</p>
<p><b>7. Margin of Safety:</b> Submission describes explicit and/or implicit margin of safety for each pollutant.</p>	<p>Staff TMDL Report, pp. 65. The TMDLs include an implicit and explicit margin of safety. The implicit margin of safety is included in the model through conservative model assumptions and statistical analysis (e.g., based on critical conditions of low assimilative capacity). An explicit margin of safety is incorporated by reserving 10% of the load for uncertainty circumstances.</p> <p>EPA considers this a permissible and appropriate way of dealing with uncertainty concerning the relationships between WLAs and water quality.</p>
<p><b>8. Seasonal Variations and Critical Conditions:</b> Submission describes method for accounting for seasonal variations and critical</p>	<p>Staff TMDL Report, pp. 65. Seasonal variations and critical conditions are described and included in primary analysis of the model and impairment assessment for ammonia and oxidized nitrogen compounds (see Source Assessment and Linkage Analysis sections). The TMDLs adequately account for the seasonal variations and critical conditions by</p>

conditions in the TMDL(s)	examining the existing flow record and water quality data. Since POTW effluent comprises most of the flow and is the greatest source of nitrogen loadings during low flow periods, the analysis sufficiently included these situations in the analysis and margin of safety.
<p><b>9. Public Participation:</b> Submission documents provision of public notice and public comment opportunity; and explains how public comments were considered in the final TMDL(s).</p>	<p><u>Regional Board Documents:</u> Regional Board Resolution 02-017, October 24, 2002; Notice of public hearing published on September 17, 2001 to discuss chloride and nutrient TMDLs for the Calleguas Creek Watershed on October 01, 2001. A public CEQA scoping meeting was held on September 17, 2002 to receive comments on nitrogen compounds and related effects TMDLs in Calleguas Creek, its tributaries and Mugu Lagoon. A stakeholder meeting was held on October 16, 2002. On August 30, 2002, the Regional Board held a public hearing at which public comments were invited concerning the TMDLs. Summary of responses to public comments by Regional Board on October 18, 2002.</p> <p>Two public meetings and one stakeholder meeting with individual stakeholders and agencies were held.</p> <p><u>State Board documents:</u> State Board Resolution 2003-0023, March 19, 2003. SWRCB workshop on March 4, 2003. Transcript of March 4, 2003 Workshop available. Public Hearing on March 19, 2003, with agenda item and transcript available on SWRCB website.</p> <p>The Regional Board and State Board both provided public notice and opportunities to comment on the TMDLs through mailings to the Basin Plan mailing lists, by holding many public meetings, and by hearing the public comments at these meetings regarding the TMDLs. Several public comments were received in writing and in oral testimony. The State demonstrated how it considered these comments in its final decision by providing reasonably detailed responsiveness summaries, which include responses to each comment.</p>
<p><b>10. Technical Analysis:</b> Submission provides appropriate level of technical analysis supporting TMDL elements.</p>	<p>The TMDL analysis provides a thorough review and summary of available information about nitrogen loadings and related effects in the specific areas of concern. We conclude the State was reasonably diligent in its technical analysis of ammonia and oxidized nitrogen loadings in the watershed and its analysis of viable approaches for setting protective nitrogen compounds and related effects TMDLs. Neither the State nor public commenters identified research nor study results which provided an analytical basis for setting the TMDLs at levels different than identified at this time.</p>
<p><b>Note:</b></p> <p>The following criteria do not apply to all TMDLs, but must be applied in the situations noted.</p>	
<p><b>11. Monitoring Plan for TMDLs Under Phased Approach (where phased</b></p>	<p>Interim effluent limits are set and based on POTW performance. Development of a monitoring program is included to assess compliance with the targets identified in this TMDL document. Data will be</p>

<p>approach is used):</p> <p>TMDLs developed under phased approach identify implementation actions, monitoring plan and schedule for considering revisions to TMDL.</p>	<p>reviewed 3 years after the effective date of the TMDLs to evaluate the effectiveness of the TMDLs and to determine if revisions of WLAs or additional load allocations are required.</p> <p>Additional monitoring studies will collect information on algal biomass and the presence of scum and odors throughout the watershed and in Mugu Lagoon. Source estimates from minor point source discharges and dry and wet-weather flows from non point sources will be refined.</p> <p>Special studies for minor sources, greenhouse gases and groundwater loadings, and the Water Effect Ratio are also set to be completed 3 years after the effective date of the TMDLs.</p>
<p><b>12. Reasonable Assurances (for waters affected by both point and nonpoint sources):</b> Where point source(s) receive less stringent wasteload allocations because nonpoint source reductions are expected and reflected in load allocations, implementation plan provides reasonable assurances that nonpoint implementation actions are sufficient to result in attainment of load allocations in a reasonable period of time. Reasonable assurances may be provided through use of regulatory, non-regulatory, or incentive based implementation mechanisms as appropriate.</p>	<p>This provision is not applicable because there are no point sources which receive less stringent wasteload allocations based on expected nonpoint source reductions.</p>