



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

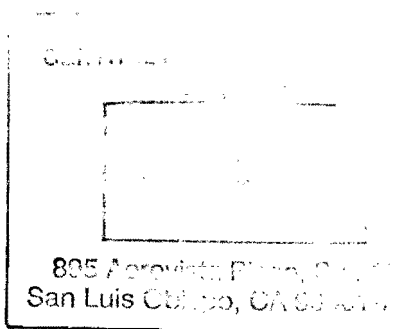
REGION IX

75 Hawthorne Street  
San Francisco, CA 94105-3901

file: TMDL

July 16, 2007

Roger Briggs  
Executive Officer  
Central Coast Regional Water Quality Control Board  
895 Aerovista Place, Suite 101  
San Luis Obispo, CA 93401



Dear Mr. Briggs:

Thank you for submitting total maximum daily loads (TMDLs) to address nutrients and dissolved oxygen in Chorro Creek. The TMDLs were submitted and received by EPA on September, 15 2006, supplemental information was provided on July 16, 2007. The State of California adopted the TMDLs to address nutrients and dissolved oxygen in Chorro Creek as identified on the State's 2004-06 Clean Water Act (CWA) Section 303(d) list.

Based on EPA's review, I have concluded the TMDLs adequately address the pollutants of concern and, upon implementation, will result in attainment of applicable water quality standards. The TMDLs include waste load allocations and load allocations as needed, take into consideration seasonal variations and critical conditions, and provide an adequate margin of safety. The State provided adequate opportunities for the public to review and comment on the TMDLs. All required elements are adequately addressed; therefore, the TMDLs are hereby approved pursuant to Clean Water Act Section 303(d)(2).

The State's 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 plans or compliance schedules provided with the TMDLs. EPA generally concurs with the State's proposed implementation approaches. If the Regional Board contemplates including schedules of compliance in NPDES permits, it can only do so if they are consistent with a compliance schedule-authorizing provision that has been submitted to EPA under CWA Section 303(c) and approved by EPA.

The enclosed review discusses the basis for this approval decision. We appreciate the State and Regional Boards' work to complete and adopt the TMDLs and we look forward to our continuing partnership in TMDL development. If you have questions concerning this approval, please call me at (415) 972-3572 or Lynn Suer at (415) 972-3148.

Sincerely yours,

*Alexis Strauss 18 July 2007*

Alexis Strauss  
Director, Water Division

Enclosure

## TMDL Review Checklist

**State:** California

**Waterbodies:** Chorro Creek

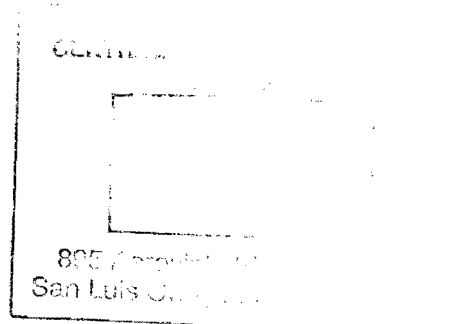
**Pollutant(s):** Nutrients, Dissolved Oxygen

**Date of Initial Submission:** September 25, 2006

**Date Received By EPA:** September 25, 2006

**Dates of Supplemental Submission(s) and Receipt by EPA:** July 16, 2007

**EPA Reviewer:** Peter Kozelka



### 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). Acknowledge if any supplemental material was provided and receipt date.*

TMDL Submittal letter dated September 25, 2006. The Central Coast Regional Water Quality Control Board (Regional Board) adopted the TMDLs on July 7, 2006 under Resolution No. RB3-2006-0044. (Approval by SWRCB and OAL was not required as part of state approval process.) The TMDL submittal addresses impairments in Chorro Creek due to elevated nutrients and low dissolved oxygen as identified on the State's 2006 303(d) List. The submittal contained the Central Coast Regional Board resolution and Final Project Report (TMDL Report) which described the TMDL elements. Supplemental information was provided by Regional Board to EPA to clarify certain aspects of the TMDL submittal (email from Chris Rose dated July 16, 2007).

EPA finds the State's analysis concerning water body impairment associated with nutrients and factors causing low dissolved oxygen in Chorro Creek watershed is reasonable and consistent with the requirements of Section 303(d).

### 2. TMDLs Included:

*The submittal clearly identifies the water segments and pollutants or stressors for which TMDLs were developed. The submittal should include the water segment identifier (e.g., NHD code) for each segment addressed. The submittal should clearly identify the TMDLs adopted for currently 303(d) listed waterbody-pollutant combinations. It should also clarify if TMDLs were adopted for new impairment findings (by waterbody-pollutant combinations) that do not exist on the current 303(d) list. If appropriate, the submittal should describe any assessment decisions that may have resulted in non-impairment status for water/pollutant combinations that exist on State's most current 303(d) list.*

(Resolution, p. 1)

These TMDLs address nutrients and dissolved oxygen and are set at levels necessary to attain and maintain the applicable water quality standards. TMDLs were adopted for the following impaired segments identified on the State's 2006 303d list: Chorro Creek –nutrients and dissolved oxygen.

**3. Water Quality Standards Attainment:** *TMDL and associated allocations are set at levels adequate to result in attainment of applicable water quality standards.*

(Resolution, p. 1)

The TMDLs are designed to implement existing water quality objectives that are identified in the Basin Plan. There is a numeric objective for dissolved oxygen, whereas for nutrients there are numeric objectives for nitrate to protect freshwaters designated for municipal drinking water supplies. There is also a narrative objective for biostimulatory substances (i.e., nutrients) to address excess aquatic plant growth that "cause nuisance or adversely affects beneficial uses." These objectives will protect the applicable beneficial uses, including municipal and domestic water supply (MUN) and warm water habitat (WARM) and cold water habitat (COLD) in the Chorro Creek watershed. The submittal describes the impairment of the biostimulatory objective occurs in the lower reaches of Chorro Creek, downstream from Canet Road.

The State reasonably concluded that implementation of the TMDLs, load allocations, and waste load allocations will result in elimination of the adverse effects associated with elevated nutrients and low dissolved oxygen and bring about attainment of the applicable water quality standards.

**4. Numeric Target(s):** *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.*

(Resolution, p. 1; Staff Report pp. 8-20)

The TMDLs establish multi-part numeric water quality targets, which are specific to the impairments and applicable beneficial uses described in item 3 above. The dissolved oxygen numeric target is consistent with the Basin Plan water quality objectives for COLD beneficial use, since these are more stringent than WARM. This includes a minimum objective (7 mg/L) and daily median value (>85% saturation). The numeric targets for biostimulatory substances is the combination of a numeric target for dissolved oxygen and a numeric value for benthic algae expressed as aerial cover of less than 40%, as a monthly median from May through September, measured at mid-channel stream with continuous flow.

EPA concludes the State's approach to developing these TMDLs upon the existing numeric water quality objectives and interpretation of narrative water quality objectives for beneficial uses in these waters is reasonable, environmentally protective, and consistent with existing standards.

**5. Source Analysis:** *Point, non-point, and background sources of pollutants of concern are described, including the magnitude and location of sources. Submittal demonstrates all significant sources have been considered. Point, nonpoint, and background sources of pollutants of concern are described, including the magnitude and location of sources. The submittal demonstrates all significant sources have been considered.*

(Resolution, p. 1; Staff Report pp. 12-32)

The TMDL submittal conducted an assessment of all readily available data and information concerning the sources of nutrients and oxygen. The primary point source is discharge from the California Men's Colony, wastewater treatment plant. Non-point sources include run-off from agricultural and undeveloped lands in the surrounding watershed.

The TMDL submittal adequately considered all significant sources of nutrients and related causative agents of low dissolved oxygen in the Chorro Creek watershed.

**6. Loading Capacity Linkage Analysis:** *Submittal describes relationship between numeric target(s) and identified pollutant sources. Submittal clearly identifies loading capacity. For each pollutant, describes analytical basis for conclusion that sum of allocations and margin of safety does not exceed the loading capacity of the receiving water(s).*

(Staff Report, pp. 31-33)

The TMDL submittal describes a clear linkage between pollutant sources (both point and non-point sources) and ambient stream water quality in Chorro Creek. Low dissolved oxygen is related to the imbalance of oxygen input as well as oxygen demand based on presence of other parameters. Causes of low dissolved oxygen are: lack of turbulent flow thereby minimizing oxygen re-aeration, reduced oxygen solubility due to elevated total salts (TDS and sodium), elevated stream temperatures and lack of riparian shading, and presence of benthic algae. Causes of excessive algae are: elevated nutrient levels, lack of scouring due to elevated stream flow during algal growing season, increased stream temperatures, and excessive light availability due to lack of riparian canopy (shading) in lower reaches of the creek. When shading is less than 70%, the in-stream algal cover exceeds 40%.

The State's analysis sufficiently describes the link between the numeric targets and the pollutant sources in the Chorro Creek watershed.

#### **7. TMDL and Allocations:**

*TMDL—Submittal identifies the total allowable load, which is set equal to or less than the loading capacity. TMDL is expressed in terms of mass-based, concentration-based or other equivalent approaches that are consistent with federal requirements. If TMDL has seasonal features then please describe. TMDLs and allocations should be expressed in terms of daily time steps. If the TMDL and/or allocations are also expressed in terms other than mass loads per day, the submittal explains why it is reasonable and appropriate to express the TMDL in those terms.*

*Allocations—Submittal identifies appropriate waste load allocations for all point sources and load allocations for all non-point sources. Allocations are expressed in terms of mass-based, concentration-based or other equivalent approaches, the submittal explains why it is reasonable and appropriate to express in those terms. If point sources are present, submittal identifies existing NPDES permits by name and number. More discussion of point sources in watershed. If no point sources are present, waste load allocations are zero. More discussion of non-point sources. If no non-point sources are present, then load allocations are zero.*

(Basin Plan Amendment Resolution, p. 2; Staff Report pp. 31-36)

The TMDL or loading capacity for these waters is defined as concentration-based criteria, which are equivalent to the numeric targets for dissolved oxygen, sodium, TDS and water temperature.

The biostimulatory substances TMDLs are defined for nutrients (rolling median value for N and P from May through September) and related constituents: Nitrate-nitrogen shall not exceed 1.5 mg/L; ortho-phosphorus shall not exceed 0.4 mg/L; no increase in receiving water temperatures by more than 5 degrees Fahrenheit, median shading shall not fall below 70% along Chorro Creek downstream from Canet Road. Also, the benthic algae shall not exceed median aerial cover of 40% from the months of May through September downstream from Canet Road.

The nutrients and dissolved oxygen TMDLs are defined on daily basis, although monitoring and implementation may occur at different durations.

#### **Waste Load Allocations (WLAs)**

TMDL submittal identifies one point source in the watershed, California Men's Colony Wastewater Treatment Plant (NPDES # CA 0047856). Waste load allocations for this point source are expressed as concentration-based values. The dissolved oxygen related WLAs are equivalent to the TMDL values described for sodium, total dissolved solids, and receiving water temperature as described above. The

biostimulatory related WLAs are: median ortho-phosphorus concentrations shall not exceed current levels (approx. 0.4 mg/L as measured by comparison to effluent levels in 2005 and 2005) and monthly maximum nitrate-nitrogen concentrations shall not exceed 10 mg/L. (Note: The submittal acknowledges the CMC facility is scheduled for an upgrade/improvement in nutrient removal processes and this is expected to result in single digit nitrate-nitrogen conc. and ten-fold lower conc. of phosphorus discharges. The Regional Board confirmed the CMC upgrade installation occurred on May 30, 2007. See supplemental information.)

#### **Load Allocations (LAs)**

TMDL submittal identifies load allocations for land owners along Chorro Creek downstream of Canet Road: median stream shading shall not fall below 70%. The submittal does not explicitly define load allocations for nitrogen and phosphorus discharges from other non-point sources; e.g., agricultural runoff and natural sources (open space and undeveloped forest land); however it does summarize existing monitoring results (approx. 300 data points) for upstream watersheds and implies the existing nitrogen and phosphorus loads are minimal and likely to decline upon additional agricultural activities regulated through the State's Ag Waiver program. See discussion in supplemental information.

Based on the information in the Basin Plan Amendment and the attachment, EPA concludes the State's approach of setting TMDLs and allocations on a concentration basis is appropriate for the water and pollutants of concern and consistent with the provisions of CWA and federal regulations. See 40 CFR 130.2(i). These allocations are suitable for daily load evaluations.

#### **8. Margin of Safety:** *Submission describes explicit and/or implicit margin of safety for each pollutant.*

(Basin Plan Amendment Resolution, p.2; Staff Report, p. 36)

The TMDL submittal utilizes the existing water quality standards and an implicit margin of safety. The TMDLs for nitrate-nitrogen and shade are based on local information and thus also presumed to be more conservative and therefore provide an implicit margin of safety.

EPA considers this a permissible and appropriate way of dealing with uncertainties in addressing water quality in Chorro Creek.

#### **9. Seasonal Variations and Critical Conditions:** *Submission describes method for accounting for seasonal variations and critical conditions in the TMDL(s).*

(Basin Plan Amendment Resolution, p. 2; Staff Report, p. 33)

The submittal identifies that the TMDLs and allocations apply year round to the CMC plant discharge, although the critical condition is late summer when little or no natural flow is present in waters upstream of the CMC discharge point. The critical season is established as May through September when shading should be equal to or more than 70%.

The State's analysis adequately accounts for the seasonal variations and critical conditions by establishing TMDLs and allocations that vary in response to differences in flow conditions.

#### **10. Public Participation:** *Submittal documents include provision of public notice and public comment opportunity; and explain how public comments were considered in the final TMDL(s).*

The Regional Board provided adequate opportunities for public comment on the TMDLs through direct mailings, public meetings, and formal hearings. 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.

The Regional Board held three public meetings in 2000 and 2001. Another meeting (March 2006) was held with CMC representatives. In April 2006, the Regional Board sent notification of public hearing to stakeholder; the hearing was held on July 7, 2006.

The State demonstrated how it provided sufficient opportunities for public comment.

**11. Technical Analysis:** *Submission provides appropriate level of technical analysis supporting TMDL elements.*

The TMDL analysis provides a thorough review and summary of available information concerning nutrient and dissolved oxygen impairments in the Chorro Creek watershed.

EPA concludes the State was reasonably diligent and appropriate in its technical analysis of nutrients and related constituents contributing to impairments in Chorro Creek.

**12. Reasonable Assurances:** *[may require EPA review] If wasteload allocations are made less stringent based on inclusion of load allocations that reflect nonpoint source reductions, submission describes how there are reasonable assurances necessary nonpoint source reductions will occur.*

NOT APPLICABLE

**13. Other:** *Table for clarifying submittal for TMDL waterbody-combinations for corresponding 303(d) listing, new impairment findings or non-impairment findings.*

| <b>TMDLS for 303d list</b>       | <b>Listed Year</b> |
|----------------------------------|--------------------|
| Chorro Creek - nutrient          | 2002               |
| Chorro Creek – dissolved oxygen  | 2006               |
|                                  |                    |
| <b>TMDLS for new impairments</b> | N/A                |
|                                  |                    |