



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

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STATE WATER RESOURCES CONTROL BOARD
STATE OF CALIFORNIA
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION IX

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Dorothy Rice
Executive Director
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100

Dear Ms. Rice,

Thank you for the submittal of the total maximum daily loads (TMDLs) for metals and selenium in the Calleguas Creek watershed and for bacterial indicators for Ballona Creek watershed. The two submittals were dated January 8, 2007. Supplemental information regarding the State's Office of Administrative Law approvals of the TMDLs was received on February 6, 2007 for Calleguas Creek and on February 20, 2007 for Ballona Creek. The State adopted TMDLs for the following waterbodies:

- Lower Calleguas Creek – total copper, total mercury, total zinc;
- Revolon Slough – dissolved copper;
- Mugu Lagoon – total selenium;
- Ballona Creek, Ballona estuary, Sepulveda Channel – bacterial indicators.

Based on EPA's review of the TMDL submittal under Section 303(d), I have concluded that the TMDLs adequately addresses the pollutants of concern and, upon implementation, will result in attainment of the water quality standards adopted by the State. The TMDLs include waste load and load allocations as needed, take into consideration seasonal variations and critical conditions, and provides an adequate margin of safety. The State has provided sufficient 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 State's submittals also contain a detailed plan for implementing these 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. However, EPA generally concurs with the State's proposed implementation approaches.

This letter does not respond to the letter from Tom Howard of January 22, 2007 requesting approval of certain provisions of the TMDLs' program of implementation regarding compliance schedules pursuant to Clean Water Act 303(c). EPA will respond to that letter separately.

We plan to continue working with you and the Regional Boards to ensure that future TMDLs are adopted, and assist in any useful and supportive capacity required during the TMDL development and implementation phase.

The enclosed reviews discuss the basis for these decisions in greater detail. I appreciate the State and Regional Board's work to complete and 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 Peter Kozelka at (415) 972-3448.

Sincerely,

 26 Mar. 2007
Alexis Strauss, Director
Water Division

Enclosure

cc: Jon Bishop, Los Angeles RWQCB

**Enclosure: Staff Analysis of TMDL Submittals for
Metals in Calleguas Creek, its Tributaries and Mugu Lagoon
And
Bacterial Indicators in Ballona Creek, Ballona Estuary and Sepulveda Channel**

March 23, 2007

Introduction

The State of California adopted TMDLs to address water body impairments in multiple segments of the Calleguas Creek watershed and the Ballona Creek watershed. The Calleguas Creek Amendments include all metals and selenium TMDLs required for Calleguas Creek, Revolon Slough and Mugu Lagoon. The Ballona Creek Amendments include bacterial indicator TMDLs for Ballona Creek, Ballona Estuary and Sepulveda Channel.

EPA reviewed the submittals to ensure that all TMDL elements required by the Clean Water Act Section 303(d) and associated federal regulations in 40 CFR 130.2 and 130.7 were adequately addressed. EPA Region 9 reviews of State TMDL submittals are organized in a checklist form. This document includes separate checklists for each TMDL and Basin Plan Amendment that briefly discusses the State's approaches to meeting TMDL requirements as documented in the submittals. EPA has determined that the State-adopted TMDLs meet all federal approval requirements.

By approving these TMDL submittals, EPA is in compliance with the TMDL completion requirements for these waters and pollutants established in a 1999 federal consent decree pursuant to the *Heal the Bay, v. Browner* litigation. This consent decree requires completion of TMDLs for many watersheds in the Los Angeles region in accordance with a specific time schedule. The consent decree schedule, as amended in a 2005 agreement between U.S. EPA and the plaintiffs, requires completion of required metals and selenium TMDLs in Calleguas Creek watershed and bacterial indicator TMDLs in Ballona Creek watershed by March 26, 2007.

As described below, the State of California determined that some Calleguas Creek waters identified in the consent decree do not require TMDL development because available data and information indicate that these waters are not water quality limited pursuant to Section 303(d). (For the Ballona Creek watershed, the State did not include findings that some waters were not impaired and therefore TMDLs were developed for waters identified on the State's 303(d) list.) Pursuant to the provisions of paragraph 8 of the consent decree, TMDLs are not required to be completed for water body-pollutant combinations identified in the consent decree if the State or EPA determine, consistent with the requirements of Section 303(d), that the water body-pollutant combinations are not water quality limited. The State of California has determined that several water body-pollutant combinations in the Calleguas Creek watershed do not require TMDL development. Several of these combinations were removed from the Section 303(d) list during the 2002 revisions to California's Section 303(d) list and are not addressed in

TMDL Review Checklist

State: California

Waterbodies: Calleguas Creek, its Tributaries and Mugu Lagoon

Pollutant(s): Metals (Hg, Cu, Ni, Zn, Se)

Date of Initial Submission: January 8, 2007

Date Received By EPA: January 18, 2007

Dates of Supplemental Submission(s) and Receipt by EPA: February 6, 2007

EPA Reviewer: Cindy Lin

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 January 18, 2007; supplemental submission dated February 6, 2007.

The Los Angeles Regional Water Quality Control Board (Regional Board) adopted the TMDLs on June 8, 2006 through Resolution No. R4-2006-012. The State Water Resources Control Board (State Board) approved the Basin Plan Amendment through Resolution No. 2006-0078 on October 25, 2006. The State Office of Administrative Law approved the TMDLs on February 6, 2007 (OAL file No. 06-1222-01 S). The submittal addresses three impaired water bodies in Calleguas Creek watershed that were identified on the State's 2002 303(d) list for high mercury, copper, nickel, zinc and selenium concentrations.

EPA finds the State's analysis concerning water body impairment associated with metals in the 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.

(March 29, 2006 TMDL Staff Technical Report [Staff Report], p. 13-16; Basin Plan Amendment, p. 2) These TMDLs address water body-pollutant combinations identified in Analytical Unit # 6 of the *Heal the Bay* consent decree. TMDLs were adopted for all of the following segments identified on the 2002 303(d) list, except for Zinc (see below for explanation):

Mugu Lagoon—Total Copper, Total Mercury, Total Nickel, Total Zinc

Lower Calleguas Creek—Dissolved Copper

Revolon Slough—Total Selenium

(Staff Report, pp. 37-43 and Basin Plan Amendment A Resolution, pp. 2-4.)

The TMDLs establish four types of numeric targets: (1) California Toxics Rule (CTR) criteria in dissolved fraction for copper, nickel, and zinc, and in total recoverable form for mercury and selenium; (2) fish tissue targets for mercury (based on methodology developed by the US Fish and Wildlife Service (USFWS)); (3) bird egg targets for mercury and selenium; and (4) sediment quality guidelines for copper, nickel, and zinc for 303(d) listed reaches. The attainment of sediment quality targets will be evaluated in combination with sediment toxicity data, if available.

Water Quality

The CTR aquatic life criteria for water are selected as numeric targets for protection of freshwater and marine life from aquatic toxicity for dissolved copper, nickel and zinc; and for total mercury and selenium. Separate targets are established for dry-weather and wet-weather conditions. The 4-day average chronic criterion (Criterion Continuous Concentration, or CCC) and 1-hour average acute criterion (Criterion Maximum Concentration, or CMC) for each constituent are included as targets for the TMDLs. CTR aquatic life criteria are not developed for mercury, so 30-day average CTR human health criteria (organisms only) are applied instead.

The CTR defines numeric criteria for copper, nickel and zinc expressed as dissolved metal concentrations, which are hardness-dependent. CTR also provides metal-specific conversion factors for translating dissolved metal values into total metals concentrations. Through its use of these conversion factors, the State demonstrates how TMDLs expressed in terms of total recoverable metals will be sufficient to result in attainment of water quality criteria expressed in terms of dissolved metals.

The CTR criteria for mercury and selenium are expressed in terms of total (unfiltered) mercury and total (unfiltered) selenium and are not hardness-dependent. The mercury and selenium criterion were applied directly as the basis for the mercury and selenium TMDLs.

Fish Tissue & Bird Egg

Fish tissue targets are established to protect humans and wildlife from consumption of fish and other aquatic organisms contaminated by mercury. The TMDLs include a USEPA adopted methylmercury target (0.3 mg/kg) to account for the fact that nearly 90-95% of mercury accumulates in fish tissue in the form of methylmercury; EPA determined it is more appropriate to base the methylmercury criterion on a fish tissue residue concentration than on an ambient water concentration (Staff Report, pp. 41). However, both fish tissue and water criterion are included to provide conservative measures of protection. In addition, three sizes of trophic level-3 fish tissue targets are included for protection of wildlife (based on the US Fish & Wildlife Service methodology that developed numeric targets for the San Francisco Bay Mercury TMDLs and the Guadalupe River Watershed Mercury TMDLs); these targets provide protection of coastal or semi-coastal habitats in California with sensitive species. Finally, bird egg targets are appropriately established to protect species higher up on the food web; since mercury and selenium are known to cause reproductive failure and other developmental effects, bird egg concentration targets are one of the most direct means by which to measure impacts.

Sediment

Alternative numeric targets for copper and nickel in sediment have been designated as triggers for sediment toxicity testing in Mugu Lagoon. The effects range-low values (ERLs, published by the National Oceanic and Atmospheric Administration (NOAA)), combined with evidence of sediment toxicity due to metals, were chosen as the sediment targets and are in place to protect benthic organisms from sediment toxicity due to metals.

EPA concludes the State's approach to calculating the numeric targets using CTR-based procedures is

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 preferably be expressed in terms of daily time steps. If the TMDL and/or allocations are also expressed in terms other than mass loads, 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.

(Staff Report, p. 132-164 and Basin Plan Amendment Resolution, pp. 4-11.)

The TMDLs include both waste load allocations for point sources and load allocations for non point sources. Metals and selenium loadings to Calleguas Creek, its tributaries, and Mugu Lagoon vary depending on the hydrologic conditions that occur in the watershed. Separate dry weather and wet weather allocations are identified for different pollutants in different locations. The loads for copper and nickel are calculated based on dissolved water column targets; however, total allocations are developed to address the potential for conversion of total metals present in discharges into dissolved metals in the receiving water (this is achieved by using partition coefficients from the HSPF model) (Staff Report, p. 134). Selenium targets and allocations are both for total selenium; the same approach is used for copper and nickel, except a translator is not necessary. The approach for developing mercury allocations is based on a reduction in loading of mercury on suspended sediment, based upon percent reductions required to achieve numeric target concentrations for water and fish tissue. To translate required reductions in fish tissue and water column concentrations into suspended sediment mercury load reductions, it is assumed that a given percent reduction in water or fish tissue concentration results in a proportional percent reduction in suspended sediment mercury loads (Staff Report, p. 157).

Waste Load Allocations

Waste load allocations (WLAs) for copper, nickel and selenium were developed for both wet and dry weather. A plot of in-stream flow duration curves, generated by an HSPF model, showed a "knee" point which corresponded to precipitation driven runoff representing an estimate of the maximum non-storm flow rates. Consequently, dry weather allocations apply to days when flows are below the 86th percentile flow rate. Wet weather allocations apply to days when flows are above the 86th percentile flow rate.

Concentration-based and mass-based WLAs are established for copper and nickel in total recoverable forms, and are applied to POTWs during both wet and dry weather. Mass-based WLAs are developed for mercury for POTWs. Zinc allocations are not set because current information indicate that numeric targets for zinc are achieved. Since POTWs do not discharge to reaches listed for selenium, WLAs are not set for selenium. Individual waste load allocations are provided for each POTW. These include:
Camarillo WRP, NPDES No. CA0053597
Simi Valley WWTP, NPDES No. CA004002
Hill Canyon WWTP, NPDES No. CA0056294

The stormwater dischargers are considered as one source and will receive one WLA. Separate waste load allocations are specified for municipal, industrial, CalTrans, and construction sources.

The POTW WLAs for mercury are based on the median monthly mercury effluent concentrations multiplied by the design flow (low, medium, high) where the total load in water is assumed equal to the

The Regional and State Boards provided public notice and opportunities to comment on the TMDLs through 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, which include responses to each comment.

Numerous public meetings were held to discuss the Calleguas Creek, its tributaries and Mugu Lagoon metals and selenium TMDLs. The Regional Board held monthly meetings with public stakeholders from January 2005 to January 2006 to evaluate the progress of the TMDLs. In addition, Regional Board staff provided updates at the public meetings held by the Calleguas Creek Watershed Management Group in Ventura County. On January 26, 2006, the Regional Board held a CEQA scoping meeting. The Regional Board held a public hearing on June 8, 2006. The State Board also public noticed and subsequently received testimony on the TMDLs at a public hearing held on October 25, 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 metals and selenium impairments in the Calleguas Creek, its tributaries and Mugu Lagoon. EPA concludes the State was reasonably diligent and appropriate in its technical analysis of metals and selenium in the Calleguas Creek watershed.

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

NOT APPLICABLE

TMDL Review Checklist

State: California

Waterbodies: Ballona Creek, Ballona Estuary, Sepulveda Channel

Pollutant(s): Bacterial indicators

Date of Initial Submission: January 8, 2007

Date Received By EPA: January 18, 2007

Dates of Supplemental Submission(s) and Receipt by EPA: February 20, 2007

EPA Reviewer: Peter Kozelka

1. Submittal Letter: January 18, 2007

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 January 8, 2007; supplemental submittal dated February 20, 2007.

The Los Angeles Regional Water Quality Control Board (Regional Board) adopted the TMDLs on June 8, 2006 under Resolution No. R4-2006-011. The State Water Resources Control Board (State Board) approved the Basin Plan Amendment on November 15, 2006 under Resolution No. 2006-0092. The State Office of Administrative Law approved the TMDLs on February 20, 2007 (OAL file No. 07-0105-01 S). The submittal addresses three impaired segments within the Ballona Creek watershed that were identified on the State's 2002 303(d) list for high coliform count.

EPA finds the State's analysis concerning water body impairment associated with bacteria in Ballona 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.

(TMDL [Staff] Report, p. 13-16; Basin Plan Amendment, p. 2)

These TMDLs address water body-pollutant combinations identified in Analytical Units # 48 and 49 of the *Heal the Bay* consent decree. The TMDL addresses bacterial indicators, which are technically similar to high coliform counts as identified on the 2002 303(d) list. TMDLs were adopted for the following impaired segments identified on the state's 2002 303(d) list: Ballona Creek, Ballona Estuary and Sepulveda Channel.

Ballona Creek and Ballona Estuary.

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, p. 22)

The TMDL shows a clear linkage between pollutant sources (wet and dry weather runoff, conveyed via storm drains) and ambient stream bacterial densities. The frequency of instream exceedences of single sample targets closely corresponds with the exceedences observed in storm drain discharges. The loading capacity of each water body is defined in terms of bacterial indicator densities set equal to the numeric targets.

The State's analysis sufficiently describes the link between the numeric targets and the pollutant sources in Calleguas Creek, its tributaries and Mugu Lagoon.

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.

(Staff Report, pp. 25-30 and Basin Plan Amendment Resolution, pp. 4-6; Table 7.21.2a on p. 9)

The TMDL or loading capacity for these waters is defined as concentration-based criteria, which are equivalent to the numeric targets. The allocations are also concentration-based and applicable on a daily basis or calculated for geomean criteria using samples collected on 5-days per month basis, thus these allocations are suitable for daily load evaluations.

Waste Load Allocations

TMDL submittal identifies several point sources in the watershed, each with existing NPDES permits: Los Angeles County MS4 (# CAS 004001) and Caltrans Stormwater permit (# CAS 000003). Waste load allocations for each point source are expressed as allowable exceedence days because the bacterial density and frequency of the single sample exceedences are the most relevant to protect public health.

For REC-1 and LREC-1, the geomean criteria may not be exceeded at any time. For the single sample targets, three time periods with specific allowable exceedences were established:

- (1) summer dry weather = April 1 to Oct. 31 (0 exceedence days allowed);
- (2) winter dry weather = Nov. 1 to March 31 (3 exceedence days allowed);
- (3) wet weather = days with ≥ 0.1 inch rain + 3 days following rain (17 exceedence days allowed).

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 bacteriological impairments in the Ballona Creek watershed. EPA concludes the State was reasonably diligent and appropriate in its technical analysis of bacterial indicators in the Ballona Creek watershed.

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.*

NOT APPLICABLE