



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

May 13, 2008

Pamela C. Creedon
Executive Director
Central Valley Water Board
11020 Sun Center Drive, # 200
Rancho Cordova, CA 95670

Dear Ms. Creedon,

Thank you for submitting total maximum daily loads (TMDLs) to address pathogens in several Stockton waterbodies. The submittal was dated April 25, 2008. The Central Valley Regional Water Quality Control Board adopted the TMDLs to address the following waterbody-pollutant combinations identified on the State's 2006 Clean Water Act Section 303(d) list:

- Five-Mile Slough - pathogens
- Lower Calaveras River - pathogens
- Mormon Slough – pathogens
- Mosher Slough - pathogens
- Smith Canal - pathogens
- Walker Slough - pathogens

Based on EPA's review, I have concluded the TMDLs adequately address the pollutants of concern, and will, upon implementation, result in attainment of applicable water quality standards. The TMDLs include 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 plan provided with the TMDLs. However, EPA generally concurs with the State's proposed implementation approaches.

These TMDLs are being implemented through the NPDES City of Stockton and San Joaquin County Municipal Separate Storm Water Sewer Systems Permit (Stockton MS4 permit). All provisions necessary to achieve the load reductions have already been incorporated into the NPDES permit and the monitoring requirements ordered under California Water Code 13267 on November 14, 2007. The Central Valley Water Board does not need any additional regulatory programs (e.g., a Basin Plan Amendment) to address pathogens in the identified reaches.

The enclosed review discusses the basis for this approval decision. We appreciate the Regional Boards' 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) 972-3572 or Debra Denton at (916) 341-5520.

Sincerely yours,

/ signed by /

Alexis Strauss, Director
Water Division

Enclosure

TMDL Review Checklist

State: California

Waterbodies: Stockton Urban Waterbodies

Pollutant(s): Pathogens

Date of Initial Submission: April 25, 2008

Date Received By EPA: April 28, 2008

EPA Reviewer: Debra Denton

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.

Submittal letter dated April 25, 2008.

The Central Valley Regional Water Quality Control Board (RWQCB) adopted the pathogens TMDLs for Stockton urban waterbodies on March 14, 2008 (RWQCB Resolution # R5-2008-0030). The submittal addresses the Stockton urban waterbodies as identified on the State's 2002 and 2006 Clean Water Act Section 303(d) list for pathogens. The submittal package contained the Administrative Record, which included the final Regional Board adopted Resolution, final TMDL Technical Staff Report and Responses to comments.

EPA finds the State's analysis concerning waterbody impairment associated with elevated pathogens in Stockton urban waterbodies to be 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.

The submittal addresses 6 waterbodies in the Stockton urban area as identified on the State's 2002 and 2006 Section 303(d) list for pathogens. The State reasonably concluded that attainment of the numeric targets and associated TMDLs, waste load allocations, and load allocations will result in attainment of the applicable numeric water quality objectives.

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

(RWQCB Final Resolution, Findings 5, 6 and 7, pgs. 1, 2)

The water quality objectives that apply to protect the beneficial uses of these urban waterbodies are the fecal coliform water quality objectives as defined in the Central Valley Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan) and the Basin Plan narrative toxicity

objective, interpreted using the EPA numeric criteria for *E. coli*. The numeric targets for the TMDL are applicable year-round and are designed to ensure attainment of these Basin Plan objectives.

The State reasonably concluded that attainment of the numeric targets and associated TMDLs, wasteload allocations, and load allocations will result in attainment of the applicable numeric water quality objectives. EPA concurs with the State's analysis and concludes the TMDLs are set at levels necessary to attain 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.*

(RWQCB Final Resolution, Table 1, pg. 6)

The numeric water quality targets for this TMDL are:

The TMDL numeric water quality targets are:

Indicator	30-day Geometric mean ^a	Maximum
Fecal coliform ^b	200 MPN ^c /100 ml	400 MPN ^d /100 ml
<i>E. coli</i> ^e	126 MPN/100 ml	235 MPN/100 ml

^a Based on a minimum of no less than 5 samples equally spaced over a 30-day period

^b Based on the Basin Plan (Basin Plan pg. III-3.00)

^c Most probable number

^d No more than 10% of the total number of samples taken over a 30-day period shall exceed 400/100 ml

^e *E. coli* based on the EPA criteria (EPA 1986) and implemented based on Basin Plan narrative toxicity objective (Basin Plan pg. III-8.01)

NPDES Permit Locations: Finding 79, Board-approved Final Resolution, Attachment 1 pgs. 5 and 6. and Water Quality Based Effluent Limits – Pathogen Plan

The above targets are considered to be protective of the REC-1 beneficial use.

EPA concurs that these numeric targets are adequate and appropriate, and finds there is an adequate basis for these targets as an interpretation of the applicable water quality 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.*

(RWQCB Final Resolution, Attachment pg. 6)

The TMDL report adequately discusses the potential sources of pathogens. The City of Stockton has an approved Pathogen Plan (as part of its NPDES permit requirements) to identify pathogen sources and management practices to address those sources. During Phase One of the on-going Pathogen Plan, specific pathogen sources for Smith Canal and Mormon Slough were identified.

If it is determined that upstream sources contribute to the impairment, then future action will need to be considered by the Central Valley Water Board to address the upstream sources.

EPA finds the State's source analysis to be complete, reasonable and appropriate, given the data limitations.

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).*

(RWQCB Final Resolution, pgs. 5, 6)

The submittal contains numeric targets based on the Basin Plan water quality objective for fecal coliform and the EPA freshwater criteria for *E. coli*. Both the final TMDL report and Final Resolution establish a good relationship between the numeric targets, pollutant sources and allocations.

The submittal sufficiently describes the relationships between the numeric targets, pollutant sources, loading capacity, TMDL allocations and margin of safety. EPA finds the State's analysis reasonable and appropriate.

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.

(RWQCB Final Resolution, pgs. 6, 7).

TMDL:

The TMDL or loading capacity is set equal to the concentration-based water quality objectives for fecal coliform and EPA's recommended criteria for *E. coli*. See geometric mean and maximum values identified in numeric targets section above.

Waste Load Allocations:

All waste load allocations are set equal to the concentration-based water quality objectives for fecal coliform, and EPA's recommended criterion for *E. coli*. See Table 1 of Final Resolution
This TMDL assigns waste load allocations from sources regulated under the City of Stockton's current Pathogen Plan, a component of their MS4 permit (Order No. R5-2007-0173; NPDES No. CAS083470), to control sources of pathogens. Monitoring under the Pathogen Plan is required by both the Order (California Water Code 13267) and NPDES Permit (November 14, 2007).

The potential point sources of pathogens into the Stockton urban waterbodies are the municipal storm water discharges into the watershed.

Load Allocations:

TMDL submittal does not define any load allocations; thus EPA assumes all load allocations are equal to zero. For Mosher Slough, Walker Slough, Mormon Slough and the lower Calaveras River, the Central

Valley Water Board Staff does not have sufficient data to assign load allocations to these waterbodies at this time, but acknowledges that each of these waterbodies has upstream reaches outside of the urban area. Upon completion of the Pathogen Plan, the Central Valley Water Board staff will reevaluate the need for potential load allocations. (Table 7, Final Staff Report).

EPA concludes the analysis sets TMDLs, load allocations and waste load allocations that are consistent with the provisions of the CWA and federal regulations. The concentration-based approach also fulfills EPA's recommendation for daily quantifications of TMDLs and allocations.

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

(RWQCB Final Resolution, pg. 7)

The TMDL submittal provides an implicit margin of safety. Pathogens cannot survive for long periods of time outside of the host body or humans. Because of this, pathogen concentrations are expected to decrease as they move away from the source due to factors that influence their die-off rate. These factors include sunlight, temperature, and predation.

EPA finds the State's analysis to be reasonable.

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

(TMDL report, page 1034)

The TMDL analysis explains that the allocations apply throughout the year and therefore ensure attainment of applicable water quality standards under all flow conditions. Due to lack of adequate information on frequency of recreational use and how background levels vary by season, the level necessary to attain water quality objectives is the same throughout the year (concentration-based). By setting the targets on a concentration basis, these TMDLs ensure the standards will be met under all flow conditions.

TMDL submittal acknowledges the loading capacity and waste load allocations are all defined using 30-day geometric and maximum concentrations, all seasonal variations and critical conditions are explicitly considered in the recommended loading capacity and allocation determination method.

Based on the submittal, EPA finds the State's analysis concerning seasonal variations and critical conditions to be reasonable.

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

The Central Valley Regional Water Board adequately held public meetings and responded to written and oral comments from the public. The Water Board's public hearing was held on March 14, 2008 for the purpose of receiving testimony on the proposed TMDL. Stakeholder comments were addressed in these workshops and hearings.

The State demonstrated that it provided sufficient opportunities for public comments and considered public comments in its final decision by providing reasonably detailed responsiveness summaries.

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

The TMDL submittal provides as acceptable level of technical analysis supporting all TMDL elements. The Staff Report provides appropriate technical discussions and analyses used to calculate and support all TMDL elements.

12. Reasonable Assurances: *If waste load 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.*

The State's 2002 and 2006 303d list contains the following 6 segment - pollutant listings for these TMDLs:

- Five-Mile Slough - pathogens
- Lower Calaveras River - pathogens
- Mormon Slough – pathogens
- Mosher Slough - pathogens
- Smith Canal - pathogens
- Walker Slough - pathogens

This approval applies to each waterbody-pollutant combination identified above.