



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

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San Francisco, CA 94105-3901

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QUALITY CONTROL BOARD
FOR A-1013 REGION

MAR 14 2006

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 Calleguas Creek watershed. The organophosphate pesticides and toxicity TMDL submittal was dated January 12, 2006 and the organochlorine pesticides and siltation TMDL submittal was dated February 6, 2006. The State adopted TMDLs to address the following water body-pollutant combinations on California's 2002 Clean Water Act Section 303(d) list:

- Calleguas Creek Reach 1 [Mugu Lagoon] for sediment toxicity, chlordane, DDT, dieldrin, PCBs, toxaphene, sedimentation/siltation
- Duck Pond drain/Mugu Drain/Oxnard Drain #2 for ambient and sediment toxicity, chlordane, DDT, dieldrin, PCBs, toxaphene
- Calleguas Ck. R2 [estuary] for sediment toxicity, chlordane, DDT, dieldrin, PCBs, toxaphene
- Calleguas Ck. R4 [Revolon Slough] for ambient toxicity, chlorpyrifos, chlordane, DDT, dieldrin, PCBs, toxaphene
- Calleguas Ck. R5 [Beardsley Channel] for ambient toxicity, chlorpyrifos, chlordane, DDT, dieldrin, PCBs, toxaphene
- Calleguas Ck. R6 [Arroyo Las Posas] for chlordane, DDT, dieldrin, PCBs, toxaphene
- Calleguas Ck. R7 [Arroyo Simi] for chlorpyrifos, diazinon
- Calleguas Ck. R9A [Conejo Ck.] for chlordane, DDT, dieldrin, PCBs, toxaphene
- Calleguas Ck. R9B [Conejo Ck. mainstem] for ambient toxicity, chlordane, DDT, dieldrin, PCBs, toxaphene
- Calleguas Ck. R10 [Conejo Ck., Hill Canyon] for ambient toxicity, chlordane, DDT, dieldrin, PCBs, toxaphene
- Calleguas Ck. R11 [Arroyo Santa Rosa] for ambient toxicity, chlordane, DDT, dieldrin, PCBs, toxaphene
- Calleguas Ck. R12 [Conejo Ck, north fork] for chlordane, DDT, dieldrin, PCBs, toxaphene
- Calleguas Ck. R13 [Conejo Ck., south fork] for ambient toxicity, chlordane, DDT, dieldrin, PCBs, toxaphene.

During the TMDL development process, the State determined the following additional water body-pollutant combinations need TMDLs pursuant to the requirements of Section 303(d)(1), and adopted TMDLs to address these additional combinations:

- Calleguas Ck. R2 [estuary] for chlorpyrifos, diazinon
- Calleguas Ck. R3 [Potrero Rd., upstream] for ambient toxicity, chlorpyrifos, diazinon, chlordane, DDT, dieldrin, PCBs, toxaphene
- Calleguas Ck. R4 [Revolon Slough] for diazinon
- Calleguas Ck. R5 [Beardsley Channel] for diazinon
- Calleguas Ck. R6 [Arroyo Las Posas] for ambient toxicity, chlorpyrifos, diazinon
- Calleguas Ck. R7 [Arroyo Simi R1 & R2] for ambient toxicity, chlordane, DDT, dieldrin, PCBs, toxaphene
- Calleguas Ck. R8 [Tapo Cyn. R1 & R2] for chlorpyrifos, diazinon, chlordane, DDT, dieldrin, PCBs, toxaphene
- Calleguas Ck. R9A [Conejo Ck.] for ambient toxicity, chlorpyrifos, diazinon
- Calleguas Ck. R9B [Conejo Ck. mainstem] for chlorpyrifos, diazinon
- Calleguas Ck. R10 [Conejo Ck., Hill Canyon] for chlorpyrifos, diazinon

During the decision-making process, the State identified these additional water body-pollutant combinations as water quality limited waters for which TMDLs are required. The State provided sufficient documentation to support its determination and provided opportunities for public review and comment on the additional water body-pollutant identifications. The State's decision to concurrently identify additional water quality limited segments and adopt TMDLs for those segments is consistent with the provisions of the Clean Water Act and federal regulations. As the State's decision to identify the additional water body-pollutant combinations is consistent with the requirements of Section 303(d) and federal regulations at 40 CFR 130.7, EPA hereby approves the identification of these additional combinations pursuant to Section 303(d)(2).

Based on EPA's review of the TMDL submittals under Clean Water Act Section 303(d)(2), I have concluded the TMDLs adequately address the pollutants of concern and, upon implementation, will result in attainment of the applicable water quality standards. These TMDLs include waste load and load allocations as needed, take into consideration seasonal variations and critical conditions, and provide an adequate margin of safety.

The State 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 submittals also contain detailed plans for implementing these TMDLs. Current federal regulations do not define TMDLs as containing implementation plans; therefore, EPA is not taking action on the implementation plans provided with the TMDLs. However, EPA generally concurs with the State's proposed implementation approaches.

The enclosed review discusses the basis for these decisions in greater detail. I appreciate the State and Regional Boards' work to adopt these TMDLs and look forward to our continuing partnership in TMDL development. If you have questions concerning this action, please call me at (415) 972-3572 or David Smith at (415) 972-3416.

Sincerely yours,

Alexis Strauss 14 March 2006
Alexis Strauss, Director
Water Division

enclosures

cc: Jonathan Bishop, LARWQCB

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**Enclosure: Staff Analysis of TMDL Submittals
Calleguas Creek Pesticides, PCBs, Toxicity and Siltation
March 2006**

Introduction

The State of California adopted TMDLs to address water body impairments in Calleguas Creek, its tributaries and Mugu Lagoon. The TMDLs are contained in two Basin Plan Amendments submitted by the State. One amendment includes the toxicity and organophosphate pesticides TMDLs; a second amendment includes TMDLs for organochlorine pesticides and PCBs in several segments and a siltation TMDL for Mugu Lagoon.

EPA reviewed the submittals to ensure that all TMDL elements required by Clean Water Act Section 303(d) and associated federal regulations at 40 CFR 130.2 and 130.7 were adequately addressed. EPA Region 9 reviews of State TMDL submittals are organized in checklist form. This document includes separate checklists for the two Basin Plan Amendments that briefly discuss the State's approaches to meeting TMDL requirements. EPA has determined that the 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 requires completion of required pesticide, PCB, and toxicity TMDLs for Calleguas Creek watershed and a siltation TMDL for Mugu Lagoon by March 22, 2006.

As described below, the State of California determined that some 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) and do not require TMDL development. 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 these TMDL submittals as EPA previously approved these delisting decisions.

During development of the, the State determined that several additional water-pollutant combinations included on California's 2002 Section 303(d) list are not impaired and do not require TMDL development. Consistent with the provisions of consent decree paragraph 8, the State's documentation prepared to support these TMDL submittals clearly describes the basis for the State's conclusion that TMDLs are not needed for these combinations. The public had several opportunities to review and comment on these determinations. EPA concurs in these determinations that TMDLs are not required for these additional combinations. EPA expects these

combinations will be removed from the Section 303(d) list during the ongoing revisions to California's Section 303(d) list, scheduled for completion in 2006.

Some listed segments in these watersheds covered in the consent decree were listed on the Section 303(d) list due to ambient water or sediment toxicity. The State developed TMDLs for all pollutants found at levels associated with toxicity to aquatic organisms. The State also developed separate toxicity TMDLs to address unidentified toxic agents of ambient or sediment toxicity. EPA concurs with this approach to addressing the toxicity listings in these waters.

In addition to addressing the water body-pollutant combinations included in the consent decree, the State determined through its analysis that water quality standards were being violated in several additional segments in the subject watershed. The State identified these additional water body-pollutant combinations in the Technical Reports supporting the Basin Plan Amendments as waters and pollutants requiring TMDLs pursuant to Section 303(d)(1). The State also described the analytical basis for its determinations concerning these additional segments and pollutants and provided ample opportunities for public review of these additional identifications. The State concurrently developed TMDLs for these additional water body-pollutant combinations that are included with the Basin Plan Amendment submittals. The State's approach of concurrently identifying waters and pollutants needing TMDLs and adopting the required TMDLs is consistent with the provisions of the Clean Water Act and associated federal regulations. This approach is also efficient as it comprehensively addresses water quality problem associated with pesticides, PCBs, and toxicity in these waters.

The technical analyses for most of these TMDLs were developed by a third party, Larry Walker Associates, under contract with the Calleguas Creek Watershed Management Steering Committee. One technical report describes the toxicity and organophosphate pesticide TMDLs (June 21, 2005). Another technical report (June 20, 2005) describes the organochlorine pesticide and PCBs TMDLs. Both technical reports were developed with input and guidance from the Los Angeles Regional Water Quality Control Board and EPA. The Los Angeles Regional Board staff prepared a separate technical memo (Staff Memo, April 25, 2005) for the siltation TMDL, which was included in the Basin Plan Amendment for the organochlorine pesticide and PCBs TMDLs.

TMDL Checklist

State: California
 Waterbodies: Calleguas Creek, tributaries and Mugu Lagoon
 Pollutant(s): Toxicity and Organophosphate pesticides (chlorpyrifos and diazinon)
 Date of State Submission: January 12, 2006
 Date Received By EPA: January 26, 2006
 EPA Reviewer: Cindy Lin

Review Criteria	Comments
<p>I. 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 January 12, 2006. The Los Angeles Regional Water Quality Control Board (Regional Board) adopted the TMDLs on July 7, 2005 through Resolution No. R4-2005-009. The State Water Resources Control Board (State Board) approved the basin plan amendment through Resolution No. 2005-0067 on September 22, 2005. The State Office of Administrative Law approved the TMDLs on December 27, 2005 as file No. 05-1110-02 S.</p> <p>These TMDLs address water body-pollutant combinations identified in Analytical Units # 2 and 5 of the <i>Heal the Bay</i> consent decree. TMDLs were adopted for following segments and impairments as identified on the state's 2002 303d list: (June 21, 2005 Technical Report (Technical Report), p. 23)</p> <ul style="list-style-type: none"> - Calleguas Ck Reach 1 = Mugu Lagoon (sediment toxicity) - Duck Pond drain/Mugu drain/ Oxnard drain #2 (ambient and sediment toxicity) - Calleguas Creek R2 = estuary (sediment toxicity) - Calleguas Ck R4 = Revolon Slough (ambient toxicity, chlorpyrifos) - Calleguas Ck R5 = Beardsley Channel (ambient toxicity, chlorpyrifos) - Calleguas Ck R7 = Arroyo Simi (organophosphate pesticides; i.e., chlorpyrifos and diazinon) - Calleguas Ck R9B = Conejo Ck mainstem (ambient toxicity) - Calleguas Ck R10 = Conejo Ck, Hill Canyon (ambient toxicity) - Calleguas Ck R11 = Arroyo Santa Rosa (ambient toxicity) - Calleguas Ck R13 = Conejo Ck, south fork (ambient toxicity) <p>As discussed above, the State identified several additional segments in the Calleguas Creek watershed for which organophosphate pesticides and toxicity TMDLs were also adopted (Technical Report, pp. 45-46):</p> <ul style="list-style-type: none"> - Calleguas Creek R2 = estuary (chlorpyrifos, diazinon) - Calleguas Ck R3 = Potrero Rd. (ambient toxicity, chlorpyrifos, diazinon) - Calleguas Ck R4 = Revolon Slough (diazinon) - Calleguas Ck R5 = Beardsley Channel (diazinon) - Calleguas Ck R6 = Arroyo Las Posas (ambient toxicity, chlorpyrifos, diazinon) - Calleguas Ck R7 = Arroyo Simi (ambient toxicity) - Calleguas Ck R8 = Tapo Cyn R1 & R2 (chlorpyrifos, diazinon) - Calleguas Ck R9A = Conejo Ck (ambient toxicity, chlorpyrifos, diazinon) - Calleguas Ck R9B = Conejo Ck mainstem (chlorpyrifos, diazinon) - Calleguas Ck R10 = Conejo Ck, Hill Canyon (chlorpyrifos, diazinon) - Calleguas Ck R11 = Arroyo Santa Rosa (chlorpyrifos, diazinon) <p>EPA finds the State's analysis concerning water body impairment associated with toxicity, chlorpyrifos and diazinon organophosphate compounds in the Calleguas Creek watershed and Mugu Lagoon is reasonable and consistent with the requirements of Section 303(d).</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 June 21, 2005 Technical Report, pp. 13-15.</p> <p>The TMDL is designed to implement the existing narrative objectives for toxicity and toxic pollutant that apply in Calleguas Creek, its tributaries and Mugu Lagoon. The Regional Board Basin Plan specifies narrative water quality objectives stating that toxic substances shall not be present at levels that will bioaccumulate in aquatic organisms to levels that are harmful to aquatic life or human health. Although there are no Basin Plan Objectives specific to sediment toxicity, the narrative ambient water toxicity objectives may be used to address sediment toxicity for the purposes of identifying targets for sediment toxicity.</p> <p>In addition, the Basin Plan specifies that no individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses. The Basin Plan also prohibits increases pesticide concentrations found in bottom sediments or aquatic life. (Technical Report Section 2.2.2) Currently, there are no adopted numeric water, sediment, or fish tissue objectives in the Basin Plan or California Toxics Rule for any organophosphate pesticides (i.e., chlorpyrifos and diazinon).</p> <p>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 high toxicity and organophosphate pesticide loads and bring about attainment of the applicable standards for these toxicant compounds in water and sediments.</p>																		
<p>3. 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.</p>	<p>Basin Plan Amendment Resolution, pp. 2-3.</p> <p>The TMDL report identifies numeric targets for chlorpyrifos, diazinon and water and sediment toxicity. The TMDL establishes a numeric toxicity target of 1.0 toxicity unit-chronic (1.0 Tuc) to address toxicity in reaches where the toxicant has not been identified through a Toxicity Identification Evaluation (TIE) (unknown toxicity). A sediment toxicity target was defined for reaches for which TIEs did not identify the causes of sediment toxicity. (Technical Report, pp. 53-56)</p> <p>The TMDL establishes numeric targets for chlorpyrifos and diazinon based on USEPA's 1985 Guidelines for Deriving Numeric National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses. (Technical Report, pp. 50-52)</p> <table border="0" data-bbox="511 1402 1247 1623"> <tr> <td>Chlorpyrifos Numeric Targets (ug/L)</td> <td>Chronic</td> <td>Acute</td> </tr> <tr> <td> Freshwater</td> <td>0.014</td> <td>0.025</td> </tr> <tr> <td> Saltwater (Mugu Lagoon)</td> <td>0.009</td> <td>0.02</td> </tr> <tr> <td>Diazinon Numeric Targets (ug/L)</td> <td>Chronic</td> <td>Acute</td> </tr> <tr> <td> Freshwater</td> <td>0.10</td> <td>0.10</td> </tr> <tr> <td> Saltwater (Mugu Lagoon)</td> <td>0.40</td> <td>0.82</td> </tr> </table> <p>The State's approach is a reasonable and environmentally protective approach for applying applicable numeric criteria to derive numeric targets.</p>	Chlorpyrifos Numeric Targets (ug/L)	Chronic	Acute	Freshwater	0.014	0.025	Saltwater (Mugu Lagoon)	0.009	0.02	Diazinon Numeric Targets (ug/L)	Chronic	Acute	Freshwater	0.10	0.10	Saltwater (Mugu Lagoon)	0.40	0.82
Chlorpyrifos Numeric Targets (ug/L)	Chronic	Acute																	
Freshwater	0.014	0.025																	
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Diazinon Numeric Targets (ug/L)	Chronic	Acute																	
Freshwater	0.10	0.10																	
Saltwater (Mugu Lagoon)	0.40	0.82																	
<p>4. 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</p>	<p>Basin Plan Amendment Resolution, p. 3.</p> <p>The TMDL analysis evaluates all available data and information concerning the sources of toxicity and organophosphate pesticides into Calleguas Creek, its tributaries and Mugu Lagoon. The TMDL focuses on the potential sources of chlorpyrifos and diazinon as these two organophosphate pesticides have been identified as principal causes of water and/or sediment toxicity in the watershed.</p>																		

<p>sources have been considered.</p>	<p>The Calleguas Creek Watershed Nutrients TMDL (approved in 2003) addresses potential contributions to toxicity from ammonia. As the causes of toxicity in some listed reaches have not been fully identified, monitoring will continue to investigate toxicity of unknown causes (as stipulated in the Implementation Plan). Toxicity investigations to date suggest the unknown toxicity is associated with organic toxicants and, in particular, organophosphate pesticides. (Technical Report, p. 57)</p> <p>The largest source of chlorpyrifos and diazinon pesticides is agricultural runoff and urban runoff within the watershed. During dry weather, publicly owned treatment works (POTWs) contribute a significant load of diazinon to the water bodies. However, urban use of chlorpyrifos and diazinon are unlikely to be a long-term source to the watershed as both pesticides have been banned for most non-agricultural uses starting December 31, 2005. (Technical Report, pp. 58-85)</p> <p>The TMDL report adequately considered all significant sources of organophosphate compounds to Calleguas Creek watershed and other potential causes of observed toxicity.</p>
<p>5. Allocations: Submittal identifies appropriate waste load allocations for point sources and load allocations for non-point sources. If no point sources are present, waste load allocations are zero. If no non-point sources are present, load allocations are zero.</p>	<p>Basin Plan Amendment Resolution, pp. 4-6.</p> <p>The TMDLs include both wasteload allocations for point sources and load allocations for non point sources. A wasteload allocation of 1.0 TUc is allocated to point sources (POTWs, urban stormwater co-permittees (MS4), and minor NPDES-regulated sources). In addition, the major and minor point sources receive wasteload allocations set equal to the established numeric targets for chlorpyrifos (equal to the 4-day chronic numeric target) and diazinon (equal to the 1 hour acute target).</p> <p>All nonpoint sources received a load allocation of 1.0 TUc. Load allocations of chlorpyrifos and diazinon are set equal to the numeric targets for each subwatershed. (Technical Report, pp. 109-115)</p> <p>Since chlorpyrifos and diazinon are not naturally occurring, the background load allocation is set equal to zero. (Technical Report, pp. 118)</p> <p>Based on the information in the Technical Report and the Basin Plan Attachment to Resolution, EPA concludes that the TMDLs include as appropriate wasteload and load allocations that are consistent with the Clean Water Act and federal regulations.</p>
<p>6. Link Between Numeric Target(s) and Pollutant(s) of Concern: Submittal describes relationship between numeric target(s) and identified pollutant sources. For each pollutant, describes analytical basis for conclusion that sum of waste load allocations, load allocations, and margin of safety does not exceed the loading capacity of the receiving water(s).</p>	<p>Basin Plan Amendment Resolution, p. 3-4.</p> <p>The State used water quality modeling to establish the linkage between sources of chlorpyrifos and diazinon in the watershed to observed water quality data. A mass balance water quality model used existing data to determine loads and partitioning between dissolved and adsorbed fractions. The TMDL report presented a conceptual model describing the relationship between water column concentrations and fish tissue and sediment concentrations. The model incorporated the specific characteristics of chlorpyrifos (preferentially binds to sediment) and diazinon (preferentially partition to water phase) and reasonably calculated conservative loads and loading capacities. (Technical Report, pp. 86-108)</p> <p>The State's analysis sufficiently describes the link between numeric targets and the pollutant sources in Calleguas Creek watershed.</p>

<p>7. Margin of Safety: Submission describes explicit and/or implicit margin of safety for each pollutant.</p>	<p>Basin Plan Amendment Resolution, p. 7.</p> <p>The TMDL includes both an implicit and explicit margin of safety. The primary implicit margin of safety is provided through the adoption of concentration based TMDLs and allocations that are sensitive to temporal and spatial variability of pollutant loads, and through the adoption of toxicity based TMDLs to address unexplained toxicity causes. The TMDL also includes an explicit margin of safety of 5%. This 5% explicit margin of safety is added to the targets for chlorpyrifos in the Calleguas and Revolon subwatersheds to address the uncertainty in the linkages between water column criteria and fish tissue and sediment concentrations. (Technical Report, pp. 118)</p> <p>EPA considers this a permissible and appropriate way of dealing with uncertainty concerning the relationships between allocations and water quality.</p>
<p>8. Seasonal Variations and Critical Conditions: Submission describes method for accounting for seasonal variations and critical conditions in the TMDL(s)</p>	<p>Basin Plan Amendment Resolution, p. 7.</p> <p>The critical condition in this TMDL is defined as the flowrate at which the model calculated the greatest in-stream diazinon or chlorpyrifos concentration in comparison to the appropriate criterion. The critical condition for chlorpyrifos was in dry weather based on a chronic numeric target. For diazinon, wet weather (based on acute numeric target) is defined as the critical period, except in Mugu Lagoon where critical condition is in dry weather based on the chronic numeric target. (Technical Report, pp. 110 and 119)</p> <p>The State's approach adequately accounts for critical conditions by defining crucial hydrological periods in which ecological effects may occur.</p>
<p>9. Public Participation: Submission documents provision of public notice and public comment opportunity; and explains how public comments were considered in the final TMDL(s).</p>	<p>The Regional and State Boards provided public notice and opportunities for public comment to comment on the TMDLs through mailings, by holding numerous public meetings, and by receiving public comments at these meetings. 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>The Regional Board held public meetings to discuss the Calleguas Creek Toxicity and Chlorpyrifos and Diazinon TMDLs on May 5, May 31 and July 7, 2005. (See summary of responses to public comments by Regional Board, July 2005.) The State Board also received public comment on the TMDLs on September 22, 2005.</p>
<p>10. Technical Analysis: Submission provides appropriate level of technical analysis supporting TMDL elements.</p>	<p>The TMDL analysis provides a thorough review and summary of available information concerning toxicity, chlorpyrifos and diazinon organophosphate pesticides impairing Calleguas Creek, its tributaries and Mugu Lagoon.</p> <p>EPA concludes the State was reasonably diligent in its technical analysis of toxicity, chlorpyrifos and diazinon in Calleguas Creek and its watershed.</p>

TMDL Checklist

State: California
Waterbodies: Calleguas Creek, tributaries and Mugu Lagoon
Pollutant(s): Organochlorine pesticides (DDT, dieldrin, chlordane, toxaphene), PCBs and siltation
Date of State Submission: February 6, 2006
Date Received By EPA: February 8, 2006
EPA Reviewer: Peter Kozelka

Review Criteria	Comments
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>Letter dated February 6, 2006. The Los Angeles Regional Water Quality Control Board (Regional Board) adopted the TMDLs on July 7, 2005 through Resolution No. R4-2005-010. The State Water Resources Control Board (State Board) approved the basin plan amendment through Resolution No. 2005-0068 on September 22, 2005. The State Office of Administrative Law approved the TMDLs on January 20, 2006 as file No. 05-1026-03 S.</p> <p>These TMDLs address water body-pollutant combinations identified in Analytical Units # 5 and 7 of the <i>Heal the Bay</i> consent decree. TMDLs were adopted for following segments identified on the state's 2002 303d list:</p> <ul style="list-style-type: none"> - Calleguas Ck Reach 1 = Mugu Lagoon (chlordan, DDT, dieldrin, PCBs toxaphene) - Duck Pond drain/Mugu drain/ Oxnard drain #2 (chlordan, DDT, dieldrin, PCBs toxaphene) - Calleguas Creek R2 = estuary (chlordan, DDT, dieldrin, PCBs toxaphene) - Calleguas Ck R4 = Revolon Slough (chlordan, DDT, dieldrin, PCBs toxaphene) - Calleguas Ck R5 = Beardsley Channel (chlordan, DDT, dieldrin, PCBs toxaphene) - Calleguas Ck R6 = Arroyo Las Posas (chlordan, DDT, dieldrin, PCBs toxaphene) - Calleguas Ck R9A= Conejo Ck (chlordan, DDT, dieldrin, PCBs toxaphene) - Calleguas Ck R9B = Conejo Ck mainstem (chlordan, DDT, dieldrin, PCBs toxaphene) - Calleguas Ck R10 = Conejo Ck, Hill Canyon (chlordan, DDT, dieldrin, PCBs toxaphene) - Calleguas Ck R11 = Arroyo Santa Rosa (chlordan, DDT, dieldrin, PCBs toxaphene) - Calleguas Ck R12 = Conejo Ck, north fork (chlordan, DDT, dieldrin, PCBs toxaphene) - Calleguas Ck R13 = Conejo Ck, south fork (chlordan, DDT, dieldrin, PCBs toxaphene) <p>As discussed above, the State identified several additional segments in the Calleguas Creek watershed for which organochlorine pesticides and PCBs TMDLs were also adopted (Technical Report, pp. 23):</p> <ul style="list-style-type: none"> - Calleguas Ck R3 = Potrero Rd., upstream (chlordan, DDT, dieldrin, PCBs toxaphene) - Calleguas Ck R7 = Arroyo Simi R1 & R2 (chlordan, DDT, dieldrin, PCBs toxaphene) - Calleguas Ck R8 = Tapo Cyn R1 & R2 (chlordan, DDT, dieldrin, PCBs toxaphene) <p>As discussed above, the State concluded that several water body-pollutant combinations in the watershed that were covered by the consent decree are not water quality limited pursuant to the Clean Water Act and that TMDLs are not required. The State found the following water body segments, as identified on the 2002 303(d) list, were not impaired due to the corresponding pollutants:</p> <ul style="list-style-type: none"> - Calleguas Ck Reach 1 = Mugu Lagoon (endosulfan) - Duck Pond drain/Mugu drain/ Oxnard drain #2 (Chem A group) - Calleguas Creek R2 = estuary (Chem A, endosulfan) - Calleguas Ck R4 = Revolon Slough (Chem A, endosulfan) - Calleguas Ck R5 = Beardsley Channel (Chem A, endosulfan, dacthal) - Calleguas Ck R9A= Conejo Ck (Chem A, endosulfan, hexachlorocyclohexane)

	<ul style="list-style-type: none"> - Calleguas Ck R9B = Conejo Ck mainstem (Chem A, endosulfan) - Calleguas Ck R10 = Conejo Ck, Hill Canyon (Chem A, endosulfan) - Calleguas Ck R11 = Arroyo Santa Rosa (Chem A, endosulfan) - Calleguas Ck R13 = Conejo Ck, south fork (Chem A, endosulfan) <p>(TMDL report pp. 19-24 and pp. 32-33)</p> <p>EPA finds the State's analysis concerning water body impairment associated with organochlorine compounds in Calleguas Creek watershed and siltation in Mugu Lagoon is reasonable and consistent with the requirements of Section 303(d).</p>
<p>2. Water Quality Standards</p> <p>Attainment: TMDL and associated allocations are set at levels adequate to result in attainment of applicable water quality standards.</p>	<p>The June 20, 2005 Technical TMDL Report (Technical Report), pp. 14-16.</p> <p>The TMDL is designed to implement the existing numeric and narrative objectives for organochlorine compounds apply in Calleguas Creek, its tributaries and Mugu Lagoon. The federal California Toxics Rule (CTR) specifies numeric water quality criteria for organochlorine pesticides and PCBs that apply in these waters. The Regional Board's Basin Plan specifies narrative water quality objectives stating that toxic substances shall not be present at levels that will bioaccumulate in aquatic organisms to levels which are harmful to aquatic life or human health. (Technical Report, pp. 14-16)</p> <p>The TMDL also addresses narrative objectives regarding wetlands, which emphasize that existing habitat for flora and fauna shall be maintained. This objective is relevant to the protection of Mugu Lagoon. (Technical Report, p. 16)</p> <p>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 high organochlorine pesticide, PCBs and siltation loads and bring about attainment of the applicable standards for these toxicant compounds and silt/sediment.</p>
<p>3. Numeric Target(s):</p> <p>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>Basin Plan Amendment Resolution, pp. 2-4.</p> <p>The TMDL report identifies numeric targets for several media (e.g., water, sediment, fish tissue, wildlife tissue). The TMDLs are designed to implement the numeric water quality criteria in the CTR as well as related fish tissue targets based on translation of the CTR human health criteria. Organochlorine pesticide and PCB targets in sediment are identified for freshwater and saltwater values based on sediment quality guidelines. Targets for bird eggs and seal blubber are included. (Technical Report, pp. 52-57)</p> <p>Two siltation targets are identified in the TMDL for silt reduction and maintenance of existing habitat. (Staff technical memo, dated April 25, 2005, p. 5)</p> <p>The State's approach is a reasonable and environmentally protective approach for applying applicable numeric criteria to derive numeric targets.</p>
<p>4. Source Analysis:</p> <p>Point, non-point, and background sources of pollutants of concern are described, including the magnitude and location of sources. Submittal demonstrates all</p>	<p>Basin Plan Amendment Resolution, p. 4.</p> <p>The TMDL analysis evaluates all available data and information concerning the sources of organochlorine pesticides and PCBs into Calleguas Creek, its tributaries and Mugu Lagoon. The largest source of organochlorine pesticides is agricultural runoff (regulated via waste discharge requirements) with minor inputs from urban runoff and wastewater treatment plants (regulated via NPDES permits) within the watershed. Atmospheric deposition is identified as a potential source of PCBs but not the other compounds. Groundwater and imported water are not significant sources of organochlorine pesticides, PCBs and sediment. (Technical Report, pp. 58-83)</p>

<p>significant sources have been considered.</p>	<p>The siltation TMDL also identified five sources as contributors of sediment to the lagoon basin. (Staff Memo, p. 5)</p> <p>The TMDL report adequately considered all significant sources of organochlorine compounds to Calleguas Creek watershed. It also adequately considered sources of sediments (silt) to Mugu Lagoon. The TMDL sufficiently described all sources of impairments.</p>
<p>5. Allocations: Submittal identifies appropriate waste load allocations for point sources and load allocations for non-point sources. If no point sources are present, waste load allocations are zero. If no non-point sources are present, load allocations are zero.</p>	<p>Basin Plan Amendment Resolution, pp. 5-8.</p> <p>The TMDLs include both waste load allocations for point sources and load allocations for non point sources. Allocations are categorized by sources and expressed in terms of allowable concentrations of organochlorine pesticides and PCBs. POTWs and minor point sources received daily and monthly wasteload allocations. Stormwater permittees (point source) and agricultural (non-point) sources received annual average wasteload allocations for toxicants in sediments. (Technical Report, pp. 102-105)</p> <p>For the separate siltation TMDL, stormwater permittees and agricultural sources each received a mass-based allocation for sediment yield to Mugu Lagoon. (Staff Memo, pp. 7-9)</p> <p>Based on the information in the Staff Report and the Basin Plan Attachment to Resolution, EPA concludes that the TMDLs include as appropriate wasteload and load allocations that are consistent with the Clean Water Act and federal regulations.</p>
<p>6. Link Between Numeric Target(s) and Pollutant(s) of Concern: Submittal describes relationship between numeric target(s) and identified pollutant sources. For each pollutant, describes analytical basis for conclusion that sum of waste load allocations, load allocations, and margin of safety does not exceed the loading capacity.</p>	<p>Basin Plan Amendment Resolution, pp. 4-5.</p> <p>The TMDL report provides a conceptual model that describes the fate, transformation and uptake of OC pesticides and PCBs and a mass balance model to connect sources of these compounds to their fate and transport in Calleguas Creek and Mugu Lagoon. Sediments serve as the primary exposure pathway and so reductions in sediment concentrations will yield in pollutant reductions in water and fish tissue. DDE is used as a surrogate indicator in the modeling analysis because it is consistently detected in water, sediment and tissue at levels above media specific numeric targets. (Technical Report, pp. 84-95)</p> <p>The Siltation TMDL memo cited several studies to demonstrate that increased sediment accumulation (via deposition of upstream sources) would create land elevation changes in areas that currently contain habitat and would impact estuarine marshes and tidal mudflats. (Staff Memo, pp. 5-6)</p> <p>The State's analysis sufficiently describes the link between numeric targets and the pollutant sources in Calleguas Creek watershed.</p>
<p>7. Margin of Safety: Submission describes explicit and/or implicit margin of safety for each pollutant.</p>	<p>Basin Plan Amendment Resolution, p. 8.</p> <p>The pesticides and PCBs TMDLs include an implicit margin of safety based on several conservative methods utilized during TMDL development. For example, the TMDLs are set based on the greater percent reduction required of either water or fish tissue concentrations in order to determine the percent reductions required for sediments. (Technical Report, pp. 106-107)</p> <p>The siltation TMDL also includes an implicit margin of safety based on conservative estimates of sediment volume reduction need to preserve and improve habitat conditions affected by silt loads. (Staff Memo, p. 7)</p> <p>EPA considers this a permissible and appropriate way of dealing with uncertainty concerning the relationships between allocations and water quality.</p>

<p>8. Seasonal Variations and Critical Conditions: Submission describes method for accounting for seasonal variations and critical conditions in the TMDL(s)</p>	<p>Basin Plan Amendment Resolution, p. 9-10.</p> <p>The TMDL report presents a direct correlation between organochlorine pollutant concentrations and suspended sediment levels, and a positive correlation between sediment loads and wet weather, to support a finding that critical conditions occur during wet weather. The report acknowledges that wet weather events may occur at any time of the year, and these events produce extensive sediment and organochlorine compound redistribution and transport downstream. For bioaccumulative pollutants such as these, which manifest effects over long time periods, the short-term load variations are not likely to create significant variations in beneficial use effects. (Technical Report, pp. 98-99)</p> <p>The siltation analysis recognizes that storm conditions account for the majority of sediment transport and deposition into Mugu Lagoon. However, as beneficial use effects in Mugu Lagoon are associated with the cumulative effects of sediment loads over multi-year periods, short term load variations are unlikely to cause measurable effects. (Staff Memo, pp. 6-7)</p> <p>The State's approach adequately accounts for critical conditions by establishing TMDLs for longer timeframes in which ecological effects may occur.</p>
<p>9. Public Participation: Submission documents provision of public notice and public comment opportunity; and explains how public comments were considered in the final TMDL(s).</p>	<p>The Regional and State Boards provided public notice and opportunities to comment on the TMDLs through mailings, by holding numerous public meetings, and by hearing public comments at these meetings. 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>The Regional Board held public meetings to discuss the Calleguas Creek organochlorine compound and siltation TMDLs on May 5 and July 7, 2005. (See summary of responses to public comments by Regional Board, July 2005). The State Board also received public comment on the TMDLs on September 7, 2005.</p>
<p>10. Technical Analysis: Submission provides appropriate level of technical analysis supporting TMDL elements.</p>	<p>The TMDL analysis provides a thorough review and summary of available information concerning organochlorine pesticides and PCBs impairing Calleguas Creek, its tributaries and Mugu Lagoon. The analysis also provides appropriate review and summary information for siltation build up and effects in Mugu Lagoon.</p> <p>EPA concludes the State was reasonably diligent in its technical analysis of DDT, dieldrin, chlordane, PCBs and toxaphene in Calleguas Creek and its watershed, as well as the analysis for siltation in Mugu Lagoon.</p>