

**Proposed Amendment to the Water Quality Control Plan – Los Angeles Region
to Incorporate the
Total Maximum Daily Load for Pesticides and PCBs in Machado Lake**

Proposed for adoption by the California Regional Water Quality Control Board, Los Angeles Region on July 8, 2010

Amendments

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7-38.2 Machado Lake Pesticides and PCBs TMDL - Implementation Schedule

Chapter 7. Total Maximum Daily Loads (TMDLs)

Machado Lake Pesticides and PCBs TMDL

This TMDL was adopted by:

The Regional Water Quality Control Board on **[insert date]**.

This TMDL was approved by:

The State Water Resources Control Board on **[insert date]**.

The Office of Administrative Law on **[insert date]**.

The U.S. Environmental Protection Agency on **[insert date]**.

This TMDL is effective on **[insert date]**.

The elements of the TMDL are presented in Table 7-38.1 and the Implementation Plan in Table 7-38.2.

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Table 7-38.1. Machado Lake Pesticides and PCBs TMDL: Elements

TMDL Element	Regulatory Provisions
<p>Problem Statement</p>	<p>Machado Lake is identified on the 1998, 2002, 2006, and 2008 Federal Clean Water Act Section 303(d) lists of impaired waterbodies due to chlordane, DDT, dieldrin, Chem A, and PCBs in fish tissue.</p> <p>Chem A (the abbreviation for ‘chemical group A’) is a suite of bio-accumulative pesticides that includes chlordane and dieldrin. The 1998 303(d) listing (and subsequent listings) for Chem A was predominately based on fish tissue concentrations of chlordane and dieldrin; there was only minimal detection of other Chem A pollutants in 1983 and 1984. Chlordane and dieldrin have been recently detected in fish tissue, while other Chem A pollutants have not been detected in 25 years. Therefore, this TMDL only addresses the Chem A pollutants (chlordane and dieldrin) that are causing impairment.</p> <p>Because of potential harm to human health and the environment, the use of these pollutants has been banned for many years; however, the physio-chemical properties of the pollutants cause them to persist in the environment. These pollutants, bound to soil particles, are easily transported with surface runoff to waterbodies. Contaminated sediments accumulate in the receiving waterbodies and aquatic organisms are exposed to the toxic pollutants. Sediment toxicity has been documented at Machado Lake, and it is likely that pesticides and PCBs contribute to the toxic condition of the sediments. Moreover, all of these pollutants biomagnify as they move up the food chain, thereby increasing concentrations in higher trophic-level aquatic organisms and wildlife.</p> <p>The exposure of the Machado Lake ecosystem to chlordane, DDT, dieldrin, and PCBs has impaired the aquatic life (WARM, WILD, RARE, WET) and recreation (REC-1, REC-2), including fishing, designated beneficial uses of the lake. This TMDL addresses these impairments.</p> <p>Applicable water quality objectives for this TMDL are narrative objectives for Chemical Constituents, Bioaccumulation, Pesticides, and Toxicity in the Basin Plan and the numeric water quality criteria promulgated in 40 CFR 131 (the California Toxics Rule (CTR)).</p>
<p>Numeric Targets</p>	<p>Numeric targets are for pesticides and PCBs in water, sediment, and fish tissue to protect aquatic life, fishing, and other recreational uses in the lake. The CTR criteria for human health (including protection for consumption of organisms) are the numeric targets for the water column. These targets will protect both aquatic life and human health because the CTR human health criteria are more stringent than the aquatic life criteria.</p>

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TMDL Element	Regulatory Provisions																																						
	<table border="1" data-bbox="673 315 1198 661"> <thead> <tr> <th>Pollutant</th> <th>Water Column Target (ug/L)</th> </tr> </thead> <tbody> <tr> <td>Total PCBs</td> <td>0.00017</td> </tr> <tr> <td>4,4' DDT</td> <td>0.00059</td> </tr> <tr> <td>4,4' DDE</td> <td>0.00059</td> </tr> <tr> <td>4,4' DDD</td> <td>0.00084</td> </tr> <tr> <td>Chlordane</td> <td>0.00059</td> </tr> <tr> <td>Dieldrin</td> <td>0.00014</td> </tr> </tbody> </table> <p data-bbox="414 693 1461 861">The sediment numeric targets are based on the freshwater Threshold Effect Concentration (TEC) guidelines compiled by the National Oceanographic and Atmospheric Administration (NOAA). The fish tissue numeric targets are based on the Office of Environmental Health Hazard Assessment (OEHHA) Fish Contaminant Goals (FCGs).</p> <table border="1" data-bbox="544 892 1328 1291"> <thead> <tr> <th>Pollutant</th> <th>Sediment Target (ug/kg dry weight)</th> <th>Fish Tissue Target (ng/g wet weight)</th> </tr> </thead> <tbody> <tr> <td>Total PCBs</td> <td>59.8</td> <td>3.6</td> </tr> <tr> <td>DDT (all congeners)</td> <td>4.16</td> <td>No target</td> </tr> <tr> <td>DDE (all congeners)</td> <td>3.16</td> <td>No target</td> </tr> <tr> <td>DDD (all congeners)</td> <td>4.88</td> <td>No target</td> </tr> <tr> <td>Total DDT</td> <td>5.28</td> <td>21.0</td> </tr> <tr> <td>Chlordane</td> <td>3.24</td> <td>5.6</td> </tr> <tr> <td>Dieldrin</td> <td>1.9</td> <td>0.46</td> </tr> </tbody> </table>	Pollutant	Water Column Target (ug/L)	Total PCBs	0.00017	4,4' DDT	0.00059	4,4' DDE	0.00059	4,4' DDD	0.00084	Chlordane	0.00059	Dieldrin	0.00014	Pollutant	Sediment Target (ug/kg dry weight)	Fish Tissue Target (ng/g wet weight)	Total PCBs	59.8	3.6	DDT (all congeners)	4.16	No target	DDE (all congeners)	3.16	No target	DDD (all congeners)	4.88	No target	Total DDT	5.28	21.0	Chlordane	3.24	5.6	Dieldrin	1.9	0.46
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<p>Source Analysis</p>	<p>The point sources of pesticides and PCBs into Machado Lake are stormwater and urban runoff discharges from the municipal separate storm sewer system (MS4), California Department of Transportation (Caltrans), and general construction and industrial dischargers. Stormwater and urban runoff discharges to Machado Lake occur through the following subdrainage systems: Wilmington Drain, Project 77 and Project 510.</p> <p>PCBs, DDT, dieldrin, and chlordane are no longer legally sold or used, yet, they remain ubiquitous in the environment, bound to fine-grained particles. When these particles become waterborne, the chemicals are ferried to new locations. The more recent small discharges of pesticides and PCBs to Machado Lake most likely come from the erosion of pollutant-laden sediment further up in the watershed. Urban runoff and rainfall higher in the watershed mobilize the particles, which are then washed into storm drains and channels that discharge to the lake.</p>																																						

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	<p>The major nonpoint source of pesticides and PCBs to Machado Lake is the internal lake sediments. The contaminated lake sediments are a reservoir of historically deposited pollutants. The resuspension of these sediments contributes to the fish tissue impairment in the lake. Additionally, the feeding behaviors of fish expose them to contaminated sediments.</p> <p>The estimated contribution of pesticides and PCBs from point sources is much smaller than the estimated contribution from internal lake sediments.</p>																			
<p>Linkage Analysis</p>	<p>A conceptual model links the source loading information to the numeric targets.</p> <p>The chemical properties of pesticides and PCBs result in strong binding to particulate matter; therefore, most of the incoming contaminants from the watershed are bound to suspended sediment particles. When the contaminated suspended sediment settles to the lake bottom, pesticides and PCBs accumulate in the lake sediments. These pollutants are available to migrate to the water column and ultimately to the food web. Through bioturbation and feeding processes the contaminants may be taken up by benthic organisms. Once the sediment-bound PCBs and pesticides contaminate benthic organisms, the contaminants may move out of the lake sediments through each trophic level. Thus, the contaminated lake sediments are an important source. It is expected that if sediments within the lake and those loaded to the lake meet sediment numeric targets, then the fish tissue targets will be met as well. The monitoring program will consist of water, sediment, and fish tissue monitoring to assess this assumption.</p>																			
<p>Loading Capacity</p>	<p>The loading capacity for each pollutant is equal to the volume of the active layer of sediment in the lake multiplied by the sediment numeric target.</p> <p align="center">Pollutant Loading Capacity = Volume Active Sediment x Target Concentration</p> <p>The loading capacity for each pollutant is presented as follows; the conversion factors are not included in the table.</p> <table border="1" data-bbox="475 1425 1395 1692"> <thead> <tr> <th>Pollutant</th> <th>Target Concentration (ug/kg)</th> <th>Sediment Volume (m³)</th> <th>Sediment Bulk Density* (g/ml)</th> <th>Loading Capacity (g)</th> </tr> </thead> <tbody> <tr> <td>Chlordane</td> <td>3.24</td> <td rowspan="4">372,310</td> <td rowspan="4">1.057</td> <td>1,275</td> </tr> <tr> <td>Total DDT</td> <td>2.28</td> <td>897</td> </tr> <tr> <td>Dieldrin</td> <td>1.9</td> <td>747</td> </tr> <tr> <td>PCBs</td> <td>59.8</td> <td>23,533</td> </tr> </tbody> </table> <p>*Standard value from lakes with similar sediment types</p>	Pollutant	Target Concentration (ug/kg)	Sediment Volume (m ³)	Sediment Bulk Density* (g/ml)	Loading Capacity (g)	Chlordane	3.24	372,310	1.057	1,275	Total DDT	2.28	897	Dieldrin	1.9	747	PCBs	59.8	23,533
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TMDL Element	Regulatory Provisions																								
<p>Waste Load Allocations</p>	<p>Waste load allocations (WLAs) for contaminants associated with suspended sediment are assigned to stormwater dischargers (MS4, Caltrans, general construction and general industrial) in both wet and dry weather.</p> <table border="1" data-bbox="521 415 1349 905"> <thead> <tr> <th data-bbox="526 415 808 569">Responsible Party</th> <th data-bbox="813 415 1062 569">Pollutant</th> <th data-bbox="1066 415 1344 569">WLA for Suspended Sediment-Associated Contaminants (ug/kg dry weight)</th> </tr> </thead> <tbody> <tr> <td data-bbox="526 575 808 617">MS4 Permittees¹,</td> <td data-bbox="813 575 1062 617">Total PCBs</td> <td data-bbox="1066 575 1344 617">59.8</td> </tr> <tr> <td data-bbox="526 623 808 665">Caltrans, General</td> <td data-bbox="813 623 1062 665">DDT (all congeners)</td> <td data-bbox="1066 623 1344 665">4.16</td> </tr> <tr> <td data-bbox="526 672 808 714">Construction and</td> <td data-bbox="813 672 1062 714">DDE (all congeners)</td> <td data-bbox="1066 672 1344 714">3.16</td> </tr> <tr> <td data-bbox="526 720 808 762">Industrial Stormwater</td> <td data-bbox="813 720 1062 762">DDD (all congeners)</td> <td data-bbox="1066 720 1344 762">4.88</td> </tr> <tr> <td data-bbox="526 768 808 810">Permittees, Other</td> <td data-bbox="813 768 1062 810">Total DDT</td> <td data-bbox="1066 768 1344 810">5.28</td> </tr> <tr> <td data-bbox="526 816 808 858">Non-stormwater</td> <td data-bbox="813 816 1062 858">Chlordane</td> <td data-bbox="1066 816 1344 858">3.24</td> </tr> <tr> <td data-bbox="526 865 808 907">NPDES Permittees</td> <td data-bbox="813 865 1062 907">Dieldrin</td> <td data-bbox="1066 865 1344 907">1.9</td> </tr> </tbody> </table>	Responsible Party	Pollutant	WLA for Suspended Sediment-Associated Contaminants (ug/kg dry weight)	MS4 Permittees ¹ ,	Total PCBs	59.8	Caltrans, General	DDT (all congeners)	4.16	Construction and	DDE (all congeners)	3.16	Industrial Stormwater	DDD (all congeners)	4.88	Permittees, Other	Total DDT	5.28	Non-stormwater	Chlordane	3.24	NPDES Permittees	Dieldrin	1.9
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<p>Load Allocations</p>	<p>Load allocations (LAs) addressing nonpoint sources of pesticides and PCBs are assigned to the lake sediments. The LAs are set to attain the lake loading capacity, including a 10% margin of safety; however, in the case that the existing load is less than the loading capacity, the LA is set at the existing load.</p> <p>The LAs for chlordane and total DDT are set to attain the lake loading capacity. For PCBs and dieldrin, where existing loads are less than the loading capacity, the LAs are set at the existing load to ensure that sediment quality for these pollutants does not degrade below current levels.</p> <table border="1" data-bbox="521 1310 1349 1556"> <thead> <tr> <th data-bbox="526 1310 808 1367">Responsible Party</th> <th data-bbox="813 1310 1062 1367">Pollutant</th> <th data-bbox="1066 1310 1344 1367">LA (grams)</th> </tr> </thead> <tbody> <tr> <td data-bbox="526 1373 808 1556" rowspan="4">City of Los Angeles</td> <td data-bbox="813 1373 1062 1415">Chlordane</td> <td data-bbox="1066 1373 1344 1415">1,147</td> </tr> <tr> <td data-bbox="813 1421 1062 1463">Total DDT</td> <td data-bbox="1066 1421 1344 1463">807</td> </tr> <tr> <td data-bbox="813 1470 1062 1512">Dieldrin</td> <td data-bbox="1066 1470 1344 1512">519</td> </tr> <tr> <td data-bbox="813 1518 1062 1560">PCBs</td> <td data-bbox="1066 1518 1344 1560">14,069</td> </tr> </tbody> </table>	Responsible Party	Pollutant	LA (grams)	City of Los Angeles	Chlordane	1,147	Total DDT	807	Dieldrin	519	PCBs	14,069												
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¹ Municipal Separate Storm Sewer System (MS4) Permittees including: Los Angeles County, Los Angeles County Flood Control District, and the Cities of Carson, Lomita, Los Angeles, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, and Torrance.

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TMDL Element	Regulatory Provisions															
<p>Margin of Safety</p>	<p>The uncertainties associated with this TMDL are due to:</p> <ul style="list-style-type: none"> ■ Limited data on the amount of pesticides and PCBs residing within the lake sediments ■ Limited data on the amount of pesticides and PCBs entering the lake ■ Estimated information on the volume of the active layer of sediment in Machado Lake ■ Estimated information on the watershed sediment deposition rate <p>To address these uncertainties, an implicit margin of safety is included by employing conservative assumptions in the TMDL analysis. Additionally, an explicit 10 % margin of safety is applied to the loading capacity for this TMDL.</p> <table border="1" data-bbox="615 781 1255 1037"> <thead> <tr> <th>Pollutant</th> <th>Loading Capacity (g)</th> <th>Loading Capacity with 10 % Margin of Safety</th> </tr> </thead> <tbody> <tr> <td>Chlordane</td> <td>1,275</td> <td>1,147</td> </tr> <tr> <td>Total DDT</td> <td>897</td> <td>807</td> </tr> <tr> <td>Dieldrin</td> <td>747</td> <td>673</td> </tr> <tr> <td>PCBs</td> <td>23,533</td> <td>21,180</td> </tr> </tbody> </table>	Pollutant	Loading Capacity (g)	Loading Capacity with 10 % Margin of Safety	Chlordane	1,275	1,147	Total DDT	897	807	Dieldrin	747	673	PCBs	23,533	21,180
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<p>Seasonal Variations and Critical Conditions</p>	<p>Pesticides and PCBs in fish tissue are a concern in Machado Lake due to long-term loading and bioaccumulation and biomagnification. Wet-weather events may produce extensive sediment redistribution and transport sediments to the lake. This would be considered the critical condition for loading and the CTR-based water column targets are protective of this condition. However, the effects of pesticides and PCBs in sediment and fish tissue are manifested over long time periods. The TMDL is established in a manner that accounts for the longer time periods in which ecological effects may occur.</p>															

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TMDL Element	Regulatory Provisions
<p>Monitoring Plan</p>	<p><u>Compliance Monitoring – Waste Load Allocations</u></p> <p>Responsible parties assigned WLAs shall conduct monitoring to determine compliance with the WLAs. Samples will be analyzed for total suspended solids. Sampling shall be designed to collect sufficient volumes of suspended solids to allow for analysis of the following pollutants in the bulk sediment:</p> <ul style="list-style-type: none"> ■ Total Organic Carbon ■ Total PCBs ■ DDT and Derivatives ■ Dieldrin ■ Total Chlordane <p>In addition to TMDL constituents, general water chemistry (temperature, dissolved oxygen, pH, and electrical conductivity) and a flow measurement will be required at each sampling event.</p> <p>The monitoring shall be conducted in two phases at appropriate locations in the subwatershed.</p> <p><u>Phase 1</u></p> <p>Phase 1 monitoring will be conducted for a three-year period. Samples will be collected during two wet weather events each year. The first large storm event of the season shall be included as one of the monitoring events.</p> <p><u>Phase 2</u></p> <p>Phase 2 monitoring will commence once Phase 1 monitoring has been completed. Samples will be collected during one wet weather event every other year.</p> <p>Monitoring shall be conducted under a technically appropriate Monitoring and Reporting Plan (MRP) and Quality Assurance Project Plan (QAPP). The MRP shall include a requirement that the responsible parties report compliance and non-compliance with waste load allocations as part of annual (or biennial during Phase 2 monitoring) reports submitted to the Regional Board. The QAPP shall include protocols for sample collection, standard analytical procedures, and laboratory certification. All samples shall be collected in accordance with SWAMP protocols. Phase 1 sampling shall begin within 60 days of Executive Officer approval of the MRP and QAPP.</p> <p>The Regional Board Executive Officer may reduce, increase, or modify these monitoring and reporting requirements, as necessary, based on the results of Phase 1 monitoring. Currently, several of the constituents of concern have numeric targets that are lower than the readily available detection limits. As analytical methods and detection limits continue to improve (i.e., development of lower detection limits) and become more environmentally relevant, responsible parties shall incorporate new method detection limits in the MRP</p>

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TMDL Element	Regulatory Provisions
	<p>and QAPP.</p> <p><u>Compliance Monitoring – Load Allocations</u></p> <p>Monitoring to determine compliance with the TMDL load allocations and attainment of the fish tissue targets shall be conducted as part of the Lake Water Quality Management Plan (LWQMP). This monitoring shall commence following the remediation of lake sediments as presented in the LWQMP.</p> <p>Lake sediment samples will be collected annually from three locations in the lake (northern end, mid point, southern end). All samples shall be collected in accordance with SWAMP protocols. Sediment samples will be analyzed for:</p> <ul style="list-style-type: none"> ■ Total Organic Carbon ■ Total PCBs ■ DDT and Derivatives ■ Dieldrin ■ Total Chlordane <p>Fish shall be collected for tissue analysis every 3 years. Fish tissue samples will be analyzed for:</p> <ul style="list-style-type: none"> ■ Total PCBs ■ DDT and Derivatives ■ Total Chlordane ■ Dieldrin <p>The fish collection and analysis shall be conducted in accordance with the U.S. EPA <i>Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories: Volume 1 Fish Sampling and Analysis</i> (EPA 823-B-00-0007) or updates.</p> <p>In addition to TMDL constituents, general water chemistry (temperature, dissolved oxygen, pH, and electrical conductivity) will be required at each sampling event. Additional monitoring may be required depending on which implementation alternatives are pursued by the responsible parties.</p> <p>Currently, several of the constituents of concern have numeric targets that are lower than the readily available detection limits. As analytical methods and detection limits continue to improve (i.e., development of lower detection limits) and become more environmentally relevant, responsible parties shall incorporate new method detection limits in the MRP and QAPP.</p> <p><u>Wilmington Drain Monitoring</u></p> <p>The Los Angeles County Flood Control District shall monitor Wilmington Drain to demonstrate that Wilmington Drain is not re-contaminating Machado Lake. Monitoring shall include bed sediment sampling and visual inspection of channel maintenance and operation of best management practices (BMPs).</p>

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TMDL Element	Regulatory Provisions
	Monitoring shall be required by an Executive Officer order or a conditional Water Quality Certification under section 401 of the Clean Water Act.

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<p>Implementation Plan</p>	<p>Compliance with the TMDL is based on the assigned WLAs and LAs. Compliance with this TMDL will require the implementation of NPDES permit limitations for urban runoff and stormwater discharges and cleanup of contaminated lake sediments. Table 7-38.2 contains a schedule for responsible parties to implement BMPs and a LWQMP to comply with the TMDL.</p> <p>I. Implementation of WLAs</p> <p>The TMDL WLAs shall be incorporated into the MS4, Caltrans, and general construction and industrial stormwater NPDES permits and any other non-stormwater NPDES permits.</p> <p>Permitted stormwater dischargers can implement a variety of implementation strategies to meet the required WLAs, such as non-structural and structural BMPs, and/or diversion and treatment to reduce sediment transport from the watershed to the lake.</p> <p>II. Implementation of LAs</p> <p>Load allocations shall be implemented through the following:</p> <ul style="list-style-type: none"> (1) Memorandum of Agreement (MOA), or (2) Cleanup and Abatement Order or Other Regulatory Order. <p>The responsible parties for the load allocations shall be allowed one year from the effective date of this TMDL to enter into a Memorandum of Agreement (MOA) with the Executive Officer, detailing the voluntary efforts that will be undertaken to attain the load allocations. The MOA shall include development of a LWQMP. The MOA shall comply with the <u>Water Quality Control Policy for Addressing Impaired Waters: Regulatory Structure and Options</u> (“Policy”), including part II, section 2 c ii and related provisions, and shall be consistent the requirements of this TMDL. If the MOA is timely adopted, and so long as it is implemented, the program described in the MOA shall be deemed “certified”, pursuant to the Policy, subject to the conditions of section 2 e of the Policy. The MOA must be approved by the Executive Officer, and may be amended with Executive Officer approval, as necessary. If an MOA is not established with responsible parties within one year or if responsible parties do not comply with the terms of the MOA, a cleanup and abatement order pursuant to Water Code section 13304 or another appropriate regulatory order shall be issued to implement the load allocations.</p> <p>Furthermore, the implementation of the MOA must result in attainment of the TMDL load allocations. If the MOA and LWQMP are not implemented or otherwise do not result in attainment of load allocations, the certification shall be revoked, the MOA rescinded, and the load allocations shall be implemented through a cleanup and abatement order or other order as described above. Implementation of the MOA shall be reviewed annually by the Executive Officer</p>

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	<p>as part of the MRP annual reports.</p> <p>Responsible parties entering into an MOA with the Regional Board shall submit and implement a LWQMP. The LWQMP must be approved by the Executive Officer and may be amended by Executive Officer approval, as necessary. The LWQMP shall include an MRP to address appropriate monitoring and a clear timeline for the implementation of measures that will achieve the lake sediment LAs. The LWQMP shall include annual reporting requirements. In addition to the LWQMP and MRP, a QAPP shall also be submitted to the Regional Board for approval by the Executive Officer to ensure data quality.</p> <p>One and one half years from the effective date of the TMDL, the responsible parties entering into the MOA shall submit a letter of intent, LWQMP, MRP, and QAPP for approval by the Executive Officer in order to be in compliance with the MOA adopted as part of this TMDL. If there is already an MOA, LWQMP, MRP, and QAPP in place to implement the Machado Lake Nutrient TMDL, these documents may be amended to implement and attain the load allocations of this TMDL.</p> <p>The Executive Officer may require a revised assessment under the MOA and LWQMP:</p> <ul style="list-style-type: none"> (a) To prevent pesticides and PCBs from accumulating or recycling in the lake in deleterious amounts that impair water quality and/or adversely affect beneficial uses; (b) To reflect the results of special studies. <p>III. Cleanup and Abatement Order or Other Regulatory Order:</p> <p>Alternatively, responsible parties may propose or the Regional Board may impose an alternative program that would be implemented through a cleanup and abatement order, or any other appropriate order or orders, provided the program is consistent with the allocations and schedule described in Table 7-38.2.</p> <p>IV. Compliance with Allocations and Attainment of Numeric Targets</p> <p>TMDL effectiveness will be determined through water, sediment, and fish tissue monitoring and comparison with the TMDL waste load and load allocations and numeric targets. The compliance point for the stormwater WLA is at the storm drain outfall of the permittee's drainage area. Alternatively, if stormwater dischargers select a coordinated compliance option, the compliance point for the stormwater WLA may be at the storm drain outfalls discharging to Machado Lake (i.e., Wilmington Drain, Project 77 storm drain, and Project 510 storm drain). Depending on potential BMPs implemented, alternative stormwater compliance points may be proposed by responsible parties subject to approval by the Regional Board Executive Officer. The compliance point for responsible parties receiving a load allocation is in Machado Lake.</p>

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TMDL Element	Regulatory Provisions
	<p>Stormwater dischargers may coordinate compliance with the TMDL. Compliance with the TMDL may be based on a coordinated MRP and implementation plan. Dischargers interested in coordinated compliance shall submit a coordinated MRP and implementation plan that identifies stormwater BMPs and monitoring to be implemented by the responsible parties.</p> <p>V. Application of Allocations to Responsible Parties</p> <p>Responsible parties to attain WLAs for this TMDL include but are not limited to:</p> <ul style="list-style-type: none"> • Caltrans • General Stormwater Permit Enrollees • MS4 Permittees including: <ul style="list-style-type: none"> ➢ Los Angeles County ➢ Los Angeles County Flood Control District ➢ City of Carson ➢ City of Lomita ➢ City of Los Angeles ➢ City of Palos Verdes Estates ➢ City of Rancho Palos Verdes ➢ City of Redondo Beach ➢ City of Rolling Hills ➢ City of Rolling Hills Estates ➢ City of Torrance • Other Non-stormwater Permittees <p>The City of Los Angeles is the responsible jurisdiction to implement the assigned Load Allocations for this TMDL.</p>

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Table 7-38.2. Machado Lake Pesticides and PCBs TMDL: Implementation Schedule

Task Number	Task	Responsible Party	Deadline
Load Allocation Requirements			
1	Enter into a Memorandum of Agreement (MOA) with the Regional Board to implement the load allocations. If there is already an MOA in place to implement the Machado Lake Nutrient TMDL, the current MOA may be amended to address the requirements of this TMDL.	City of Los Angeles	1 year from effective date of TMDL
2	Begin development of a Cleanup and Abatement Order or other regulatory order to implement the load allocations if an MOA is not established with responsible parties.	Regional Board	1 year from effective date of TMDL
3	Issue a Cleanup and Abatement Order or other regulatory order if an MOA is not established with responsible parties. The Cleanup and Abatement Order or other regulatory order shall reflect the TMDL Implementation Schedule.	Regional Board	1.5 years from effective date of TMDL
4	Submit a LWQMP ² , MRP ³ Plan, and QAPP ⁴ for approval by the Executive Officer to comply with the MOA. If there is already a LWQMP, MRP Plan, and QAPP in place to implement the Machado Lake Nutrient TMDL, these documents may be amended to address the requirements of this TMDL.	City of Los Angeles	1.5 years from the effective date of the TMDL
5	Begin implementation of the LWQMP.	City of Los Angeles	60 days from date of LWQMP approval
6	Achieve LAs for Pesticides and PCBs and demonstrate attainment of numeric targets.	City of Los Angeles	September 30, 2018
Waste Load Allocation Requirements			
7	Submit a MRP and QAPP for Executive Officer approval.	Caltrans, MS4 Permittees ⁵	6 months from effective date of TMDL
8	Begin monitoring as outlined in the approved MRP and QAPP.	Caltrans, MS4 Permittees	60 days from date of approval

² Lake Water Quality Management Plan

³ Monitoring Reporting Program

⁴ Quality Assurance Project Plan

⁵ Municipal Separate Storm Sewer System (MS4) Permittees including: Los Angeles County, Los Angeles County Flood Control District, and the Cities of Carson, Lomita, Los Angeles, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, and Torrance.

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Attachment A to Resolution No. R10-XXX

Task Number	Task	Responsible Party	Deadline
9	Based on the results of Phase 1 Monitoring, submit an implementation plan to attain WLAs or document that WLAs are attained.	Caltrans, MS4 Permittees	6 months from completion of Phase 1 Monitoring (Submit Draft Plan) 1 year from completion of Phase 1 Monitoring (Submit Final Plan)
10	Begin implementation actions to attain WLAs, as necessary.	Caltrans, MS4 Permittees	60 days from date of plan approval
11	Achieve WLAs for Pesticides and PCBs and demonstrate attainment of numeric targets.	Caltrans, MS4 Permittees	September 30, 2018

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