

## ATTACHMENT TO RESOLUTION NO. R8-2003-0039

*(added language is underlined, deleted language is struck out or otherwise identified)*

### Amendment to the Santa Ana Region Basin Plan

#### Chapter 5 - Implementation Plan, Discussion of Newport Bay Watershed (page 5-39 *et seq*)

Delete the existing discussion entitled: "Toxic Substance Contamination" on pages 5-41 and 5-42 of the Basin Plan:

##### ~~Toxic Substance Contamination~~

~~As described in Chapter 6 (Monitoring and Assessment), a number of monitoring programs are conducted by the Regional Board and local agencies to determine the presence and sources of toxic substances in Newport Bay and its watershed. These studies have shown high levels of certain trace metals and organics in San Diego Creek and at certain locations in the Bay itself. As a result of these findings, the Board has designated San Diego Creek as a water quality limited segment. Further evaluation of toxic constituents in the Upper and Lower Newport Bay is being addressed by the Bay Protection and Toxic Cleanup Program, which is discussed later in this chapter.~~

~~Sources of these trace metals and organics include past and present agricultural activities, erosion and transport of soils to which toxicants are bound, boatyard operations, and stormwater runoff.~~

~~The efforts described earlier to reduce erosion and siltation and to control nutrient inputs in agricultural irrigation tailwaters should also result in reduced loadings of toxics to the Bay and its tributaries.~~

~~Boatyard operations in the Region are regulated by the Regional Board under NPDES permits. Each operator is required to develop and implement a Pollution Control Plan (PCP) to prevent discharges of pollutants to the Bay. In 1989-90, the Regional Board conducted a study to evaluate the effectiveness of the PCPs utilized by boatyards in Newport Bay (and Anaheim Bay-Huntington Harbour) [Ref. 15]. The study found that some boatyard waste collection and treatment practices are not effective in reducing the discharge of heavy metals to the Bay. Specific recommendations for necessary improvements were provided and are generally being implemented. Where necessary, enforcement actions will be taken by the Board to address continuing problems.~~

~~During 1992-93, the Regional Board contracted with local universities to further evaluate the occurrence and impacts of toxics in the Newport Bay watershed. The results are contained in final reports prepared by UC Irvine and UC Davis [Ref 16, 17]. The results of the study indicated that metal concentrations in Newport Bay and its watershed have generally improved, with the exception of locations near boatyard facilities. This confirms the data used to designate Lower Newport Bay as a Toxic Hot Spot (see following discussion). Endosulfan was found to be ubiquitous in the watershed. DDT also persists in the Bay and watershed. In most cases, endosulfan and DDT levels exceeded established water quality criteria.~~

The chronic toxicity bioassays on the freshwater samples indicated no toxicity due to metals. Some toxicity was observed, apparently caused by one or more nonpolar organic compounds. Additional efforts should focus on a more specific identification of the toxic compound(s). Additional discussion of the Newport Bay Coordinating Council and their activities in Newport Bay, is provided in Chapter 7.

Add the following:

#### 4 Toxic Substances Contamination

San Diego Creek and Newport Bay are not attaining water quality standards with respect to certain classes of toxic pollutants. On June 14, 2002, USEPA established Total Maximum Daily Loads (TMDLs) for selenium, heavy metals (cadmium, copper, lead, and zinc), organochlorine pesticides (chlordane, dieldrin, DDT, and toxaphene), PCBs, and organophosphate pesticides (diazinon and chlorpyrifos). In addition, USEPA established a separate TMDL for the Rhine Channel in Lower Newport Bay. Table 5-9i shows these TMDLs, the constituents addressed, and the waterbodies affected.

USEPA's TMDLs do not specify implementation plans, which are the responsibility of the Regional Board. The Regional Board has adopted or will adopt Basin Plan amendments to incorporate the USEPA TMDLs, revised if and as appropriate, into the Basin Plan. These amendments will include implementation plans. The anticipated schedule for these Basin Plan amendments is also shown in Table 5-9i.

**Table 5-9i. USEPA TMDLs Established June 14, 2002**

TMDL	Basin Plan Schedule	Location	Constituents
Organophosphate Pesticides	2003	SDC	Diazinon, chlorpyrifos
		UNB	Chlorpyrifos
Selenium	2007	SDC, UNB LNB	Selenium
Metals	2007	SDC	Cd, Cu, Pb, Zn
		UNB	Cd, Cu, Pb, Zn
		LNB	Cu, Pb, Zn
Organochlorine Compounds	2007	SDC	Chlordane, dieldrin, DDT, PCBs, toxaphene
		UNB	Chlordane, DDT, PCBs
		LNB	Chlordane, dieldrin, DDT, PCBs
Rhine Channel	2007	Rhine Channel	Se, Cr, Hg, Cu, Pb, Zn Chlordane, dieldrin, DDT, PCBs

*SDC= San Diego Creek; UNB=Upper Newport Bay; LNB=Lower Newport Bay*

##### 4.a Diazinon and Chlorpyrifos TMDL

Aquatic toxicity in San Diego Creek and Upper Newport Bay causes adverse impacts to the established beneficial uses of those waterbodies.

A report prepared by Regional Board staff describes the aquatic life toxicity problems in San Diego Creek and Upper Newport Bay in greater detail and discusses the technical basis for

the TMDL that follows<sup>1</sup>. This TMDL is the same as that promulgated by the USEPA on June 14, 2002, but an implementation plan is also specified (see Section 4.a.i.). The USEPA TMDL was, in fact, based on a draft TMDL prepared by Regional Board staff. The TMDL addresses toxicity due to diazinon and chlorpyrifos in San Diego Creek and chlorpyrifos in Upper Newport Bay. Implementation of this TMDL is expected to address, to a significant extent, the occurrence of aquatic life toxicity in these waterbodies. Reduction in aquatic life toxicity will help assure attainment of water quality standards; that is, compliance with water quality objectives and protection of beneficial uses.

Table 5-9j shows the TMDL and the allocations for diazinon and chlorpyrifos in San Diego Creek.

**Table 5-9j. Diazinon and Chlorpyrifos Allocations for San Diego Creek**

Category	Diazinon (ng/L)		Chlorpyrifos (ng/L)	
	Acute	Chronic	Acute	Chronic
Wasteload Allocation	72	45	18	12.6
Load allocation	72	45	18	12.6
MOS	8	5	2	1.4
<b>TMDL</b>	<b>80</b>	<b>50</b>	<b>20</b>	<b>14</b>

*MOS = Margin of Safety; Chronic means 4-consecutive day average*

Table 5-9k shows the TMDL and the allocations for chlorpyrifos in Upper Newport Bay.

**Table 5-9k. Chlorpyrifos Allocations for Upper Newport Bay**

Category	Acute (ng/L)	Chronic (ng/L)
Wasteload allocation	18	8.1
Load allocation	18	8.1
MOS	2	0.9
<b>TMDL</b>	<b>20</b>	<b>9</b>

*MOS = Margin of Safety; Chronic means 4-consecutive day average*

The TMDL and its allocations contain an explicit 10% margin of safety. In addition, a substantial margin of safety is implicitly incorporated in the TMDL through use of conservative assumptions.

#### 4.a.i TMDL Implementation

Table 5-9l outlines the tasks and schedules to implement the TMDL.

<sup>1</sup> Diazinon and Chlorpyrifos TMDL, Upper Newport Bay and San Diego Creek, April 4, 2003

**Table 5-91. TMDL Task Schedule**

Task No.	Task	Schedule	Description
1	USEPA Re-Registration Agreements	12/2001 to 12/2006	Phase-out of uses specified in the re-registration agreements. Should end over 90% of usage. <sup>2</sup>
2	Revise Discharge Permits	2005	WDR and NPDES permits will be revised to include the TMDL allocations, as appropriate.
3	Pesticide Runoff Management Plan	2004	A pesticide runoff management plan will be developed
4	Monitoring	2003	Modify existing regional monitoring program to include analysis for organophosphate pesticides and toxicity
	Special Studies		
5a	Atmospheric deposition	2003	Quantify atmospheric deposition of chlorpyrifos loading to Upper Newport Bay
5b	Mixing volumes in Upper Newport Bay	2003	Model mixing and stratification of chlorpyrifos in Upper Newport Bay during storm events

**Task 1: USEPA Re-Registration Agreements**

The re-registration agreements negotiated by USEPA with the manufacturers of diazinon and chlorpyrifos are the most significant factor affecting the implementation plan. Usage of both diazinon and chlorpyrifos in the Newport Bay Watershed is expected to be reduced by over 90 percent.

**Task 2: Revise Discharge Permits**

The TMDL allocates wasteloads to all dischargers in the watershed. Since the TMDL is concentration-based, these wasteloads are concentration limits. The concentration limits will be incorporated into existing and future discharge permits in the watershed. Compliance schedules would be included in permits only if they are demonstrated to be necessary. Compliance would be required as soon as possible, but no later than December 1, 2007.

**Task 3: Pesticide Runoff Management Plan**

A pesticide runoff management plan will be developed for the watershed as a cooperative project between the Regional Board and stakeholders.

**Task 4: Monitoring**

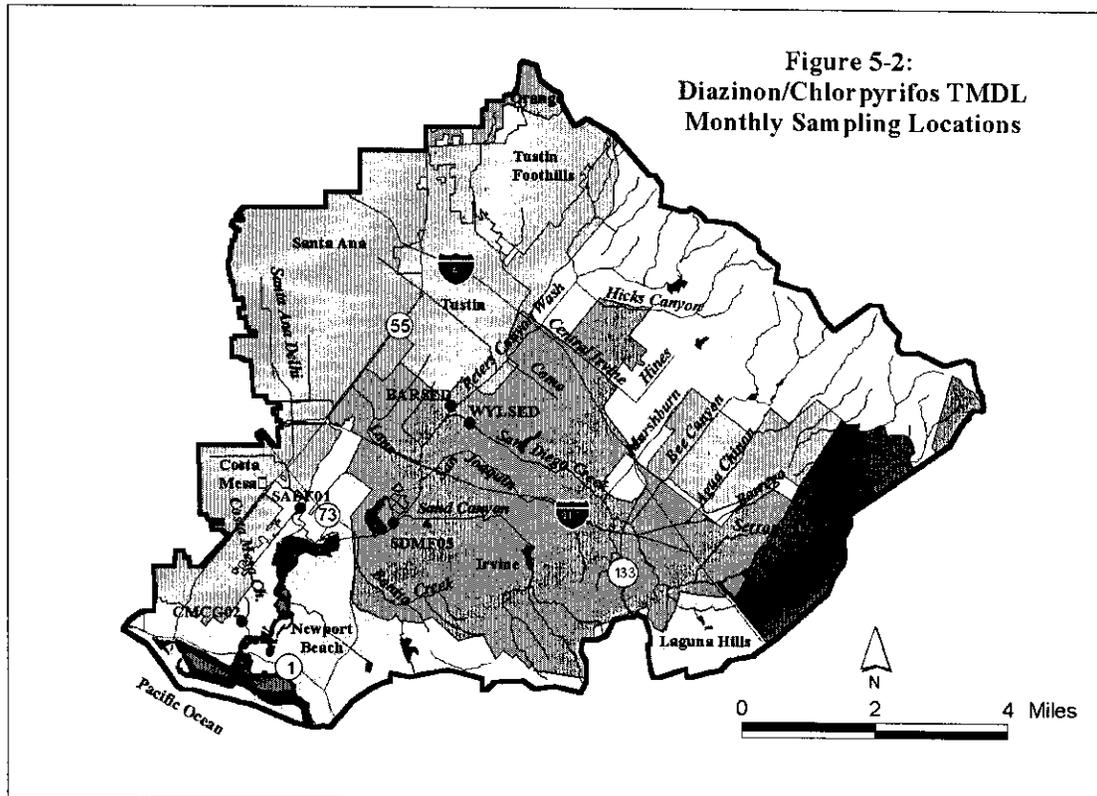
Routine monitoring is necessary to assess compliance with the allocations specified in the TMDL. The County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach, and the agricultural operators in the Newport Bay

<sup>2</sup> This task is not within the purview of the Regional Board, but is nevertheless of critical significance for implementation of the TMDL.

watershed will be required to propose a plan by January 30, 2004 for routine monitoring to determine compliance with the TMDL allocations for diazinon and chlorpyrifos. At a minimum, the proposed plan must include the collection of monthly samples at the stations specified in Table 5-9m and shown in Figure 5-2 and analysis of the samples for diazinon and chlorpyrifos. Monthly toxicity tests should also be conducted at several locations in the watershed. Data summaries will be required monthly. An annual report summarizing the data collected for the year and evaluating compliance with the TMDL will be required to be submitted by November 30 of each year.

**Table 5-9m. Minimum Required Monthly Sampling Stations**

Station Code	Location
BARSED	Peters Canyon Wash
WYLSER	San Diego Creek at Harvard Dr.
SDMF05	San Diego Creek at Campus Dr.
SADF01, or CMCG02	Santa Ana Delhi Channel, or Costa Mesa Channel



In lieu of this coordinated, regional monitoring plan, one or more of the parties identified in the preceding paragraph may submit an individual or group plan to conduct routine monitoring in areas solely within their jurisdiction to determine compliance with the TMDL. Any such individual or group plans must also be submitted by January 30, 2004. Reports of the data collected pursuant to approved individual/group plan(s) will be required to be submitted monthly, and an annual report summarizing the data and evaluating compliance with the TMDL will be required to be submitted by November 30 of each year.

It is likely that implementation of these requirements will be through the issuance of Water Code Section 13267 letters to the affected parties. The monitoring plan(s) will be considered by the Regional Board and implemented upon the Regional Board's approval.

#### **Task 5: Special Studies**

With the anticipated assistance of stakeholders in the watershed, the Regional Board will conduct investigations to (1) quantify the significance of atmospheric deposition of chlorpyrifos to Upper Newport Bay, and (2) determine the adequacy of the freshwater allocations for chlorpyrifos in the tributaries to Upper Newport Bay in achieving the lower saltwater allocations. The existing hydrodynamic model for Newport Bay is being used to perform simulations that predict contaminant concentrations in the Bay based on various flow and management scenarios. The model results will be used to verify whether the TMDL allocations for chlorpyrifos in the watershed will be sufficient to achieve the TMDL allocations in Upper Newport Bay. One of the questions to be addressed is the magnitude of toxic exposure that could result from development of a freshwater lens associated with the discharge of stormwater to Upper Newport Bay.

#### **4.a.ii Adjust TMDL**

Based on the results of the special studies and recommendations made in the Pesticide Runoff Monitoring reports, changes to the TMDL may be warranted. Such changes would be considered through the Basin Plan Amendment process.

The Regional Board is committed to the review of this TMDL every three years, or more frequently if warranted by these or other studies.