

Table 1. Proposed 303(d) pollutant-water body pairs addressed in comment letter

Water body	Pollutant
Lower Newport Bay	DDT
Lower Newport Bay	PCBs
Lower Newport Bay	Chlordane
Upper Newport Bay	DDT
Upper Newport Bay	PCBs
Upper Newport Bay	Chlordane
San Diego Creek	Toxaphene
Peters Canyon Channel	DDT
Peters Canyon Channel	Toxaphene

SWRCB Comment 115.1

Relevant pollutant-water body pairs: all.

Board response:

The Board's response to our comment is unclear, it seems to indicate that the data referenced in our previous comment letter were inadequate to demonstrate the decline of organochlorines in the watershed, and to determine the causes and impacts. Board staff claims that additional data are necessary.

Counter-rebuttal:

The data we previously supplied clearly demonstrate the downward trend in organochlorines in the watershed, and the attached reports on DDT, toxaphene, and chlordane further bolster this case (Attachments 1, 2, and 3). The analysis of DDT data presented in the attached "DDT Analysis for the Newport Bay Watershed" (Attachment 1) was conducted by Quantitative Environmental Analysis (QEA), specialists in statistical analysis of environmental data, and their conclusion was that the probability that there is no decline in DDT concentrations in the watershed is "vanishingly small." So, counter to the Board's claim, existing datasets are adequate and substantiate the statistically significant declines in organochlorine concentrations in the watershed; additional data are not required.

Additionally, Board staff has not addressed a central part of the original comment, namely that toxicity problems have not been linked with the organochlorine compounds proposed for listing. In fact, Bay et al. (2004) explicitly *deny* a link between the compounds proposed for listing and acute toxicity in the watershed. Steve Bay, a member of the Technical Advisory Committee for the Newport Bay Organochlorines TMDL, in comments to the Regional Board staff on October 12, 2006, again indicates that the organochlorine compounds are not responsible for observed toxicity, and that additional work is necessary to determine which pollutants are responsible for those impacts. Citing from Dr. Bay's comments: "The available data from Newport Bay indicates an association between sediment contamination and toxicity, ... , but it does not provide conclusive data to support the identification of DDT, PCB, or chlordane as

the cause. The exceedance of SQGs and the presence of statistical correlations for individual contaminants are not sufficient to establish the cause, as these findings could be due to the effects of other contaminants that were unmeasured or cross-correlated with the target chemicals. For example, recent data ... indicates that pyrethroid pesticides may be a significant cause of sediment toxicity in upper Newport Bay” (Attachment 4)

SWRCB Comments 115.10, 115.11, 115.12, 115.14, 115.15

Relevant pollutant-water body pairs:

Lower Newport Bay – DDT; Lower Newport Bay – PCBs; Lower Newport Bay – chlordane; Upper Newport Bay – PCBs; Upper Newport Bay – chlordane; Peters Canyon Channel – DDT; Peters Canyon Channel – toxaphene.

Board response:

The Board insists that all data—including old data—must be considered in the assessment of whether to list a compound, and therefore that additional data would be necessary to remove the water body from the 303(d) list.

Counter-rebuttal:

The Board’s response shows flawed reasoning. First, the Board clearly cannot endorse using *all* available data in a listing assessment. For example, it seems unlikely that the Board would endorse using data sampled prior to the ban on DDT, as such data would clearly not be representative of current conditions. Moreover, the Section 6.1.5 of the Listing Policy explicitly gives staff “...wide discretion (in) establishing how data and information are to be evaluated, including the flexibility to establish water segmentation, as well as the scale of spatial and temporal data and information that are to be reviewed.” While the Policy does not give explicit criteria for judging whether data are too old to use, it does state that data must be temporally representative.

If clear trends in concentrations and loads have been established, as is the case here, then it is irresponsible and scientifically inappropriate to include older data in listing decisions without an analysis of these temporal trends. Organochlorine concentration data are sufficient in Newport Bay to establish statistically robust trends. Because the purpose of the listing policy is to establish current impairments, listing decisions should be made based on current watershed conditions. The presence of an impairment eight or more years ago is immaterial to the decision to place a water body on the 2006 303(d) list, provided that conditions will not become worse in the future, and in the face of the well-documented decreasing trend in concentrations over time. In the case of organochlorine contamination in Newport Bay, these compounds were banned long ago (DDT in 1972, toxaphene in 1990, chlordane in 1988); degradation of these compounds means that there is an ever-smaller mass of these pollutants in watershed soils; and land use conversion results in an ever-smaller mass of pollutants that would be available for washoff during storm conditions. (See attached Attachments 1, 2, and 3 for a detailed discussion of these factors.)

Second, available data indicate that the water body is not currently impaired for these pollutants. If these water body-pollutant pairs are listed, it would be an unreasonable and unjustified expenditure of public funds to collect enough data to de-list in the future.

For example, the staff report for the proposed listings states that the total number of available samples of chlordane in Upper Newport Bay is 11 (all are sediment samples). Of these samples, three of seven from the 1994-1996 time periods exceed targets. All four samples indicated in the staff report from the time period 2001 to present were below the ERM sediment guideline. If these data are included in the data set, at least 26 additional sub-criterion samples would need to be collected (for a total of at least 37 samples) to meet the de-listing requirements of the State Listing Policy, at significant expense. A more productive expenditure of scarce public resources would be to conduct the studies recommended by scientists to determine which pollutants are causing observed toxic and other effects. Also importantly, new listings for these compounds would require the development of TMDLs for water bodies that are not actually impaired, limiting RWQCB staff availability for TMDL development for other, more important and more pressing contaminants.

Finally, Board staff has not addressed a central part of the original comment, namely that toxicity problems have not been linked with the organochlorine compounds proposed for listing. In fact, Bay et al. (2004) explicitly *deny* a link between DDT and acute toxicity in the watershed. (See also Attachment 4, which provides Steve Bay's comments on the proposed TMDL for DDT, PCB, chlordane, and toxaphene in this watershed.)

Board staff also failed to respond to our comment that the OEHHA value assumes consumption of fish for 70 years into the future. Given current rates of DDT decline in the watershed, a current fish tissue concentration of 1200 ng/g (well above recent sampled concentrations) would yield an average tissue concentration over the next 70 years equal to the OEHHA value. In other words, current concentrations, coupled with trends of declining concentrations in the watershed, are more than sufficient to meet the 70-year average concentration requirement assumed in the OEHHA value.

Furthermore, as detailed in Attachments 1, 2, and 3, current OEHHA values are inappropriate for making listing decisions. For example, the current OEHHA values for DDT, chlordane, and toxaphene—100 ng/g, 30 ng/g, and 30 ng/g respectively—were used as the basis of several listing decisions. However, OEHHA is currently in the process of revising these values to 560 ng/g, 200 ng/g, and 220 ng/g respectively (see OEHHA [2006], "Draft Development of Guidance Tissue Levels and Screening Values for Common Contaminants in California Sport Fish"). If these revised standards — standards based on OEHHA's most up-to-date science — had been used instead of the older values, it is unlikely that any of the cases in which exceedance of the OEHHA value was the reason for listing would have in fact resulted in a decision to list.

SWRCB Comments 115.13, 115.14, 115.31, 115.28, 115.23

Relevant pollutant-water body pairs:

Upper Newport Bay – DDT; Upper Newport Bay – PCBs.

Board response:

In this response the Board states that "Data for fish species have been incorporated [into the decision to recommend listing] although they may not be year-round residents

or natives of this water body, and that there is a possibility these fish species accumulated the pollutant(s) in another water segment.”

Counter-rebuttal:

The Board staff’s response is inadequate. We had criticized their proposed listings of Upper Newport Bay for DDT and PCBs because they depend on exceedances in fish tissue samples from species that are not resident to the Bay and thus are not justifiable indicators of contamination in the watershed.

The Board staff’s response appears to agree with our original comment about non-resident fish and the possibility that the non-resident samples may reflect concentrations of chemicals obtained outside the Newport Bay watershed, yet their listing recommendation remains unchanged. Since the data cited in the Staff Report do not appear to demonstrate a current contamination problem *in the watershed*, listing is unjustified.

Also, as for other responses noted above, the Board staff have not addressed our comment that the OEHHA target is a 70-year average concentration, and thus it is inappropriate to compare individual samples to OEHHA targets when a well-established, robust trend to declining concentrations is present. Rather, projected 70-year average sample concentrations should be compared against the OEHHA target, which Board staff have not done. As shown in the attached report by QEA Environmental Consultants (p. 42, Appendix A of Attachment 1), projecting the trend seventy years into the future (with corresponding 95% confidence intervals) demonstrates that DDT concentrations in fish tissue in the watershed will be far below OEHHA target values, again indicating that there is no current impairment for DDT in Upper Newport Bay.

SWRCB Comments 115.20, 115.26, 115.30, 115.6, 115.7, 115.8

Relevant pollutant-water body pairs:

Upper Newport Bay – DDT; Upper Newport Bay – chlordane; Lower Newport Bay – DDT; Lower Newport Bay – chlordane; Peters Canyon Channel – DDT; Peters Canyon Channel – Toxaphene; Upper Newport Bay – PCBs; Lower Newport Bay – PCBs.

Board response:

“Based on the figures provided, staff cannot determine what the DDT/toxaphene/PCB concentration values are and if the tissue samples exceed the water quality objective.”

Counter-rebuttal:

The spreadsheet file accompanying this letter contains the data plotted in the figures for the Board’s evaluation. To the best of our knowledge, we believe that these datasets are the same as those used by Board staff as the basis for the proposed listings, and thus, these data are contained in the Board’s files.

SWRCB Comments 115.21, 115.27

Relevant pollutant-water body pairs:

Upper Newport Bay – DDT; Lower Newport Bay – DDT; Peters Canyon Channel – DDT;
Peters Canyon Channel – Toxaphene.

Board response:

“Based on the land-use distribution graphical representation and maps provided, it cannot be determined what the causes and impacts land-use has on the decline of DDT/toxaphene concentrations in the San Diego Creek watershed without additional supporting data.”

Counter-rebuttal:

Because conversion of agricultural land to other land uses (residential development, commercial or industrial land uses, etc.) results in a transfer of open, unimproved land to land with a higher degree of imperviousness, sediment and soils concentrations in runoff decline following development. This effect is well-documented, both within the general scientific literature and by studies conducted within the Newport Bay watershed (see, e.g., WRC [2006; Attachment 5]). Further, organochlorines were applied preferentially to agricultural land uses, and they sorb strongly to sediments. Because development immobilizes sediment, development reduces the quantities of sediment (and associated pollutants) available for erosion and transport. Significant land use conversion has occurred in the past (agricultural uses have declined from 23% of the watershed area in 1973 to 5% in 2006 while developed area has increased from less than 48% to 67% of the watershed over the same period), and land use conversion will continue in the future, as detailed in Attachment 1.

The most important fact is that organochlorine concentrations in the watershed—particularly in fish and mussel tissue—have been steadily declining over the past 20 years. Land use conversion, together with degradation of compounds that were historically applied to agricultural lands within the watershed but have not been applied for a decade or longer, are responsible for these trends in time.

SWRCB Comments 115.22, 115.6, 115.7, 115.8

Relevant pollutant-water body pairs:

Upper Newport Bay – DDT; Upper Newport Bay – chlordane; Lower Newport Bay – DDT; Lower Newport Bay – chlordane; Peters Canyon Channel – DDT; Peters Canyon Channel – Toxaphene; Upper Newport Bay – PCBs; Lower Newport Bay – PCBs.

Board response:

“Based on the figures provided, it cannot be determined what the causes and impacts are based on the decline of DDT concentrations in the watershed without additional supporting data.”

Counter-rebuttal:

Board staff’s response to our comment is unclear. If the issue is that the concentrations and values cannot be discerned from the information provided in our comment letter, we again provide those data electronically, and point out that to our knowledge they are consistent with the data contained in the Board’s database. We have offered several credible, quantitative explanations regarding the causes of the observed declines in

concentration: the organochlorines were banned long ago (DDT in 1972, toxaphene in 1990, chlordane in 1988); the mass of these compounds within soils in the watershed continues to decline due to degradation processes; and land use conversion means that the organochlorine concentrations that remain in watershed soils are far less available to washoff. Finally, the “impacts” of such declines are also clear: concentrations are declining across the board in all media, and no current impairment is evident for any of these compounds within the watershed’s receiving waters.

SWRCB Comments 115.24

Relevant pollutant-water body pairs:

Upper Newport Bay – DDT; Lower Newport Bay – DDT; Peters Canyon Channel – DDT; Peters Canyon Channel – Toxaphene.

Board response:

“The Listing Policy allows the use of whole body residues in analyzing fish tissue data. Forage fish were used in a precautionary way to represent the concentrations of fish that may be consumed.”

Counter-rebuttal:

Although the Listing Policy may permit the use of whole body residues in analyzing fish tissue data, such a practice clearly makes no sense for comparisons of fish tissue data to the OEHHA screening value targets. The OEHHA targets are recommended for sport-fish consumption. First, forage fish are not “sport fish,” will not be consumed by humans, and thus the OEHHA value is not applicable to them. Second, the OEHHA value is based on the assumption that only the filet is consumed—a very reasonable assumption with regard to sport fish—and so comparing whole fish samples to OEHHA targets is inappropriate. Specifically, as previously noted, the use of whole fish samples skews the sample concentrations higher since organochlorines tend to be especially concentrated in fatty tissues, which are different from the filet. In short, the Board’s approach here is not “precautionary” but scientifically unjustified.

Based on the clarifications we have provided, we again request that the State Board remove the water body-pollutant combinations in Table 1 from the proposed additions to the 2006 303(d) list. Thank you for the opportunity to provide comments on the 2006 proposed revisions to the California Clean Water Act Section 303(d) List. We appreciate the opportunity to work with the SWRCB to resolve these issues and produce an accurate and comprehensive list of impaired water bodies in the state of California. Please contact Amanda Carr at (714) 567-6367 if you have any questions regarding these comments.

Very truly yours,

Chris Crompton, Manager
Environmental Resources

Attachments: Attachment 1 DDT Analysis for the Newport Bay Watershed
Attachment 2