Comment Summary and Responses
Calleguas Creek Watershed Metals and Selenium TMDL

CEQA Scoping Meeting
1. Keith Jones and Daniel Apt, Caltrans/RBF; Mark Pumford, City of Oxnard; Arne Anselm, City of Thousand Oaks; Anita Kuhlman, City of Camarillo; William Seaver, Calleguas MWD
Peer Review
2. Theo A. Dillaha
3. Dr. Rhea L. Williamson
Public Review
4. Camrosa Water District on behalf of Camarillo Sanitation District, City of Thousand Oaks, City of Simi Valley, Camrosa Sanitary District, and Ventura County Water Works District #1
5. Heal the bay
6. California Department of Transportation

No.	Author	Date	Comment	Response
CEQA Scoping Meeting 1/26/06: Caltrans, City of Thousand Oaks, City of Camarillo, Calleguas Creek MWD, City of Oxnard				
1.1			What would happen to the TMDL if the 303(d) listing is changed	Regional Board staff understand that the 303(d) listing for Calleguas Creek watershed will remain the same except for zinc. Stakeholders have sought delisting of zinc from the 303(d) list for Reach 1, Mugu Lagoon because recent available data suggest zinc is not causing impairment. Regional Board staff understand that State Board may consider the delisting request in the 2006 303(d) list. The TMDL Implementation Plan clairifies that hould zinc not be delisted by the end of

No.	Author	Date	Comment	Response
				the 303(d) listing cycle following the effective date of this TMDL, zinc wasteload and load allocations will be developed within one year.
1.2			There is inconsistency in applying federal law. Federal law requires adoption of TMDLs, not the implementation portion of the TMDL	While federal law does not require U.S. EPA approval of TMDL implementation plans, upon establishment of TMDLs by the State or U.S. EPA, the State is required to incorporate the TMDLs along with appropriate implementation measures into the State Water Quality Management Plan (40 CFR 130.6(c)(1), 130.7). This Water Quality Control Plan for the Los Angeles Region (Basin Plan), and applicable statewide plans, serves as the State Water Quality Management Plans governing the watersheds under the jurisdiction of the Regional Board. The State must also ensure that effluent limitations in NPDES permits are consistent with the assumptions and requirements of any available waste load allocations. (40 CFR 122.44(d)(1)(vii)(B).)
1.3			MS4 and Caltrans might not be able to meet the CTRs if only end of pipe actions such as BMPs are used. It may require treatment devices to meet the CTRs.	Regional Board staff note that structural treatment devices should be considered in addition to low cost controls such as efficient street sweeping, public education, business inspections, and existing storm water programs to meet the proposed numeric targets, if necessary.
1.4			CEQA: Catch basin and constructed wetland might affect wildlife	Regional Board staff note that some of the diversion strategies considered could result in reduced creek flows, particularly during dry weather, which may have an adverse impact on wildlife. The agencies responsible for implementing the TMDL should consult with

No.	Author	Date	Comment	Response
				agencies such as the California Department of Fish and Game to develop strategies to prevent such impacts to these resources and the National Marine Fisheries Service to determine minimum base flows to be maintained in the creek to protect these resources. In the event that maintaining these flows will not achieve compliance with TMDL requirements, an alternative treatment and return strategy can be considered
1.5			CEQA: The proposal may result in changes or substantial alterations in drainage system.	Regional Board staff agree that the TMDL may alter the draiage system. In order to achieve compliance with the TMDL, storm water drainage systems may need to be retrofitted with structural BMPs or re-configured to divert and/or capture and treat a portion of storm water. These alterations will have a positive environmental impact with the resulting reduced pollutant loads from urban and storm water runoff. The construction of these retrofits, however could have significant short-term impacts that can be mitigated by standard construction methods.
1.6			CEQA: The proposed project would substantially result in alteration of the direction or rate of flow of ground waters	A change in the rate of flow of ground waters may occur if compliance with the TMDL is achieved through significant infiltration of storm water. However, Regional Board staff do not find data to show that the proposal "would substantially result in alteration of the direction and reate of groundwater flow." When properly managed, increased groundwater recharge would be considered a positive impact by the proposal as it would contribute to replenishing local water supplies. Groundwater quality standards are available to evaluate impacts from using

No.	Author	Date	Comment	Response
				urban runoff containing contaminants for groundwater recharge. Standard treatment technologies are available for wastewater treatment to reduce contaminant levels prior to recharge. Applicable and appropriate mitigation measures will be evaluated when specific projects are determined.
1.7			CEQA: 100-year flood plan for Calleguas Creek will be changes in the near future. The proposed flood plan will expand the 100-year flood hazard areas and will cause the Calleguas Creek and Conejo Creek to merge. This will effect the implementation of this TMDL. The Regional Board should take this into consideration. proposed flood plan will result in impact on existing recreation	Comment noted. However the effects of the proposed flood plan should be addressed by responsible agency at the time implementation actions are put into place.
1.8			Currently there is no technology available to achieve CTR value for copper. In addition, it is very difficult to achieve numeric target for selenium from current loadings including natural sources.	It is acknowledged that some of the standard may not be met due to natural sources. The TMDL provides an option of dischargers to pursue natural source exclusion studies during the TMDL implementation.
1.9			CEQA: The proposed project may have effect on land use and planning	Depending on the implementation strategy chosen, the proposal may result in alteration of the present or planned land use of an area to provide land for storage, diversion or treatment facilities for agricultural runoff water. However, projects may be designed to increase parks and wildlife habitat areas and to improve water quality. Potential conflicts between the TMDL and other land uses can be resolved by standard planning efforts under which specific projects are reviewed by local planning agencies. Applicable and appropriate mitigation measures will be evaluated when specific

No.	Author	Date	Comment	Response
				projects are determined.
1.10			CEQA: The proposed project may result in increases in existing noise levels	The proposal may result in increases in existing noise levels, particularly in the case of construction of storage, diversion or treatment facilities for storm water. The potential for increased noise levels due to construction is limited and short-term. Short-term noise impacts can also be mitigated by implementing noise abatement procedures, standard construction techniques such as sound barriers, mufflers and restricted hours of operation. Applicable and appropriate mitigation measures will be evaluated when specific projects are determined.
1.11			CEQA: The proposed project may have effect on utilities and services systems including water system and storm water drainage system.	A reduction or elimination of irrigation water containing high selenium concentration and providing alternative water supply might be required to achieve final load allocations. However the need of alternative water supply can be minimized by using BMPs such as cover crops to increase infiltration, reduce surface runoff of water and evaporation from soil surfaces, and result in no or little net change in irrigation water needs. In order to achieve compliance with the TMDL, storm water drainage systems may need to be retrofitted with structural BMPs or re-configured to divert and/or capture and treat a portion of storm water. These alterations will have a positive environmental impact with the resulting reduced pollutant loads from urban and storm water runoff. The construction of these retrofits, however could have significant short-term

No.	Author	Date	Comment	Response
				impacts that can be mitigated by standard construction methods.
1.12			CEQA: The proposed project may cause traffic delay when implementing BMPs.	Regional Board staff agree. Depending on the implementation strategy chosen, the proposal may result in temporary alterations to existing transportation systems during construction of storm water diversion or treatment facilities. Potential impacts are limited and short-term. Potential impacts could be reduced by limiting or restricting hours of construction so as to avoid peak traffic times
1.13			Need daylight the methodology to implement the TMDL Economic impact of this TMDL	Comment noted. The economic analysis section has been updated to discuss about the economic impact of this TMDL in greater detail. See Technical Report document, section 13.9.
1.14	Keith Jones, Caltrans/RBF	2/6/06	The State has no obligation or authority to perform a TMDL for waters not included on the 303(d) List. RWQCB and U.S. EPA did not present sufficient information to justify the inclusion and regulation of all metals in all reaches, as instructed by U.S. EPA in letters written as part of the Trash TMDL settlement (May 6, 2003). The data analysis is distorted and does not support the inclusion of non-listed metals. The TMDL should be scaled back to apply only to impaired reaches and only for the pollutants listed in those reaches.	Regional Board staff do not agree that the "data analysis is distorted." The commenter does not describe the manner in which the data analysis is distorted. The Calleguas Creek metals and selenium TMDLs were prepared for listed pollutants in impaired reaches. In the case of copper and nickel, freshwater column targets are less stringent than saltwater water column targets and freshwater targets are not exceeded in fresh water reaches. Freshwater streams with higher loading capacities due to less stringent freshwater targets flow downstream into listed reaches including Mugu Lagoon, Revolon Slough, and Lower Calleguas Creek where saltwater criteria apply and loading capacities are lower. Assigning allocations based on the freshwater targets for discharges to freshwater reaches

No.	Author	Date	Comment	Response
				would not result in achievement of the saltwater targets in the lower reaches. Therefore, the allocations were developed based on the freshwater load which actually flows to the saltwater reaches and to account for any dilution or removal of loads that may occur between the discharge and the portion of the watershed to which the saltwater criteria apply. (See Technical Report Document)
1.15			The installation of treatment BMPs will only treat to the water quality volume/flow they have been designed. There will always be storm events which will overwhelm treatment BMPs and thus treatment will not be provided. This is not something that requires direction from the Regional Board.	Staff is working on the issue of defining a maximum volume or storm event size through the wet-weather task force. Based on the task force's recommendation, staff will bring the definition of a storm that will address multiple TMDLs to the Board for their consideration as a Basin Plan amendment.
1.16			The TMDL report' s economic analysis needs to be expanded. The Department performed an extensive Retrofit Pilot Study in which several types of structural BMPs were installed. The construction cost for biofiltration swales averaged $752 per m3 of WQV. The construction cost for extended detention basins averaged $590 per m3 of WQV. The construction cost for infiltration basins averaged $369 per m3 of WQV. These costs do not included operation and maintenance cost, which can be substantial. The operation and maintenance cost for 20 years at a discount rate of 4%, the present worth total cost per m3 of WQV would be $826 for biofiltration swales, $450 for extended detention basins and $673 for infiltration basins. These Retrofit Pilot Study cost may not reflect typical installations that will occur with the watershed. The	Comment noted. See Technical Report document, section 13.9 for detail. The economic analysis section has been significantly updated. Revised cost estimates are in line with the values presented by commentor.

No.	Author	Date	Comment	Response
			sites in the Pilot Study were selected to avoid traffic conflicts, and need for right of way purchase. Cost could escalate 150% to 300%, as shown in the recent bids for the GSRD project locations in Los Angeles.	
1.17			While the Department continues to work with the Brakepad Partnership, source control of Copper in brake pads is beyond the control of the Department, or any discharger. The Department, nor any of the dischargers have the authority to require consumers to use alternative materials. It will take action at the state and federal level to have any meaningful change in the material used for brake pads.	Comment noted and footnote added to discussion in economic section.
1.18			A means for calculating compliance for source control measures should be developed. The Daily Generation Rate may not be appropriate. For example, if the Department increases sweeping frequency for several years, and a large storm event occurs and mobilizes sequestered sources (potentially from median) then use of the DGR may show that sweeping was ineffective.	Comment noted. The implementation plan calls for development of an UWQMP in which Caltrans and the other dischargers can propose a method for showing progress towards compliance with the allocations.
1.19			The Department is concerned with the adoption of the water effects ratio (WER) for copper and the site specific objectives (SSO) for the other constituents as these will have an impact on the ultimate requirements of the TMDL. We will be interested in reviewing these again when available.	Comment noted. The proposed WER will be made available for public review in advance of consideration by the Regional Board.
1.20			The Department requests information on the concentrations used in the model for various land uses, we would like to look at closer.	Requested information was sent from LWA to Keith Jones in February 2006.

No.	Author	Date	Comment	Response
Peer Review				
2.1	Theo A. Dillaha	4/8/06	In general, I found the TMDL to be scientifically reasonable. As in many TMDLs, there was inadequate historical flow and water quality monitoring data available for rigorous model parameter development, calibration, and validation. Consequently, there is a high degree of uncertainty in the model predictions and the resulting numeric targets developed fro the Calleguas Creek TMDLs. The TMDL developers adequately compensated for the lack of data by selecting very conservative model parameters that generally resulted in overestimates of contaminate concentrations and loads. In my opinion, the conservative model parameters and model calibration probably result in a implicit margin of safety on the order of 20 to 40%. I believe that this margin of safety is reasonable and desirable given the lack of available data for model calibration. Based on my analysis of the Calleguas Creek TMDL documents that I reviewed, it is my best professional judgment that the achievement of the proposed numeric targets, WLAs, and LAs will bring the waters of Calleguas Creek Watershed into compliance with applicable California water quality criteria. Because of the conservative assumptions used in the development of the TMDL, I believe that many of the water quality criteria will be achieved before the specified WLAs and LAs are achieved.	Comment noted
2.2			Attachment A to Resolution NO. R4-2006-XXX: a. Page 6, 2nd and 3rd tables: unit (lbs/day?) are missing or dry and wet weather WLAs in water	Regional Board staff agree, changes are made. Please refer to revised BPA, Attachment A

No.	Author	Date	Comment	Response
			column and for daily storm volume Q (ft^3?) b. Page 8, 3rd table: units missing daily storm volume Q (ft^3)	
2.3			Land use in the watershed is poorly described. Making it more difficult to provide context for pollutant sources	Additional land use description will be added to the Technical Report document.
2.4			"Percent" used throughout report when percentage is grammatically required.	Comment noted.
			Page 75-76. Modeling of sediment erosion using RUSLE and a simplified version of a sediment delivery model (SEDMOD) is described and used to develop Table 42. Not sure what the purpose of this analysis is and there is so much uncertainty in the presented loads that I am not sure they are useful for anything. The description of the methods involved is so vague that it is difficult to evaluate the science involved. Without more detail, it appears that the USLE model rather than RUSLE was actually implemented in the GIS. Lack of information on how the LS factor was implemented in the GIS is a cause for concern since USLE (and RUSLE for that matter) is extremely sensitive to slope-length (L). Similar concerns exist with the simplifications made to the SEDMOD sediment delivery model. Reducing its term just to simplify implementation in the GIS is not adequately justified. Consequently, the background natural load numbers in Table 42 are fairly meaningless. A more scientifically defensible estimate of natural loadings could have been obtained by using the calibrated HSPF model with the anthropogenic sources turned off to estimate the natural	The RUSLE analysis was conducted as a secondary check on other calculations. Commentor is correct in observing the models and resulting numbers in Table 42 are not used in the TMDL, so this does not impact the proposed TMDLs for metals and selenium.

No.	Author	Date	Comment	Response
			background loadings. The models and resulting numbers in Table 42 are not used in the TMDL, so this does not impact the proposed TMDLs for metals and selenium.	
2.5			Page 142, Figure 56: Units missing from y-axis. X-axis would be understood by more readers if expressed as % exceedance.	Staff agree. Figure 56 will be revised to address comment.
2.6			Page 142, Table 63 and following sentence: The sentence "As shown I …" is not true. For both Revolon and Calleguas, the critical condition for nickel is in the average flow range. Rewrite the sentence.	Staff agree. Text will be revised to reflect the results in the table.
2.7			Page 145, Table 65: Units of daily storm volume, Q, not specified.	Staff agree. Units of cfs will be specified in all tables where Q is referenced.
2.8			Page 145 and 146, Tables 67 and 68: Are headings of column 4 mislabeled? Shouldn't they be "…Total Loading Capacity Equation (lbs/day)"? Also why not multiply the equation out to simplify	Comment noted. Column heading will be changed. All of the values are shown in this table so the reader can see the components of the equation. The values are multiplied out in the allocation tables.
2.9			Page 146, Tables 69 and 70: Missing units under targets (ug/L).	Staff agree. Units will be added.
2.10			Page 147, 1st paragraph: Where does the "46%" reduction for copper comes from? Is there a table (s) or figure(s) to support the statement? If so, specify.	The 46% reduction results from a comparison of wet weather model results to the corresponding criteria. A table or figure is not included in the text, but the analysis is available as part of the administrative record.
2.11			Page 148 and 149, Tables 72 and 73: Include "Dry Weather" in captions	Dry weather will be included in the table captions
2.12			Page 149, next to last paragraph: Modify to: "…resulting equation by the fraction of the load attributable to the source and 1.0 plus the margin safety	Comment noted. Change made to the text

No.	Author	Date	Comment	Response
			expressed as a fraction."	
2.13			Page 150 and 151, Tables 74 and 75: Why are the WLA for hill Canyon and Camarillo the same? Daily discharges are very different, 10.2 and 6.76 MGD, respectively.	Camarillo has significantly higher copper concentrations than Hill Canyon and the resulting loads happen to calculate to the same value (with rounding)
2.14			Page 153: Table 78: Are final LAs and WLAs really the same for both agricultural and urban sources? Is the coincidence or typos	The allocations shown in the tables represent the value that the sum of all loads cannot exceed. In the revised report, these allocations have been adjusted to be more clear.
2.15			Page 153, Table 79: Units missing form Table caption. Are interim dry daily and monthly LAs really the same for agriculture and then for urban sources in both watersheds? Is the coincident or typo?	Unit will be added. Because the agricultural and urban characterization data used to develop the interim allocations is not specific to one subwatershed, the interim allocations are the same across all of the subwatersheds. The characterization data was considered representative of the entire Calleguas Creek watershed.
2.16			Page156, TMDL equation: Need parentheses around 1-PR. Conversion factor, f, should be 1.67E-06 according to my calculations. If I am correct, is this a typo or is the wrong conversion factor used developing the mercury TMDL?	Parenthesis added to (1-PR). Wrong conversion factor was not used in developing the mercury TMDL. The conversion factor used in calculation of the TMDL was 1.97e-6. The incorrect value for f shown on page 156 was calculated separately from the actual TMDL calculations, and has been corrected per TMDL calculations and per comment. Calculation sheet used to generate WLAs and LAs has been provided to Regional Board, for assurance that correct conversion factor was used in calculating WLAs and LAs.
2.17			Page 157, line 19: Change to "---current load* (1-percentage reduction/100)	Revised per comment
2.18			Page 157, last paragraph: First sentence has	Revised per comment

No.	Author	Date	Comment	Response
			grammatical problems. Reasoning in paragraph is questionable. Better logic is that bedload is not considered because it is composed of coarser sediment particles (sand and gravel) that mercury does not adsorb to. Suspended sediment contains the particle sizes that are responsible for mercury transport.	
2.19			Page 159, Figure 57: Eliminate bad figure caption at the top of the figure box.	Comment noted
2.20			Page 159, Figure 58: Eliminate bad figure caption at the top of the figure box. Include low and medium annual flow lines in figure for clarity.	Comment noted
2.21			Page 160, Section 10.4, first sentence: Should be changed to "…the total load of mercury is proportional ~~approximately equivalent~~ to the suspended sediment load	Comment noted
2.22			Page 160, next to last paragraph: Anthropogenic mercury also comes from undeveloped open space due to atmospheric deposition. Was this mercury considered?	Staff agree that anthropogenic sources of mercury include atmospheric deposition, which may be deposited in undeveloped open space.
2.23			Page 160, last paragraph: GIS analysis did not utilize flow data. Delete "and flow data". I do not see the benefit of using GIS generated mercury load. Not scientifically reasonable to arbitrarily assume that sediment loss is simply proportional to area (fraction of undeveloped land). Sediment loss is greater when the land is disturbed. Undeveloped land would be expected to have lower sediment yield due to less disturbance (natural cover and armoring). Eliminated the reference to data from Table 42 on page 76. It is	Staff agree. Technical Report will be revised per comment.

No.	Author	Date	Comment	Response
			not needed	
2.24			Page 162, Table 84: Puzzling that mercury loads in agricultural and urban runoff are so similar. I would expect much higher sediment losses from the agricultural areas. Unless the mercury concentrations in the urban soil are proportionally higher, this is puzzling. Need to check soil losses and mercury concentrations in soils of agricultural and urban areas to see if this makes sense.	Staff agree that sediment runoff is not strictly proportional to area. However, the overwhelming source of mercury to the watershed is via atmospheric deposition, so on a per area basis the land uses are similar.
2.25			Page 162, Tables 84 and 85: Why are the interim LAs in Table 85 higher than the current LAs in Table 84?	As explained in the table note for Table 85, the interim load allocations are set equal to the highest annual load within each flow category, based on HSPF model output for the years 1993-2003. The purpose of this is to account for the large variance in loads from year to year, which is associated more closely with environmental conditions such as precipitation than with human activities.
2.26			Page 162, Table 86: How Table 86 is used in determining interim limits needs to be explained. Column headings need to be clarified "Mercury in Suspended Sediment"	The explanation is in the table note for Table 85 (and in response, above). Column headings revised per comment.
2.27			Page 164, 4th bullet: Not clear that this statement is correct. Some of the mercury losses from the open space land are due to anthropogenic atmospheric deposition, not natural soil concentrations. The two should be separated and defined before making this statement. That said, the reality of the situation is that it may not be **socially or economically feasible to achieve 80% reductions** in mercury losses from	Comment noted. Separate definitions will be included in the Technical Report document. Regional Board staff agree that 80% reductions in mercury losses from anthropogenic and/or natural sources can not be accomplished by reducing anthropogenicsources alone.

No.	Author	Date	Comment	Response
			anthropogenic and/or natural sources	
2.28			Page 165, Table 88: Relative difference in what values? Are these comparisons between individual concentration values? If so, it would be useful to indicate how many samples the relative differences are based on. Need more explanation of data in table. Fairly consistent and systematic over prediction for copper and mercury. Since most of the estimated mercury loading comes from the largest storms, and the table suggests that the model may over estimate loading by 100%, required mercury reductions may be much less than the estimated 80%	Language will be revised for greater clarity. Attainment of numeric targets is the measure of success for the TMDL. If numeric targets are achieved before the WLAs and LAs are achieved, the TMDL may be reopened (per language included in the Implementation Plan).
2.29			**Technical Memorandum:** No information or data is presented on the hydrology calibration results for the CCWM. Lack of information on the hydrology calibration results makes it some what difficult to evaluate the TSS, metals and the selenium calibrations.	Comment noted. The CCWM hydrology was calibrated separately by Aqua Terra. The calibration results are "good to very good". Aqua Terra calibration report is available from the website, www.calleguascreek.org.
2.30			Page 26: Reference for Chang (2004) is missing from references	Reference will be added
2.31			Page 27-29: Figures indicate that the calibrated CCM model is over estimating measured sediment concentrations by a factor of 2.1 to 3.3. This is justified based on similarities to alternative estimates of annual sediment yields by Chang (2004) and an unspecified NRCS/SCS study(s); however no information on the scientific basic of either estimate is presented on which to judge their scientific validity. More background is needed on these estimates.	Comment noted. Also at issue is the measured data for TSS are a mix of grab and storm composite samples. The HSPF model ran on a 1 hour time step and daily average concentrations were used to compare to available data, the measured data were expected to be smaller than the model calculations. More explanation of Chang (2004) and the NRCS/SCS covered within Change (2004) will be added to the TMDL.

No.	Author	Date	Comment	Response
2.32			Page 31-37: CCWM seems to consistently grossly over predict total copper concentrations. Possible consequence of over prediction of TSS or potency factor. Dissolved copper concentrations are generally predicted well	Comment noted
2.33			Page 39-45: CCWM seems to generally over predict total nickel concentrations. Possible consequence of over prediction of TSS or potency factor. Dissolved nickel concentrations are generally predicted well.	Comment noted
2.34			Page 47-50: CCWM seem to consistently over predict total mercury concentrations. Possible consequence of over prediction of TSS or potency factor. Dissolved mercury concentrations are generally predicted well	Comment noted
2.35			Page 52-55: CCWM seems to predict total selenium concentrations well	Comment noted
3.1	Dr. Rhea L. Williamson	4/23/06	Overall, this document is per guidance provided in the cover letter, comments are held to addressing the scientific portions of the proposed TMDL amendment, for the most part. It is recommended that both documents be reviewed for grammar, use of complete sentences, etc as there are numerous errors throughout. When such errors affect the content of the statement, I mention them in the specific comments section below, but otherwise do not point out each one.	Comment noted..
3.2			Of concern is the determination of the allowable metals and selenium concentrations with little to no discussion of the temporal (seasonal and diel) and spatial (horizontal and vertical) variations of general water quality parameters that affect metal speciation and	Comment noted. Commentor is correct in stating the local aquatic chemistry influences the metal speciation and mercury methylation rates. Total suspended solids (TSS) and organic carbon concentrations are noted in USEPA guidance (Translator guidance) as the two

No.	Author	Date	Comment	Response
			mercury methylation, including dissolved oxygen levels (especially in Mugu Lagoon), pH, turbidity (NTU), salinity, solids concentrations, etc. None of these water quality parameters were discussed or provided in summary form in the document.	most likely lumped parameters relating partitioning to water quality. Early in the TMDL development the HSPF model was selected for use in the TMDL development. The only available speciation mechanism in HSPF is a linear partitioning model keyed to TSS. Because the model only incorporated TSS in the portioning, the effects of other water quality parameters on the metals speciation were not considered. However, the partition coefficient was calculated per subwatershed thereby allowing the model to account for some variation in the local water chemistry, albeit in the lumped partition coefficient. Mercury methylation was not considered at this time as there is grossly inadequate information on methlymercury in the watershed.
3.3			There are considerable concerns about the simplifications and assumptions used in dealing with data gaps, non-detects, etc. Part of the concern is that while the issues are mentioned throughout the document, the data that are assumed, estimated, or calculated (sometimes with multiple assumed values for parameters in a calculation) are then treated as actual data. The proposed numeric targets are based on limited data, and focus much on average or median values based on limited sampling across the entire subwatersheds.	Comment noted. Calculations, assumptions, and estimations were performed out of necessity to fill-in missing information or perform the analyses needed to calculate the TMDL. Each calculation, assumption, and estimation was considered and evaluated, and the variation in the final answer used to determine the margin of safety (MOS).
3.4			The proposed numeric targets are based on limited data, and focus much on average or median values based on limited sampling across the entire subwatersheds.	Comment noted. Staff agree that the data were too limited to perform an ideal TMDL analysis. However, the goal of the TMDL was to perform the best analysis possible with the information at hand, and include a

No.	Author	Date	Comment	Response
				strong monitoring and future revisiting of the TMDL as major components in the implementation.
3.5			Page 2: Figure 1 includes the reach names. The names used in the text of the report vary from those used in this Figure, causing some confusion for the first time reader. For example, Reach 1 is Mugu Lagoon on the figure, but Calleguas Creek in the text (bottom of page 23); Beardsley Wash in the figure is Beardsley Channel in the text, etc.	Reach 1 is Mugu Lagoon. The reference to "Calleguas Creek" on page 23 was correct, but unclear. The reference has been re-written/clarified. Beardsley Wash and Beardsley Channel are two names often used to describe Reach 5, which is just upstream of Revolon Slough. The technical report will be changed to refer to one or the other, and a note added explaining both names are commonly used to refer to Reach 5.
3.6			Page 5, Table 2: Reach numbers appear to be incorrect. Conejo Creek includes reaches 9A, 9b, and 10. Arroyo Simi is reach 7.	The reaches are correct, as named in the consent decree (which used previous reach names). Current reach names were added to the table, for clarification. See additional information at, http://www.waterboards.ca.gov/losangeles/html/programs/regional_program/wmi2004/Impaired%20Waters%20by%20Watershed/Calleguas%20Creek%20Watershed%20303d%20Waters.doc
3.7			Page 11, paragraph 4: The impact of flow diversion projects is described and it is stated that such diversions resulting in changes in flow need to be considered when establishing the TMDLs. This does not happen. Wet and dry weather TMDLs were calculated (pg 142) using the median flow rates for current flow conditions to address seasonal variation, but do not consider the impact of new diversion projects.	The modeling and the allocation development considered the impact of the flow diversion. The flow diversion was included in the model and all model runs that were conducted. For allocations for treatment plants and urban and agricultural discharges upstream of the diversion, current flows were used. It is not possible to determine what portion of each source is diverted and what portion remains in the stream after the diversion. Therefore, the reductions for sources upstream of the diversion were developed with current flows and the allocations checked to ensure they would

No.	Author	Date	Comment	Response
				meet standards downstream of the diversion.
3.8			Page 14, Section 2.3: The beneficial uses of Calleguas Creek water for agriculture and industry are missing from the discussion. This is important in that discussion of the impacts of both of these uses on loading of metals and selenium are limited in latter parts of the document.	The aquatic life criteria are more stringent than criteria for other uses, so there is little utility in discussing the AGR or IND use criteria when aquatic life is controlling. Agriculture and industrial (in terms of a percentage of urban) sources are identified as major sources of the metals in the TMDL.
3.9			Page 21: Conc. Of Metals and Selenium in Mugu Lagoon section. Data for metals concentrations over time in other reaches are not "implicitly considered" as Mugu Lagoon has a salinity of 32ppt, is characterized as wetland and marsh habitat, has elevated sulfate and sulfide concentrations, and as a result, has likely increased inorganic and organic metal complexes which will not be included in analysis of in dissolved metal concentrations over time. The statement that metal concentrations decrease over time in Mugu Lagoon is questioned in that there is no assessment of parameters affecting concentration, such as changes in load in wet vs. dry years, variability in sampling, time and depth of sampling, etc. Statistical applications to these data are needed prior to making such a statement.	The effects of receiving waters in the watershed on the Lagoon are implicitly considered because the receiving waters ultimately terminate in the lagoon. It is agreed that the available data do not warrant a definitive statement on whether Lagoon concentrations are increasing, decreasing, or remaining the same. The implementation component of the TMDL calls for additional monitoring.
3.10			Page 23, last paragraph: Think reference is to concentrations of metals and selenium in Mugu Lagoon tend to decrease as water flows toward the mouth of the lagoon. This point is reiterated on page 81 as in Mugu lagoon. This decreasing trend in concentration may be a result of mixing of Calleguas Creek waters with the lagoon water, resulting in increased complexation and	Comment noted. It is agreed that the observation is for decreasing concentrations for measurements closer to the mouth of the Lagoon, most likely due to increased complexation of dissolved constituents as the water becomes more "sea like".

No.	Author	Date	Comment	Response
			precipitation, and reduced concentrations of the dissolved fraction of the metals, or reduced measurement of the dissolved solids depending on the sampling method used. Information on general water quality parameters (e.g., salinity) might explain the trend.	
3.11			Tables 10-21. It is unclear how the % Above Criteria values are calculated. It is stated that only detected values that exceed criteria are used in the calculation. However, for Table 12, the text states that there were 12 exceedances of the total mercury criteria. If there were 12 exceedances, then the % above the criteria is 27% not 22%. This is because only 82% of the 55 samples had detected values (i.e., 45 samples) and 12 of 45 samples is 27%. This is a minimum, in that of the 10 samples with a non-detect, the number with a detection limit above the numeric target is not indicated. In Table 15, 4 samples were collected in Reach 6 for selenium, and only 2 samples had detected concentrations. However, the % Above Criteria is shown as 25%; only options are 50% or 100% (1 or 2 samples, respectively, not part of a sample).	The % exceedance is the number of exceedances divided by the total number of samples.
3.12			Tables 10-21. The range of hardness values in each reach should be provided for the chronic and acute freshwater targets. Use of the 50^{th} percentile for all dry weather samples in a subwatershed is questioned as 1) some of the subwatersheds include several reaches of considerable length and variability, 2) subwatersheds include multiple sources of water, including groundwater, POTW effluent, and tributary inputs, 3)	The 50th percentile hardness by reach has been used in other TMDLs in the Region and was determined to be the most appropriate choice after analysis of the hardness data. The variability of hardness values was not considered significant enough to justify consideration of anything other than dry and wet hardness values. The values presented in the current condition section are reflective of the chosen targets for

No.	Author	Date	Comment	Response
			water sources within a subwatershed change over time within the dry and wet weather periods. Use of one number for all calculations may incorrectly estimate the criteria used for a given reach of creek. In reaches where hardness values are highly variable as a function of source water, more applicable hardness values should be used.	the TMDL.
3.13			Reaches without hardness data include 1, 2, 4, 5, 6, 8, 11, 12, and 13. In reaches 1, 2, and 4, salinity resulted in the use of the saltwater continuous criterion. In reach 5, the freshwater continuous criterion for selenium was used. In reaches 6 and 8, hardness data were not provided, even though the median hardness value in reach 7 exceeded 400 mg/L, resulting in the highest criteria used within the watershed. For reaches that are not listed for metals (11, 12, and 13), hardness data were not provided, even though the reaches are contiguous with those impacted by metals downstream.	Hardness data are available for all reaches in the watershed except reach 11 which does not contain flow except during large wet weather events. For analysis, all reaches within a subwatershed were grouped together for analysis. For all of the reaches mentioned, the median dry weather hardness was over 400 mg/L. The selenium criteria are not impacted by hardness and the CTR requires the use of the lower of the freshwater or saltwater criteria when salinity is between 1 and 10 ppt more than 5% of the time.
3.14			At higher reaches, hardness concentrations increase, and as a result, the criteria used increase. Not considered is the impact on total hardness of the creek and its tributaries due to the use of hydrated lime and basic copper sulfate applied in the orchards and agricultural areas. If these compounds are affecting hardness as they are copper concentrations, then as the area develops and use of these chemicals drops, hardness may also decrease and the criteria will need to be adjusted accordingly.	Comment noted. The implementation component of the TMDL requires continued compliance monitoring. The TMDL can be re-opened and revised if required to address this issue.

No.	Author	Date	Comment	Response
			Figures 12 and 13 are incomplete, leaving out processes such as complexation, mercury methylation, etc.	Comment noted. The text explanation/discussion of the Figures does provide more detail.
3.15			Page 49: Discussion of biotic and abiotic reactions of mercury is well done; the varying environmental conditions, and reaction rates within the water column support concerns of how data were collected, grouped, and basically combined into one number for an entire subwatershed. Mercury methylation rates are expected to be greater deeper in the water column, in anoxic water that is warm. Deposition areas along the creek, and in Mugu Lagoon are potential hot spots for mercury methylation. When few samples are collected from depth, or are averaged with numerous surface samples, the information is lost, resulting in an underestimate of the formation of compounds that result in toxicity. Given the lack of historical data, future monitoring plans need to address these concerns for all the constituents of concern.	Staff agree and future monitoring is called for in the implementation of the TMDL.
3.16			Page 61: The grouping of residential, commercial, industrial, and runoff from impervious areas is unfortunate. Given that "Urban" runoff contributes 26% of total copper, 28% of dissolved nickel, etc, it would have been more effective to retain separate categories, esp. when determining practices to reduce metal loading. In addition, the omission of rooftops from the impervious surfaces calculations assumes that the roofs are residential, and ignores the commercial and industrial component of the category.	As defined in the HSPF model "impervious" runoff is all runoff that does not have the opportunity to infiltrate into soil. Examples are rain falling on a roof with a downspout to a driveway running into a street, and finally a storm drain; runoff from a parking lot; or runoff from an industrial complex. In the model there are 28 variations of "impervious" applied across the watershed, and while the chemical constituent makeup of the runoff is similar from each variation, the chemical makeup is the integrated average quality from all impervious sources from a specific area.

No.	Author	Date	Comment	Response
3.17			Page 61: Tapo Canyon is described as undeveloped, however Table 3 indicates there is a gravel mine and nursery operations within the watershed. The use of one monitoring site in a lightly developed area as representative of all the undeveloped land is questioned.	Staff agree that Tapo Canyon contains some gravel and nursery operations. However, the majority of the drainage area is undeveloped. Because the Calleguas Creek tributaries in undeveloped areas typically do not contain flow during dry weather. Tapo Canyon is one of the few areas that drains a primarily undeveloped area that can be sampled during dry weather conditions. Although the limited development may have an impact on the results, Tapo Canyon monitoring is the best available source of dry weather, undeveloped land monitoring results in the watershed.
3.18			Page 72, last paragraph: Units for copper concentrations in domestic water are questioned.	Comment noted. Units will be corrected.
3.19			Page 75: Given the importance of Total Suspended Solids (TSS) values in determining mercury loading, the estimation of sediment erosion based on surface and rill/sheet erosion is a limitation of the study. In stream channel erosion would seem to be of great importance, given the hydrological characteristics of the area (intense rainfall in a short time period). Estimates of sediment load into streams from that surrounding land are made, but in-stream erosion is not addressed.	Both land surface erosion and in-stream sedimentation/resuspension are accounted for in the HSPF model. The information detailing the HSPF model implementation are discussed in the corresponding Appendices. The text in the TMDL document on page 75 describes a source loading estimate which was conducted separately from the HSPF modeling as a rough double check.
3.20			Page 97: Estimates of background concentrations of metals and mercury are critical to this process in that future practices will depend on realistic numbers. Use of data that contain variable detection limits, including some above detected or measured background concentrations is problematic. This is often the case with historical data. It is recommended that future	Staff agree. Several special studies may be performed to improve the understanding of background loadings. Evaluation and Initiation Sources Exclusion study will evaluate background loads for each constituents including mercury. The monitoring program and another special study to investigate concentrations by PSD and Agricultural Dischargers is also included in

No.	Author	Date	Comment	Response
			monitoring include background soils data, especially for mercury.	the implementation plan to identify areas with high concentrations of metals and/or selenium. Use of detailed soil maps for the watershed in combination with field survey and soil sampling may lead to identification of areas of important for reducing over all loads to the stream. The results of studies on background loadings of metals studies and will be submitted to the Regional Board 4 years after the effective date of the amendment.
3.21			Page 109: The summary/conclusion about the primary source of selenium being natural soil contradicts an earlier statement on the top of page 106, that states natural soil loadings represent less than 1% of the annual load of selenium.	Staff agree. The statement should state that the primary source of selenium is natural groundwater contributions. The text will be changed accordingly.
3.22			Page 110, paragraph 3: Numeric targets for copper and nickel are for dissolved concentrations, yet 99% and 97% of the load is in the particulate form. Transformation of the particulate to dissolved form is underestimated by modeling, as resuspension is not included in the model. This indicates that a large source of metal remains unaccounted for.	Comment noted. The reason for the effort in modeling both dissolved and total metals and selenium is that on an annual basis, almost the entire load is in the particulate form, because discrete storms (long-term historical average of 7.7 per year) produce flows in the watershed 3 to 5 orders of magnitude greater than the annual average. Including both total and dissolved metals provides a more precise analysis than annual total metal load alone. The HSPF does include sedimentation during periods of "low flow" and resuspension during periods of "high flow". In addition, the transfer to and from water column dissolved metal and benthic solids is accounted for in the model. To a large degree, the transfer from benthic sediments to the dissolved water column drives

No.	Author	Date	Comment	Response
				receiving water concentrations during dry weather. Because water column-benthic transfers of particulate and dissolved metals and selenium are included in the model, the metals are accounted for to the extent practical. Furthermore, because the transfer of dissolved constituent from the benthic sediment to the water column is considered, the stream bed acts as a source in the analysis. The above points will be addressed in the text for clarification.
3.23			Page 112: The estimated Kd for the copper, nickel, and selenium are questioned. Concerns are that the Kds are not applicable at low TSS conditions, only 30% to 40% of the variability in the equation used to calculate the Kd is related to the regression of [(Ct/Cd) -1] and TSS, meaning 60-70% of the variability in unexplained!. Comparison of these estimated values to other Kd values in the literature would be helpful.	Comment noted. It is agreed that the partitioning model does not account for a fair amount of variability in the portioning especially in the 10 to 100 mg/L TSS range. The linear partitioning model asymptotically calculates all metal present to be in the dissolved form as TSS decreases. It is the variability in local chemistry that binds more of the metals reducing the dissolved fraction that creates the variability. By using the regression we are biasing the results toward a higher dissolved metals and selenium fraction. A review of the literature will reveal that Kd for selenium are in the range of 100 to 1,000, copper and nickel are in the range of 1,000 to 10,000, and Kd for mercury are in the range of 10,000 to 100,000.
3.24			Page 114: Error associated with Equation 4 may be quite high, in that errors multiply, and already there are errors in the estimation of Kd, Ct (average over watershed) and TSS (method unknown: could be estimated using conductivity measurements). This compounding of errors should be addressed.	Equation 4 represents a simplified method of how HSPF calculates the relation between total and dissolved metals and corresponds to the USEPA translator guidance. The calculations are internal to the HSPF model. During the calibration process of HSPF the Kd was adjusted to result in the best dissolved concentrations given the model calculated TSS values.

No.	Author	Date	Comment	Response
				Equation 4 provides a method to translate the dissolved criteria for the metals and selenium to equivalent total criteria for each subwatershed for various watershed conditions using receiving water TSS as a lumped parameter indicating water column conditions. By multiplying Equation 4 by the receiving water flowrate and the appropriate conversion factor allows the calculation of a flow based allowable loading curve. In general, the model over predicts both total metals and selenium, and TSS while providing good estimates of the dissolved metals and selenium meaning the Kd are likely underestimated. Also, knowing that the Kd is estimated to be too small (i.e. indicating more in the dissolved phase) combined with the measured TSS will result in translating the dissolved criteria to a total criteria that is biased low. (i.e. more stringent than necessary to provide the intended protection to aquatic life). By making the assumptions we have made throughout the entire modeling process, allowable total metals and selenium loads calculated with Equation 4 will be conservative.
3.25			Page 114, Section 7.4: The bathtub model is overly simplistic: it does not include tidal influence, resuspension, changes in volume, and other important considerations. It is unclear how a margin of safety is provided, in that details of conditions used are not provided (e.g., was the "bathtub" full or not (low tide) when the model was run). In Figures 42-47, the model seems to underestimate the water column data and over estimate the sediment data. This poses a challenge to	The bathtub model was meant to be a screening level model, and as such was simplistic. The goal in developing the model was to determine if particle associated metals and selenium entering the Lagoon would partition into the water column. As it turned out, a numeric model is unnecessary to make that determination, because the Kd calculated with concurrent dissolved metals and selenium, total metals and selenium, and TSS measurements indicate that

No.	Author	Date	Comment	Response
			the conclusion that there is not a correlation between high metal concentrations in the water column and concentrations in the sediments. Data are limited in time and space, and additional sampling should be included in future monitoring.	partitioning to particles (i.e. Kd) in the Lagoon is almost an order of magnitude greater than partitioning in the waterbodies within the watershed. Additional sampling is included in the implementation of the TMDL and a revisiting of the analysis.
3.26			Page 122, paragraph 3: Comparison of Kd values to those from other sites and location would strengthen the report, again since the Kd is estimated using estimated data.	Actual data to perform the Kd analysis were only available for three of the reaches in the watershed and Mugu Lagoon. The analysis was performed for each of the reaches with available data and the resulting Kd ranged from 23,800 to 48,100 L/Kg, which on a log scale plot in a tight group. A fundamental point is that all the Kd for each metal were calculated using measured paired total and dissolved metal, concurrent with TSS. The data used to calculate Kd were not estimated. The Kd were estimated using measured site-specific concurrent data.
3.27			Page 123: Figure 48 is a model of mercury not copper (figure caption).	Revised per comment.
3.28			Page 125, Table 60: It is unclear how the % reduction values were calculated.	The percent reduction should have been 42% and 45% for the mean and median, respectively. Corresponding values in Table 60 have been updated. All references to the tissue percent reduction elsewhere in the document need to be updated. Ultimately this does not impact the TMDL because the number of tissue samples is insufficient in size to override the 80% reduction necessary for water concentrations.
3.29			Page 128: Reasons for setting the % reduction of mercury in sediments at 80% are not sufficient. The CTR WQO should be considered temporary as more	As with the other metals, the approach in determining the TMDL is to set a target based on the information at hand and implement a strong monitoring program with

No.	Author	Date	Comment	Response
			fish tissue data are collected. While the limited data set is recognized, having few data or no data is not justification for setting the reduction to meet the WTO, especially for mercury, which can biomagnify. Note that use of a watershed wide tissue data set results in a loss of reach specific tissue values. This prevents identification of areas to target actions at.	provisions to revisit the TMDL in the future when more data are available. The only tissue samples exceeding the target were sharks (TL4) in the Lagoon. A weight of evidence approach is used in that the required reduction off the land necessary to meet CTR objectives happened to correspond to the linear reduction necessary to bring TL4 fish in Mugu Lagoon to the tissue target. It is difficult to envision setting a target different from the adopted CTR objective without site specific data, especially in light of 1) low tissue mercury residual levels (i.e. 8 of 45 TL4 samples in the watershed exceeded the tissue target), and 2) the implementation plan calls for additional monitoring and future updates to the targets. Reason 1 states that none of the tissue samples collected across the entire watershed (outside of Mugu Lagoon) exceeded the mercury tissue targets. The reach information was not stripped from the mercury tissue data, and reach specific implementation strategies have not been removed from consideration.
3.30			Page 130: Top. It is amazing to read that dissolved oxygen (DO) data are not available for a slough or lagoon such as Mugu lagoon. Of course DO is controllable; huge drinking water reservoirs use hypolimnetic aeration, surface aerators, etc. for preventing anoxia at sediments.	Comment noted. The monitoring plan will include DO for Mugu Lagoon. The urban water management plan required by the TMDL will address aeration issue in Mugu Lagoon.
3.31			Page 134, Equation 8: Use of the translator to convert dissolved to recoverable loads is of concern in that it assumes pH, complexation potential, salinity etc are constant throughout the watershed. TSS only explains	Comment noted. The partition coefficient for each metal was calculated independently for each of the major subwatersheds (Mugu Lagoon, Revolon, Calleguas, Conejo, and Arroyo Las Posas/Arroyo

No.	Author	Date	Comment	Response
			a part of the relationship.	Simi). The specific water chemistry was not considered in the translator, however the effects are encompassed in the results by using the lumped parameter KD and TSS.
Public Review				
4.1	Camrosa Water District	5/16/06	1. Copper Water Effect Ratio In conjunction with the development of the Metals and Selenium TMDL, the stakeholders in the Calleguas Creek Watershed developed and submitted a copper water effects ratio (WER) for lower Calleguas Creek and Mugu Lagoon to the RWQCB for consideration. The copper WER was developed as part of the watershed's overall implementation strategy to address copper in the Calleguas Creek Watershed. The stakeholders feel that incorporation of the copper WER into the Tentative Metals BPA is an important component of the strategy to effectively address copper discharges in the watershed and will allow effective implementation of best management practices and other implementation measures to address all of the 23 constituents for which TMDLs have been developed in the watershed. Since September 2005 when the Copper WER was submitted to the Regional Board, the stakeholders have been working with Regional Board staff to determine the most appropriate WERs based on the results of the study. At the request of the Regional Board staff, an additional wet weather sample was collected and the	 Comment noted. The Copper WER is not under consideration by the Regional Board at this time. New findings (No. 11-15) were added to the revised Tentative Resolution to clarify the status of the Copper WER. The CCWMP has submitted an updated report that is under review by Regional Board staff. It is anticipated that staff will bring the WER before the Regional Board for their consideration. Regional Board staff agree. Finding No. 13 is added to clarify that the Regional Board had reviewed the draft report and a comment letter was sent to LWA on March 15, 2006. Regional Board staff identified several concerns and data limitations of the study that constrained the scientifically defensible alternatives

No.	Author	Date	Comment	Response
			WERs currently being discussed are more conservative than those proposed by the stakeholders in September. The stakeholders have actively participated in responding to the concerns of the Regional Board staff on the copper WER. As such we requesting the Tentative Metals BPA provide for incorporation of a copper WER upon its approval through the following modifications. In each of the footnote revisions, estimated values of the WER have been developed based on the current discussions with the Regional Board staff.	available to the Board. The finding also note that Larry Walker Associates had sampled an additional wet weather event on April 14, 2006 in response to Regional Board comments
4.2			Modify footnote 1 in the Copper Targets table to state as follows: The WER has a numeric value of 1.0 unless a study is completed and approved to adjust the numeric value of the WER. A WER study for Mugu Lagoon, lower Calleguas Creek and Revolon Slough has been submitted to the Regional Board and is currently under review by Regional Board and USEPA staff. The WER study contains proposed WERs of 1.5 for Mugu Lagoon and Revolon Slough and 3.4 for Calleguas Creek that were developed in consultation with RWQCB staff. If a WER or SSO for copper is approved, the targets shall be set in accordance with the approved WER or SSO using the equations in the table above.	Comment noted. The footnote 1 in the Copper Target Table is revised as follows to clarify that if site-specific WERs are approved by the Regional Board, the TMDL targets and allocations shall be implemented in accordance with the approved WERs: "The water quality targets for copper in the TMDL are expressed as the copper water quality criteria from the federal California Toxics Rule (CTR). Those criteria include a numerical threshold multiplied by a water-effect ratio (WER). The WER has a default value of 1.0 unless a site-specific WER is approved. To use a WER other than the default of 1.0, a study must be conducted consistent with USEPA's WER guidance and adopted by the Regional Board through the state's basin plan amendment process. A WER study for Mugu Lagoon (Reach 1), lower Calleguas Creek (Reach 2), Revolon Slough (Reach 4) and Beardsley

<table>
<tr><th>No.</th><th>Author</th><th>Date</th><th>Comment</th><th>Response</th></tr>
<tr><td></td><td></td><td></td><td></td><td>Wash (Reach 5) has been submitted to the Regional Board. If the Regional Board approves site-specific WERs for copper in these waterbodies, the TMDL targets will be modified in accordance with all legal and regulatory requirements and implemented in accordance with the approved WERs using the equations set forth in Table 7-19.1 above”</td></tr>
<tr><td>4.3</td><td></td><td></td><td>Modify the POTW Total Recoverable Copper WLAs table to include the WER [CCWMP proposed]as shown below:
<table>
<tr><th rowspan="2">POTW</th><th colspan="2">Interim</th><th colspan="3">Final[e]</th></tr>
<tr><th>Daily Maximum (ug/L)</th><th>Monthly Average (ug/L)</th><th>Daily Maximum[f] (ug/L)</th><th>Monthly Average[f] (ug/L)</th><th>lb/day</th></tr>
<tr><td>Hill Canyon WWTP</td><td>20.0</td><td>16.0</td><td>(a)</td><td>(a)</td><td>0.11*WER - 0.04</td></tr>
<tr><td>Simi Valley WQCP</td><td>(b)</td><td>(b)</td><td>31.0</td><td>30.5</td><td>(c)</td></tr>
<tr><td>Moorpark WTP</td><td>(b)</td><td>(b)</td><td>31.0</td><td>30.5</td><td>(d)</td></tr>
<tr><td>Camarillo WRP</td><td>57.0</td><td>20.0</td><td>(a)</td><td>(a)</td><td>0.12*WER - 0.04</td></tr>
<tr><td>Camrosa WRP</td><td>(b)</td><td>(b)</td><td>27.4</td><td>27.0</td><td>(d)</td></tr>
</table></td><td>Staff agree. See revised BPA</td></tr>
<tr><td>4.4</td><td></td><td></td><td>Modify the Urban Runoff Total Recoverable Dry Weather WLAs in Water Column table to include the WER [CCWMP proposed]as shown below:
<table>
<tr><th rowspan="2">Flow Range</th><th colspan="3">Calleguas and Conejo Creek</th><th colspan="3">Revolon Slough</th></tr>
<tr><th>Low Flow</th><th>Average Flow</th><th>Elevated Flow</th><th>Low Flow</th><th>Average Flow</th><th>Elevated Flow</th></tr>
<tr><td>Copper[b]</td><td>0.04*WER - 0.02</td><td>0.12*WER - 0.02</td><td>0.18*WER - 0.03</td><td>0.03*WER - 0.01</td><td>0.06*WER - 0.03</td><td>0.13*WER - 0.02</td></tr>
<tr><td>Nickel</td><td>0.100</td><td>0.120</td><td>0.440</td><td>0.050</td><td>0.069</td><td>0.116</td></tr>
<tr><td>Selenium</td><td>(a)</td><td>(a)</td><td>(a)</td><td>0.004</td><td>0.003</td><td>0.004</td></tr>
</table></td><td>Staff agree. See revised BPA</td></tr>
</table>

<table>
<tr><th>No.</th><th>Author</th><th>Date</th><th>Comment</th><th>Response</th></tr>
<tr><td>4.5</td><td></td><td></td><td>Modify the Urban Runoff Total Recoverable Wet Weather WLAs in Water Column table to include the WER [CCWMP proposed]as shown below:
<table>
<tr><th>Constituent</th><th>Calleguas Creek</th><th>Revolon Slough</th></tr>
<tr><td>Copper [(c)]</td><td>(0.00054*Q^2*0.032*Q - 0.17)*WER - 0.06</td><td>(0.0002*Q^2+0.0005*Q)*WER</td></tr>
<tr><td>Nickel [(b)]</td><td>0.014*Q^2+0.82*Q</td><td>0.027*Q^2+0.47*Q</td></tr>
<tr><td>Selenium [(b)]</td><td>(a)</td><td>1.56*Q</td></tr>
</table></td><td>Staff agree. See revised BPA</td></tr>
<tr><td>4.6</td><td></td><td></td><td>Modify the Modify the Other NPDES Dischargers WLAs table to include the WER[CCWMP proposed] as shown below:
<table>
<tr><th rowspan="2">Reach</th><th colspan="2">Copper[(c)]</th><th colspan="2">Nickel</th><th colspan="2">Selenium</th></tr>
<tr><th>Final Dry CCC (ug/L)</th><th>Final Wet CMC (ug/L)</th><th>Final Dry CCC (ug/L)</th><th>Final Wet CMC (ug/L)</th><th>Final Dry CCC (ug/L)</th><th>Final Wet CMC (ug/L)</th></tr>
<tr><td>1</td><td>3.1*WER</td><td>4.8*WER</td><td>8.2</td><td>74</td><td>(b)</td><td>(b)</td></tr>
<tr><td>2</td><td>3.1*WER</td><td>4.8*WER</td><td>8.2</td><td>74</td><td>(b)</td><td>(b)</td></tr>
<tr><td>3</td><td>25.9</td><td>26.3</td><td>149</td><td>856</td><td>(b)</td><td>(b)</td></tr>
<tr><td>4</td><td>3.1*WER</td><td>4.8*WER</td><td>8.2</td><td>74</td><td>5</td><td>290</td></tr>
<tr><td>5</td><td>3.1*WER</td><td>4.8*WER</td><td>8.2</td><td>74</td><td>5</td><td>290</td></tr>
<tr><td>6</td><td>(a)</td><td>29.8</td><td>(a)</td><td>958</td><td>(b)</td><td>(b)</td></tr>
<tr><td>7</td><td>(a)</td><td>29.8</td><td>(a)</td><td>958</td><td>(b)</td><td>(b)</td></tr>
<tr><td>8</td><td>(a)</td><td>29.8</td><td>(a)</td><td>958</td><td>(b)</td><td>(b)</td></tr>
<tr><td>9</td><td>27.9</td><td>41.6</td><td>160</td><td>1292</td><td>(b)</td><td>(b)</td></tr>
<tr><td>10</td><td>27.9</td><td>41.6</td><td>160</td><td>1292</td><td>(b)</td><td>(b)</td></tr>
<tr><td>11</td><td>27.9</td><td>41.6</td><td>160</td><td>1292</td><td>(b)</td><td>(b)</td></tr>
<tr><td>12</td><td>27.9</td><td>41.6</td><td>160</td><td>1292</td><td>(b)</td><td>(b)</td></tr>
<tr><td>13</td><td>27.9</td><td>41.6</td><td>160</td><td>1292</td><td>(b)</td><td>(b)</td></tr>
</table></td><td>Staff agree. See revised BPA</td></tr>
<tr><td>4.7</td><td></td><td></td><td>Modify footnote * in the Copper allocations tables for POTWs, Urban Runoff, and Other NPDES Dischargers to state as follows:

The WER has a numeric value of 1.0 unless a study is completed and approved to adjust the numeric value of the WER. A WER study for Mugu Lagoon, lower Calleguas Creek and Revolon Slough has been submitted to the Regional Board and is currently under</td><td>Comment noted. The footnote * in the Copper allocations tables for POTWs, Urban Runoff, and Other NPDES Dischargers is revised as follow to clarify that if site-specific WERs are approved by the Regional Board, the TMDL wasteload allocations shall be implemented in accordance with the approved WERs:

‘If site-specific WERs are approved by the Regional Board, TMDL waste load allocations shall be</td></tr>
</table>

<table>
<tr><th>No.</th><th>Author</th><th>Date</th><th>Comment</th><th>Response</th></tr>
<tr><td></td><td></td><td></td><td>review by Regional Board and USEPA staff. The WER study contains proposed WERs of 1.5 for Mugu Lagoon and Revolon Slough and 3.4 for Calleguas Creek that were developed in consultation with RWQCB staff. If a WER or SSO for copper is approved, the WLAs shall be set in accordance with the approved WER or SSO using the equations in the table above.</td><td>implemented in accordance with the approved WERs using the equations set forth above. Regardless of the final WERs, total copper loading shall not exceed current loading. In addition, effluent concentrations shall not exceed the performance standards of current treatment technologies”</td></tr>
<tr><td>4.8</td><td></td><td></td><td>Modify the Total Recoverable Dry Weather LAs in Water Column table to include the WER [CCWMP proposed] as shown below:
<table>
<tr><th colspan="2" rowspan="2">Constituent</th><th colspan="3">Calleguas Creek</th><th colspan="3">Revolon Slough</th></tr>
<tr><th>Low Flow</th><th>Average Flow</th><th>Elevated Flow</th><th>Low Flow</th><th>Average Flow</th><th>Elevated Flow</th></tr>
<tr><td rowspan="2">Copper*</td><td>Agriculture</td><td>0.040</td><td>0.040</td><td>0.170</td><td>0.043</td><td>0.070</td><td>0.280</td></tr>
<tr><td>Open Space</td><td>0.150</td><td>0.080</td><td>0.130</td><td>0.050</td><td>0.120</td><td>0.110</td></tr>
<tr><td rowspan="2">Nickel</td><td>Agriculture</td><td>0.420</td><td>0.260</td><td>0.970</td><td>0.390</td><td>0.690</td><td>1.600</td></tr>
<tr><td>Open Space</td><td>0.450</td><td>0.420</td><td>0.560</td><td>0.010</td><td>0.020</td><td>0.020</td></tr>
<tr><td rowspan="2">Selenium</td><td>Agriculture</td><td>(a)</td><td>(a)</td><td>(a)</td><td>0.008</td><td>0.007</td><td>0.018</td></tr>
<tr><td>Open Space</td><td>(a)</td><td>(a)</td><td>(a)</td><td>0.180</td><td>0.310</td><td>0.490</td></tr>
</table></td><td>Staff agree. See revised BPA</td></tr>
<tr><td>4.9</td><td></td><td></td><td>Modify the Urban Runoff Total Recoverable Wet Weather WLAs in Water Column table to include the WER [CCWMP proposed] as shown below
<table>
<tr><th colspan="2">Constituent</th><th>Calleguas Creek</th><th>Revolon Slough</th></tr>
<tr><td rowspan="2">Copper[(c)]</td><td>Agriculture</td><td>(0.00017*Q^2*0.01*Q - 0.05)*WER - 0.02</td><td>(0.00123*Q^2+0.0034*Q)*WER</td></tr>
<tr><td>Open Space</td><td>0.0000537*Q^2+0.00321*Q</td><td>0.0000432*Q^2+0.000765*Q</td></tr>
<tr><td rowspan="2">Nickel [(b)]</td><td>Agriculture</td><td>0.014*Q^2+0.82*Q</td><td>0.027*Q^2+0.47*Q</td></tr>
<tr><td>Open Space</td><td>0.014*Q^2+0.82*Q</td><td>0.027*Q^2+0.47*Q</td></tr>
<tr><td rowspan="2">Selenium [(b)]</td><td>Agriculture</td><td>(a)</td><td>1.56*Q</td></tr>
<tr><td>Open Space</td><td>(a)</td><td>1.56*Q</td></tr>
</table></td><td>Staff agree. See revised BPA</td></tr>
<tr><td>4.10</td><td></td><td></td><td>Modify footnote * in the Copper allocations tables for Agricultural Dischargers to state as follows:</td><td>Comment noted. The footnote * in the Copper allocations tables for Agricultural Dischargers is revised as follow to clarify that if site-specific WERs</td></tr>
</table>

No.	Author	Date	Comment	Response
			The WER has a numeric value of 1.0 unless a study is completed and approved to adjust the numeric value of the WER. A WER study for Mugu Lagoon, lower Calleguas Creek and Revolon Slough has been submitted to the Regional Board and is currently under review by Regional Board and USEPA staff. The WER study contains proposed WERs of 1.5 for Mugu Lagoon and Revolon Slough and 3.7 for Calleguas Creek that were developed in consultation with RWQCB staff. If a WER or SSO for copper is approved, the LAs shall be set in accordance with the approved WER or SSO using the equations in the table above	are approved by the Regional Board, the TMDL load allocations shall be implemented in accordance with the approved WERs: "If site-specific WERs are approved by the Regional Board, TMDL load allocations shall be implemented in accordance with the approved WERs using the equations set forth above"
4.11			In addition, we request that the Board Resolution adopting the Basin Plan Amendment (BPA) include a commitment by the Regional Board to consider the copper WER within four months of the Regional Board adoption of the BPA.	Comment noted. Task No. 22 is added to the Implementation Table to state that Regional Boardd staff will prepare water effect ratios for copper based on study performed by stakeholders for Regional Board consideration four months after the adoption of this proposed BPA.
4.12			2. Problem Statement It would be helpful to revise the problem statement to include the reaches listed for each metal. This would clarify which allocations apply to which reaches when reader get to allocations.	Note take. Please refer to the Technical Report document for details.
4.13			3. Numeric Targets Add footnote to Table 1. Copper Targets, Table 3. Nickel Targets, and Table 5. Zinc Targets for the Sediment Targets as follows:	Comment noted

No.	Author	Date	Comment	Response
			Attainment of sediment quality targets will be evaluated in combination with sediment toxicity data, if available. *Rationale: the statement above is included in the paragraph above the targets and the point gets lost by the time the reader gets to Table 5. It would be clearer if placed in a footnote at the bottom of each table that contains a sediment target and could be removed from the paragraph above the tables*	
4.14			4. Wasteload Allocation Revise the introductory paragraph to read as follows: In the case of copper, nickel, and selenium, waste load allocations (WLAs) are developed for both wet and dry-weather. The dry-weather WLAs apply to days when flows in the stream are less than 86th percentile flow rate for each reach. The wet-weather WLAs apply to days when flows in the stream exceed 86th percentile flow rate for each reach. Annual mass loads of mercury in suspended sediment were developed according to low, medium, and high annual flow categories. A margin of safety of 15% was included in the WLAs for copper and nickel. Move the discussion about zinc allocations from the POTW section to the introductory section for the wasteload allocations.	Staff agree. See revised BPA

No.	Author	Date	Comment	Response
			Rationale: The changes make the introduction consistent with the load allocation section, distinguishes between the allocation process for copper, nickel and selenium, versus mercury, and addresses the fact that the zinc allocation discussion applies to all of the waste load allocations, not just POTWs.	
4.15			4.1 Revisions to POTW Wasteload Allocations Move the discussion about zinc allocations to the introductory section (see comment above). Move the discussion about margin of safety to the introductory section (see comment above). Delete the last three sentences that discuss the WER. *Rationale: The language discussing the WER is not consistent with the recommended revised footnotes (discussed above) and is not necessary with the changes requested in the first comment.*	Staff agree. See revised BPA
4.16			Add Total Recoverable to the copper, nickel and selenium allocation table titles for clarity. Revise the concentration-based allocations in the table to copper and nickel allocations table to total recoverable concentrations by dividing by the CTR conversion factor. Add a footnote describing how the allocations were converted.	Staff agree. See revised BPA

No.	Author	Date	Comment	Response
			Rationale: The copper and nickel concentration-based allocations currently included in the allocations tables for POTWs are equal to the dissolved criteria. The allocations should be converted to total recoverable values by using the default CTR conversion factors.	
4.17			Revise the headers in the allocation tables from CMC to Daily Maximum and from CCC to Monthly Average. *Rationale: CMC and CCC are acronyms for criteria and are not appropriate for describing allocations.*	Staff agree. See revised BPA
4.18			4.2 Revisions to Urban Stormwater Co-Permittees Wasteload Allocations Add the following paragraph to the Urban Runoff section before the allocation tables Mass-based WLAs are established for copper, nickel, and selenium in total recoverable forms. Mass-based WLAs are developed for mercury in suspended sediment. Interim limits are included to allow time for dischargers to put in place implementation measures necessary to achieve final waste load allocations. The daily maximum and monthly average interim limits are set equal to the 99^{th} and 95^{th} percentile of available discharge data. *Rationale: This language makes the urban runoff*	Revised per comment.

No.	Author	Date	Comment	Response
			section consistent with the POTW section in describing how interim and final allocations were developed.	
4.19			Revise the headers in the allocation tables from CMC to Daily Maximum and from CCC to Monthly Average. Add Total Recoverable to the copper, nickel and selenium allocation table titles for clarity. Revise the wet weather selenium allocations for Revolon Slough in the Wet-Weather WLAs in Water Column table to be 1.56*Q. *Rationale: The wet weather selenium allocations included in the Tentative Metals BPA and Tentative Metals Technical Report are incorrect. They appear to be copies of the wet weather nickel allocations.*	Revised per comment
4.20			Add the following footnote to nickel and selenium in the Wet-Weather WLAs in Water Column table: (a) Current loads do not exceed loading capacity during wet weather. Sum of all loads cannot exceed loads presented in the table *Rationale: This footnote was included in the Metals Technical Report and was designed to show that the current loads are not being exceeded and cap those loads as a sum of all discharges. Without the footnote, the allocation for urban runoff appears to be the entire allowable load, as does the agricultural allocations.*	Revised per comment

No.	Author	Date	Comment	Response
4.21			4.3 Revisions to Other NPDES Dischargers Wasteload Allocations Add Total Recoverable to the copper, nickel, and selenium allocation table titles for clarity Revise the title of the Wasteload allocations table to state "Final WLAs for Dissolved Copper and Nickel and Total Recoverable Selenium" for clarity. *Rationale: Unless the values for copper and nickel in the allocations table are converted to total recoverable allocations using the default CTR conversion factor, the allocations as presented are dissolved.*	Comment noted. Concentration-based wasteload allocations in the table to copper and nickel allocations table are converted to total recoverable concentrations using CTR conversion factor to be consistent with other wasteload allocations. See revised BPA.
4.22			5. Load Allocations Revise the introductory paragraph to read as follows: Mass-based load allocations (LAs) for agriculture, background, and open space are developed for copper, nickel, and selenium in total recoverable forms. LAs for copper, nickel and selenium are developed for both wet and dry-weather. The dry-weather LAs apply to days when flows in the stream are less than 86th percentile flow rate for each reach. The wet-weather LAs apply to days when flows in the stream exceed 86th percentile flow rate for each reach. Annual mass loads of mercury in suspended sediment were developed according to low, medium, and high annual flow categories. A margin of safety of 15% was included	Revised per comment

No.	Author	Date	Comment	Response
			in the LAs for copper and nickel. Add the paragraph discussing zinc allocations to the introductory section. Add the following language before the Interim limits table. Interim limits are included to allow time for dischargers to put in place implementation measures necessary to achieve final load allocations. The daily maximum and monthly average interim limits are set equal to the 99th and 95th percentile of available discharge data. *Rationale: Revisions to make the load allocations section consistent with the wasteload allocations section.*	
4.23			Revise the headers in the allocation tables from CMC to Daily Maximum and from CCC to Monthly Average. Add Total Recoverable to the copper, nickel and selenium allocation table titles for clarity. Revise the wet weather selenium allocations for Revolon Slough in the Wet-Weather LAs in Water Column table to be 1.56*Q for both open space and agriculture.	Revised per comment

No.	Author	Date	Comment	Response
			Add the following footnote to nickel and selenium in the Wet-Weather WLAs in Water Column table: (b) Current loads do not exceed loading capacity during wet weather. Sum of all loads cannot exceed loads presented in the table *Rationale: See above.*	
4.24			6. Special Studies and Monitoring Plan For Special Study #1, revise the fourth sentence as follows: This study will also consider whether or not any portion of the ambient source contribution for agricultural or urban runoff loads qualify for natural source exclusion and/or provide the basic for site specific objectives. *Rationale: the study is designed to look at both background sources and ambient sources discharging from agricultural or urban runoff, not just the ambient sources from agricultural and urban runoff. Therefore, the word specially should be removed.*	Comment noted. See revised BPA. Proposed language included. However, Regional Board staff note that the provisions for natural source exclusion in the Basin Plan pertain to bacteria.
4.25			7. Implementation Plan Modify the Completion Date for Items 13b, 14b, and 15b in Table 7-19.2 to be based on EO approval of the workplans for the studies.	Revised per comment

No.	Author	Date	Comment	Response
			Rationale: Investment in studies needs to be based on approved study workplans. Timeframes for completion of studies should be linked to approval of the workplans so that the studies are not compromised by shortened timeframes caused by delays in approval of the workplans.	
4.26			Modify the Completion Date for Item 21 in Table 7-19.2 from 2 years to 1 year after the effective date of the amendment. *Rationale: Urban and Agricultural dischargers are required to submit management plans within two years of effective date of the amendment. In order to effectively develop the plans, the nickel SSO needs to be considered by the Regional Board prior to that date*	Revised per comment
4.27			8. Conclusion In summary, we appreciate the support that the Regional Board has given to the collaborative process and believe that the documents produced through that process are of high quality. We request that the Regional Board move forward as quickly as possible with the adoption of the Copper WER. We look forward to continuing to work with you on the upcoming TMDLs.	Comment noted
5.1	Heal The Bay	5/16/06	On behalf of Heal the Bay, we submit the following comments on the Draft TMDL for Metals and Selenium in the Calleguas Creek, its Tributaries and Mugu Lagoon ("Draft TMDL"). We appreciate the opportunity to provide comments on the Draft TMDL.	Comment noted. Response to specific comments are provided below under responses to item 5.2-5.22

No.	Author	Date	Comment	Response
			Heal the Bay has significant concerns that the proposed TMDL, on its very face, will not adequately address impairments in Calleguas Creek, its Tributaries and Mugu Lagoon. The basic tenet of the Clean Water Act TMDL program is "to attain and maintain" water quality standards. 33 U.S.C. § 1313(d). As set forth in detail below, the Draft TMDL, as currently written, and as acknowledged in its supportive documentation, fails to ensure that water quality standards will be attained: • The Waste Load Allocations ("WLAs") are calculated based on a model developed with limited data and which utilizes numerous and additive nonconservative assumptions. • Many steps and assumptions must be taken to move from in-stream mercury water column targets to mercury LAs and WLAs based on suspended sediment • While it may be implicit, the Draft TDML does not explicitly require or *ensure* ultimate compliance with numeric targets – which is the whole point of the TMDL program • The TMDL fails to contain any margin of safety for the numeric targets to address the many uncertainties inherent in these waterbodies and TMDLs. • As required by the CWA, Mugu Lagoon is an Area of Special Biological Significance ("ASBS"); yet	

No.	Author	Date	Comment	Response
			the TMDL fails to address the fact that Ocean Plan standards for the ASBS must be met in setting targets for Calleguas Creek and Mugu Lagoon For all of these reasons, it is entirely unclear, and indeed unlikely, that this TMDL will ever restore beneficial uses to these waterbodies. We urge the Los Angeles Regional Water Quality Control Board ("Regional Board") to address these general deficiencies by 1) obtaining sufficient water quality data to calibrate and validate the model; 2) considering concentration-based load allocations for non-point and urban runoff; 3)ensuring that Ocean Plan ASBS standards are fully considered and met; 4) adding an explicit margin of safety to the numeric targets; and 5) explicitly requiring ultimate compliance with TMDL targets in the Implementation Plan	
5.2			**I. Calleguas Creek Watershed Metals and Selenium TMDL Draft Final Technical Report ("Technical Report")** **A. The Regional Board should clarify the role of the Technical Report.** First, the Draft Resolution for the Draft TMDL ("Resolution") describes the Technical Report as though it is a Regional Board Document: "[t]he technical document…prepared by Larry Walker Associates is an integral part of this Regional Board action and was reviewed, and accepted by the Regional Board as a supporting technical analysis before acting."	Regional Board staff understands that there are two basic concerns – first the transparency of the process, and the appropriateness of a technical report produced by a stakeholder group's consultant. The Calleguas Creek Metals and Selenium TMDL is the product of a stakeholder-led process in which Regional Board and US EPA staff had intensive participation and review. The stakeholder group, the Calleguas Creek Watershed Management Plan, is an established watershed planning group that has broad participation from local groups, including water purveyors, planning and resources agencies, publicly owned treatment works, the Point Mugu Naval base,

No.	Author	Date	Comment	Response
			Resolution at 3. However, this statement directly contradicts statements made by Regional Board staff, who have indicated in conversations that they are not in complete agreement with various aspects of the Technical Report. In addition, as it was prepared by the parties' consultant, staff indicated that the Regional Board is not at liberty to make any changes to the Technical Report. Clearly, this is not a Regional Board document. Despite this, and Regional Board staff's admitted disagreement with certain elements of the Technical Report, the Resolution also states that, "[t]he technical document provides the detailed factual basis and analysis supporting the problem statement, numeric targets (interpretation of the narrative and numeric water quality objectives, used to calculate the pollutant allocations), source analysis, linkage analysis, waste load allocations (for point sources), load allocations (for nonpoint sources), margin of safety, and seasonal variations and critical conditions of this TMDL." Resolution at 3. These statements in the Resolution should be removed. Further, the Technical Report is the only document available for public review – there is no Staff Report associated with the Draft TMDL. Thus, there is no document that accurately describes the analysis and assumptions made by Regional Board staff in developing the Draft TMDL. Is it the Regional Board's intent to use the Technical Report in place of a staff report, even though staff does not agree with certain aspects of the Technical Report? If so, the Regional Board must at the very least make	and agriculture representatives. The Calleguas Creek Watershed Management Plan is an open group, inviting participation from any and all interested parties. In the past, environmental groups such as Ventura County Coastkeeper and Heal the Bay have participated in CCWMP meetings. The CCWMP has had standing monthly meetings for nearly seven years and notices those meetings through an email list that includes Heal the Bay and other environmental groups. In addition, there has been outreach through public notices of a meeting in February 2004 outlining the TMDL and the various alternatives and issues. Additionally, the stakeholder's consultant met with Regional Board and US EPA on a monthly basis to discuss the TMDL as it was being developed. These meetings were also noticed and Heal the Bay was invited to attend every meeting between the CCWMP and Regional Board and USEPA staff. In the past years, there were more than 20 meetings regarding the TMDL and status of the TMDL. Heal the Bay had been invited and Heal the Bay had attended twice. As described above, the TMDL was produced through a process in which Regional Board and USEPA staff reviewed and commented extensively on draft sections of the TMDL. These discussions were documented by the CCWMP facilitator and notes and minutes were distributed and made available to the stakeholders. At

No.	Author	Date	Comment	Response
			this fact clear in the Resolution and explicitly outline the portions of the Technical Report with which they are not in agreement, as well as any separate analyses done by Regional Board staff.	the request of the Ventura County Coastkeeper, the UCLA Institute of the Environment performed a review of the CCWMP process. It found that CCWMP was open process.
5.3			**B. The Regional Board should develop and include a staff report for public review.** Second, it is inappropriate for the Regional Board to issue the Draft TMDL, which is based on various complex calculations, models and analyses, without preparing a Staff Report that accurately presents the staff's reasoning and decision-making process. This is important both for public review and for the Regional Board members themselves to fully understand staff's bases for the TMDL targets and load allocations. This Staff Report cannot properly be replaced by a technical report produced by a stakeholder group's consultant, particularly where, as here, Regional Board staff does not agree with all of the analyses and conclusions of that technical report. As it stands now, it is impossible for the public to provide comprehensive technical comments on the Draft TMDL without knowing the actual assumptions and analyses, if any, used by staff in developing the final Draft TMDL. This simply does not meet the requirements for a transparent process. As the consultant's Technical Report was the only document provided for public comment, our comments necessarily are based on the analyses and calculations	Regional Board staff understands HTB's concern that the process of using a Technical Report produced by a stakeholder group may obscure the role of the Regional Board staff's analysis in the TMDL. In response to this comment, Staff have produced a report detailing its rationale for accepting the analysis provided in the Technical Report. Regional Board staff surmises that there is some misunderstanding on the nature and extent of the Regional Board staff disagreement with the Technical Report. In fact, during the development of the TMDL, there was one issue regarding numeric targets that staff and the stakeholder consultant disagreed: the issue of sediment targets for metals. Although the 303 (d) listings did not specifically list sediment impairments, Regional Board staff opined that these targets were essential for the attainment of water quality standards because metals impairments of water quality standards are typically caused by metals loaded to waterbodies with sediment. Sediment control is a major portion of the TMDL implementation approach. Regional Board staff proposed using NOAA guidelines which was eventually agreed to by stakeholders and the stakeholder consultant.

No.	Author	Date	Comment	Response
			set forth in that report, which presumably was used in setting the TMDL numeric targets and allocations	
5.4			**II. The Numeric Targets In The Draft TMDL Many Not Ensure That WQS Will Be Attained.** **A. It is more appropriate and protective to use the lowest hardness data point in calculating numeric targets for metals.** In the Draft TMDL, freshwater targets are calculated using the 50th percentile hardness calculated from all freshwater hardness data collected in a specific subwatershed. Technical Report at 38. This is a non-conservative assumption, as it allows that about half-of-the-time higher levels of pollutant will be bioavailable in the waterbody than accounted for in the target. As hardness varies inversely with bioavailability for these pollutants, such a non-conservative assumption cannot guarantee to protect beneficial uses. The consequences of this decision are waters that contain levels of metals that are toxic to aquatic life. We therefore urge the Regional Board to use the lowest hardness data point from each subwatershed instead, in order to account for the entire range of conditions, including when the pollutants are the most bioavailable	The chronic criteria were calculated using the 50th percentile hardness values because the chronic criteria are based on long term exposures. This is consistent with SIP method for choosing translator values and recent adopted metals TMDLs such as Los Angeles River Metals TMDL and Ballona Creek and Estuary Metals TMDL. In addition, Regional Board staff had reviewed the hardness data for dry weather and found that the 10% (ranging from 213 to above 400) hardness values are not significantly lower than the 50% (ranging from 357 to above 400) and would not lead to acute toxicity to aquatic organisms at time of lower hardness.
5.5			**B. The TMDL targets must ensure that Ocean Plan standards for Mugu Lagoon, an Area of Special Biological Significance, are met** As acknowledged in the Technical Report, Mugu Lagoon is designated as an Area of Special Biological	ASBS apply to the ocean only therefore Ocean Plan requirements do not be applied to Mugu Lagoon.

No.	Author	Date	Comment	Response
			Significance (ASBS). Technical Report at 10. Yet having stated this, it is ignored throughout the rest of the Report and in the Draft TMDL. The California Ocean Plan sets forth specific standards for areas designated as ASBS. Specifically, the Ocean Plan states that: [w]aste shall not be discharged to areas designated as being of special biological significance. Discharges shall be located a sufficient distance from such designated areas to assure maintenance of natural water quality conditions in these areas. Ocean Plan at 20. Pursuant to this provision, the Draft TMDL should not permit any direct discharges of waste to Mugu Lagoon. The Draft TMDL should also ensure that indirect discharges of waste into Calleguas Creek are appropriately addressed so as to ensure that natural water quality conditions are maintained in Mugu Lagoon.	
5.6			There is no analysis provided in the Technical Report to indicate that the calculated numeric targets and WLAs will prevent exceedances of natural background levels in Mugu Lagoon. Indeed, there is no discussion as to whether this applicable WQS was even considered. The Draft TMDL must be modified as necessary to ensure that natural background levels are attained and maintained in Mugu Lagoon pursuant to the plain language of the Ocean Plan provisions. These Ocean Plan provisions are legally applicable WQS and cannot be simply ignored in developing TMDLs in California.	Staff disagree. Regional Board staff acknowledge that the water column targets might not be achieved by solely controlling agriculture, urban runoff, or POTW discharges. However, percent reductions are applied to POTWs, agricultural, and urban runoff discharges to meet the final WLAs and LAs to attain WQO in Mugu Lagoon. The allocation are developed by taking off the background load from the loading capacity and including MOS to the percentage of the load attribute from POTWs, agricultural, and urban runoff discharges. Further more, in developing the allocations, the model assumed that background loads

No.	Author	Date	Comment	Response
				would not change significantly over time. In realty, some activities under taken to reduce loadings for this TMDL and other TMDLs will result reduction in background load from open space and groundwater. This results in higher reduction for the other sources than would be required. In addition, saltwater targets which are stringent than freshwater targets, are used to calculate the allocation for upstream discharges to achieve the WQOs in Mugu Lagoon.
5.7			**C. The Regional Board should incorporate an explicit margin of safety into numeric target calculations** The Regional Board does not provide an adequate margin of safety in the Draft TMDL, as there is no implicit or explicit margin of safety applied to the numeric targets. Pursuant to Section 303(d), TMDLs must include a margin of safety to reflect uncertainties regarding discharges and water quality. 33 U.S.C. § 1313(d); 40 C.F.R. § 130.7(c)(1) ('TMDLs shall be established at levels necessary to attain and maintain the applicable narrative and numerical WQS with seasonal variations *and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality*.") (emphasis added); *see also Minnesota Center for Environmental Advocacy v. U. S. Environmental Prot'n Agency*, 2005 U.S. Dist. LEXIS 12652 (D.Minn.2005) (holding that EPA "..must comply with the statutory and regulatory mandate to establish a margin of safety that takes into account any	There appear to be two issues regarding margin of safety: first, that it should be applied to the numeric targets and second, that it may not be sufficient to ensure that water quality standards will be met. In response, the TMDL contains an explicit margin of safety in compliance with 33 U.S.C. sec 133(d). Because the numeric targets are based on the promulgated California Toxics Rule, there is little uncertainty that the targets will implement the water quality standards. Further, the issue of a water effect ratio, which would adjust the CTR targets is not being considered at this time, also adding to the certainty of the numeric targets. However, there is uncertainty in calculating wasteload allocations for copper and nickel through the linkage analysis. Consequently, the margin of safety is applied to the wasteload allocation, which becomes the basis for the effluent limits. For mercury and selenium, additional numeric targets pertaining to

No.	Author	Date	Comment	Response
			lack of knowledge concerning the relationship between effluent limitations and water quality."). Thus, the Regional Board is required to include a margin of safety and it must be sufficiently protective to ensure that water quality standards are attained and maintained by the TMDLs. *Id*.	fish tissue and bird egg ensure numeric targets are attained.
5.8			Here, as discussed above, the freshwater targets were calculated using the 50th percentile hardness. Again, this means that approximately half-of-the-time the hardness values will be lower than this value and pollutants will become more bioavailable. In addition, there are other uncertainties associated with mercury interactions between the water column and sediment. A margin of safety is necessary to account for all of these uncertainties. Notably, the Regional Board did include in the Calleguas Creek Watershed Toxicity TMDL "..an explicit margin of safety of 5% ..to the targets for chlorpyrifos in the Calleguas and Revolon subwatersheds to address uncertainty in the linkages between the water column criteria and fish tissue and sediment concentrations." Calleguas Creek Toxicity TMDL at 6. The Regional Board should take a similar approach in the Draft TDML and provide an explicit margin of safety on the numeric targets. Although the Draft TMDL provides a 15% buffer to the WLAs for copper and nickel and calls it a margin of safety, this buffer is not sufficient to ensure that water	Please refer to the response to comment above. The TMDL includes multiple targets for each constituent including mercury to ensure protection from impairment for all possible beneficial uses and the most protective targets. Achievement of the water, tissue, and bird egg targets will adequately protect benthic and aquatic organism, wildlife, and human health from potential harmful effects associated with mercury and other metals. Please refer to the Margin of Safety section of the Calleguas Creek Watershed Toxicity TMDL. Explicit margin of safety of 5% was added to the targets for chlorpyrifos in the Calleguas and Revolon subwatersheds. Beside this, there was no other explicit MOS included. For this TMDL, both implicit and explicit are included. The implicit MOS stems from the use of conservative assumptions made during development of multiple numeric targets to ensure sufficient protection under all conditions and conservative methods employed in developing the TMDL. Background loads are assigned to the TMDL and assumed to remain constant throughout implementation of the TMDL. This results in higher

No.	Author	Date	Comment	Response
			quality standards will be met. Instead, it is intended to account for several non-conservative assumptions utilized in calculating the WLAs such using translators and the median flow rate. A true margin of safety is needed to account for unknowns in the system, in addition to any corrections or buffers needed to compensate for the use of nonconservative assumptions. Thus, in order to establish an adequate margin of safety and obtain sufficiently protective numeric targets in the TMDL, the Regional Board should include an explicit margin of safety in calculating the numeric targets themselves. The resulting lower numeric targets will act as a "safety net" (as the CWA intended) in the event that incorrect assumptions and/or unknowns in the system lead to greater pollutant bioavailability than expected.	required reductions for the other sources. Calculation of allocations is based on never exceeding numeric target concentrations rather than the once in three year exceedance referenced in the CTR. Calculations of current loads and loading capacity for Mugu Lagoon are based on the combined discharges from Calleguas Creek and Revolon Slough (without any dilution provided by tidal flushing), which over predicts actual concentrations in the Lagoon. Additional 15% explicit MOS is also included for copper and nickel to account for the uncertainty resulting from the calculation of the allowable load based on the median flow rate and translator of each flow category. The 15% explicit MOS is determined sufficient to address the elevated flow category, but still account for the more conservative nature of low and average category.
5.9			**III. The Assumptions Underlying the Waste Load Allocations (WLAs) Are Not Fully Protective** In addition to uncertainties in the targets themselves, there are several problems with the calculation of the specific WLAs and LAs intended to meet the numeric targets. First, there is much uncertainty with the model itself primarily due to the lack of water quality data with which to validate and calibrate the model. Second, numerous non-conservative assumptions were used to develop the WLAs and LAs set forth in the Draft TMDL. **A. The models used to develop the WLAs should be calibrated and validated using sufficient water quality data.**	There are two steps of model calibration for the model applied to Calleguas Creek Metals TMDL. As described in the technical report, the first step of calibration is hydrology. The calibration parameters are precipitation, evaporation adjustment factor and soil coefficients, i.e. infiltration rate, field capacity, and porosity (saturated moisture). Most of the coefficients are selected from literature values and adjusted slightly to match the timing and magnitude of hydrology. Precipitation and evaporation data were obtained and extended to allow model simulation up to 17 years. Topographic, soils, land use, and agricultural cropping information was used to develop the model segmentation and input, and detailed streamflow data

No.	Author	Date	Comment	Response
			The Technical Report acknowledges that "..limited environmental data were available for comparison to model results."Technical Document at 111. According to the project modeler from Larry Walker Associates, the water quality data used for calibration came from 3-5 monitoring locations in the lower Watershed that had at most 10 water quality data points each (some monitoring points had even fewer data points). This raises significant uncertainty as to the ability of the model to accurately predict water quality in the Calleguas Creek Watershed over a wide range of conditions. Furthermore, the data used to validate the model is extremely questionable. The modeler explained that the data or information used to validate the model did not come from instream water quality data. Instead, the consultant team used information such as agricultural runoff data, pesticide-use data and road density information. This method of validation does not provide a high level confidence in the model, as the relationship between these types of data and in-stream metal concentrations is not well-defined. A separate data set containing in-stream water quality data is necessary to validate the model. Moreover, as of May 9, 2006, Regional Board staff had not evaluated the data sets used by the consultant for model calibration and validation. It is critical that Regional Board staff have full confidence in the model and the data used for determining WLAs and LAs before issuing a Draft	were selected to allow calibration over a 9 year period (WY 1994-WY 2002) and validation over a separate 6 year period (WY 1988-WY 1993). The procedure and parameters used for hydrology are reviewed by Regional Board staff and believed to scientifically appropriate. Water quality calibration proceeds after hydrologic calibration. Water quality calibration follows the same principles as hydrologic calibration. The order of calibration is as follows: temperature, sediment, TSS, hardness, chloride, metals. For Calleguas Creek, many parameters are considered known and are not adjusted. The values of these parameters are within the range of available scientific literatures. The parameters that need to be adjusted for Calleguas Creek mainly are partition coefficient and potency factor. Available in-stream water quality data are from October 1,1987 through December 31, 2004. For metals and selenium where data from October 1993 to December 2002 were used for calibration of model parameters, and the latter data from January 2003 through December, 2004 were used for validation. After several iteration to minimize relative and absolute errors, a set of best fit rates were developed. The values of those two parameters are within reasonable range of available literatures. To summarize, there are a large number of parameters that can be adjusted in model calibration. Like any scientific investigation, model calibration is often a

No.	Author	Date	Comment	Response
			TDML for public comment. This does not appear to be the case here. As a result, we have little confidence in the sufficiency of the WLAs derived from the model to actually meet the targets. At a minimum, a special study should be pursued that collects enough data to adequately validate the model and provide a reopener if the results are inconsistent with the current WLAs. In addition, while we recognize the clear need for the 15% buffer provided for in the WLAs, we recommend that an even higher buffer be applied to the WLAs to address the large uncertainties inherent in the current model.	never-ending iterative process. Further improvement can be made as more data becomes available. So far, the calibration processes performed and parameters used for Calleguas Creek Metals TMDL are believed by the Regional Board staff to be appropriate and within the range of available scientific data and all data used for the calibration and validation have been reviewed and checked by the Regional Board staff. Therefore, the proposed WLAs obtained from the calibrated model are believed to be appropriate and the suggested 15% of margin of safety (MOS) for copper and nickel is within a reasonable range.
5.10			**B. The assumptions used in developing waste load allocations in the Draft TMDL are flawed and/or non-conservative.** In addition, several of the assumptions used in developing waste load allocations are not sufficiently conservative to be truly protective. • Flow categories based on flow ranges with similar pollutant concentrations were used to determine loading capacity and allocations under dry weather conditions. Within each flow category, the median flow rate was used to establish the loading capacity. Technical Report at 142. As discussed above, this approach cannot ensure compliance with targets as the median flow rate will fail to be sufficiently protective about half-of-the-time. Indeed, the stakeholder's own Technical Report admits that '[t]here is uncertainty as to whether or not	Regional Board staff supported the development of flow categories to develop WLAs under dry weather for several reasons. First, different constituents have maximum loadings at different dry weather flow rates, and the flow categories will allow protective WLAs for each constituent. Second, this approach has been used successfully in the Newport Bay TMDL in region 8. Finally, the water column concentrations in many locations generally do not exceed concentration based targets. Under these conditions, the flow based wasteload allocations are more conservative than

No.	Author	Date	Comment	Response
			allocations based on those [flow] categories will result in achievements of targets in the stream." Technical Report at 165. Further, compliance assurance of WLAs based on flows will be very difficult. Heal the Bay has never seen discharge permits with multiple flows and loadings before. How does the Regional Board propose to enforce a WLA based on many different flows? Will there be numerous flow gauges installed in the Creek to determine the instantaneous flow? Was the consultant's proposed approach analyzed or questioned by staff? Was a concentration-based approach for Las and urban runoff WLAs considered or evaluated by staff? In general, concentration-based WLAs are much easier to calculate with a much smaller margin of error (thus requiring a lower buffer calculated in) and are much easier to enforce. In order to simplify implementation and ensure that the TMDL is in fact enforceable, we urge the Regional Board to consider revising the Draft TDML to include concentration-based LAs as well as WLAs for urban runoff.	concentration based targets based on CTR. The statement 'There is uncertainty as to whether or not allocations based on those categories will result in achievements of targets in the stream" is intended to justify the imposition of explicit margin of safety. The statement is placed at the beginning of the section on Margin of Safety and it is meant to justify the need for an explicit MOS for copper and nickel. With the explicit margin of safety, as well as other discussion on the appropriateness of the median hardness for this TMDL, staff opines that the allocations based on flow categories will result in achievement of the targets in the stream.
5.11			• Translators were used to convert the dissolved critical condition loads to total recoverable critical condition loads for copper and nickel. However, the chosen translators are not always greater than the maximum translator calculated from actual	The method used for calculating translator in the Calleguas Creek Metals TMDL is the partition coefficient equation, which means the fraction of the total metal in the water that is dissolved (the translator) may be determined indirectly by means of a partition

No.	Author	Date	Comment	Response
			environmental data. As a result, the total allocations may be higher than is appropriate to actually meet water quality targets. The Regional Board should use translators based on the maximum translator calculated from environmental data.	coefficient. This method has been adopted and indicated in the EPA guidance on translators ("The Metals Translator: Guidance for Calculating A Total Recoverable Permit Limit From A Dissolved Criterion, EPA 823-B-96-007, June,1996"). EPA guidance indicates the strength of this approach that 'use of the partition coefficient may provide advantage over the dissolved fraction when using dynamic simulation for waste load allocation (WLA) or the total maximum daily load (TMDL) calculation and …". For Calleguas metals TMDL, the model simulation involves a dynamic simulation and the translator is to be a function of adsorbent concentrations (e.g. TSS), developing a statistically robust translator is required. Therefore, the Regional Board staff considered the translators used in the model are appropriate for the metals TMDL and are in conservative side.
5.12			• Load allocations and WLAs for mercury in the Draft TMDL are based on the amount of suspended sediment at different flows. This approach is problematic as many steps and assumptions must be taken to move from in-stream numeric water column targets to LAs and WLAs based on suspended sediment. An example of such an assumption is that the TMDL calculation assumes that "..a certain percent reduction in the suspended sediment loads will result in an equal percent reduction in water column and fish tissue mercury concentrations."Technical Report at 167. By contrast, other TMDLs have included allocations	Regional Board staff notes that both the San Francisco Bay Mercury TMDL and the Calleguas Creek Metals and Selenium TMDL recognize the importance of sediment bound mercury. Mercury is a bioaccumulative pollutant that is primarily transported in sediment and is of concern in multiple media including water and fish tissue. Using suspended sediment loads as allocations allows linkages to both water and fish tissue targets. The reductions in sediment are based on the greater of either: 1) the reduction needed in water column concentrations to achieve water quality objectives; or 2) the reduction in fish tissue concentrations needed to achieve fish tissue targets.

No.	Author	Date	Comment	Response
			that can be more easily derived from the numeric targets, thereby requiring fewer assumptions and mathematical gymnastics to calculate the allocations. For instance, the San Francisco Bay Mercury TMDL derives the annual mercury *sediment loads* from a suspended *sediment target* which requires fewer assumptions and leads to less uncertainty. This is turn leads to far more certainty with regard to actually attaining targets and thus water quality standards. In this case, as there are many non-conservative assumptions and calculations that have gone into developing sediment-based LAs and WLAs to achieve water column targets, the Regional Board should include a *substantial* buffer to the calculated allocations to ensure that numeric targets are met in the water column where the impairment is found	This approach is taken to ensure that all targets are achieved through the allocations. Considering only water allocations might not take into account reductions necessary to achieve fish tissue targets in some cases because of the relationship between settling of suspended sediments and methyl mercury production. The assumption of using an equal percent reduction to calculate suspended sediment allocations is based on the precedent of the Calleguas Creek Organochlorine and PCBs TMDL allocation process that was reviewed by a technical advisory committee and peer reviewers and approved by the LARWQCB, SWRCB and USEPA. The bioaccumulative nature of mercury and its tendency to associate with particulate matter is similar to OC pesticides and make the allocation process appropriate for mercury. Additionally, assigning suspended sediment loads helps to address concerns about sediment toxicity due to mercury by ensuring that suspended sediment is monitored in addition to water column concentrations of mercury. Finally, using suspended sediment loads provide a direct link to implementation actions in that mercury loadings are more likely to result from sediment discharges than from water discharges.
5.13			The model assumes that Mugu Lagoon is in equilibrium, but this has not actually been demonstrated. This is a big assumption to make without any support and calls for an additional amount of	A "BATHTUB" model is applied to the Mugu Lagoon, which is the estuary of the Calleguas Creek Watershed. The Mugu Lagoon model is developed from the fundamental principal of mass balance and the entire

No.	Author	Date	Comment	Response
			buffer.	lagoon is modeled of as one complete-mix system. The system can be considered to be in equilibrium on a daily basis, which means that diluting effect of the flood tide is neglected and the lagoon is modeled as a constant volume system to make the computation of concentration be in a conservative side and ensure that water quality standards will be met. This conservative simplifying "bathtub" assumption provides an implicit margin of safety to the model calculation. The comparisons of model results with measured data presented in Technical Report have demonstrated this assumption.
5.14			The model fails to account for possible impacts of the pollutant loads on sediment toxicity: a significant issue for metals and selenium.	The model can be used to estimate metals content in the benthic sediment. The model estimates suspended sediment deposition during lower flows, and benthic sediment erosion during higher flows. Concurrently, the model tracks the metals content of the suspended and benthic sediment, and models the transfer of metals between the water column and sediment (i.e. partitioning). However, there is no model relating metal content in sediment to toxicity (i.e. there is no sediment metals content objective to compare model results with to assess toxicity). The only method currently available to assess metals toxicity in sediment is to collect the sediment, perform toxicity tests, and if toxicity is found run TIE/TRE type analysis. If the TIE/TRE indicates metals as the source of toxicity, then we can know the level of metals in the sediment is toxic. The model

No.	Author	Date	Comment	Response
				could then be used to evaluate metals loads and benthic sediment metals content and how they might affect sediment toxicity.
5.15			As recently verified by one United States District Court, ". . . the TMDL must be established at a level necessary to ensure that the applicable water quality standards are met in each of the impaired waters for which the TMDL is prepared, in compliance with that cannot and do not ensure that water quality standards will be met. The Draft TMDL states that an explicit "margin of safety"1 (more appropriately called a buffer in this case) of 15% is established for the copper and nickel WLAs to account for these nonconservative model assumptions. However, based on the high number of critical nonconservative assumptions used throughout the model, this buffer number appears low. A more conservative WLA cushion is justified here, more in the range of 25-35%.	A margin of safety for the TMDL is designed to address any uncertainties in the analysis that could result in targets not being achieved in the waterbodies. To identify whether an explicit margin of safety is necessary for each constituent, a summary of the significant uncertainties in the TMDL analysis was developed and compared to the conservative assumptions used to address the uncertainty in the analysis. Although there is a sizable implicit margin of safety for cooper and nickel, two uncertainties were evaluated in more depth and considered to be significant enough to warrant an explicit margin of safety for these constituents. (1) The calculation of the allowable load is based on the median flow rate for each flow category. (2) The translation between dissolved allowable loads and total allowable loads is calculated using the median translator for each flow category. The allowable loads calculated using the median flow rate and median translator were compared to the variable allowable load calculated using the model flow rate and model translator and compared to the allowable load generated using the environmental data flow and translator. The comparison showed that for the flow and average flow category, the chosen approach was fairly conservative, but it was less conservative for the elevated flow category. A 15% margin of safety was determined to be sufficient to

No.	Author	Date	Comment	Response
			In addition, the reasoning set forth in the Draft TMDL for *not* including any "buffer" in calculating the mercury and selenium WLAs based on the same model is inappropriate. Notably, the Draft TMDL acknowledges that "[f]or both mercury and selenium, data are insufficient to fully assess whether or not the wildlife targets are being achieved. Therefore, there is some uncertainty as to whether or not the allocations will result in compliance with wildlife targets." Technical Report at 167. Yet, no buffer is set for these two toxics. What is the justification for this? Clearly, significant uncertainty is present for the mercury and selenium WLAs, and a buffer of 15-35% therefore should be included for these WLAs as well.	address the elevated flow category, but still account for the more conservative nature of the low and average flow category. For mercury and selenium, the model is used to estimate current loads from which the percent reductions are taken to determine allowable loads. The model appears to overestimate loading much of the time. Plus, the development of allocations for selenium and mercury incorporates other individual implicit MOS factors. Therefore, no additional explicit margin of safety is considered for these two constituents.
5.16			**C. A TMDL must be developed for zinc in Mugu Lagoon.** The Technical Report maintains that there are no longer zinc impairments in the Watershed based on recent data, but does not contain an analysis of all available data. Yet, presumably based on the Technical Report's claim, the Draft TDML provides numeric targets for zinc and describes zinc compliance monitoring, but fails to contain any WLAs or LAs for zinc. A de-listing for zinc was not proposed in the State Water Board's draft 2006 303(d) List. Thus, zinc is still	The SWRCB 2004 report titled: Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List provided guidance on using the collected data to determine if each of the listed metals and selenium continue to cause an impairment in a listed reach. According to the 303(d) listing policy (SWRCB 2004) the allowable percent above criteria for delisting purposes varies between 6 and 8 percent based on the sample size. Tables 10-21 in Current Condition section of the Technical Report document show the

No.	Author	Date	Comment	Response
			on the State's 303(d) List. The Consent Decree requires the completion of a TMDL for zinc in Mugu Lagoon by March 22, 2006 (with a backstop of March 22, 2007). 1999 USEPA Consent Decree. If the Regional Board is proposing to de-list zinc, pursuant to the Consent Decree, it must prepare a detailed report describing the analysis and conclusions that led to this decision. In this case, the parties have not been notified and a detailed report was not prepared. Indeed, there is no Staff Report associated with this Draft TMDL. Moreover, there is no documentation or evidence provided to show that the levels of zinc in Mugu Lagoon are at natural background levels, as required by the Ocean Plan for an ASBS. This must be established in order to propose any de-listing for zinc, if this is what the Regional Board is in fact doing. Given the above, the failure to establish a TMDL, with corresponding WLAs and LAs, will comprise a violation of the Consent Decree. A TMDL for zinc in Mugu Lagoon that meets all water quality objectives, including ASBS standards, should be completed and adopted by March 22, 2007.	percent above criteria for all reaches in the watershed. The data presented in Table 10 show 0% exceedance in Mugu Lagoon of the dissolved zinc criteria. Based on the results presented in the Technical report document, impairment due to zinc in the watershed is not occurring. Regional Board staff had discussed with the State Board staff and indicate that the current data show that Calleguas Creek watershed meet the requirement for delisting. The Calleguas Creek Watershed Management Plan (CCWMP) had sent a letter to the State Board on January 18, 2006, to request delisting of zinc for the Calleguas Creek watershed from the 303(d). On January 27, 2006, Larry Walker and Associate on behalf of the CCWMP submitted to the State Board supplementary information to further support the removal of the listing from the 2006 303(d) list. Regional Board staff also understand that USEPA is preparing a letter to Consent Decree plaintiff informing them that allocation for zinc are not necessary. As mentioned above, ASBS standards do not apply to Mugu Lagoon therefore the comment that a TMDL for zinc in Mugu Lagoon that meets ASBS standards, should be completed is not valid
5.17			**IV. Monitoring Plan** **A. Monitoring should begin within 6 months of the effective date of the TMDL.** The Draft TMDL requires monitoring efforts to start	Comment noted. The implementation schedule for

No.	Author	Date	Comment	Response
			within one year of the effective date of the TMDL.3 Draft TMDL at 14. A one-year timeframe to initiate monitoring appears excessive, especially given that the monitoring is designed to fit into the existing Calleguas Creek Watershed TMDL Monitoring Plan. We suggest a maximum of 6 months for responsible parties to develop a monitoring plan *and* begin monitoring efforts.	tasks 3a and 3b are changed from 6 months to 3 months to address the concern. See revised BPA, Table 7-19.2
5.18			**B. Water column samples should be collected monthly in all areas impaired by metals.** The Draft TMDL and Technical Report acknowledge that there is little existing water quality data for metals in the impaired reaches of the Calleguas Creek Watershed. As a result, discharges and variability in the system are not well characterized. Thus, it is vital that the ambient monitoring and compliance monitoring programs adequately characterize the Watershed and evaluate the progress being made to remove the metal impairments. The Draft TDML requires quarterly sampling of in-stream water quality. In contrast, the Ballona Creek Metals TMDL calls for monthly sampling of metals at each monitoring location. In order to adequately characterize the Calleguas Creek Watershed and capture variability, the frequency of sampling should be increased. Instream water quality should be sampled on a monthly basis. The designated sampling locations are also problematic. The Draft TMDL specifies that the samples "..will generally be collected at the base of	Comment noted. The monitoring frequency has been changed from quarterly to monthly to address this concern. See revised BPA, Table 7-19.1. In addition to the designated sampling locations for the Calleguas Creek Watershed TMDL Monitoring Plan (CCWTMP), other samples will be collected

No.	Author	Date	Comment	Response
			Revolon Slough and Calleguas Creek and in Mugu Lagoon…"Technical Report at 182. Compliance sampling locations should include points slightly upstream of the base of Revolon Slough and Calleguas Creek, in order to better understand the source of pollution. Compliance should also be evaluated at the input locations of numerous discharges into Mugu Lagoon and Calleguas Creek. For instance, there are numerous inputs into Mugu Lagoon from drainages that pass through the Mugu Naval Air Base. Thus, these potential sources of metals should be fully characterized.	concurrently at representative agricultural and urban runoff land use stations as well as at POTWs in each of the subwatersheds and analyzed for GWQCs, copper, mercury, nickel, selenium, and zinc. The location of the land use stations will be determined before initiation of the CCWTMP and approved by the Executive Officer.
5.19			**C. The Calleguas Creek Watershed Metals and Selenium Monitoring Program should be made available for public review and comment before Executive Officer or Regional Board approval** The Draft TMDL Implementation Schedule requires the submittal of a monitoring program to the Regional Board for Executive Officer approval. In order to make the development of the Draft TDML a true stakeholder process, the Regional Board should revise the TMDL to make the monitoring plan available for stakeholder input before it is approved.	Comment noted. The following language is added to the Monitoring Program section: "The proposed CCWTMP shall be made available for public review prior to approval by the Executive Officer"
5.20			**V. The Regional Board Should Not Promote Special Studies That Aim To Increase The Amount Of Pollution Allowed In Calleguas Creek Watershed.** The Draft TMDL outlines five special studies, along with corresponding study completion dates, in the Implementation Schedule. Only two of these special	Comment noted. The Implementation Schedule is revised to clarify that Special Studies 1, 2 , and 3 are optional.

No.	Author	Date	Comment	Response
			studies are identified as "optional." Draft TMDL at 12 and 13. While we agree that special studies that provide vital information to the TMDL should be required by the Regional Board, the Draft TMDL should not require or recommend special studies solely aimed at increasing (i.e. softening) TMDL targets and WLAs. For instance, special study #5 suggests calculating a WER in Revolon Slough because "..monitoring demonstrated that the saltwater copper CTR criterion was exceeded in the Revolon Slough." Draft TMDL at 13. The exceedance of a standard is not a valid reason to explore increasing that standard. Actions such as calculating a WER or SSO and evaluating natural sources exclusions should be pursued separately from the TMDL process entirely, and certainly should not be promoted by the Regional Board. By presenting these special studies within the Draft TMDL, the Regional Board could be interpreted as implying that these studies are integral to the TMDL itself. They are not. The Regional Board should revise this section on Special Studies to remove these Special Studies from the TMDL, or at the very minimum, make clear that those studies that are not appropriate for a TMDL (such as Special Study #1) are labeled as "optional." Further, we urge the Regional Board to develop and include more appropriate and useful special studies in the TMDL, such as collecting additional water quality data over time to validate the HSTF model.	
5.21			**VI. The Proposed Implementation Schedule In the**	

No.	Author	Date	Comment	Response
			Draft TMDL Improperly Fails To Include Enforceable Milestones And All Appropriate Compliance Goals. **A. The Implementation Schedule should include milestones to ensure progress toward meeting final WLAs and numeric targets** An effective Implementation Plan must have enforceable milestones to ensure TMDL compliance. The Implementation Schedule in the Draft TMDL does not provide any milestones or other means to track the progress of responsible parties and ensure that waste loads are being reduced. The only reference to progress milestones is a statement that at 5, 10 and 15 years after the effective date of the TMDL, milestones *may* be developed based on BMP implementation. Draft TDML at 20. This allows the responsible parties at least five years, and potentially many more, of maintaining the status quo before making any measurable progress towards meeting TMDL targets and water quality standards. We urge the Regional Board to expressly include appropriate and measurable milestones for reductions in the Implementation Schedule. For instance, POTWs should have a required 25%, 50%, and 100% reduction in the current loading minus the waste load allocation at 5, 8, and 10 years after the effective date, respectively. Agricultural Dischargers and Permitted Stormwater Dischargers should have a required 25%, 50% and 100% reduction in the current loading minus the waste load allocation at 5, 10, and 15 years, respectively. These interim	Comment noted. The BPA is revised to include the milestones to achieve final WLAs and LAs. See revised BPA, Table 7-19.2 for detail.

No.	Author	Date	Comment	Response
			compliance targets must be enforceable, in order to ensure steady progress towards the final numeric targets. This is particularly true, where, as here, the WLAs and LAs are based on a model and assumptions that cannot ensure that the final targets will be met. Basing interim targets on percent reductions in waste loading is a direct, enforceable and effective way to structure the TMDL.	
5.22			**B. Final compliance milestones in the Implementation Plan should ensure that numeric water quality standards are met – the Waste Load Allocations should not be used as the sole compliance endpoint** Final compliance points are provided in the Draft TMDL's Implementation Schedule. For instance, within 10 years of the TMDL effective date, POTWs must achieve final WLAs, and within 15 years, Agricultural Dischargers and Permitted Stormwater Dischargers must achieve final WLAs and LAs. However, the Draft TMDL does not provide an explicit final compliance requirement for meeting numeric targets. Presumably, these are implicitly intended to be the same as the 10 year and 15 year compliance dates for WLAs and LAs referenced above. For instance the Draft TMDL hints at this implicit requirement by stating that the first goal of the monitoring plan is to "..determine compliance with copper, mercury, nickel, and selenium numeric targets at receiving water monitoring stations and at POTWs discharges…"Draft TDML at 14. However, an explicit statement to this	Comment noted. The BPA is revised to clarify that water quality standards for copper, mercury, nickel, and selenium shall also be meet as final WLAs and LAs are achieved by POTWs, Agricultural Dischargers, MS4s, Caltrans, the Naval Air Weapons Station at Point Mugu, and general industrial and construction permittees.

No.	Author	Date	Comment	Response
			effect should be included in the Implementation Schedule. *See e.g.,* Calleguas Creek Nitrogen Compounds and Related Effects TMDL at 6 (7/16/03) (defining the final compliance point as 'final achievement of ammonia and oxidized nitrogen standards.''). An explicit final compliance point for meeting the numeric targets is particularly important in this TMDL as currently proposed since there is no guarantee that meeting the WLAs and LAs will result in attainment of the numeric targets. Unlike the majority of TMDLs developed in the Los Angeles Region, the WLAs in the Draft TMDL are not concentration-based allocations (the numeric target multiplied by the discharge flow). Rather, in this case, multiple assumptions and steps have gone into developing the WLAs and LAs in this TMDL. The regulations stipulate that "…TMDLs shall be established at levels necessary to attain and maintain the applicable narrative and numeric water quality standards…"40 C.F.R. § 130.7(c)(1). Thus if WLAs are met but numeric targets are not met, the ultimate goal of the TMDL will be compromised. As stated in the Technical Report, '[a]chievement of the water, tissue, and bird egg targets named above will adequately protect benthic and aquatic organisms, wildlife, and human health from potentially harmful effects associated with metals and selenium."Technical Report at 37. Clearly, meeting the *targets* will ensure that beneficial uses are attained, but meeting the WLAs	

No.	Author	Date	Comment	Response
			does not provide this same guarantee. Thus, a final requirement for compliance with numeric targets must be included. We therefore urge the Regional Board to add the following language to Items 25 and 26 in the Implementation Schedule of the Draft TMDL: "*Achievement of Final WLAs and numeric targets for copper, mercury, nickel, selenium, and zinc."*	
6.1	Department of Transportation	5/16/06	The California Department of Transportation (Department) strongly supports the Regional Board's efforts to protect human health and water quality. To that end, we appreciate the opportunity to review the subject report, and offer the following comments: 1. In order to show that reasonably foreseeable alternatives for complying with the TMDLs or mitigating for impacts attributed to the alternatives have been prudently analyzed, the Economic Analysis of Implementation (Section 13.9, page 187) should provide realistic costs. Listed below are some of our specific concern: • In Table 93 (page 189), the low and high annual costs for the development of an Urban Water Quality Management Plan for the entire watershed are $200, 000 and 500,000. Annual costs for improving the street sweeping program range from zero to 460,000. Combined costs range from $2000,000 to 960, 000. The Department owns approximately 85 miles of highways, 2 maintenance stations, and 8 park-and-ride facilities within the Calleguas Creek watershed. This Department Right-of-	Comment noted Comment noted. The Economic Analysis of Implementation needs to be revised to provide more accurate estimated cost. Addition information on annual cost for implementation from Department of Transportation would be really helpful to revise the Economic Analysis.

No.	Author	Date	Comment	Response
			way (ROW) total 875 acres, but represents only .4% of the total area of the watershed. If the Department 's share of the annual costs were based on this run off share, it would range from $800 to 3,840. A budget of this magnitude would not provide enhanced sweeping for one day. Given the small fraction of runoff the Department contributes to the watershed, the Department's equitable annual loading and cost share allocation should be based on realistic data. • Table 93 (page189) indicates that through participation in national activities, $10,000 will be required to reduce the content of the copper in brake pads. This too is unrealistic. It is not clear what type of the national activities and participation level are expected or how this reduction is likely to occur. The sources control of copper in break pads is beyond our control. We do not have the authority to require suppliers or consumers to use any alternative material. Lobbying alone for legislation to change brake ad composition will cost much more than $10,000 and will not guarantee a successful out come. • Table 94 states that the Caltrans' cost information for the Department's BMP Retrofit Pilot Program was "not adjusted based on relative land costs in Ventura County." Please note that the Department 's BMP Retrofit Pilot	

No.	Author	Date	Comment	Response
			Program did not include the cost of land, which was already owned by the Department. Therefore, this significant cost need to be added to this estimate.	
6.2			2. The TMDL should analyze the reasonably foreseeable environmental impacts that could impede the ability to perform activities to comply with the TMDL. Such impacts include: Traffic during construction of BMPs, increased traffic, dust, and noise generated by freeway and highway maintenance activities (such as street sweeping); partial blockage of the Department's right-of-way by BMPs (causing future widening to be more difficult of impossible); and diversions of natural drainage patterns.	The CEQA check list has been revised to incorporate to comments received at the CEQA Scoping meeting. Please refer to the CEQA check list posted on Regional Board web site at http://www.waterboards.ca.gov/losangeles/html/bpaRes/bpa.html
6.3			3. The Department is concerned that the Selenium objective will not be achievable, because background sources (e.g., groundwater seepage) are primary sources of this contaminant. Significant but impracticable reductions is the background loads are necessary to achieve the selenium targets.	Regional Board staff agree. The Implementation Plan include a special study to identify groundwater with high concentrations of selenium that is either being discharged directly to the stream or used as irrigation water. The investigation will focus on areas where groundwater has a high probability of reaching the stream and identify practical actions to reduce the discharge of the groundwater to the stream. The analysis will include an assessment of the availability of alternative water supplies for irrigation water, the costs of the alternative water supplies and the costs of reducing groundwater discharges.
6.4			4. The Department commends the development of site-specific objective to effectively protect the environment without causing unnecessary	Regional Board staff agree. Several special studies are included in the implementation plan to conduct site-specific objective studies to address the concern.

No.	Author	Date	Comment	Response
			environmental impacts or excessive burden on the stakeholders.	Please see the Implementation Schedule, Table 7-19.2 for detail.