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February 18, 2011

Ms. Alexis Strauss  
Water Division Director  
ATTN: Peter Kozelka  
U.S. Environmental Protection Agency, Region IX  
75 Hawthorne Street  
San Francisco, CA 94105

Samuel Unger  
Executive Officer  
ATTN: Ms. Thanhloan Nguyen  
California Regional Water Quality Control Board, Los Angeles Region  
320 W. 4th St., Suite 200  
Los Angeles, CA 90013

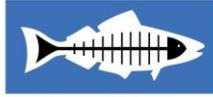
**Re: Comments on Total Daily Maximum Load for Toxic Pollutants in Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters**

Dear Ms. Strauss and Mr. Unger:

On behalf of Heal the Bay, we submit the following comments on the Los Angeles Regional Water Quality Control Board's ("Regional Board") proposed Total Daily Maximum Load for Toxic Pollutants in Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters ("Draft TMDL"). We appreciate the opportunity to provide comments.

Heal the Bay supports many aspects of the Draft TMDL. In particular, we strongly support the inclusion of a numeric toxicity limit of 1 TUc and the inclusion of sediment targets based on Effects Range-Low (ERLs) and Threshold Effect Concentration (TECs) sediment guidelines. We support the inclusion of the explicit 10% margin of safety in Dominguez Channel loading capacity. Despite these positive aspects, Heal the Bay has a number of major concerns regarding the Draft TMDL including:

- The TMDL should not use the Sediment Quality Objectives ("SQOs") triad approach to determine TMDL compliance.



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- The TMDL fails to contain an adequate explicit margin of safety to address the many uncertainties inherent in TMDL development and the use of SQOs.
- The TMDL should provide clear guidelines for the monitoring program.
- The TMDL should include dry-weather and wet-weather numeric targets for each waterbody-pollutant combination included on the 303(d) List based on chronic aquatic life criteria.
- The TMDL should apply concentration-based WLAs instead of mass-based allocations.
- The TMDL should define buried sediments deeper than 5 centimeters as the “active layer” of sediment.
- The TMDL should contain concrete implementation milestones to ensure existing impairments are addressed in a timely manner.

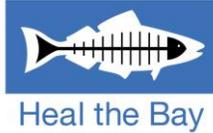
The basic tenet of the Clean Water Act TMDL program is “to attain and maintain” water quality standards. 33 U.S.C. § 1313(d). These issues must be addressed in order for water quality standards to be attained. Our concerns are set forth in detail below.

## **I. Compliance**

### **Narrative SQOS should not be used to determine TMDL compliance**

We are concerned with the proposed approach incorporating SQOs into this TMDL. In particular we believe that the SQO approach should not be used to determine compliance with numeric targets and waste load allocations. There are many non-conservative assumptions and uncertainties associated with the SQOs. As this is the first time SQOs have been incorporated into a TMDL, this action is precedent-setting and must be done in a cautious, protective manner.

One of the many flaws of the SQOs is that they do not include clear numeric objectives. SQOs use narrative objectives coupled with the multiple lines of evidence (MLOE) assessment, which together provide an unclear and ineffective way to determine if sediments are contaminated and impaired. Instead, we support the inclusion of ERLs and TECs as numeric targets within the TMDL because these are easily measured numeric values that can function as effective indicators of healthy sediments. Further, sediment toxicity and benthic community health should also be evaluated



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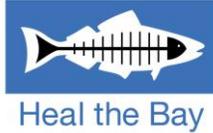
independently. Of note, the recently adopted 2008/2010 303(d) List includes numerous listings based on sediment toxicity and benthic communities as independent factors.

The Draft TMDL gives the option of meeting final sediment allocations or demonstrating the desired qualitative condition via multiple lines of evidence in the SQOs. Unfortunately, we believe that most dischargers would opt out of compliance with numeric targets. Also, the TMDL gives added incentive for dischargers to choose numeric targets, as it allows less frequent monitoring-- five years for sampling for the sediment triad versus two years for chemical testing.

The TMDL must require compliance with ERLs and TECs in addition to meeting the SQOs. As currently proposed there are instances where the SQOs can be met, but ERLs, TECs, and even ERMs are grossly exceeded. For instance, the score for the chemistry leg of the triad is based on weighted average CSI score, which has four disturbance categories: reference, low, moderate, and high. These categories do not coincide with ERLs and TECs. In fact, copper, lead, mercury and zinc could all exceed ERLs and still fall into the low disturbance category. When weighted with the other legs of the triad, the SQO target of "likely unimpacted" could result even if sediment chemistry exposure is moderate as long as benthic community condition is at least "low" or if sediment toxicity is at least "moderate." Copper, zinc and mercury could all exceed ERMs and still fall under the "moderate" disturbance category.

The individual legs of the triad should be evaluated independently to determine whether sediment quality is impacted. Sediment that does not meet one leg of the triad impairs beneficial uses, thus each line of evidence evaluated separately in the SQO should be sufficient to demonstrate that sediment quality targets are not being met. For instance if sediment is found to have high chemical concentrations, it is enough to infer that the sediment is contaminated. If sediment is found to be toxic, the sediment is impaired for toxicity. Perhaps most critically, **at no time should a station assessment showing either moderate toxicity, moderate benthic community impact, or moderate sediment chemistry exposure be considered in compliance, regardless of the station assessed being designated as "unimpacted" or "likely impacted".**

In addition, the TMDL should provide more clarity on how compliance will be determined using SQOs. The TMDL should explicitly state that an "inconclusive" station result will not comply with TMDL WLAs. The SQOs state that an inconclusive station



level assessment indicates “[d]isagreement among the LOE suggests that either the data are suspect or that additional information is needed before a classification can be made.”<sup>1</sup> In addition, a result of “likely unimpacted” should warrant further investigation prior to compliance determination. As noted in the SQOs, a station assessed as “likely unimpacted” indicates that “[s]ediment contamination at the site is not expected to cause adverse impacts to aquatic life, but some disagreement among the LOE reduces certainty in classifying the site as unimpacted.”<sup>2</sup> This disagreement between LOE should be investigated and resolved before a station is considered in compliance. Otherwise, a station assessed to have moderate sediment chemistry exposure, moderate sediment toxicity but reference benthic community conditions, for instance, would be considered in compliance. Anytime an individual LOE result shows a “moderate” effect, the station should not be considered in compliance. Such assessment would help provide a necessary margin of safety that is currently lacking in this TMDL, as we explain in more detail below.

Finally, the TMDL should clarify how the SQOs will be used to determine the condition of an entire water body. SQOs assess sediment quality on a station-by-station basis. Any one station that fails to meet SQOs is in violation of TMDL requirements. Clearly, averaging station results over an entire water body would not be a protective approach and should not be used. How will the TMDL translate results from individual stations to an entire waterbody? This methodology should be clearly explained in the TMDL.

## II. Numeric Targets/ Waste Load Allocations

**The Regional Board and USEPA should incorporate an explicit margin of safety into the waste load allocations of this TMDL and into the individual lines of evidence in the SQOs.**

We support the Regional Board and USEPA including an explicit margin of safety to the Dominguez Channel freshwater allocations. However, the TMDL has an inadequate margin of safety applied to the final sediment and water column allocations for Dominguez Channel Estuary and Greater Harbor Waters. Pursuant to Section 303(d), TMDLs must include a margin of safety to reflect uncertainties regarding discharges, water quality, and capturing critical conditions. 33 U.S.C. § 1313(d); 40 C.F.R. §

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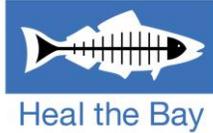
<sup>1</sup> Water Quality Control Plan for Enclosed Bays and Estuaries- Part 1 Sediment Quality. California Environmental Protection Agency State Water Resources Control Board. Effective Aug. 25, 2009. Page 10.

<sup>2</sup> Ibid.



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 regulatory agencies “...must comply with the statutory and regulatory mandate to establish a margin of safety that takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality.”). *Id.* Thus, the Regional Board is required to include a margin of safety and it must be sufficiently protective to ensure that standards are attained and maintained by the TMDLs. A 10% explicit margin of safety should be applied to all of water column allocations for all the waterbodies included in this TMDL. Also, since uncertainty of environmental impacts is even greater in contaminated sediments than receiving waters, a margin of safety is even more critical.

The TMDL states that an implicit margin of safety exists in the final allocations to Dominguez Channel Estuary and the Greater Harbor waters based on the selection of multiple numeric targets, including targets for water, fish tissue, and sediment. However, selection of multiple targets does not constitute an implicit margin of safety; this simply represents the need to address multiple impairments. The TMDL goes on to state “there may be uncertainty associated with revised sediment quality values, which may warrant including additional explicit margin of safety” (Draft TMDL page 20). In this TMDL, an explicit margin of safety is needed to account for uncertainties associated with application of the SQO approach. This is especially necessary as the SQO Policy is new and has not been implemented to date. The SQOs do not contain any margin of safety. A margin of safety would provide a “safety net” for the incorrect assumptions made or unknowns that existed in the SQO development process. There are non-conservative assumptions made throughout the SQO plan which carry over into this TMDL, such as the use of the average value to integrate data points for the sediment assessment and the use of the non-conservative MLOE approach. The USEPA and Regional Board should either discard the SQOs as a means of compliance, or at a minimum, apply the SQOs in a way that provides a protective explicit margin of safety. The use of a single line of evidence as previously suggested, rather than multiple lines of evidence would be a margin of safety protective of marine life. By the very nature of the MLOE SQOs, this approach is not nearly as protective of marine life as the use of any single LOE.



**The Draft TMDL must include dry-weather and wet-weather numeric targets for each waterbody-pollutant combination included on the 303(d) List.**

The Draft TMDL includes freshwater wet-weather numeric targets and load allocations for copper, lead, and zinc in the Dominguez Channel. There are no dry-weather numeric targets proposed for these metals. This approach is inappropriate and illegal because the California Clean Water Act Section 303(d) List of Water Quality Limited Segments (“303(d) List”) does not distinguish between impairments occurring in dry-weather and wet-weather. By creating dry-weather TMDLs for certain constituents and not others, the EPA will initiate “pocket de-listings” of the omitted constituents, which will cause the impaired waterways to be vulnerable during dry weather to the very pollutants that cause the impairments. Adding to this concern is the fact that the Draft TMDL specifies that Dominguez Channel must reach a flow of 62.7 cfs (the 90<sup>th</sup> percentile flow rate) before wet-weather load allocations apply. The use of the 90<sup>th</sup> percentile flow as a compliance threshold allows the Dominguez Channel to violate water quality standards for metals nearly all of the time—in dry weather, small rain events, and even moderate rain events. How is this approach protective of aquatic life? What is the justification for this approach, given that the SUSMP design storm (85<sup>th</sup> percentile storm) would not even be included in the definition of wet weather? The targets must apply 365 days a year. Marine life can’t avoid contaminated water based on rainfall conditions. The Draft TMDL must include both dry-weather and wet-weather numeric targets for each waterbody-pollutant combination listed as impaired on the 303(d) List. This is consistent with the Ballona Creek and LA River metals TMDLs, which include both wet- and dry-weather allocations.

Also, the TMDL should contain allocations for diazinon. According to the staff report, load allocations for diazinon were excluded from this TMDL because the pesticide was banned in 2005 and because the chemical has not been detected since the ban. The Dominguez Channel is still listed as impaired by this constituent, which could be present in the sediment and resurface during dredging activities. Thus, USEPA and Regional Board should not perform a “pocket-delisting” of this constituent by excluding it from the TMDL. The TMDL should contain both a numeric target and load allocation for diazinon. If monitoring efforts show that a responsible party already meets the numeric targets and allocations, they will be in early compliance with the TMDL.



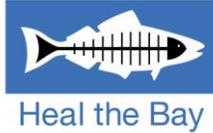
### **The TMDL should apply concentration-based allocations to all dischargers.**

The Draft TMDL proposes mass-based allocations for Caltrans and MS4 Permittees that discharge into Dominguez Channel, and to the ExxonMobile refinery that discharges into Torrance Lateral. These responsible parties should be given concentration-based allocations, instead, for ease of compliance determination and protection of aquatic life. Concentration-based allocations are more protective of aquatic life. Under a mass pollutant loading scheme, a source can discharge effluent at contaminant concentrations toxic to aquatic life, yet remain in compliance with mass-based WLAs. This approach is not protective. Also mass-based allocations for MS4 discharges are not as protective as concentration-based allocations because they make it more difficult to determine compliance and have more uncertainty. With concentration-based allocations if a sample exceeds a target concentration, then it is clearly out of compliance. In addition, mass-based allocations require more steps in order to convert concentrations to annual mass loadings based on a limited set of flow data that may not accurately represent flow conditions over the course of the year.

Even though the ExxonMobile refinery only discharges occasionally, the discharger should not be allowed to discharge in toxic concentrations during those periods. We are aware that there are other similar refineries that have means to treat their discharge to concentrations that meet water quality standards. All refineries should be able to install similar treatment capabilities to reach acute aquatic CTR concentrations and thus meet concentration-based allocations. Also we are concerned that the estimated discharge frequencies contained in the TMDL are greater than those that the refinery currently discharges and will allow for the refinery to increase the frequency of current discharge.

### **The TMDL should define buried sediments as deep as 1 meter or more as the “active layer” of sediment**

Loading capacities and allocations for Dominguez Channel Estuary and Greater Harbor waters were developed based on existing sediment concentrations in the “active sediment layer,” which is defined in the Draft TMDL as the top 5-centimeter layer of sediment. The TMDL reasons that this layer was selected because it provides habitat for 95% of benthic organisms. The active layer should be defined to include a larger depth that aims to protect 100% of the organisms, especially the most sensitive organisms. Examining just the top layer of sediment does not give sufficient insight on the ecological health of the water body. Species such as ghost shrimp and spoon worms go



down a meter or more into the sediments. Burrows of Thassaladian mud-shrimps have been reported to reach down to 2.5-meter sediment depths.<sup>3</sup> According to the Monterey Bay Aquarium ghost shrimp tunnel almost constantly, reworking the sediment to a depth of as much as 30 inches (76 cm), and these burrows provide shelter for other invertebrates.<sup>4</sup> Thus, buried sediments can impact the benthic community and beneficial uses. Even EPA's own work on the DDT and PCB contaminated sediments off of Palos Verdes supports a thicker active layer. The final remediation plan includes a cap of 45 centimeters to prevent significant bioturbation for benthic infauna. A 5 centimeter active layer is completely inconsistent with EPA's own work on contaminated sediment management. EPA and the Regional Board have been involved with contaminated sediments issues in the Port of Los Angeles and Long Beach area where sediment caps for contaminated sediments of 1 meter or greater have been required. Also sediments can be dynamic and can move and be buried due to a single storm event and legacy contaminated sediment may be buried. Clearly, the USEPA and Regional Board should consider deeper sediments in order to understand the health of the water body and ensure that beneficial uses are protected for all species. Further the SQO Policy does not restrict implementation and monitoring to 5 cm, so there is absolutely no reason to do so in the Draft TMDL. We believe The TMDL should define the active layer of sediment to encompass at least 1 meter of sediment, and that compliance monitoring of sediments should be performed to at least this depth.

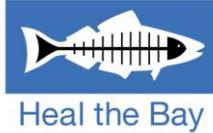
**The Draft TMDL should include dry-weather and wet-weather numeric targets based on *chronic* aquatic life criteria.**

In the Draft TMDL acute criteria are used for the calculation of freshwater wet-weather numeric targets and WLAs for Dominguez Channel and Torrance Lateral. The EPA's justification for this choice is that chronic exposures occur over a 4-day interval, and most storms in California have duration less than four days (Page 13). This method is not protective of the most critical conditions of the waterway. During certain wet weather events, it is possible to encounter storms lasting more than four days. We've seen inputs of a stormy week last for well over a month of measured base flows in some watersheds. For storms of a shorter duration but high intensity or for multiple storms that occur over a longer duration, water may remain in a waterway for more than four

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<sup>3</sup>Pemberton, S. G., Risk, M. J. & Buckley, D. E. Science 192, 790-791 (1976) quoted in W. Ziebus et al. Complex Burrows of the Mud Shrimp *Callinassa truncata* and their geochemical impact in the sea bed Nature Vol. 328 15 Aug. 1996

<sup>4</sup> Monterey Bay Aquarium. Bay Ghost Shrimp On Exhibit. Accessed Feb. 10, 2011.  
<http://www.montereybayaquarium.org/animals/AnimalDetails.aspx?id=781172>



days. Such events can pose a major threat to aquatic life if chronic pollution criteria are not used for the calculation of wet weather numeric targets. During these storms, more volume enters the Channel, sediments containing metals are suspended and hardness concentrations drop, resulting in potentially higher toxicity of metals that enter the waterway at this time. Furthermore, the CTR criteria apply at all times during wet and dry weather. There are no exceptions for very large storm events. Hence, chronic criteria should be used instead of acute to provide adequate protection to aquatic life during these critical storm events.

### **III. Implementation**

#### **The Regional Board should tighten the maximum timeframe to implement sediment remediation actions.**

As proposed in the Draft TMDL, final LAs and WLAs are to be achieved 20 years after the effective date of this TMDL. This timeframe is far too long. In particular, the remediation of contaminated sediment must be expedited in order to meet fish tissue targets by the end of the implementation of this TMDL. Instead, we support a schedule of no more than 15 years to implement this TMDL, with all hotspots to be remediated within 10 years. We agree that the first five years (Phase I) would be well spent by addressing watershed inputs to the Harbor. However, this does not mean that progress in remediating the Harbor sediments is not feasible during this time. Existing sediment quality data could be used to expedite the drafting of the Contaminated Sediment Plan, which is to be submitted two years into the implementation of this TMDL. Of note, drafting of this plan should already be in progress for the Ports as a part of the Ports' joint Water Resource Action Plan. This plan must identify all hotspots and contain a schedule for remediation in the short-term and long-term. Also, the Regional Board should use its authority to ensure that these hotspots are addressed in a timely manner. In the Marina Del Rey Toxics TMDL, for example, the Regional Board used an approach involving the issuance of Clean Up and Abatement Orders to address sediment contamination hotspots. Similar methods could be used in this TMDL.



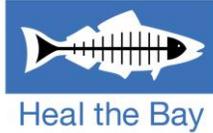
**The Regional Board should set concrete implementation milestones to ensure existing impairments are addressed in a timely manner.**

In addition, The Regional Board should set concrete milestones to set responsible parties on the path to compliance during implementation of the TMDL. We suggest that one third of the hotspots identified in the Contaminated Sediment Plan should be cleaned up within Phase I of the Implementation period, and the remaining two thirds should be remediated ten years into TMDL implementation. This will put responsible parties on the path to meet sediment targets within 15 years.

#### **IV. Monitoring**

**The Regional Board should clarify and strengthen guidelines for the monitoring program in the Draft TMDL.**

We support the general monitoring components in the Draft TMDL, including ambient monitoring and compliance assessment monitoring. While we support the designation of sampling sites for compliance monitoring at the locations in the Greater Harbor Area listed on the table on page 23 of the Basin Plan Amendment, we also feel the Board should provide clear guidance for how many sampling stations are necessary for each site, and criteria for selecting these stations during each sampling event. Compliance points should be located to ensure water quality and sediment targets are attained throughout the Dominguez Channel, Greater Harbor waters, and Dominguez Channel Estuary. The TMDL states, "Chemistry data without accompanying sediment triad data shall be used to assess sediment chemistry trends and shall not be used to determine compliance." While we disagree and believe that any leg of the triad should be viewed independently as a measure of compliance for the reasons mentioned earlier, we also recommend that in addition to sediment chemistry, toxicity and benthic impacts should be tested throughout the Harbor every two years instead of the five-year frequency proposed. Storm variability is extremely high and any given year can have much higher contaminant loads. Also, more data can allow regulators and dischargers to better assess temporal trends and progress during the implementation phases of the TMDL. Also as mentioned earlier, because the proposed monitoring frequency for the sediment triad is less frequent than for sediment quality guidelines, SQOs are favored as the choice for sediment quality compliance over ERLs and TECs.



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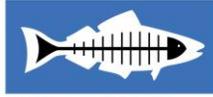
**The Regional Board should establish clear guidelines for fish tissue monitoring and compliance in the Draft TMDL.**

Several aspects of the fish tissue monitoring proposal have improved from other adopted TMDLs in the Region. For instance, we support the Regional Board's guidance on the number of fish species to be sampled in Dominguez Channel and Greater Harbor waters. However, more clarification is needed in the Fish Tissue Monitoring section of the TMDL. The TMDL should require that fish tissue sampling locations should coincide with known angler access points, known contamination hotspots, and other areas of concern. Also, the TMDL should require that the entire fish is tested. Currently, the Draft TMDL states "Tissue analyzed shall be based on the most common preparation for the selected fish species." However, different ethnic groups have different methods of preparation for the same species. Hence basing testing on the most "common" preparation method may not be the most protective approach. We urge the Board to require testing on whole fish instead of selecting certain tissues.

In addition, the TMDL should clarify that fish tissue targets must be met to achieve TMDL compliance. Currently, the TMDL contains no waste load allocations for fish tissue. However as you know, the 303(d) list includes separate listings for fish tissue. We realize that the TMDL aims to address these listings by addressing sediment contamination. However, beneficial uses cannot be restored if fish tissue remains impaired after the implementation of the TMDL is complete. Thus, the Regional Board and USEPA should clarify that meeting fish tissue targets within 15 years is a mandatory element of compliance with the TMDL.

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We urge the Regional Board to address the deficiencies of this TMDL by reconsidering the method of applying SQOs to this TMDL, adding an explicit margin of safety, reducing the implementation timeframe, clearly outlining fish tissue monitoring, strengthening sediment monitoring provisions, and including year-round targets for all constituents waterbody-pollutant combinations included in this TMDL. Without these changes, Dominguez Channel Estuary and Greater Harbor water beneficial uses, especially aquatic life beneficial uses, are likely to remain impaired.



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If you have any questions or would like to discuss any of these comments, please feel free to contact us at (310) 451-1500. Thank you for your consideration of these comments.

Sincerely,

Mark Gold, D. Env.  
President

Kirsten James, MESM  
Water Quality Director

W. Susie Santilena, MS, E.I.T.  
Water Quality Scientist