California Stormwater Quality Association®
Dedicated to the Advancement of Stormwater Quality Management, Science and Regulation

December 14, 2017

Jeanine Townsend, Clerk to the Board
State Water Resources Control Board

Subject: Sediment Quality Objectives

Dear Ms. Townsend:

The California Stormwater Quality Association (CASQA) is writing to comment on the State Water Resources Control Board (State Water Board) Proposed Amendments to the Water Quality Control Plan for Enclosed Bays and Estuaries: Sediment Quality Provisions (Proposed Amendments).

CASQA commends the efforts by the State Water Board in developing the updates to the Sediment Quality Objectives (SQOs) to address human health and believes these objectives incorporate much needed improvements to the science and requirements linking sediment and fish tissue for chlorinated pesticides and PCBs. In particular, CASQA would like to support the State Water Board's use of Office of Environmental Health Hazard Assessment (OEHHA) Advisory Tissue Levels for the Tier 1 Assessment in the Proposed Amendments.

While CASQA supports the overall approach to the SQOs provided in the Proposed Amendments, there are a number of clarifications and modifications that are recommended to support the application of the Proposed Amendments throughout California. CASQA presents the following comments with the intention of improving the Proposed Amendments.

<u>General Comment: Implementation of Proposed Amendments appears resource intensive</u>

As agencies responsible for implementation of regulatory initiatives like the Proposed Amendments, our assessment is the implementation of the Proposed Amendments is likely to be quite resource intensive. And while we recognize and appreciate the State Water Board making some changes that will reduce the burden (e.g., reducing the frequency of monitoring from every three years to every five years), we request that the State Water Board continue to look for ways to make implementation of the Proposed Amendments less resource intensive wherever possible. Some of our specific comments below provide suggestions for reducing the implementation burden.

Comment #1: Clarification of Procedures for Fish Species Monitoring and Selection

The Proposed Amendments are unclear as to the procedures and minimum requirements for fish species monitoring. The Proposed Amendments make frequent references to fish species, fish size requirements, dietary guilds, and primary and secondary guild species, without additional clarification for the procedures and criteria required for groups to select fish species to monitor. The Proposed Amendments need to clearly specify the minimum number of fish species that need to be monitored and any requirements for selecting those species. If the fish species selection is solely based on the conceptual site model (CSM), the Proposed Amendments should clearly state that and remove other requirements and inconsistencies in the discussion. For example, Table 18 states that a minimum of two species shall be included in the assessment. Then bullet b under the Tier 2 chemical assessment that follows the table states that "Tissue from the primary species from each dietary guild should be used in the analysis". This text implies that at a site with multiple dietary guilds may need to collect up to nine species to conduct the assessment. This requirement could place a significant burden on fish tissue monitoring programs if they are mandated to collect species from each dietary guild as compared to identifying two primary species for monitoring.

Additionally, the provisions do not adequately address sites that may have limited fish species or restricted fishing requirements, such as those estuaries located on Naval bases in Southern California. For example, although Provision IV.A.2.b.3.4.b specifies that "Fish shall meet sportfish angling size requirements," the Proposed Amendments do not specify how a group should proceed if these size requirements cannot be met. Additionally, it is unclear how monitoring should be conducted if primary and secondary species cannot be collected at a site. One potential solution for limited fish species that has been used in Newport Bay is the identification and use of surrogate species where no primary or secondary species could be collected. Surrogate species need to have a clear linkage to the site and be approved by the Regional Water Board Executive Officer. Surrogate species were only to be used for informational purposes; information on surrogate species by itself could not be used to make decisions.

Revisions to the Proposed Amendment, including Provision IV.A.2.b.3 and Appendix A-6, should be made to reflect these needed clarifications and provide more flexibility for sites with limited fish species and fishing restrictions.

CASQA Recommendation:

- *Modify the Proposed Amendments to clearly state that only two fish species are required for monitoring, though more could be selected based on the CSM. The selected fish species should represent dietary guilds identified in the CSM and be from the primary species list where possible. However, if primary species are not available at the site, secondary species can be used. Where neither primary nor secondary species are available, surrogate species may be used for informational purposes – information on surrogate species by itself could not be used to make decisions. Surrogate species need to have a clear linkage to the site and be approved by the Regional Water Board Executive Officer.*

- *Include language throughout the Proposed Amendments, including but not limited to Provision IV.A.2.b.3 and Appendix A-6, clarifying procedures and criteria for selecting fish species to monitor in waterbodies under conditions with limited fish species or other restrictions on fish monitoring (e.g., sportfish size, sportfishing prohibitions).*

Comment #2: Consideration of Historic Data for Tier 1 Assessments

Provision IV.A.2.b.5 of the Proposed Amendments specifies that, "A conceptual site model (CSM) and study design as described in Chapter IV.A.4.d.5) must be developed prior to data analysis. Sediment and tissue data shall not be used to assess sediments in accordance with this plan, unless they are consistent with the CSM." CASQA requests consideration of modifications that would allow a Tier 1 Screening Evaluation to be conducted using existing historical data without the development of a CSM. In cases where fish tissue data are not available, the Proposed Amendments could be revised to reduce the requirements for CSM development for sites where qualifying historical sediment data are available.

Some areas in California have been collecting data on fish tissue and sediment for many years. Modifying the requirements would allow use of these data for the initial Tier 1 assessment prior to investing in the development of a CSM. Because the Tier 1 assessments are intended to be conservative, if the thresholds are being met based on historic data that has been collected to characterize the site, there should be minimal risk that the SQOs are not being attained. If the Tier 1 assessment thresholds are not met, then a Tier 2 assessment is required and a CSM would be developed at that time.

Additionally, the Tier 1 assessment should provide some flexibility to include other available data that are relevant to the site to meet some of the Tier 1 assessment requirements. As discussed in the previous comment, there are sites were the primary and secondary fish species may not be present. The Tier 1 assessment should include allowances for sites where the data specified in the Proposed Amendments are not collected, despite efforts to do so.

CASQA Recommendation:

- *Remove requirement to do a full CSM before Tier 1 assessment where fish tissue data exist that meet the Tier 1 data requirements or allow for a modified, lower level CSM for Tier 1 assessment of sediment data.*
- *Modify Provision* IV.A.2.b.5.2 as follows:
  - *b. Sediment data must include matching total organic carbon content. <u>If total organic carbon data are not available, an estimate may be proposed in the CSM.</u>*
  - *d. Only tissue from those species listed in Appendix A-6 shall be used in the analysis. <u>Secondary species or an alternative list of species based on site specific factors may only be used if primary species are not collected from the site, despite efforts to do so.</u>*

Comment #3: Clarification of Interpretation of Tier 1 Assessment Results

As currently drafted, the proposed amendments are not clear on how to interpret the results of the Tier 1 Evaluation. Provision IV.A.2.c.5 states, "If either tissue or sediment is applied in Tier 1 and the result exceeds the threshold for any constituent, Tier 2 is required for those constituents." This statement should be clarified so that a Tier 2 Assessment only applies if only one of the two media is assessed. However, as currently drafted, this requirement is unclear and could be interpreted to mean that even if both media are assessed, if either one exceeds the threshold for any constituent, Tier 2 is required, in contradiction to both the sentence and bullets that follow (Provisions IV.A.2.c.5.a-d).

In addition to the clarification detailed above, the purpose of the Tier 1 assessment should also include a determination that sediments are not impacted and are meeting the SQOs if a complete site assessment is not warranted. Currently the language states that sediments not requiring a Tier 2 determination are "not degraded" and "not impacted", but the determination of meeting the SQOs under Tier 2 uses the terminology "unimpacted". The language should be consistent throughout the document so it is clear that sediments not requiring a Tier 2 assessment are considered "unimpacted" and thereby attain the SQOs.

CASQA Recommendation:

- *Revise the second paragraph of Provision IV.A.2.c.5.*
  If ~~either~~ only tissue or only sediment is ~~applied in~~ evaluated in Tier 1 and the result is above the threshold for any constituent, Tier 2 is required for ~~those~~ the constituents above Tier 1 thresholds.
- *Revise the first paragraph of Provision IV.A.2.c.1.*
  If potential chemical exposure is below this level, sediments are ~~not degraded~~ unimpacted and there is no reason to perform more detailed assessment (either Tier 2 or Tier 3).
- *Revise bullets a-d of Provision IV.A.2.c.5.*
  a. *If both tissue and sediment result ~~falls~~ are equal to or below the threshold, the chemical exposure associated with the sediment and tissue is acceptable and the sediment quality is ~~not impacted~~ unimpacted.*
  b. *If tissue results fall below the threshold and sediment ~~equals or exceeds~~ is above the threshold, the chemical exposure is acceptable and the sediment quality is ~~not impacted~~ unimpacted.*
  c. *If sediment results ~~fall~~ are equal to or below the threshold and tissue equals or ~~exceeds~~ is above the threshold, a Tier 2 assessment is required.*
  d. *If both sediment and tissue results ~~equal or exceed~~ are above the threshold, ~~the chemical exposure to consumers is unacceptable and~~ a Tier 2* ***assessment is required****.*

Comment #4: Consideration of Tier 3 Evaluation Approvals

The second paragraph of Provision IV.A.2.e states that "Tier 3 may be performed at any time with approval from the Regional Water Board provided that Tier 2 is completed at the same time." CASQA feels that approval from the Regional Water Board should not be required to conduct Tier 3 analysis.

A Tier 3 assessment is a more complex and site-specific assessment, and one that should be pursued if a group sees it fit to do so. Although it is appropriate to solicit Regional Water Board involvement and concurrence on study design of a Tier 3 assessment and for the Regional Water Board to retain its ability to accept or reject the results of a Tier 3 assessment, CASQA contends that any group should be able to pursue a Tier 3 analysis if they meet the triggering criteria in Provision IV.A.2.e. 2.

CASQA Recommendation:

- *Revise the second paragraph of Provision IV.A.2.e as follows:*

  Tier 3 may be performed at any time ~~with approval from the Regional Board~~ provided that Tier 2 is completed at the same time. A change in any parameter or model from that used in Tier 2 must be justified based on site conditions in comparison to Tier 2 assumptions and values, and approved by the Regional Water Board prior to performing the analysis.

Comment #5: Consideration of Subsistence Fishing Beneficial Uses Designations

Provision IV.A.2.e.3 allows for the use of a different OEHHA guideline, one with high frequency of fish consumption, when considering subsistence fishers and their exposure to human health risks. While use of the higher fish consumption thresholds may be appropriate for a site with subsistence fishing, the Proposed Amendments should be clear on when the higher fish consumption rates can be used in the SQO assessments. CASQA recommends that the use of the higher consumption rates be limited to waterbodies with beneficial use designations for subsistence fishing or tribal subsistence fishing. The State Water Board recently adopted new beneficial uses for subsistence fishing, but have not assessed the designation for most waters. Designation should be required before the higher consumption frequency OEHHA rates are used to ensure the beneficial use is present.

CASQA Recommendation:

- *Clarify higher OEHHA fish consumption thresholds for subsistence fishing should only be assessments if a waterbody has a designated subsistence fishing or tribal subsistence fishing beneficial use designation.*

Comment #6: Clarification on Implementation of Sediment Quality Objectives to Determine Exceedance of Receiving Water Limits

According to Provision IV.A.4.c.2.a (Exceedance of Receiving Water Limit to protect aquatic life), an exceedance occurs when "any station within the site is assessed as Clearly Impacted…or if the total percent area categorized as Possibly Impacted and/or Likely Impacted equals or exceeds 15 percent of the site area over the duration of a permit cycle." According to Provision IV.A.4.c.2.b (Exceedance of Receiving Water Limit to protect human consumers of sportfish), an exceedance occurs when "the site sediments are characterized as Possibly Impacted, Likely Impacted or Clearly Impacted."

While we support the inclusion of "any station that is Clearly Impacted", we request that the term "Possibly Impacted" be removed from these provisions. "Possibly Impacted" does not clearly demonstrate impacts or the likelihood of impacts and therefore should not be used to establish an exceedance of a receiving water limit.

Additionally, we request that the "15 percent" areal criterion for Possibly Impacted and/or Likely Impacted determinations from Provision IV.A.4.c.2.a be modified to a criterion that better reflects that the majority of the site is impacted. Fifteen percent is a small area and could represent local sources or impacts, making it inappropriate to determine a receiving water "exceedance" for all dischargers to a site.

CASQA Recommendation:

- *Remove "Possibly Impacted" from this provision.*
- *Modify the 15% percent areal criterion for Likely Impacted sites to be the majority of sites for the waterbody.*

Comment #7: Clarification on Implementation of Sediment Quality Objectives for Evaluating Waters for Placement on the Section 303(d) List

Provision IV.A.4.e.1.a. and IV.A.4.e.1.b. include provisions for listing waterbodies that are "Clearly Impacted", "Likely Impacted", and "Possibly Impacted" per the SQO assessment requirements. While we support the inclusion of waterbodies with "Clearly Impacted" and "Likely Impacted" sites on the 303(d) list, we request that the term "Possibly Impacted" be removed from this provision. "Possibly Impacted" does not clearly demonstrate that waters are degraded and additional monitoring should be conducted prior to designating these waters as impaired and placing them on the 303(d) list (Category 5 of the California 303(d)/305(b) Integrated Report). Rather, these waterbodies should be placed in Category 3 of the Integrated Report. Category 3 contains waters for which there are insufficient data to make a use support decision. The designation of "Possibly Impacted" indicates that additional monitoring and information is needed to identify if impacts are occurring at the site. Therefore, it would be appropriate to place these waterbodies into Category 3 rather than making a determination that the site is impaired and placing it on the 303(d) list.

Additionally, we support the provision specifying the use of data from the most recent 303(d) listing cycle for the SQO site assessments and the requirements for data to be collected from

multiple spatially representative stations and multiple surveys over the span of at least one year to make listing decisions.

CASQA Recommendation:

- *Place "Possibly Impacted" sites in Category 3 of the Integrated Report rather than on the 303(d) list.*

Comment #8: Clarification of the technical procedure for site linkage determination

The technical procedure for site linkage determination contains a number of inconsistencies that should be clarified to ensure consistent application of the Proposed Amendments. Additionally, the Proposed Amendments do not include necessary guidance, such as how to address non-detects, that is needed to complete the calculations. The following are suggested modifications to clarify and reduce inconsistencies in the site linkage assessment procedures.

CASQA Recommendation:

- *Add subscript i to C_{EST} and C_{Tis} in the linkage factor equation (Equation 8 and also in Appendix A-8).*
- *C_{EST} and C_{Tis} definitions in Equation 8 and in Appendix A-8 are slightly different. Consider using a consistent terminology.*
- *Clarify summation procedure for calculation of sum contaminant concentration in Equation 8 for sets with and without detected congeners.*
- *Consider changing "BSAF calculation" to "the estimated BSAF values" on page 28 under Calculation of site sediment linkage to be consistent with Appendix A-8.*
- *Clarify differences between Equation 8 and the equation used in Appendix A-8 to calculate C_{EST} from Monte-Carlo simulation. Apparently in the latter equation SA/HR is replaced by SUF_i which is coming from probability density functions for home range.*
- *Review cumulative % of sediment linkage distribution and linkage threshold values in Table 21. The fourth outcome (i.e. high) occurs when probability of calculated site linkage factor being equal or greater than 0.5 is 25% or in mathematical terms: $p(X \geq 0.5) = 0.25$.*
  On the other hand, the first outcome (i.e. very low) is defined as: $p(X < 0.5) = 0.75$ which is equivalent to $p(X \geq 0.5) = 1-0.75 = 0.25$ and is technically similar to the definition of outcome four.

Comment #9: Document Clarity and Editing

In addition to the more substantive comments listed above, CASQA respectfully requests the State Water Board address and correct the numerous typographical errors and unclear or inconsistent references found throughout the document. Examples within the Proposed Amendments are as follows:

- The headers in Table 17 are incorrect (i.e. DDT is repeated twice in #3).
- Chapter IV.A.2.b.7 does not exist (page 18 under Tier 3). The triggering criteria for Tier 3, are defined in Chapter IV.A.2.e.2.

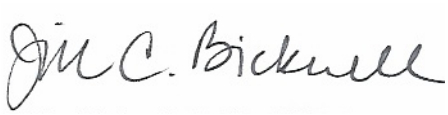
- In Section IV.A.4.e.1.d, reference to "subchapter i above…" should be revised to "Section IV.A.4.e.1.a.i, above…" for clarity.
- The figure of Waterbody Assessment Process in Appendix A-1 and Figure of Point Source Assessment Process in Appendix A-2 need to be updated according to the modified Section and Subsection numbers (i.e. Section VII.E.8 is now IV.A.4.e, Section VII.C is now IV.A.4.c.2, Section VII.F is now IV.A.4.f, and Section VII.G is now IV.A.4.g, etc.).

CASQA Recommendation:

- *Edit and correct typographical errors, incorrect or unclear section references, and inconsistencies throughout the Proposed Amendments.*

If you have any questions, please contact CASQA Executive Director Geoff Brosseau at (650) 365-8620.

Sincerely,



Jill Bicknell, Chair
California Stormwater Quality Association

cc: CASQA Board of Directors, CASQA Executive Program Committee