



August 20, 2012

*Via Electronic Mail*

Charles R. Hoppin, Chairman and Members  
State Water Resources Control Board  
c/o Jeanine Townsend  
Clerk to the Board  
State Water Resources Control Board  
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**Subject: Comment Letter – Policy for Toxicity Assessment and Control**

Dear Chairman Hoppin and Members:

The Management Committee for the Stakeholders implementing TMDLs in the Calleguas Creek Watershed (Stakeholders) appreciates the opportunity to provide comments on the Draft Policy for Toxicity Assessment and Control (Draft Policy).

The Stakeholders have a strong interest in the Draft Policy for both its implications to individual dischargers and how it would impact TMDL compliance. As part of the Calleguas Creek Watershed Management Plan (CCWMP), the Stakeholders worked diligently with the Los Angeles Regional Water Quality Control Board (Regional Board), State Water Resources Control Board (State Board), and US Environmental Protection Agency (EPA) to develop the Calleguas Creek Watershed Toxicity TMDL (CCW Toxicity TMDL - effective March 2006). During this coordinated development effort, the CCWMP assisted Regional Board staff in developing a TMDL that appropriately and efficiently identifies toxic environmental conditions and allows for adequate implementation actions in areas where true toxic conditions have been identified. The implementation of this TMDL would successfully reduce toxic conditions in the watershed and we hope that any adopted toxicity policy will facilitate the work that has already been done in the watershed.

The Stakeholders have submitted comments on the previous preliminary draft versions of the Toxicity Policy and are concerned that several of our key issues have not been addressed or

discussed in this latest Draft Policy. In particular, the Stakeholders have requested that the Draft Policy use narrative objectives with implementation procedures for wastewater dischargers that include narrative effluent limitations and consistent numeric triggers for accelerated monitoring and Toxicity Reduction Evaluations (TREs) along with a policy for interpreting the narrative objectives for the purposes of 303(d) listing and TMDL target development. As these earlier recommendations have not been included in the Draft Policy, our fundamental concern with the Draft Policy continues to be the implementation of statewide numeric toxicity objectives and numeric effluent limitations for wastewater dischargers.

Although we appreciate removal of stormwater and agriculture effluent limitation provisions and specific monitoring requirements, we feel that the Draft Policy continues to fail to recognize the implications of numeric objectives to these dischargers, particularly in the context of TMDLs. For these types of dischargers in the Calleguas Creek Watershed, the Draft Policy will result in the revision of the Toxicity TMDL along with required implementation actions and the likely application of the numeric objectives as allocations for the agricultural and stormwater discharges.

For the wastewater dischargers, the Draft Policy has failed to demonstrate the need for numeric effluent limitations. In the Calleguas Creek Watershed and the Los Angeles Region in general, the use of narrative effluent limitations with numeric triggers have resulted in significant improvements to water quality. In the Calleguas Creek Watershed, the implementation of the Toxicity TMDL through the use of triggers for additional action, identification of toxicants and implementation of actions to address the identified toxicants has significantly reduced the observed toxicity in the watershed. This has all been accomplished without the need for numeric objectives or numeric effluent limits. The ability to not be in violation if actions are taken to identify and reduce observed persistent toxicity is sufficient to compel action and the Draft Policy does not provide sufficient justification as to why the consistent application of this approach will not work. Additionally, although the Draft Policy has attempted to address some of the concerns with the use of numeric effluent limitations for wastewater entities through the implementation procedures, the Draft Policy does not address the fact that due to the establishment of numeric objectives for receiving waters, TMDLs may drive more stringent numeric effluent limitations for wastewater dischargers than those outlined in the implementation provisions of the Draft Policy

To address these key concerns, the Stakeholders recommend that the Draft Policy be revised to include the following:

1. A consistent narrative objective for all inland surface waters, enclosed bays, and estuaries of the state.
2. Appropriate implementation procedures to make 303(d) listing decisions. The procedures should be designed to identify and trigger actions only for persistent toxicity, and help control the inherent issues with toxicity test procedures, such as false positives and false negatives by only requiring actions after multiple exceedances of the numeric values.

3. TMDL implementation language that states if numeric targets are used in the TMDL they are to be implemented as triggers for additional action, consistent with the implementation procedures of the Policy. Reconsiderations of existing TMDLs to include the Policy would need to consider the impact on required implementation actions and adjust the compliance schedule if additional actions are required.
4. Consistent narrative effluent limitations for all wastewater dischargers.
5. A multi-sample trigger for accelerated chronic toxicity monitoring and initiation of TREs for wastewater dischargers.
6. Specific, enforceable requirements in the implementation procedures for wastewater dischargers that would result in violations.

The attached comment letter details the significant concerns identified by the Stakeholders with the technical approach and implementation procedures in the Draft Policy. The attachment also includes more detailed recommendations that we feel would provide the desired statewide consistency and provide a comprehensive framework for cost-effectively addressing persistent toxicity associated with all types of dischargers. We request that these recommended changes be considered and evaluated and modifications to the Draft Policy be made to address all of the concerns included in this letter.

The Stakeholders support the goal of the SWRCB to develop a consistent statewide policy for toxicity that adequately protects the receiving environment, including declaring samples toxic when they are indeed toxic and non-toxic when they are not toxic. We would like to work with the State Board to define a consistent policy for addressing toxicity that addresses our key concerns while effectively protecting beneficial uses. We feel this is possible if the State Board seriously evaluates our recommendations and the mechanisms for turning it into a statewide policy. If you have any questions about this letter, please contact Ashli Desai at 310-394-1036 or Lucia McGovern at 805-388-5334.

Sincerely,



Lucia McGovern

Chair, Stakeholders Implementing TMDLs in the Calleguas Creek Watershed

## **Stakeholders Implementing TMDLs in the Calleguas Creek Watershed Comments on the Public Review Draft Policy for Toxicity Assessment and Control**

The Stakeholders have the following comments on the Public Review Draft of the Policy for Toxicity Assessment and Control (Draft Policy). These comments represent the significant issues identified by the Stakeholders during the review of the Draft Policy.

### **Numeric Objectives for Acute and Chronic Toxicity are Unnecessary and Problematic**

As demonstrated by the Stakeholders' participation in the CCW Toxicity TMDL development and the ongoing efforts to reduce toxicity in the watershed through implementing the TMDL, the Stakeholders acknowledge that toxic discharges represent a threat to beneficial uses. We support the State Board efforts to develop a consistent statewide policy to eliminate toxic discharges to waters of the State. However, we disagree with the Draft Policy's assertion that numeric objectives for chronic toxicity are necessary to adequately protect beneficial uses and feel that a modification to the narrative standards would be sufficient to address the goals of the policy to "achieve regulatory uniformity" (Staff Report p. 51) and "protect aquatic biota from the effects of toxicity" (Staff Report p. 64).

We are concerned that the justification for the selection of numeric targets (and the Draft Policy as a whole) seems focused on the need to define numeric effluent limitations for wastewater dischargers. We feel this is an inappropriate justification for setting objectives and does not adequately consider the implications of the objectives that are being set. Following is a discussion of our key concerns with the justification for the selection of numeric toxicity objectives.

### Justification for Selection of Numeric Objectives is Based Solely on Discharge Considerations

In the Draft Staff Report Analysis of Issues and Alternatives, Issue 1C discusses the alternatives for determining the statewide toxicity objective. This section provides the justification for the selection of numeric toxicity objectives including the following statements:

- "Numeric toxicity objectives are an efficient regulatory tool when expressed as effluent limits because the measurement of compliance is clearly defined."
- "The duty of achieving and maintaining compliance lies with the discharger."
- "Numeric objectives represent a compliance-driven model of toxicity control that provides clearly defined and consistently applied requirements to determine the protection of aquatic life."

The justification then goes on to discuss permit limitations for wastewater, stormwater and non-NPDES dischargers.

All of these statements focus on the discharge, discharger compliance, and the application of the objectives into permit requirements. Although a few statements in the justification mention the protection of aquatic life beneficial uses, the discussion never explains why a numeric objective

will provide more protection for beneficial uses than a narrative objective other than it is more efficient and less resource intensive. While we recognize that efficient use of resources is important, setting numeric toxicity objectives solely for that purpose is not warranted, particularly given the implications of the use of the numeric objectives discussed in the following section.

In order to justify the use of numeric objectives over narrative objectives, the Draft Policy would need to explain why numeric objectives are necessary to protect beneficial uses. However, EPA studies and other scientific research indicate that chronic toxicity as measured in Whole Effluent Toxicity (WET) is a poor predictor of in-stream impacts (see discussion in letter submitted by the Clean Water Associations). Additionally, recent studies by the Surface Water Ambient Monitoring Program (SWAMP) and the Southern California Coastal Water Research Program (SCCWRP) found that increasing aquatic toxicity, as measured using *Ceriodaphnia dubia* chronic toxicity tests, had a slight correlation with increasing biological condition measured using freshwater benthic invertebrates.<sup>1</sup> . If this effect is real and accurate, the relationship would indicate that receiving waters with greater aquatic toxicity would be expected to have better biological condition. Therefore, available information indicates the use of numeric toxicity objectives will not result in greater protection of receiving biological conditions.

Given that the justification for numeric objectives focuses on the discharges to a waterbody, rather than the impacts on the waterbody itself and no information is provided to justify why numeric objectives will provide better protection of aquatic life beneficial uses than narrative objectives, the selection of numeric objectives over narrative objectives does not appear to be sufficient.

#### Alternatives Evaluation Does Not Fully Consider the Ability of Numeric Objectives to Address Concerns with the Existing Approach to Toxicity Regulation

The alternatives evaluation did not include an evaluation of all alternatives, or fully evaluate the alternatives that were presented. As a result, the analysis does not support the selection of numeric objectives as the preferred alternative. For example, the Draft Staff Report (p. 42) provides four reasons why narrative objectives are not the selected alternative:

1. Narrative objectives do not provide a clear measurement of compliance and ultimately obligate the permitting authority to prove that a violation occurred before enforcement actions can be taken.
2. This approach represents an oversight-driven model of toxicity control that essentially requires the regulatory agency to manage the dischargers' efforts to reduce and control toxicity.

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<sup>1</sup> Ecological Condition of Watersheds in Coastal Southern California: Progress Report of the Stormwater Monitoring Coalition's Stream Monitoring Program First Year. February 2011, SCCWRP Technical Report 639. SWAMP/Stormwater Monitoring Council Fact Sheet. Assessing the Health of Southern California Streams. [http://www.waterboards.ca.gov/water\\_issues/programs/swamp/docs/assesshealthsocialstreams.pdf](http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/assesshealthsocialstreams.pdf)

3. The significant amount of resources that would be required to ensure water quality objectives are met under such a policy would encumber the Regional Water Boards.
4. The potential for ecological harm would likely increase as a result of these vague objectives.

While these issues may be of concern with the current narrative approach, the State Water Board staff did not evaluate an approach that utilized a statewide narrative objective combined with statewide implementation procedures for wastewater dischargers that include numeric triggers for additional action to address persistent toxicity and defined enforcement provisions. Despite the Stakeholders and other Associations, such as CASA and Tri-Tac's, support of an alternative narrative approach in earlier comments and testimony, the Draft Staff report only considers the use of a statewide narrative objective that is implemented using current procedures. Although the Draft Staff Report does not detail the enforcement difficulties or resource concerns with the current approach, it is clear that there is concern with the current implementation. However, we feel that a narrative standard combined with clear enforceable implementation requirements could be developed that would allow a narrative objective to contain clear measurements of compliance, address the concerns with narrative objectives outlined in the alternatives analysis, and achieve the same level of protection of beneficial uses as a numeric objective.

It should also be noted that the first two reasons for not utilizing narrative objectives relate to the enforcement of permit limitations. Neither narrative nor numeric objectives are the source of enforcement, nor will choosing a narrative or numeric objective control whether or not the regulatory agency will be required to manage discharger's efforts to control toxicity. Regardless of whether a narrative or numeric objective is selected, the objective must be translated into an appropriate effluent limitation. The effluent limitation is ultimately what will dictate any challenges with enforcement. As a result, these issues should not be utilized as reasons for not selecting a narrative objective.

In addition, the numeric objective does not necessarily resolve any of the issues presented for the narrative objectives, particularly when considered with the implementation procedures included in the Draft Policy.

Regardless of whether the objective is narrative or numeric, the permitting authority is obligated to prove that a violation occurred before enforcement actions can be taken. However, as discussed above, a numeric objective will not provide additional assistance with determining a violation has occurred. The implementation procedures and translation of the objective into permit conditions will dictate the ease of enforcement and amount of resources necessary to address observed toxicity. The implementation procedures outlined in the Draft Policy for wastewater dischargers would not reduce the burden on the regulatory agencies to manage the dischargers' efforts to reduce and control toxicity. The Draft Policy requires a step-wise approach that includes numeric thresholds for accelerated testing followed by additional numeric triggers for TRE implementation. Therefore, under the Draft Policy, Regional Boards will have to continue to evaluate discharger efforts to aggressively and effectively identify toxicants through accelerated testing and TRE implementation.

For wastewater dischargers, Figure 2 on page 24 of the Draft Policy shows the compliance determination process for wastewater dischargers. The graphic fails to identify that violations of the permit would occur if any of the additional monitoring or TREs were not conducted. A similar graphic could be drawn for narrative objectives and narrative effluent limitations. The only difference would be changing MDEL and MMEL to triggers and removing the boxes that state "Violation of MDEL and Violation of MMEL." It should be noted that both of the "violation" boxes are located prior to the point at which a discharger has any ability to identify and control the source of toxicity. As a result, the only real difference between a narrative objective and effluent limitation and numeric objective and effluent limitation in practicality is whether or not a violation is determined prior to the discharger taking action to resolve the problem or after a discharger has failed to take action to solve the problem. As a result, it is unclear how many resources would be saved or how enforcement would be significantly improved by utilizing a numeric objective over a standardized narrative objective nor how the process improves water quality.

#### Alternatives Evaluation Does Not Fully Consider the Ability to Define an Appropriate Numeric Toxicity Objective Give the Nature of Toxicity Testing

Finally, we feel that the justification provided for the selection of numeric objectives does not take into account factors inherent to toxicity testing that make the establishment of numeric objectives inappropriate. Similar to the discussion included in the Draft Policy as to why numeric effluent limitations for stormwater and agricultural discharges are not appropriate, there are a number of reasons why numeric objectives for toxicity cannot be determined.

- *Biological systems are inherently variable and toxicity tests used to measure impacts on these systems are impacted by variables that are not concerns in chemical testing.* Interpretation of toxicity data is a complex undertaking because of the inherent variability and anomalies associated with biological data. Toxicity tests are measures of how certain organisms respond to a particular water sample. As a result, the measurements are impacted by factors such as ionic changes in water chemistry, seasonality, light levels, temperature, and health of the organisms – all factors which can vary to different, unpredictable degrees between water samples and test applications. Although the toxicity test procedures attempt to minimize variability, the inherent variability of biological testing procedures cannot be eliminated and make the use of numeric objectives problematic. This issue is highlighted in EPA guidance on WET testing: "*The interpretation of the results of the analysis of data from any of the toxicity tests described in this manual can become problematic because of the inherent variability and sometimes unavoidable anomalies in biological data.*"<sup>2</sup> Furthermore, USEPA guidance states, "*The allowable frequency for criteria excursions should refer to true excursions of the criteria, not to spurious excursions caused by analytical variability or error.*"<sup>3</sup> As a result, an

<sup>2</sup> EPA. Short-Term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Water to Freshwater Organisms, Fourth Ed., EPA-821-R-02-013. October 2002. Section 9.4.1.1, p. 39.

<sup>3</sup> Technical Support Document for Water Quality-Based Toxics Control, EPA Office of Water, March

appropriate numeric objective would need to address this inherent variability and allow for consideration of factors that influence toxicity testing. The numeric objective in the Draft Policy does not address this issue.

- *The selected numeric objectives do not conform to EPA guidance and cannot easily be altered to address the guidance.* The selected numeric objectives do not contain an appropriate averaging period or exceedance frequency. As a result, the numeric objectives are currently equivalent to an instantaneous maximum with no allowable exceedances. The concept of an instantaneous maximum objective for chronic toxicity does not make sense. Chronic toxicity tests are designed to capture toxicity resulting from longer term exposures to contaminants in water samples. Additionally more than one exceedance of a toxicity threshold is needed to define persistent toxicity that could possibly be addressed and prevented. Not including an averaging period and exceedance frequency is inconsistent with EPA guidance and the nature and impact of toxicity. EPA's *Guidelines for Developing Water Quality Criteria to Protect Aquatic Life* states: "Because aquatic ecosystems can tolerate some stress and occasional adverse effects, protection of all species at all times and places is not deemed necessary." Additionally, the Guidelines acknowledge that "a statement of a criterion as a number that is not to be exceeded any time or place is not acceptable." However, establishing a numeric objective for toxicity that adequately defines an appropriate averaging period and exceedance frequency when considering the varying types of waterbody conditions, discharges to the waterbodies and potential beneficial use impacts is not feasible.
- *The use of numeric objectives does not recognize the realities of addressing the causes of toxicity.* Toxicity is not a pollutant, but an effect. Dischargers cannot proactively address toxicity and prevent the discharges of "toxicity". Addressing persistent toxicity requires the identification of a toxicant so that mechanisms to reduce the discharge of the **toxicant** can be identified. Without this step, toxicity cannot be addressed. Therefore, regardless of whether the objective is numeric or narrative, no actions to control toxicity will be possible before additional studies are conducted. Imposing a numeric objective will not alter this reality. It would be more effective in achieving the ultimate intent of a toxicity policy – the reduction of toxicity in receiving waters – to use toxicity tests as a starting point to identify the cause(s) rather than as a regulatory endpoint. Narrative objectives provide more flexibility to appropriately address the complex issues associated with toxicity testing.

For these reasons, we feel that the justification in the Draft Staff Report for not using narrative objectives is insufficient and does not warrant rejecting the narrative objective option. Additionally, we feel that the justification for the selection of numeric objectives is not supported and that use of numeric objectives for toxicity is problematic for a number of other reasons that were not considered in the Draft Staff Report when selecting numeric objectives as the preferred alternative and that all available alternatives were not evaluated. If these issues were fully



evaluated, we feel that the narrative objectives with clear implementation procedures would be a more reasonable alternative.

### Narrative Objectives are Appropriate and Can be Implemented Successfully

The use of a consistent statewide narrative objective with clear implementation procedures is supported by other State policies that address toxicity in sediment and would provide additional consistency across media. As the State Water Board acknowledged for sediment toxicity, “[a] narrative objective coupled with indicators to interpret the narrative objectives represents a logical means to assess sediment quality.” *Staff Report and Draft Water Quality Control Plan for Enclosed Bays and Estuaries - Part 1 Sediment Quality (July 18, 2008), Appendix E, at p. 68.*)

Additionally, properly implemented narrative objectives can reduce toxicity and protect beneficial uses. In Region 4, the wastewater and stormwater permits and agricultural conditional waivers all include narrative limits, specific triggers for additional action, and specific actions that must be taken once those triggers are exceeded. According to the *Summary of Toxicity in California Waters: 2001-2009* prepared for the Surface Water Ambient Monitoring Program (figure on page 20), the Los Angeles Region demonstrated the second lowest level of water column toxicity in the state.<sup>4</sup> According to the figure, almost 90% of the samples were non-toxic and only 5% were moderately or highly toxic. For a region that contains significant urban and agricultural areas, these study results demonstrate that the implementation of the narrative objective in Region 4 is working pretty effectively. It follows that a similar application of a policy including narrative objectives with clearly defined implementation requirements could be effective if consistently implemented statewide.

For these reasons, we feel that a narrative objective with consistent implementation procedures, had it been fully evaluated by State Board staff, would have been the preferred alternative to address the existing concerns with the Draft Policy. We strongly recommend that the State Board consider the use of narrative objectives with consistent implementation procedures, including numeric triggers for accelerated monitoring and toxicity reduction evaluation (TRE) for wastewater dischargers, rather than numeric objectives. This step-wise approach is consistent with guidance from the EPA, both at the national<sup>5</sup> and regional<sup>6</sup> levels, a diverse national expert advisory panel<sup>7</sup> formed by SETAC and funded by the EPA to provide guidance on WET issues, and the State Board Toxicity Task Force<sup>8</sup> specifically assembled to provide guidance on the regulatory use of toxicity tests within the State.

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<sup>4</sup> The Santa Ana Region showed 100% of the samples to be non-toxic, but only 2 sites were evaluated.

<sup>5</sup> Technical Support Document for Water Quality-Based Toxics Control, EPA Office of Water, March 1991, EPA/505/2-90-001, p. 62, Section 3.3.7.

<sup>6</sup> EPA Regions 9 and 10 Guidance for Implementing Whole Effluent Toxicity Testing Programs, EPA, May 31, 1996, pp. 2-1, 4-1, and 5-2.

<sup>7</sup> SETAC Wet Expert Advisory Panels, <http://www.setac.org/wettre.html>, Sections 1 and 4.

<sup>8</sup> Memo to Members of the State Water Resources Control Board from the Toxicity Task Force, September 27, 1995. Recommendations 2, 5, 9, and 10.

### **Numeric Objectives for Acute and Chronic Toxicity Have Significant Implications for 303(d) Listings, TMDLs and Storm Water and Agricultural Dischargers that were Not Evaluated**

In addition the issues identified in the previous comment, we feel there are broader implications for the use of numeric objectives that were not considered and further support the use of narrative objectives.

1. The selection of numeric objectives has implications for TMDL development and agricultural and stormwater dischargers that were not evaluated.
2. The inherent false positive rate of the TST would have significant impacts for 303(d) listings and TMDLs that were not considered.
3. The objective is inconsistent with the implementation provisions for wastewater dischargers included in the Draft Policy.

#### Implications of Numeric Objectives for TMDLs and Non-Wastewater Dischargers

We appreciate the revisions to the Draft Policy to recognize the complexities of addressing toxicity for non-wastewater dischargers. In particular, under Issue 1D, the Draft Staff Report determines that the application of numeric effluent limits is infeasible for storm water dischargers for a number of reasons, including the highly variable nature of stormwater runoff, the findings of the Blue Ribbon Panel report, and the significant difficulty associated with numeric effluent limit compliance. Additionally, under Issue 1E, the State Water Board recognizes the widely varying nature of agricultural discharges, the questionable ability of agricultural discharges to meet numeric toxicity limits, and the significant potential costs to dischargers of meeting numeric objectives. As a result, the Draft Policy does not recommend the use of numeric toxicity effluent limitations for stormwater and agricultural dischargers.

However, the Draft Staff Report does not recognize that the establishment of numeric objectives essentially drives requirements for numeric effluent limitations or other actions determined to be too costly or infeasible in the discussion under Issue 1D and 1E, especially for dischargers subject to toxicity TMDLs.

When a TMDL is developed for a waterbody, one of the first steps in the development is the identification of numeric targets. If the TMDL is for a constituent with a narrative standard, interpretation of the narrative standard into a numeric value is needed. In the Calleguas Creek Watershed, the numeric targets for the Toxicity TMDL were established by identifying *numeric targets for the constituents that had been identified as causing toxicity*. Because the cause of toxicity had not been identified in all reaches, a numeric toxicity target was also included along with implementation procedures to allow the identification of the toxicant and addition of numeric targets for that toxicant if necessary after identification. The implementation provision included the following language:

“The toxicity WLAs will be implemented in accordance with US EPA, State Board and Regional Board resolutions, guidance and policy at the time of permit issuance or

renewal. Currently, these WLAs would be implemented as a trigger for initiation of the TRE/TIE process as outlined in USEPA's "Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System Program" (2000) and current NPDES permits held by dischargers to the CCW."

The TMDL clearly indicates that the implementation of the numeric toxicity targets and WLAs will be as a trigger for initiation of the TRE/TIE process. However, should the State adopt the Draft Policy, the dischargers subject to the Toxicity TMDL would be subject to the numeric objective and implementation procedures outlined in the Draft Policy. There is currently no discussion about how a numeric objective should be used in the context of the TMDL and no implementation procedures for wastewater, stormwater or agricultural dischargers that prevent the application of the numeric objective as an instantaneous, single sample exceedance. As a result, all of the dischargers in the Calleguas Creek Watershed will likely be subject to requirements that are inconsistent with the implementation procedures in the Draft Policy as currently written because of the inclusion of a numeric objective in the Draft Policy.

If a narrative objective were included, it will be possible for the Regional Board to use the information in the Draft Policy to identify an appropriate numeric target, while providing them with the flexibility to include implementation procedures that are consistent with the implementation procedures in the Draft Policy for all types of dischargers. Additionally, a narrative objective provides the flexibility to develop a toxicity TMDL that just includes numeric targets for the pollutants causing the toxicity as the interpretation of the narrative toxicity standard if all toxicants have been identified. With the establishment of a numeric water quality objective for toxicity, the ability to consider these alternative approaches would be limited as a numeric objective must be included in the TMDL when available.

As shown above, the result of a numeric objective for toxicity is that, in the context of TMDLs, agricultural and stormwater dischargers will likely be subject to numeric interpretations of the Draft Policy. This is further supported by the statement on page 45 of the Draft Staff Report justifying the use of numeric objectives for toxicity. "Numeric toxicity objectives are an efficient regulatory tool when expressed as effluent limits because the measurement of compliance is clearly defined." The Draft Policy does not consider how clarity as to the measurement of compliance is defined when numeric effluent limits are not feasible or utilized, as is the case for non-wastewater discharges and 303(d) listings. The Draft Staff Report does not evaluate the ability of these dischargers to meet the proposed numeric objectives in a cost-effective manner when considering the type of objective to select. Additionally, since the Draft Policy recognizes that setting numeric effluent limits for stormwater and agricultural dischargers is not feasible, using the justification that it is an efficient regulatory tool when expressed as effluent limits is not appropriate for non-wastewater dischargers that are also subject to the objective.

### Implications of False Determinations of Toxicity Under the Draft Policy Would Be Significant

The Stakeholders are very concerned about the interpretation of false determinations of toxicity (i.e., incorrectly identifying a non-toxic effluent as toxic) under the Draft Policy and the impacts that will result. According to the Staff Report (page 37), a 5% statistical false positive rate was selected for the TST method because it “has been established by U.S. EPA for all hypothesis tests.” However, as is discussed in the letter provided by the Clean Water Associations, this statistical false positive rate does not address the actual rate of determining a non-toxic sample to be toxic under the TST method. This “false determination of toxicity rate” can only be accurately estimated through the evaluation of multiple toxicity results conducted on known, non-toxic blank samples, which was not done in evaluating the TST. An evaluation developed by Tri-TAC and CASA to address this issue estimated that 14.8% and 8.3% of EPA clean water, non-toxic samples tested with *Ceriodaphnia dubia* and fathead minnow, respectively, would have been incorrectly identified as toxic using the TST. As a result, the false positive rate for the Draft Policy could be as high as 15%.

Although the Draft Policy was modified to try to address the issues with the false positive rate through the implementation procedures for wastewater dischargers, the implications of the false positive rate were not addressed for the numeric objective itself. The selection of numeric objectives has broader implications for 303(d) listings, TMDL development, and non-wastewater dischargers. As a result, the implications of the false positive rate are potentially significant and the Draft Policy has not addressed these concerns. In particular:

1. The false positive rate would result in a significant number of 303(d) listings for unimpaired waterbodies.
2. The false positive rate would have significant implications for compliance with the Calleguas Creek Watershed TMDL.
3. The false positive rate would have significant implications for agricultural and MS4 dischargers.

#### *Implications for 303(d) Listings*

The proposed numeric toxicity objective states that “attainment of the water quality objective is demonstrated by rejecting this null hypothesis in accordance with the statistical approach described in Appendix A.” This functionally indicates that a single TST failure in a receiving water bioassay test represents an exceedance of the numeric objective. Table 3.1 of California’s 303(d) listing policy<sup>9</sup> specifies that if two or more of 24 measurements in a waterbody exceed the water quality objective, the waterbody will be listed as impaired. As discussed above, the false positive error rate is inherently at least 5% and could be as high as 15%. Using either estimate, application of the proposed numeric objective will result in an unacceptably high number of non-

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<sup>9</sup> Water Quality Control Policy for Developing California’s Clean Water Act Section 303(d) List. State Water Resources Control Board. Adopted September 2004.

toxic receiving water bodies being incorrectly listed as toxic. At a 15% false determination of toxicity rate, the **probability of listing a non-toxic water body** (i.e., of observing at least two TST exceedances in 24 samples) is **89%** while at a minimal 5% error rate, 34% of California's non-toxic waterbodies would be expected to be incorrectly listed as impaired based on an assessment of 24 samples.

We acknowledge that the use of narrative objectives could also result in a similar "over listing" of waters as impaired for toxicity. However, we feel that the Draft Policy should address the identified concerns through inclusion of specific 303(d) listing guidance into the Draft Policy or considering revisions to the Listing Policy. The provisions should include multiple TST failures to define an "exceedance" of the objective. This multiple TST failure approach is similar to what is being proposed by State Board staff to implement the objectives into wastewater effluent limits.

#### *Implications for the CCW Toxicity TMDL*

The Stakeholders are additionally concerned over the implications of the false determinations of toxicity for the CCW Toxicity TMDL. The implementation of the toxicity TMDL in the CCW since 2006 has significantly reduced toxicity in receiving waters in the watershed. However, false determinations of toxicity resulting from the Draft Policy could reduce the ability of the Stakeholders to ever meet the requirements of the TMDL and delist toxicity in the watershed.

The TMDL monitoring program consists of quarterly dry weather monitoring and two wet weather events for toxicity, resulting in six toxicity monitoring results per year at each monitoring location. In order to delist toxicity in a reach, a minimum of 28 samples are required by the State Listing Policy. It will take five years of monitoring to achieve the minimum sample size under the current TMDL monitoring program. Based on the statistical false positive rate of 5% in the Draft Policy, at least one and possibly two non-toxic samples will be determined to be toxic as a result of the statistics during the five-year monitoring period. If the actual statistical false positive rate is closer to 15%, up to 5 samples could be falsely determined to be toxic by the Draft Policy. In order to delist with a sample size of 28 to 36, no more than two samples can exceed water quality objectives. As a result, samples that were falsely determined to be toxic by the Draft Policy would prevent the waterbody from being delisted at a minimum if any other sample exhibited toxicity during the five year period and potentially without any truly toxic samples being collected. This is despite the fact that the State Listing Policy does not consider a water to be impaired if less than 10% of the samples, as determined through the binomial method, exceed water quality objectives. Consequently, the CCW could be achieving the toxicity objectives per the State Listing Policy and not be able to delist as a result of false determinations of toxicity under the Draft Policy.

To evaluate the impact of the Draft Policy on Calleguas Creek Watershed Toxicity TMDL, data from the Calleguas Watershed TMDL Monitoring Program was evaluated using the TST and compared to the test results obtained using the NOEC. All of the samples evaluated were receiving water samples. The following table summarizes the results.

**Table 1. Evaluation of CCW Toxicity TMDL Monitoring Data Using the TST**

Reach	# Events (8/08-8/10)	Total # Samples (survival and reproduction combined)	# Samples Exceeding 1.0 TUc	# Samples identified as toxic by the TST <sup>b</sup>
Somis	13	26	6	7
Adolf	13	26	3	4
Gate	11	22	0	1
University (3)	13	26	9	9 <sup>a</sup>
Belt	9	18	1	1 <sup>a</sup>
Hitch	13	26	10	12

- a. At this site, one sample was identified as being non-toxic while exceeding the 1.0 TUc and one sample was identified as toxic when not exceeding 1.0 TUc.
- b. All of the samples determined to be toxic using the TST that did not exceed 1.0 TUc were for the reproduction endpoint, not survival, for *Ceriodaphnia Dubia* tests.

The results show that the TST identified 7 samples as toxic that did not exceed the 1.0 TUc target. The TST identified at least one additional sample as being toxic at each monitoring location over the course of about 13 monitoring events, which is what would be expected of a method with a 5% rate of false determinations of toxicity. The TST also identified 2 samples as not toxic that had a TUc greater than 1.0 using the NOEC. It is important to note that these samples were conducted by a laboratory that generates very high quality data (Pacific Ecorisk) and 10 replicates were conducted for each sample. As a result, it is unlikely that the differences in the results can be explained because the quality of the data needs to be improved.

Although we cannot determine if the additional samples determined to be toxic by the TST are false positives, the analysis shows that the TST would likely result in additional observations of toxicity in the receiving waters. However, these observations would be at such low levels of toxicity that actions could likely not be taken to identify the cause of the toxicity. For reaches where several observations of toxicity have occurred, the impact will likely not be that significant until toxicity reductions occur. However, for reaches with little or no toxicity observations, the impact will be a continued need to monitor and evaluate the site and determine if any actions need to be implemented to address toxicity that is intermittent and for which the constituent(s) causing the toxicity cannot be easily defined. It will also potentially create issues with delisting the watershed for toxicity as discussed above.

If the CCW cannot be delisted for toxicity, the TMDL implementing stakeholders will be subject to ongoing monitoring and TMDL management costs to address a non-toxic waterbody. Additionally, because the toxicity objectives are included as wasteload and load allocations in the TMDL, POTWs, stormwater and agricultural dischargers in the watershed would be subject to ongoing permit requirements related to the TMDL.

These implications are not limited to the CCW. False determinations of toxicity will result in the inability of listed waterbodies throughout the state to be delisted even after a TMDL has been

developed and controls have been implemented for identified toxicants. This will result in community resources being spent to implement TMDLs for non-toxic waterbodies.

*False Positives have Significant Implications for Agricultural and Stormwater Dischargers*

For stormwater and agricultural dischargers in the CCW, the false determinations of toxicity would result in expenditures for Best Management Practice implementation and a potentially unending iterative implementation loop as required by their permit and conditional waiver to implement the CCW Toxicity TMDL.

The Draft Policy requires the use of the TST for those agricultural and stormwater dischargers that already have toxicity monitoring requirements in their permits or Conditional Waivers. All of the dischargers to the Calleguas Creek watershed are already subject to toxicity testing and would therefore have to evaluate their data using the TST. As discussed above, the TST has a minimum assumed statistical false positive rate of 5% and some studies indicate the rate of false determinations of toxicity could be as high as 15%. False determinations of toxicity have significant implications for monitoring costs and implementation requirements for dischargers with existing toxicity testing requirements.

For example, agricultural dischargers in most regions are subject to Conditional Waivers of discharge. These Conditional Waivers set requirements for how data collected under the program is utilized to determine actions that must be taken by dischargers. In Ventura County, the Conditional Waiver requires the following:

1. Sample results be compared to water quality benchmarks. Toxicity is included as a benchmark and the current benchmark is 1.0 TUc.
2. If a benchmark is exceeded in a sample, a water quality management plan must be developed that identifies how the exceedance will be addressed and includes a schedule for implementing the identified actions.
3. Every year, the water quality management plan is updated to address the benchmark exceedances in the previous year's monitoring and actions are updated as necessary to address any new benchmark exceedances.

Given this process, the implications of false determinations of toxicity are significant. Every false determination of toxicity will result in a benchmark exceedance which triggers the development or revision of a water quality management plan and the implementation of BMPs. Since there will inherently be continued false determinations of toxicity based on the regulatory management decisions used in the TST, the Ventura County Agricultural Irrigated Lands Group (VCAILG) will never be able to cease the iterative BMP implementation process for exceedances of toxicity benchmarks, resulting in wasted resources. Additionally, VCAILG is not a single entity, but rather a coalition of over 1000 growers. Implementation of BMPs involves coordinated evaluations and implementation by numerous entities, none of which has

ultimate control over the final quality of the agricultural discharge to the receiving water. The cost of outreach and education to inform the growers about the issues and BMPs to implement is also significant.

For stormwater entities, the impact of the establishment of numeric objectives is even more significant. The Ventura County MS4 permit includes receiving water limitations that are set equal to the water quality objectives. On July 13, 2011, the United States Court of Appeals for the Ninth Circuit issued an opinion in *Natural Resources Defense Council, Inc., et al., v. County of Los Angeles, Los Angeles County Flood Control District, et al.*<sup>10</sup> (*NRDC v. County of LA*) determined that a municipality is liable for permit violations if its discharges cause or contribute to an exceedance of a water quality standard. This revised interpretation of the receiving water limitations language in the Ventura County MS4 permit means that MS4 permittees could be subject to permit violations due to the numeric receiving water objectives for toxicity.

The false determinations of toxicity have more significant impacts under the Draft Policy than under the current policy because of the inclusion of numeric objectives and the corresponding use of single exceedances of the numeric objectives to determine 303(d) listings and correspondingly drive BMP implementation and potential permit limit violations. These impacts were not evaluated in selecting the numeric objectives as the preferred alternative and would be mitigated by the inclusion of a narrative objective in the Draft Policy.

Numeric Objectives are Inconsistent with the Implementation Provisions for Wastewater Dischargers and Could Result in TMDL-Driven WLAs for Toxicity that Produce More Restrictive Effluent Limits Than Those Outlined in the Draft Policy.

As discussed above, the numeric objectives currently lack any averaging period or allowable exceedance frequency. As a result, they are interpreted as instantaneous maximum objectives not to be exceeded at any time. In the absence of any provisions to the contrary in the Draft Policy, TMDL numeric targets will need to be interpreted as instantaneous maximums and corresponding allocations would likely be interpreted in the same way. As a result, WLAs for wastewater dischargers could be more stringent than the implementation provisions in the Draft Policy have outlined. Inclusion of narrative objectives would allow Regional Water Boards to clearly use the implementation provisions in the Draft Policy to determine the WLAs for wastewater dischargers.

Recommendations

The comments above document a number of serious concerns with the use of numeric objectives as outlined in the Draft Policy. The Draft Policy fails to consider several aspects of the implication of selecting numeric objectives that will have significant impacts that are inconsistent with other discussions in the Draft Policy. Additionally we feel that a properly structured narrative objective can address all of the concerns with narrative objectives discussed

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<sup>10</sup> No. 10-56017, 2011 U.S. App. LEXIS 14443, at \*1 (9th Cir., July 13, 2011).



in the Draft Staff Report and most of the concerns with a numeric objective outlined in the letter and establish consistent statewide toxicity provisions that will promote uniformity and protect aquatic life beneficial uses.

As a result, the Stakeholders request the State Water Board modify the Draft Policy to include a narrative objective with numeric triggers as outlined below:

1. Define a consistent narrative objective for all inland surface waters, enclosed bays, and estuaries of the state.
2. Identify appropriate implementation procedures to make 303(d) listing decisions. The procedures should be designed to identify and trigger actions only for persistent toxicity, and help control the inherent issues with toxicity test procedures, such as false positives and false negatives by only requiring actions after multiple exceedances of the numeric values.
3. Include TMDL implementation language that states if numeric targets are used in the TMDL they are to be implemented as triggers for additional action, consistent with the implementation procedures of the Policy. Reconsiderations of existing TMDLs to include the Policy would need to consider the impact on required implementation actions and adjust the compliance schedule if additional actions are required.

We feel that this approach will address our concerns with the objectives in the Draft Policy and result in a consistent, environmentally protective toxicity policy.

### **Use of Numeric Effluent Limitations for Wastewater Dischargers Are Not Required and Narrative Limits Will be Protective**

In addition to the concerns with numeric objectives, we have similar concerns about implementation procedures in the Draft Policy that require the use of numeric effluent limitations for wastewater dischargers. We appreciate the revision of the Draft Policy to remove the single sample exceedance requirements that were in previous versions of the Draft Policy. However, we are still concerned with the inclusion of numeric effluent limits for wastewater dischargers in the Draft Policy.

POTWs cannot proactively cause their non-toxic effluent to be more non-toxic or more reliably non-toxic. When effluent toxicity does occur, the cause of the toxicity cannot be addressed through source control or additional treatment until the source of the toxicant has been identified. In these cases, it is not appropriate to consider the discharge “out of compliance” or “in violation” while the cause of the toxicity is still under investigation, as long as the discharger is aggressively seeking the source of the toxicity and, if identified, takes responsible action(s) to reduce the source. However, the Draft Policy currently considers the POTW in violation ahead of the ability to take any action to identify the toxicant or address the toxicity as outlined in Figure 2 of the Draft Policy.

As outlined in the letter from the Clean Water Associations, numeric effluent limitations are not required. Additionally, the use of narrative objectives with clear implementation procedures is consistent with Federal, State, and Regional Guidance. Furthermore, a step-wise approach using narrative effluent limits with accelerated monitoring and TRE triggers has been effectively utilized in California<sup>11</sup> for over ten years, particularly in the Los Angeles and Santa Ana regions. Such an approach is supported by a diverse national expert advisory panel,<sup>12</sup> which was formed by the Society of Environmental Toxicology and Chemistry (SETAC) and funded by the EPA to provide guidance on WET issues and by the State Water Board Toxicity Task Force,<sup>13</sup> which was specifically assembled to provide guidance on the regulatory use of toxicity test within the State. Finally, the narrative limit/numeric trigger approach has been in place since 2003 without demonstrable adverse environmental consequences, has not been objected to by EPA, and has been supported by the State Water Board. Therefore, we disagree with the Draft Policy's proposal to significantly shift the regulation of toxicity for wastewater dischargers from a narrative trigger approach to a numeric effluent limit approach.

A well-articulated toxicity regulatory strategy using narrative effluent limitations with numeric toxicity triggers with enforceable TRE requirements would be able to address the goals of the Draft Policy and address the concerns identified above. Consistent narrative effluent limitations with numeric toxicity triggers will allow time for toxicant identification without being in violation of the permit, while failure on the part of a discharger to adequately implement this process in response to toxicity would constitute a violation of the narrative toxicity limitation and expose the discharger to the imposition of penalties and other enforcement actions. The narrative effluent limit approach provides an incentive to the discharger to aggressively identify and control the constituents causing the toxicity, as inaction will result in a violation. The Draft Policy causes dischargers to be in violation regardless of whether or not actions are taken to address the toxicity. As a result, there is a potential disincentive to spend money to identify and control the toxicity if violations occur regardless of whether or not you are taking actions. Additionally, with a narrative effluent limitation efforts are focused on identifying and controlling persistent toxicity and resources are not wasted on situations that are unlikely to be controllable, such as sporadic events or non-toxic samples erroneously identified as toxic.

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<sup>11</sup> See e.g., California Regional Water Quality Control Board, Los Angeles Region MRPs: No. CI-5662 - NPDES No. CA0054119, No. CI-5059 - NPDES No. CA0054011, No. CI-2848 - NPDES No. CA0053716, No. CI-5542 - NPDES No. CA0054119, No. CI-0755 - NPDES No. CA0053619, No. CI-4993 - NPDES No. CA0054216, No. CI-2960 - NPDES No. CA0054313.

<sup>12</sup> SETAC WET Expert Advisory Panels, <http://www.setac.org/wettre.html>, Sections 1 and 4. Application of TIEs/TREs to Whole Effluent Toxicity Testing: Principles and Guidance. A Report of the Society of Environmental Toxicology and Chemistry (SETAC) WET Expert Advisory Panel on TIE/TRE, peer reviewed by the SETAC WET Expert Advisory Panels Steering Committee. June 1998. Produced under the SETAC Foundation's WET Cooperative Agreement with U.S. Environmental Protection Agency, No. CX 824845-01-0. <http://www.setac.org/wettre.html>.

<sup>13</sup> Memo to Members of the State Water Resources Control Board from the Toxicity Task Force, September 27, 1995. Recommendations 2, 5, 9, and 10.

Finally, we feel that the identification of clear, specific, enforceable requirements in the policy will address concerns identified in the Draft Staff Report that a narrative effluent limitation does not provide a clear method for determining compliance.

In addition to the concerns with the numeric effluent limitations, the Stakeholders support the following issues identified in the letter from Clean Water Associations:

- The Maximum Daily Effluent Limit (MDEL) for chronic toxicity should be removed.
- The Draft Policy should include a Schedule of Compliance for Dischargers to identify and address toxicity.
- The assumption of reasonable potential for wastewater dischargers over 1 MGD should be removed.
- The requirements for monitoring based on discharger frequency should be consistent with the minimum sampling requirements for chronic tests that require the collection of three samples over at least a five-day period. Non-continuous dischargers should only be required to conduct the toxicity testing if discharge occurs for seven or more consecutive days.

### Recommendations

The Stakeholders support the following recommended approach to implementing toxicity effluent limitations in wastewater permits as outlined in the Clean Water Associations letter to:

1. Establish consistent narrative effluent limitations for all wastewater dischargers.
2. Use a two-phased trigger for accelerated chronic toxicity monitoring as follows:
  - a. If a toxicity test shows an unacceptably high level of chronic toxicity (the initial "trigger" as defined by the policy), a second test must be run to determine whether the toxicity is persistent. If this second test fails to confirm elevated toxicity, a third test must be run to provide added certainty that this was not a persistent event. This additional toxicity testing (second and, if necessary, third test) must be completed and reported within 30 days. None of these should be considered to be violations since persistent chronic toxicity has not been demonstrated.
  - b. If the above initial trigger phase fails to confirm elevated toxicity, no further actions would be required and the discharger would return to normal compliance monitoring. However, if elevated chronic toxicity *is* confirmed, then a discharger would conduct accelerated testing comprising up to six additional toxicity tests over the following 90 days. If any two or more of these six tests exhibit elevated toxicity, the discharger would initiate a Toxicity Reduction Evaluation (TRE) consistent with its TRE Work Plan required to be submitted to the regional board upon permit renewal. Otherwise, if only one or none of the tests exhibit elevated toxicity, the discharger would return to normal compliance monitoring.
3. Establish specific, enforceable requirements in the implementation procedures for wastewater dischargers that would result in violations. Suggestions for these requirements include:

- Failure to conduct the required toxicity tests at the required times and/or frequencies,
- Failure to timely report any toxicity test results,
- Failure to perform accelerated testing after exceeding the accelerated testing trigger,
- Failure to conduct accelerated testing at minimum required frequencies,
- Failure to prepare and submit an initial TRE Work Plan within 90 days after permit issuance,
- Failure to amend TRE Work Plan as requested by Regional Board after review,
- Failure to initiate TRE Work Plan when TRE trigger was exceeded, and
- Failure to conduct specific steps in the TRE Work Plan at the specified frequency.

Each of these failures is easily proven and will not cause the regulatory burdens alleged in the Draft Policy and Draft Staff Report.

### **No Justification for More Stringent Requirements by Regional Water Boards**

Our final concern is with the remaining discretion given to Regional Water Boards within the Draft Policy. The purpose and intent of the Draft Policy as well as the justification for many of the decisions made in developing the Draft Policy (as stated in the Staff Report) is the development of statewide consistency in addressing water column toxicity. However, as discussed in the Draft Policy, the Policy will supersede the State Implementation Plan (SIP) toxicity control and toxicity testing procedures, but not the narrative objectives established in Basin Plans. Additionally, the Draft Policy gives the State and Regional Water Boards the discretion to establish acute toxicity limitations and monitoring requirements. If State and Regional Boards are given the discretion to impose more stringent requirements or translate existing narrative objectives in individual Basin Plans into additional or different testing procedures or limitations, the Draft Policy will fail to achieve consistency.

### Recommendations

Have the Draft Policy establish a consistent statewide narrative objective that supersedes the existing narrative objectives in the individual Basin Plans.

Remove the option to evaluate reasonable potential for acute toxicity and include acute effluent limitations and monitoring requirements for wastewater dischargers.

### **Conclusions**

The Stakeholders Implementing TMDLs in the Calleguas Creek Watershed are committed to proactively addressing water quality impairments. To this end, we have successfully developed and implemented numerous TMDLs, including one for Toxicity. Although we understand and support the goals of the Draft Policy, the chosen approach will have significant implications beyond what has been discussed and considered in the Draft Staff Report. The Calleguas Creek

Watershed is unique in California in that the responsible stakeholders have developed stakeholder TMDLs and therefore very much understand the development process. Additionally, the Stakeholders include all types of dischargers discussed in the Draft Policy. As a result, we are uniquely qualified to discuss the implications of the Draft Policy on watersheds with TMDLs and the resulting implications for non-wastewater dischargers. Although we recognize and support the State Board's revisions of the Draft Policy for these dischargers, the lack of consideration of the implications of the numeric objectives in contexts other than regulating wastewater dischargers (as highlighted by the justification for numeric objectives) is a significant deficiency of the Policy and will lead to requirements that could be in conflict with the implementation procedures in the Draft Policy. We hope the State Board will seriously reconsider the proposed recommendations and utilize a narrative objective with consistent implementation procedures for 303(d) listings and wastewater dischargers that include multi-sample numeric triggers for listing decisions and requiring additional action by dischargers. This will allow the flexibility needed to address discharges from sources other than wastewater and avoid unnecessary listings and resource expenditures.