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COMMENT LETTER FROM REGION 4 - POLICY FOR TOXICITY ASSESSMENT AND CONTROL (TOXICITY POLICY)

Thank you for the opportunity to comment on this very important Toxicity Policy and its accompanying staff report. We are happy to see that the United States Environmental Protection Agency (USEPA) developed an α and β number for *Selenastrum,* as USEPA's October 2009 draft *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* did not have that information available. We are also pleased to see that the procedure for transforming percent survival acute toxicity data using the arcsine square root transformation was included in the draft Policy; we fully support this approach. Our detailed comments and recommendations follow:

Applicability of the Policy

1. The second paragraph on Page 1 of the draft Toxicity Policy reads, "This Policy supersedes the toxicity control provisions in Section 4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP)* (2005) and all toxicity testing provisions established in Regional Water Quality Control Plans (Basin Plans)."

   The Los Angeles Regional Water Quality Control Board has adopted a Total Maximum Daily Load (TMDL) for toxicity containing numeric targets and waste load allocations based on USEPA recommended criteria of 1 Chronic Toxicity Unit (TUc), and not on the Test of Significant Toxicity (TST). We request clarification that the Regional Boards shall retain authority to implement the requirements of the Toxicity Poilicy into existing Basin Plan Amendments, as appropriate.

Part I: Definitions

2. On Page 1, Part I, Definition C, the term "Channelized Dischargers" is unclear and may not be applicable statewide.

   We suggest that this term be changed to "Nonpoint Source Dischargers" and strike the word "exclusively" from Definition C. The revised Definition C would read as follows:

Nonpoint source dischargers regulated under the Porter-Cologne Water Quality Control Act(nonpoint source dischargers) *include dischargers subject to the Irrigated Lands Regulatory Program and other nonpoint source discharges, directed through a channel, that are not regulated under the National Pollutant Discharge Elimination System (NPDES) Permit Program.*

This definition also provides a clear reciprocal to Definition K.

Part II: Toxicity Objectives

3. On Page 3, Part II, the acute Whole Effluent Toxicity (WET) objective is expressed as a null hypothesis and a regulatory management decision (RMD) of 0.80 for acute WET methods, where a 0.20 effect (or more) at the instream waste concentration (IWC) demonstrates an unacceptable level of acute toxicity. The following statement shall be used as the null hypothesis, where compliance is demonstrated by rejecting the null hypothesis:

Ho: Mean response (IWC) < 0.80 • mean response (control)

However, the Los Angeles Basin Plan has the following existing water quality objective (WQO) for acute toxicity:

"There shall be no acute toxicity in ambient waters, including mixing zones. The acute toxicity objective for discharges dictates that the average survival in undiluted effluent for any three consecutive 96-hour static or continuous flow bioassay test shall be at least 90%, with no single test having less than 70% survival when using an established USEPA, State Board, or other protocol authorized by the Regional Board."

Is it the intent of the State Board that the acute toxicity WQO be superceded by the the acute WET objective (expressed as a null hypothesis and RMD of 0.80 for acute WET methods)? If so, how can we know if our existing Basin Plan WQO conflicts with, or is more stringent than, the proposed acute toxicity objective?

4. We recommend that the **acute** WET objective on Page 3, Part II, of the Policy include a reference to Section III.A.6 as follows:

"The acute WET objective is expressed as a null hypothesis and a regulatory management decision (RMD) of 0.80 for acute WET methods, where a 0.20 effect (or more) at the instream waste concentration (IWC) demonstrates an unacceptable level of acute toxicity. The following statement shall be used as the null hypothesis, where compliance is demonstrated by rejecting the null hypothesis **according to the statistical method described in Section III.A.6**:"

5. We recommend that the **chronic** WET objective on Page 3, Part II, of the Policy include a reference to Section II.A.6 as follows:

"The chronic WET objective is expressed as a null hypothesis and a regulatory management decision (RMD) of 0.75 for chronic WET methods, where a 0.25 effect (or more) at the instream waste concentration (IWC) demonstrates an unacceptable level of acute toxicity. The following statement shall be used as the null hypothesis, where compliance is demonstrated by rejecting the null hypothesis **according to the statistical method described in Section III.A.6**."

Part III: Implementation Procedures

Numeric Effluent Limitations in Permits

6. We recommend that the Example of Permit Effluent Limitation Subsection (Page 5) under Section A.2" read as follows:

"The discharger must report either a Pass or Fail and the percent effect at the **IWC** to the [applicable Water Board]."

Routine Monitoring

7. Section A.4 (Page 6) of the Toxicity Policy mentions that the applicable Water Board has the discretion to require NPDES wastewater and point source Waste Discharge Requirement (WDR) dischargers to conduct periodic monitoring of chronic or acute toxicity. However, the Los Angeles Regional Water Board will need to send out 13267 letters to all of its NPDES Dischargers requiring them to monitor for acute toxicity and to report the lethal concentration (LC_{50}) endpoint results because the current Monitoring and Reporting Program associated with our NPDES permits requires that the acute toxicity sampling results be reported as percent survival, not LC_{50}. Our region would not be able to rely on existing historical acute toxicity data because it is not reported in the manner specified under the TST approach. This will result in a delay of the incorporation of TST-based toxicity limits within NPDES permits due to the fact that Reasonable Potential (RP) calculations will not be completed until after new data are gathered and evaluated.

8. Section A.6 (Page 7) of the Toxicity Policy requires the use of complex equations to evaluate chronic and acute WET tests using the TST method. We appreciate the fact that the State Board has posted the Excel calculation tool on its website to allow the Regional Boards, stakeholders, and other interested parties to perform these calculations.

9. Section A.2 (Page 5) and Section A.6 (Page 8) of the draft policy, at the conclusion of Step 5, refer the reader to the USEPA's *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA-833-R-10-003) for additional guidance.

We recommend that the USEPA Guidance document be included as an appendix in the Toxicity Policy, posted on the State Board's website, or referenced with a link within the Toxicity Policy, so that readers may have access to it. If none of those alternatives are viable, the example

calculations that USEPA provides in Attachment A of the document should be included as part of the Toxicity Policy so that the public may better understand the new TST procedure.

Compliance Determination

10. Section A.7.b (Page 11) of the draft policy titled "Compliance Determination" contains the following statement: "Failure to initiate an accelerated monitoring schedule may result in appropriate enforcement action." We recommend that additional clarification be provided regarding the type of enforcement actions that might be possible, along with a statement that they are consistent with the new enforcement policy.

Storm Water Dischargers Regulated Pursuant to NPDES Permits

Toxicity Monitoring

11. Section III.B.3 (Page 14) of the Toxicity Policy discusses the number of samples that should be collected for storm events during the wet season and the dry season. However, the terms "wet season" and "dry season" have not been defined. We recommend that Part I of the Toxicity Policy and Appendix C of the staff report include a provision to (1) require the use of region-specific definitions of "wet season" and "dry season" that are acceptable to the Regional Board, as appropriate for the location, discharger and other factors, where available, and (2) provide default definitions for "dry season" and "wet season" where an applicable region-specific definition is not available.

Staff Report

Basin Plan WQO

12. Resolution No. R4-2005-009 establishes Waste Load Allocations (WLAs) for Chronic Toxicity within the Calleguas Creek Watershed based on USEPA's 1.0 TUc for chronic toxicity. However, there is no mention of this under the pertinent section of the staff report that discusses the applicable WQOs for toxicity for the various Regional Water Boards.

We would like to request that Resolution No. R4-2005-009 be included in the staff report for the draft Policy, on Page 10, under Section I, Introduction, Regional Water Board Basin Plans – Toxicity Objectives. This resolution, namely Chapter 7 of the Los Angeles Regional Water Quality Control Board's Basin Plan, contains the following Total Maximum Daily Load (TMDL) tables:

Table 7-16 Calleguas Creek Watershed Toxicity TMDL;
Table 7-16.1. Calleguas Creek Watershed Toxicity TMDL: Elements; and,
Table 7-16.2. Calleguas Creek Watershed Toxicity TMDL: Implementation Schedule.

Test Method

13. During the November 16, 2010 workshop, it was mentioned that neither USEPA nor the State Water Boards were proposing a change to the test method. However, the Toxicity Policy's single concentration testing is not in line with what the USEPA Test Method EPA-821-R-02-013 recommends. In Section 8.10, *Multi-concentration (Definitive) Effluent Toxicity Tests* (Page 36), the method reads as follows, "The tests recommended for use in determining discharge permit compliance in the NPDES program are **multi-concentration** (emphasis added), or definitive, tests which provide (1) a point estimate of effluent toxicity in terms of an IC_{25}, IC_{50}, or LC_{50}, or (2) a no-observed-effect-concentration (NOEC) defined in terms of mortality, growth, reproduction, and/or teratogenicity and obtained by hypothesis testing. The tests may be static renewal or static non-renewal." Also, in Section 8.11.3, *Receiving Water Tests*, of the same Test Method, a multi-concentration tests is performed for the receiving water in order to estimate the degree of toxicity in the receiving water.

Please include a new subsection in the staff report specifying the preferred test methods to be used to analyze for acute toxicity and chronic toxicity.

14. In Subsection 1B - Statistical Method (Page 44), the staff report recommends Alternative 4 for adoption. Although the statistical method for calculating the toxicity results is given, the test methods which should be used to perform the acute and chronic toxicity tests were not provided.

We recommend that the following test methods be referenced in the section that discusses Alternative 4, similar to the discussion of Alternatives 2 and 3:

> "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (5th Edition), Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (4th Edition), and Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms (1st Edition)."

15. Under the Alternatives analysis for Issue 1C: Objective Type (Page 44) of the staff report, Alternative 2 (narrative objective) is described as not providing a clear measurement of compliance and as possibly depleting the Regional Water Board's resources. However, the TST approach is also resource intensive. Like the narrative approach, it too requires accelerated testing and initiation of Toxicity Identification Evaluation (TIE)/Toxicity Reduction Evaluation (TRE) efforts, both of which are resource-intensive implementation elements.

Environmental Effects of Proposed Policy

16. On Page 62 of the staff report, under Section V, the Antidegradation discussion reads, "The toxicity provisions presently in the SIP provide minimal protection of aquatic life beneficial uses because they lack numeric objectives and a comprehensive methodology. Additionally, the inconsistencies that exist among the toxicity requirements established in NPDES permits, WDRs,

conditional waivers, and Basin Plans have the potential to further weaken water quality standards."

It does not appear that an Antidegradation analysis was conducted comparing the new TST approach and Resolution No. R4-2005-009, which establishes numeric WLAs for chronic toxicity based on USEPA's recommended 1 TUc. We suggest the inclusion of an antidegradation analysis for Resolution R4-2005-009 in this section of the staff report.

Appendix H

17. On Page 4 of Subsection 4, a statement reads, "Note that under the Policy, dischargers may have incentive to increase the number of replicates tested. Thus, actual compliance may differ from that estimated from existing data."

The term replicates was not defined in the Toxicity Policy or in the staff report. Please provide a definition for "Replicate" in Appendix C of the staff report.

18. On Page 1 of Subsection 3 – Description of Proposed Policy, the draft *Economic Considerations of Proposed Whole Effluent Toxicity Control Policy for California*, prepared by Science Applications International Corporation (SAIC), lists the following as the objectives for all inland surface waters, enclosed bays, and estuaries to protect freshwater ans salt water aquatic life:

Acute WET = 1.0 Toxicity Unit – Acute (TUa)
Chronic WET =1.0 Toxicity Unit – Chronic (TUc)

These obectives conflict with what is stated as the WQOs on Page 3, Part III, of the actual Toxicity Policy. Please update the SAIC report to reflect the WQO stated in the Toxicity Policy.

19. On Page 4 of Subsection 4 – Method for Evaluating Compliance and Costs, the draft *Economic Considerations of Proposed Whole Effluent Toxicity Control Policy for California*, prepared by SAIC, estimated that dischargers with dilution ratios less than 1000:1 will receive chronic WET limits of 1.0 TUc, and that only dischargers with dilution ratios greater than 1000:1 would receive acute WET limits. That conflicts with language in Section A.1 of the Toxicity Policy which reads, "The applicable Water Board shall have the discretion to require reasonable potential analyses for acute toxicity;" and, with Section A.2 of the Toxicity Policy which reads, "The applicable Water Board has the discretion to include a numeric effluent limitation for acute toxicity." The Policy seems to base the need for an acute toxicity limit on reasonable potential analyses, not on whether or not the dilution ratio is greater than 1000. Therefore, we recommend that the SAIC report be updated to reflect the approach that is stated in the recent version of the draft Toxicity Policy.

In addition to the detailed comment contained in this letter, an overarching concern is the need to articulate a clear path to transition to this improved policy given existing TMDL WLAs, permit conditions, and Basin Plan Objectives. We appreciate the effort that State Board has undertaken in developing this Policy, and we appreciate the opportunity to submit comments. As always, our staff is available to discuss comments with you if needed.

If you have questions regarding our comments, please contact Veronica Cuevas at (213)576-6662, or Brandi Outwin-Beals at (213) 576-6664.

Sincerely,

Samuel Unger

Samuel Unger, P.E.
Executive Officer