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August 20, 2012

Charles R. Hoppin, Chairman and Members
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

c/o Jeanine Townsend, Clerk to the Board
commentletters@waterboards.ca.gov



SUBJECT: Comment Letter: Draft Policy for Toxicity Assessment and Control

Dear Chairman Hoppin and Members:

The undersigned associations (Associations) sincerely appreciate the opportunity to provide written comments on the Revised Draft Policy for Toxicity Assessment and Control (Revised Draft Policy) released by the State Water Resources Control Board (State Water Board) in June of 2012. Our associations represent public wastewater agencies providing sewer collection, wastewater treatment, and water recycling services to millions of Californians. Our associations are committed to the effective and appropriate implementation of a toxicity assessment and control program, and support the use of toxicity testing as a tool to address potential uncertainties associated with chemical-specific monitoring and biological assessment. We also appreciate the time that Board members and staff have spent with us in order to understand and attempt to respond to our concerns regarding the initial draft policy. We acknowledge that the Revised Draft Policy includes a number of changes designed to resolve some of the key implementation issues, including the use of a multiple test approach to establishing monthly effluent limitations. Unfortunately, however, the Revised Draft Policy continues to fall short in several key areas and to fully address concerns regarding false determinations of toxicity and compliance jeopardy for publicly owned treatment works.

- The Revised Draft Policy departs from what should be the ultimate goal of the toxicity testing program, which is the creation of an investigative *tool* to identify and then control specific persistent chemicals and/or activities that are the source of the toxicity. Instead, the Revised Draft Policy focuses almost exclusively on establishment of numeric effluent limits for against point sources, which will result in POTWs being deemed in violation while they are undertaking the necessary investigatory steps to identify and reduce the toxicant—if possible.
- We are concerned that the Revised Draft Policy would allow a discharger to be deemed in violation based on a single test failure at a 50% chronic effect. In his review of the

initial draft policy, Dr. Peter Chapman, of Golder Associates, indicated that in his opinion, toxicity in a WET test should not automatically result in a violation without confirmation of this result or the opportunity to investigate further and, if this result is confirmed, to determine the cause of the observed toxicity and remedy same. We recommend that the maximum daily effluent limitation be deleted. We note that federal regulations specify that effluent limitations for POTWs are to be expressed as monthly or weekly limitations, not daily limits. (40 C.F.R. § 122.45(d)(2).)

- We continue to advocate for narrative acute and chronic toxicity objectives, which are fully protective and allow the Water Boards flexibility in regulating different categories of discharges. Numeric water quality objectives are not required. Applying the proposed numeric water quality objectives for acute and chronic toxicity, even at the minimal 5% error rate acknowledged for the test of significant toxicity (TST), 34% of California's non-toxic waterbodies would be expected to be incorrectly listed as impaired based on an assessment of 24 samples. If the numeric objectives are retained, as discussed in greater detail in Attachment A, this problem of unwarranted listings can be addressed by including language in the final Policy that specifies that waters exhibiting a 66% TST "pass" rate should not be listed which is consistent with the multiple TST failure approach proposed in the Revised Policy for final effluent limits. Ensuring that waters are not improperly listed for unknown toxicity should be a concern to the Water Boards as well as dischargers, as each listing will require the equivalent of a receiving water toxicity identification evaluation/toxicity reduction evaluation (TIE/TRE) to identify the specific toxicant. These investigatory processes are time consuming and costly, and should be focused on instances of real persistent toxicity measured in the ambient waters.
- While we support the multiple test approach set forth for the monthly effluent limitations for POTWs, we are very concerned that the use of a calendar month for testing will result in a flood of sampling at the beginning of each month and overwhelm the few trusted laboratories able to perform the testing. This will undoubtedly result in increased testing costs as laboratories will be required to hire additional staff to accommodate this unnecessary increase in early in the month toxicity testing. We recommend that the final Policy allow the Regional Water Boards to define calendar month on a discharger-specific basis (e.g. the 5th of April through the 4th of May) and stagger the definition of calendar month across the 30 days.
- In addition, the Associations remain concerned that the Revised Draft Policy will impose a disproportionate economic burden on smaller wastewater agencies that are not deemed disadvantaged pursuant to somewhat narrow criteria, given the high costs of conducting the required toxicity testing and TREs. We recommend that the threshold for the presumption of reasonable potential (which implies automatic applicability of effluent limitations for chronic toxicity), and the threshold for monthly rather than quarterly monitoring be raised from 1 mgd to 5 mgd. This is consistent with the discharge level used by the United States Environmental protection Agency (EPA) as a threshold for the requirement of industrial pretreatment programs and is based not simply on the agency's ability to pay but on the reduced potential for the occurrence of toxicity in these small systems.

Other issues with the Revised Draft Policy range from concern regarding false determinations of toxicity to the failure to complete an accurate analysis of the potential alternatives and impacts under the California Environmental Quality Act (CEQA), and the lack of a comprehensive Water Code section 13241 analysis, including an accurate and comprehensive economic analysis, and the failure to propose a comprehensive 13242 implementation plan. Our comments on these and other topics are detailed in the attachments to this letter.

We regret that despite all of the effort that has been invested by the Board, your staff and stakeholders, the Revised Draft Policy significant revision of the proposed policy is still required prior to adoption. We would like to continue to work with the State Water Board to determine whether our remaining concerns can be addressed in a manner that serves the State Water Board's goals of clarity, consistency and ensuring that real instances of toxicity are being detected, investigated and resolved as effectively as possible.

Sincerely,



Roberta L. Larson, CASA



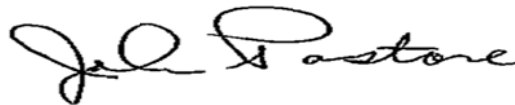
James M. Kelly, BACWA



Debbie Webster, CVCWA



Staci Heaton, RCRC



John Pastore, SCAP



Terrie L. Mitchell, Tri-TAC

ATTACHMENT A

CLEAN WATER ASSOCIATION TECHNICAL COMMENTS PROPOSED POLICY FOR TOXICITY ASSESSMENT AND CONTROL

1. Numeric Toxicity Objectives with Numeric Effluent Limits Are Not Necessary To Promote Statewide Uniformity and Reduce Regulatory Discrepancies Regarding WET-Related Regulatory Actions.

As documented in several places in the Staff Report, current provisions in SIP provide the framework of whole effluent toxicity (WET)-related regulatory actions that Regional Boards currently use to address potential excursions of the various narrative toxicity objectives statewide. However, discrepancies in objectives and corresponding permit requirements can result in differing accelerated testing schedules and toxicity reduction evaluation (TRE) triggers. We agree with the State Water Board staff that “establishment of statewide provisions to manage toxicity exceedances will promote uniformity and reduce these disparities”. However, State Board staff’s assertion that numeric toxicity objectives combined with numeric maximum daily effluent limits (MDEL) and monthly median effluent limits (MMELs) represent the best or most effective means to promote uniformity and reduce discrepancies is incorrect.

The same uniformity and reduction of discrepancies can be achieved through adoption of a statewide Toxicity Policy that includes a state-wide narrative toxicity objective translated into consistent numeric effluent triggers that would require dischargers, if the trigger were exceeded, to aggressively conduct accelerated testing and potentially a TRE.

An excerpt from the Staff Report at page 42 copied below concisely describes the perceived advantages of combining numeric toxicity objectives with numeric effluent limits:

“Numeric toxicity objectives are an efficient regulatory tool when expressed as effluent limits because the measurement of compliance is clearly defined. In this scenario, the duty of achieving and maintaining compliance lies with the discharger. Once a permit limit is exceeded, the discharger must implement accelerated monitoring, the TRE process, and any other steps necessary to avoid further violations (see Issue 2F). 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.”

However, these same perceived advantages can also be realized by use of a statewide narrative toxicity objective translated into numeric effluent triggers. Similar to the excerpt above, the same goals can be achieved:

A statewide narrative toxicity objective translated into statewide numeric effluent triggers are an efficient regulatory tool because the measurement of compliance is clearly defined. In this scenario, the duty of achieving and maintaining compliance lies with the discharger. Once a numeric trigger is exceeded, the discharger must implement accelerated monitoring, the TRE process, and any other steps necessary to avoid a

violation. Narrative objectives combined with numeric effluent triggers represent a compliance-driven model of toxicity control that provides clearly defined and consistently applied requirements to determine the protection of aquatic life.

Despite our Associations advocacy of this approach in earlier comments and testimony, the State Water Board staff did not evaluate an approach that utilized a statewide narrative objective combined with statewide numeric effluent triggers as an alternative. The Associations recommend this as the preferred alternative.

2. *A Numeric Toxicity Objective Implemented by Numeric Effluent Limits Will Not Reduce Water Board Resources Needed to Ensure Compliance.*

The State Water Board Staff have argued that *numeric* WET limits are necessary to provide adequate protection of aquatic life and that numeric WET limits represent an efficient regulatory tool that minimizes the resources Regional Boards need to devote to compliance.¹ However, in addition to the punitive numeric limits included in the Revised Draft Policy, the policy as proposed also requires a step-wise approach that includes numeric thresholds for accelerated testing followed by additional numeric triggers for TRE implementation. Therefore, as the Policy is proposed, in order to assure protection of receiving waters from discharges that may cause aquatic toxicity, Regional Boards will have to continue to evaluate discharger efforts to aggressively and effectively identify toxicants through accelerated testing and TRE implementation. Even though State Water Board staff appear to believe that immediate violation status in response to routine monitoring exceedances will ensure that dischargers aggressively conduct accelerated testing and TREs, the Associations believe that the use of numeric accelerated testing and TRE *triggers*, with the threat of violations if dischargers do not aggressively conduct accelerated testing and TREs, have provided and would continue to provide more than adequate incentive to take appropriate and necessary steps in response to WET exceedances.

3. *Numeric Toxicity Objectives with Numeric Effluent Limits Are Not Necessary to Protect Aquatic Life or Biological Beneficial Uses.*

Field studies conducted by the EPA and others in the 1980s have led to a common misperception that the results of WET tests are relatively good predictors of in-stream biological impacts. However, these early studies have been criticized for selecting sites exhibiting large in-stream effects with known biological impacts and did not evaluate waters and effluents exhibiting low to moderate sublethal chronic effects. Furthermore, none of these studies demonstrated predictive accuracy. **EPA's experts now acknowledge that WET test failures caused solely by changes in growth or reproduction may not accurately predict in-stream impairment.** Although EPA contends that "when significant lethality is seen in toxicity tests there is a very high potential of aquatic ecosystem impairment," EPA's experts "continue to struggle with the idea that sublethal effects on indicator species can result in detectable adverse ecosystem responses."²

¹ Policy for Toxicity Assessment and Control Staff Report. October 2010. Division of Water Quality State Water Resources Control Board. Page 44.

² A Review of Single Species Toxicity Tests: Are the Tests Reliable Predictors of Aquatic Ecosystem Responses?, EPA, EPA/600/R-97/114, July 1999, p. 24.

Furthermore, more recent scientific research on this topic has demonstrated that chronic toxicity as measured in the WET tests is a *poor predictor of in-stream impacts* with “nearly a 50% probability that toxicity exhibited in WET tests may not be reflected in-stream, even for those effluents exhibiting a relatively high failure rate (>90%).”³ Additionally, the authors concluded that “a surprising result of this study was the lack of relationship between *Ceriodaphnia dubia* acute and chronic endpoints and in-stream biological results” and that even when using the more robust EC/IC25 statistical analyses, “poor agreement was observed between WET results and in-stream biological condition, contrary to results previously reported by EPA and other research entities.”⁴ A subsequent Water Environment Research Foundation (WERF) study published in 2007 described nearly identical findings,⁵ even though this study focused on effluent-dominated streams where effluent WET tests would be expected to be more predictive of in-stream effects. Even more recently, the Surface Water Ambient Monitoring Program (SWAMP) and the Southern California Coastal Water Research Program (SCCWRP) found that after analyzing over 120 sites across 15 watersheds, aquatic toxicity, as measured using *Ceriodaphnia dubia* chronic toxicity tests, was found to negatively correlate with biological condition measured using freshwater benthic invertebrates.⁶ If real and accurate, this slight negative correlation would nonsensically indicate that receiving waters with greater WET toxicity would be expected to have BETTER biological condition!

Therefore, the use of numeric WET objectives and limitations will not result in greater protection of receiving biological conditions. The EPA peer review of the WERF study concurred that, “the actual level of false positives in ‘real life’ as defined by this [EPA’s Interlaboratory WET Variability, 2000] study can be expected to be higher. These tests are applied, too often, as decisive when they are far from such.”⁷

4. Use of a Narrative Objective with Statewide Numeric Accelerated Testing and TRE Triggers is Consistent With Federal, State, and Regional Guidance.

The EPA Technical Support Document (TSD)⁸ recommends that a discharger conduct a toxicity identification evaluation (TIE) in response to a positive WET test result and that chemical-specific limits on the identified constituent be applied along with continued WET monitoring.

³ Diamond, J. and C. Daley. 2000. What is the relationship between whole effluent toxicity and instream biological condition? *Environ. Toxicol. Chem.* 19:158-168.

⁴ Evaluating Whole Effluent Toxicity Testing as an Indicator of Instream Biological Condition. WERF Project Report 95-HHE-1. 1999.

⁵ Evaluation of WET Testing as an Indicator of Aquatic Health in Effluent-Dominated Streams. WERF Project Report 03-ECO-2T. 2007.

⁶ 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

⁷ EPA, Summary Report: Peer Review of “Preliminary Report: Interlaboratory Variability Study of EPA Short-Term Chronic and Acute Whole Effluent Toxicity Test Methods” (WET Study Report), prepared by Versar, Inc. (March 2001) (“Peer Review Report”), p. 18.

⁸ 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. See also EPA NPDES Permit Writers Manual at 6-40, EPA-833-K-10-001 (Sept. 2010)(stating that “A permit also *could* include a requirement to conduct a toxicity identification evaluation and toxicity reduction evaluation (TIE/TRE) as a *special condition* in an NPDES permit.”)(emphasis added).

(See accord 40 C.F.R. §122.44(d)(1)(v)(no effluent limit required for WET where chemical specific limits can attain narrative toxicity standard).) The TSD further recommends that if toxicity is observed subsequently, this process should be repeated. EPA Region 9 and 10 WET guidance indicates that “the principal mechanism for bringing a discharger into compliance with a water quality-based WET requirement is a toxicity reduction evaluation.”⁹ **The EPA has indicated that the current WET regulatory strategy utilized in California (i.e., narrative limit with numeric triggers to accelerated testing and toxicity identification) meets its requirements, as it is “fully implementing” its NPDES WET program.**¹⁰

Furthermore, a step-wise approach using narrative effluent limits with accelerated monitoring and TRE triggers has been effectively utilized in California¹¹ 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,¹² 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,¹³ which was specifically assembled to provide guidance on the regulatory use of toxicity test within the State. This Task Force included representatives from non-governmental organizations, POTWs, EPA, State and Regional Water Boards and reached *complete consensus* that the State Water Board should adopt a process to implement toxicity objectives that included routine monitoring, accelerated testing triggers, and toxicity reduction evaluation (TRE) triggers very similar to those proposed in this letter and in previous comments submitted by the Associations. The Task Force also recommended that the State Board “should adopt a provision that: No single test result shall constitute a violation.” (*Id.*)

5. *The Proposed Numeric Toxicity Objective Will Result in an Unacceptably Large Number of Non-Toxic Receiving Waters to be 303(d) Listed As Impaired.*

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

⁹ 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.

¹⁰ September 29, 2009 EPA Headquarters EPA NPDES WET Program presentation provided by Linda Boornazian, Director of Water Permits Division, Laura Phillips (EPA WPD/OWM), and Debra Denton (EPA Region 9) – see slides 6 and 7 of Appendix 1.

¹¹ 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.

¹² 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>.

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

water bioassay test represents an exceedance of the numeric objective. Table 3.1 of California's 303(d) listing policy¹⁴ specifies that if two or more of 24 measurements in a waterbody exceed the water quality objective, the waterbody will be listed as impaired. Some disagreement exists regarding the single test TST false determination of toxicity error rate, with the EPA interlaboratory validation study indicating that this error is as high as 15% while the State Board Staff's "Test Drive" indicates it approximates the 5% error rate associated with the current NOEC statistical test. However, using either estimate, application of the proposed numeric objective will result in an unacceptably high number of non-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 current implementation of regional basin plan narrative objectives could also result in a similar "over listing" of waters as impaired for toxicity. However, the proposed adoption of a statewide policy offers an opportunity to address this issue and focus our limited collective resources going forward. This issue can be resolved through adoption of a narrative toxicity objective, substantial modifications to the proposed numeric objectives, or through inclusion of specific 303(d) listing guidance into the WET Policy requiring provisions to address this uncertainty by utilizing multiple TST failures defined as constituting an "exceedance" of the objective.

At a minimum, the State Water Board should include specific 303(d) listing guidance in Part II of the Revised Policy to address uncertainties associated with the TST "pass/fail" approach. This guidance would direct regulatory authorities to use a 66% TST "pass" rate among all toxicity tests conducted in a receiving water reach as evidence of a receiving water meeting toxicity objectives. Use of a 66% TST "Pass" rate is consistent with the two out of three multiple TST test approach used for final effluent compliance to take into account uncertainty in the analytical and statistical methods. Additionally, guidance allowing continued use of Table 3.1 of California's 303(d) listing policy¹⁵ would be appropriate for evaluating results exhibiting effects greater than twice the regulatory management decision, which is consistent with proposed final effluent MDELs. Following this recommended listing guidance will result in less than 1% of non-toxic waters being erroneously listed as "impaired" assuming a 5% false determination of toxicity error rate and less than 2% if that error rate is 15%. The inclusion of 303(d) listing guidance was recently incorporated into the State Water Board's Sediment Quality Objective Policy¹⁶.

If, despite the demonstrable benefits to both regulators and stakeholders associated with including the recommended guidance on 303(d) listing, the State Water Board opts not to include

¹⁴ Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List. State Water Resources Control Board. Adopted September 2004.

¹⁵ Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List. State Water Resources Control Board. Adopted September 2004.

¹⁶ Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1: Sediment Quality. Effective August 25, 2009. Pages 17 and 17.

http://www.waterboards.ca.gov/water_issues/programs/bptcp/docs/sediment/sed_qlty_part1.pdf.

this provision, then at a minimum, the Policy must include language that would prevent Regional Water Boards from imposing inappropriate and more restrictive WET limits in response to toxicity TMDLs. While this alternative solution will not reduce the number of erroneous 303(d) listings, it will provide significant assurances that all potential numeric toxicity limits adequately address and account for uncertainty, This can be easily accomplished by the recommended edits (in bold) to Section 2. (Page 7):

Numeric Effluent Limitations in Permits

*If the applicable Water Board determines that reasonable potential exists for any NPDES wastewater discharger or point source WDR discharger **or if a TMDL derived waste load allocation for toxicity is warranted**, in accordance with Part III (A)(1), the applicable Water Board shall include numeric effluent limitations for chronic toxicity in any permit issued, reissued, or reopened to address toxicity requirements after the effective date of the Policy...*

6. *Allowing Applicable Regional Water Boards Discretion to Require and Incorporate Acute Toxicity Provisions for Dischargers Already Subject to a Chronic Toxicity Testing Requirement is Not Appropriate.*

The Revised Draft Policy requires applicable water boards to conduct a reasonable potential analysis for all WDR dischargers for chronic toxicity, except for large (greater than 1 mgd) POTWs that are inappropriately presumed to always have reasonable potential. If it is determined that reasonable potential exists for chronic toxicity, the applicable water board must include chronic toxicity limits into any permits issued. However, the Revised Draft Policy grants the applicable water board the discretion to also conduct reasonable potential for WDR dischargers for acute toxicity and, reasonable potential is determined to exist for acute toxicity, the applicable water board must also include acute toxicity limits into any permits issued. With reasonable potential assumed for all dischargers over 1 mgd, allowing the regional water board the discretion to evaluate acute toxicity makes it likely that both acute and chronic toxicity limits will be incorporated into some, if not most, discharger permits. This practice will not achieve the State Water Board's goal of statewide consistency for toxicity requirements and will potentially result in a discharger failing two toxicity limits (acute and chronic) for the same event.

It is commonly accepted that chronic toxicity testing represents a more sensitive measurement of toxicity than acute testing. Chronic toxicity tests typically utilize a more critical and sensitive life-stage (typically larvae), have longer exposure durations, and incorporate more sensitive endpoints than survival, such as growth and reproduction. Therefore, any sample exhibiting acute toxicity would be expected to exhibit at least as much toxicity in a chronic test and in most instances, more toxicity. Therefore, a discharger with an acute and chronic limit or trigger failing an acute threshold would also be expected to fail the chronic threshold on the same sample. For this reason, the Policy should not include toxicity objectives for acute toxicity, and should specifically instruct regional water boards that where a chronic limit or trigger is required, no acute limit or trigger should be incorporated into the WDR.

7. *Toxicity Cannot Be Proactively Addressed for Many Dischargers.*

Under the Revised Draft Policy, POTWs that discharge without dilution credits must produce effluent that free of toxicity at all times. Yet 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. A well-articulated toxicity regulatory strategy using numeric toxicity triggers with enforceable TRE requirements would allow time for such identification, 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 unnecessary enforcement actions. The Revised Draft Policy must also expressly recognize that the source of fleeting toxicity may never be known, and this failure to find the source(s) should not result in enforcement exposure for the POTW since, as explained above, this laboratory toxicity unlikely resulted in any receiving water impacts. (Moreover, water quality criteria promulgated by EPA routinely incorporate a once-in-three-year exceedance rate such that sporadic exceedances are not required to be considered violations.)

8. *The Incorrect Identification of Non-Toxic Samples as Toxic Under the Proposed Policy Would Be Unacceptably High.*

The Associations are tremendously concerned that the proposed Policy will lead to an unacceptably high frequency of incorrectly identifying a non-toxic effluent as “toxic.” The EPA guidance on the TST¹⁷ (TST Guidance) and the Revised Draft Policy estimate that a 5% statistical false positive error rate (i.e., incorrectly identifying a non-toxic sample as “toxic”) for individual tests is incorporated into the TST analysis. However, this explicit 5% statistical false positive error rate stated in the Revised Draft Policy is actually a regulatory management decision (RMD) made by EPA to identify no more than 5% of the tests with a 10% effect or less as “toxic” regardless of whether the sample was actually or truly toxic. Use of this false positive error rate estimate assumes that a non-toxic sample would never result in an effect greater than 10%. Additionally, the State Water Board’s “Test Drive” analysis assumed any observed effect greater than 25% could not be a false positive and claimed a false positive error rate of about 5% as well. In both estimates, the EPA and State Water Board staff failed to incorporate into the Revised Draft Policy the much more significant concern of incorrectly identifying a non-toxic sample as toxic, regardless of the measured effect. 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.

This issue of incorrectly identifying a non-toxic sample as toxic using blind testing on known non-toxic blank samples was a critical component in the United States Court of Appeals ruling in the case of *Edison Electric Institute, et al v. USEPA*.¹⁸ According to that ruling, “EPA defines a

¹⁷ EPA, National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document. EPA 833-R-10-003; June 2010.

¹⁸ U.S. Court of Appeals-D.C. Circuit Judgment (*Edison Electric Institute, et al v. Environmental Protection Agency*; Case No. 96-1062; Dec. 10, 2004).

false positive test result as one indicating toxicity in a blank study.” The ruling further described that the results of the EPA’s WET Interlaboratory Variability Study¹⁹ conducted on non-toxic blank samples demonstrated that no individual test’s false positive error rate exceeded 5% using the NOEC or EC/IC25. Additionally, the same false positive error rates were also instrumental in the eventual promulgation of the WET methods.²⁰ Citing the results obtained from the EPA’s WET Interlaboratory Variability Study, EPA determined that the false positive error rate associated with the NOEC and EC/IC25 as determined using non-toxic blank samples was 3.7% and 4.35% for the *Ceriodaphnia dubia* and fathead minnow chronic tests, respectively.

Using the same non-toxic blank data from the EPA Variability Study, Tri-TAC and CASA evaluated the frequency at which the TST analysis incorrectly identified non-toxic blank samples as toxic with *Ceriodaphnia dubia* and fathead minnows as test organisms. Since all these samples were known to be non-toxic blank samples, any identification of toxicity would be a false determination of toxicity. **This evaluation found an unacceptable 14.8% and 8.3% of the EPA clean water, non-toxic samples tested with *Ceriodaphnia dubia* and fathead minnow, respectively, would have been incorrectly identified as toxic using the TST.**

Since a numeric MMEL violation would be assessed with every monthly median identification of toxicity under the Revised Draft Policy, a discharger of non-toxic effluent with a monthly monitoring requirement would be expected to accrue between 1 and 3 violations over the course of a five-year permit cycle based on an 8% and 15% false toxicity determination rate. The resulting impact of these false determinations would be the performance of unnecessary accelerated tests as well as enforcement liability under the California Water Code and the Clean Water Act, including citizen suits, for these false “violations.”

9. *The TST Statistical Method Is Not Included In the 40 C.F.R. Part 136 Promulgated Methods.*

The aquatic toxicity testing provisions in 40 C.F.R. Part 136 specifically list LC₅₀, percent effluent, NOEC, and IC₂₅ under Parameter and Units for acute and chronic aquatic toxicity testing. As discussed in Attachment B, the promulgated method manual does not describe, endorse, or recommend the use of the TST or similar bioequivalency approach for statistical analysis. Some may contend that the TST is a relatively new analytical tool and the methods were promulgated in the absence of any significant knowledge of the TST or similar bioequivalency approach. However, bioequivalence testing/alternative null hypothesis testing has been a widely used statistical method for many decades. In fact, peer-reviewed publications have proposed the use of bioequivalency in aquatic toxicity testing as early as 1995 (Erickson and McDonald) – seven (7) years before promulgation of the EPA-recognized methods. Therefore, even with direct understanding of the TST/bioequivalence statistical methods, EPA promulgated the current toxicity methods with a recommendation and strong preference for the use of point estimation for NPDES compliance monitoring and a strong rejection of pass/fail analyses.

¹⁹ EPA, Final Report: Interlaboratory Variability Study of EPA Short-term Chronic and Acute Whole Effluent Toxicity Test Methods-Vol. 1 & 2; EPA-821-B-01-004; September, 2001.

²⁰ Federal Register, November 19, 2002. Vol. 67, No. 223, 69968.

No information in the TST guidance document or in the record for the Revised Draft Policy rigorously assesses the relative merits of TST versus point estimation. In fact, the EPA document “National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document” (EPA 833-R-10-044) (June 2010) states the following, on p. xiii: “*Because TST is a form of hypothesis testing, analyses in this document focus on comparing results of TST to the traditional hypothesis testing approach and not to point estimate techniques such as linear interpolation (i.e. IC25). Therefore, this document does not discuss point estimate procedures.*”

The primary argument presented by State Water Board staff against using point estimation is that it is too computationally intensive. This is a moot argument given the ready availability and widespread use of off-the-shelf computer programs (e.g., CETIS) that perform these calculations and are already used by many dischargers. Another argument for the TST was that it would encourage dischargers to produce better quality data (e.g., using more replicates²¹) while use of the NOEC would discourage dischargers from producing better quality data (e.g., use of less replicates). However, with point estimates, no inherent “benefit” or incentive exists for a discharger to produce poor quality data. Finally, there was no information presented in the Staff Report to document the current widespread existence of poor quality/high variability chronic toxicity data. To the extent that this is indeed a valid concern, it must be directly addressed in the Staff Report by including evidence to support this contention. Then, additional and/or more specific chronic toxicity testing requirements (e.g., use x instead of y number of replicates) in the Monitoring and Reporting Program (MRP) section of dischargers’ NPDES permits could resolve this concern instead of transitioning to the non-approved TST statistical method.

10. Use of Instream Waste Concentration is Essential to Valid Use of the TST

The Revised Draft Policy defines instream waste concentration (IWC) as follows: “*In-Stream Waste Concentration (IWC) is the concentration of a toxicant or effluent in the receiving water after mixing (the inverse of the dilution factor). A discharge of 100 percent effluent will be considered the IWC whenever mixing zones or dilution credits are not authorized by the applicable Water Board.*” The second sentence allows deviation from the use of a true IWC when using the TST to evaluate toxicity test results, and is not appropriate, since the validity of using the TST for regulatory decision-making is based on its use in conjunction with the IWC. All documents referencing use of the TST to evaluate toxicity test data, including the Revised Draft Policy itself, staff report, and the Peer Review of the Policy, agree on this point.

The USEPA NPDES Test of Significant Toxicity Technical Document (June 2010) is particularly clear. The final sentence of the Executive Summary reads: “*The TST approach is designed to be used for two concentration data analysis of the IWC or a receiving water concentration (RWC) as compared to a control concentration.*” The definition of IWC in this EPA Technical Document is: “*In-stream Waste Concentration (IWC) is the concentration of a toxicant or effluent in the receiving water after mixing. The IWC is the inverse of the dilution factor. It is sometimes referred to as the receiving water concentration (RWC).*” Thus, the USEPA guidance document that establishes the standards for using the TST in NPDES permit

²¹ However, the use of more replicates also comes at a greater cost, which is particularly problematic for small communities.

programs requires the IWC to be a true concentration of effluent in the receiving water after mixing.

If the policy is adopted to allow an IWC to be artificially defined as 100 percent effluent when the true IWC is lower—in some cases, significantly lower--the TST analysis will always overstate the true measurement of toxicity for that effluent in the receiving water. Under this scenario, a positive TST analysis on whole effluent will require a discharger to conduct accelerated monitoring and potentially be in violation for a positive test result that would not, in fact, exhibit similar results within the receiving water. If all the other elements of the Revised Draft Policy are retained, many dischargers will spend significant staff and monetary resources to respond to toxicity test results that are inherently overstated if the Policy does not require a true IWC to be used.

An illustration of the Policy's reliance on using IWC is found in section III.A.6, Compliance Determination, which reads: "...dischargers shall report the results of reasonable potential analyses, species sensitivity screenings, and routine toxicity tests to the applicable Water Board as either a "pass" or a "fail" at the IWC, in accordance with the TST approach and provide the calculated percent effect at the IWC." A discharger will not be able to comply with the intent of this provision if the policy enables an IWC to be arbitrarily set at 100 percent effluent when the true IWC is lower since the data will never reflect the actual percent effect in the receiving water.

The intent of the policy is to establish statewide consistency and reliability in the interpretation and response to toxicity test results. A true IWC when using the TST is integral to meeting these objectives, and therefore the policy should not include a loophole that allows the IWC to be artificially limited.

To address this, we recommend the following amendment to the policy:

Remove the second sentence of the definition of IWC from the Policy so that it reads: "In-Stream Waste Concentration (IWC) is the concentration of a toxicant or effluent in the receiving water after mixing (the inverse of the dilution factor)."

II. The Policy Must Not Place Intermittent POTW Discharges in Compliance Jeopardy.

The Revised Draft Policy states "[a]dditionally, a discharger's failure to initiate an accelerated monitoring schedule or conduct a TRE, as required by an NPDES wastewater permit or point source WDR, will result in all exceedances being considered violations of the MDEL or MMEL and may result in the initiation of an enforcement action." We are concerned about what happens if a non-continuous discharger, upon experiencing a "failed" toxicity test under the TST ceases discharge before any additional monitoring can take place. The discharger should not be deemed in violation because it was not possible to conduct accelerated monitoring, particularly given that the non-continuous discharger may not discharge again for six or more months.

Many POTWs employ very complicated operation strategies when it comes to discharging recycled water to surface water. These dischargers must balance weather conditions, supply,

demand and storage capacity every year. There may be months where discharge is started and stopped a few times in one calendar month, or years, like 2012, where to-date, certain dischargers have only needed to discharge intermittently during certain months, and depending upon weather conditions, may not discharge again (excluding short discharge events due to maintenance related activities) until next year. We request that the State Water Board clarify that where a seasonal discharge has ceased, the discharger is not obligated to conduct accelerated monitoring and that no violation will be assessed against non-continuous dischargers in these circumstances.

12. Requirements for Monitoring Based on Discharge Frequency Should Be Consistent With Minimum Sampling Requirements.

A single chronic toxicity test typically requires the collection of three samples over at least a five day period to complete. Therefore, any referenced minimum discharge periods should be compatible with this typical sampling requirement. Specifically, the sections highlighted below from pages 8 and 9 should recognize this limitation in collecting appropriate WET samples, similar to those seen with stormwater discharges, and be re-worded to specify **seven or more consecutive days** of discharge.

Proposed Revisions to the Revised Draft Policy (pp. 8 and 9):

*“NPDES wastewater and point source WDR dischargers that are non-continuous dischargers that discharge at a rate equal to or greater than one million gallons per day shall conduct one chronic toxicity test every calendar month during which a discharge lasting more than ~~two~~ **six** days occurs for the duration of the permit, but only during each period of discharge.*

*NPDES wastewater and point source WDR dischargers that are non-continuous dischargers discharging at a rate less than one million gallons per day shall conduct one chronic toxicity test each calendar quarter of the discharge period. A calendar quarter shall be counted whenever the discharge period **lasts seven or more days** during a calendar month.”*

13. TMDL-Driven WLAs for Toxicity Could Result in More Restrictive Effluent Limits Than Those Outlined in the Draft Policy.

Section 2 on page 7 of the Revised Draft Policy fails to address numeric limits associated with toxicity TMDL waste load allocations. In the absence of significant changes in the 303(d) listing policy or inclusion of clarifying language in the final Toxicity Policy associated with WET listings, the policy must include language that would prevent regional water boards from imposing inappropriate and more restrictive WET limits in response to toxicity TMDLs. This can be easily accomplished by the recommended edits (in bold) to Section 2. of page 7 (please note that additional changes would be recommended by the Associations to this paragraph to address other issues raised in this letter):

2. Numeric Effluent Limitations in Permits

If the applicable Water Board determines that reasonable potential exists for any NPDES wastewater discharger or point source WDR discharger or if a TMDL derived waste load allocation for toxicity is warranted, in accordance with Part III (A)(1), the applicable Water Board shall include numeric effluent limitations for chronic toxicity in any permit issued, reissued, or reopened to address toxicity requirements after the effective date of the Policy...

14. The Arc-sine Square Root Transformed Data Contains an Apparent Bias.

Transforming percentage data (e.g., survival responses) is a commonly accepted practice prior to conducting hypothesis testing where normal distribution assumptions are critical in the statistical analysis. When using the commonly applied arc-sine transformation, a bias resulting in the calculated response or effect using the transformed data is typically greater than the actual observed response of effect. This bias poses little concern when traditional hypothesis testing is conducted because all transformed treatments are compared directly to the transformed control. However, with the TST hypothesis test, the transformed treatments are compared to 75% of the transformed control. By not similarly transforming the binomial “b” or bioequivalency factor (75% for chronic tests and 80% for acute tests), this bias will significantly increase the probability of identifying a sample as toxic. The effect and magnitude of this bias in real world samples exhibiting observed effects ranging from zero (0) to 25% are presented in Figure 2.

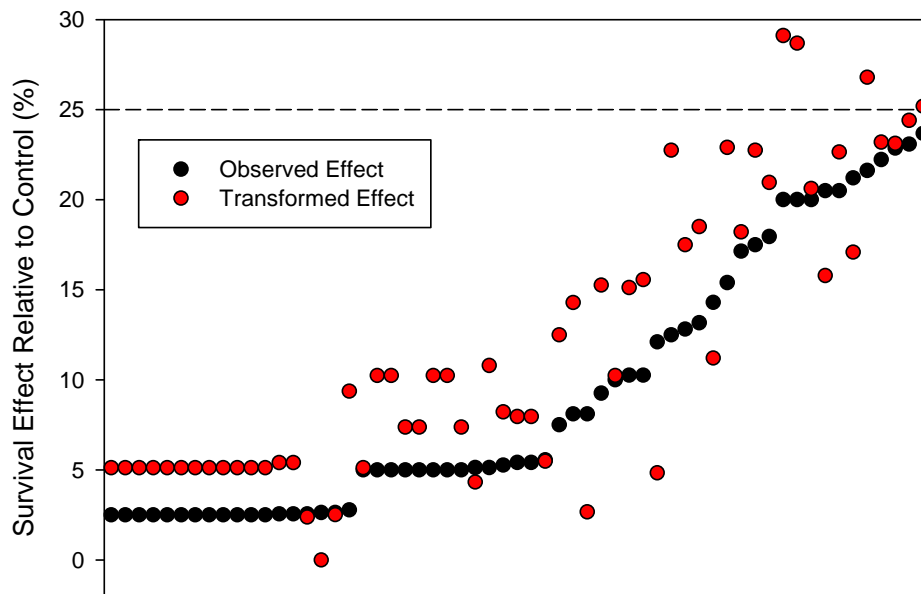


Figure 1. Fathead minnow survival effects between 0% and 25%. All tests conducted by the Districts San Jose Creek Water Quality Laboratory in 2009.

a. All Calculated Effects Should Be Determined Using Untransformed Data.

The fathead minnow survival data example contained on page 22 of the Revised Draft Policy calculates the percent effect in the instream waste concentration (IWC) using arc-sine transformed survival data as represented below:

$$\% \text{ Effect at IWC} = [(1.412 - 1.219) / 1.412] * 100 = 13.7\%$$

However, when conducting the same calculations using original, untransformed data we would find:

$$\% \text{ Effect at IWC} = [(10 - 8.75) / 10] * 100 = 12.5\%$$

After reviewing the EPA's TST spreadsheet tool (version 1.5), it is clear that all effects are to be calculated using original, not transformed data. Considering that there is significant positive bias associated with calculating percent effects at the IWC using transformed data, EPA TST tools calculate percent effects using untransformed data, and that accurate calculations of these estimates are critical for reasonable potential determination, MDEL evaluation, and TRE trigger determination, all references and examples in the Revised Draft Policy should clearly indicate that original units are to be used for these calculations.

15. *A Maximum Daily Effluent Limit (MDEL) for Chronic Toxicity is inappropriate.*

Contrary to EPA guidance, the Revised Draft Policy includes an MDEL that would result in an effluent limit violation as a result of a single sample exceedance. Despite the relatively high effect level associated with the MDEL, it is inappropriate to assess single sample violations for WET analyses due to the variability and uncertainty inherent in testing biological organisms. The promulgated EPA method for chronic toxicity, which is required by the draft WET policy, states that “[t]he 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.”

Numerous sources of uncertainty exist in toxicity testing. One is the inherent variability of individual test organism response that leads to statistical uncertainty and can only be partially reduced by increasing the number of replicates tested. There are also numerous potential causes for organisms response that are unrelated to toxicity, including variability in batches of test organisms, the presence of pathogens, or a deficiency of necessary conditions in the sample. For example, there are well-documented effects of samples with low hardness or high salinity on organisms such as *Ceriodaphnia* or fathead minnows. In these cases, the apparent “toxicity” of the sample is due to the absence of essential elements in the test solution. Single sample exceedances that are not part of a pattern of toxicity should be viewed with suspicion, as they may be due to transient causes unrelated to chronic toxicity.

The Associations recommend that the Policy, if it numeric effluent limits are included, express these limits as median or other percentile limits that require more than one test result to assess a permit violation.

ATTACHMENT B

CLEAN WATER ASSOCIATION LEGAL AND POLICY COMMENTS PROPOSED POLICY FOR TOXICITY ASSESSMENT AND CONTROL

1. *The Revised Draft Policy Fails to Achieve its Goal of Statewide Consistency.*

a. A Consistent Statewide Narrative Toxicity Objective Will Further the State Water Board's Goal of Attaining a Consistent Regulatory Program.

Although one goal of the Revised Draft Policy is to resolve discrepancies between toxicity requirements statewide and to promote a more consistent regulatory program for toxicity statewide (Staff Report at 4; *see also* Revised Draft Policy at 1 (“improves regulatory consistency”), the Revised Draft Policy fails to meet this goal by maintaining ten inconsistent narrative toxicity Basin Plan objectives. (*See* Revised Draft Policy at 1 (“This Policy does not supersede the narrative toxicity objectives established in the Basin Plans.”); Staff Report at 11 (“the policy will not supersede the narrative toxicity objectives established in each of the ten Basin Plans”).) Our Associations recognize that a properly drafted toxicity policy can bring consistency and clarity to the current region-by-region approach. However, the policy choice to overlay new numeric objectives over the existing 10 regional narrative objectives is problematic for several reasons:

- (1) Many of the narrative objectives contain quasi-numeric factors that must be made consistent in order for the State Water Board to be able to adequately define an implementation plan as required under Water Code section 13242. The following are examples:
 - Regions 1, 3, 5, 7, and 9 require compliance to be evaluated with a 96-hour bioassay,
 - Region 2 defines acute toxicity as “a median of less than 90%, or less than 70%, 10% of the time, of test organisms in a 96-hour static or continuous flow test.”
 - Region 4 states that the “acute toxicity objective dictates that the average survival in undiluted effluent for any three consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, with no single test having less than 70% survival...,”
 - Region 8 interprets the “consistently exceeds” trigger as failures of 3 successive monthly chronic toxicity tests, each conducted on separate samples.
- (2) Maintenance of inconsistent narrative objectives will not further statewide consistency and may lead to regional regulatory differences sought to be avoided in the Revised Draft Policy.
- (3) The maintenance of these narrative objectives may be used by regional water boards to require more restrictive and more costly toxicity testing requirements than those proposed in the Revised Draft Policy.

Instead, the State Water Board could adopt a single statewide narrative toxicity objective, such as “There shall be no acute or chronic toxicity to aquatic organisms in ambient waters caused by non-natural or reasonably controllable water quality factors, outside any designated mixing zone.” The Policy could then implement this objective through defined effluent limits where reasonable potential exists and through monitoring requirements for other discharges, such as stormwater and agricultural discharges.

b. The Numerous Instances Where Regional Discretion is Provided Ensures Continued Inconsistency in the Program.

Contrary to the goal of statewide consistency, the Revised Draft Policy contains a number of provisions instances where inconsistency is specifically allowed or may occur:

- The Policy does not apply to ocean waters, including Monterey Bay and Santa Monica Bay, so some dischargers may have differing toxicity requirements depending on where the discharge flows. For example, the cities near the ocean or around Santa Monica Bay and Monterey Bay would have to monitor and assess toxicity under the Ocean Plan’s requirements for ocean outfalls, but under the Revised Draft Policy for freshwater outfalls. This dual program is problematic and increases costs for all of these dischargers. Moreover, the requirements are not clear since the Revised Draft Policy allows the local regional board to determine whether freshwater dischargers to marine waters may use freshwater test methods. (*See Revised Draft Policy at 6.*)
- The Revised Draft Policy leaves the requirement of monitoring, assessing reasonable potential, and assigning effluent limitations for acute toxicity to the regional boards. (*See Revised Draft Policy at 6-8.*) This will result in inconsistent requirements statewide.
- Other inconsistencies built into the Revised Draft Policy relate to assessing violations. For example, the “safe harbor” possibly preventing a discharger from being assessed numerous violations while conducting accelerated monitoring and a Toxicity Reduction Evaluation (TRE) may not be available in all regions since the Revised Draft Policy now prescribes this protection only “if appropriate.” (*See Revised Draft Policy at 10.*) In addition, a regional board has the *discretion* to impose additional violations and initiate an enforcement action for failing tests after six months from the initial violation. This inconsistency must be avoided so that all dischargers are subject to a consistent and fair enforcement program.
- Compliance schedules are similarly discretionary, such that two equally situated dischargers might be given disparate treatment just because they reside in different regions. (*See Revised Draft Policy at 10.*) A consistent policy must be adopted to provide certainty statewide.
- The Revised Draft Policy purports to provide exemptions for small communities and insignificant discharges. (*See Revised Draft Policy at 11.*) However, these exemptions could be eviscerated by the discretion provided to regional boards to withdraw or not allow these exemptions.²²

²² In addition, the Revised Draft Policy sets no timelines for when any exemption or exception will be granted. As seen in the Ocean Plan’s Areas of Special Biological Significance (ASBS) program, exceptions can take up to seven (7) years after a completed application. To avoid financial hardship, an exception or exemption must be granted

- Inconsistency between discharger types is also prevalent in the Revised Draft Policy. Although all discharges may have the potential to affect receiving water toxicity, only traditional point sources are being required to have presumed reasonable potential, monitor more frequently, and be exposed to enforcement and penalties. Other discharges, such as stormwater and agricultural channelized dischargers, are being subjected to a much less stringent program notwithstanding that these discharges may also adversely affect waterways. (See Revised Draft Policy at 13-14.) This inconsistency is unexplained and arbitrary, and should be avoided. All dischargers should be subject to similar requirements when they have similar potential effects on receiving waters.²³
- Within categories of dischargers, there are also inconsistencies. For example, it is not clear whether the California Department of Transportation will be required to meet the same requirements as all other stormwater dischargers in California. (See Revised Draft Policy at 13.) Similarly, dischargers not currently monitoring for toxicity are treated differently from those currently monitoring. (See Revised Draft Policy at 13-14.) Regulatory requirements should be based on likelihood of adversely affecting receiving waters, not on current regulatory status.
- The proposed effluent limitation language is also discretionary, thereby leading to inconsistent language being required statewide. (See Revised Draft Policy at 19.) If the State Water Board seeks to have consistent permit requirements, then such discretion is inadvisable.

Each of these instances illustrates the Revised Draft Policy may contribute to rather than resolve inconsistency under the currently effective toxicity program under the State Implementation Policy (SIP) and State Water Board precedent. If these inconsistencies are not remedied, then the State Water Board goal of consistency will not be met.

2. The Proposed Policy and Associated Analytical Tools Were Not Promulgated or Established Through Formal Rulemaking

To assure compliance with permit limitations, each NPDES permit must include requirements to monitor “[a]ccording to test procedures approved under 40 CFR Part 136 for the analyses of pollutants or another method is required under 40 CFR subchapters N or O. In the case of pollutants for which there are no approved methods under 40 CFR Part 136 or otherwise required under 40 CFR subchapters N or O, monitoring must be conducted according to a test procedure specified in the permit for such pollutants.” (40 C.F.R. § 122.44(i)(1)(iv).)

The federal regulations specify approved methods for toxicity. (Table IA of 40 C.F.R. § 136.3.) “Parameters or pollutants, for which methods are approved, are listed together with test procedure descriptions and references in Tables IA, IB, IC, ID, IE, IF, IG, and IH. In the event of a conflict between the reporting requirements of 40 C.F.R. Parts 122 and 125 and any

immediately within the Policy, within a set timeframe from submission of an application, or be deemed granted unless denied in a certain timeframe.

²³ We are aware of no justification for the State Water Board to treat traditional point sources, with treatment technologies in place, more stringently than other dischargers that have no traditional treatment and may be more likely to contain pesticides and other chemicals that can cause toxicity in receiving waters.

reporting requirements associated with the methods listed in these tables, the provisions of 40 C.F.R. Parts 122 and 125 are controlling and will determine a permittee's reporting requirements." Three WET method manuals were incorporated by reference into 40 C.F.R. part 136 in the 1995 federal rule. These methods do not include the TST. "As regulations, use of these methods and adherence to the specific test procedures outlined in the WET method manuals is required when monitoring WET under the National Pollutant Discharge Elimination System (NPDES)." (*Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)*, EPA 821-B-00-004 at p. 1-1, emphasis added.)

Here, the Staff Report concedes that the numeric objectives and the test methods upon which they rely are a "new approach for analyzing toxicity test data" developed by EPA. (See Staff Report at 37.) No EPA Region or other State requires the TST method for WET. The TST procedures are set forth in a recent 2010 U.S. EPA document (EPA-833-R-10-003), which is *only guidance* and was never released issued as a proposed regulation for public comment. EPA has not formally approved the TST as an Alternate Test Procedure (ATP) as required by 40 C.F.R. 136.5. Thus, the Revised Draft Policy should not require the use of the TST unless and until such method is approved and promulgated by EPA.

3. *The Need for the Proposed Policy Has Not Been Demonstrated*

The Staff Report fails to set forth an articulation of why the Revised Draft Policy is necessary, or why the alternative approaches proposed by the Associations has not been considered. The existing policy, which allows the regional water boards to implement the narrative objectives contained in their basin plans using the approach contained in the SIP, is working to identify and address instances of suspected toxicity in POTW discharges and other industrial discharges throughout California. As detailed in Appendix 1, in 2009, the head of EPA's Water Permits Division confirmed that California is "fully implementing" the NPDES WET Program. (See slides 6 and 7 of Appendix 1.)²⁴

However, without a great deal of explanation, the Staff Report rejects use of narrative objectives and recommends numeric objectives instead because "[n]arrative 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."²⁵ (Staff Report at p. 42.) This analysis ignores the fact that the State Water Board recently developed, through a scientifically valid process, and adopted *narrative* sediment quality objectives ("SQO") to address sediment toxicity. According to the SQO staff report, "narrative objective can be proposed that can be implemented with a high degree of confidence using a robust suite of tools." (SQO Staff Report at pp. 5-11.) Thus, this conflicts with the Staff Report's conclusions for water column toxicity, and the Staff has provided no evidence or valid rationale for concluding that a similar approach would not work for controlling water column toxicity. Moreover, EPA has recently reaffirmed the use of narrative effluent limitations for toxicity in NPDES permits. (EPA, NPDES Permit Writer's Manual, EPA 833-K-10-001 (Sept. 2010) at pp. 6-40.)

²⁴ September 29, 2009 EPA Headquarters EPA NPDES WET Program presentation provided by Linda Boornazian, Director of Water Permits Division, Laura Phillips (EPA WPD/OWM), and Debra Denton (EPA Region 9).

²⁵ It should be noted that this burden of proof exists in every enforcement action and, thus, does not present any particular difficulty in the toxicity arena.

In addition, the statements in the Staff Report regarding toxicity in waterbodies and effects of the same are qualified with phrases such as “potential,” “may be,” “might be,” or “could be.” (Staff Report at 35 (beneficial uses “might be compromised”), 38 (“will likely persist”), 41 (“would likely prove challenging” and “potential impacts to aquatic life beneficial uses”), and 44 (“may help reduce the effects of toxicity”).) No specific examples of water quality benefits are provided; the Staff Report includes only conclusory statements, that are not supported by references to any evidence in the record, that “numeric toxicity objectives... will assure the protection of aquatic life beneficial uses.” (Staff Report at 42.)

The Associations’ expert consultant, Dr. Peter Chapman, reviewed the studies cited in the Staff Report and previous iterations of the same, and concluded that there does not appear to be evidence of toxicity-related adverse environmental impacts due to POTW discharges in California. This conclusion is supported by studies referenced herein. We raise this point to emphasize that the conservative nature of WET tests assures that failure of a single WET test, or even several chronic tests, does not translate into immediate adverse environment effects. The toxicity tests should be used as they were intended to be used, as an early warning system that allow for resolution through an accelerated monitoring and TRE approach as recommended by the Associations.

4. *The Proposed Policy Does Not Include a Schedule of Compliance for Dischargers to Identify and Address Toxicity.*

Federal and state law allow for the use of compliance schedules where immediate compliance with newly established water quality objectives is not feasible. The State Water Board recently enacted a Compliance Schedule Policy that allows up to 10 years to come into compliance with new more stringent effluent limitations where there is a showing that the discharger needs time to implement improvements. (Resolution WQ 2008-0025.) The Revised Draft Policy:

- (1) Requires that every POTW with a permitted capacity over one million gallons per day (mgd) have a chronic toxicity effluent limitation;
- (2) Establishes numeric effluent limitations by which a *single* toxicity test failure or two failures in a month would constitute a violation (even when confirmatory or the other tests pass);
- (3) Requires use of a toxicity test method with a set false determination of toxicity rate of 5% and false non-toxic determination when the water is actually toxic of between 10% and 25%. (Revised Draft Policy at 17.)

Therefore, the chance of a single non-toxic discharge with a monthly monitoring requirement being charged with three or more false violations over a permit cycle is at least 58% (5% false determination of toxicity rate). The Associations disagree with the staff’s characterization in the Revised Draft Policy that this represents an acceptable rate of false determinations of toxicity. (Staff Report at 40.)

Apart from the potential for false violations, if real toxicity violations occur, even the Revised Draft Policy requires a process to determine if the toxicity is recurring through the accelerated monitoring program, and then to implement a TRE, which may take many months. If an unknown toxicant is causing the toxicity test failures, then the permittee may be deemed to be in

ongoing violation throughout at least part of that investigatory period, due to the discretionary language of the policy and the time period set forth (which equates to roughly **only 3 months** given the initial testing and accelerated monitoring periods). This is true even if the discharger is fully complying with all of the required toxicity testing and investigation procedures specified in the Revised Draft Policy (and its permit).

The Revised Draft Policy allows the exceedances occurring during accelerated monitoring and the TRE to not be considered violations, *if appropriate*. (Revised Draft Policy at 10.) Additional violations can accrue if the discharger fails to proceed with accelerated monitoring and TRE in a timely manner and if the both are completed within 6 months of the initial exceedance. (*Id.*) Given that the initial monitoring and confirmatory monitoring take a month to conduct followed by accelerated monitoring over an 8-week period,²⁶ this allows just 3 months to complete a TRE, which is inadequate and too short to guarantee additional violations are not imposed. A better solution would be to maintain the currently effective trigger approach, which encourages more testing, instead of setting the discharger up for more failure/violations just because additional testing was done. The proposed program does not “provide dischargers with a positive incentive to generate high quality data” as alleged in the Staff Report. (Staff Report at 40.)

Further, the Revised Draft Policy provides no possibility for a permittee already conducting toxicity monitoring to be granted a compliance schedule for exceedances of the proposed effluent limitations, placing all of these dischargers in **immediate noncompliance** once an exceedance occurs. (Policy at 11.) Any “compliance schedules” allowed in the Revised Draft Policy are solely for developing and putting into place a toxicity testing program and limited to two years. The compliance schedule authority sunsets in 10 years, notwithstanding the fact that new dischargers may need a compliance schedule after that date. This section of the Revised Draft Policy should be amended to all dischargers that already monitor and/or have narrative effluent limitations to be eligible for “compliance schedules.”

Without these modifications, the Revised Draft Policy will be unreasonably punitive for several reasons. First, at least 5% of the tests undertaken will be tagged with violations based on false determinations where no actual toxicity exists. Given the episodic nature of some false determinations, where accelerated testing shows no further test failures, the discharger may not be able to prove that no true “violation” occurred. While the State Water Board may choose not to enforce single violations, these instances will, over time, accumulate to multiple violations be posted on CIWQS for the public to see, recited in the compliance history set forth in permits, and subject to third party enforcement.

Secondly, the Revised Draft Policy makes upset conditions a violation (*see* Revised Draft Policy at 10 and 24) when the data from such events should not even be used since not representative,

²⁶ It should be noted that there is an inconsistency between the Revised Draft Policy and the Staff Report on this length of time. The Revised Draft Policy says that “an accelerated monitoring schedule shall consist of four, five-concentration chronic toxicity tests, conducted at approximately two-week intervals, over an eight-week period.” (Revised Draft Policy at 10, para. 6.c.) The Staff Report alternatives say that “an accelerated monitoring schedule shall consist of four toxicity tests, conducted at approximately two-week intervals, over an 12-week period.” (Staff Report at 58, para. 2F. 2.) Therefore, it is unclear exactly what the Revised Draft Policy is requiring and what the alternatives analysis is considering.

and would be subject to an affirmative defense in an enforcement action. (40 C.F.R. §122.41(n); *Weyerhaeuser Company v. Costle*, 590 F.2d. 1011, 1056 (D.C. Cir. 1978)(“Waste treatment facilities occasionally release excess pollutants due to such unusual events as plant start-up and shut-down, equipment failures, human mistakes, and natural disasters.”); *Marathon Oil v. EPA*, 564 F.2d 1253, 1273 (9th Cir. 1977)(concluding that a facility using proper technology operated in an exemplary fashion would not necessarily be able to comply with effluent limitations one hundred percent of the time)(emphasis added); *Natural Resources Defense Council, Inc. v. U.S.E.P.A.*, 859 F.2d at 206 (finding meritorious industry’s claim that EPA acted arbitrarily when it declined to provide an upset defense to WQBELs).)

Third, toxicity is not a pollutant, but an effect. Toxicity tests are merely diagnostic *tools* designed to identify the presence of potential toxicity and allow a discharger to investigate and, in the best case, ultimately identify the toxicant. Under the Revised Draft Policy, if a discharger conducts the TIE/TRE process and identifies the pollutant responsible for the toxicity, the discharger might be able to get a compliance schedule if a new effluent limitation is required to address the specific pollutant under the 2008 Compliance Schedule Policy. However, as noted above, each single toxicity test failure that occurs during the period of time that the TIE/TRE process is going on and while improvements are being implemented could continue to constitute a violation. The discharger could continue to accrue a record of chronic noncompliance even though it is doing everything required to identify and eliminate the toxicity in the shortest possible period of time. For these reasons, the Revised Draft Policy is unduly punitive, with no demonstrated corresponding water quality benefits.

Therefore, at a minimum, the Revised Draft Policy should specify that the Policy for Compliance Schedules in NPDES Permits (Resolution WQ 2008-0025) applies to all instances where a toxicity testing violation occurs and the discharger may need time to come into compliance.

5. *The Proposed Policy Conflicts With Federal Law*

A. Reasonable Potential

Federal regulations specify that an effluent limit for toxicity is required where there is “the reasonable potential to cause, or contribute to an **in-stream excursion** above the numeric criterion for whole effluent toxicity.” (40 C.F.R. §122.44(d)(1)(iv).) As noted above, the record is devoid of any evidence demonstrating the linkage between a single toxicity test failure and in-stream effects. Yet the Revised Draft Policy automatically assumes reasonable potential for toxicity for major (greater than 1 mgd) POTWs and requires numeric effluent limitations for all major POTWs. The stated justification for this requirement is wholly inadequate: “Because POTWs accept a steady voluminous flow of effluent from a variety of municipal discharges containing numerous unknown constituents, these facilities harbor the potential to adversely affect aquatic biota.” (Staff Report at p. 50; *but see contra* Revised Draft Policy at 32 (characterizing POTW discharges where “effluent flow and quality remains somewhat steady, changing little over time unless alterations in the treatment process occur” and “relatively static effluent conditions”).)

The Staff Report’s generalization applies equally to all pollutant specific parameters, as the very nature of public sewer systems is that it is not possible to control every input to the system. In addition, this statement could apply equally to other categories of discharges, including

stormwater, which are not being regulated the same way. Moreover, this simplistic statement fails to take into account the history of toxicity testing, differences in the types of users served by a POTW, whether the POTW has implemented a pretreatment program, and whether the POTW has a robust source control and pollution prevention program.

The Revised Draft Policy would arbitrarily impose numeric effluent limitations on major POTWs without following the federal rules. The federal regulations do not use the nature of POTW influents as a basis to exclude POTWs from the reasonable potential regulations that apply to all other dischargers. The Staff Report does not adequately analyze application of reasonable potential methods for POTWs. While acknowledging that the methods contained in the EPA's Technical Support Document for Water Quality-Based Toxics Control (TSD) are "accurate and comprehensive," staff dismisses them because they "would require a substantial amount of time and resources" for Water Board staff. (Staff Report at 50, para. 3.) Similarly, the TST method for determining reasonable potential, which relies on initial toxicity testing to determine the need for limits is described as "highly accurate," yet major POTWs are categorically excluded from this initial screening step. (*Id.* at para. 5.) For these reasons, the automatic presumption of reasonable potential must be removed from the Revised Draft Policy.

B. Numeric Effluent Limitations

The Revised Draft Policy requires numeric effluent limits when such limits are not required by federal or state law. (See *Communities for a Better Environment (CBE) v. State Board/Tesoro*, 109 Cal.App.4th 1089, 1103–07 (2003); State Board Order No. WQ 91-03, 1991 WL 135460, at 12; 40 C.F.R. § 122.44(k); see also 40 C.F.R. §122.44(d)(1)(v).) As the State Water Board itself has acknowledged in the context of 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 I Sediment Quality (July 18, 2008), Appendix E*, at p. 68.) Thus, the narrative approach recommended by the Associations is appropriate and legally sound, and should be the preferred alternative under the Revised Draft Policy.

C. Maximum Daily Effluent Limitations

Federal regulations specify that "all permit effluent limitations" for POTWs shall be stated as average monthly and average weekly limitations unless impracticable." (40 C.F.R. § 122.45(d)(2)(emphasis added).) Yet, the Revised Draft Policy specifies that *all* effluent limitations, including those for POTWs, imposed pursuant to the Policy are to be expressed as maximum daily effluent limitations (MDELs) and median monthly effluent limitations (MMELs). The only justification for this departure from the federal rule to allow MMELs is that monthly average limits would be "impracticable using the TST statistical method, because the primary output of the approach is a non-numeric result of 'pass' or 'fail'." (Revised Draft Policy at 7, n.1.) No justification is given for the MDEL.

MDELs are not justified because a single discharge of toxic effluent has not been demonstrated to cause an in-stream excursion of water quality objective and to impact aquatic life. Thus, the proposal to include MDELs is not supported with adequate findings and evidence, and is flawed for several reasons. First, as noted above, no evidence links a failure of a toxicity test with in-stream effects. Second, no need for such limits is provided and any purported need is disproved

by current practices among the regional water boards. Effluent triggers for toxicity based on Basin Plan narrative toxicity objectives have routinely been implemented as monthly medians with no evidence of receiving water toxic effects as a result. The Staff Report’s alternative analysis is lacking since there is no consideration of an alternative using just longer term average limits. (See Staff Report at 52-54 (No consideration of monthly and weekly average limits for POTWs, or just MMELs due to impracticability of applying a daily limit to a test that takes up to 9 days (67 Fed. Reg. 69953 (2002 Final WET Rule)) (“short term methods for estimating chronic toxicity [] use longer durations of exposure (up to nine days) to ascertain the adverse effects of an effluent or receiving water on survival, growth and/or reproduction of the organisms.”).)

6. *Numeric Effluent Limitations Are Not Required and Narrative Limits Will be Protective.*

The law is clear that effluent limitations need not be numeric. (See *Communities for a Better Environment (CBE) v. State Board/Tesoro*, 109 Cal.App.4th 1089, 1103–07 (2003); State Board Order No. WQ 91-03, 1991 WL 135460, at 12; 40 C.F.R. §122.44(k).) Under the *CBE* case, the appellate court specifically held that the federal regulation at “section 122.44(d) does not require a numeric WQBEL [water quality based effluent limitation].” (*CBE*, 109 Cal.App.4th at 1104.) The Court in *CBE* further held:

“We see nothing in the regulation which mandates numeric WQBELs in all circumstances. The definition of ‘effluent limitation’ in the CWA refers to ‘any restriction,’ does not specify that the limitation must be numeric, and provides that an effluent limitation may be a schedule of compliance. (33 U.S.C. 1362(11).) Moreover, section 122.44(k)(3) permits non-numeric WQBELs where numeric ones are not feasible.”²⁷ (*Id.*)

Therefore, the Associations fundamentally disagree with the proposal to significantly shift the regulation of toxicity from a narrative trigger approach to a numeric effluent limit approach.

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 as recently as in a 2009 order, amended in 2012. (See *accord In the Matter of the Own Motion Review of City of Lodi Waste Discharge Requirements*, Order WQ 2009-0005 as revised by Order WQ 2012-0001, 2012 WL 566321 at *16 (February 07, 2012) (citing “precedential decision in Water Quality Order 2008-0008 (City of Davis), adopted on September 2, 2008.) In that order, the Board concluded that a numeric effluent limitation for chronic toxicity was not appropriate in the permit under review, but that the permit had to include a narrative effluent limitation for chronic toxicity.”.) Narrative toxicity requirements were also included in the recent Pesticide Applicator permit (See *Statewide NPDES Permit for Biological and Residual Pesticide Discharges to Waters of the United States from Vector Control Applications*, Water Quality Order No. 2012-0003-DWQ, General Permit No.

²⁷ A good argument exists that numeric chronic toxicity requirements are infeasible particularly where they have a guaranteed percentage of non-compliance. “Infeasible” is defined as “not capable of being accomplished in a successful manner within a reasonable period of time, taking into account, environmental, legal, social, and technological factors.” SIP at Appendix 1-3.

CAG 990004, (Amending Water Quality Order No. 2011-0002-DWQ), 2012 WL 1520326 at *8 (April 3, 2012) (includes a narrative Receiving Water Limitation for toxicity and acute and chronic toxicity testing requirements for residual pesticides of concern.) No demonstration has been made that a numeric chronic toxicity limitation is now suddenly appropriate, and no justification exists for treating POTWs more stringently than entities applying pesticides, designed to cause toxicity, directly to receiving waters.

A WET regulatory strategy that employs narrative toxicity objectives with multiple test numeric triggers for POTWs has been implemented throughout the state for years with no evidence of receiving water toxic effects as a result. The use of multiple test triggers would satisfy the State Water Board's goals of establishing a consistent and enforceable objective that will be effective in identifying discharges that could have adverse toxic effects in receiving waters. Continuing the narrative limit/numeric trigger approach will also, through enforceable permit requirements, require the investigations necessary to identify and control the chemical constituents causing the toxicity in such discharges and provide incentives for permit holders to be responsive and timely.

As such, the Associations support and request the following approach:

- The narrative objectives should be implemented using the EC/IC25 (point estimates) method as recommended in the methods promulgated by EPA. As noted above, the newly proposed TST is not part of any approved or even formally proposed EPA method and, therefore is not compliant with EPA regulations.
- A two-phased trigger should be used for accelerated chronic toxicity monitoring as follows:
 - 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.
 - 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.

- The trigger approach is superior to the violation approach as dischargers have more incentive to avoid being in violation. The current approach throws dischargers into immediate violation with no way to rehabilitate and avoid such classification and the penalties/lawsuits that will inevitably follow.

Numerous opportunities for enforcement would still exist as an enforceable violation of the permit would occur if the discharger did any of the following:

- Failed to conduct the required toxicity tests at the required times and/or frequencies,
- Failed to timely report any toxicity test results,
- Failed to perform accelerated testing after exceeding the accelerated testing trigger,
- Failed to conduct accelerated testing at minimum required frequencies (every two weeks),
- Failed to prepare and submit an initial TRE Work Plan within 90 days after permit issuance,
- Failed to amend TRE Work Plan as requested by Regional Board after review,
- Failed to initiate TRE Work Plan when TRE trigger was exceeded, and
- Failed 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 Revised Draft Policy and Staff Report.

The two-phased trigger approach outlined above will be equally effective in providing an early warning of potential effluent toxicity as the Revised Draft Policy, and is a better approach to the ultimate goal of avoiding adverse impacts from persistent toxicity. Our recommended approach focuses discharger and Water Board resources on identifying and addressing the causes of persistent toxicity that could adversely affect receiving waters. Those toxicants would then be regulated with pollutant-specific effluent limitations.

Further, with regard to compliance incentives, the narrative approach will actually be more effective than the numeric alternatives, in that a discharger who responds promptly and undertakes the required implementation steps can avoid a violation, whereas under the numeric approaches proposed in the Revised Draft Policy, the discharger will be in violation as soon as the numeric limit is exceeded, without regard to its good faith efforts to identify and address the causes of the toxicity.

7. The Proposed Policy Adversely Impacts Small Communities

In addition, our Associations remain concerned that the Revised Draft Policy will impose a disproportionate economic burden on smaller wastewater agencies, given the high costs of conducting the required toxicity testing and TREs, and the increase in monitoring frequency for many small communities. The Revised Draft Policy requires routine chronic testing **monthly** for

all POTWs over 1 mgd and **quarterly** for all POTWs under 1 mgd (average dry weather flow) except for those considered to be economically disadvantaged. (Revised Draft Policy at 8-9.) Each chronic toxicity test costs approximately \$1,000, a TRE is estimated to cost \$40,000 (conservatively and without including implementation of specific control actions),²⁸ and the Revised Draft Policy significantly increases the number of tests required for many small POTWs.

Many smaller agencies are currently required to test once per permit cycle, or at most once per year, for toxicity. To address these concerns, we recommend the following alternative approach:

- If reasonable potential (RP) for POTWs is assumed for larger discharges over our objections,²⁹ we recommend that the threshold for this presumption (which implies automatic applicability of effluent limitations for chronic toxicity) be raised from 1 mgd to 5 mgd. This is consistent with the discharge level used by EPA as a threshold for the requirement of industrial pretreatment programs.
- The criteria for determining RP should be adjusted from the proposed 10% effects level to a 25% effect level, which represents the RMD.
- Routine toxicity monitoring should be modified to annually for POTWs smaller than 1 mgd, and quarterly for POTWs between 1 and 5 mgd.
- Under the Revised Draft Policy, RP is forever. Once an effluent limitation has been imposed in an NPDES permit, no mechanism exists in the Revised Draft Policy for the effluent limitation to be reconsidered, no matter how many “clean” tests the POTW has reported. For all POTWs, and particularly those under 5 mgd, the Regional Boards should be required to reassess RP each permit cycle (just as they do for chemical-specific effluent limitations).

These proposed changes are consistent with other State Water Board policies which address small community concerns including the Board’s *Water Quality Enforcement Policy* (May 20, 2010) (Enforcement Policy) and Resolution No. 2008-0048, *Promoting Strategies to Assist Small and/or Disadvantaged Communities with Wastewater Needs* (July 1, 2008). The Enforcement Policy recognizes that “complying with environmental laws and regulations will require higher per capita expenditures in small communities than in large communities.” (Enforcement Policy, p. 3.) As a result of this recognition combined with the significant costs associated with traditional water quality enforcement practices, the Enforcement Policy eases enforcement burdens on all small communities, not just those that are disadvantaged. (*Ibid.*) Specifically, the Enforcement Policy generally directs that informal enforcement or compliance assistance be the first steps taken to return a facility serving a small community to compliance.

²⁸ See Abt Associates, *Economic Considerations of Proposed Whole Effluent Toxicity Control Policy for California*, June 2012 at 4-10 (“Abt Report”).

²⁹ As discussed in our detailed comments, reasonable potential should not be presumed for any size discharger, as this is inconsistent with federal law. Only those dischargers that have demonstrated RP should receive effluent limitations for chronic toxicity. See 40 C.F.R. § 122.44(d)(1)(iv); EPA NPDES Permit Writers Manual at 6-38, EPA-833-K-10-001 (Sept. 2010).

(*Ibid.*) Resolution No. 2008-0048 also recognizes that small communities, not just those that are economically disadvantaged, lack economies of scale and the funding necessary for compliance with water quality regulations. Therefore, Resolution No. 2008-0048 directs Board staff to take certain actions related easing the financial burdens of regulatory compliance.

8. *The Alternatives Analysis and CEQA Checklist Are Inaccurate and Lacking in Detail.*

The Revised Draft Policy is founded on perceived water quality benefits from assessing and controlling toxicity, even though no evidence in the record substantiates these claimed benefits. It is likely that in some cases, the only available alternative for compliance will be construction of additional advanced treatment facilities, such as reverse osmosis. This is acknowledged in the economic analyses done for the Revised Draft Policy, which states that reverse osmosis or other control technologies may be required for some pollutants causing toxicity (*see* SAIC Economic Analysis at 5-7; Abt Associates, *Economic Considerations of Proposed Whole Effluent Toxicity Control Policy for California*, June 2012, at 4-11.) Yet, the checklist concludes there is “no impact” to air, greenhouse gases, noise, and public services, or from the construction of new wastewater or stormwater treatment facilities. (*See* Staff Report at 69, 71, 74, 75, 76.) This checklist must be revised to address the environmental impacts of construction as well as the significant adverse environmental impacts that arise from the operation of these treatment technologies, including higher energy consumption, greenhouse gas generation, and the potential need to dispose of highly concentrated residual brines.

The Staff Report’s CEQA analysis also fails to acknowledge the State Water Board has substantial discretion as to how to regulate the discharges for toxicity and the failure to consider all potential impacts of its policy choices renders these proceedings an abuse of discretion. (*Valley Advocates v. City of Fresno* (2008) 160 Cal.App.4th 1039, 1063 (“CEQA’s policy of promoting informed decisionmaking leads to the conclusion that a prejudicial abuse of discretion occurs when a public agency is misinformed regarding its discretionary authority and, as a result, does not actually choose whether to exercise that discretionary authority.”))

The Revised Draft Policy chooses an inappropriate baseline since the starting point for an adequate environmental analysis relies on an adequate project description. (*City of Redlands v. County of San Bernardino* (2002) 96 Cal.App.4th 398, 406 (“An accurate and complete project description is necessary for an intelligent evaluation of the potential environmental impacts of the agency’s action.”).) The “project” must be interpreted broadly in order to protect the environment. (*National Parks & Conservation Assn. v. County of Riverside* (1996) 42 Cal.App.4th 1505, 1514.) In other words, the project must include not just the State Water Board’s policy choices and ultimate decision, but also the physical improvements that the dischargers will have to make to comply with the new rules.

The Staff Report and environmental checklist fail to describe any of the physical improvements that the dischargers would undertake to comply with the new rules. These are part of the project, and must be included. CEQA requires a detailed analysis of potential environmental impacts. (*Friends of Sierra Madre v. City of Sierra Madre* (2001) 25 Cal. 4th 165, 184, 185.)

The CEQA checklist fails to discuss and analyze any significant cumulative impacts. (Staff Report at 77-80; CEQA Guidelines § 15130(a).) The checklist fails to list past, present, and probable future projects to address toxicity that could have cumulative impacts, nor does it

discuss another planning document describing or evaluating conditions contributing to any cumulative effects. (CEQA Guidelines § 15130(b).) In fact, the checklist (as well as the economic analysis discussed more below) improperly avoids discussion of cumulative impacts by relying on future project-level CEQA review. This ignores the potentially cumulative nature of this program’s impacts, which have not been analyzed “in connection with... the effects of probable future projects.” (CEQA Guidelines § 15065(a)(3).) Indeed, there is no real analysis—or even identification—of other past, present, and future projects that the Revised Draft Policy that could have cumulative impacts. (See Staff Report at 77-79 (calling all such projects “purely speculative.”).) Such a “conclusory statement ‘unsupported by empirical or experimental data, scientific authorities, or explanation of any kind’ not only fails to crystallize issues but ‘affords no basis for a comparison of the problems involved with the proposed project and the difficulties involved in the alternatives.’” (*Whitman v. Bd of Supervisors* (1979) 88 Cal. App. 3d 397, 411 (citations omitted).) Cumulative impact discussion that is “but a conclusion utterly devoid of any reasoned analysis” is insufficient. (*Id.*)

The alternatives analysis is similarly lacking. The Staff Report provides its recommendations for the alternatives considered (which the Associations do not believe are sufficiently comprehensive³⁰), but fails to provide support for its recommendations. Both the range of alternatives and level of analysis in this Staff Report are inadequate. The Staff Report provides no explanation of the staff’s reasons for selecting the considered alternatives. (CEQA Guidelines § 15126.6(c).) The Staff Report should identify all alternatives that were considered, but were rejected as infeasible during the scoping process, and explain why they were rejected. (*Id.*) The Staff Report fails to do this, and merely sets forth a “Recommendation” to “Adopt” a particular alternative.

This action does not include “sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project.” (CEQA Guidelines § 15126.6(d) (emphasis added); *Save Round Valley Alliance v. County of Inyo* (2007) 157 Cal. App. 4th 1437, 1457 (citation omitted) (“If an alternative is identified as at least potentially feasible, an indepth discussion is required.”).) The Staff Report also fails to contain a quantitative and comparative analysis of alternatives. (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal. App. 3d 692, 735.) For all of these reasons, the environmental review and CEQA checklist are inadequate and unlawful.

9. The Water Code Section 13241 and Economic Analyses Are Inadequate.

The Revised Draft Policy includes new numeric water quality objectives for toxicity, as well as new permit effluent limitations. The Water Boards are “under an affirmative duty to consider economics when adopting water quality objectives.” (Memorandum to Regional Water Board Executive Officers from William R. Attwater, Chief Counsel, Jan. 4, 1994 at p. 1.) The Water Code requires that objectives be reasonable; “economic considerations are a necessary part of the determination of reasonableness.” (*Id.* at p. 3.) The economic assessment requires a determination of the following factors:

- Whether the objective is currently being attained;

³⁰ See, e.g., *Watsonville Pilots Ass’n v. City of Watsonville* (2010) 183 Cal. App. 4th 1059, 1087 (an environmental review will be found legally inadequate if it contains an overly narrow range of alternatives).

- What methods are available to achieve compliance with the objective, if it is not currently being attained;
- The costs of those methods. (*Id* at p. 1.)

The analysis in support of the Revised Draft Policy does not satisfy the requirements of Water Code sections 13241 and 13263. For one thing, the analysis lacks a determination that the objectives are currently being attained. In addition, there are no citations to facts or evidence to support any conclusions made. (*See* Staff Report at 63-64). The law requires adequate consideration of *all* 13241 factors; the decision must demonstrate a rational connection between those factors, the choice made, and the purposes of the Porter Cologne Water Quality Control Act. (*Id.* at 5; *see also California Hotel & Motel Assn v Industrial Welfare Commission*, 25 Cal 3rd 200, 212 (1979).

Further, the economic analysis that is relied upon in the Staff Report may be obsolete, as the analysis must have been conducted on a *prior draft version* of the policy, which was different than the current version of the Revised Draft Policy. Further, the economic analysis significantly underestimates the cost impacts of the Revised Draft Policy. The only costs considered are those for monitoring (which are incomplete); the economic analysis fails to consider costs of compliance, including treatment, or the costs associated with unnecessary enforcement, or citizen suit penalties. All of these costs need to be considered as they are all above the current baseline condition.

While it may be true in the most general sense that “end-of-pipe treatment can be costly, making dischargers most likely to first pursue lower cost options such as process optimization and pollution prevention (e.g., chemical substitution and pretreatment modifications)” (Abt Report at 4-11³¹), no evidence has been provided that these types of improvements will be sufficient to comply with the proposed objectives given the inherent 5% false toxicity determination percentage. The State Water Board must consider the costs of all compliance methods available.

An assessment of treatment technologies was not undertaken because the treatment needed is “highly site-specific” or “due to a lack of site-specific data.” (SAIC Economic Analysis at 7; Abt Report at 4-11.) While it may be difficult to identify treatment needs and therefore the costs, there are methods for estimating and evaluating the potential costs that should at least be discussed and considered. It is not sufficient to summarily dismiss the possibility of additional treatment costs due to the site-specific nature of toxicity. For example, during the State Water Board’s evidentiary hearing regarding the City of Vacaville’s permit, CASA presented expert testimony regarding the unit cost and unit energy requirements for the use of advanced wastewater treatment facilities to address specific pollutants that might pose compliance issues for POTWs discharging to inland surface waters in California. At a minimum, the economic

³¹ The Abt Report is too limited by only considering incremental expenditures associated with the Revised Draft Policy (Abt Report at 1-2), and also relies on incorrect or unproven and unsupported assumptions, such as “most major dischargers have effluent limitations and/or monitoring requirements for acute and chronic toxicity in their NPDES permit” (*id.* at 2-5), “minor dischargers are not as likely as majors to discharge toxic pollutants in toxic amounts” (*id.* at 4-1), “assumed dischargers will only receive chronic toxicity monitoring requirements [not for acute]” (*id.* at 4-5), “assumed that accelerated monitoring would indicate the need for a TRE” (*ibid.*); “assumed that incremental costs associated with the addition of replicates would be minimal” (*ibid.*) and on data that is 4-6 years old (*id.* at 4-4).

analysis should discuss the costs and energy demands of the most likely treatment technologies to be employed to address toxicity and estimate the percentage of facilities that will be required to implement these technologies statewide.

In addition, because the Revised Draft Policy prescribes permit requirements more stringent than required by federal law (e.g., daily limits for POTWs, automatic reasonable potential, numeric objectives and limits), the State Water Board is also obligated to do a Water Code section 13263 analysis. (*See accord City of Burbank v. SWRCB*, 35 Cal. 4th 613 (2005).)

10. The Peer Review Process Employed by the State Water Board was Inadequate.

Under California Health and Safety Code section 57004, the State Water Board has obligations to provide peer review of the scientific basis and portions of any rule or regulation. While the State Water Board did conduct a peer review, it is not clear that this peer review was conducted in accordance with section 57004's requirements, and agency guidance (*see* <http://www.calepa.ca.gov/publications/Reports/PEERRVW.PDF>, http://www.waterboards.ca.gov/water_issues/programs/peer_review/docs/rb1_klamath_river/peer_review_guide_010709.pdf and http://www.swrcb.ca.gov/water_issues/programs/peer_review/).

First, it is not clear that the peer reviewers reviewed all portions of the Revised Draft Policy that include a "scientific basis" or "scientific portions" as defined by H&S Code section 57004(a)(2). It is also not clear that the peer reviewers met the requirements of section 57004(b). The State Water Board gave the peer reviewers only particular sections of the policy for them to review and provide their feedback and comments (*see* http://www.swrcb.ca.gov/water_issues/programs/peer_review/docs/calif_toxicity_policy/attachment_2.pdf.) These sections of the policy did not include key scientific portions of the policy, including, but not limited to, the validity of the numeric objectives or effluent limitations. In addition, the way the sections were described by the water board staff may have inserted bias into the process.

In addition, the validity of the peer review process is called into question by the fact that the Policy was revised from the version that went to the peer reviewers *after the review process occurred*. (*Compare* http://www.swrcb.ca.gov/water_issues/programs/peer_review/docs/calif_toxicity_policy/draft_toxicity_policy_pr.pdf to http://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/draft_tox_policy_0612.pdf .) Thus, the current version was not peer reviewed. By way of example of the changes, the proposed monthly limit was changed from a monthly average (AMEL) to a monthly median (MMEL) *after* the peer review.

Finally, as pointed out above, the peer reviewers missed serious mathematical errors in the Revised Draft Policy that may have adversely affected their recommendations had these errors been found. For these reasons, the Associations believe that the peer review process should not be substantially relied upon to justify adoption of the Revised Draft Policy.