

Attachment A

USEPA Washington D.C. Memo dated June 18, 2010

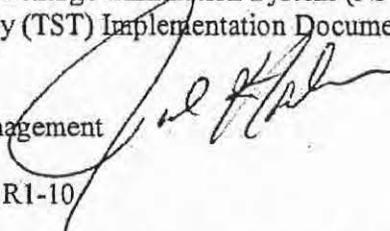


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN 18 2010

OFFICE OF
WATER

SUBJECT: Final National Pollutant Discharge Elimination System (NPDES)
Test of Significant Toxicity (TST) Implementation Document

FROM: James Hanlon, Director
Office of Wastewater Management 

TO: Water Division Directors, R1-10

The purpose of this memorandum is to transmit to you a copy of the final guidance document, "National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document" (EPA 833-R-10-003). This document provides an additional recommended statistical approach for analyzing WET test data used for whole effluent toxicity (WET) reasonable potential determinations and NPDES permit compliance.

EPA developed the TST approach to provide an additional scientifically valid, statistical application for assessing WET hypothesis test data. The TST assesses the measurement of toxic impacts from effluent on specific test organisms' ability to survive, grow, and reproduce and is based on research and peer-reviewed publications. The TST examines whether there is a biologically significant difference defined as the measured difference which has a detrimental effect on aquatic organisms to thrive and survive when compared against the normal condition (i.e., a control). Using a WET test, this biologically significant difference is the comparison between an effluent's in-stream waste concentration (IWC), as specified in the permit, and the control. The TST recommendations advance the applied science of the NPDES WET Program by addressing both the false negative and false positive error rates which have been a concern for both permitting authorities and permittees. We believe the TST approach addresses these false negative and positive concerns and provides an incentive to NPDES permittees to provide valid, high quality WET test data to enhance NPDES WET reasonable potential and permit compliance determinations.

The TST document was externally peer reviewed according to EPA's requirements and after addressing the peer review comments the document was sent out to EPA Regions and States for their review. Comments received from EPA Regions and States were addressed and, where appropriate, revisions were incorporated into the final document.

The TST approach does not preclude the use of existing recommendations for assessing WET data provided in EPA's 1991 Water Quality-based Technical Support Document (TSD) which remain valid for use by EPA Regions and the States.

To compliment your understanding of the attached final TST document, we have scheduled a second webcast on Wednesday, July 14, 2010, from 1:00 to 2:00 P.M. (EST). This webcast will provide an introduction to TST, including an overview of its scope and context; how the TST should be implemented; advantages of the TST over other statistical approaches; and conceptual examples demonstrating the TST application. Please watch for an E-mail with additional details about how to participate in the webcast. If you have questions, please contact Laura Phillips (phillips.laura@epa.gov, 202-564-0741) of my staff.

Attachment (1)

Cc: Mark Pollins, WED/OCE/OECA
Debra Denton, R9
Regional Branch Chiefs, R1-10
EPA WET Coordinators, R1-10

Attachment B

**State Water Resources Control Board Letter
on 40 CFR 136 WET Method
dated May 14, 2015**



EDMUND G. BROWN JR.
GOVERNOR



MATTHEW RODRIGUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

State Water Resources Control Board

May 14, 2015

Water Docket, Environmental Protection Agency
Attention: Docket ID # EPA-HQ-OW-2014-0797
Mail code: 4203M, 1200 Pennsylvania Ave. NW.
Washington, DC 20460

State Water Resources Control Board (State Water Board) staff would like to thank the United States Environmental Protection Agency (U.S. EPA) for the opportunity to comment on the "Clean Water Act Methods Update Rule for the Analysis of Effluent." This letter will focus exclusively on the proposed revisions to *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition*, *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, and *Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, Third Edition* (collectively: toxicity method manuals).

State Water Board staff supports the clarifying edits and updates proposed for the toxicity method manuals. In addition, State Water Board staff is requesting a revision to the five-concentration minimum required for all toxicity test methods in order to comport with the U.S. EPA's newest statistical approach, the Test of Significant Toxicity (TST), as it statistically compares only the instream waste concentration and a control.

The benefits of the TST approach have been lauded by numerous academicians. The five peer reviewers selected in a blind fashion for U.S. EPA's peer review process agreed that the TST's bioequivalence approach is sound, and that the results of TST analyses are reasonable and defensible. The State Water Board also initiated a peer review focusing on the use of the TST approach in the draft *Policy for Toxicity Assessment and Control*. The two researchers, Dr. Gerald A. Le Blanc and Dr. Michael C. Newman, concluded that the TST is a "...major advance from the currently compromised No Observed Effects Concentration (NOEC) approach," and "...is statistically sound, reduces burden associated with the assays, and, by structuring the assay around a hypothesis of significant toxicity, provides incentive for precision in assay performance." In addition, four individual articles examining the TST approach have been published in two respected, peer-reviewed toxicological journals (Denton et al. 2011, Diamond et al. 2011, Zheng et al. 2012, Diamond et al. 2013), while the State Water Board published a report comparatively analyzing the results of over 3,000 toxicity tests using both the TST and "traditional" hypothesis approaches (State Water Board, 2011). Although this "Test Drive" analysis showed that the results of the NOEC and TST are generally the same, it is important to note that the TST correctly identified truly non-toxic samples more often than the NOEC did. Moreover, the NOEC failed to identify more truly toxic samples than the TST approach.

ELIJAH MARCUS, CHAIR | THOMAS HOWARD, EXECUTIVE DIRECTOR

1001 I Street, Sacramento, CA 95814 | Mailing Address: P.O. Box 100, Sacramento, CA 95812-0100 | www.waterboards.ca.gov

The TST approach is currently being used to implement Tribal and Territory NPDES permits issued by U.S. EPA Region 9, as well as the U.S. EPA Region 9 offshore oil and gas general permit (No. CAG280000). The State Water Board has included provisions requiring the use of the TST approach in the Caltrans general permit for storm water discharges (Order No. 2012-0011-DWQ), the NPDES permit issued to the US Department of the Navy's San Diego Naval base (Order No. R9-2013-0064), the San Diego Regional Water Quality Control Board's general permit for discharges from boatyards and boat maintenance and repair facilities (Order No. R9-2013-0026), and the NPDES permit issued to the US Department of the Navy's San Diego Naval base (Order No. R9-2013-0064). The TST approach has also been incorporated into several NPDES permits in Hawaii.

It is worth noting that the toxicity method manuals clearly state that the statistical approaches featured therein are merely recommendations. As such, requiring the use of five concentrations for TST analyses is inherently contradictory. Therefore, State Water Board staff is suggesting the addition of the following language (in red) to the "Test Concentration" requirement in the toxicity method manuals' "Summary of Test Conditions" tables:

Effluents:	5 and a control (required minimum for LOEC and NOEC endpoints, and point estimates) 1 and a control (required minimum for TST)
Receiving Water:	100% receiving water (or minimum of 5) and a control (recommended)

In addition to the inclusion of the *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* in the "Cited References" section, State Water Board staff believes it would also be helpful to update the sections of the toxicity method manuals that discuss "pass/fail" tests with the following language (in red):

With the exception of the Test of Significant Toxicity (TST), Use of pass/fail tests consisting of a single effluent concentration (e.g., the receiving water concentration or RWC) and a control is not recommended. If the NPDES permit has a whole effluent toxicity limit for acute toxicity at the RWC, it is prudent to use that permit limit as the midpoint of a series of five effluent concentrations for the LOEC and NOEC endpoints, and for point estimates. This will ensure that there is sufficient information on the dose-response relationship. For example, the effluent concentrations utilized in a test may be: (1) 100% effluent, (2) $(RWC + 100)/2$, (3) RWC, (4) $RWC/2$, and (5) $RWC/4$. More specifically, if the RWC = 50%, appropriate effluent concentrations may be 100%, 75%, 50%, 25%, and 12.5%. Guidance for the TST approach is provided in the National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (USEPA 2010).

These minor revisions will eliminate the extremely wasteful practice of utilizing five test concentrations for TST analyses while greatly improving regulatory interpretation.

Sincerely,


 Greg Gearheart, Director
 Office of Information Management and Analysis


 Rik Rasmussen, Chief
 Total Maximum Daily Load Section


 Rich Breuer, Assistant Deputy Director
 Office of Information Management and Analysis


 Zane Poulson, Chief
 Inland Planning Standards and Implementation Unit

References:

Denton DL, Diamond JM, Zheng L. 2011. Test of Significant Toxicity: A Statistical Application for Assessing Whether an Effluent or Site Water is Truly Toxic. *Environmental Toxicology and Chemistry*. DOI: 10.1002/etc.493.

<http://onlinelibrary.wiley.com/doi/10.1002/etc.493/full>

Diamond JM, Denton DL, Roberts Jr. JW, Zheng L. 2013. Evaluation of the Test of Significant Toxicity for Determining the Toxicity of Effluents and Ambient Water Samples. *Environmental Toxicology and Chemistry*. DOI: 10.1002/etc.2166.

<http://onlinelibrary.wiley.com/doi/10.1002/etc.2166/full>

Diamond J, Denton D, Anderson B, Phillips B. 2011. It is time for changes in the analysis of whole effluent toxicity data. *Integrated Environmental Assessment and Management*. DOI: 10.1002/ieam.278.

<http://onlinelibrary.wiley.com/doi/10.1002/ieam.278/full>

Regional Water Quality Control Board, San Diego Region. 2013. General Waste Discharge Requirements for Discharges from Boatyards and Boat Maintenance and Repair Facilities Adjacent to Surface Waters within the San Diego Region. Order No. R9-2013-0026.

http://www.waterboards.ca.gov/sandiego/board_decisions/adopted_orders/2013/R9-2013-0026.pdf

Regional Water Quality Control Board, San Diego Region. 2013. Waste Discharge Requirements for the United States Department of the Navy Naval Base, San Diego Complex, San Diego County. Order No. R9-2013-0064.

http://www.waterboards.ca.gov/sandiego/board_decisions/adopted_orders/2013/R9-2013-0064.pdf

State Water Resources Control Board. 2011. Effluent, Stormwater, and Ambient Toxicity Test Drive Analysis of the Test of Significant Toxicity (TST).

http://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/final_testdrive.pdf

State Water Resources Control Board. 2012a. Policy for Toxicity Assessment and Control, Public Review Draft.

http://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/draft_tox_policy_0612.pdf

State Water Resources Control Board. 2012b. National Pollutant Discharge Elimination System (NPDES) Statewide Storm Water Permit Waste Discharge Requirements (WDRS) for State of California Department of Transportation. Order No. 2012-0011-DWQ.

http://www.swrcb.ca.gov/board_decisions/adopted_orders/water_quality/2012/wqo2012_0011_dwq.pdf

State Water Resources Control Board peer review:

Gerald A. LeBlanc, PhD

http://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/gerald_leblanc_review.pdf

Michael C. Newman, PhD

http://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/michael_newman_review.pdf

U.S. Environmental Protection Agency. 2010. National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document. EPA 833-R-10-004.

<http://www.epa.gov/npdespub/pubs/tst-techdoc.pdf>

U.S. Environmental Protection Agency. 2012. Authorization to Discharge Under The National Pollutant Discharge Elimination System for Oil and Gas Exploration, Development, and Production Facilities. General Permit No. CAG280000.

<http://www.epa.gov/region9/water/npdes/pdf/ocs-general-permit2012.pdf>

U.S. Environmental Protection Agency peer review:

http://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/tst_peerreview.pdf

Zheng L, Diamond JM, Denton DL. 2012. Evaluation of whole effluent toxicity data characteristics and use of Welch's t-test in the Test of Significant Toxicity analysis.

<http://www.ncbi.nlm.nih.gov/pubmed/23172744>

Attachment C

**USEPA Region IX
ATP Withdrawal Letter dated February 11, 2015**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

February 11, 2015

Renee Spears
Senior Environmental Scientist Specialist-QA Officer
Office of Information Management & Analysis
State Water Resources Control Board
1001 I Street, 16-39D- Sacramento, CA 95814
P.O. Box 100- Sacramento, CA 95812

Dear Ms. Spears:

This letter addresses the EPA Region 9 Quality Assurance Office's March 17, 2014 approval of the State of California's request to use an Alternate Test Procedure (ATP), authorizing the use of two concentrations in lieu of the five concentrations plus a control specified in the WET test methods, when using the Test of Significant Toxicity (TST) statistical approach. EPA is withdrawing the approval of the Limited Use ATP, effective immediately, for a number of reasons. Please note that at this time, California's February 12, 2014 ATP request is no longer pending before EPA and should the State wish to pursue such an ATP, a new ATP application would be required.

As you may know, the March 17, 2014 Limited Use ATP approval was challenged in the U.S. Eastern District Court of California in June 2014 by the Southern California Alliance of Publicly Owned Treatment Works (SCAP) and Central Valley Clean Water Association (CVCWA). As a result of the litigation, EPA has become aware of issues related to the State of California's February 12, 2014 request as well as EPA Region 9's approval. First, we note that the State's request cited 40 C.F.R. § 136.4, which describes the process for *nationwide* ATP approvals, rather than 40 C.F.R. § 136.5 for a Limited Use ATP. While we continue to believe this was a simple error, we acknowledge that it has created uncertainty and confusion among the regulated community.

Second, there is currently pending a proposed rulemaking to revise the ATP regulations at 40 C.F.R. Part 136. Please see <http://water.epa.gov/scitech/methods/cwa/mur2015.cfm>. The EPA Administrator signed a proposed rule on February 5, 2015, relevant portions of which are attached. One element of that rulemaking is a proposal to correct an inadvertent error in the 40 C.F.R. § 136.5 regulatory language regarding Limited Use ATPs. In revising 40 C.F.R. § 136.5 in 2012, EPA had inadvertently included the phrase "or permitting authority" after each instance that the phrase "Regional Alternate Test Procedure Coordinator" or "Regional ATP Coordinator" appears in Section 136.5. The effect of this inadvertent inclusion was to authorize State

permitting authorities to approve ATPs. This was not EPA's intention, and EPA has now proposed to delete the phrase "or permitting authority" from Section 136.5. It is EPA's position that the inadvertent error is not implicated in its approval decision here, but plaintiffs have raised arguments regarding the phrase "permitting authority" in Section 136.5. To the extent this error has created uncertainty in regards to the appropriateness of the March 17, 2014 ATP approval, EPA believes it is appropriate to withdraw that approval. However, withdrawal of the approval does not affect any aspect of the regulations at 40 C.F.R. Part 136 but concerns only the State's February 12, 2014 ATP request.

Third, plaintiffs have raised concerns with respect to the administrative record for the ATP approval. In light of some of the issues raised by plaintiffs, EPA has concluded that it is appropriate to withdraw its ATP approval. If you have any questions regarding this action, please contact me at (415) 972-3411.

Sincerely,

A handwritten signature in cursive script that reads "Eugenia McNaughton".

Eugenia McNaughton, Ph.D.
Manager, Quality Assurance Office

Cc: Rich Breuer

J. Clarifications/Corrections to ATP Procedures in 40 CFR 136.4, 136.5 and Allowed Modifications in 136.6

40 CFR 136.4 and 136.5 describe EPA procedures for obtaining approval to use an alternate test procedures either on a national basis, or for limited use by dischargers or facilities specified in the approval. In the 2012 Method Update Rule, EPA made several clarifying changes to the language of these sections. At the same time, however, in many places in 40 CFR 136.4 and 136.5 where the phrase “Regional Alternate Test Procedures Coordinator” or “Regional ATP Coordinator” appears, EPA inadvertently also inserted the phrase “or permitting authority” following the phrase. This error resulted from the use of the “search and replace” function on the computer. The effect of the change was to inadvertently authorize *State* permitting authorities to approve ATPs for limited use within the State. EPA never intended this result as is demonstrated by two facts. First, in its proposal for the 2012 Update, EPA did not propose to authorize State NPDES permitting authorities to approve limited use ATPs. Second, the rule states that the approval may be restricted to specific dischargers or facilities, or to all dischargers or facilities “specified in the approval *for the Region.*” (emphasis added). This language evidences EPA’s intent that the Region – not the state – would be authorized to issue any such limited use ATP approval. Finally, as further evidence of EPA’s intent, in several places, the text of the rule makes more sense if read to authorize only the Regional ATP Coordinator, and not the State permitting authority, to approve limited use ATPs. For example, 40 CFR 136.5(d)(1) provides as follows:

“After a review of the application by the Alternate Test Procedure Regional ATP Coordinator or permitting authority, the Regional ATP Coordinator or permitting

authority notifies the applicant and the appropriate State agency of approval or rejection of the use of the alternate test procedure....”

As currently written, if the State is acting on a request for approval, the regulation would require the State to inform itself of its own action in approving or rejecting the ATP, a somewhat superfluous requirement.

Consequently, EPA proposes to delete all instances of “or permitting authority” from 40 CFR 136.4 and 136.5 to correct this error and revise the rule text to its original intent. Based on this revision, EPA and EPA alone would have the authority to approve limited use ATPs.

EPA also proposes changes to 40 CFR 136.4 and 136.5 to clarify the process for nationwide approval and the Regional ATP Coordinator’s role in limited use ATP approvals. These changes do not significantly change the process, the intent is to make wording simpler and clearer.

Finally, EPA proposes to add language to 40 CFR 136.6(b)(1) to clarify that if a method user is uncertain whether or not a modification is allowed under 40 CFR 136.6, the user should contact either its Director or EPA Regional ATP Coordinator.

K. Changes to Appendix B to 40 CFR part 136 - Definition and Procedure for the Determination of the MDL

EPA proposes revisions to the procedure for determination of the MDL primarily to address laboratory blank contamination and to better account for intra-laboratory variability. EPA’s consideration of revisions to the MDL procedure for this rulemaking is specific to these revisions, and other changes to the procedure are outside the scope of this action. The proposed changes originated from The National Environmental Laboratory Accreditation Conference

5. Section 136.4 is amended by revising paragraphs (a) introductory text, (b), and (c) to read as follows:

§ 136.4 Application for and approval of alternate test procedures for nationwide use.

(a) A written application for review of an alternate test procedure (alternate method) for nationwide use may be made by letter via email or by hard copy in triplicate to the National Alternate Test Procedure (ATP) Program Coordinator (National Coordinator), Office of Science and Technology (4303T), Office of Water, U.S. Environmental Protection Agency, 1200 Pennsylvania Ave. NW, Washington, DC 20460. Any application for an ATP under this paragraph (a) shall:

* * * * *

(b) The National Coordinator may request additional information and analyses from the applicant in order to evaluate whether the alternate test procedure satisfies the applicable requirements of this part.

(c) Approval for nationwide use.

(1) After a review of the application and any additional analyses requested from the applicant, the National Coordinator will notify the applicant, in writing, of whether the National Coordinator will recommend approval or disapproval of the alternate test procedure for nationwide use in CWA programs. If the application is not recommended for approval, the National Coordinator may specify what additional information might lead to a reconsideration of the application and notify the Regional Alternate Test Procedure Coordinators of the disapproval recommendation. Based on the National Coordinator's recommended disapproval of a proposed alternate test procedure and an assessment of any current approvals for limited uses for the

unapproved method, the Regional ATP Coordinator may decide to withdraw approval of the method for limited use in the Region.

(2) Where the National Coordinator has recommended approval of an applicant's request for nationwide use of an alternate test procedure, the National Coordinator will notify the applicant. The National Coordinator will also notify the Regional ATP Coordinators that they may consider approval of this alternate test procedure for limited use in their Regions based on the information and data provided in the application until the alternate test procedure is approved by publication in a final rule in the Federal Register.

(3) EPA will propose to amend 40 CFR part 136 to include the alternate test procedure in §136.3. EPA shall make available for review all the factual bases for its proposal, including the method, any performance data submitted by the applicant and any available EPA analysis of those data.

(4) Following public comment, EPA shall publish in the FEDERAL REGISTER a final decision on whether to amend 40 CFR part 136 to include the alternate test procedure as an approved analytical method for nationwide use.

(5) Whenever the National Coordinator has recommended approval of an applicant's ATP request for nationwide use, any person may request an approval of the method for limited use under §136.5 from the EPA Region.

6. Section 136.5 is amended by revising paragraphs (a), (b), (c), and (d) to read as follows:

§136.5 Approval of alternate test procedures for limited use.

(a) Any person may request the Regional ATP Coordinator to approve the use of an alternate test procedure in the Region.

(b) When the request for the use of an alternate test procedure concerns use in a State with an NPDES permit program approved pursuant to section 402 of the Act, the requestor shall first submit an application for limited use to the Director of the State agency having responsibility for issuance of NPDES permits within such State (i.e., permitting authority). The Director will forward the application to the Regional ATP Coordinator with a recommendation for or against approval.

(c) Any application for approval of an alternate test procedure for limited use may be made by letter via email or by hard copy. The application shall include the following:

(1) Provide the name and address of the applicant and the applicable ID number of the existing or pending permit(s) and issuing agency for which use of the alternate test procedure is requested, and the discharge serial number.

* * * * *

(d) Approval for limited use. (1) The Regional ATP Coordinator will review the application and notify the applicant and the appropriate State agency of approval or rejection of the use of the alternate test procedure. The approval may be restricted to use only with respect to a specific discharge or facility (and its laboratory) or, at the discretion of the Regional ATP Coordinator, to all dischargers or facilities (and their associated laboratories) specified in the approval for the Region. If the application is not approved, the Regional ATP Coordinator shall specify what additional information might lead to a reconsideration of the application.

(2) The Regional ATP Coordinator will forward a copy of every approval and rejection notification to the National Alternate Test Procedure Coordinator.

7. In Section §136.6:

Clean Water Act Methods Update Rule for the Analysis of Effluent

List of Subjects in 40 CFR part 136

Environmental protection, Incorporation by reference, Reporting and recordkeeping requirements, Test procedures, Water pollution control.

Dated:

FEB 05 2015



Gina McCarthy, Administrator.

Attachment D:

**TMDL for Toxicity, Chlorpyrifos, and Diazinon in Calleguas Creek,
its Tributaries, and Mugu Lagoon
(Toxicity TMDL)**

Attachment A to Resolution No. R4-2005-009

Amendment to the Water Quality Control Plan – Los Angeles Region

to Incorporate the

Total Maximum Daily Load for Toxicity, Chlorpyrifos, and Diazinon in the Calleguas Creek, its Tributaries and Mugu Lagoon

Adopted by the California Regional Water Quality Control Board, Los Angeles Region on 7 July, 2005.

Amendments

Table of Contents

Add:

Chapter 7. Total Maximum Daily Loads (TMDLs)

7- Calleguas Creek Watershed Toxicity TMDL

List of Figures, Tables, and Inserts

Add:

Chapter 7. Total Maximum Daily Loads (TMDLs)

Tables

7-16 Calleguas Creek Watershed Toxicity TMDL

7-16.1. Calleguas Creek Watershed Toxicity TMDL: Elements

7-16.2. Calleguas Creek Watershed Toxicity TMDL: Implementation Schedule

**Chapter 7. Total Maximum Daily Loads (TMDLs)
Calleguas Creek Watershed Toxicity TMDL**

This TMDL was adopted by:

The Regional Water Quality Control Board on July 7, 2005.

This TMDL was approved by:

The State Water Resources Control Board on September 22, 2005.

The Office of Administrative Law on December 22, 2005.

The U.S. Environmental Protection Agency on March 14, 2006.

July 7, 2005

Table 7-16.1. Calleguas Creek Watershed Toxicity TMDL: Elements

TMDL Element	Calleguas Creek Watershed Toxicity TMDL																		
Problem Statement	<p>Discharge of wastes containing chlorpyrifos, diazinon, other pesticides and/or other toxicants to Calleguas Creek, its tributaries and Mugu Lagoon cause exceedances of water quality objectives for toxicity established in the Basin Plan. Elevated levels of chlorpyrifos have been found in fish tissue samples collected from a segment of Calleguas Creek. Chlorpyrifos and diazinon are organophosphate pesticides used in both agricultural and urban settings. Excessive chlorpyrifos and diazinon can cause aquatic life toxicity in inland surface and estuarine waters such as Calleguas Creek and Mugu Lagoon. The California 2002 303(d) list of impaired waterbodies includes listings for “water column toxicity,” “sediment toxicity,” chlorpyrifos in fish tissue,” and “organophosphate pesticides in water” for various reaches of Calleguas Creek, its tributaries and Mugu Lagoon.</p>																		
Numeric Targets	<p>A water column toxicity target of 1.0 toxicity unit – chronic (1.0 TU_C) is established to address toxicity in reaches where the toxicant has not been identified through a Toxicity Identification Evaluation (TIE) (unknown toxicity).</p> <p>TU_C = Toxicity Unit Chronic = 100/NOEC (no observable effects concentration)</p> <p>A sediment toxicity target was defined in the technical report for reaches where the sediment toxicant has not been identified through a TIE. The target is based on the definition of a toxic sediment sample as defined by the September 2004 Water Quality Control Policy For Developing California’s Clean Water Act Section 303(d) List (SWRCB).</p> <p>Chlorpyrifos Numeric Targets (ug/L)</p> <table border="0" style="margin-left: 40px;"> <thead> <tr> <th></th> <th style="text-align: center;">Chronic (4 day average)</th> <th style="text-align: center;">Acute (1 hour average)</th> </tr> </thead> <tbody> <tr> <td>Freshwater</td> <td style="text-align: center;">0.014</td> <td style="text-align: center;">0.025</td> </tr> <tr> <td>Saltwater (Mugu Lagoon)</td> <td style="text-align: center;">0.009</td> <td style="text-align: center;">0.02</td> </tr> </tbody> </table> <p>Diazinon Numeric Targets (ug/L)</p> <table border="0" style="margin-left: 40px;"> <thead> <tr> <th></th> <th style="text-align: center;">Chronic (4 day average)</th> <th style="text-align: center;">Acute (1 hour average)</th> </tr> </thead> <tbody> <tr> <td>Freshwater</td> <td style="text-align: center;">0.10</td> <td style="text-align: center;">0.10</td> </tr> <tr> <td>Saltwater (Mugu Lagoon)</td> <td style="text-align: center;">0.40</td> <td style="text-align: center;">0.82</td> </tr> </tbody> </table>		Chronic (4 day average)	Acute (1 hour average)	Freshwater	0.014	0.025	Saltwater (Mugu Lagoon)	0.009	0.02		Chronic (4 day average)	Acute (1 hour average)	Freshwater	0.10	0.10	Saltwater (Mugu Lagoon)	0.40	0.82
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Freshwater	0.10	0.10																	
Saltwater (Mugu Lagoon)	0.40	0.82																	

TMDL Element	Calleguas Creek Watershed Toxicity TMDL																														
	<p>Additionally, the diazinon criteria selected as numeric targets are currently under review by the USEPA. If water quality objectives become available, the Regional Board may reconsider this TMDL and revise the water toxicity numeric target.</p>																														
<p>Source Analysis</p>	<p>Source analysis determined that agricultural and urban uses are the largest sources of chlorpyrifos and diazinon in the watershed. Urban use of diazinon and chlorpyrifos is unlikely to be a long-term source to the Calleguas Creek Watershed (CCW) as both of these pesticides have been banned for sale for non-agricultural uses on December 31, 2005 by federal regulation. As a result, the proportion of the loading from urban sources will likely decrease after December 2005.</p> <p>Chlorpyrifos – Sources by Use</p> <table border="0" data-bbox="532 831 1312 1003"> <thead> <tr> <th></th> <th>Dry Weather</th> <th>Wet Weather</th> </tr> </thead> <tbody> <tr> <td>Agriculture</td> <td>66%</td> <td>80%</td> </tr> <tr> <td>Urban</td> <td>23%</td> <td>20%</td> </tr> <tr> <td>POTW</td> <td>11%</td> <td><1%</td> </tr> <tr> <td>Other</td> <td><1%</td> <td><1%</td> </tr> </tbody> </table> <p>Diazinon – Sources by Use</p> <table border="0" data-bbox="532 1146 1312 1318"> <thead> <tr> <th></th> <th>Dry Weather</th> <th>Wet Weather</th> </tr> </thead> <tbody> <tr> <td>Agriculture</td> <td>30%</td> <td>1%</td> </tr> <tr> <td>Urban</td> <td>13%</td> <td>62%</td> </tr> <tr> <td>POTW</td> <td>57%</td> <td>37%</td> </tr> <tr> <td>Other</td> <td><1%</td> <td><1%</td> </tr> </tbody> </table>		Dry Weather	Wet Weather	Agriculture	66%	80%	Urban	23%	20%	POTW	11%	<1%	Other	<1%	<1%		Dry Weather	Wet Weather	Agriculture	30%	1%	Urban	13%	62%	POTW	57%	37%	Other	<1%	<1%
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<p>Linkage Analysis</p>	<p>Water quality modeling established the linkage of sources of chlorpyrifos and diazinon in the CCW to observed water quality data. The linkage analysis qualitatively describes the connection between water column concentrations and sediment and fish tissue concentrations. The qualitative analysis demonstrates that the water column analysis conducted by laboratories implicitly includes sediment associated diazinon and chlorpyrifos loads transported to receiving waters as almost all water quality data do not differentiate between dissolved and particulate fractions. The linkage analysis assumes a reduction in water column concentrations will result in a reduction in fish tissue as chlorpyrifos in freshwater fish tissue rapidly depurate within several days of removal from exposure. Additionally, as chlorpyrifos preferentially binds to sediment the linkage analysis suggests that sediment concentrations of</p>																														

TMDL Element	Calleguas Creek Watershed Toxicity TMDL																																																										
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<p>Wasteload Allocations (WLA)</p>	<p><u>Major point sources:</u></p> <p>A wasteload of 1.0 TU_c is allocated to the major point sources (POTWs) discharging to the Calleguas Creek Watershed.</p> <p>Additionally, the following wasteloads for chlorpyrifos and diazinon are established and based on the numeric target for POTWs. The concentration based wasteload allocations for Camarillo and Camrosa WRPs for chlorpyrifos is reduced by a 5% margin of safety from the numeric targets. This margin of safety is applied to the Calleguas Creek and Revelon subwatersheds based on uncertainty in the linkages between the water column criteria and fish tissue and sediment concentrations.</p> <p><u>Chlorpyrifos WLAs, ug/L</u></p> <table border="1" data-bbox="529 1077 1364 1312"> <thead> <tr> <th rowspan="2">POTW</th> <th colspan="2">Interim WLA</th> <th colspan="2">Final WLA</th> </tr> <tr> <th>Chronic (4 day)</th> <th>Acute (1hour)</th> <th>Chronic (4 day)</th> <th>Chronic (4 day)</th> </tr> </thead> <tbody> <tr> <td>Hill Canyon WWTP</td> <td>0.030</td> <td>0.025</td> <td>0.025</td> <td>0.014</td> </tr> <tr> <td>Simi Valley WQCP</td> <td>0.030</td> <td>0.025</td> <td>0.025</td> <td>0.014</td> </tr> <tr> <td>Ventura County (Moorpark) WTP</td> <td>0.030</td> <td>0.025</td> <td>0.025</td> <td>0.014</td> </tr> <tr> <td>Camarillo WRP</td> <td>0.030</td> <td>0.024</td> <td>0.024</td> <td>0.0133</td> </tr> <tr> <td>Camrosa WRP</td> <td>0.030</td> <td>0.024</td> <td>0.024</td> <td>0.0133</td> </tr> </tbody> </table> <p><u>Diazinon WLAs, ug/L</u></p> <table border="1" data-bbox="529 1419 1364 1682"> <thead> <tr> <th rowspan="2">POTW</th> <th>Interim Acute (1 hour)</th> <th>Interim Chronic (4 day)</th> <th>Final WLA (Acute or Chronic)</th> </tr> </thead> <tbody> <tr> <td>Hill Canyon WWTP</td> <td>0.567</td> <td>0.312</td> <td>0.10</td> </tr> <tr> <td>Simi Valley WQCP</td> <td>0.567</td> <td>0.312</td> <td>0.10</td> </tr> <tr> <td>Ventura County (Morepark) WTP</td> <td>0.567</td> <td>0.312</td> <td>0.10</td> </tr> <tr> <td>Camarillo WRP</td> <td>0.567</td> <td>0.312</td> <td>0.10</td> </tr> <tr> <td>Camrosa WRP</td> <td>0.567</td> <td>0.312</td> <td>0.10</td> </tr> </tbody> </table> <p>A wasteload of 1.0 TU_c is allocated to Urban Stormwater Co-Permittees (MS4) discharges to the Calleguas Creek Watershed.</p> <p>Additionally, the following wasteloads for chlorpyrifos and</p>	POTW	Interim WLA		Final WLA		Chronic (4 day)	Acute (1hour)	Chronic (4 day)	Chronic (4 day)	Hill Canyon WWTP	0.030	0.025	0.025	0.014	Simi Valley WQCP	0.030	0.025	0.025	0.014	Ventura County (Moorpark) WTP	0.030	0.025	0.025	0.014	Camarillo WRP	0.030	0.024	0.024	0.0133	Camrosa WRP	0.030	0.024	0.024	0.0133	POTW	Interim Acute (1 hour)	Interim Chronic (4 day)	Final WLA (Acute or Chronic)	Hill Canyon WWTP	0.567	0.312	0.10	Simi Valley WQCP	0.567	0.312	0.10	Ventura County (Morepark) WTP	0.567	0.312	0.10	Camarillo WRP	0.567	0.312	0.10	Camrosa WRP	0.567	0.312	0.10
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Margin of Safety	<p>In addition to the implicit margin of safety achieved by conservative assumptions and by using a concentration based TMDL, an explicit margin of safety of 5% has been added to the targets for chlorpyrifos in the Calleguas and Revelon subwatersheds and to the Camarillo and Camrosa WRPs to address uncertainty in the linkages between the water column criteria and fish tissue and sediment concentrations. The Calleguas and Revelon subwatersheds include those reaches listed for sediment toxicity and chlorpyrifos in fish tissue.</p>																																													
Future Growth	<p>Ventura County accounts for slightly more than 2% of the state's residents with a population of 753,197 (US Census Bureau, 2000). GIS analysis of the 2000 census data yields a population estimate of 334,000 for the CCW, which equals about 44% of the county population. According to the Southern California Association of Governments (SCAG), growth in Ventura County averaged about 51% per decade from 1900-2000; with growth exceeding 70% in the 1920s, 1950s, and 1960s. The phase-out of chlorpyrifos and diazinon is expected to reduce loads from urban and POTWs significantly by 2007. Use of diazinon in agriculture has declined considerably between 1998 and 2003. Conversely, chlorpyrifos use in agriculture has remained relatively stable over the same period.</p>																																													

TMDL Element	Calleguas Creek Watershed Toxicity TMDL
	<p>The phase out of chlorpyrifos and diazinon as well as population growth will cause an increase in the use of replacement pesticides (e.g. pyrethroids) in the urban environment and may have an impact on water and/or sediment toxicity. Additionally, population growth may affect an increase in the levels of chlorpyrifos and diazinon loading in the CCW from imported products which contain residues of these pesticides.</p>
<p>Critical Conditions</p>	<p>The critical condition in this TMDL is defined as the flowrate at which the model calculated the greatest in-stream diazinon or chlorpyrifos concentration in comparison to the appropriate criterion. The critical condition for chlorpyrifos was in dry weather based on a chronic numeric target; the critical condition for diazinon was in wet weather based on an acute numeric target except in Mugu Lagoon where it was in dry weather based on the chronic numeric target.</p>
<p>Implementation Plan</p>	<p>WLAs established for the major points sources, including POTWs in the CCW will be implemented through NPDES permit effluent limits. The final WLAs will be included in NPDES permits in accordance with the compliance schedules provided. The Regional Board may revise these WLAs based on additional information as described in the Special Studies and Monitoring Section of the Technical Report.</p> <p>The toxicity WLAs will be implemented in accordance with US EPA, State Board and Regional Board resolutions, guidance and policy at the time of permit issuance or renewal. Currently, these WLAs would be implemented as a trigger for initiation of the TRE/TIE process as outlined in USEPA's "Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System Program" (2000) and current NPDES permits held by dischargers to the CCW.</p> <p>Stormwater WLAs will be incorporated into the NPDES permit as receiving water limits measured in-stream at the base of each subwatershed and will be achieved through the implementation of BMPs as outlined below. Evaluation of progress of the TMDL will be determined through the measurement of in-stream water quality and sediment at the base of each of the CCW subwatersheds. The Regional Board may revise these WLAs based on additional information developed through special studies and/or monitoring conducted as part of the TMDL.</p>

TMDL Element	Calleguas Creek Watershed Toxicity TMDL
	<p>As shown in Table 7-16.2 the following implementation actions will be taken by the MS4s discharging to the CCW and POTWs located in the CCW:</p> <ul style="list-style-type: none"> ▪ Plan, develop, and implement an urban pesticides public education program; ▪ Plan, develop, and implement urban pesticide education and chlorpyrifos and diazinon collection program; ▪ Study diazinon and chlorpyrifos replacement pesticides for use in the urban environment; and, ▪ Conduct environmental monitoring as outlined in the Monitoring Plan and NPDES Permits. <p>LAs for chlorpyrifos and diazinon will be implemented through the State’s Nonpoint Source Pollution Control Program (NPSPCP), nonpoint source pollution (i.e. Load Allocations). The LARWQCB is currently developing a Conditional Waiver for Irrigated Lands. Once adopted, the Conditional Waiver Program will implement allocations and attain numeric targets of this TMDL. Compliance with LAs will be measured at the monitoring sites approved by the Executive Officer of the Regional Board through the monitoring program developed as part of the Conditional Waiver, or through a monitoring program that is required by this TMDL.</p> <p>The toxicity LAs will be implemented in accordance with US EPA, State Board and Regional Board resolutions, guidance and policy at the time of permit or waiver issuance or renewal.</p> <p>The following implementation actions will be taken by agriculture dischargers located in the CCW:</p> <ul style="list-style-type: none"> ▪ Enroll for coverage under a waiver of waste discharge requirements for irrigated lands; ▪ Implement monitoring required by this TMDL and the Conditional Waiver program; ▪ Complete studies to determine the most appropriate BMPs given crop type, pesticide, site specific conditions, as well as the critical condition defined in the development of the LAs; and, ▪ Implement appropriate BMPs and monitor to evaluate effectiveness on in-stream water and sediment quality. <p>The Regional Board may revise this TMDL based on monitoring data and special studies of this TMDL. If the Regional Board revises NPDES permits or the Basin Plan to use other methods of evaluating toxicity or if other information supporting other methods</p>

TMDL Element	Calleguas Creek Watershed Toxicity TMDL
	becomes available, the Regional Board may reconsider this TMDL and revise the water toxicity numeric target. Additionally, the development of sediment quality guidelines or criteria and other water quality criteria revisions may call for the reevaluation of the TMDL. The Implementation Plan includes this provision for reevaluating the TMDL to consider sediment quality guidelines or criteria and revised water quality objectives and the results of implementation studies, if appropriate.

Table 7-16.2. Overall Implementation Schedule for Calleguas Creek Watershed Toxicity TMDL

Implementation Action		Responsible Party	Date
1	Interim chlorpyrifos and diazinon waste-load allocations apply. ¹	POTW permittees and MS4 Copermittees	Effective date ²
2	Interim chlorpyrifos and diazinon load allocations apply. ¹	Agricultural Dischargers	Effective date ²
3	Finalize and submit workplan for integrated Calleguas Creek Watershed Monitoring Program for approval by the Regional Board Executive Officer. ³	POTW permittees, MS4 Copermittees, and Agricultural Dischargers	6 months after effective date of amendment ²
4	Initiate Calleguas Creek Watershed Toxicity TMDL Monitoring Program developed under Task 3 workplan.	POTW permittees, MS4 Copermittees, and Agricultural Dischargers	6 months after E.O. approval of Monitoring Program (task 3) workplan.
5	Conduct Special Study #1-Investigate the pesticides that will replace diazinon and chlorpyrifos in the urban environment, their potential impact on receiving waters, and potential control measures.	POTW permittees and MS4 Copermittees	2 years after effective date ²
6	Conduct Special Study #2 – Consider results of monitoring of sediment concentrations by source/land use type through special study required in Special Study #1 of the OC Pesticides, PCBs and siltation TMDL Implementation Plan. If the special study is not completed through the OC Pesticides, PCBs and Siltation TMDL no consideration is necessary ³	Agricultural Dischargers ³ and MS4 Copermittees	6 months after completion of CCW OC Pesticides, PCBs and Siltation TMDL sediment concentrations special study. ²
7	Develop and implement collection program for diazinon and chlorpyrifos and an educational program. Collection and education could occur through existing programs such as household hazardous waste collection events	POTW permittees and MS4 Copermittees	3 years after effective date ²
8	Develop an Agricultural Water Quality Management Plan in conjunction with the Conditional Waiver for Irrigated Lands, or (if the Conditional Waiver is not adopted in a timely manner) develop an Agricultural Water Quality Management Plan as part of the Calleguas Creek WMP.	Agricultural Dischargers ³	3 years after effective date ²
9	Identify the most appropriate BMPs given crop type, pesticide, site specific conditions, as well as the critical condition defined in the development of the LAs.	Agricultural Dischargers ³	3 years after effective date ²
10	Implement educational program on BMPs identified in the Agricultural Water Quality Management Plan.	Agricultural Dischargers	1 year after E.O. approval of Plan (Task 7) ²
11	Conduct Special Study #3-Calculation of sediment transport rates in CCW. Consider findings of transport	Agricultural Dischargers ³ and	6 months after completion of CCW OC Pesticides,

¹ Interim WLAs and LAs are effective immediately upon TMDL adoption. WLAs will be placed in POTW NPDES permits as effluent limits. WLAs will be placed in stormwater NPDES permits as in-stream limits. LAs will be implemented using applicable regulatory mechanisms.

² Effective date of this TMDL.

³ The Regional Board regulatory programs addressing all discharges in effect at the time an implementation task is due may contain requirements substantially similar to the requirements of an implementation task. If such a requirement is in place in another regulatory program including other TMDLs, the Executive Officer may determine that such other requirements satisfy the requirements of an implementation task of the TMDL and thereby coordinate this TMDL implementation plan with other regulatory programs.

Implementation Action	Responsible Party	Date
rates developed through Special Study #1 of the OC Pesticides, PCBs and siltation TMDL Implementation Plan. If the special study is not completed through the OCs TMDL, no consideration is necessary. ³	MS4 Copermittees	PCBa and Siltation TMDL sediment transport special study. ²
12 Begin implementation of BMPs.	Agricultural Dischargers ³	1 year after E.O. approval of Plan (Task 8) ²
13 Evaluate effectiveness of BMPs.	Agricultural Dischargers ³	3 years after E.O. approval of Plan (Task 8) ²
14 Reevaluate the TMDLs, interim or final WLAs and LAs, and implementation schedule based on monitoring data and on the results of Implementation Actions 1-13 and if sediment guidelines are promulgated, or water quality criteria are revised, and/or if targets are achieved without attainment of WLAs or LAs.	Stakeholders and Regional Board	2 years after the submittal of information necessary to reevaluate the TMDL
15 Achievement of Final WLAs	POTW permittees and MS4 Copermittees	2 years after the effective date of the TMDL ²
16 Achievement of Final LAs	Agricultural Dischargers	10 years after the effective date of the TMDL ²



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street

San Francisco, CA 94105-3901

June 4, 2015

Mr. David Hung
California Regional Water Quality Control Board
Los Angeles Region
320 4th Street, Suite 200
Los Angeles, CA 90013

Re: Camarillo Water Reclamation Plant (NPDES No. CA0053597)
Camrosa Water Reclamation Facility (NPDES No. CA0059501)
Hill Canyon Wastewater Treatment Plant (NPDES No. CA0056294)
Pomona Water Reclamation Plant (NPDES No. CA0053619)
Simi Valley Water Quality Control Plant (NPDES No. CA0055221)
Whittier Narrows Water Reclamation Plant (NPDES No. CA0053716)

Dear Mr. Hung:

Thank you for the opportunity to review and comment on the public notice draft NPDES permit modifications for the above referenced permits. We strongly support adoption of the proposed revisions to the chronic toxicity requirements in these permits.

EPA is pleased that the subject modified draft permits continue to plainly require effluent limits on chronic whole effluent toxicity (WET), where there is reasonable potential. EPA agrees with the Regional Water Board's previous decision to use numeric chronic WET WQBELs for these permits, which are feasible to calculate for the discharges. As a result, the permits comport with the Clean Water Act and NPDES regulations. [CWA sections 301(b)(1)(C) and 502(11), 40 CFR 122.44(d)(1)(i) and (v) and 40 CFR 122.45(d).] Moreover, EPA supports the inclusion of both monthly and daily WQBELs for chronic toxicity, as the Regional Water Board has determined that such limits are necessary to protect against highly toxic short-term peaks of acute or chronic toxicity that exceed the applicable toxicity water quality standard.

It is critical that permitting authorities explicitly choose and identify the statistical approach that will be used to protect their narrative toxicity water quality standard and interpret toxicity test results required by NPDES permits. Your Board has chosen to measure chronic toxicity for compliance reporting with the Test of Significant Toxicity (TST) bioequivalence statistical t-test approach used to determine if two sets of observations—made for the effluent's instream waste concentration (IWC) and the control concentration—are different. The proposed modifications ensure that the subject permits, reissued over the past year, contain standardized transparent, clearly expressed, enforceable requirements for chronic WET.

It is within this context that we continue to strongly support the permit language updating Order section VII.J and associated fact sheet language, to result in consistency across all non-

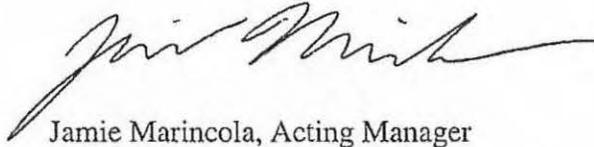
ocean POTW permits with chronic toxicity WQBELs expressed in terms of the TST. This provision specifies the compliance evaluation and reporting requirements for chronic toxicity data expressed using the TST and assures compliance with the multi-concentration test design requirement for NPDES effluents found in EPA's 2002 toxicity test methods. Also, it assures that—following EPA's 2002 toxicity test methods—the concentration-response pattern will be reviewed, as appropriate. On this point, we note that the National Organization of Clean Water Agencies (NACWA) has previously submitted comments critical of some of the POTW permits you have recently issued. Bearing this in mind, we wish to draw your attention to a January 2006 white paper by NACWA, page 10, which states: "The [toxicity] methods do not specifically state that a permittee may invalidate a [toxicity] test purely on the basis of the concentration-response relationship. However, NACWA believes that, in the context of a full Data Quality Objectives program, the testing laboratory and the clean water agency should consider a test invalid if an adequate relationship is not present." This position places NACWA and its member agencies holding this position squarely at odds with EPA's 2002 toxicity test methods rule and preamble regarding the proper role of concentration-response pattern reviews. After statistical analysis of the biological data, concentration-response pattern review specified by EPA plays a role limited to specific instructions for determining that particular statistical endpoints—NOECs, LC50s, and IC25s—are interpreted appropriately.

It remains EPA's position that the determination of toxicity is not based on achieving a specified concentration-response pattern. As a result, we concur with the proposed modifications to permit fact sheets, which correctly state that the appropriate interpretation of effluent (or receiving water) sample measurement results from the TST statistical approach is, by design, independent from the concentration-response patterns of the toxicity tests for those samples. When using the TST, we agree that the application of EPA's 2000 concentration-response pattern review guidance will not improve the appropriate interpretation of a TST result, as long as your permits require use of EPA's toxicity test methods by which good QA/QC is demonstrated through ongoing evaluation and tracking of reference toxicant testing and measures (i.e., mean, standard deviation, and coefficient of variation) of control concentration performance.

Also, provision VII.J takes good steps to effectively address our concern that a laboratory's Standard Operating Procedures for chronic toxicity test data analysis and review can be used to improperly disqualify a test result. It is our position that applying EPA's 2000 concentration-response pattern review guidance and/or inapplicable NOEC/LOEC variability criteria (i.e., PMSDs) to the TST—an unrelated statistical approach—prior to reporting compliance will undercut the transparency of the reported toxicity result, shroud a potentially non-compliant result prior to reporting, and diminish the reliability and enforceability of the permit and its toxicity WQBELs. The three POTW permits you adopted in April 2015 took a large step toward addressing our ongoing observation that providing too much WET method flexibility on specific procedures has been a way for some NPDES permit holders to improperly disqualify test results. We support the inclusion of the proposed generic permit condition and fact sheet language that takes steps to ensure such practices will not be used for the proposed modified permits.

If you have questions regarding these comments, please call me at (415) 972-3520, or Robyn Stuber at (415) 972-3524.

Sincerely,

A handwritten signature in black ink, appearing to read "Jamie Marincola". The signature is fluid and cursive, with a long horizontal stroke at the end.

Jamie Marincola, Acting Manager
NPDES Permits Office (WTR-2-3)