

# 2018-2019 Permit Year

Ventura Countywide Stormwater Quality Management Program Annual Report Attachment D Monitoring Appendices H - K



County of Ventura Fillmore Moorpark Ojai Oxnard Port Hueneme Santa Paula Simi Valley Thousand Oaks Ventura Ventura

December 13, 2019

Appendix H. RWQCB Permission of Toxicity Species Substitution



### California Regional Water Quality Control Board

Los Angeles Region



Recipient of the 2001 Environmental Leadership Award from Keep California Beautiful

Linda S. Adams Agency Secretary 320 W. 4th Street, Suite 200, Los Angeles, California 90013 Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: http://www.waterboards.ca.gov/losangeles Arnold Schwarzenegger Governor

October 28, 2009

Ms. Norma Camacho, Director Ventura County Watershed Protection District 800 South Victoria Ave., L#1600 Ventura, CA 93009-1600 Certified Mail Return Receipt Requested Claim No. 7009 0820 0001 6811 7509

#### SUBJECT: TOXICITY TEST SPECIES SUBSTITUTION, VENTURA COUNTY MUNICIPAL SEPARATE STORM SEWER SYSTEM DISCHARGE (MS4) PERMIT (BOARD ORDER No. 09-0057; NPDES No. CAS004002)

Dear Ms. Camacho:

On October 14, 2009, the Regional Board staff received a request from the Ventura County Watershed Protection District (County) to substitute topsmelt, *Atherinops affinis*, with the inland silverside, *Menidia beryllina*, due to the unavailability of topsmelt from the supplier. After consultation with US EPA staff, Regional Board staff denied the request. On October 15, 2009, the Regional Board received an e-mail from the County, titled "Notification of toxicity exception - (species unavailable) Ventura County MS4 NPDES Permit Order No. 09-0057 (Monitoring Program)". The County's e-mail communication was submitted pursuant to requirements in subparts D.5 and D.8(b) of the Ventura County MS4 Permit's Monitoring Program (Monitoring Program), which requires an explanation of the circumstance with documentation when toxicity tests cannot be performed to comply with the requirements of this permit, and written authorization from the Regional Board Executive Officer to substitute test species.

In order to evaluate the appropriateness of substituting topsmelt, *Atherinops affinis*, with the inland silverside, *Menidia beryllina*, in toxicity testing at mass emissions stations in the future, the Regional Board requires the County to conduct comparative static renewal toxicity tests on both species as follows. During the next storm event of this permit year (2009-10) and the first storm event of next permit year (2010-11), the County shall conduct toxicity tests on both topsmelt, *Atherinops affinis*, and the inland silverside, *Menidia beryllina*, along with giant kelp, *Macrocystis pyrifera*, and the purple sea urchin, *Strongylocentrotus purpuratus*, pursuant to subpart D.8(a) of the Monitoring Program. The County shall submit the results of the comparative toxicity tests as part of its reporting requirements.

#### RECEIVED

California Environmental Protection Agency

NOV **5**2009

Ms. Norma Camacho, Director - 2 of 2 -Ventura County Watershed Protection District

In the event that topsmelt, *Atherinops affinis*, is unavailable for testing during future sampling events conducted under the Monitoring Program, the County shall follow the protocol set forth in subpart D.5 of the Monitoring Program. The County shall notify the Regional Board by phone and e-mail as soon as possible if a test species is unavailable. Notification shall be sent directly to me as well as Tracy Woods, Stormwater Permitting Unit, with a copy to Renee Purdy, Chief, Regional Programs Section. The County shall submit to the Regional Board documentation of species unavailability from both the County's contract lab and the contract lab's supplier at least 48 hours prior to the planned sampling event to provide adequate time for my staff to evaluate any request for species substitution. Any approval or denial of a request for species substitution must be authorized pursuant to subpart D.8(b) of the Monitoring Program.

If you have any questions, please contact me at (213) 576-6605, or Renee Purdy at (213) 576-6783.

Sincerely,

J. Egoscue. Executive Officer

cc: Mr. Bruce Fujimoto, Division of Water Quality, State Water Resources Control Board Mr. Gerhardt Hubner, Ventura County Watershed Protection District Mr. Arne Anselm, Ventura County Watershed Protection District

California Environmental Protection Agency

Appendix I. Aquatic Toxicity Testing Lab Results





December 21, 2018

Kelly Hahs Ventura County Watershed Protection District 800 South Victoria Ave., L#1610 Ventura, CA 93009

Kelly:

I have enclosed our report "Evaluation of the Toxicity of Ventura County Watershed Protection District Stormwater Samples" for the samples that were collected November 21, 22, and 29, 2018. The results of this testing are summarized below.

Toxicity summary for VCWPD mass emission station stormwater samples.							
	Toxicity Present Re	Toxicity Present Relative to the Lab Control treatment?					
Sample Station	Purple Urchin	Atherino	ps affinis				
	Fertilization	Survival	Growth				
ME-CC		no	no				
ME-SCR	no						
ME-VR2		no	no				
MO-HUE <sup>a</sup>		no	no				

a - This site is a major outfall station, and is tested using A. affinis when the salinity of the site water is >2 ppt.

Toxicity summary for VCWPD major outfall station stormwater samples.										
	Toxicity Present Relative to the Lab Control treatment?									
Sample Station	Selenastrum capricornutum	Ceriodapl	hnia dubia	Fathead	Minnow					
	Growth	Survival	Reproduction	Survival	Growth					
MO-CAM				YES	YES					
MO-OJA				YES	YES					
MO-MEI				no	YES					
MO-VEN		no	YES							
MO-OXN				no	YES					
MO-HUE		YES	YES							
MO-THO		no	no							
MO-MPK	no									
MO-SIM		no	no							
MO-FIL		no	YES							
MO-SPA				no <sup>a</sup>	YES <sup>a</sup>					

a - Pathogen-related mortality (PRM) was observed in this treatment.

#### Chronic Toxicity of VCWPD Stormwater to Purple Urchin Fertilization

There was <u>no</u> significant reduction in purple urchin fertilization in the ME-SCR stormwater sample.

#### Chronic Toxicity of VCWPD Stormwater to Atherinops affinis (Topsmelt)

There was <u>*no*</u> significant reduction in topsmelt survival or growth in any of the stormwater samples tested.

#### Chronic Toxicity of VCWPD Stormwater to Selenastrum capricornutum

There was <u>no</u> significant reduction in *S. capricornutum* growth in the MO-MPK stormwater sample.

#### Chronic Toxicity of VCWPD Stormwater to Ceriodaphnia dubia

There <u>was</u> a significant reduction in *C. dubia* survival in the MO-HUE stormwater sample; there was <u>no</u> significant reduction in *C. dubia* survival in any of the remaining stormwater samples. There was <u>no</u> significant reduction in *C. dubia* reproduction in the MO-THO and MO-SIM stormwater samples. However, there <u>was</u> a significant reduction in reproduction in the MO-VEN, MO-HUE, and MO-FIL stormwater samples. It must be noted that the elevated conductivity of the MO-HUE stormwater sample (~8500  $\mu$ S/cm) was well above the tolerance range for this species, and therefore is the likely cause of the observed toxicity.

#### **Chronic Toxicity of VCWPD Stormwater to Fathead Minnows**

There was <u>*no*</u> significant reduction in fathead minnow survival in the MO-MEI, MO-OXN, and MO-SPA stormwater samples; there <u>*was*</u> a significant reduction in survival in the MO-CAM and MO-OJA stormwater samples. There <u>*was*</u> a significant reduction in fathead minnow growth in all stormwater samples tested.

It is important to note that pathogen related mortalities (PRM) were observed in the MO-SPA sample. PRM is considered an artifact of the test methodology. PRM is well documented in the EPA guidelines (EPA-821-R-02-013) as caused by microorganisms, and it is acknowledged that PRM interferes with the toxicity evaluation. PRM was not observed in the Lab Control treatment, indicating that the source of pathogens was the ambient water sample. To resolve the observation of PRM in the affected samples, future testing could be performed following the protocol using 20 test replicates noted in the EPA testing manual.

If you have any questions regarding the performance and interpretation of these tests, feel free to contact me or my colleague Stephen Clark at (707) 207-7760.

Sincerely,

Stevi Vasquez Project Manager



Pacific EcoRisk is accredited in accordance with NELAP (ORELAP ID 4043). Pacific EcoRisk certifies that the test results reported herein conform to the most current NELAP requirements for parameters for which accreditation is required and available. Any exceptions to NELAP requirements are noted, where applicable, in the body of the report. This report shall not be reproduced, except in full, without the written consent of Pacific EcoRisk. This testing was performed under Lab Order 29434.

### Evaluation of the Toxicity of Ventura County Watershed Protection District Stormwater Samples

Samples collected November 21, 22, and 29, 2018

Prepared For:

Ventura County Watershed Protection District 800 South Victoria Ave., L#1610 Ventura, CA 93009

Prepared By:

Pacific EcoRisk 2250 Cordelia Road Fairfield, CA 94534

December 2018



Page

### Evaluation of the Toxicity of Ventura County Watershed Protection District Stormwater Samples

Samples collected November 21, 22, and 29, 2018

## **Table of Contents**

1. INTRODUCTION	1
2. CHRONIC TOXICITY TEST PROCEDURES	1
2.1 Sample Receipt and Handling	1
2.2 Echinoderm Fertilization Toxicity Testing with Strongylocentrotus purpuratus	2
2.3 Survival and Growth Toxicity Testing with Topsmelt (Atherinops affinis)	3
2.4 Algal Growth Toxicity Testing with Selenastrum capricornutum	4
2.5 Survival and Reproduction Toxicity Testing with Ceriodaphnia dubia	5
2.6 Survival and Growth Toxicity Testing with Larval Fathead Minnows	5
3. RESULTS	7
3.1 Effects of VCWPD Stormwater on Purple Urchin Fertilization	7
3.2 Effects of VCWPD Stormwater on Atherinops affinis	7
3.3 Effects of VCWPD Stormwater on Selenastrum capricornutum	8
3.4 Effects of VCWPD Stormwater on Ceriodaphnia dubia	8
3.5 Effects of VCWPD Stormwater on Fathead Minnows	9
4. AQUATIC TOXICITY DATA QUALITY CONTROL	10
4.1 Maintenance of Acceptable Test Conditions	10
4.2 Negative Control Testing	10
5. SUMMARY AND CONCLUSIONS	11

## Appendices

Appendix A	Chain-of-Custody Records for the Collection and Delivery of the VCWPD Samples
Appendix B	Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of the VCWPD Stormwater to Purple Urchin Fertilization
Appendix C	Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of the VCWPD Stormwater to <i>Atherinops affinis</i>
Appendix D	Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of the VCWPD Stormwater to <i>Selenastrum capricornutum</i>
Appendix E	Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of the VCWPD Stormwater to <i>Ceriodaphnia dubia</i>
Appendix F	Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of the VCWPD Stormwater to Fathead Minnows

### **1. INTRODUCTION**

Under contract to Ventura County Watershed Protection District, Pacific EcoRisk (PER) has been contracted to evaluate the toxicity of stormwater samples collected for the Ventura County Watershed Protection District (VCWPD). This evaluation consists of performing the following US EPA short-term chronic toxicity tests:

- echinoderm sperm fertilization test with the purple urchin, *Strongylocentrotus purpuratus*;
- 7-day survival and growth test with the topsmelt, Atherinops affinis;
- 96-hour algal growth test with the green alga, *Selenastrum capricornutum;*
- 3-brood survival and reproduction test with the crustacean, Ceriodaphnia dubia; and
- 7-day survival and growth test with larval fathead minnows (Pimephales promelas).

These toxicity tests were conducted on stormwater samples collected on November 21, 22, and 29, 2018. This report describes the performance and results of these tests.

### 2. CHRONIC TOXICITY TEST PROCEDURES

The methods used in conducting the chronic toxicity tests followed the guidance established by the following EPA manuals:

- "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms" (EPA/600/R-95/136); and
- "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013).

#### 2.1 Sample Receipt and Handling

On November 21-22, VCWPD staff collected stormwater samples from 11 stations into appropriately-cleaned containers; stormwater samples from three stations were collected on November 29. These samples were transported on ice and under chain-of-custody to the PER laboratory in Fairfield, CA. Upon receipt at the laboratory, aliquots of the water samples were collected for analysis of initial water quality characteristics (Tables 1a and 1b). The samples were then stored at 0-6°C except when being used to prepare test solutions. The chain-of-custody records for the collection and delivery of these samples are presented in Appendix A.

Table 1a. Initial water quality characteristics of the VCWPD mass emission station stormwater samples.									
Date Sample Received	Sample ID	Temp. (°C)	pН	D.O. (mg/L)	Conductivity (µS/cm)	Total Ammonia (mg/L N)			
11/23/18	ME-CC	0.0	7.79	10.3	1566	<1.0			
11/30/18	ME-SCR	0.5	7.51	7.1	2074	<1.0			
11/23/18	ME-VR2	0.0	7.83	10.6	1295	<1.0			

Table 1b.	Table 1b. Initial water quality characteristics of the VCWPD major outfall station stormwater samples.										
Date Sample Received	Sample ID	Temp. (°C)	pН	D.O. (mg/L)	Alkalinity (mg/L)	Hardness (mg/L)	Conductivity (µS/cm)	Total Ammonia (mg/L N)			
11/23/18	MO-CAM	0.0	7.16	10.9	68	163	600	2.2			
11/23/18	MO-OJA	0.0	7.23	10.4	32	83	377	2.3			
11/23/18	MO-MEI	0.0	6.95	9.7	30	69	202	1.9			
11/23/18	MO-VEN	0.0	7.13	11.2	14	35	161	<1.0			
11/23/18	MO-OXN	0.0	7.15	10.1	33	108	359	2.2			
11/23/18	MO-HUE	0.0	7.27	10.1	196	1105	8572	1.4			
11/30/18	MO-THO	0.8	7.81	10.8	64	158	523	<1.0			
11/23/18	MO-MPK	0.0	7.86	11.3	116	318	2526	<1.0			
11/23/18	MO-SIM	0.0	7.48	10.5	54	185	551	1.4			
11/23/18	MO-FIL	0.0	7.76	10.4	27	62	190	<1.0			
11/30/18	MO-SPA	0.4	7.93	11.1	111	744	85	<1.0			

#### 2.2 Echinoderm Fertilization Toxicity Testing with Strongylocentrotus purpuratus

The echinoderm sperm cell fertilization test consists of exposing purple sea urchin sperm to the stormwater, after which the effects on successful fertilization of the eggs are determined. The specific procedures used in this testing are described below.

Sperm and eggs were generated from gravid adult purple urchins, *S. purpuratus*. The gravid adult urchins were obtained from a commercial supplier (Alexi Gabriel, San Diego, CA). Upon receipt at the lab, the urchins were held at 12°C. Spawning of the urchins was induced by injection with 0.5 M KCl, followed by vigorous shaking of the animals to stimulate gamete release, as per EPA guidelines. The gametes from each spawning individual were collected and examined microscopically; the gametes exhibiting the best quality (as determined from morphology and trial fertilization) were pooled to provide a composite of high quality sperm and a composite of high quality eggs.

The Lab Water Control medium for this test consisted of 1-µm filtered seawater (collected from the UC Granite Canyon Marine Lab). The stormwater sample was adjusted to the test salinity of approximately 33 ppt using an artificial sea salt (Tropic Marin<sup>®</sup>). As an additional QA measure, and in order to assess any potential artefactual toxicity that might have been caused by the addition of the sea salt to the sample, a Salt Control consisting of filtered seawater diluted to the salinity of the stormwater sample and then adjusted back to a salinity of approximately 33 ppt via addition of the same artificial sea salt was also prepared and tested. Routine water quality characteristics (pH, D.O., and salinity) were measured for each test solution prior to use in this test.

There were four replicates at each test treatment. Each test replicate consisted of a 30-mL glass vial to which five mL of appropriate test solution was added. The test was initiated with the inoculation of an appropriate quantity of sperm into each replicate vial to achieve a final sperm-to-egg ratio of 2000:1. After a 20-min exposure period, approximately 1000 eggs were inoculated into each vial. After an additional 20-min exposure, the test was terminated with all of the test embryos being fixed by the addition of 0.5 mL of 1% glutaraldehyde.

The contents of each preserved test vial were subsequently examined microscopically to determine the percentage of embryos exhibiting successful fertilization. The resulting percentage fertilization data were analyzed to determine any impairment caused by the stormwater; all statistical analyses were performed using CETIS<sup>™</sup> (TidePool Scientific, McKinleyville, CA).

### 2.3 Survival and Growth Toxicity Testing with Topsmelt (Atherinops affinis)

The chronic toxicity test with topsmelt consists of exposing larval fish to the stormwater samples for seven days, after which effects on survival and growth are evaluated. The specific procedures used in this testing are described below.

The larval topsmelt used in these tests were obtained from a commercial supplier (Aquatic Biosystems, Fort Collins, CO). Upon receipt at the testing lab, the larval fish were maintained in aerated Lab Water Control medium, and were fed brine shrimp nauplii *ad libitum* during the pretest holding period.

The Lab Water Control medium for these tests consisted of 1-µm filtered U.C. Granite Canyon Marine Laboratory seawater. The stormwater samples were adjusted to a salinity of approximately 33 ppt via addition of an artificial sea salt (Crystal Seas<sup>®</sup>-bioassay grade). The samples were tested at the 100% concentration only. As an additional QA measure, and in order to assess any potential artefactual toxicity that might have been caused by the addition of the sea salt to the samples, a Salt Control consisting of filtered seawater diluted to the salinity of the stormwater sample and then adjusted back to a salinity of approximately 33 ppt via addition of the sea extificial sea salt was also prepared and tested. Routine water quality characteristics (pH, D.O., and salinity) were measured for each test solution prior to use in these tests.

There were five replicates for each test treatment, each replicate consisting of 400 mL of test solution in a 600-mL glass beaker. The tests were initiated by randomly allocating five 14-day old topsmelt into each replicate beaker. The beakers were randomly positioned in a temperature-controlled room at 20°C (with temperature being monitored daily), under a 16L:8D photoperiod. These test fish were fed brine shrimp nauplii twice daily.

Each day of the tests, fresh test solutions were prepared as before. The test replicate beakers were examined, with any dead animals, uneaten food, wastes, and other detritus being removed. The number of live fish in each replicate was determined and then approximately 80% of the test

solution in each beaker was carefully poured out and replaced with fresh test solution. "Old" water quality characteristics (pH and D.O.) were measured on the old test water collected from one randomly selected replicate at each treatment.

After seven days exposure, the tests were terminated and the number of live fish in each replicate beaker was recorded. The fish from each replicate were then carefully euthanized in methanol, rinsed in de-ionized water, and transferred to a pre-tared weighing pan. The fish were then dried at  $100^{\circ}$ C for >24 hours and re-weighed to determine the total weight of fish in each replicate; the total weight was then divided by the initial number of fish per replicate to determine the biomass value. The resulting survival and growth data were analyzed to determine any impairment(s) caused by the stormwater samples; all statistical analyses were performed using CETIS.

#### 2.4 Algal Growth Toxicity Testing with Selenastrum capricornutum

The short-term chronic toxicity algal test consists of exposing *Selenastrum capricornutum* to the stormwater for 96 hours, after which the effects on cell growth are evaluated. The specific procedures used in this testing are described below.

The Lab Water Control medium for this test consisted of Type 1 lab water (reverse-osmosis, filtered, de-ionized water) spiked with nutrients. The stormwater sample was tested at the 100% concentration only. An aliquot of the stormwater sample was 0.45-µm filtered and spiked with nutrients before use in the algal test. "New" water quality characteristics (pH, D.O., and conductivity) were measured on the resulting test solutions prior to use in the test.

There were 4 replicates at each test treatment, each replicate consisting of a 250-mL glass Erlenmeyer flask containing 100 mL of test solution; an additional replicate was established at each test treatment for the measurement of test solution water quality characteristics during the test and at test termination. Each flask was inoculated to an initial algal cell density of 10,000 cells/mL from a laboratory culture of *Selenastrum* that is maintained in log growth phase.

These flasks were loosely capped and randomly positioned within a temperature-controlled room at 25°C, under continuous cool-white fluorescent illumination. Each replicate flask was shaken a minimum of three times daily. The temperature and pH were determined daily for the designated "water quality" replicate at each treatment.

After 96 ( $\pm 2$ ) hours exposure, the algal cell density in each replicate flask was determined by spectrophotometric analysis. The resulting cell density data were analyzed to determine any impairment caused by the stormwater; all statistical analyses were performed using CETIS.

Ventura Countywide Stormwater Quality Management Program 2018/19 Annual Report



#### 2.5 Survival and Reproduction Toxicity Testing with Ceriodaphnia dubia

The short-term chronic *Ceriodaphnia* test consists of exposing individual females to the stormwater samples for the length of time it takes for the Lab Control treatment females to produce three broods (typically 6-8 days), after which effects on survival and reproduction are evaluated. The specific procedures used in this testing are described below.

The Lab Water Control medium for this testing consisted of modified US EPA synthetic moderately hard water, prepared by addition of reagent grade chemicals to Type 1 lab water. The stormwater samples were tested at the 100% concentration only. Each treatment consisted of a 200 mL aliquot of test solution to which the alga *S. capricornutum* and Yeast-Cerophyll<sup>®</sup>-Trout food (YCT) had been added to provide food for the test organisms. "New" water quality characteristics (pH, D.O., and conductivity) were measured on these food-amended test solutions prior to use in these tests.

There were 10 replicates for each test treatment, each replicate consisting of 15 mL of test solution in a 30-mL plastic cup. The tests were initiated by allocating one neonate (<24 hours old and within 8 hours of age) *C. dubia*, obtained from in-house laboratory cultures, into each replicate cup. The replicate cups were placed in a temperature-controlled room at 25°C, under cool white fluorescent lighting on a 16L:8D photoperiod.

Each day of the test, fresh test solutions were prepared and characterized as before, and a new set of replicate cups was prepared. The original test replicate cups were examined, with surviving original individual organisms being transferred to the corresponding new cup. The contents of each of the remaining old replicate cups was carefully examined and the number of neonate offspring produced by each original organism was determined, after which the "old" water quality characteristics (pH, D.O., and conductivity) were measured for the old test solution from randomly-selected replicate(s) at each treatment.

After it was determined that  $\geq$ 60% of the *C. dubia* in the Lab Control treatments had produced their third brood of offspring, the tests were terminated. The resulting survival and reproduction data were analyzed to determine any impairment(s) caused by the stormwater samples. All statistical analyses were performed using CETIS.

#### 2.6 Survival and Growth Toxicity Testing with Larval Fathead Minnows

The short-term chronic fathead minnow test consists of exposing larval fish to the stormwater for 7 days, after which effects on survival and growth are evaluated. The specific procedures used in this testing are described below.

The larval fathead minnows used in these tests were obtained from a commercial supplier (Aquatox, Hot Springs, AR). Upon receipt at the lab, the larval fish were maintained in aerated tanks of EPA moderately-hard water at 25°C, and were fed brine shrimp nauplii *ad libitum*.

The Lab Water Control medium for this test consisted of EPA synthetic moderately-hard water. The stormwater samples were tested at the 100% concentration only. "New" water quality characteristics (pH, D.O., and conductivity) were measured on these test solutions prior to use in the tests.

There were 4 replicates for each test treatment, each replicate consisting of 200 mL of test solution in a 600-mL glass beaker. The test was initiated by randomly allocating 10 larval fathead minnows (<48 hours old) into each replicate. The replicate beakers were placed in a temperature-controlled room at 25°C, under cool-white fluorescent lighting on a 16L:8D photoperiod. The test fish were fed brine shrimp nauplii twice daily.

Each day of the test, fresh test solutions were prepared for each treatment, and water quality characteristics were determined as before. The replicate beakers were examined, with any dead animals, uneaten food, wastes, and other detritus being removed. The number of live fish in each replicate was determined and then approximately 80% of the old test media in each beaker was carefully poured out and replaced with fresh test solution. "Old" water quality characteristics (pH, D.O., and conductivity) were measured on the old test water that had been discarded from one randomly selected replicate at each treatment.

After 7 days exposure, the test was terminated and the number of live fish in each replicate beaker was recorded. The fish from each replicate were then carefully euthanized in methanol, rinsed in de-ionized water, and transferred to a pre-tared weighing pan. These fish were then dried at  $100^{\circ}$ C for >24 hours and re-weighed to determine the total weight of fish in each replicate. The total weight was then divided by the initial number of fish per replicate to determine the "biomass value." The resulting survival and biomass data were analyzed to determine any impairment(s) caused by the stormwater samples. All statistical analyses were performed using CETIS.

#### 3. RESULTS

#### 3.1 Effects of VCWPD Stormwater on Purple Urchin Fertilization

The results of this test are summarized in Table 2. There was no significant reduction in fertilization in the ME-SCR stormwater sample. The test data and summary of statistical analyses for this test are presented in Appendix B.

Table 2. Effects of VCWPD stormwater on purple urchin fertilization.						
Test Initiation Date (Time)	Treatment/Sample ID	Mean % Fertilization				
	Salt Control	89.8				
12/1/18 (1626)	Lab Control	94.3				
	ME-SCR	98.5				

#### 3.2 Effects of VCWPD Stormwater on Atherinops affinis

The results for these tests are summarized in Table 3. There was no significant reduction in survival or growth any of the stormwater samples tested. The test data and summary of statistical analyses for these tests are presented in Appendix C.

Table 3. Effects of VCWPD stormwater on Atherinops affinis.								
Test Initiation Date (Time)	Treatment/Sample ID	Mean % Survival	Mean Biomass Value (mg)					
-	Salt Control	88	1.70					
	Lab Control	92	1.94					
11/23/18 (1225)	ME-CC	84	1.68					
	ME-VR2	92	2.20					
	MO-HUE	88	1.83					

#### 3.3 Effects of VCWPD Stormwater on Selenastrum capricornutum

The results for this test are summarized in Table 4. There was no significant reduction in algal growth in the MO-MPK stormwater sample. The test data and summary of statistical analyses for this test are presented in Appendix D

Table 4. Effects of VCWPD stormwater on Selenastrum capricornutum.							
Test Initiation Date (Time) Treatment/Sample ID		Mean Algal Cell Density (cells/mL x 10 <sup>6</sup> )					
11/22/18 (1020)	Lab Control	3.03					
11/23/18 (1020)	MO-MPK	7.34					

#### 3.4 Effects of VCWPD Stormwater on Ceriodaphnia dubia

The results for this test are summarized in Table 5. There was a significant reduction in *C. dubia* survival in the MO-HUE stormwater sample; there was no significant reduction in *C. dubia* survival in any of the remaining stormwater samples tested. There was no significant reduction in *C. dubia* reproduction in the MO-THO and MO-SIM stormwater samples. However, there was a significant reduction in reproduction in the MO-VEN, MO-HUE, and MO-FIL stormwater samples. It must be noted that the elevated conductivity of the MO-HUE stormwater sample (~8500  $\mu$ S/cm) was well above the tolerance range for this species, and therefore is the likely cause of the observed toxicity. The test data and summary of statistical analyses are presented in Appendix E.

Table 5. Effects of VCWPD stormwater on Ceriodaphnia dubia.							
Test Initiation Date (Time)	Mean % Survival	Mean Reproduction (# neonates/female)					
	Lab Control-01	100	28.3				
	MO-VEN	100	18.9*				
11/24/18 (1113)	MO-HUE	0*	<b>0</b> *a				
	MO-SIM	100	30.9				
	MO-FIL	100	15.6*				
12/1/18 (1557)	Lab Control-02	100	34.9				
12/1/18 (1557)	MO-THO	100	32.9				

\* The response at this test treatment was significantly less than the Lab Control treatment response (p < 0.05).

a – The EPA manual indicates that "concentrations that had a significant toxic effect on one of the observed responses would not be subsequently tested for an effect on some other response as only applying to dilution series testing." The Surface Water Ambient Monitoring Program (SWAMP) Roundtable has ruled that this does not apply to testing of 100% solution testing, and that hypothesis test results for both the survival and sub-lethal endpoints must be reported for SWAMP compliant programs. We have complied with this requirement by indicating that this treatment is toxic to survival and reproduction.

#### 3.5 Effects of VCWPD Stormwater on Fathead Minnows

The results for this test are summarized in Table 6. There was no significant reduction in fathead minnow survival in the MO-MEI, MO-OXN, and MO-SPA stormwater samples; there was a significant reduction in survival in the MO-CAM and MO-OJA stormwater samples. There was a significant reduction in fathead minnow growth in all stormwater samples tested. The test data and summary of statistical analyses for this test are presented in Appendix F.

Table 6. Effects of VCWPD stormwater on fathead minnows.							
Test Initiation Date (Time)	Treatment/Sample ID	Mean % Survival	Mean Biomass Value (mg)				
	Lab Control-01	100	1.00				
	MO-CAM	77.5*	0.38*a				
11/24/18 (1127)	MO-OJA	57.5*	0.23*a				
	MO-MEI	85.0	0.46*				
	MO-OXN	90.0	0.53*				
12/1/18 (1323)	Lab Control-02	95.0	0.79				
	MO-SPA	82.5	0.45* <sup>b</sup>				

\* The response at this test treatment was significantly less than the Lab Control treatment response (p < 0.05).

a - The EPA manual indicates that "concentrations that had a significant toxic effect on one of the observed responses would not be subsequently tested for an effect on some other response as only applying to dilution series testing." The Surface Water Ambient Monitoring Program (SWAMP) Roundtable has ruled that this does not apply to testing of 100% solution testing, and that hypothesis test results for both the survival and sub-lethal endpoints must be reported for SWAMP compliant programs. We have complied with this requirement by indicating that this treatment is toxic to survival and growth.

b - Pathogen related mortalities (PRM) were observed in this treatment. PRM is considered an artifact of the test methodology. PRM is well documented in the EPA guidelines (EPA-821-R-02-013) as caused by microorganisms, and it is acknowledged that PRM interferes with the toxicity evaluation. PRM was not observed in the Lab Control treatment, indicating that the source of pathogens was the stormwater sample.

#### 4. AQUATIC TOXICITY DATA QUALITY CONTROL

Two QC measures were assessed during the toxicity testing:

- Maintenance of acceptable test conditions; and
- Negative Control testing;

#### 4.1 Maintenance of Acceptable Test Conditions

Due to the timing of the storm, the urchin fertilization test, the *C. dubia* test using the sample collected November 29, and all fathead minnow tests were initiated outside the 36-hour hold time, but within 72 hours as allowed in the VCWPD MRP. Additionally, due to a lack of culture neonates on November 23, the C. dubia tests using samples collected November 21-22 were initiated the following morning, outside the 36-hour hold time, but within 72 hours as allowed in the VCWPD MRP. During the routine D.O. check of the A. affinis test on Day 3, the D.O. in the MO-HUE sample dropped to 5.7 mg/L. In order to prevent mortalities due to hypoxia, all replicates for this treatment were aerated for the remaining duration of the test. During the routine D.O. check of the November 24 fathead minnow test on Day 1, a low D.O. of 3.3 mg/L, 1.4 mg/L, 2.6 mg/L, and 3.7 mg/L was measured in the MO-CAM, MO-OJA, MO-MEI, and MO-OXN samples, respectively, resulting in aeration for the remainder of testing. During the routine D.O. check of the December 1 fathead minnow test on Day 1, a low D.O. of 2.4 mg/L was measured in the MO-SPA sample, resulting in aeration for the remainder of testing. One replicate in the MO-VEN C. dubia test was observed with two adult females in the replicate cup at test termination. As the brood count for that replicate was higher than the rest of the treatment, it is likely that both females had broods. Further investigation did not result in determining the source of the second adult and as such, the replicate was excluded from both survival and reproduction statistics.

Pathogen related mortalities (PRM) were observed in the fathead minnow test in site MO-SPA. PRM is considered an artifact of the test methodology. PRM is well documented in the EPA guidelines (EPA-821-R-02-013) as caused by microorganisms, and it is acknowledged that PRM interferes with the toxicity evaluation. PRM was not observed in the Lab Control treatment, indicating that the source of pathogens was the ambient water sample.

Otherwise, all other test conditions (pH, D.O., temperature, etc.) were within acceptable limits. All analyses were performed according to laboratory Standard Operating Procedures.

#### 4.2 Negative Control Testing

The responses at the Lab Control treatments were acceptable.

#### 5. SUMMARY AND CONCLUSIONS

An evaluation of the toxicity of VCWPD stormwater samples was conducted utilizing samples collected on November 21, 22, and 29, 2018. A summary of test results is provided below.

#### Chronic Toxicity of VCWPD Stormwater to Purple Urchin Fertilization

There was <u>no</u> significant reduction in purple urchin fertilization in the ME-SCR stormwater sample.

#### Chronic Toxicity of VCWPD Stormwater to Atherinops affinis (Topsmelt)

There was <u>no</u> significant reduction in topsmelt survival or growth in any of the stormwater samples tested.

#### Chronic Toxicity of VCWPD Stormwater to Selenastrum capricornutum

There was <u>no</u> significant reduction in *S. capricornutum* growth in the MO-MPK stormwater sample.

#### Chronic Toxicity of VCWPD Stormwater to Ceriodaphnia dubia

There <u>was</u> a significant reduction in *C. dubia* survival in the MO-HUE stormwater sample; there was <u>no</u> significant reduction in *C. dubia* survival in any of the remaining stormwater samples. There was <u>no</u> significant reduction in *C. dubia* reproduction in the MO-THO and MO-SIM stormwater samples. However, there <u>was</u> a significant reduction in reproduction in the MO-VEN, MO-HUE, and MO-FIL stormwater samples. It must be noted that the elevated conductivity of the MO-HUE stormwater sample (~8500  $\mu$ S/cm) was well above the tolerance range for this species, and therefore is the likely cause of the observed toxicity.

#### **Chronic Toxicity of VCWPD Stormwater to Fathead Minnows**

There was <u>no</u> significant reduction in fathead minnow survival in the MO-MEI, MO-OXN, and MO-SPA stormwater samples; there <u>was</u> a significant reduction in survival in the MO-CAM and MO-OJA stormwater samples. There <u>was</u> a significant reduction in fathead minnow growth in all stormwater samples tested.

### Appendix A

### Chain-of-Custody Records for the Collection and Delivery of the VCWPD Samples

### **CHAIN-OF-CUSTODY RECORD**

Pacific EcoRisk 2250 Cordelia Rd., Fairfield, CA 94534 (707) 207-7760 FAX (707) 207-7916

Results To:	Ventura Cou	inty Watershed	Protection	District	Invoice To:	Ventura Count	y Public Works Agency	REQUESTED ANALYSIS										
Address:	Address: 800 South Victoria Ave., L#1610			Address: Engineering Services Division		Services Division		0										
	Ventura, CA		ura, CA 93009			800 South Vi	ctoria Ave., L#1670	5	(sr) 008	8	65 al	SB/		1				
						Ventura, CA	93009-1670	A	A 1	3.0	1 2 5 6	A				1		
Phone:	Phone: (805) 658-4375		Phone:			ы Ш	EP.	й Ö	Su	μЩ.								
Attn:	Kelly Hahs				Attn:	Karen Goo	dman	wth	on, pu	A 1	Dia Dia	wth 3	1.1					
E-mail: Kelly.Hahs@ventura.org			E-mail:			E D	r (S	ЦG	ctio	Gro								
<b>Project Name:</b>	NPDES Stor	mwater Monit	oring Progr	am - 2018/1	9-1 (Wet)			Pu	î î î î	wth	hnia	Ind						
P.O.#/Ref:	Contract No.	. AE18-015						al a	Ъщ	Grov	fap/	ala						
Client C		Sample	Sample	Sample	Grab/		Container	viv 0.06.0	erme	lené	1 Ro	Viv DOLC						
Client Sa		Date	Time	Matrix*	Comp	Number	Туре	Su 10	n ds	Alg	aŭe	Su 50	5.14		(			-
MO-	OXŅ	11/21/18	1340	STRMW	Grab	2	2.5-gal jerrican		j – j	1		X	n di				2	
MO-	HUE	11/22/18	0030	STRMW	Grab	2	2.5-gal jerrican		1	1	X		-		447.1 2	4	1	
MO-	THO			STRMW	Grab	2	2.5 gal jerrican			2	×			-				
MO-	MPK	4/22/18	0010	STRMW	Grab	2	2.5-gal jerrican			х								
MO-	-SIM	WIZUR	0110	STRMW	Grab	2	2.5-gal jerrican				X		12-21					
MO	-FIL	11/22/18	0125	STRMW	Grab	2	2.5-gal jerrican		1	1	X							
MO	SPA			STRMW	Grab	2	2.5 gal jerrican	-	-			×			-			
									1	1	1	1.1	1				1	
		-												_				_
Samples collect	ted by:							L										
Comments/Spe	cial Instructio	on:				RELINQUIS	HED BY:				RECE		SY:	RAN	Ter	vst	WA	at
						Signature:	W-B-CAR	EY			Signature: La PSH					- 1		
All sites/specie	s: 100% conc	entration only				Print:	W.B. Cm	14		1	Print:		1	)		10	/	
Perform TIE if >	50% effect; n	otify client imm	nediately if	toxicity is of	bserved	Organizatio	In: VCWPD	1			Organ	nization	-	PGE	KIN	FIC	un	GR
	MO-HUE: If salinity >2ppt, perform additional topsmelt test for comparison				Date:	1-22-18	Time:	(5)	D	Date:	11	271	18		Time:	310	len	
MO-HUE: If sali				parison	RELINQUISHED BY: 111					RECE	IVED	Y:	15				1	
						Signature: ACCASTANANTE				/	Signa	ture:	tren	22 -	FILL	han		
										E	Print:		Tre	Vor	Fisil	121	_	
					1	Organizatio	n: REDUN	Ξ.			Organ	ization	: PL	5R				
						Date: //	23/18	Time	302	Auch	Date:	11	231	18		Time:	1280	2

Example Matrix Codes: (EFF - Effluent) (FW = Freshwater); (SW = Saltwater); (WW = Wastewater); (STRMW = Stormwater); (SED = Sediment); or other

### CHAIN-OF-CUSTODY RECORD

Pacific EcoRisk 2250 Cordelia Rd., Fairfield, CA 94534 (707) 207-7760 FAX (707) 207-7916

Results To:	Ventura Cour	nty Watershee	<b>1</b> Protection	District	Invoice To:	Ventura County	Public Works Agency	REQUESTED ANALYSIS									
Address:	800 South Vi	ictoria Ave., I	#1610		Address:	Engineering S		0.		0	_						
	Ventura, CA	93009-1610				800 South Vie	is	(s) 008	utum 3.0	al 02.(	Ias						
. C						Ventura, CA	A	A 1(		ļšē.	PA						
Phone:	(805) 658-43	75			Phone:			ε Ξ.	EPu	100	Su	μ Ξ Ξ					
Attn:	Kelly Hahs				Attn:	Karen Good	dman	te the	d'u	Pric A	n, E	E Th					
E-mail:	Kelly.Hahs@	ventura.org			E-mail:	1	Gro	zati (S	Ъ	ctio	0 O						
Project Name:	NPDES Stori	nwater Monit	oring Progr	am - 2018/1	9-1 (Wet)			Pu	li ci i	wth	brie Ddu	un di					
P.O.#/Ref:	Contract No.	AE18-015						ala	Ъщ.	Gro	lapi	0 0	. 1				
Client Co		Sample	Sample	Sample	Grab/		Container	rviv De	em	lena Jal (	1 Root	rviv D0.0					
Client Sample ID		Date		Matrix*	Comp	Number	Туре	Su	ng S	Sel	aŭ C	Su 50			· · · · · · ·		_
ME-	ME-CC 11/22/18 0130 STRMW		Grab	2	2.5-gal jerrican	Х											
ME-	SCR	-		STRMW	Grab	-2	2.5-gal jerrican	-	X	-	-			-			
ME-	VR2	1/22/18	0130	STRMW	Grab	2	2.5-gal jerrican	X									
MO-0	CAM	11/21/15	22 35	STRMW	Grab	2	2.5-gal jerrican					X					
MO-	OJA	11/21/14	2315	STRMW	Grab	2 2.5-gal jerrican						X					
MO-	MEI	11122/156	0206	STRMW	Grab	2 2.5-gal jerrican					1	X		-			
MO-Y	VEN	11/21/18	2315	STRMW	Grab	2	2.5-gal jerrican				X						
		1	è	1	. ·												
					1												
Samples collect	ed by:																
Comments/Spec	cial Instruction	n:				RELINQUIS	HED BY:				RECE	IVED B	¥?	1	21	Í	
					- 13	Signature:	WAR CAR	EY			Signa	ture:	5-1	ter	101	t	
All sites/species	s: 100% conce	entration only				Print: W.	BCATLY			-	Print: Enand Buchan An TE						
Perform TIE if >	50% effect; no	otify client imm	nediately if a	toxicitv is ob	served	Organizatio	n: VCWPM			-	Organ	ization	VE	al	VE (	non	-n
	ŗ	-			10.29	Date:	= 11-22-18	Time:	151	0	Date:	111	221	IB	60	lime'	2100
						RELINQUIS	HED BY:	1		-	RECE	IVEDB	Y.	V			Sign
						Signature:					Signature: 7-1. 4. 4. 4. 4. 4.						
						Print: Food bustom Batt Print: Transforda											
						Organizatio	n: COUNE			-	Organ	ization	· Pr	PAC	11.1		
							15MAC	Time Contact Data: 1/2 2/// Time 1//2									

\*Example Matrix Codes: (EFF - Effluent) (FW = Freshwater); (SW = Saltwater); (WW = Wastewater); (STRMW = Stormwater); (SED = Sediment); or other

#### Pacific EcoRisk

2250 Cordelia Rd., Fairfield, CA 94534

(707) 207-7760 FAX (707) 207-7916

#### Results To: Ventura County Watershed Protection District **REQUESTED ANALYSIS** Invoice To: Ventura County Public Works Agency Address: 800 South Victoria Ave., L#1610 Address: Engineering Services Division 0 Ceriodaphnia dubia Survival and Reproduction, EPA 1002.0 Fathead Winnow (P. prometas) Survival and Growth, EPA 0 Purple Urchin (S. *purpuratus*) Sperm Fertilization, EPA 1008. Ventura, CA 93009 800 South Victoria Ave., L#1670 Capricornutum 1003.0 EPA Ventura, CA 93009-1670 Phone: (805) 658-4375 Phone: Growth, Attn: Kelly Hahs Attn: Karen Goodman EPA E-mail: Kelly.Hahs@ventura.org E-mail: Selenastrum ( Algal Growth, and Project Name: NPDES Stormwater Monitoring Program - 2018/19-2 (Wet) Fathead N Survival a 1000.0 P.O.#/Ref: Contract No. AE18-015 Survival 1006.01 Sample Sample Sample Grab/ Container **Client Sample ID** Number Date Time Matrix\* Comp Type MO OXN STRMW Grab 2 2.5-gal jerrican × MO-HUE STRMW Grab 2 2.5 gal jerrican v 11-29-18 1415 MO-THO STRMW Grab 2 2.5-gal jerrican Х MO-MPK STRMW Grab 2 Y 2.5-gal jerrican MO-SIM STRMW 2 Grab 2.5-gal jerrican × MOEH STRMW Grab 2 2.5 gal jerrican X 6 MO-SPA 1/29/18 0200 STRMW Grab 2 2.5-gal jerrican Х 1630 ME-SCR × STAMW Greb 2 8 15 C 10 Samples collected by: **RELINQUISHED BY: Comments/Special Instruction: RECEIVED BY:** Signature: Signature: ELLY HAHS All sites/species: 100% concentration only Print: Print: Perform TIE if >50% effect; notify client immediately if toxicity is observed Organization: VCWPD **Organization:** 50a Date: 18 Time: 0730 Date: Time: **RELINQUISHED BY:** RECEIVED BY: MO-HUE: If salinity >2ppt, perform additional topsmelt test for comparison Signaturez Signature: Print: Print: 10 **Organization: Organization:** Date: Date: Time: Time:

CHAIN-OF-CUSTODY RECORD

\*Example Matrix Codes: (EFF - Effluent) (FW = Freshwater); (SW = Saltwater); (WW = Wastewater); (STRMW = Stormwater); (SED = Sediment); or other

### **Appendix B**

## Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of the VCWPD Stormwater to Purple Urchin Fertilization

 Report Date:
 12 Dec-18 14:57 (p 1 of 1)

 Test Code:
 VCWPD\_1201\_SP | 03-6519-9191

### CETIS Summary Report

Echinoid Fertilizat	ion Test									Pa	cific EcoRisk
Batch ID: 13-6 Start Date: 01 D Ending Date: 01 D Duration: 39m	437-7946 ec-18 16:26 ec-18 17:05	Te: 5 Pro 5 Sp So	st Type: Fer otocol: EP ecies: Stri urce: Ale	tilization A/600/R-95/ ongylocentro xi Gabriel	136 (1995) otus purpura	atus	Ana Dilu Brin Age	alyst: uent: ne: e:	Stevi Vasque Not Applicable Tropic Marin N/A	z e	
Sample Code Sample ID			mple Date	Receipt	Date	Sample Age	e Clie				
VCWPD_1201_SP	17-6589-9	394 01	Dec-18 16:26	5 01 Dec-	18 16:26	n/a (11.6 °C	) Ver	ntura Cou	unty Watersh	29434	
VCWPD_SP_SALT	16-7833-1	950 01	Dec-18 16:20	5 01 Dec-	18 16:26	n/a (11.5 °C	)				
ME-SCR	00-0419-7	965 29	NOV-18 16:30	30 NOV-	18 14:15	48h (0.5 °C)					
Sample Code	Material T	уре	Sai	nple Source	9	Stat	tion Loca	tion	Lat/Lon	g	
VCWPD_1201_SP	Lab Water	•	Ver	ntura County	Watershed	Prote LAE	BQA				
VCWPD_SP_SALT	Salt Contro	ol	Ver	ntura County	Watershed	Prote					
ME-SCR	Ambient V	Vater	Ver	tura County	Watershed	Prote ME-	SCR	_			
Single Comparison Summary											
Analysis ID End	point		Comparis	on Method			P-Value	Com	parison Resu	lt	
18-7485-5966 Ferti	lization Rate	•	Equal Var	ance t Two-	Sample Tes	st	0.1408	VCW	PD_SP_SALT	passed fe	rtilization rate
11-4517-2914 Ferti	lization Rate	e	Equal Variance t Two-Sample Test				0.9408	ME-S	CR passed fer	tilization r	ate
Fertilization Rate S	ummary										
Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E	Err Std Dev	CV%	%Effect
VCWPD_1201_SP	LW	4	0.943	0.865	1.000	0.880	0.990	0.024	0.049	5.15%	0.00%
VCWPD_SP_SALT	SA	4	0.898	0.804	0.991	0.830	0.970	0.029	0.059	6.52%	4.77%
ME-SCR		4	0.985	0.976	0.994	0.980	0.990	0.003	3 0.006	0.59%	-4.51%
Fertilization Rate D	letail										
Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4						
VCWPD_1201_SP	LW	0.930	0.970	0.880	0.990						
VCWPD_SP_SALT	SA	0.970	0.880	0.910	0.830						
ME-SCR		0.980	0.990	0.980	0.990						
Fertilization Rate B	inomials										
Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4						
VCWPD_1201_SP	LW	93/100	97/100	88/100	99/100						
VCWPD_SP_SALT	SA	97/100	88/100	91/100	83/100						
ME-SCR		98/100	99/100	98/100	99/100						

Analyst: SNV QA: M

							Test	code.	VCVVFD_12	01_3P   C	12-0218-9191
Echinoid Fertilizat	ion Test									Paci	fic EcoRisk
Analysis ID: 11-4	4517-2914	End	point: Fer	tilization Ra	te		CET	IS Version:	CETISv1	.9.2	
Analyzed: 12	Dec-18 14:5	56 Ana	lysis: Par	ametric-Two	o Sample		Offic	ial Results	: Yes		
Data Transform		Alt Hyp	_				Comparis	son Result			PMSD
Angular (Corrected)		C > T					ME-SCR	passed ferti	lization rate		5.28%
Equal Variance t T	wo-Sample	Test									
Sample I vs	Sample II		Test Stat	Critical	MSD DF	P-Type	P-Value	Decision	(a:5%)		
Lab Water Control	ME-SCR		-1.82	1.94	0.11 6	CDF	0.9408	Non-Sign	ificant Effect		
ANOVA Table											
Source	Sum Squa	ares	Mean Squ	lare	DF	F Stat	P-Value	Decision	(a:5%)		
Between	etween 0.0211795 0.0211795			5	1	3.32	0.1184	Non-Sign	ficant Effect		
Error	0.0383157	,	0.006386		6						
Total	0.0594952	2			7						
Distributional Test	s										
Attribute	Test				Test Stat	Critical	P-Value	Decision	(α:1%)		
Variances	Variances Variance Ratio F Test			21	47.5	0.0324	Equal Variances				
Distribution	Distribution Shapiro-Wilk W Normality Test			0.969	0.645	0.8931	Normal D	istribution	_		
Fertilization Rate S	ummary										
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
VCWPD_1201_SP	LW	4	0.943	0.865	1.000	0.950	0.880	0.990	0.024	5.15%	0.00%
ME-SCR		4	0.985	0.976	0.994	0.985	0.980	0.990	0.003	0.59%	-4.51%
Angular (Corrected	l) Transform	ned Summ	ary								
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
VCWPD_1201_SP	LW	4	1.35	1.17	1.52	1.35	1.22	1.47	0.0552	8.20%	0.00%
ME-SCR		4	1.45	1.41	1.49	1.45	1.43	1.47	0.012	1.66%	-7.64%
Graphics											
1.0						0.16					
	· · · · · · · · · · · · · · · · · · ·					0.14					
0.9				Reject Null		0.12					•
0.8						0.10					
0.7					ed	g 0.06					
<u>छ</u> 0.6					Center	<b>č</b> 0.04					
<b>0</b> 0.5					-	0.00		,			
cilizat						-0.02		• /•			
a						-0.04 -0.06	• /				
0.3						-0.08					
0.2						-0.10					
0.1						0.34					
0.0	VONDD 1201 CD		10 C			-0.16	-1.0	-0.5 0.0	0.5	1.0	1.5
	VGWPD_1201_SP		ME-SCR.					Rankits			

### **CETIS Analytical Report**

Report Date: Test Code:

12 Dec-18 14:57 (p 1 of 2) VCWPD 1201 SP L03-6519-9191

Analyst: GVV QA: M Attachment D Appendix I

### **Echinoderm Fertilization Toxicity Test Water Chemistry Data**

Client: Ventura Coun	11316	Age: N/A								
Test Material:	ME-SCR		Organism Supplier:	Alexi						
Test Species	S. purpuratus		Control/Diluent:		FSW					
Test ID#: 80311	Project #: 29434	-	Test Date: 12/1/18 Randomization:							
Sample Salinity adjusted with : Tropic Marin										
	1									
Treatment	Temperature (°C)	рН	D.O. (mg/L)	Salinity (ppt)	Signoff					
Lab Water Control	11.6	7.77	7.8	3.4.0	Date:					
100%	11.5	8.36	6.8	33.2	Sample ID: 57497					
Meter ID	100A	PHZY	RO13	FO VENILLE EC12	Test Solution Prep: ゴク					
					New WQ: Je					
					Innoculation Time: 1626					
					Innoculation Signoff: JQ					

### **Echinoderm Fertilization Toxicity Test Data Sheet**

Client	: Venti	ura County Watersh	Test Start Date:	12/1/18			
Test Material	:	ME-S	CR	Test End Date:	12/1/13		
Test Species		S. purpu	ratus	Enumeration Date:	12/1/18		
Test ID #	:	80311		Investigator:	Ja		
Project #	:	29434					
Sample Salinity	adjuste	ed with : Tropic N	Aarin				
Concentration		Number of Fertilized Eggs	Number of Unfertilized Eggs	Total Number of Eggs	Percent Fertilization		
Rej	olicate			~885			
	A	93	7	100	93		
Lab Water	В	97	3	100	97		
Control	С	88	12	100	88		
	D	99	1	100	99		
	A	98	2	100	98		
100%	В	99	1	100	99		
	С	98	2	100	98		
	D	99	(	100	97		

							Test	Code:	VCWPD_1	201_SP   0	3-6519-9191	
Echinoid Fertilizat	ion Test									Paci	fic EcoRisk	
Analysis ID: 18-	7485-5966	End	point: Fer	tilization Ra	te		CET	S Version:	CETISV	1.9.2		
Analyzed: 12	Dec-18 14:5	67 Ana	lysis: Par	ametric-Two	o Sample		Offic	ial Results	: Yes			
Data Transform		Alt Hyp					Comparis	on Result			PMSD	
Angular (Corrected)		C > T					VCWPD_	SP_SALT p	assed fertil	ization rate	7.95%	
Equal Variance t T	wo-Sample	Test										
Sample I vs	Sample II		Test Stat	Critical	MSD DF	P-Type	P-Value	Decision	(α:5%)			
Lab Water Control	Salt Contr	ol	1.18	1.94	0.149 6	CDF	0.1408	Non-Signi	ficant Effect	t		
ANOVA Table												
Source	Sum Squa	ares	Mean Squ	are	DF	F Stat	P-Value	Decision	α:5%)			
Between	Between 0.0163579 0.0163579 1				1	1.4	0.2816	Non-Signi	ficant Effec	t		
Error	0.0701351		0.0116892		6							
Total	0.086493				7							
Distributional Test	s											
Attribute	Test				Test Stat	Critical	P-Value	Decision(	α:1%)			
Variances	Variance F	Ratio F Test			1.09	47.5	0.9453	Equal Var	iances			
Distribution	Distribution Shapiro-Wilk W Normality Test				0.94	0.645	0.6092	Normal Di	stribution		_	
Fertilization Rate S	ummary											
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Мах	Std Err	CV%	%Effect	
VCWPD_1201_SP	LW	4	0.943	0.865	1.000	0.950	0.880	0.990	0.024	5.15%	0.00%	
VCWPD_SP_SALT	SA	4	0.898	0.804	0.991	0.895	0.830	0:970	0.029	6.52%	4.77%	
Angular (Corrected	) Transform	ned Summa	ary									
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect	
VCWPD_1201_SP	LW	4	1.35	1.17	1.52	1.35	1.22	1.47	0.0552	8.20%	0.00%	
VCWPD_SP_SALT	SA	4	1.26	1.09	1.42	1.24	1.15	1.4	0.0529	8.42%	6.71%	
Graphics												
1.0						0.16						
0.9						0.12					•	
0.8			[	Reject Nuli								
0.7						0.06		l				
gu 0.6					en terec	0.04			<b>"</b> *			
on Rat					ů į	0.00 ·		1	6			
						0.00						
5 0.4						-0.04		•				
0.3						-0.08						
0.2						-0.12	•					
0.1						• *						
0.0	VCWPD_1201_SP		VCWPD_SP_S	ALT		-0.16 -1.5	-1.0	0.5 0.0	0.5	1.0	1.5	
								Rentices				

Report Date:

12 Dec-18 14:57 (p 2 of 2)

**CETIS Analytical Report** 

Analyst: Analyst: QA: Attachment D Appendix T

### **Echinoderm Fertilization Toxicity Test Water Chemistry Data**

Client:	Ventura Coun	ty Watershed Protection	District	Organism Log#:	Age: N/A				
Test Material:		Salt Control	(	Organism Supplier:	Alexi				
Test Species		S. purpuratus		Control/Diluent:	FSW				
Test ID#:	80311	Project #: 29434	_	Test Date:	12/1/18	Randomization:			
Sample Salinity	adjusted with :_	Tropic Marin							
Treatment		Temperature (°C)	pH	D.O. (mg/L)	Salinity (ppt)	Signoff			
Lab Water Control		11.6	7.77	7.8	34,0	Date: 12/1/18			
Salt Co	ontrol	11.5	8.67	7.6	33.3	Test Solution Prep:			
						New WQ: Le			
						Innoculation Time: 1626			
						Innoculation Signoff:			
Meter	: ID	100A	PHZY	RDIS	ECIZ				

### **Echinoderm Fertilization Toxicity Test Data Sheet**

Client:	Ventu	ra County Waters	hed Protection District	Test Start Date: 12/1/18						
Test Material:		Salt Co	ntrol	Test End Date:	12/1/18					
Test Species:	_	S. purpu	iratus	Enumeration Date:	12/1/18					
Test ID #:	-	803	11	Investigator: Jo						
Project #:		2943								
Sample Salinity a	adjuste	d with : Tropic N	Marin							
Concentration Rep	licate	Number of Fertilized Eggs	Number of Unfertilized Eggs	Total Number of Eggs	Percent Fertilization					
	A	93	7	100	93					
Lab Water	В	97	3	100	97					
Control	С	88	12	100	88					
	D	97	1	100	99					
	A	97	3	100	97					
Salt Control	В	88	12	100	88					
South C Grade Dr	С	91	9	100	91					
	D	83	17	100	83					

## Appendix C

### Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of the VCWPD Stormwater to *Atherinops affinis*

#### **CETIS Summary Report**

 Report Date:
 06 Dec-18 11:18 (p 1 of 2)

 Test Code:
 VCWPD\_1123\_AA | 20-8046-1655

Chronic Larval Fish Survival and Growth Test Pacific EcoRisk													
Batch ID: 09-	3052-8477	Tes	st Type: Gro	wth-Surviva	al (7d)			Analy	st: S	tevi Vasque	z		
Start Date: 23	Nov-18 12:25	5 Pro	tocol: EPA	V600/R-95/	136 (1995)			Diluer	nt: N	ot Applicabl	е		
Ending Date: 30	Nov-18 08:34	4 Spe	ecies: Athe	erinops affir	nis			Brine:	: C	rystal Sea			
Duration: 6d	20h	So	u <b>rce:</b> Aqu	atic Biosys	tems, CO			Age:	1	4			
Sample Code	Sample II	) Sar	nple Date	Receip	t Date	Sample	Age	Client	Name		Project		
VCWPD_1123_AA	13-1519-8	115 23	Nov-18 12:25	23 Nov-	18 12:25	n/a (20.	1 °C)	Ventu	ra Coun	ty Watersh	29434		
VCWPD_AA_SAL	T 07-5380-4	617 23	Nov-18 12:25	23 Nov-	18 12:25	n/a (19.	1 °C)						
ME-CC	09-8136-9	357 22	Nov-18 01:30	23 Nov-	18 08:02	35h (0 '	°C)						
ME-VR2	19-8396-2	457 22 1	Nov-18 01:30	23 Nov-	18 08:02	35h (0 °	°C)						
MO-HUE	02-1965-3	242 22	Nov-18 00:30	23 Nov-	18 08:02	36h (0 °	°C)						
Sample Code	Material T	уре	Sam	ple Sourc	e		Station L	ocatio	n	Lat/Lor	g		
VCWPD_1123_AA	Lab Water		Ven	tura County	/ Watershed	d Prote	LABQA						
VCWPD_AA_SAL	F Salt Control	ol	Ven	tura County	/Watershee	d Prote							
ME-CC	Ambient V	Vater	Ven	tura County	Watershee	d Prote	ME-CC						
ME-VR2	Ambient V	Vater	Ven	tura County	Watershee	d Prote	ME-VR2						
MO-HUE	Ambient V	Vater	Ven	tura County	Watershee	Prote	MO-HUE						
Single Comparison Summary													
Analysis ID End	lpoint		Compariso	on Method			P-Va	alue	Compa	rison Resu	it		
11-9639-0399 7d	Survival Rate		Equal Varia	ance t Two-	Sample Te	st	0.34	80	VCWPE	_AA_SALT	passed 7d s	urvival rate	
15-8817-8476 7d	Survival Rate	•	Equal Varia	ance t Two-	Sample Te	st	0.20	20	ME-CC	passed 7d s	urvival rate	1	
00-9464-5738 7d \$	Survival Rate		Wilcoxon R	Rank Sum T	wo-Sample	Test	0.73	81	ME-VR2	2 passed 7d	survival rate		
00-0367-2190 7d \$	Survival Rate		Equal Varia	ance t Two-	Sample Te	st	0.34	80	MO-HU	E passed 7c	survival rate		
14-2240-5459 Mea	in Dry Bioma	iss-mg	Equal Varia	ance t Two-	Sample Te	st	0.12	57	VCWPE	AA_SALT	passed mea	n dry biomas	
02-3207-9203 Mea	in Dry Bioma	iss-mg	Equal Varia	ance t Two-	Sample Te	st	0.20	20	ME-CC	passed mea	n dry biomas	ss-mg	
08-3027-4251 Mea	in Dry Bioma	iss-mg	Equal Varia	ance t Two-	Sample Tes	st	0.86	71	ME-VR2	2 passed me	an dry bioma	ass-mg	
05-6650-6645 Mea	n Dry Bioma	iss-mg	Equal Varia	Equal Variance t Two-Sample Test 0.34					MO-HUE passed mean dry biomass-mg				
7d Survival Rate S	Summary												
Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Мах		Std Err	Std Dev	CV%	%Effect	
VCWPD_1123_AA	LW	5	0.920	0.784	1.000	0.800	1.00	0	0.049	0.110	11.91%	0.00%	
VCWPD_AA_SALT	SA	5	0.880	0.658	1.000	0.600	1.00	0	0.080	0.179	20.33%	4.35%	
ME-CC		5	0.840	0.632	1.000	0.600	1.00	0	0.075	0.167	19.92%	8.70%	
ME-VR2		5	0.920	0.784	1.000	0.800	1.00	0	0.049	0.110	11.91%	0.00%	
MO-HUE		5	0.880	0.658	1.000	0.600	1.00	0	0.080	0.179	20.33%	4.35%	
Mean Dry Biomas	s-mg Summ	агу											
Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max		Std Err	Std Dev	CV%	%Effect	
VCWPD_1123_AA	LW	5	1.94	1.6	2.28	1.66	2.29		0.121	0.272	14.01%	0.00%	
VCWPD_AA_SALT	SA	5	1.7	1.27	2.13	1.22	2.02		0.155	0.346	20.40%	12.54%	
ME-CC		5	1.68	0.925	2.43	1.21	2.74	1	0.271	0.606	36.13%	13.49%	
ME-VR2		5	2.2	1.7	2.69	1.71	2.68	i	0.177	0.397	18.06%	-13.27%	
MO-HUE		5	1.83	1.16	2.49	0.986	2.34		0.24	0.538	29.43%	5.76%	

R 6 Analyst: SV V QA: Attachment D Appendix I
# **CETIS Summary Report**

Chronic Larval Fish Survival and Growth Test

Report Date:	06 Dec-18 11:18 (p 2 of 2)
Test Code:	VCWPD_1123_AA   20-8046-1655

Pacific EcoRisk

7d Survival Rate D	etail					
Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
VCWPD_1123_AA	L.W	1.000	0.800	0.800	1.000	1.000
VCWPD_AA_SALT	SA	0.800	1.000	1.000	0.600	1.000
ME-CC		0.800	0.800	1.000	0.600	1.000
ME-VR2		1.000	0.800	1.000	0.800	1.000
MO-HUE		0.600	1.000	1.000	1.000	0.800
Mean Dry Biomass	-mg Det	ail				
Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
VCWPD_1123_AA	LW	2.29	1.66	1.72	1.87	2.15
VCWPD_AA_SALT	SA	1.22	1.79	1.98	1.46	2.02
ME-CC		1.21	1.47	1.57	1.4	2.74
ME-VR2		2.06	1.71	2.68	2.52	2.01
MO-HUE		0.986	2.34	1.86	2.25	1.71
7d Survival Rate Bi	inomials	5				
Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
VCWPD_1123_AA	LW	5/5	4/5	4/5	5/5	5/5
VCWPD_AA_SALT	SA	4/5	5/5	5/5	3/5	5/5
ME-CC		4/5	4/5	5/5	3/5	5/5
ME-VR2		5/5	4/5	5/5	4/5	5/5
MO-HUE		3/5	5/5	5/5	5/5	4/5

							Test	Code:	VCWPD_1	123_AA   2	0-8046-1655
Chronic Larval Fi	sh Survival	and Growti	n Test							Paci	ic EcoRisk
Analysis ID: 15	-8817-8476	End	point: 7d	Survival Rat	e		CET	S Version:	CETISv1	.9.2	
Analyzed: 06	Dec-18 11:	16 <b>Ana</b>	lysis: Par	ametric-Two	o Sample		Offic	ial Results:	Yes		
Data Transform		Alt Hyp					Comparis	on Result			PMSD
Angular (Corrected	)	C > T					ME-CC pa	assed 7d sur	vival rate		17.64%
Equal Variance t	Fwo-Sample	e Test									
Sample I vs	Sample II		Test Stat	Critical	MSD DF	P-Type	P-Value	Decision(	a:5%)		
Lab Water Control	ME-CC		0.881	1.86	0.194 8	CDF	0.2020	Non-Signit	icant Effect	t	
ANOVA Table											
Source	Sum Squ	ares	Mean Squ	are	DF	F Stat	P-Value	Decision(	a:5%)		
Between	0.021087		0.021087		1	0.776	0.4040	Non-Signif	icant Effect	1	
Error	0.217313		0.0271641		8						
Total	0.2384				9						
Distributional Tes	ts										
Attribute	Test				Test Stat	Critical	P-Value	Decision(	a:1%)		
Variances	Variance I	Ratio F Test			2.19	23.2	0.4655	Equal Vari	ances		
Distribution	Shapiro-W	/ilk W Norm	ality Test		0.919	0.741	0.3483	Normal Di	stribution		
7d Survival Rate S	Summary										
Sample	Code	Count	Меап	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
VCWPD_1123_AA	LW	5	0.920	0.784	1.000	1.000	0.800	1.000	0.049	11.91%	0.00%
ME-CC		5	0.840	0.632	1.000	0.800	0.600	1.000	0.075	19.92%	8.70%
Angular (Correcte	d) Transfor	med Summ	ary								
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Мах	Std Érr	CV%	%Effect
VCWPD_1123_AA	LW	5	1.25	1.09	1.41	1.35	1.11	1.35	0.0583	10.43%	0.00%
ME-CC		5	1.16	0.918	1.4	1.11	0.886	1.35	0.0864	16.68%	7.35%
Graphics											
1.0		-				0.20					
						0.15			6	e	
			1119	11		0.15					
0.8				Reject Null		0.10		٠	• •		
0.7					ered	0.05 Bu					
9 <sup>0.6</sup>					Cent	0.00		·¥			
0.5						-0.05		• •		·	
0.4						-0.10					
0.3						-0.15		•			
0.2						-0.20					
						-0.25					. 1
0.1						-0.30	•				
0.0	VCWPD_1123_AA		ME-CC			-2.0	-1.5 -1.0	-0.5 0.0	0.5 1.0	1.5	2.0
								Kankits			
								140			

Report Date:

06 Dec-18 11:18 (p 1 of 8)

#### 004-996-743-9

**CETIS Analytical Report** 

Ventura Countywide Stormwater Quality Management Program 2018/19 Annual Report

CETIS™ v1.9.2.6 Page DI - 34

Analyst: SVN QA: Attachment D Appendix I

CETIS Analy	tical Rep	port					Rep Tes	ort Date: t Code:	06 VCWPD 1	Dec-18 11:	18 (p 5 of 8)
Chronic Larval	Fish Surviva	al and Gro	owth Test							Paci	fic EcoRisk
Analysis ID: ( Analyzed: (	2-3207-9203 06 Dec-18 11	3 E 1:17 A	Endpoint: Me Analysis: Pa	ean Dry Bior rametric-Tw	nass-mg o Sample		CET	IS Version	n: CETISv ts: Yes	1.9.2	
Data Transform		Alt Hy	/p				Compari	son Resul	t		PMSD
Untransformed		C > T					ME-CC p	assed mea	an dry bioma	ss-mg	28.48%
Equal Variance	t Two-Samp	le Test									
Sample i vs	Sample	H.	Test Stat	Critical	MSD DF	P-Type	P-Value	Decisio	n(a:5%)		
Lab Water Contro	ME-CC		0.881	1.86	0.552 8	CDF	0.2020	Non-Sig	nificant Effect	t	
ANOVA Table											
Source	Sum Sq	uares	Mean Sq	uare	DF	F Stat	P-Value	Decisio	n(a:5%)		
Between	0.171088	3	0.171088		1	0.776	0.4040	Non-Sig	nificant Effect	:t	
Error	1.76342	******	0.220428		8			- 3			
Total	1.93451				9						
Distributional Te	sts										
Attribute	Test				Test Stat	Critical	P-Value	Decisio	n(α:1%)		
Variances	Variance	Ratio F Te	est		4.98	23.2	0.1492	Equal Va	ariances		
Distribution	Shapiro-\	Wilk W No	ormality Test		0.826	0.741	0.0303	Normal [	Distribution		
Mean Dry Bioma	ss-mg Sumi	mary									
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
VCWPD_1123_A	A LW	5	1.94	1.6	2.28	1.87	1.66	2.29	0.121	14.01%	0.00%
ME-CC		5	1.68	0.925	2.43	1.47	1.21	2.74	0.271	36.13%	13.49%
Graphics											
3.0						1.2					
						1.0					1
2.5						08					
						3					
2.0 P	1119111	-			tered	0.6					
nassen			11191	11	Cen	0.4					
.© 1.5 2			1////		-	0.2					
lan D				Reject huij							
Σ 1.0						0.0		~+			
						-0.2			•		
0.5						-0.4	¥				
						1	•				
0.0											

Client	: Ven	tura County	Watershed 1	Protection D	istrict		Organi	sm Log#	(13	60	Age:	14 days
Test Material	:		ME-CC				Organism	Supplier		ARS	- -	
Test ID#	: 80	308		Project #:	29434		Contr	ol Water	:		FS	SW
Test Date	11/23/	18 Ra	andomization:	5.5	.3	Со	ntrol Wa	ter Batch			_	
						-						
Test Treatment	Temp	1	H	D.O.	(mg/L)	Salinity		#1	Live Orean	isms	-	SIGN-OFF
	(°C)	new	old	new	old	(ppt)	A	B	С	D	E	Date: 1122415
Lab Water Control	201	7.89		9.8		34,1	5	5	5	5	5	Test Solution Prep: TF
100%	20.0	7.93		7.4		34.3	5	5	5	5	5	Initiation Time: R21 Initiation Signoff: 7F
Meter ID	81A	19419		RDII		ECII	New WQ:	TF		T		Sample ID: 51378
Lab Water Control	20.6	7.88	7.76	7.7	6.6	34.3	5	5	5	5	5	Test Solution Prep: JO
100%	20.8	8.04	8.13	7.7	6.2	34.3	5	5	5	5	5	Renewal Time: 1030 Renewal Signoff: TO
Meter ID	109A	PITZU	pH24	RDIO	RDIO	EC12	New WQ:	TF	Old WQ:	CD .		Sample ID: 51378
Lab Water Control	20.0	7.62	7.81	7.8	6.4	34.Z	5	5	5	5	5	Test Solution Prep: 64
100%	20.1	7.96	8.26	8.0	6.3	34.3	9	5	2	5	5	Renewal Time: 1145 Renewal Signoff: KL
Meter ID	108A	pH19	pot 24	Rpio	RD13	EC13	New WQ:	KL	Old WQ:	DH		Sample ID: 51378
Lab Water Control	19.9	7.70	7.67	9.1	6.4	34.2	5	5	5	5	5	Date: 126 (18 Test Solution Prep: 6-R
100%	19.9	8.12	8.09	g. o	6.3	34.4	4	5	5	5	5	Renewal Time: 1055 Renewal Signoff: 146
Meter ID	109A	1pula	PHIQ	PPIU	LAIO	EC13	New WQ:	SF	Old WQ:	FTP	2	Sample ID: 51378
Lab Water Control	19.6	7.82	7.72	7.8	8.4	34.4	5	5	5	5	5	Date: 11/27/18 Test Solution Prep:
100%	20.0	8.00	8.12	7.9	7.6	34.4	4	5	5	3	5	Renewal Time: 1109 Renewal Signoff: R6
Meter ID	APDI	PH25	P#125	RDID	ROIO	ECIZ	New WQ:	Th	Old WQ:	TA		Sample ID: 5/378
Lab Water Control	19.3	7,4	7.59	7,6	7.2	33.3	5	S	5 H	45	5	Date: 11 28/18 Test Solution Prep: K6
100%	200	7,92	8.12	10.1	7.8	34,4	4	4	5	3	5	Renewal Time: 1430 Renewal Signoff: 146
Meter ID	109A	pH25	PH25	1011	PDN	8010	New WQ:	SAT	Old WQ:	SAT		Sample ID: 51378
Lab Water Control	19.3	7,80	7.58	10.3	5.9	33.4	5	4	4	5	5	Date: M29118 Test Solution Prep: 66
100%	TE INIZAN	7.89	7.93	9.8	6.1	33.2	4	4	5	3	5	Renewal Time: USS Renewal Signoff: TF
Meter ID	(19A	14-19	PHI9	No12	RD12	ECIZ	New WQ:	XAT	Old WQ:	SVV		Sample ID: 51378
Lab Water Control	20.5		7.53		5.2	34.8	5	4	4	5	5	Date: 11/30/18 Termination Time: 1834
100%	20.7		7.92		4.4	34.2	4	4	5	3	5	Termination Signoff: 12
Meter ID	10711		PHT9		RD13	EC13			Old WQ:	TA		

7 Day Chronic Topsmelt (A. affinis) Toxicity Test Data

# **Chronic Topsmelt Dry Weight and Biomass Data**

Client:	Ventura County Water Prote	ction District	Fest ID #: 803	BO8 Project #	29434
Sample:	ME-CC	Tare We	ight Date: 11-29	-18 Sign-off:	myL
Test Date:	11/23/18	Final We	ight Date: 12 - 4 -	- 18 Sign-off:	AR
Pan ID	Concentration Replicate	Initial Pan Weight (mg)	Final Pan Weight (mg)	Initial # of Organisms	Biomass Value (mg)
1	Control A	407.28	418.72	5	2.29
2	В	408.87	417.19	5	1.66
3	С	409.58	418.17	5	1.72
4	D	406.36	415.73	5	1.87
5	E	414.46	425.21	5	2.15
6	F	411.83	-	-	-
7	100% A	418.16	424.23	5	1.21
8	В	409.09	416.44	5	1.47
9	С	416.00	423.84	5	1.57
10	D	411.90	418.89	5	1.40
11	Е	410.95	424.63	5	2.74
12	F	411.84	-	-	
QA 1		415.01	415.01		-
Balance ID		BALOH	Baloy		

CETIS Analyti	cal Repo	ort						Repo Test	ort Date: Code:	06 VCWPD_1	Dec-18 11: 123_AA   2	18 (p 2 of 8) 0-8046-1655
Chronic Larval Fis	h Survival	and Growth	n Test								Paci	fic EcoRisk
Analysis ID: 00- Analyzed: 06	9464-5738 Dec-18 11:1	End 6 Ana	point: 7d : lysis: Nor	Survival Rat	e -Two Sam	nple	9	CET	IS Versior ial Result	n: CETISv1 s: Yes	.9.2	
Data Transform		Alt Hyp						Comparis	son Result	t		PMSD
Angular (Corrected)	)	C > T						ME-VR2	bassed 7d	survival rate		13.97%
Wilcoxon Rank Su	ım Two-San	nple Test										
Sample I vs	Sample II		Test Stat	Critical	Ties	DF	P-Type	P-Value	Decisio	n(α:5%)		
Lab Water Control	ME-VR2		27.5	n/a	2	8	Exact	0.7381	Non-Sig	nificant Effec	t	
ANOVA Table												
Source	Sum Squa	ares	Mean Squ	are	DF		F Stat	P-Value	Decisio	n(α:5%)		
Between	0		0		1	-	0	1.0000	Non-Sig	nificant Effect	t	
Error	0.136099		0.0170124		8				5			
Total	0.136099				9							
Distributional Test	s											
Attribute	Test				Test Sta	at	Critical	P-Value	Decisio	n(α:1%)		
Variances	Variance F	Ratio F Test			1		23.2	1.0000	Equal Va	ariances		
Distribution	Shapiro-W	ilk W Norma	ality Test		0.64		0.741	1.7E-04	Non-Nor	mal Distributi	on	
7d Survival Rate S	ummary											
Sample	Code	Count	Mean	95% LCL	95% UC	Ľ	Median	Min	Мах	Std Err	CV%	%Effect
VCWPD_1123_AA	LW	5	0.920	0.784	1.000		1.000	0.800	1.000	0.049	11.91%	0.00%
ME-VR2		5	0.920	0.784	1.000		1.000	0.800	1.000	0.049	11.91%	0.00%
Angular (Corrected	d) Transforr	ned Summ	ary									
Sample	Code	Count	Mean	95% LCL	95% UC	Ľ	Median	Min	Max	Std Err	CV%	%Effect
VCWPD_1123_AA	LW	5	1.25	1.09	1.41		1.35	1.11	1.35	0.0583	10.43%	0.00%
ME-VR2		5	1.25	1.09	1.41		1.35	1.11	1.35	0.0583	10.43%	0.00%
Graphics												
10				- GJ			0.10					
			1111	11.			0.08				e e	
0.9	0						0.06		1			
0.8							D.04 -					
0.7						_ 9	0.02			,		
						And	n 0.00		- 1			
<sup>6.0</sup>							-0.02					
0.5							-0.04					
<b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b>							-0.06					
							-0.08					
0.5							-0.10					
0.2							-0,12					
0.1							-0.14	• / •				
0.0	VCWPD_1123_AA		ME-VR2				-2.0	-1.5 -1.0	-0.5 0.0	0.5 1.	1.5	2.0

								Test	Code:	VCWPD_1	123_AA   20	0-8046-1655
Chronic Larval Fis	sh Survival :	and Growth	n Test								Pacif	ic EcoRisk
Analysis ID: 08-	3027-4251	End	point: Mea	an Dry Biom	lass-mg			CETI	S Version:	CETISv1	.9.2	
Analyzed: 06	Dec-18 11:1	7 Ana	l <b>ysis</b> : Par	ametric-Two	o Sample	9		Offic	ial Results:	: Yes		
Data Transform		Alt Hyp						Comparis	on Result			PMSD
Untransformed		C > T						ME-VR2 p	assed mea	n dry bioma	ss-mg	20.61%
Equal Variance t T	wo-Sample	Test										
Sample I vs	Sample II		Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(	a:5%)		
Lab Water Control	ME-VR2		-1.2	1.86	0.4	8	CDF	0.8671	Non-Signi	ficant Effect		
ANOVA Table												
Source	Sum Squa	ares	Mean Squ	are	DF		F Stat	P-Value	Decision(	α:5%)		
Between	0.165374		0.165374		1		1.43	0.2657	Non-Signit	ficant Effect		
Error	0.92392		0.11549		8							
Total	1.08929				9							
Distributional Test	s											
Attribute	Test				Test St	tat	Critical	P-Value	Decision(	α:1%)		
Variances	Variance F	Ratio F Test			2.13		23.2	0.4815	Equal Vari	iances		
Distribution	Shapiro-W	ilk W Norm	ality Test		0.937		0.741	0.5150	Normal Di	stribution		
Mean Dry Biomass	s-mg Summ	ary										
Mean Dry Biomass Sample	s-mg Summ Code	ary Count	Mean	95% LCL	95% U(	CL	Median	Min	Max	Std Err	CV%	%Effect
Mean Dry Biomass Sample VCWPD_1123_AA	s-mg Summ Code LW	ary Count 5	<b>Mean</b> 1.94	<b>95% LCL</b> 1.6	95% U0 2.28	CL	<b>Median</b> 1.87	Min 1.66	<b>Max</b> 2.29	<b>Std Err</b> 0.121	<b>CV%</b> 14.01%	%Effect 0.00%
Mean Dry Biomass Sample VCWPD_1123_AA ME-VR2	s-mg Summ Code LW	ary Count 5 5	<b>Mean</b> 1.94 2.2	<b>95% LCL</b> 1.6 1.7	<b>95% U</b> 2.28 2.69	CL	<b>Median</b> 1.87 2.06	Min 1.66 1.71	Max 2.29 2.68	<b>Std Err</b> 0.121 0.177	<b>CV%</b> 14.01% 18.06%	<b>%Effect</b> 0.00% -13.27%
Mean Dry Biomass Sample VCWPD_1123_AA ME-VR2 Graphics	s-mg Summ Code LW	ary Count 5 5	Mean 1.94 2.2	<b>95% LCL</b> 1.6 1.7	<b>95% U</b> 2.28 2.69	CL	<b>Median</b> 1.87 2.06	Min 1.66 1.71	<b>Max</b> 2.29 2.68	<b>Std Err</b> 0.121 0.177	CV% 14.01% 18.06%	%Effect 0.00% -13.27%
Mean Dry Biomass Sample VCWPD_1123_AA ME-VR2 Graphics	s-mg Summ Code LW	ary Count 5 5	Mean 1.94 2.2	<b>95% LCL</b> 1.6 1.7	<b>95% U</b> 2.28 2.69	CL	<b>Median</b> 1.87 2.06	Min 1.66 1.71	Max 2.29 2.68	<b>Std Err</b> 0.121 0.177	CV% 14.01% 18.06%	%Effect 0.00% -13.27%
Mean Dry Biomass Sample VCWPD_1123_AA ME-VR2 Graphics	s-mg Summ Code LW	ary Count 5 5	Mean 1.94 2.2	<b>95% LCL</b> 1.6 1.7	<b>95% U</b> 2.28 2.69	CL	Median 1.87 2.06	Min 1.66 1.71	Max 2.29 2.68	<b>Std Err</b> 0.121 0.177	CV% 14.01% 18.06%	%Effect 0.00% -13.27%
Mean Dry Biomass Sample VCWPD_1123_AA ME-VR2 Graphics	s-mg Summ Code LVV	ary Count 5 5	Mean 1.94 2.2	<b>95% LCL</b> 1.6 1.7	<b>95% U</b> 2.28 2.69	CL	Median 1.87 2.06	Min 1.66 1.71	Max 2.29 2.68	<b>Std Err</b> 0.121 0.177	CV% 14.01% 18.06%	%Effect 0.00% -13.27%
Mean Dry Biomass Sample VCWPD_1123_AA ME-VR2 Graphics	s-mg Summ Code LW	ary Count 5 5	Mean 1.94 2.2	<b>95% LCL</b> 1.6 1.7	<b>95% U</b> ( 2.28 2.69	CL	Median 1.87 2.06	Min 1.66 1.71	Max 2.29 2.68	Std Err 0.121 0.177	CV% 14.01% 18.06%	%Effect 0.00% -13.27%
Mean Dry Biomass Sample VCWPD_1123_AA ME-VR2 Graphics	s-mg Summ Code LW	ary Count 5 5	Mean 1.94 2.2	<b>95% LCL</b> 1.6 1.7	<b>95% U</b> ( 2.28 2.69	CL	Median 1.87 2.06	Min 1.66 1.71	Max 2.29 2.68	Std Err 0.121 0.177	CV% 14.01% 18.06%	%Effect 0.00% -13.27%
Mean Dry Biomass Sample VCWPD_1123_AA ME-VR2 Graphics	s-mg Summ Code LW	ary Count 5 5	Mean 1.94 2.2	<b>95% LCL</b> 1.6 1.7	<b>95% U</b> ( 2.28 2.69	ntered nsformed	Median 1.87 2.06	Min 1.66 1.71	Max 2.29 2.68	Std Err 0.121 0.177	CV% 14.01% 18.06%	%Effect 0.00% -13.27%
Mean Dry Biomass Sample VCWPD_1123_AA ME-VR2 Graphics	s-mg Summ Code LW	ary Count 5 5	Mean 1.94 2.2	<b>95% LCL</b> 1.6 1.7	<b>95% U</b> ( 2.28 2.69	Centered Untransformed	Median 1.87 2.06 0.5 0.4 0.3 0.2 0.1	Min 1.66 1.71	Max 2.29 2.68	Std Err 0.121 0.177	CV% 14.01% 18.06%	%Effect 0.00% -13.27%
Mean Dry Biomass Sample VCWPD_1123_AA ME-VR2 Graphics 2.5 2.0 2.5 2.0 2.5	s-mg Summ Code LW	ary Count 5 5	Mean 1.94 2.2	95% LCL 1.6 1.7	<b>95% U</b> ( 2.28 2.69	Centered Untransformed	Median 1.87 2.06	Min 1.66 1.71	Max 2.29 2.68	Std Err 0.121 0.177	CV% 14.01% 18.06%	%Effect 0.00% -13.27%
Mean Dry Biomass Sample VCWPD_1123_AA ME-VR2 Graphics	s-mg Summ Code LW	ary Count 5 5	Mean 1.94 2.2	95% LCL 1.6 1.7	<b>95% U</b> ( 2.28 2.69	Centered Untransformed	Median 1.87 2.06 0.5 0.4 0.3 0.2 0.1 0.0 -0.1	Min 1.66 1.71	Max 2.29 2.68	Std Err 0.121 0.177	CV% 14.01% 18.06%	%Effect 0.00% -13.27%
Mean Dry Biomass Sample VCWPD_1123_AA ME-VR2 Graphics	s-mg Summ Code LW	ary Count 5 5	Mean 1.94 2.2	95% LCL 1.6 1.7	<b>95% U</b> ( 2.28 2.69	Centered Untransformed	Median 1.87 2.06 0.5 0.4 0.3 0.2 0.1 0.0 -0.1 -0.2	Min 1.66 1.71	Max 2.29 2.68	Std Err 0.121 0.177	CV% 14.01% 18.06%	%Effect 0.00% -13.27%
Mean Dry Biomass Sample VCWPD_1123_AA ME-VR2 Graphics 2.5 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	s-mg Summ Code LW	ary Count 5 5	Mean 1.94 2.2	95% LCL 1.6 1.7	<b>95% U</b> ( 2.28 2.69	Centered Untrastformed	Median 1.87 2.06 0.5 0.4 0.3 0.2 0.1 0.0 -0.1 -0.2 0.3 0.2 0.1 0.0 0.5 0.4 0.3 0.2 0.1 0.5 0.4 0.5 0.4 0.5 0.4 0.5 0.5 0.4 0.5 0.5 0.4 0.5 0.5 0.4 0.5 0.5 0.5 0.4 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	Min 1.66 1.71	Max 2.29 2.68	Std Err 0.121 0.177	CV% 14.01% 18.06%	%Effect 0.00% -13.27%
Mean Dry Biomass Sample VCWPD_1123_AA ME-VR2 Graphics 2.5 2.0 2.0 2.0 2.0 2.5 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	s-mg Summ Code LW	ary Count 5 5	Mean 1.94 2.2	95% LCL 1.6 1.7	<b>95% U</b> ( 2.28 2.69	Centered Untransformed	Median 1.87 2.06 0.5 0.4 0.3 0.2 0.1 0.0 -0.1 -0.2 -0.3	Min 1.66 1.71	Max 2.29 2.68	Std Err 0.121 0.177	CV% 14.01% 18.06%	%Effect 0.00% -13.27%
Mean Dry Biomass Sample VCWPD_1123_AA ME-VR2 Graphics 2.5 2.0 2.5 2.0 2.5 2.0 2.5 2.0 2.5 2.0 2.5 2.0 2.5 2.0 2.5 2.0 2.0 2.5 2.0 2.0 2.5 2.0 2.5 2.0 2.5 2.0 2.5 2.0 2.0 2.5 2.0 2.0 2.5 2.0 2.0 2.5 2.0 2.0 2.5 2.5 2.0 2.0 2.5 2.5 2.5 2.0 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5	s-mg Summ Code LW	ary Count 5 5	Mean 1.94 2.2	95% LCL 1.6 1.7	<b>95% U</b> ( 2.28 2.69	Centered Untransformed	Median 1.87 2.06 0.5 0.4 0.3 0.2 0.1 0.0 -0.1 -0.2 -0.3 -0.4	Min 1.66 1.71	Max 2.29 2.68	Std Err 0.121 0.177	CV% 14.01% 18.06%	%Effect 0.00% -13.27%
Mean Dry Biomass Sample VCWPD_1123_AA ME-VR2 Graphics 2.5 2.0 2.5 2.0 1.5 1.5 1.5 1.0 0.5 0.0	s-mg Summ Code LW	ary Count 5 5	Mean 1.94 2.2	95% LCL 1.6 1.7	<b>95% U</b> ( 2.28 2.69	Centered Lintransformed	Median 1.87 2.06 0.5 0.4 0.3 0.2 0.1 0.0 -0.1 -0.2 -0.3 -0.4 -0.5 -220	Min 1.66 1.71	Max 2.29 2.68	Std Err 0.121 0.177	CV% 14.01% 18.06%	%Effect 0.00% -13.27%

### **CETIS Analytical Report**

 Report Date:
 06 Dec-18 11:18 (p 6 of 8)

 Test Code:
 VCW/PD 1123 A4 120-8046 1655



Client	Ven	tura County	Watershed I	rotection D	istrict	2	Organis	sm Log#:	1130	00	Age:	14 days
Test Material			ME-VR2			- c	Organism	Supplier		ABS	_	
Test ID#	80	309		Project #:	29434		Contro	ol Water			FS	W
Test Date	11/23	5/18 R	andomization:	5.5	3	Co	ntrol Wat	er Batch:				
Test Treatment	Temp		pH	D.O.	(mg/L)	Salinity		#1	live Organ	isms	_	SIGN-OFF
	(°C)	new	old	new	old	(ppt)	A	B	С	D	E	Date: 11 and 11 a
Lab Water Control	20.1	7.89		9.8		34.1	5	5	5	5	S	Test Solution Prep.
100%	19.9	7.85		8.0		34.4	5	5	5	5	5	Initiation Lime: 122 5 Initiation Signoff: TF
Meter ID	81A	PH 19		RDI		E(1)	New WQ:	TF				Sample ID: 51379
Lab Water Control	20.6	7.88	7.76	7.7	6.6	34.3	5	5	5	5	5	Test Solution Prep: JO
100%	20.8	7.97	8.19	7.7	6.2	34.3	5	5	5	5	5	Renewal Time: 1030 Renewal Signoff: 50
Meter ID	109A	7424	PH24	RDIO	RDIO	EC12	New WQ:	TF	Old WQ:	00		Sample ID: 51379
Lab Water Control	20.0	7.62	7.81	7.8	G.4	34.2	5	5	5	5	5	Test Solution Prep: 6
100%	20.3	7.88	8.27	8.4	6.3	34.5	5	5	5	5	5	Renewal Time: 11215 Renewal Signoff: KL
Meter ID	108A	p1+19	P424	RDIO	RDIS	EUS	New WQ:	KL	Old WQ:	PH		Sample ID: 51379
Lab Water Control	19.9	7.70	7.67	8.1	6.4	34.2	S	5	S	5	5	Date: 126118 Test Solution Prep: 66
100%	20.1	8.04	8:11	8. 4	6.2	34.2	5	5	5	5	5	Renewal Time: 1055 Renewal Signoff: K/2
Meter ID	109A	WHIA	PHIA	RDID	RANO	ECIS	New WQ:	sf	Old WQ:	ST	5	Sample ID: 51379
Lab Water Control	19.6	7.82	7.72	7-8	8-4	34.4	5	5	5	5	5	Date: 11/274/kS Test Solution Prep: TF
100%	20.3	7-90	8.19	8.2	8.1	34.4	5	4	5	4	5	Renewal Time: 1109 Renewal Signoff: Rt
Meter ID	129A	PH25	PH25	RDIO	ROID	EC13	New WQ:	TA	Old WQ:	TA	_	Sample ID: 51379
Lab Water Control	19.8	7.4	7.59	2.6	7.2	33.3	S	S	Sum	14 NO INIO	5	Test Solution Prep: K6
100%	20.0	7,91	8,13	10.6	7.0	33.8	5	4	5	4	5	Renewal Time: 1430 Renewal Signoff: K6
Meter ID	109A	PHZ	PH25	KPIL	RPA	2010	New WQ:⊄	AT	Old WQ:	SA	1	Sample ID: 31379
Lab Water Control	74-7 7F 1/29/18	7.90	7.58	10.3	5.9	33.4	5	4	4	5	5	Test Solution Prep: EP
100%	.207	7.88	8.05	9.8	6.2	33.6	5	4	5	4	5	Renewal Time: US3 Renewal Signoff:
Meter ID	109A	0419	pH19	RPIZ	EDIZ	ECIZ	Now WQ:	SAT	Old WQ:	SVV	(	Sample ID: 61379
Lab Water Control	70.5		7.53		5.2	34.8	5	ų	U	5	5	Date: 11/30/18 Termination Time: 0334
100%	20.8		8.04		5.5	34.0	5	4	5	ų	5	Termination Signoff:
Meter ID	107A		PH19		RAB	EC/3			Old WQ:	TA		

#### 7 Day Chronic Topsmelt (A. affinis) Toxicity Test Data

# **Chronic Topsmelt Dry Weight and Biomass Data**

Client:	Ventura County Water Protect	ion District	Test ID #:	803	09	Project #	29434
Sample:	ME-VR2	Tare We	eight Date:	11-29	-18	Sign-off:	MYL
Test Date:	1/231.8	Final We	eight Date:	12 - 4 -	18	Sign-off:	AR
Pan ID	Concentration Replicate	Initial Pan Weight (mg)	Final Par	n Weight	Initial Organ	# of isms	Biomass Value (mg)

Pairid	Replicate	(mg)	(mg)	Organisms	Biomass value (mg)
1	Control A	407.28	418.72	5	2.29
2	В	408.87	417.19	5	1.66
3	С	409.58	418.17	5	1.72
4	D	406.36	415.73	5	1.87
5	E	414.46	425.21	5	2.15
6	F	411.83	-	-	-
13	100% A	411.33	421.62	5	2,06
14	В	410.76	419.30	5	1.71
15	С	417.51	430.90	5	2.68
16	D	410.50	423.11	T	2.52
17	Е	412.91	422.98	5	2.01
18	F	410,99	1		
QA 1		415.01	415.01		
Balance ID		BALOY	BAL 04		

<b>CETIS Analyti</b>	cal Repo	ort					Repo Test	ort Date: Code:	06   VCWPD 1	Dec-18 11: 123  AA I 2	18 (p 3 of 8) 0-8046-1655
Chronic Larval Fis	h Survival	and Growth	n Test							Pacif	fic EcoRisk
Analysis ID: 00-0	0367-2190	End	point: 7d	Survival Rat	e		CET	S Version:	CETISv1	.9.2	
Analyzed: 06	Dec-18 11:1	7 Ana	<b>lysis</b> : Par	ametric-Two	Sample		Offic	ial Results	: Yes		
Data Transform		Alt Hyp					Comparis	on Result			PMSD
Angular (Corrected)		С > Т					MO-HUE	passed 7d s	urvival rate		18.50%
Equal Variance t T	wo-Sample	Test									
Sample I vs	Sample II		Test Stat	Critical	MSD DF	P-Type	P-Value	Decision(	(α:5%)		
Lab Water Control	MO-HUE		0.405	1.86	0.203 8	CDF	0.3480	Non-Signi	ficant Effec	t	
ANOVA Table											
Source	Sum Squa	ares	Mean Squ	are	DF	F Stat	P-Value	Decision(	α:5%)		
Between	0.0048873		0.0048873		1	0.164	0.6961	Non-Signi	ficant Effect	t	
Error	0.238371		0.0297963		8						
Total	0.243230				9						
Distributional Test	S										
Attribute	Test	Potio E Toot			Test Stat	Critical	P-Value	Decision(	a:1%)		
Distribution	Shapiro-W	ilk W Norm	ality Test		2.5	0.741	0.0218	Normal Di	stribution		
7d Survival Rate S	ummary					_					
Sample	Code	Count	Mean	95% I CI	95% UCI	Median	Min	Max	Std Err	CV%	% Effect
VCWPD 1123 AA	LW	5	0.920	0.784	1.000	1.000	0.800	1.000	0.049	11.91%	0.00%
MO-HUE		5	0.880	0.658	1.000	1.000	0.600	1.000	0.080	20.33%	4.35%
Angular (Corrected	I) Transform	ned Summ	ary								
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
VCWPD_1123_AA	LW	5	1.25	1.09	1.41	1.35	1.11	1.35	0.0583	10.43%	0.00%
MO-HUE		5	1.21	0.95	1.46	1.35	0.886	1.35	0.0923	17.11%	3.54%
Graphics								k.			
1.0	11/1/1		11111	11,		0.20					
0.9	//////			11.		0.15			•		
0.8						0.10			•		
0.7				Reject Null		0.05					
0,7					itered	0.00					
Rate					, C	-0.05 -					
						-0.10	:	۰			
יא 0.4 ג						-0.15	۰				
0.3						-0.20					
0.2						+D.25					
0.1						0.00					
0.0						-0.35 -2.0	-1.5 -1.0	-0.5 0.0	0.5 1.6	1.5	2.0
	VCWPU_1123_AR		MO-HUE					Rankits			]

Analyst: SNV QA: Rb Attachment D Appendix I

<b>CETIS Analytic</b>	cal Repo	ort					Repo	ort Date:		Dec-18 11:1	18 (p 7 of 8)
Chronic Larval Fis	h Survival :	and Growth	Test				1031		VOWPD_1	Pacif	ic EcoRisk
Analysis ID: 05-6	3650-6645	End	point: Mea	n Dry Biom	ass-mo		CETI	S Version:	CETISv1	92	
Analyzed: 06	Dec-18 11:1	7 Ana	<b>ysis:</b> Para	ametric-Two	Sample		Offic	ial Results	: Yes		
Data Transform		Alt Hyp					Comparis	on Result			PMSD
Untransformed		C > T					MO-HUE	passed mea	an dry bioma	ass-mg	25.84%
Equal Variance t T	wo-Sample	Test									
Sample I vs	Sample II		Test Stat	Critical	MSD DF	P-Type	P-Value	Decision	(α:5%)		
Lab Water Control	MO-HUE		0.414	1.86	0.501 8	CDF	0.3448	Non-Signi	ficant Effec	t	
ANOVA Table											
Source	Sum Squa	ares	Mean Squ	are	DF	F Stat	P-Value	Decision	(α:5%)		
Between	0.0311387	,	0.0311387		1	0.172	0.6896	Non-Signi	ficant Effect	t	
Error	1.45159		0.181448		8						
lotal	1.482/3				9		and the second state				
Distributional Test	5										
Attribute	Test				Test Stat	Critical	P-Value	Decision(	α:1%)		
Variances	Variance F	Ratio F Test			3.92	23.2	0.2142	Equal Var	iances		
Distribution	Shapiro-W	ilk W Norma	ality Test		0.941	0.741	0.5695	Normal Di	stribution		
Mean Dry Biomass	-mg Summ	ary									
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
VCWPD_1123_AA	LW	5	1.94	1.6	2.28	1.87	1.66	2.29	0.121	14.01%	0.00%
MO-HUE		5	1.83	1.16	2.49	1.86	0.986	2.34	0.24	29.43%	5.76%
Graphics											
2.5						0.8					
						0.6					
2.0										•	
Z						0.4 9					
					ered	0.2			۰		
Ê 1.5				Reject Null	Cent	0.0	-			-	
Bio						5		•			
6 1.0				1 mar 10 mar 10 mar		*U.2		•			
Wea W						-0.4					
						-0.6					
0.5											
						-0.0	•				
0.0						-1.0 -2.0	-1.5 -1.0	-0.5 0.0	0.5 1.0	1.5	2.0
	VCWPD_1123_AA		MO-HUE					Rankits			

#### 004-996-743-9

Ventura Countywide Stormwater Quality Management Program 2018/19 Annual Report

CETIS™ v1.9.2.6 Page DI - 43



Client:	Ven	tura County	Watershed I	Protection D	istrict		Organi	sm Log#	113	00	Age:	14 days
Test Material:			MO-HUE			C	Organism	Supplier		AB	S	
Test ID#:	80	310	-	Project #:	29434		Contr	ol Water	:		FS	SW
Test Date:	1/23/	18 Ra	andomization:	5.	5.3	Co	ntrol Wat	er Batch		-	_	
	Temp	1	н		(m./I.)	Salinity	1	#1	live Oraan	ieme		1
Test Treatment	(°C)	new	old	new	old	(ppt)	A	#1 B	C	D	E	SIGN-OFF
Lab Water Control	20.1	7.89		9.8		34.1	5	5	5	5	5	Date: 11/2 3/19 Test Solution Prep: 77
100%	21.0	7.81		7.7		3.4.2	5	5	5	5	5	Initiation Time: 1225 Initiation Signoff: 4F
Meter ID	81,4	PH 19		RDII		ECI	New WQ:	TF				Sample ID: 51387
Lab Water Control	20.6	7.88	7.76	7.7	6.6	34.3	5	5	5	5	5	Test Solution Prep: J.O.
100%	20.8	7.94	8.06	8.0	6.0	34.4	5	5	5	5	5	Renewal Signoff:
Meter ID	109A	PH 24	PH24	RDIO	RDIO	EC12	New WQ:	TF	Old WQ:	CD	-	Sample ID: 51387
Lab Water Control	20.0	7.62	7.81	7.8	6.4	34.2	5	5	5	5	5	Test Solution Prep: CF
100%	20.3	7.82	8.12	8.1	5.6	34:2	5	5	5	5	5	Renewal Signoff: KL
Meter ID	108A	PITA	рнгч	RDIO	RD13	EC13	New WQ:	KL	Old WQ:	DH	-	Sample ID: 51387
Lab Water Control	19.9	770	7.67	8.1	6.4	34.2	5	5	5	5	5	Test Solution Prep: 68
100%	20.1	7.97	8.00	8.0	5.7	34.3	5	5	5	5	5	Renewal Time: 1055 Renewal Signoff: 15/2
Meter ID	IMA	4HIA	8424	RDIO	RIO	EC13	New WQ:	SF	Old WQ:	str-	7	Sample ID: 31387
Lab Water Control	19.6	8.61	7.72	7.8	8-4	34.4	5	5	5	5	5	Date: 1/27-1/8 Test Solution Prep: TF
100%	198	7.82	8-21	7.7	8.1	34.4	4	5	5	5	5	Renewal Time: 1109 Renewal Signoff: <i>R</i> 6
Meter ID	109A	PH25	PH25	ROID	RAIO	=(13	New WQ:	TA	Old WQ:	TA	-	Sample ID: 51387
Lab Water Control	19.9	7.4	7.59	7,6	7.2	33.3	5	5	5	45	5	Test Solution Prop
100%	19.9	7.81	8.05	10.3	7.4	33.5	3	5	S	5	4	Renewal Signoff: KG
Meter ID	109A	PH25	pHas	KPI	KDI	2010	New WQ:	SAT	Old WQ:	SAT	[	Sample ID: 51387
Lab Water Control	120.2 12112010	7.80	7,58	10.3	5.9	33.4	5	ч	4	5	5	Test Solution Prep: ER
100%	20.2	7.73	8.12	9,3	6.5	33.2	3	5	5	5	4	Renewal Time: 1153 Renewal Signoff: TF
Meter ID	109A	QH-19	PHIQ	6012	RDIZ	ECIZ	New WQ	AT	Old WQ:	81	/	Sample ID: 51387
Lab Water Control	70.5		7-53		5.2	34.8	ζ	4	4	5	5	Tennination Time: 08 34
100%	70.4		8.07		5.1	33-8	3	5	5	5	4	remination Signoff:
Meter ID	MA		PH19		R\$13	EC13			Old WQ:	TA		

#### 7 Day Chronic Topsmelt (A. affinis) Toxicity Test Data

# **Chronic Topsmelt Dry Weight and Biomass Data**

Client:	Ventura County Water Protection District	Test ID #:	80310	Project #	29434
Sample:	MO-HUE	Tare Weight Date:	11-29-18	Sign-off:	MH
Test Date:	11/23/18	Final Weight Date:	12-4-18	Sign-off:	AR

Pan ID	Concentration Replicate	Initial Pan Weight (mg)	Final Pan Weight (mg)	Initial # of Organisms	Biomass Value (mg)
1	Control A	407.28	418.72	5	2.29
2	В	408.87	417 19	5	1.66
3	C	409.58	418-17	5	1.72
4	D	406.36	415.73	5	1.87
5	E	414.46	425-21	5	2,15
6	F	411.83	1	-	
19	100% A	407.94	412.87	5	0.986
20	В	407.55	419.23	5	2.34
21	С	413.14	422.43	5	1.86
22	D	415.85	427.08	5	2.25
23	E	410.81	419.36	5	1.71
24	F	407.71	-	-	-
QA 1		415.01	415.01		-
Balance ID		BALOY	BALOY		

<b>CETIS Analytic</b>	cal Repo	ort					Repo	ort Date:		Dec-18 11:1	8 (p 4 of 8)
Chronic Larval Fis	h Survival a	and Growth	n Test				Test		VOWPD_1	Pacif	ic EcoRisk
Analysis ID: 11-9	9639-0399	End	point: 7d \$	Survival Rat	e		CETI	S Version:	CETISv	.9.2	Anna Carl
Analyzed: 06	Dec-18 11:1	7 Anal	l <b>ysis:</b> Par	ametric-Two	o Sample		Offic	ial Results:	: Yes		
Data Transform		Alt Hyp					Comparis	on Result			PMSD
Angular (Corrected)		C > T					VCWPD_/	AA_SALT p	assed 7d s	urvival rate	18.50%
Equal Variance t T	wo-Sample	Test									
Sample I vs	Sample II		Test Stat	Critical	MSD DF	P-Type	P-Value	Decision(	a:5%)		
Lab Water Control	Salt Contro	bl	0.405	1.86	0.203 8	CDF	0.3480	Non-Signi	ficant Effec	t	
ANOVA Table											
Source	Sum Squa	ires	Mean Squ	are	DF	F Stat	P-Value	Decision(	a:5%)		
Between	0.0048873		0.0048873		1	0.164	0.6961	Non-Signi	ficant Effec	t	
Error	0.238371		0.0297963		8						
Total	0.245250	_			9			-			
Distributional Test	\$										
Attribute	Test	atio E Test			Test Stat	Critical	P-Value	Decision(	α:1%)		
Distribution	Shapiro-W	ilk W Norma	alitv Test		∠.5 0.815	23.2 0.741	0.3959	Equal Vari	ances stribution		
7d Survival Rate S	ummary					•	0.02.0				
Sample	Code	Count	Moon	95% 1.01	05% 1101	Modian	Min	Mox	Std Em	C) /0/	0/ 1766 4
VCWPD 1123 AA	L W	5	0.920	0 784	1 000	1 000	0.800	1 000	0 049	11 91%	
VCWPD_AA_SALT	SA	5	0.880	0.658	1.000	1.000	0.600	1.000	0.080	20.33%	4.35%
Angular (Corrected	) Transform	ned Summa	агу								
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
VCWPD_1123_AA	LW	5	1.25	1.09	1.41	1.35	1.11	1.35	0.0583	10.43%	0.00%
VCWPD_AA_SALT	SA	5	1.21	0.95	1.46	1.35	0.886	1.35	0.0923	17.11%	3.54%
Graphics											
1.0 / /	111111		<i>[[]</i> ]	771		0.20					
0.9						0.15					
0.8						0.10					
0.7		***		Reject Null		0.05					
0.7					thered	0.00		-			
20.6					G	0.05					
						-0.10					
S 0.4						-0.15	٠	•			
0.3						-0.20					
0.2						-0.25 ÷-		1			
0.1						-0.30	٠	1			
0.0						-0.35 +2.0	-1.5 -1.0	-0.5 0.0	0.5 1.	0 1.5	2.0
	VCWPD_1123_AA		VCWPD_AA_S	SALT				Rankits			

Report Date:

06 Dec-18 11:18 (p 4 of 8)

Analyst: <u>Analyst:</u> QA: <u>Attachment D Appendix I</u>

CETIS Analyti	cal Repo	ort					Repo Test	ort Date: Code:	06 I VCWPD_1	Dec-18 11:1 123_AA   20	8 (p 8 of 8) )-8046-1655
Chronic Larval Fis	h Survival	and Growth	n Test							Pacif	ic EcoRisk
Analysis ID: 14- Analyzed: 06	2240-5459 Dec-18 11:1	End 7 Ana	point: Mea lysis: Par	an Dry Biom ametric-Two	ass-mg Sample		CETI Offic	S Version: ial Results:	CETISv1 Yes	.9.2	
Data Transform		Alt Hyp					Comparis	on Result			PMSD
Untransformed		C > T					VCWPD_	AA_SALT p	assed mean	n dry bioma	s 18.87%
Equal Variance t T	wo-Sample	Test									
Sample I vs	Sample II		Test Stat	Critical	MSD DF	P-Type	P-Value	Decision(	α:5%)		
Lab Water Control	Salt Control	ol	1.24	1.86	0.366 8	CDF	0.1257	Non-Signi	ficant Effect	t	
ANOVA Table											
Source	Sum Squa	ares	Mean Squ	are	DF	F Stat	P-Value	Decision(	α:5%)		
Between	0.147865		0.147865		1	1.53	0.2514	Non-Signi	icant Effect		
Error	0.773803		0.0967253		8						
Total	0.921668				9						
Distributional Test	S										
Attribute	Test				Test Stat	Critical	P-Value	Decision(	α:1%)		
Variances	Variance F	Ratio F Test			1.62	23.2	0.6504	Equal Vari	ances		
Distribution	Shapiro-W	lik W Norm	ality Test		0.917	0.741	0.3294	Normal Di	stribution		
Mean Dry Biomass	-mg Summ	ary									
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Мах	Std Err	CV%	%Effect
VCWPD_1123_AA	LW	5	1.94	1.6	2.28	1.87	1.66	2.29	0.121	14.01%	0.00%
VCWPD_AA_SALT	SA	5	1.7	1.27	2.13	1.79	1.22	2.02	0.155	20.40%	12.54%
Craphics 2.5 2.0 2.0 1.5 0.5 0.5	7.1.87.7.7.		7777	Reject Null	Centered	0.5 0.4 0.3 0.2 0.1 -0.1 -0.2 -0.3 -0.4	•	•	•	ø	
	VOMPD 1122 44					-2.0	-1.5 -1.0	-0.5 0.0	0.5 1.0	1.5	2.0

Rb Analyst: \_\_\_\_\_ QA: \_\_\_\_\_ Attachment D Appendix I

Client:	Vent	tura County	Watershed I	Protection D	istrict		Organis	sm Log#:	113	00	Age:	14	TF 11/23/18 Jaws
Test Material:			Salt Control			C	rganism	Supplier:		AB	5		S.
Test ID#:		a.	Project #:	29	434		Contro	ol Water;	D	iluted Fil	tered Sea	awater + (	Crystal Sea
Test Date:	11/23/	18 Ra	- indomization:	\$ 5.3		Cor	ntrol Wat	er Batch:					
Test Treatment	Temp	F	Н	D.0.	(mgA_)	Salinity (ppt)		# L	ive Organ	isms	1	S	IGN-OFF
Salt Control	19.1	12.22	OIG	R2	OIG	34.2	5	5	5	5	E S	Date: (1/	23/18 n Prep:
												Initiation Ti	ne: 1225
	2	DLL 19		RM		571	New WQ:					Initiation Sig	TF
Meter ID	314	1711		15/21	6 1	Lett		1/				Date:	2.U110
Salt Control	20.7	8.91	8.04	7.9	6.6	34.4	5	5	5	5	5	Test Solution	Prep: T.O
												Renewal Tim Renewal Sign	1030
Meter ID	109A	PH24	DH24	RD10	RDIO	ECIZ	New WQ:	TF	Old WQ:	Ð	1.111.111.111		
Salt Control	20.1	8.23	8.03	7.9	63	34.8	5	5	5	4	5	Date: 11 Test Solution	125/18 1 Prop: GR
												Renewal Tim	e: 1145
												Renewal Sigr	NOFF: KL
Meter ID	108A	01719	1424	RDIO	RDIZ	ECIZ	New WQ	KL	Old WQ	DH	-	Date:	
Salt Control	19.9	8.40	7.81	8.0	6.5	34.2	5	5	5	3	5	Test Solution	26118 Prep: 62
												Renewal Tim Renewal Sign	"1055 "" K/2
Meter ID	1090	PHIG	PHIQ	2010	enio.	EC13	New WDY	2	Old WQ:	201	7		
Salt Control	19.9	8-61	7.81	7.9	8.1	34.4	5	5	5	3	5	Date: /// Test Solution	27/18 Prep:TF
												Renewal Tim	104
						br z	New WO					Renewal Sign	off: RG
Meter 1D	LU IA	PHZS	PHPES	RDIO	RDIO	417	non ng. ,	TR	ola wę.	TA	-	Date:	20/10
Salt Control	20.0	8.1	7.81	412	7.3	33.1	S	5	5	3	5	Test Solution	Prot
												Renewal Time	*1430
	1094	01- 25	0101	0011	001	0015	New WO-		OIA WO:	0/2	-1-	Renewal Sign	off: K6
Meter 1D	20.4	18.16	PHAS	POLL	RAM	0010		1AM		707	1728	in the second	24/10
Salt Control	TE UTANY	9.5×11	7.+3	9,5	6.1	33.4	5	S	>	5	5	Test Solution	Prop:
												Renewal Time	1153
	1/19 A-	allan	DULO	0010	0.00		Nav WO	CAT	Old WO	0		Renewal Sign	TF
ivieter 1D	10171		kula	my 2	PULL	0012		7453		SV V		Date:	1201.8
Salt Control	20.7		7.65		5-4	34.8	4	5	5	3	5	Termination T	ime: 1834
												remination S	rgaou: 12
Meter ID	1071		PH19		RD13	EC13			Old WQ:	TA			

7 Day Chronic Topsmelt (A. affinis) Toxicity Test Data

# Chronic Topsmelt Dry Weight Data

Client:	Ventura County Watershed Protection I	District	Test ID #:	-	Project #	29434
Sample:	Salt Control	Tare We	ight Date: _	11-29-18	Sign-off:	myl
Test Date:	11/23/18	Final We	ight Date:	12-4-18	Sign-off:	AR

Pan ID	Concentrati	on Replicate	Initial Pan Weight (mg)	Final Pan Weight (mg)	Initial # of Organisms	Biomass Value (mg)
IA	Salt	Α	414.11	420.21	Б	1.22
ZA	Control	В	411.27	420.23	5	1.79
3A		С	412.99	422.89	5	1.98
ЧÁ		D	410.46	417 77	5	1.46
5A		E	413.30	423.42	5	2.02

# **Appendix D**

# Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of the VCWPD Stormwater to Selenastrum capricornutum

#### **CETIS Summary Report**

 Report Date:
 06 Dec-18 11:23 (p 1 of 1)

 Test Code:
 VCWPD\_1123\_SC | 00-6855-1810

Algal Growth Tes	t									Paci	fic EcoRisk
Batch ID:00-Start Date:23Ending Date:27Duration:95h	9959-2590 Nov-18 10:20 Nov-18 09:45	Tes Pro Spe Sou	t Type: Ce tocol: EF cies: Se rce: In-	ell Growth PA-821-R-02- elenastrum ca -House Cultur	013 (2002) apricornutur re	n	Anal Dilue Brine Age:	yst: Ste ent: Not e: Not 7	vi Vasquez Applicable Applicable		
Sample Code VCWPD_1123_SC	Sample ID 04-3129-3	) San 925 23 N	i <b>ple Date</b> lov-18 10:2	Receipt	t Date 18 10:20	Sample Age n/a (24.4 °C	e Clier ) Vent	<b>it Name</b> ura County	Pi Watersh 29	oject 9434	
MO-MPK	02-6415-9	658 22 N	lov-18 00:1	0 23 Nov-	18 08:02	34h (0 °C)					
Sample Code VCWPD_1123_SC MO-MPK	Material T Lab Water Ambient W	ype /ater	Sa Ve Ve	ample Source entura County entura County	e v Watershed v Watershed	Stat Prote LAE Prote MO	tion Locati 3QA -MPK	on	Lat/Long		
Single Compariso Analysis ID End 12-1186-2003 96h	on Summary Ipoint Cell Density	-without ED	Compari Equal Va	son Method riance t Two-	Sample Te	st	<b>P-Value</b> 1.0000	Compari MO-MPK	<b>son Result</b> passed 96h	cell densi	ty-without edt
96h Cell Density-v	vithout EDT	A Summary	/								
Sample VCWPD_1123_SC MO-MPK	Code LW	Count 4 4	Mean 3.03E+6 7.34E+6	<b>95% LCL</b> 2.72E+6 6.89E+6	<b>95% UCL</b> 3.34E+6 7.80E+6	Min 2.81E+6 7.06E+6	Max 3.27E+6 7.72E+6	<b>Std Err</b> 9.68E+4 1.44E+5	Std Dev 1.94E+5 2.89E+5	CV% 6:40% 3.93%	%Effect 0.00% -142.61%
96h Cell Density-v	vithout EDT	A Detail									
Sample VCWPD_1123_SC MO-MPK	Code LW	<b>Rep 1</b> 3.27E+6 7.41E+6	Rep 2 2.81E+6 7.06E+6	<b>Rep 3</b> 2.96E+6 7.72E+6	<b>Rep 4</b> 3.07E+6 7.19E+6						

Ļ

· · · · · · · · · · · · · · · · · · ·		-					Test	Code:	VCWPD_1 <sup>2</sup>	123_SC   0	0-6855-1810
Algal Growth Test										Paci	fic EcoRisk
Analysis ID: 12-	1186-2003	End	point: 96	n Cell Densit	y-without EI	DTA	CET	S Version:	CETISv1	.9.2	
Analyzed: 06	Dec-18 11:23	Anal	ysis: Pa	rametric-Two	o Sample		Offic	ial Results	: Yes		
Data Transform		Alt Hyp					Comparis	on Result	+		PMSD
Untransformed	(	) > T					MO-MPK	passed 96h	cell density	-without ea	dta 11.16%
Equal Variance t 1	wo-Sample T	est									
Sample I vs	Sample II		Test Stat	Critical	MSD DF	P-Type	P-Value	Decision	(α:5%)		
Lab Water Control	MO-MPK		-24.8	1.94	3E+05 6	CDF	1.0000	Non-Signi	ficant Effect	t	
ANOVA Table											
Source	Sum Square	s	Mean Squ	uare	DF	F Stat	P-Value	Decision(	(α:5%)		
Between	3.728E+13		3.728E+1	3	1	617	2.8E-07	Significan	t Effect		
Error	3.626E+11		6.043E+1	0	6						
Total	3.764E+13				7			_			
Distributional Test	ts										
Attribute	Test				Test Stat	Critical	P-Value	Decision(	[α:1%)		
Variances	Variance Ra	io F Test			2.22	47.5	0.5286	Equal Var	iances		
Distribution	Shapiro-Wilk	W Norma	ality Test		0.959	0.645	0.7976	Normal Di	stribution		
96h Cell Density-w	ithout EDTA	Summary									
Sample	Code C	ount	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
VCWPD_1123_SC	LW 4		3.03E+6	2.72E+6	3.34E+6	3.02E+6	2.81E+6	3.27E+6	9.68E+4	6.40%	0.00%
MO-MPK	4		7.34E+6	6.89E+6	7.80E+6	7.30E+6	7.06E+6	7.72E+6	1.44É+5	3.93%	-142.61%
Graphics											
8.0E+06						4.0E+05					
				\ 		3.5E+05					0
7.9E+06						3.0E+05					
6.0F+06						2.5E+05				•	
¥.					2	2.0E+05					
5.0E+06					enter	0 1.5E+05					
with					0	5.02+04					
1.00+06						0.0E+00	-			-	
3.0E+06						~5.0E+04					
964.0				Reject Null		+1.0Ê+05					
2 0E+06						-1.5E+05		0			
2.02.700											
1.0E+06						-2.0E+05					
1.0E+06						-2.0E+05 -2.5E+05 -3.0E+05					

06 Dec-18 11:23 (p 1 of 1)

Report Date:

**CETIS Analytical Report** 

# Selenastrum capricornutum Algal Toxicity Test Data Sheet

Client:	Ventura County Watershed Protection District	Test Material:	MO	)-MPK	
Test Start Date:	11/23/18	Test ID #:	80322	Project #:	29434
Test End Date:	11/27/18	Control/Diluent:	Type I NO EDTA	Shelf #: (	1R4/51

Treatment			Mean Cell Density				
Treaunent	Rep A	p D	$(\text{ cells/mL x 10}^{6})$				
Lab Water Control	3-27	2-81	2-94	3.07		3.03	5
100%	7-41 7-04 7-72 7-19						
This datasheet has with Test Accent	been reviewed for comp	bleteness and consistency	Control Mean Density (cells/mL x 10 <sup>6</sup> )	% CV	Date:	Time:	Signoff:
white rest recept		3.03	6-38 11/27/18		8 0945 NB		

Initial Count: 10,000 cells/mL

Termination Time: 0945

Enumerating Scientist:

Test Treatment	Temp (°C)	pH	D.O. (mg/L)	Conductivity (µS/cm)	Sign-Off
Lab Water Control	24.4	7.50	90	87	Date: 1/23/18
100%	242	7:60	10.0	2550-2606	Sample ID: 51385
					Test Solution Prep: RG
					New WQ: R6
					Innoculation Time: 1020
Meter ID	BZA	PH 23	RO13	EED-ELD	Innoculation Signoff: RG
Lab Water Control	25.9	8.19			Date: 11/24/18
100%	25.9	7.82			WQ Time: 0848
Meter ID	62A	PH19			WQ Signoff: MYL
Lab Water Control	26.0	8.62			Date: 11/25/18
100%	26.0	8-31			WQ Time: 0850
Meter ID	62A	PH Z4			WQ Signoff: FD
Lab Water Control	0 26-2240	9.39			Date: 11/26/18
100%	26-2260	9.50			WQ Time: 0901
Meter ID	62 A	PH25	*****		WQ Signoff: ID
Lab Water Control	25.1	9.73	94	108	Date: 11/27/18
100%	25.1	10.38	15.9	2507	WQ Time: 0836
Meter ID	62A	PH24	RD13	EC13	WQ Signoff: AR

Initial Test Conditions	/ Alkalinity	Hardness	Light Intensity (ftc)
Initial Test Continuous	V 119	V 371	396

# **Appendix E**

# Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of the VCWPD Stormwater to *Ceriodaphnia dubia*

#### **CETIS Summary Report**

03-2885-1306 Survival

**Report Date:** 06 Dec-18 14:18 (p 1 of 2) Test Code: VCWPD\_1124\_CD | 20-3234-3150

Ceriodaphnia	Surv	ival and Reprod	uction Test							Pacific EcoRisk
Batch ID: Start Date: Ending Date: Duration:	02-42 24 N 30 N 6d 5	296-7304 ov-18 11:13 ov-18 15:49 h	Test Type: Protocol: Species: Source:	Reproc EPA-8 Cerioda In-Hou	luction-Survival (7d 21-R-02-013 (2002) aphnia dubia se Culture	)		Analyst: Diluent: Brine: Age:	Stevi Vasquez Not Applicable Not Applicable 1	2
Sample Code		Sample ID	Sample Da	te	Receipt Date	Sample	e Age	Client Na	ame F	Project
VCWPD_1124 MO-VEN MO-HUE MO-SIM MO-FIL	L_CD	20-4904-5898 15-6365-5653 02-1965-3242 07-0073-2265 12-6512-2693	24 Nov-18 1 21 Nov-18 2 22 Nov-18 0 22 Nov-18 0 22 Nov-18 0	11:13 23:15 00:30 01:10 01:25	24 Nov-18 11:13 23 Nov-18 08:02 23 Nov-18 08:02 23 Nov-18 08:02 23 Nov-18 08:02	n/a (24. 60h (0 ° 59h (0 ° 58h (0 ° 58h (0 °	6 °C) °C) °C) °C) °C)	Ventura (	County Watersh 2	29434
Sample Code		Material Type		Sampl	e Source		Station L	ocation	Lat/Long	9
VCWPD_1124 MO-VEN MO-HUE MO-SIM MO-FIL	CD	Lab Water Ambient Water Ambient Water Ambient Water Ambient Water		Ventura Ventura Ventura Ventura	a County Watershe a County Watershe a County Watershe a County Watershe a County Watershe	d Prote d Prote d Prote d Prote d Prote	LABQA MO-VEN MO-HUE MO-SIM MO-FIL			
Single Compa	arison	Summary								
Analysis ID	Endp	oint	Comp	arison	Method		P-V	alue Co	mparison Resul	t
15-4845-8331	Repro	oduction	Equal	Varianc	e t Two-Sample Te	est	0.00	042 MC	D-VEN failed repro	oduction
04-0336-8563	Repro	oduction	Wilco	xon Ran	k Sum Two-Sample	e Test	5.4E	E-06 MC	D-HUE failed repro	oduction
10-4240-0037	Repr	oduction	Equal	Variand	e tiwo-Sample Te	ist	0.87	73 NC = 04 MC	D-SIIVI passed repi	roduction
11-3879-4920	Survi	val	Fisher	Exact 1	Fest	501	2.10	2-04 MC	D-VEN passed sur	vival

18-7563-5106 Surv 14-4960-6467 Surv	ival ival		Fisher Exa Fisher Exa	ct Test ct Test			1.0000 1.0000	MO-SIM passed survival MO-FIL passed survival			
Reproduction Sum	mary										
Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
VCWPD_1124_CD	LW	10	28.3	24.8	31.8	17	33	1.56	4.92	17.39%	0.00%
MO-VEN		9	18.9	12.3	25.5	4	29	2.85	8.55	45.27%	33.25%
MO-HUE		10	0	0	0	0	0	0	0		100.00%
MO-SIM		9	30.9	27.5	34.3	22	38	1.47	4.4	14.25%	-9.15%
MO-FIL		10	15.6	9.95	21.3	2	26	2.5	7.9	50.67%	44.88%
Survival Summary											
Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
VCWPD_1124_CD	LW	10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
MO-VEN		9	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
MO-HUE		10	0.000	0.000	0.000	0.000	0.000	0.000	0.000		100.00%
MO-SIM		9	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
MO-FIL		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%

5.4E-06

MO-HUE failed survival

Fisher Exact Test

Analyst: GV V OA: Attachment D Appendix H

### **CETIS Summary Report**

Ceriodaphnia Survival and Reproduction Test

0	6	Dec-	18	14	4:18	3 (p	2	of	2)
			0		~~	~~~		~ 4	

Report Date: Test Code:

VCWPD\_1124\_CD | 20-3234-3150

Ceriodaphnia Survival and Reproduction Test Pacific EcoRisk											
Reproduction Deta	ul										
Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
VCWPD_1124_CD	LW	23	31	33	30	27	31	32	28	17	31
MO-VEN		26	23	29	17	24	25	4	12	10	
MO-HUE		0	0	0	0	0	0	0	0	0	0
MO-SIM		30	32	38	22	31	33	30	34	28	
MO-FIL		16	10	11	2	12	10	23	26	25	21
Survival Detail											
Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
VCWPD_1124_CD	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
MO-VEN		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
MO-HUE		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MO-SIM		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
MO-FIL		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Survival Binomials	;										
Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
VCWPD_1124_CD	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
MO-VEN		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	
MO-HUE		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
MO-SIM		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	
MO-FIL		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

CETIS™ v1.9.2.6 Page DI - 56

CETIS	Ana	l <b>vti</b> (	cal Re	port						Report Dat	e:	06 Dec-1	8 14:18 (p 1 of 4)
		·								Test Code:		VCWPD_1124_C	D   20-3234-3150
Cerioda	aphnia	Surv	vival and	Reprod	uction Te	st							Pacific EcoRisk
Analysi	is ID:	11-:	3879-492	0	Endpoir	it: Sui	rvival			CETIS Vers	sion:	CETISv1.9.2	
Analyze	∋d:	06	Dec-18 1	4:16	Analysis	: Sin	gle 2x2 Con	tingency Ta	ble	Official Res	sults	: Yes	
Fisher	Exact T	est											
Sample	el v	s	Sampl	e II	Те	st Stat	P-Type	P-Value	Decision	(a:5%)			
Lab Wa	ter Con	trol	MO-VE	EN	1.0	00	Exact	1.0000	Non-Signi	ficant Effect	//**		
Data Su	ummary	ŗ											
Sample	)		Code	NR	R		NR + R	Prop NR	Prop R	%Effect			
VCWPE	D_1124	CD	LW	10	0		10	1	0	0.0%			
MO-VEI	N			9	0		9	1	0	0.0%			
Graphic	cs												
	1.0	6	0		•		0						
	0.9												
	0.8												
	0.7												
	C.6												
vival	0.5												
- In the second se	0.4												
	03												
	0.0												
	0.2												
	0.1												
	0.0	VCWPD_	1124_CD		MO-VEN		MO-VEN						



Ceriodanhnia Sun	vival and Re	production	Test					1631			Pacif	ic EcoRisk
Ceriodapinha Odi		production	i i cat								1 4011	IC CONISK
Analysis ID: 15-4	4845-8331 Dec 19 14:1	End	point: Rep	production	Comple			CETI	S Version:	CETISv1	.9.2	
Analyzed: 061	Dec-10 14.1	/ Ana	ysis: Pai	ametric-1wc	Sample			Unic	ai Results:	Tes		
Data Transform		Alt Hyp						Comparis	on Result			PMSD
Untransformed		621						NO-VEN 1	alled reprod	uction		19.41%
Equal Variance t T	wo-Sample	Test										
Sample I vs	Sample II		Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(	α:5%)		
Lab Water Control	MO-VEN*		2.98	1.74	5.49	17	CDF	0.0042	Significant	Effect		
ANOVA Table												
Source	Sum Squa	ares	Mean Squ	are	DF		F Stat	P-Value	Decision(	α:5%)		
Between	419.537		419.537		1		8.88	0.0084	Significant	Effect		
Error	802.989		47.2346		17							
Total	1222.53				18							
Distributional Test	5											
Attribute	Test				Test St	at	Critical	P-Value	Decision(	α:1%)		
Variances	Variance R	Ratio F Test			3.02		6.69	0.1203	Equal Vari	ances		
Distribution	Shapiro-W	ilk W Norma	ality Test		0.933		0.861	0.1928	Normal Dis	stribution		
Reproduction Sum	mary											
Sample	Code	Count	Mean	95% LCL	95% UC	CL	Median	Min	Max	Std Err	CV%	%Effect
VCWPD_1124_CD	LW	10	28.3	24.8	31.8		30.5	17	33	1.56	17.39%	0.00%
MO-VEN		9	18.9	12.3	25.5		23	4	29	2.85	45.27%	33.25%
Graphics												
35							12 -					
	]						10				•	
30 7							8					
	<u></u>						6				•	
25						red	4			•		
- 30			1////	Report, Null		Centel	0					
			1116			12	-2		•			
15 15							-4	4				
-							+6					
10							-10	•				
							-12	•				
5	e.						-14					
o	- 6.00						-16	-1.5 -1.0	-0.5 0.0	0.5 1.0	1.5	2.0
	VCWPD_1124_CD		MO-VEN						Rankits			

### **CETIS Analytical Report**

 Report Date:
 06 Dec-18 14:17 (p 1 of 4)

 Test Code:
 VCWPD 1124 CD | 20-3234-3150

Analyst: SNV QA: R/b Attachment D Appendix I

С	lient:	Ven	tura Coun	ty Waters	hed Prote	ction Dist	rict	Ν	faterial:			MO-	VEN			Te	est Date:	11124/18
Proje	ect #:	294	134		Test ID:	803	17	Random	ization:		10 3	2 ./				Contro	l Water:	Modified EPAMH
	Day	p. Now	H	D.	0. 	Cond.	Temp	A	D		Sur	vival / R	eproduc	ction				SIGN-OFF
10101010202	0	7.94		11.2		354	24.6	ð	ð	0	0	Ô	Ô	0	н ()	0	0	Date: 11/34/19 New WQ: Test Init.: 7F
	1	7.74	8.05	10.8	7.0	359	24.3	0	0	6	0	0	0	0	()	0	0	Date: 1/125/15 New WQ: KL Counts: KG Sol'n Prep: - Old WQ: D H Time: Page
	2	7.59	7,84	10-6	8,1	360	24.8	0	0	0	0	0	0	0	0	0	0	Date: W124/18 New WQ:UUL Counts: CP Sol'n Prep: CP Old WO: DM Time: 1144
ntrol	3	7.88	7.72	10.3	7.5	352	24.5	6	6	6	4	6	5	6	5	6	6	Date: 11/27/ BNew WQ: TA Counts: 03 Sol'n Prep: TF Old WQ: AR Time: 1541
ter Coi	4	7.89	3878	6.4	7.95M	350	24.8	7	11	11	11	7	11	11	0	0	0	Date: 11/28/cg New WQ: Counts: Sol'n Prep: NB Old WQ: SAF Time: 1574
ab Wa	5	7.84	7.75	8.9	7-6	350	25.1	0	0	0	υ	0	15	0	M	0	11	Date: 11/19/18 New WQ: SVV Counts: ER Sol'n Prep: EP Old WQ: TA Time: 1644
Ľ	6	-	8-09	-	7.0	393	253	10	14	16	15	14	0	15	12	1)	14	Date: W130/13 New WQ: Counts: R6 Sol'n Prep: Old WQ: TA Time: 54
	7								_									Date: New WQ: Counts: Sol'n Prep: Old WQ: Time:
	8								18				<b>1</b>				-	Date: Old WQ: Counts: Time:
Balada							Total=	23	31	33	30	27	51	32	28	17	51	Mean Neonates/Female = 28,3
	Day	p. New	Old	New	O. Old	(µS/cm)	(°C)	A	В	С	D	E	F	G	Н	Ι	J.	SAMPLE ID
	0	7.24		10.3		153	24.5	0	6	0	U	Ò	0	ð	0	0	0	51386
	1	7.35	7.18	10.2	7.2	157	2.4.10	0	0	U	0	0	D	0	0	0	0	51386
	2	737	7,36	ch income	8.1	164 Way	24.3	Ò	0	0	0	0	0	0	0	0	0	51386
	3	7.16	6.98	8-3	7.7	161	24.2	4	3	2	3	0	3	3	4	4	U	51386
%00	4	6.89	7.68%	6.1	8.0	162	24.7	7	B	0	9	0	9	0	0	0	6	51386
-	5	6.91	7.63	6.4	7.9	163	24.8	0	018	QS	0	2	0	8	0	0	4	51386
	6	-	7.56	-	7.9	172	25.3	15	12	27*	17	15	12	14	0	8	Õ	
	7					1									27.2			
	8					111012-1110-112												
							Total=	26	23	-	29	17	24	25	4	12	10	Mean Neonates/Female = 18.9
KT T	WO روز Mai	tute Coun	f femi twide Sta Program 2	MCS V mWater Q 018/19 An	Veve ( Wality) ( CC	observ Ne U	ved 1 4p, th	n H	nis r plico	eplic Je Pag	ote 18 RI - 5	ex chi	rded	terr	m s	stat	stic	S, Attachment D Appendix I

### Short-Term Chronic 3-Brood Ceriodaphnia dubia Survival & Reproduction Test Data

# **CETIS Analytical Report**

 Report Date:
 06 Dec-18 14:18 (p 2 of 4)

 Test Code:
 VCWPD\_1124\_CD | 20-3234-3150

Ceriodaphn	ia Surv	vival and R	eprod	uction Test							Pacific EcoRisk
Analysis ID	: 03-2	2885-1306	40	Endpoint:	Sun	vival	·	-1-	CETIS Version:	CETISv1.9.2	
Analyzed:	061	Dec-18 14:	10	Analysis:	Sing	gie 2x2 Com	ingency la		Official Results:	Yes	
Fisher Exac	t Test										
Sample I	vs	Sample	11	Test	Stat	P-Type	P-Value	Decision(	α:5%)		
Lab Water C	ontrol	MO-HUE	*	0.000		Exact	5.4E-06	Significant	t Effect		
Data Summ	ary										
Sample		Code	NR	R		NR + R	Prop NR	Prop R	%Effect		
VCWPD_11	24_CD	LW	10	0		10	1	0	0.0%		
MO-HUE			0	10		10	0	1	100.0%		
Graphics											
ʻ1.0		•									
0.9											
0.8											
0.7											
0.6											
0.5 0.5											
<b>ග</b> 0.4											
0.3											
0.2											
0.1											
0.0	VCWPD	_1124_CD	Μ	0-HUE		MO-HUE					

СБТІЗЕ У1.802.6

		-
CETIS	Analytical	Report

Ceriodaphnia Surv	vival and Re	production	n Test							Pacif	ic EcoRisk
Analysis ID: 04-0 Analyzed: 06	0336-8563 Dec-18 14:1	End 7 Ana	<b>point</b> : Rep <b>Iysis:</b> Nor	production	Two Sampl	e	CETI Offic	S Version: ial Results:	CETISv1 Yes	.9.2	
Data Transform		Alt Hyp					Comparis	on Result			PMSD
Untransformed		C > T					MO-HUE f	ailed reprod	uction		9.54%
Wilcoxon Rank Su	ım Two-San	nple Test									
Sample I vs	Sample II		Test Stat	Critical	Ties DF	P-Type	P-Value	Decision(	α:5%)		
Lab Water Control	MO-HUE*		55	n/a	0 18	Exact	5.4E-06	Significant	Effect		
ANOVA Table											
Source	Sum Squa	ires	Mean Squ	lare	DF	F Stat	P-Value	Decision(	α:5%)		
Between	4004.45		4004.45		1	330	<1.0E-37	Significant	Effect		
Error	218.1		12.1167		18	_					
Iotai	4222.00				19						
Distributional Test	S										
Attribute	Test				Test Stat	Critical	P-Value	Decision(	α:1%)		
Variances	Levene Eq	uality of Va	riance Test	-	13.9	8.29	0.0015	Unequal V	ariances		
Variances	Mod Lever	e Equality	of Variance	lest	6.22	8.29	0.0226	Equal Vari	ances		
Distribution	Snapiro-vv	lik vv Norm	ality rest		0.751	0.866	1.8E-04	Non-Norm	al Distributi	on	
Reproduction Sum	nmary										
Reproduction Sum Sample	nmary Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
Reproduction Sum Sample VCWPD_1124_CD	Code LW	Count	<b>Mean</b> 28.3	<b>95% LCL</b>	95% UCL 31.8	Median 30.5	Min 17	Max 33	Std Err 1.56	<b>CV%</b> 17.39%	%Effect
Reproduction Sum Sample VCWPD_1124_CD MO-HUE	Code LW	<b>Count</b> 10 10	<b>Mean</b> 28.3 0	<b>95% LCL</b> 24.8 0	<b>95% UCL</b> 31.8 0	<b>Median</b> 30.5 0	<b>Min</b> 17 0	<b>Max</b> 33 0	<b>Std Err</b> 1.56 0	<b>CV%</b> 17.39%	%Effect 0.00% 100.00%
Reproduction Sum Sample VCWPD_1124_CD MO-HUE Graphics	nmary Code LW	<b>Count</b> 10 10	<b>Mean</b> 28.3 0	<b>95% LCL</b> 24.8 0	<b>95% UCL</b> 31.8 0	<b>Median</b> 30.5 0	<b>Min</b> 17 0	<b>Max</b> 33 0	<b>Std Err</b> 1.56 0	<b>CV%</b> 17.39%	%Effect 0.00% 100.00%
Reproduction Sum Sample VCWPD_1124_CD MO-HUE Graphics	nmary Code LW	<b>Count</b> 10 10	<b>Mean</b> 28.3 0	<b>95% LCL</b> 24.8 0	<b>95% UCL</b> 31.8 0	<b>Median</b> 30.5 0	<b>Min</b> 17 0	<b>Max</b> 33 0	<b>Std Err</b> 1.56 0	<b>CV%</b> 17.39%	%Effect 0.00% 100.00%
Reproduction Sum Sample VCWPD_1124_CD MO-HUE Graphics	nmary Code LW	<b>Count</b> 10 10	<b>Mean</b> 28.3 0	95% LCL 24.8 0	95% UCL 31.8 0	Median 30.5 0	Min 17 0	<b>Max</b> 33 0	<b>Std Err</b> 1.56 0	CV% 17.39%	%Effect 0.00% 100.00%
Reproduction Sum Sample VCWPD_1124_CD MO-HUE Graphics	nmary Code LW	Count 10 10	Mean 28.3 0	95% LCL 24.8 0	95% UCL 31.8 0	Median 30.5 0	Min 17 0	Max 33 0	Std Err 1.56 0	CV% 17.39%	%Effect 0.00% 100.00%
Reproduction Sum Sample VCWPD_1124_CD MO-HUE Graphics	nmary Code LW	Count 10 10	<b>Mean</b> 28.3 0	95% LCL 24.8 0	95% UCL 31.8 0	Median 30.5 0	Min 17 0	Max 33 0	Std Err 1.56 0	CV% 17.39%	%Effect 0.00% 100.00%
Reproduction Sum Sample VCWPD_1124_CD MO-HUE Graphics	nmary Code LW	Count 10 10	<b>Mean</b> 28.3 0	95% LCL 24.8 0	95% UCL 31.8 0	Median 30.5 0	Min 17 0	Max 33 0	Std Err 1.56 0	CV% 17.39%	%Effect 0.00% 100.00%
Reproduction Sum Sample VCWPD_1124_CD MO-HUE Graphics	nmary Code LW	Count 10 10	<b>Mean</b> 28.3 0	95% LCL 24.8 0	95% UCL 31.8 0	Median 30.5 0	Min 17 0	Max 33 0	Std Err 1.56 0	CV% 17.39%	%Effect 0.00% 100.00%
Reproduction Sum Sample VCWPD_1124_CD MO-HUE Graphics	nmary Code LW	Count 10 10	Mean 28.3 0	95% LCL 24.8 0	95% UCL 31.8 0	Median 30.5 0 4 2 2 - 2 -	Min 17 0	Max 33 0	Std Err 1.56 0	CV% 17.39%	%Effect 0.00% 100.00%
Reproduction Sum Sample VCWPD_1124_CD MO-HUE Graphics	nmary Code LW	Count 10 10	Mean 28.3 0	95% LCL 24.8 0	95% UCL 31.8 0	Median 30.5 0 2 2 2 2 4 4 4 4 4 4	Min 17 0	Max 33 0	Std Err 1.56 0	CV% 17.39%	%Effect 0.00% 100.00%
Reproduction Sum Sample VCWPD_1124_CD MO-HUE Graphics	nmary Code LW	Count 10 10	<b>Mean</b> 28.3 0	95% LCL 24.8 0	95% UCL 31.8 0	Median 30.5 0 4 4 -6	Min 17 0	Max 33 0	Std Err 1.56 0	CV% 17.39%	%Effect 0.00% 100.00%
Reproduction Sum Sample VCWPD_1124_CD MO-HUE Graphics	nmary Code LW	Count 10 10	Mean 28.3 0	95% LCL 24.8 0	95% UCL 31.8 0	Median 30.5 0 2 - 2 - 4 -6 -8	Min 17 0	Max 33 0	Std Err 1.56 0	CV% 17.39%	%Effect 0.00% 100.00%
Reproduction Sum Sample VCWPD_1124_CD MO-HUE Graphics 25 25 25 25 25 25 25 25 25 25 25 25 25	nmary Code LW	Count 10 10	Mean 28.3 0	95% LCL 24.8 0	95% UCL 31.8 0	Median 30.5 0 2 - 2 4 4 - 6 - 8 -10	Min 17 0	Max 33 0	Std Err 1.56 0	CV% 17.39%	%Effect 0.00% 100.00%
Reproduction Sum Sample VCWPD_1124_CD MO-HUE Graphics 25 25 25 20 25 25 25 25 25 25 20 25 25 25 20 25 25 25 20 25 25 20 25 25 20 25 25 20 25 25 20 25 25 20 25 25 20 20 25 25 20 20 25 25 20 25 25 25 25 20 25 25 25 25 25 25 25 25 25 25 25 25 25	nmary Code LW	Count 10 10	Mean 28.3 0	<b>95% LCL</b> 24.8 0	95% UCL 31.8 0	Median 30.5 0 -2 -2 -4 -6 -6 -0 -10 -12	Min 17 0	Max 33 0	Std Err 1.56 0	CV% 17.39%	%Effect 0.00% 100.00%

С	lient:	Vent	tura Coun	ty Waters	hed Prote	ction Disti	rict	N	faterial:			MO-	HUE			Te	st Date:	11/24/18	
Proje	ect #:	294	134		Test ID:	803	18	Random	ization:		10 -	2./				Contro	Water:	Modified EPAMH	
	Day	p	Н	D.	0.	Cond.	Temp				Sur	vival / R	eproduc	tion				SIGN-OFF	
	-	New	Old	New	Old	(µS/cm)	(°C)	A	B	С	D	E	F	G	Н	Ι	J	Detection of the March WO	Test Init
	0	7.94		11.2		354	24.6	0	0	0	4	0	0	ð	0	0	0	Sol'n Prep: JL TF	Time: / (  \$
	1	7.74	8.09	10.8	7.0	359	243	0	0	0	0	0	0	0	0	0	0	Date: 11/25/18 New WQ: KC Sol'n Prep: 5 Old WO: DH	Counts: KG
	2	7.59	7.84	10-6	51	360	248	Ø	Ď	0	0	0	6	0	0	Ô	0	Date 1/2618 New WQ	Counts: CR Time: 1144
rol	3	7 00	7.72	10 3	75	257.	745	6	1.	6	L	6	5	(0	5	6	1.	Date: 11/27/13 New WQ: TA	Counts: NB
Cont	4	1.00		1.14		750	22.8	2	11	1		-	11	11	0	0	4	Date: U/28/8 New WO	Counts:
Water	5	1.81	1.82	0.9	1.1	2570	251	(°)	0	0	0	6	15		11	0	11	Date: 1/29/18 New WQ: SWV	Counts: 68
Lab		7.00	1-15	8.1	1-6	224	2.1			10				0	11		145	Date: W/W a New WQ: -	Counts: Counts
	0	-	8.09		7.0	393	0,5	10	14	16	15	14	0	15	12	И	17	Sol'n Prep: - Old WQ: TA	Time: 1.544
	7					-	1											Sol'n Prep: Old WQ:	Time:
	8																	Date: Old WQ:	Counts: Time:
							Total=	23	31	33	30	27	31	32	28	17	31	Mean Neonates/Female = $28.3$	
	Day	p	H	D.	0.	Cond.	Temp		n		Sur	vival / R	Reproduc	ction		*	1 x	SAMPLE ID	
		New	Old	New	Old	(µS/cm)	(0)	A	В		D	E	F	G	H	1		-17-7	
	0	7.65		11.2		8293	24.1	0	0	0	0	Û	0	0	0	0	0	51587	
	1	7.44	8.38	10.3	7.2	8342	25.1	XIO	X/0	X/U	0	0	×10	×/o	0	×10	0	51387	
	2	7.35	8,29	9.6	8,4	8343	24,9	-	-	-	×o	40	-	-	*16	L	\$10	51387	
	3	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-51387	TT 1127/14
%0	4	-	J			-	+	-	-	-	-	1	-	-	1	_	-		
10	5	_	4	-	-	/	-	-	-	-	-		-	-	-	-	-	-	
	6	-	-	_	-	-	_	1	-	-	-	-	-	-	-	-	-	-	
	7							-	-	-	~	~	-	-	-	5	-		
	8							1	1	-	-	-		-	L	~	-		
							Total=	×10	×/D	YU	×10	410	×10	410	7/0	¥10	710	Mean Neonates/Female = 0	)

#### Short-Term Chronic 3-Brood Ceriodaphnia dubia Survival & Reproduction Test Data

### **CETIS Analytical Report**

004-996-743-9 Ventura Countywide Stormwater Quality Management Program 2018/19 Annual Report 
 Report Date:
 06 Dec-18 14:18 (p 3 of 4)

 Test Code:
 VCWPD\_1124\_CD | 20-3234-3150

Ceriodaphnia Survival and Reproduction Test Pacific EcoRisk												
Analysis I	D: 18-7	7563-5106		Endpoint	Sur	vival			CETIS Version:	CETISv1.9.2		
Analyzed:	06 [	Dec-18 14:1	7	Analysis:	Sin	gle 2x2 Cont	ingency Tal	ole	Official Results:	Yes		
Fisher Ex	act Test											
Sample I	VS	Sample II		Test	Stat	P-Type	P-Value	Decision(	α:5%)			
Lab Water	Control	MO-SIM		1.00	0	Exact	1.0000	Non-Signit	ficant Effect			
Data Sum	mary											
Sample		Code	NR	R		NR + R	Prop NR	Prop R	%Effect			
VCWPD_1	124_CD	LW	10	0		10	1	0	0.0%			
MO-SIM			9	0	_	9	1	0	0.0%			
Graphics												
1.0		9				٠						
0.9												
0.8												
0.7												
0.6												
0.5												
0.4												
<sup>\</sup> 0.3												
0.2												
0.1												
0.0	VCWPD_	1124_CD	Ν	10-5IM		MO-SIM						



								Test	Code:	VCWPD_11	24_CD   20	)-3234-3150
Ceriodaphnia Surv	ival and Re	production	Test								Pacif	ic EcoRisk
Analysis ID: 18-4	248-6037	End	point: Rep	roduction				CETI	S Version:	CETISv1	.9.2	
Analyzed: 06 [	Dec-18 14:1	7 Anal	ysis: Par	ametric-Two	Sample			Offic	ial Results:	Yes		
Data Transform		Alt Hyp						Comparis	on Result			PMSD
Untransformed		C > T						MO-SIM p	assed repro	duction		13.23%
Equal Variance t T	wo-Sample	Test								is.		
Sample I vs	Sample II		Test Stat	Critical	MSD D	F P	-Type	P-Value	Decision(	α:5%)		
Lab Water Control	MO-SIM		-1.2	1.74	3.74 1	7 C	DF	0.8773	Non-Signit	ficant Effect		
ANOVA Table												
Source	Sum Squa	res	Mean Squ	are	DF	F	Stat	P-Value	Decision(	α:5%)		
Between	31.748		31.748		1	1	.45	0.2455	Non-Signif	ficant Effect		
Error	372.989		21.9405		17							
Total	404.737				18							
Distributional Tests	s											
Attribute	Test				Test Sta	t C	ritical	P-Value	Decision(	α:1%)		
Variances	Variance R	atio F Test			1.25	7	.34	0.7623	Equal Vari	ances		
Distribution	Shapiro-Wi	ilk W Norma	ality Test		0.91	0	.861	0.0754	Normal Di	stribution		
Reproduction Sum	mary											
Sample	Code	Count	Mean	95% LCL	95% UCI	L M	ledian	Min	Max	Std Err	CV%	%Effect
VCWPD_1124_CD	LW	10	28.3	24.8	31.8	31	0.5	17	33	1.56	17.39%	0.00%
MO-SIM		9	30.9	27.5	34.3	3	1	22	38	1.47	14.25%	-9.15%
Graphics												
40							6 +					
							5 ···					
35							ŗ					
30 77	11111						4				0	
L	116/1/					med	2		1.0	•		
25				Painet Null		insfo	0					
tion						35						
20							-4					
<b>1</b> 5							-4					
							-6	1				
10							-9					
								0	1			
5							-10					
o							-12 -2.0 -	1.5 -1.0	-0.5 0.0	0.5 1.0	1.5	2.0

# **CETIS Analytical Report**

VCWPD\_1124\_CD

MO-SIM

Rankits

R6 Analyst: SV QA: Attachment D Appendix

С	lient:	Ven	tura Cour	ity Waters	hed Prote	ction Dist	rict	N	Aaterial:			MO	-SIM			Te	st Date:	11/24/18
Proje	ect #:	294	434		Test ID:	803	20	Random	ization:		10.	71	<			Contro	Water:	Modified EPAMH
	Day	p Now	H	D.	0.	Cond.	Temp	4	D		Sur	vival / F	Reproduc	tion				SIGN-OFF
1.1.1.0.1.1.1.	0	794	Uld	11.2	Uld	354	741	A 0	В	c	D	E Ô	F O	G A	H Û	1 O	0	Date: 11 / 24/18 New WQ: Test Init .: 77
	1	7.74	8.05	10.8	7.0	359	243	0	Δ	0	0	0	0	0	0	0	(1	Date: 1125/19 New WQ: KC Counts: K6
	2	7.54	7.811	10.1	8.1	260	748	0	0	0	0	0	0	0	0	0	0	Date: 1V2000 New WOLCL Counts: 62
[0]	3	7 00	CT. T	10 2	7.5	202	240	10	10	10		10	5	(	5	i a	6	Date: 11/27 New WQ: 74 Counts: 13
Conti	4	1-38	1.14	10.5	1.2	256	29.5	Q.	Ue .	Ur I	9		0	0		0	Ŷ	Sol'n Prep: TF Old WQ: NR Time: 54 Date: 1/28/12 New WQ: TA Counts: SV
Vater	5	7.89	7.82	6.4	7.7	350	24.8	-1	1	11	11		16	In	0	0	0	Sol'n Prep: NB Old WQ: SAT Time: 1514 Date: 1129/18 New WQ: SVV Counts: 62
Lab V	6	7.50	7-75	8.9	76	356	20,1	0	0	0	0	0	15	0	11		VU	Sol'n Prep: E2 Old WQ: TA Time: 164 Date: 11/10/16 New WO: - Counts: 26
	0		8.09		7-0	393	28.5	10	14	16	15	14	0	15	12	u	14	Sol'n Prep: - Old WQ: TA Time: USY I Date: New WO Counts:
	1		-					_										Sol'n Prep: Old WQ: Time:
	8																	Date: Old WQ: Counts: Time:
							Total=	23	31	33	30	27	31	32	28	17	31	Mean Neonates/Female = $28.3$
	Day	p New	H Old	D. New	O. Old	Cond. (µS/cm)	Temp (°C)	A	В	C	Sur D	vival / F E	Reproduce F	ction G	Н	I	J	SAMPLE ID
	0	7.67		10.9		533	24.1	0	0	ð	θ	0	θ	θ	0	0	д	51388
	1	7.61	7.80	10.4	7.1	546	24.8	0	0	0	0	0	0	D	0	0	0	5,380
	2	7.41	7.83	09	17	0						-						
				0.1	8.5	548	24.9	0	0	0	0	0	0	0	0	0	6	51388
	3	7.48	7.66	8.3	7.8	548 541	24.9	0 2	02	03	04	0	0	0	0	05	0 4	51388
%0	3	7.48	7.66	8.3 6.6	8.2	548 541 533	24.9 24.4 24.8	0 2 a	0 2 12	03	0 4 14	074	049	0 6 8	04	0 5 0	6 4 8	51388 51388 51388
100%	3 4 5	7.48 7.37 7.09	7.66 7.70 7.60	8.3 6.6 6.7	8.2 7.8 8.2 7.7	548 541 533 552	24.9 24.4 24.8 24.5	0 2 9 0	0 2 12 18	03370	0 4 14 0	0700	0 4 9 0	0 6 8 0	0 4 0 2	0503	6 4 12	51388 51388 51388 51388
100%	3 4 5 6	7.48 7.37 7.09	7.66 7.70 7.60 7.68	8.3 6.6 6.7	8.2 7.8 8.2 7.7 7.8	548 541 533 552 590	24.9 24.4 24.8 24.9 25.0	0 2 9 0 19	0 2 12 18 0	03370-	0 4 14 0 20	0 2 8 0 12	0 4 9 0 18	0 6 8 0 19	0 4 0 2	0503	6 4 0 12 12	51388 51388 51388 51388
100%	3 4 5 6 7	7.48 7.37 7.09	7.66 7.70 7.68 7.68	8.3 6.6 6.7	8.2 7.8 8.2 7.7 7.8	548 541 533 552 590	24.9 24.4 24.8 24.5 25.0	0 2 9 0 19	0 2 12 18 0	03370-	0 4 14 0 20	07070012	0 4 9 0 18	0 6 8 0 19	0 4 0 2 14	0 5 0 13 16	0 4 0 12 12	51388 51388 51388 51388 -
100%	3 4 5 6 7 8	7.48 7.37 7.09	7.66 7.70 7.68 7.68	8.3 6.6 6.7	8.2 7.8 8.2 7.7 7.8	548 541 533 552 590	24.9 24.4 24.8 24.5 25.0	0 2 9 0 19	0 2 12 18 0	0 3 370	0 4 14 0 20	072 8012	0 4 9 0 18	0 6 8 0 19	0 4 0 12 14	0 5 0 13 16	0 4 0 12 12	51388 51388 51388 51388 -

### Short-Term Chronic 3-Brood Ceriodaphnia dubia Survival & Reproduction Test Data

# **CETIS Analytical Report**

 Report Date:
 06 Dec-18 14:18 (p 4 of 4)

 Test Code:
 VCWPD\_1124\_CD | 20-3234-3150

Ceriodaphn	ia Surv	rival and Re	eprod	uction Tes	t							Pacific EcoRisk
Analysis ID:	14-4	1960-6467		Endpoint	: Sur	rvival			CETIS Ve	ersion:	CETISv1.9.2	
Analyzed:	06 [	Dec-18 14:1	7	Analysis:	Sin	gle 2x2 Cont	tingency Ta	ble	Official R	esults:	Yes	
Fisher Exact	t Test											
Sample I	vs	Sample II		Tes	t Stat	P-Type	P-Value	Decision(	α:5%)			
Lab Water C	ontrol	MO-FIL		1.00	0	Exact	1.0000	Non-Signi	ficant Effect			
Data Summa	ary											
Sample		Code	NR	R		NR + R	Prop NR	Prop R	%Effect			
VCWPD_112	24_CD	LW	10	0		10	1	0	0.0%			
MO-FIL			10	0		10	1	0	0.0%			
Graphics												
1.0		P				0						
0.9												
0.8												
0.7												
0.6												
0.5												
60 C.4												
0.3												
0.2												
D.1												
0.0	VCWPD_	1124_CD		MO-FIL		MO-FIL						

							Test	Code:	VCWPD_11	24_CD   20	)-3234-3150
Ceriodaphnia Surv	vival and Rep	production	Test							Pacif	ic EcoRisk
Analysis ID: 08-3 Analyzed: 06	9184-2602 Dec-18 14:17	Endr Anal	ooint: Rep ysis: Par	production ametric-Two	Sample		CETI Offic	S Version: ial Results	CETISv1 : Yes	.9.2	
Data Transform		Alt Hyp					Comparis	on Result			PMSD
Untransformed		C > T					MO-FIL fa	iled reprodu	uction		18.04%
Equal Variance t T	wo-Sample 1	Fest									
Sample I vs	Sample II		Test Stat	Critical	MSD DF	P-Type	P-Value	Decision	(α:5%)		
Lab Water Control	MO-FIL*		4.31	1.73	5.11 18	CDF	2.1E-04	Significan	t Effect		
ANOVA Table											
Source	Sum Squar	es	Mean Squ	are	DF	F Stat	P-Value	Decision	(α:5%)		
Between	806.45		806.45		1	18.6	4.2E-04	Significan	t Effect		
Error	780.5		43.3611		18						
Total	1586.95				19						
Distributional Test	s										
Attribute	Test				Test Stat	Critical	P-Value	Decision	(α:1%)		
Variances	Variance Ra	atio F Test			2.58	6.54	0.1744	Equal Var	iances		
Distribution	Shapiro-Wil	k W Norma	ality Test		0.969	0.866	0.7331	Normal D	istribution		
Reproduction Sum	imary										
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
VCWPD_1124_CD	LW	10	28.3	24.8	31.8	30.5	17	33	1.56	17.39%	0.00%
MO-FIL		10	15.6	9.95	21.3	14	2	26	2.5	50.67%	44.88%
Graphics											
35						12					
						10					0
30	111/11/					8				•	
25					_	6 92 4					
				Reject Nul	Itered	rojse z					
u 20					Cer	0 Hutta					
oduct						-2		•			
L 15			11/11	177		-4		۰			

MO-FIL

10

06 Dec-18 14:18 (p 4 of 4)

Report Date:

Analyst: SNV QA: Attachment D Append

1.5

2.0

1.0

VCWPD\_1124\_CD

-4 -б

-8 -10 -12 -14 .

-2.0

-1.5

-1.0

-0.5

0.0

Rankits

0.5

C	lient:	Ven	tura Coun	ity Waters	hed Prote	ction Dist	rict	N	laterial:			мо	-FIL			Te	est Date:	11/24/18	
Proj	ect #:	294	434		Test ID:	803	21	Random	ization:		10	.7.1	_			Contro	1 Water:	Modified EPAMH	
	Day	р	H	D.	.0.	Cond.	Temp			_	Sur	vival / F	Reproduc	ction				SIGN OFF	
	-	New	Old	New	Old	(µS/cm)	(°C)	A	B	С	D	E	F	G	Н	I	J	SIGN-OFF	
	0	7.14		11.2		354	24.6	0	0	Ô	0	0	0	0	0	0	0	Date: 11/14/19 New WQ: Tes Sol'n Prep: 52 T/F	t Init.
	1	7.74	8.05	10.8	7.0	359	24.3	0	0	0	0	0	0	0	0	0	0	Date:11135118 New WQ: KC C Sol'n Prep: JL Old WQ: DH	ounts: KG Time()930
	2	759	7.84	10.6	8.1	36.0	24:8	0	0	0	0	0	0	0	0	0	0	Date 1/20/18 New WQ: CM C Sol'n Prep: CR Old WQ: DM	ounts: GR Time: \144
ntrol	3	7-88	7.72	10.3	7.5	352	24.5	6	4	le	4	6	5	Le	5	6	6	Date: 11/27/18New WQ: TA C Sol'n Prep: TF Old WQ: AR	ounts: JB Time: 1841
ter Co	4	7.89	7.82	6.4	7.7	350	24.8	7	11	11	11	7	N	11	0	0	0	Date: 1.1/28/18 New WQ: TA- C Sol'n Prep: NB Old WO SAT	ounts: BV Time: 1574
tb Wat	5	7.80	7.75	8.9	7.6	356	25.1	0	0	Ò	0	0	15	0	11	0	11	Date: TV79/18 New WQ: SVV C Sol'n Prep: ER Old WQ: TA	ounts: ER Time: 1644
La	6	-	8.09	-	7-0	393	25.3	10	14	16	15	14	0	15	12	11	14	Date: William New WQ: - C Sol'n Prep: - Old WQ: TA	ounts: <b>A6</b> Time: <b>15</b> 49
	7																	Date: New WQ: C Sol'n Prep: Old WQ:	ounts: Time:
	8																	Date: Old WQ: C	ounts: Time:
							Total=	23	31	33	30	27	31	32	28	17	31	Mean Neonates/Female = 28.3	
	Day	p.	H	D.	0.	Cond.	Temp	-	D	a	Sur	vival / F	Reproduc	tion			1 -	SAMPLE ID	
80808		New	Old	New	Old	(µS/cm)	(0)	A	В	C	D	E	F	G	H	1	J		
	0	7.72		10.6		189	24.3	0	0	0	0	Û	0	0	0	0	0	51389	
	1	7.59	7.50	[0.1	75	192	24.3	0	0	0	0	0	0	0	0	0	0	51389	
	2	7.70	7.66	9.3	8.2	195	24.6	0	0	0	0	6	0	0	0	0	0	51389	
	3	7.36	7.36	8-5	8.0	194	24.2	4	3	1	2	1	0	0	1	D	0	\$1389	
%00	4	7.18	7.70	16.5	8.2	190	251	0	7	0	0	0	0	0	0	0	4	51389	
1	5	7.12	7-68	7.2	8.1	198	24.5	0	0	Ö	0	0	0	8	10	9	7	51389	
	6	-	7.51	-	8.1	212	25.4	12	0	10	0	11	10	15	15	16	10	<u> </u>	
	7						1 11												
	8																		
_							Total=	16	10	11	2	12	10	23	26	25	21	Mean Neonates/Female = $-15,6$	

### Short-Term Chronic 3-Brood Ceriodaphnia dubia Survival & Reproduction Test Data
#### **CETIS Summary Report**

 Report Date:
 12 Dec-18 14:43 (p 1 of 1)

 Test Code:
 VCWPD\_1201\_CD | 06-5067-2466

Ceriodaphnia Survival and Reproduction Test Pacific EcoRisk												
Batch ID:12-1Start Date:01 DEnding Date:07 DDuration:6d 0	902-0351 Jec-18 15:57 Jec-18 16:00 Dh	Test Prot Spe Sou	Test Type:Reproduction-Survival (7d)Analyst:Stevi VasquezProtocol:EPA-821-R-02-013 (2002)Diluent:Not ApplicableSpecies:Ceriodaphnia dubiaBrine:Not ApplicableSource:In-House CultureAge:1									
Sample Code	Sample ID	) Sam	ple Date	Receipt	t Date	Sample Age	e Clie	nt Name	Pr	roject		
VCWPD_1201_CD	15-4630-7	096 01 E	ec-18 15:57	01 Dec-	18 15:57	n/a (25 °C)	Ven	tura County	Watersh 29	434		
MO-THO	13-5932-8	412 29 N	lov-18 14:15	30 Nov-	18 14:15	50h (0.8 °C)				_		
Sample Code	Material T	уре	San	nple Source	e	Stat	tion Locat	ion	Lat/Long			
VCWPD_1201_CD	Lab Water		Ven	tura County	Watershed	Prote LAE	<b>IQA</b>					
MO-THO	Ambient W	/ater	Ven	tura County	Watershed	Prote MO	THO					
Single Comparison Summary												
Analysis ID Endpoint Comparison Method P-Value Comparison Result												
18-8548-5358 Rep	oduction		Equal Vari	ance t Two-	Sample Tes	st	0.0566	MO-THO	passed repr	oduction		
09-6458-6457 Surv	ival		Fisher Exa	ct Test			1.0000	MO-THO	passed surv	rival		
Reproduction Sum	imary											
Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect	
VCWPD_1201_CD	LW	10	34.9	32.7	37.1	29	39	0.983	3.11	8.90%	0.00%	
MO-THO		10	32.9	31.3	34.5	30	37	0.69	2.18	6.64%	5.73%	
Survival Summary												
Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect	
VCWPD_1201_CD	LW	10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%	
MO-THO		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%	
Reproduction Deta	il											
Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10	
VCWPD_1201_CD	LW	30	29	37	36	36	36	36	39	36	34	
MO-THO	_	33	34	30	34	31	31	35	33	31	37	
Survival Detail												
Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10	
VCWPD_1201_CD	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
МО-ТНО		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Survival Binomials												
Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10	
VCWPD_1201_CD	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	
MO-THO		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	

Analyst: SVV Attachment D Appendix

#### **CETIS Analytical Report**

 Report Date:
 12 Dec-18 14:43 (p 1 of 1)

 Test Code:
 VCWPD\_1201\_CD | 06-5067-2466

Ceriodap	hnia Surv	vival and Re	prod	uction To	est						Pacific EcoRisk
Analysis	ID: 09-0	6458-6457		Endpoi	int: Sur	vival			CETIS Version:	CETISv1.9.2	
Analyzed	: 12	Dec-18 14:4	1	Analysi	is: Sing	gle 2x2 Cont	ingency Tal	ole	Official Results:	Yes	
Fisher Ex	act Test										
Sample I	vs	Sample II		Т	est Stat	P-Type	P-Value	Decision(	α:5%)		
Lab Wate	r Control	MO-THO		1.	.000	Exact	1.0000	Non-Signif	īcant Effect		
Data Sum	nmary										
Sample		Code	NR	R		NR + R	Prop NR	Prop R	%Effect		
VCWPD_	1201_CD	LW	10	0		10	1	0	0.0%		
MO-THO			10	0		10	1	0	0.0%		
Graphics											
1.0	1			ě.		•					
0,9											
0.8											
0.7											
0.6											
NINS											
0,4											
0,3											
0.2											
0.0	100.000	-									
	VCWPD_	1201_CD	м	0-THO		MO-THO					

Analyst: GVV Appendix I

#### **CETIS Analytical Report**

 Report Date:
 12 Dec-18 14:43 (p 1 of 1)

 Test Code:
 VCWPD\_1201\_CD | 06-5067-2466

eonedaprina ear	Ceriodaphnia Survival and Reproduction Test Pacific EcoRisk											
Analysis ID: 18-8 Analyzed: 12	3548-5358 Dec-18 14:4	End 3 Anal	point: Rep lysis: Par	production ametric-Two	o Sample		CET	S Version: al Results:	CETISv1. Yes	9.2		
Data Transform		Alt Hyp					Comparis	on Result			PMSD	
Untransformed		C > T					MO-THO	passed repro	oduction		5.97%	
Equal Variance t T	wo-Sample	Test										
Sample I vs	Sample II		Test Stat	Critical	MSD DF	P-Type	P-Value	Decision(	a:5%)			
Lab Water Control	MO-THO		1.67	1.73	2.08 18	CDF	0.0566	Non-Signif	icant Effect			
ANOVA Table												
Source	Sum Squa	ares	Mean Squ	lare	DF	F Stat	P-Value	Decision(	a:5%)			
Between	20		20		1	2.77	0.1131	Non-Signif	icant Effect			
Error	129.8		7.21111		18	_						
Total	149.8				19					-		
Distributional Test	S											
Attribute	Test				Test Stat	Critical	P-Value	Decision(d	x:1%)			
Variances	Variance R	Ratio F Test			2.03	6.54	0.3078	Equal Varia	ances			
Distribution	Shapiro-W	ilk W Norma	ality Test		0.926	0.866	0.1301	Normal Dis	stribution			
Reproduction Sum	mary											
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect	
Sample VCWPD_1201_CD	Code LW	Count 10	<b>Mean</b> 34.9	<b>95% LCL</b> 32.7	<b>95% UCL</b> 37.1	Median 36	<b>Min</b> 29	<b>Max</b> 39	<b>Std Err</b> 0.983	CV% 8.90%	%Effect 0.00%	
Sample VCWPD_1201_CD MO-THO	Code LW	Count 10 10	<b>Mean</b> 34.9 32.9	<b>95% LCL</b> 32.7 31.3	<b>95% UCL</b> 37.1 34.5	Median 36 33	<b>Min</b> 29 30	<b>Max</b> 39 37	<b>Std Err</b> 0.983 0.69	<b>CV%</b> 8.90% 6.64%	%Effect 0.00% 5.73%	
Sample VCWPD_1201_CD MO-THO Graphics	Code LW	Count 10 10	Mean 34.9 32.9	<b>95% LCL</b> 32.7 31.3	<b>95% UCL</b> 37.1 34.5	Median 36 33	Min 29 30	Max 39 37	<b>Std Err</b> 0.983 0.69	CV% 8.90% 6.64%	%Effect 0.00% 5.73%	
Sample VCWPD_1201_CD MO-THO Graphics	Code LW	Count 10 10	Mean 34.9 32.9	<b>95% LCL</b> 32.7 31.3	<b>95% UCL</b> 37.1 34.5	Median 36 33	Min 29 30	Max 39 37	<b>Std Err</b> 0.983 0.69	CV% 8.90% 6.64%	%Effect 0.00% 5.73%	
Sample VCWPD_1201_CD MO-THO Graphics	Code LW	Count 10 10	Mean 34.9 32.9	95% LCL 32.7 31.3	<b>95% UCL</b> 37.1 34.5	Median 36 33	Min 29 30	Max 39 37	<b>Std Err</b> 0.983 0.69	CV% 8.90% 6.64%	%Effect 0.00% 5.73%	
Sample VCWPD_1201_CD MO-THO Graphics <sup>40</sup> 35 ZZ	Code LW	Count 10 10	Mean 34.9 32.9	95% LCL 32.7 31.3	95% UCL 37.1 34.5	Median 36 33	Min 29 30	Max 39 37	<b>Std Err</b> 0.983 0.69	CV% 8.90% 6.64%	%Effect 0.00% 5.73%	
Sample VCWPD_1201_CD MO-THO Graphics 40 35 30	Code LW	Count 10 10	Mean 34.9 32.9	95% LCL 32.7 31.3	95% UCL 37.1 34.5	Median 36 33	Min 29 30	Max 39 37	Std Err 0.983 0.69	CV% 8.90% 6.64%	%Effect 0.00% 5.73%	
Sample VCWPD_1201_CD MO-THO Graphics 35 30	Code LW	Count 10 10	Mean 34.9 32.9	95% LCL 32.7 31.3	95% UCL 37.1 34.5	Median 36 33	Min 29 30	Max 39 37	Std Err 0.983 0.69	CV% 8.90% 6.64%	%Effect 0.00% 5.73%	
Sample VCWPD_1201_CD MO-THO Graphics 40 35 30 25	Code LW	Count 10 10	Mean 34.9 32.9	95% LCL 32.7 31.3	95% UCL 37.1 34.5	Median 36 33 33	Min 29 30	Max 39 37	Std Err 0.983 0.69	CV% 8.90% 6.64%	%Effect 0.00% 5.73%	
Sample VCWPD_1201_CD MO-THO Graphics 40 35 30 25 5 5 30 25 5 5 30 25	Code LW	Count 10 10	Mean 34.9 32.9	95% LCL 32.7 31.3	95% UCL 37.1 34.5	Median 36 33 33 2 2 1 1 2 1 2 1 1 2 1 1 2 2 1 1 2 2 1 1 2 3 3 3 3	Min 29 30	Max 39 37	Std Err 0.983 0.69	CV% 8.90% 6.64%	%Effect 0.00% 5.73%	
Sample VCWPD_1201_CD MO-THO Graphics 40 35 30 25 5 50 20 20	Code LW	Count 10 10	Mean 34.9 32.9	95% LCL 32.7 31.3	95% UCL 37.1 34.5	Median 36 33 33 5 4 3 2 2 1 - - - -	Min 29 30	Max 39 37	Std Err 0.983 0.69	CV% 8.90% 6.64%	%Effect 0.00% 5.73%	
Sample VCWPD_1201_CD MO-THO Graphics 40 35 30 25 50 20 20 25 15	Code LW	Count 10 10	Mean 34.9 32.9	95% LCL 32.7 31.3	95% UCL 37.1 34.5	Median 36 33 33 2 2 1 -1 -1 -2	Min 29 30	Max 39 37	Std Err 0.983 0.69	CV% 8.90% 6.64%	%Effect 0.00% 5.73%	
Sample VCWPD_1201_CD MO-THO Graphics 30 25 50 20 15	Code LW	Count 10 10	Mean 34.9 32.9	95% LCL 32.7 31.3	95% UCL 37.1 34.5	Median 36 33 33 2 2 2 1 1 - - - - - - - - - - - - - -	Min 29 30	Max 39 37	Std Err 0.983 0.69	CV% 8.90% 6.64%	%Effect 0.00% 5.73%	
Sample VCWPD_1201_CD MO-THO Graphics 40 35 25 20 25 20 15 15 20	Code LW	Count 10 10	Mean 34.9 32.9	95% LCL 32.7 31.3	95% UCL 37.1 34.5	Median 36 33 33 2 2 1 -1 -2 -3 -4	Min 29 30	Max 39 37	Std Err 0.983 0.69	CV% 8.90% 6.64%	%Effect 0.00% 5.73%	
Sample VCWPD_1201_CD MO-THO Graphics 40 35 30 25 25 20 15 15 20 5	Code LW	Count 10 10	Mean 34.9 32.9	95% LCL 32.7 31.3	95% UCL 37.1 34.5	Median 36 33 5 4 3 2 1 -1 -2 -3 -4 -5	Min 29 30	Max 39 37	Std Err 0.983 0.69	CV% 8.90% 6.64%	%Effect 0.00% 5.73%	
Sample VCWPD_1201_CD MO-THO Graphics 40 35 30 25 30 25 30 15 10 5	Code LW	Count 10 10	Mean 34.9 32.9	95% LCL 32.7 31.3	95% UCL 37.1 34.5	Median 36 33 2 2 1 -1 -2 -3 -4 -5 -6 -	Min 29 30	Max 39 37	Std Err 0.983 0.69	CV% 8.90% 6.64%	%Effect 0.00% 5.73%	
Sample VCWPD_1201_CD MO-THO Graphics 25 25 20 25 20 15 20 5 20 5 20 5	Code LW	Count 10 10	Mean 34.9 32.9	95% LCL 32.7 31.3	95% UCL 37.1 34.5	Median 36 33 33 2 2 1 1 - - - - - - - - - - - - - - - -	Min 29 30	Max 39 37	Std Err 0.983 0.69	CV% 8.90% 6.64%	%Effect 0.00% 5.73%	

Analyst: 7 Attachr

C	ient:	ent: Ventura County Watershed Protection District				trict Material: Lab Water Control					Test Date: 12/1/18							
Ргоје	ct #:	294	134		Test ID:		80319		Ran	domizat	ion:	(0,	4.9			Contro	Water:	Mod EPAMH
	Day	p	H	D.	.0.	Cond.	Temp		D	6	Su	urvival / R	eproducti	on	L U	I	I I	SIGN-OFF
	0	7.84		8.6	Old	352	25,0	Ð	D	0	0	0	ð	0	0	0	U	Date:         12         118         New WQ:         Test Init.:         135           Sol'n Prep:         TK         JR         Time:         1557
	1	264	7-86	7.7	7.9	352	24.1	0	0	Θ	0	0	0	0	0	0	0	Date 1/2/19 New WQ: SAT Counts: Jef Sol'n Prep: 16 Old WQ: TA Time 1555
	2	7.92	8.10	87	7.7	354	245	0	ъ	D	0	0	0	0	0	0	0	Date: 12 13 11 New WQ: 1 W Counts: 0-13 Sol'n Prep: Old WQ: Time: 1531
trol	3	7.87	7.63	8.8	7.4	363	25.9	5	5	G	6	5	6	6	8	6	5	Date: 12/4/18 New WQ: TA Counts: K6 Sol'n Prep: TF Old WQ: SR Time: 1511
er Con	4	7.84	7.66	7.9	7.1	357	28,0	10	10	6	10	D	12	13	13	0	0	Date: 145/New WQ: Counts: NB Sol'n Prep: 12 Old WQ: Time: 1443
ab Wat	5	8-13	7.57	7.9	6.7	365	24.6	0	0	12	0	12	0	0	0	13	13	Date 12/118 New WQ: 200 Counts: TF Sol'n Prep: TK Old WO: 76 Time: 1341
, î	6	-	7.89	-	5.4	385	24.8	15	14	19	20	19	18	17	18	17	16	Date: 1217119 New WQ: Counts: TL Sol'n Prep: - Old WQ: BM Time: 1600
	7				1 7 1												_	Date: New WQ: Counts: Sol'n Prep: Old WQ: Time:
	8													310				Date: Old WQ: Counts: Time:
							Total≓	30	29	37	36	36	36	37	39	34	34	Mean Neonates/Female = \$5.0-34.9
1														52112/18				SVV 12/12/18

#### Short-Term Chronic 3-Brood Ceriodaphnia dubia Survival & Reproduction Test Data

#### Short-Term Chronic 3-Brood Ceriodaphnia dubia Survival & Reproduction Test Data

C	lient:	Ventu	ra Count	y Waters	hed Prote	ection Dis	strict	N	laterial:			MO-	ТНО			Т	est Date:	12/1/18
Proj	ect #:	294	134		Test ID:	803	19		Randor	nization		10.4.	9			Contro	l Water:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp				Su	rvival / R	eproducti	on				Sample ID
		New	Old	New	Old	(µS/em)	ູ (°C)	A	В	С	D	Е	F	G	н	1	1	
	0	7.67		10.4		515	15,4	Õ	0	0	D	D	0	0	0	0	Ð	51495
	1	755	7.87	8.9	7.8	512	24.1	D	ь	0	0	0	0	0	б	Ô	0	51495
	2	7.64	7.99	10.4	8.0	514	247	D	6	0	ь	D	0	D	0	0	6	८१५९८
	3	7-65	7.70	9.3	7.7	502	25.7	8	6	6	$\square$	5	5	6	6	3	7	51495
٥%(	4	7.64	7.65	8.9	69	617	场天	0	0	8	2	0	10	0	8	0	0	51495
IU	5 _	7-85	7.66	9.2	7.2	522	24.4	10	11	0	12	10	0	11	0	11	12	८१५१८
	6	-	7.79		5.7	571	24.4	15	17	16	19	16	16	18	19	17	17	-
	7	17.3		L.													1	
	8																	
							Total=	33	34	30	34	31	31	35	33	31	37	Mean Neonates/Female = 32.9
-					international and a local data											TUNIT		

# Appendix F

# Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of the VCWPD Stormwater to Fathead Minnows

#### **CETIS Summary Report**

D\_1124\_PP | 12-2924-2791

Report Date:	
Test Code:	VCWPI

0	6 Dec-	-18 -	11:43	3 (p	1	of	2)
	4404	-	1.40	000		~7	~ 4

Chronic Larval	Chronic Larval Fish Survival and Growth Test Pacific EcoRisk											
Batch ID: 0	7-5632-3219	-	Test Type: Gro	wth-Surviva	ıl (7d) 012 (2002)			Analys	t: Stev	vi Vasquez		
Ending Date: 0	1 Dec-18 08:1	7 4	Species: Pin	n-uz (-m-uz-	melae			Brino	Not	Applicable		
Duration: 6	d 21h	· ·	Species. I m Source: Ag	istox AR	Ancias				1	Applicable		
								Age:				
Sample Code	Sample II		Sample Date	Receipt	10 44-07	Sample	Age	Client	Name	P Matarah D	roject	
	-P 02-1466-0	040	24 NOV-18 11:2	24 NOV-	40.00.00	n/a (24.	9°C)					
	00-9311-5	1000	21 Nov-18 22:35 23 Nov-18 08:02 60h (0 °C) 21 Nov-18 23:15 23 Nov-18 08:02 60h (0 °C)									
MO-OJA	13-4924-9	1051	21 Nov-18 23:15 23 Nov-18 08:02 50h (0 C)									
MO-MEI	59h (0 1	C)										
MO-OXN	07-1416-6	586 2	21 Nov-18 23:40	) 23 Nov-	18 08:02	60h (0 ·	·C)					
Sample Code	Material	Гуре	Sa	nple Sourc	e		Station L	ocation	1	Lat/Long		
VCWPD_1124_F	PP Lab Wate	r	Ve	tura County	Watershee	d Prote	LABQA					
MO-CAM	Ambient V	Vater	Vei	itura County	Watershee	d Prote	MO-CAM					
ALO-OM	Ambient V	Vater	Ver	ntura County	Watershee	d Prote	MO-OJA					
MO-MEI	Ambient V	Vater	Vei	ntura County	Watershee	d Prote	MO-MEI					
MO-OXN	Ambient V	Vater	Vei	ntura County	Watershee	d Prote	MO-OXN					
Single Compari	son Summary	/										
Analysis ID E	ndpoint		Comparis	on Method			P-Va	alue (	Comparis	on Result		
06-1891-6906 7	d Survival Rate	Э	Equal Var	iance t Two-	Sample Te	st	0.01	66 N	MO-CAM	failed 7d su	rvival rate	
13-0983-7195 70	d Survival Rate	Ð	Equal Var	Equal Variance t Two-Sample Test					MO-OJA f	ailed 7d su	rvival rate	
06-3697-6362 70	d Survival Rate	Э	Equal Var	iance t Two-	Sample Te	st	0.05	19 N	NO-MEI p	assed 7d s	urvival rate	
12-0686-5588 70	d Survival Rate	Э	Equal Var	iance t Two-	Sample Te	st	0.09	61 1	MO-OXN	passed 7d :	survival rate	
02-0593-7827 M	lean Dry Biom	ass-mg	Equal Var	iance t Two-	Sample Te	st	4.2E	-05 1	MO-CAM	failed mear	n dry biomas	s-mg
03-9675-4352 M	lean Dry Biom	ass-mg	Equal Var	iance t Two-	Sample Te	st	1.1E	-05 🛚 🕅	MO-OJA f	ailed mean	dry biomass	s-mg
11-7812-1469 M	lean Dry Biom	ass-mg	Equal Var	iance t Two-	Sample Te	st	1.9E	-04 M	MO-MEI fa	ailed mean	dry biomass	-mg
20-2469-8603 M	lean Dry Biom	ass-mg	Equal Var	ance t Two-	Sample Te	st	4.3E	-04 N	MO-OXN	failed mear	dry biomas	s-mg
7d Survival Rate	e Summary											
Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	5	Std Err	Std Dev	CV%	%Effect
VCWPD_1124_F	PP LW	4	1.000	1.000	1.000	1.000	1.00	0 0	0.000	0.000	0.00%	0.00%
MO-CAM		4	0.775	0.503	1.000	0.600	1.00	0 0	0.085	0.171	22.04%	22.50%
MO-OJA		4	0.575	0.303	0.847	0.400	0.80	0 0	0.085	0.171	29.70%	42.50%
MO-MEI		4	0.850	0.574	1.000	0.600	1.00	0 0	0.087	0.173	20.38%	15.00%
MO-OXN		4	0.900	0.675	1.000	0.700	1.00	0 0	0.071	0.141	15.71%	10.00%
Mean Dry Bioma	ass-mg Sumn	nary										
Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max		Std Err	Std Dev	CV%	%Effect
VCWPD_1124_F	PP LW	4	1	0.834	1.17	0.867	1.12	C	0.0525	0.105	10.49%	0.00%
MO-CAM		4	0.379	0.249	0.508	0.275	0.47	4 C	).0407	0.0815	21.53%	62.17%
MO-OJA		4	0.233	0.111	0.355	0.145	0.32	8 C	0.0383	0.0766	32.91%	76.74%
MO-MEI		4	0.463	0.292	0.633	0.33	0.57	7 0	0.0537	0.107	23.19%	53.75%
MO-UXN		4	0.532	0.354	0.709	0.449	0.69	3 0	0.0557	0.111	20.97%	46.88%

Rb Analyst: SNV QA: K Attachment D Appendix T

#### **CETIS Summary Report**

Chronic Larval Fish Survival and Growth Test

	CETI
ater Quality	P

ETIS™	v1.9.2.6
Page	DI - 76

7d Survival Rate I	Detail					
Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	
VCWPD_1124_PP	LW	1.000	1.000	1.000	1.000	
MO-CAM		1.000	0.800	0.600	0.700	
MO-OJA		0.800	0.500	0.600	0.400	
MO-MEI		1.000	0.900	0.900	0.600	
MO-OXN		0.900	0.700	1.000	1.000	
Mean Dry Biomas	s-mg Deta	ail				
Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	
VCWPD_1124_PP	LW	0.993	1.12	1.02	0.867	
MO-CAM		0.474	0.388	0.275	0.377	
MO-OJA		0.328	0.249	0.209	0.145	
MO-MEI		0.577	0.515	0.429	0.33	
MO-OXN		0.467	0.449	0.693	0.517	
7d Survival Rate E	Binomials					
Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	
VCWPD_1124_PP	LW	10/10	10/10	10/10	10/10	т.,
MO-CAM		10/10	8/10	6/10	7/10	
MO-OJA		8/10	5/10	6/10	4/10	
MO-MEI		10/10	9/10	9/10	6/10	
MO-OXN		9/10	7/10	10/10	10/10	

**Report Date:** Test Code:

Pacific EcoRisk



CETIS Analytical Report								ort Date: Code:	06   VCWPD_1	Dec-18 11:4 124 PP   12	3 (p 1 of 8)
Chronic Larval F	ish Surviva	and Growt	h Test							Pacif	ic EcoRisk
Analysis ID: 06	6-1891-6906	End	<b>lpoint:</b> 7d	Survival Rat	e		CET	S Version:	CETISv1	.9.2	
Analyzed: 06	6 Dec-18 11:	38 <b>An</b> a	alysis: Pa	rametric-Two	Sample		Offic	ial Results	: Yes		
Data Transform		Alt Hyp					Comparis	on Result			PMSD
Angular (Corrected	d)	C > T					MO-CAM	failed 7d su	rvival rate		13.73%
Equal Variance t	Two-Sampl	e Test									
Sample I vs	Sample i	1	Test Stat	Critical	MSD DF	P-Type	P-Value	Decision	(a:5%)		
Lab Water Contro	MO-CAM	*	2.75	1.94	0.221 6	CDF	0.0166	Significar	t Effect		
ANOVA Table											
Source	Sum Squ	lares	Mean Sq	uare	DF	F Stat	P-Value	Decision	(α:5%)		
Between	0.195833	;	0.195833		1	7.58	0.0332	Significar	t Effect		
Error	0.155012		0.025835	3	6						
Total	0.350845				7						
Distributional Te	sts										
Attribute	Test				Test Stat	Critical	P-Value	Decision	(α:1%)		
Variances	Levene E	quality of Va	ariance Test	<b>T</b>	5.94	13.7	0.0506	Equal Va	riances		
Distribution	Shaniro-V	Are Equality	of variance	Test	4.99	13.7	0.0670	Equal Val	istribution		3
Distribution Shapiro-Wilk W Normality Test				0.015	0.045	0.0390	Normal D	Istribution			
7d Survival Rate	Summary										
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
VCWPD_1124_PF		4	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%
			0.775	0.303	1.000	0.750	0.000	1.000	0.085	22.0470	22.50%
Angular (Correcte	ed) Transfo	rmed Summ	nary								
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
MO-CAM		4	1.47	0.737	1.41	1.41	0.886	1.41	0 114	20.68%	0.00%
Creation									0	20.0070	22.1070
Graphics											
1.G	0					0.35					
0.9						0.30					
0.8				Reject Null		0.25					
, 0.7			1111	1.1.1		0.20					
					tered	60 0.15					
Rate 8.0					C	5 0.1C					
0.5						0.05					
0.4						-0.05					
0.3						-0.10					
0.2						-0.15	1				
0.1						+0.20					
						-0.25					
U.U N.:	VCWPD_1124_PP		MO-CAP	м		-1.5	-1,0	-0.5 0.0 Rankits	0.5	1.0	1.5

06 Dec-18 11:43 (p 1 of 8)

ť

<b>CETIS Analyti</b>	ical Repo	ort					Repo	ort Date:	06	Dec-18 11:4	l3 (p 5 of 8)
							Test	Code:	VCWPD_1	124_PP   12	2-2924-2791
Chronic Larval Fis	sh Survival	and Growt	h Test							Pacif	ic EcoRisk
Analysis ID: 02-	-0593-7827	Enc	Ipoint: Me	an Dry Biom	ass-mg		CET	S Version:	CETISv	1.9.2	
Analyzed: 06	Dec-18 11:4	11 Ana	l <b>ysis</b> : Par	ametric-Two	o Sample		Offic	ial Results	: Yes		
Data Transform	-	Alt Hyp					Comparis	on Result			PMSD
Untransformed	_	C > T					MO-CAM	failed mear	n dry biomas	ss-mg	12.90%
Equal Variance t 1	rwo-Sample	e Test									
Sample I vs	Sample II		Test Stat	Critical	MSD DF	P-Type	P-Value	Decision	(α:5%)		
Lab Water Control	MO-CAM*	,	9.36	1.94	0.129 6	CDF	4.2E-05	Significar	t Effect		
Source	Sum Sau	2100	Moon Sau		DE	E Stat	P Value	Decision	(~. 59/)		
Between	0 773768	ales	0 773768		1	87 7	8 4E-05	Significan	t Effect		
Error	0.0529455	5	0.0088243		6	01.7	0.46-00	olgrinical	IL LIBOL		
Total	0.826714		0.00002.10	·	7	_					
Distributional Tes	ts										
Attribute	Test				Test Stat	Critical	P-Value	Decision	(a·1%)		
Variances	Variance	Ratio E Test			1.66	47.5	0.6883	Equal Va	riances		
Distribution	Shapiro-W	/ilk W Norm	ality Test		0.936	0.645	0.5697	Normal D	istribution		
Moon Dry Riemon									_		
Genele	S-my Summ	Orwert		05% 1.01		Madaa			01.1 5	~	
		Count	Mean	95% LCL	95% UCL	Median	Min	Max 1 1 2	Std Err	CV%	%Effect
MO-CAM		4	0.379	0.249	0.508	0.383	0.275	0.474	0.0323	21.53%	62.17%
Granhian											
Graphics											
1.2						0.16					
						0.14					
1.0		-				0.12					
						0.08					
0.8		3.		Reject Null	2	0.06					
ő.					enter	C.04					
SSE L						5 0.02 5 0.00		i 	۰ ۲		
2 0.8						-0.02		•			
i i i i i i i i i i i i i i i i i i i						-0.04					
× 0.4						-0.06					
						-0.08					1
0.2						-0.10					
						-0.14					
0.0						-0.16	-10	-0.6		10	1
	VCWPD_1124_PP		MO-CAM			-1.5	-1.0	Rankits	0.9	1.0	1.5

R6 Analyst: SVV QA: Attachment D Appendix T

06 Dec-18 11:43 (p 5 of 8)

Report Date:

Client:	Ventura	a County W	atershed P	rotection Di	istrict	Orga	nism Log#:	117	103	Age:	248h
Test Material:		1	MO-CAM		_	Organist	n Supplier:	F	tyhato	1	
Test ID#:	803	12	Project #:	29	434	÷	Control:		7	EP.	АМН
Test Date:	11/24/	13	Ran	domization:	4.7.14	- Control W	ater Batch:			-10	
	Temp		н	D.O.	(me/L)	Conductivity		# Live C	Dreanisms		
Test Treatment	(°C)	new	old	new	old	(µS/cm)	A	В	C	D	SIGN-OFF
Lab Water Control	24.9	8.16		9.1		301	10	10	10	lo	Date: 11/24/18 Test Solution Prep:
100%	25.0	7.23		105		605	10	10	lo	10	Sample ID: 5 391 Initiation Time: 127
Meter ID	108A	PHZY		ROID		Ecio	New WQ:	Rb			Initiation Signoff: Rb
Lab Water Control	24.8	7.96	7.93	8.8	6.6	309	10	10	10	10	Date: 11/25/18 Test Solution Prep: 51/
100%	24.5	7.08	7.00	10.8	2.3	613	10	10	8	9	Sample ID: 51381 Renewal Time: 1040
Meter ID	109A	FHIG	PHZH	RDIO	RD13	EC10	New WQ:	KL	Old WQ:	DH	Renewal Signoff: K6
Lab Water Control	24.4	7.95	7.89	8.9	8.0	303	10	10	ID	10	Date: 11/26/18 Test Solution Prep: ER
100%	24.3	7.03	7.34	9.4	6.D	614	10	10	8	9	Sample ID: 51381 Renewal Time: 1250
Meter ID	A18181A	pha	PHIG	ROID	RDID	Euro	NGW WQ:	) fr	TV BIO		Renewal Signon: K6
Lab Water Control	24.4	7-85	7.65	8-4	8.2	300	10	10	(0)	10	Date: 11/2-7/18 Test Solution Prep: TF
100%	24.3	7.01	7.40	9-5	6-6	609	10	10	8	9	Sample ID: 5738/ Renowal Time: 1029
Meter ID	81A	PH25	PHIS	RUID	RD10	Eqo	New WQ:	t	Old WQ:	4	Renewal Signoff: TF
Lab Water Control	75.2	7.86	7.67	8.5	7.3	7309	10	10	10	10	Date: 11/2 B / E Test Solution Prep: NB
100%	25.1	6.67	7.47	7,4	6.5	19-1-1- A	TT 10	10	8	9	Sample ID: 513Bİ Renewal Time: 1113
Meter ID	10/H	PHTS	PH25	4013	RPII	8013	New WQ: <	AT	Old WQ: S	4T	Renewal Signoff:
Lab Water Control	24.7	8.09	7.76	8.4	8.1	297	10	10	10	10	Date: 1129/18 Test Solution Prep: ER
100%	24.7	6.49	7-43	7.4	6.6	603	10	10	8	9	Sample ID: 51381 Renewal Time: 1537
Meter ID	BIA	PHIS	PH19	RDIO	RDIO	ECID	New WQ:	A	Old WQ:	TA	Renewal Signoff: K6
Lab Water Control	24.7	795	8.06	8.0	8-3	304	10	10	10	10	Date: 11/30/18 Test Solution Prep: KL
100%	24.7	6.69	7-78	7.3	7-3	596	10	10	8	9	Sample ID: 51381 Renewal Time: 1533
Meter ID	1024	MIG	PHZE	2013	RDII	FU3	New WQ;	VZ	Old WQ:	A	Renewal Signoff: MV~
Lab Water Control	24.6		7.80		6.7	321	10	(0)	(0)	10	Date: [2/1/18 Termination Time: 08/7
100%	24.5		7.49		6.8	632	10	8	6	7	Termination Signoff:
Meter ID	SIA		9424		2713	EC13			Old WQ:	R	

# Fathead Minnow Dry Weight Data Sheet

Client:	Ventura Cou	nty Water	Protection District	Test ID #:	80312	Project #: 29434
Test Material:		MO-CA	AM	Tare Weight Date:	11/28/18	Sign-off: 74
Test Date:	11/241	18		Final Weight Date:	12-4-18	Sign-off: AR
Pan ID	Treatment	Replicate	Initial Pan Weight (mg)	Final Pan Weight (mg)	Initial # of Organisms	Biomass Value (mg)
1	Lab Water	А	414.87	424 80	10	0.993
2	Control	В	411.65	422.87	10	1.12
3		С	409.77	419.97	10	1.02
4		D	409.68	418.35	10	0.867
5	100%	A	412.12	416.86	10	0.474
6	· · · · · ·	В	410.12	414.00	10	0.388
7		С	418.52	421.27	10	0.275
8		D	411-27	415.04	10	0.377
QA			412.31	412.32		
Balance ID:			Bal 04	Ba1 04		

CETIS Analyti	cal Rep	ort					Rep Test	ort Date: Code:	06 VCWPD 1	Dec-18 11:4 124 PP   1	43 (p 2 of 8 2-2924-279 <sup>,</sup>
Chronic Larval Fis	sh Survival	and Grow	th Test							Paci	fic EcoRisk
Analysis ID: 13- Analyzed: 06	0983-7195 Dec-18 11:	En 39 An	<b>dpoint:</b> 7d <b>alysis:</b> Pai	Survival Rat	te o Sample		CET Offic	IS Versior al Result	n: CETISv <sup>.</sup> : <b>s</b> : Yes	1.9.2	
Data Transform		Alt Hyp					Comparis	son Resul	t		PMSD
Angular (Corrected)	)	C > T					MO-OJA	failed 7d s	urvival rate		10.77%
Equal Variance t T	wo-Sample	e Test									
Sample I vs	Sample I		Test Stat	Critical	MSD DF	Р-Туре	P-Value	Decisio	n(α:5%)		
Lab Water Control	MO-OJA*	-	6.05	1.94	0.176 6	CDF	4.6E-04	Significa	int Effect		
ANOVA Table											
Source	Sum Squ	ares	Mean Squ	Jare	DF	F Stat	P-Value	Decisio	n(α:5%)		
Between	0.596626		0.596626		1	36.6	9.3E-04	Significa	nt Effect		
Error	0.097915	1	0.0163192	2	6						
Total	0.694541				7						
Distributional Test	s										
Attribute	Test				Test Stat	Critical	P-Value	Decisio	n(a:1%)		
Variances	Levene E	quality of V	ariance Test		6.96	13.7	0.0387	Equal Va	ariances		
Variances	Mod Leve	ne Equality	of Variance	Test	6.2	13.7	0.0472	Equal Va	ariances		
Distribution	Shapiro-V	Vilk W Norn	nality Test		0.844	0.645	0.0824	Normal [	Distribution		
7d Survival Rate S	ummary										
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
VCWPD_1124_PP	LW	4	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%
MO-OJA		4	0.575	0.303	0.847	0.550	0.400	0.800	0.085	29.70%	42.50%
Angular (Corrected	d) Transfor	med Sumn	nary								
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
VCWPD_1124_PP	LW	4	1.41	1.41	1.41	1.41	1.41	1.41	0	0.00%	0.00%
MO-OJA		4	0.866	0.578	1.15	0.836	0.685	1.11	0.0903	20.87%	38.68%
Graphics											
1.0						0.25					
0.9						0.20					
C.8				Reject Null		0.15					
0.7						p C.10					
					tered	Angl					
9.6 10			11101	111	Cen	e o.us					
0.5						0.00		0 - 0 -	0 -0		
ሬ.4 እ.4						-0.05					
0.3						-0.10					
0.2						-0.15					
0.1						-0.20					
0.0	VCWPD_1124_PP		MO-OJA			-0.25 -1.5	-1.0	-0.5 0.0	0.5	1.0	1.5
	2							Rankits			

							lest	Code:	VCWPD_1	124_PP   12	-2324-2731
Chronic Larval Fis	sh Survival a	and Growth	n Test							Pacif	ic EcoRisk
Analysis ID: 03-	9675-4352	End	point: Me	an Dry Biom	lass-mg		CET	S Version:	CETISv	1.9.2	
Analyzed: 06	Dec-18 11:4	1 Ana	I <b>ysis:</b> Par	rametric-Two	Sample		Offic	ial Results:	Yes		
Data Transform		Alt Hyp					Comparis	on Result			PMSD
Untransformed		C > T					MO-OJA 1	ailed mean	dry biomas	s-mg	12.61%
Equal Variance t T	wo-Sample	Test									
Sample I vs	Sample II		Test Stat	Critical	MSD DF	P-Type	P-Value	Decision(	α:5%)		
Lab Water Control	MO-OJA*		11.8	1.94	0.126 6	CDF	1.1E-05	Significant	Effect		
ANOVA Table											
Source	Sum Squa	ires	Mean Squ	lare	DF	F Stat	P-Value	Decision(	α:5%)		
Between	1.17888		1.17888		1	140	2.2E-05	Significant	Effect		
Error	0.0506219		0.008437		6						
Total	1.2295				7						
Distributional Test	ts										
Attribute	Test				Test Stat	Critical	P-Value	Decision(	α:1%)		
Variances	Variance R	tatio F Test			1.88	47.5	0.6183	Equal Vari	ances		
Distribution	Shapiro-W	ilk W Norma	ality Test		0.966	0.645	0.8614	Normal Di	stribution		
Mean Dry Biomass	s-mg Summ	ary									
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
Sample VCWPD_1124_PP	Code LW	Count 4	Mean 1	95% LCL 0.834	95% UCL	Median 1.01	<b>Min</b> 0.867	Max 1.12	Std Err 0.0525	CV% 10.49%	%Effect 0.00%
Sample VCWPD_1124_PP MO-OJA	Code LW	Count 4 4	<b>Mean</b> 1 0.233	<b>95% LCL</b> 0.834 0.111	<b>95% UCL</b> 1.17 0.355	Median 1.01 0.229	Min 0.867 0.145	Max 1.12 0.328	<b>Std Err</b> 0.0525 0.0383	CV% 10.49% 32.91%	%Effect 0.00% 76.74%
Sample VCWPD_1124_PP MO-OJA Graphics	Code LW	Count 4 4	<b>Mean</b> 1 0.233	95% LCL 0.834 0.111	95% UCL 1.17 0.355	<b>Median</b> 1.01 0.229	Min 0.867 0.145	Max 1.12 0.328	<b>Std Err</b> 0.0525 0.0383	CV% 10.49% 32.91%	%Effect 0.00% 76.74%
Sample VCWPD_1124_PP MO-OJA Graphics	Code LW	Count 4 4	Mean 1 0.233	95% LCL 0.834 0.111	<b>95% UCL</b> 1.17 0.355	Median 1.01 0.229	Min 0.867 0.145	Max 1.12 0.328	<b>Std Err</b> 0.0525 0.0383	CV% 10.49% 32.91%	%Effect 0.00% 76.74%
Sample VCWPD_1124_PP MO-OJA Graphics	Code LW	Count 4 4	Mean 1 0.233	95% LCL 0.834 0.111	95% UCL 1.17 0.355	Median 1.01 0.229	Min 0.867 0.145	Max 1.12 0.328	<b>Std Err</b> 0.0525 0.0383	CV% 10.49% 32.91%	%Effect 0.00% 76.74%
Sample VCWPD_1124_PP MO-OJA Graphics	Code LW	Count 4 4	Mean 1 0.233	95% LCL 0.834 0.111	95% UCL 1.17 0.355	Median 1.01 0.229	Min 0.867 0.145	Max 1.12 0.328	<b>Std Err</b> 0.0525 0.0383	CV% 10.49% 32.91%	%Effect 0.00% 76.74%
Sample VCWPD_1124_PP MO-OJA Graphics	Code LW	Count 4 4	Mean 1 0.233	95% LCL 0.834 0.111	95% UCL 1.17 0.355	Median 1.01 0.229	Min 0.867 0.145	Max 1.12 0.328	<b>Std Err</b> 0.0525 0.0383	CV% 10.49% 32.91%	%Effect 0.00% 76.74%
Sample VCWPD_1124_PP MO-OJA Graphics	Code LW	Count 4 4	Mean 1 0.233	95% LCL 0.834 0.111	95% UCL 1.17 0.355	Median 1.01 0.229 0.16 0.14 0.12 0.08 0.08 0.08	Min 0.867 0.145	Max 1.12 0.328	<b>Std Err</b> 0.0525 0.0383	CV% 10.49% 32.91%	%Effect 0.00% 76.74%
Sample VCWPD_1124_PP MO-OJA Graphics	Code LW	Count 4 4	Mean 1 0.233	95% LCL 0.834 0.111	95% UCL 1.17 0.355	Median 1.01 0.229 0.16 0.34 0.12 0.00 0.08 0.06 0.04	Min 0.867 0.145	Max 1.12 0.328	Std Err 0.0525 0.0383	CV% 10.49% 32.91%	%Effect 0.00% 76.74%
Sample VCWPD_1124_PP MO-OJA Graphics	Code LW	Count 4 4	Mean 1 0.233	95% LCL 0.834 0.111	95% UCL 1.17 0.355	Median 1.01 0.229 0.16 0.14 0.12 0.10 0.08 0.04 0.04 0.02	Min 0.867 0.145	Max 1.12 0.328	Std Err 0.0525 0.0383	CV% 10.49% 32.91%	%Effect 0.00% 76.74%
Sample VCWPD_1124_PP MO-OJA Graphics	Code LW	Count 4 4	Mean 1 0.233	95% LCL 0.834 0.111	95% UCL 1.17 0.355	Median 1.01 0.229 0.16 0.14 0.12 0.00 0.08 0.06 0.04 0.02 0.00 0.08 0.04 0.02 0.00 0.0	Min 0.867 0.145	Max 1.12 0.328	Std Err 0.0525 0.0383	CV% 10.49% 32.91%	%Effect 0.00% 76.74%
Sample VCWPD_1124_PP MO-OJA Graphics	LW	Count 4 4	Mean 1 0.233	95% LCL 0.834 0.111	95% UCL 1.17 0.355	Median 1.01 0.229 0.16 0.14 0.12 0.00 0.08 0.06 0.04 0.00 0.0	Min 0.867 0.145	Max 1.12 0.328	Std Err 0.0525 0.0383	CV% 10.49% 32.91%	%Effect 0.00% 76.74%
Sample VCWPD_1124_PP MO-OJA Graphics 1.2 1.0 0.8 0.8 0.6 Či u 0.6 Či u 0.4	Code	Count 4 4	Mean 1 0.233	95% LCL 0.834 0.111	95% UCL 1.17 0.355	Median 1.01 0.229 0.16 0.14 0.12 0.00 0.08 0.04 0.04 0.02 0.04 0.02 0.04 0.04 0.02 0.04 0.04 0.02 0.04 0.04 0.04 0.04 0.05 0.0	Min 0.867 0.145	Max 1.12 0.328	Std Err 0.0525 0.0383	CV% 10.49% 32.91%	%Effect 0.00% 76.74%
Sample VCWPD_1124_PP MO-OJA Graphics 1.2 10 0.8 0.6 CG CG VC VC VPD_1124_PP MO-OJA	Code	Count 4 4	Mean 1 0.233	95% LCL 0.834 0.111	95% UCL 1.17 0.355	Median 1.01 0.229 0.16 0.14 0.12 0.10 0.08 0.06 0.04 0.02 0.00 0.00 0.02 0.00 0.0	Min 0.867 0.145	Max 1.12 0.328	Std Err 0.0525 0.0383	CV% 10.49% 32.91%	%Effect 0.00% 76.74%
Sample VCWPD_1124_PP MO-OJA Graphics 1.2 1.0 0.8 0.8 0.6 AG VENUE 0.6 AG VENUE 0.6 AG VENUE 0.6 AG VENUE 0.6 AG VENUE 0.6 AG VENUE V	Code	Count 4 4	Mean 1 0.233	95% LCL 0.834 0.111	95% UCL 1.17 0.355	Median 1.01 0.229 0.16 0.14 0.12 0.10 0.08 0.04 0.02 0.04 0.02 0.04 0.02 0.04 0.02 0.04 0.02 0.06 0.04 0.02 0.06 0.08 0.02 0.00 0.08 0.02 0.00 0.08 0.02 0.00 0.02 0.00 0.0	Min 0.867 0.145	Max 1.12 0.328	Std Err 0.0525 0.0383	CV% 10.49% 32.91%	%Effect 0.00% 76.74%
Sample VCWPD_1124_PP MO-OJA Graphics 1.2 1.0 0.8 0.6 CC 0.6 CC 0.2	Code	Count 4 4	Mean 1 0.233	95% LCL 0.834 0.111	95% UCL 1.17 0.355	Median 1.01 0.229 0.16 0.14 0.12 0.00 0.08 0.06 0.04 0.02 0.00 0.08 0.04 0.02 0.00 0.08 0.04 0.02 0.00 0.02 0.00 0.02 0.00 0.02 0.00 0.02 0.00 0.02 0.00 0.02 0.00 0.0	Min 0.867 0.145	Max 1.12 0.328	Std Err 0.0525 0.0383	CV% 10.49% 32.91%	%Effect 0.00% 76.74%
Sample VCWPD_1124_PP MO-OJA Graphics 1.2 1.0 0.8 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6	Code	Count 4 4	Mean 1 0.233	95% LCL 0.834 0.111	95% UCL 1.17 0.355	Median 1.01 0.229 0.16 0.14 0.12 0.00 0.08 0.06 0.04 0.02 0.08 0.04 0.02 0.04 0.02 0.04 0.02 0.04 0.02 0.04 0.02 0.04 0.02 0.04 0.02 0.04 0.02 0.04 0.02 0.04 0.02 0.04 0.02 0.04 0.02 0.04 0.02 0.04 0.02 0.04 0.02 0.04 0.04 0.02 0.04 0.05 0.05 0.0	Min 0.867 0.145	Max 1.12 0.328	Std Err 0.0525 0.0383	CV% 10.49% 32.91%	%Effect 0.00% 76.74%

06 Dec-18 11:43 (p 6 of 8)

**CETIS Analytical Report** 

Client	Ventur	a County V	Vatershed P	rotection D	istrict	Orga	nism Log#	1130	13	Age	LYShn
Test Material:		v	MO-OJA			Organis	m Supplier	-	Ag	natu	X
Test ID#:	803	13	Project #:	29	434	-	Control			EP	AMH
Test Date:	11/24	10	- Ra	idomization:	: <u>12:11</u>	Control W	ater Batch		2	121	
Test Treatment	Temp	1	H	D.O.	(mu/L)	Conductivity		# Live C	Druanisms		SIGN-OFF
	(°C)	new	old	new	old	(µS/cm)	A	В	С	D	Deter
Lab Water Control	24.9	8.16		9.1		301	10	10	lo	10	Test Solution Prep:
100%	24.8	7.36		9.7		371	10	10	10	lo	Sample ID: 51382 Initiation Time: 1127
Meter ID	68A	PH24		ROIO		ELID	New WQ:	26			Initiation Signoff: Rb
Lab Water Control	24.97	7.96	7.93	8.8	6.8	309	10	10	10	10	Date: 11/25/18 Test Solution Prep:
100%	24.14	7.11	7.00	95	2.8	381	8	5	8	7	Sample ID: 51390 Renewal Time: Auto
Meter ID	INGA	PHI9	PH 24	RDIO	ROIS	ECIO	New WQ:	KC	Old WQ:	)H	Renewal Signoff: V
	- VV III			1.1.1		10		T			Date: 11/2/0119
Lab Water Control	24.4	7.95	7.89	8.9	8.0	303	10	10	10	10	Test Solution Prep: 64
100%		1				A 1.1					Sample ID: 51382
10070	24.1	7.03	7.36	7.5	6.7	384	B	5	7	7	Renewal Time: 1250
Meter ID	BIA	pula	PHIQ	KOiu	RIVID	ECIO	New WQ:	sr-	Old WQ:	K	Renewal Signoff: Kb
Lab Water Control	24.4	7.85	7.65	8-4	8.2	300	10	10	10	61	Date: 11/27/18 Test Solution Prep: TF
100%	24.2	6.99	7.47	8-5	7.2	383	8	5	7	5	Sample ID: 5/382 Renewal Time: 129
Meter ID	81A	PH25	PHZS	RDID	RDIO	ECIO	New WQ:	TA	Old WQ: T	A	Renewal Signoff:
Lab Water Control	25.2	7.86	7.67	85	73	305	10	10	1.0	10	Date: 11/28/16
100%	24.9	672	7.45	68	6.0	536	8	5	6	4	Sample ID: 513 B2_ Renewal Time: 11/3
Meter ID	107A	PH15	PH25	PD13	RDII	ECIZ	New WQ:	AT	Old WQ:	T	Renewal Signoff: LZ
Lab Water Control	24.7	8.09	• 7.76	8.4	8.1	297	10	10	16	16	Date: 112918 Test Solution Prep: 62
100%	71410	6.70	7-43	7.7	6.7	390	8	5	10	4	Sample ID: 51387 Renewal Time: 1527
Meter ID	814	PHILE	PHIG	PALO	RAID	FLID	New WQ:	TA	Old WQ:	TA	Renewal Signoff:
Lab Water Control	24.7	7.95	8-06	8.0	8-3	304	IJ	10	10	10	Date: 11/30/15
100%	24.6	6.81	7-85	B.6	7.4	400	8	5.	6	4	Sample ID: 51382 Renewai Time: 1727
Meter ID	02K	min	PH24	12012	RAIL	ELAS	New WQ:	17.	Old WQ:	Th	Renewal Signoff:
Lab Water Control	24.6		7.80		6.7	321	(0	10	(0)	10	Date: 12/1/18 Tennination Time: MO/7
100%	24.6		7.62		6.7	428	8	5	6	4	Termination Signoff:
Meter ID	81A		PHZY		RAN3	Baz			OId WQ: 5	R	

7 Day Chronic Fathead Minnow Toxicity Test Data

# Fathead Minnow Dry Weight Data Sheet

Client:	Ventura County Wate	r Protection District	Test ID #:	80313	Project #: 29434
Test Material:	MO-0	DJA	Tare Weight Date:	11/28/18	Sign-off: TA
Test Date:	11/24/18		Final Weight Date:	12-4-18	Sign-off: AR
·	,				
Pan ID	Treatment Replicate	Initial Pan Weight (mg)	Final Pan Weight (mg)	Initial # of Organisms	Biomass Value (mg)
1	Lab Water A	414.87	424.80	10	0.993
2	Control B	411.65	422.87	10	1.12
3	С	409-77	419.97	10	1.02
4	D	409.68	418.35	10	0.867
9	100% A	415.92	419.20	10	0.328
10	В	409.96	412.45	10	0.249
11	С	412.40	414.49	10	0.209
12	D	410.88	412.33	10	0,145
QA 2		411.94	411.94		
Balance ID:		Bal 04	Bal 04		

CETIS Analyti	cal Rep	ort					Repo Test	ort Date: Code:	06 VCWPD_1	Dec-18 11:4 124_PP   1:	43 (p 3 of 8) 2-2924-2791
Chronic Larval Fis	sh Surviva	and Grow	th Test							Paci	fic EcoRisk
Analysis ID: 06- Analyzed: 06	3697-6362 Dec-18 11:	En 39 An	dpoint: 7d alysis: Pa	Survival Rat	te o Sample		CET	IS Version: al Results:	CETISv : Yes	1.9.2	
Data Transform		Alt Hyp					Comparis	son Result			PMSD
Angular (Corrected)	)	C > T					MO-MEI p	assed 7d s	urvival rate		13.40%
Equal Variance t T	wo-Sampl	e Test									
Sample I vs	Sample I	I	Test Stat	Critical	MSD DF	P-Type	P-Value	Decision	(α:5%)		
Lab Water Control	MO-MEI		1.92	1.94	0.216 6	CDF	0.0519	Non-Sign	ificant Effec	t	
ANOVA Table											
Source	Sum Squ	lares	Mean Sq	uare	DF	F Stat	P-Value	Decision	(α:5%)		
Between	0.090712	4	0.090712	4	1	3.67	0.1039	Non-Sign	ificant Effec	t	
Error	0.148306		0.024717	6	6						
Total	0.239018				7				_		
Distributional Test	ts										
Attribute	Test				Test Stat	Critical	P-Value	Decision	(α:1%)		
Variances	Levene E	quality of V	ariance Test		5.84	13.7	0.0522	Equal Var	riances		
Variances	Mod Leve	ene Equality	of Variance	Test	2.33	13.7	0.1780	Equal Var	riances		
Distribution	Shapiro-V	Vilk W Norn	nality Test		0.792	0.645	0.0237	Normal D	istribution		
7d Survival Rate S	ummary										
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
VCWPD_1124_PP	LW	4	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%
MO-MEI		4	0.850	0.574	1.000	0.900	0.600	1.000	0.087	20.38%	15.00%
Angular (Corrected	d) Transfor	rmed Summ	nary								
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
VCWPD_1124_PP	LW	4	1.41	1.41	1.41	1.41	1.41	1.41	0	0.00%	0.00%
MO-MEI		4	1.2	0.845	1.55	1.25	0.886	1.41	0.111	18.54%	15.08%
Graphics											
1.0				-		0.30					
0.9						0.25					
012			11/4	Reject Null		0.20					
0.8						0.15					
0.7					R.	0.10				-	
a) 0.6					enter	UN 0.05			•		
Rat					0	0.00	٠	0. 0-	0	-	
0.5 N						-0.05					
5 0.4						-0.10					
0.3						-0.15					
0.2						-0.20					
						-0.25					
0,1						-0.30					
0.0	VCWPD_1124_PP		MO-M	EI		-0.35 -1.5	-1.0	-0.5 0.0	0.5	1.0	1.5
								Rankits			

QA: Rb Analyst: \_\_\_\_\_\_QA: \_\_\_\_\_\_ Attachment D Appendix I

<b>CETIS Analytic</b>	cal Repo	ort					Repo	ort Date:	06	Dec-18 11:4	43 (p 7 of 8)
-							Test	Code:	VCWPD_1	124_PP   12	2-2924-2791
Chronic Larval Fis	h Survival a	and Growth	n Test							Pacif	ic EcoRisk
Analysis ID: 11-	7812-1469	End	point: Mea	an Dry Biom	ass-mg		CET	IS Version:	CETISv1	1.9.2	
Analyzed: 06	Dec-18 11:4	1 Ana	<b>ysis:</b> Par	ametric-Two	Sample		Offic	ial Results	Yes		
Data Transform		Alt Hyp					Comparis	son Result			PMSD
Untransformed		C > T					MO-MEI f	ailed mean	dry biomass	s-mg	14.57%
Equal Variance t T	wo-Sample	Test									
Sample I vs	Sample II		Test Stat	Critical	MSD DF	P-Type	P-Value	Decision	a:5%)		
Lab Water Control	MO-MEI*		7.17	1.94	0.146 6	CDF	1.9E-04	Significan	tEffect		
ANOVA Table											
Source	Sum Saus	ITAC	Mean Sou	210	DE	E Stat	P.Value	Decision	a 5%)		
Between	0.578351	103	0.578351		1	51.4	3.7E-04	Significan	t Effect		
Frror	0.0675646		0.0112608		6	Q1. <del>4</del>	0.7 - 04	olghillean	LINGOL		
Total	0.645915				7						
Distributional Test	s										
Attribute	Test				Test Stat	Critical	P-Value	Decision	a:1%)		
Variances	Variance F	Ratio F Test			1.05	47.5	0.9713	Équal Var	iances		
Distribution	Shapiro-W	ilk W Norma	ality Test		0.918	0.645	0.4111	Normal Di	stribution		
Mean Dry Biomass	-ma Summ	arv									
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
VCWPD_1124_PP	LW	4	1	0.834	1.17	1.01	0.867	1.12	0.0525	10.49%	0.00%
MO-MEI		4	0.463	0.292	0.633	0.472	0.33	0.577	0.0537	23.19%	53.75%
Graphics											
12						0.15					
L.E.						0.14					
						0.12					0
1.0						0.10					
				Bojast Mull		0.08		1			
0.8				Reject Mult	bered	0.04			۰		
m-sse					Cen	0.02			•		
0.6						0.00		0	-		
h						-0.02					
τα 9 Σ 0.4				<del></del>		-0.06					
						-0.08					
						-0.10					
0.2						-0.12	۲				
						-0.14					
0.0	VCWPD_1124_PP		MO-MEI			-1.5	-1.0	-0.5 0.0	0.5	1.0	1.5
								Rankits			

06 Dec-18 11:43 (p 7 of 8)

Client	Ventur	a County V	Vatershed P	rotection D	District	Orga	anism Log#:	113	03	Age	Light
Test Material			MO-MEI			Organis	m Supplier:		Ag	inatd,	X
Test ID#:	803	14	Project #:	29	434	Control N	Control:		-	EP	AMH
i est Date:		110	- Ka	ndomization	: -19-12		vater Batch:	1			
Test Treatment	Temp		pH	D.O.	(mg/L)	Conductivity	1	# Live (	Organisms		SIGN-OFF
	(°C)	new	old	new	old	(µS/cm)	A	В	C	D	
Lab Water Control	24.9	8.16		9.1		301	10	10	0]	10	Test Solution Prep: J
100%	24.8	7.19		9.0		201	10	10	10	10	Sample ID: 51383 Initiation Time: 1127
Meter ID	LOS A	P1124		ROW		8410	New WQ:	R6			Initiation Signoff: R6
Lab Water Control	24.8	7.96	7.93	8.8	6.8	309	10	10	10	10	Date: 11/35/19 Test Solution Prep: JL
100%	24.4	7.01	7.04	9.6	3.6	206	10	9	9	B	Sample ID: S1383 Renewal Time:
Meter ID	109A	PHIA	PHZ4	RDIO	ROIZ	E(10	New WQ:	C	Old WQ:	н	Renewal Signoff:
Lab Water Control	24.4	7.95	7.89	89	8.0	303	10	10	10	10	Test Solution Prep: ER
100%	24.1	7.00	7.29	7.6	6.7	208	10	9	9	8	Sample ID: 51383 Renewal Time: 1250
Meter ID	BIA	WH 16	PHIA	4010	ROID	ELIU	New WQ: §	SF .	Old WQ:		Renewal Signoff: KG
Lab Water Control	24.4	7.85	7.65	8-4	8.2	300	10	10	10	10	Date: 11/27/18 Test Solution Prep: TF
100%	24.2	6-86	7-36	8.5	6.5	207	(0	9	9	8	Sample ID: 5/383 Renewal Time: 1029
Meter ID	SIA	PH25	PH25	ROID	RDIO	E40	New WQ:	4	Old WQ:	4	Renowal Signoff:
Lab Water Control	25.2	7.86	7.67	8.5	7.3	305	10	10	10	10	Date: U/2B/12 Test Solution Prep: NB
100%	24.8	6.67	7,45	7.1	GI	235	10	9	9	7	Sample ID: 5 13 83 Renewal Time: 1113
Meter ID	107A	1415	PH25	RUR	RpII	843	New WQ:	AT	Old WQ: SY	AT	Renewal Signoff:
Lab Water Control	24.7	8.09	7.76	8-4	8-1	297	10	10	10	10	Date: 1129/18 Test Solution Prep: GR
100%	24.7	6.65	7.46	7.8	7.2	209	10	9	9	7	Sample ID: S1383 Renewal Time: 1537
Meter ID	BIA	PHIS	PH19	RAID	RDIO	ECIO	New WQ:	A	Old WQ: 🖵	TA	Renewal Signoff:
Lab Water Control	24.7	7.95	8-06	8.0	8-3	Zoy	10	10	10	10	Date: 11/30/18 Test Solution Prep: KL
100%	24.6	6.75	7.68	6.4	7.5	214	10	9	9	7	Sample ID: 51383 Renewal Time: 1533
Meter ID	1021	PHIG	PH24	POB.	RDII	EU3	New WQ:	VE	Old WQ:	TA	Renewal Signoff:
Lab Water Control	24.6		7.80		6.7	321	10	10	(0)	10	Date: 12/1/18 Termination Time: 08/7
100%	24.5		7.40		6.7	129	10	9	9	6	Termination Signoff.
Meter ID	\$1A		2424		ROB	EC03			Old WQ: 3	R	

#### 7 Day Chronic Fathead Minnow Toxicity Test Data

# Fathead Minnow Dry Weight Data Sheet

Client:	Ventura Cou	nty Water	Protection District	Test ID #:	80314	Project #: 29434
Test Material:		MO-M	IEI	Tare Weight Date:	11/28/18	Sign-off: 74
Test Date:	11/2	4/18		Final Weight Date:	12-4-18	Sign-off: AR
Pan ID	Treatment	Replicate	Initial Pan Weight (mg)	Final Pan Weight (mg)	Initial # of Organisms	Biomass Value (mg)
1	Lab Water	A	414.87	424 80	10	0.993
2	Control	В	411.65	422.87	10	8 1.12
3		С	409.77	419.97	10	1_02
4		D	409.68	418.35	10	0.867
13	100%	А	412-82	418.59	110	0.577
14		В	417.12	422.27	10	0.515
15		С	415.07	419.38	10	0,429
16		D	411-58	414.88	10	0.330
QA-1			412.31	412.32		
Balance ID:			Bal 04	Baloy		

CETIS Analytic	cal Rep	ort					Repo Test	ort Date: Code:	06 VCWPD 1	Dec-18 11: 124 PP   1	43 (p <sup>·</sup> 4 of 8 2-2924-279
Chronic Larval Fis	h Survival	and Grow	th Test							Paci	fic EcoRisk
Analysis ID: 12-	0686-5588	En	dpoint: 7d	Survival Rat	e		CET	IS Version	: CETISv	1.9.2	
Analyzed: 06	Dec-18 11:	39 <b>An</b> a	alysis: Pa	arametric-Two	o Sample		Offic	cial Result	s: Yes		_
Data Transform		Alt Hyp					Comparis	son Result	t		PMSD
Angular (Corrected)		C > T					MO-OXN	passed 7d	survival rate		11.88%
Equal Variance t T	wo-Sample	e Test									
Sample I vs	Sample II		Test Stat	Critical	MSD DF	P-Type	P-Value	Decisio	n(α:5%)		
Lab Water Control	MO-OXN		1.47	1.94	0.193 6	CDF	0.0961	Non-Sig	nificant Effec	t	
ANOVA Table											
Source	Sum Squ	ares	Mean Sq	uare	DF	F Stat	P-Value	Decisio	n(α:5%)		
Between	0.0426072	2	0.042607	2	1	2.16	0.1922	Non-Sigi	nificant Effec	t	
Error	0.118468		0.019744	6	6	_					
Total	0.161075				7						
Distributional Test	s										
Attribute	Test			_	Test Stat	Critical	P-Value	Decisio	n(α:1%)		
Variances	Levene E	quality of Va	ariance Test		7.69	13.7	0.0323	Equal Va	ariances		
Variances	Mod Leve	ne Equality	of Variance	Test	5.13	13.7	0.0642	Equal Va	ariances		
Distribution	Shapiro-V	Vilk W Norn	nality Test		0.791	0.645	0.0231	Normal [	Distribution		_
7d Survival Rate S	ummary										
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
VCWPD_1124_PP	LW	4	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%
MO-OXN		4	0.900	0.675	1.000	0.950	0.700	1.000	0.071	15.71%	10.00%
Angular (Corrected	l) Transfor	med Sumn	nary								
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
VCWPD_1124_PP	LW	4	1.41	1.41	1.41	1.41	1.41	1.41	0	0.00%	0.00%
MO-OXN	_	4	1.27	0.95	1.58	1.33	0.991	1.41	0.0994	15.70%	10.34%
Graphics											
1.0						0.15					
			111/2	111,							
0.5				Reject Null		0.10					
0.8						0.05					
0.7					ह	9.00 g		• • • • • • •			
a. 0.6					enter	orr. Ar	٠	1			
					Ū	ບັ ~0.05 					
Surviv						-0.10					
P 0.4						-0.15					
0.3											
0.2						-0.20					
0.1						-0.25					
						-0.30					
0.0 <sup>i</sup>	VCWPD_1124_PP		MO-O)	KN		-1.5	-1.0	-0.5 0.0	0.5	1.0	1.5
								Rankits			

Analyst: SN QA: R L Attachment D Appendix I

<b>CETIS Analyti</b>	TIS Analytical Report						Repo	ort Date:	06	Dec-18 11:4	43 (p 8 of 8)
							Test	Code:	VCWPD_1	124_PP   1:	2-2924-2791
Chronic Larval Fis	sh Survival	and Grow	th Test							Pacif	fic EcoRisk
Analysis ID: 20-	2469-8603	En	dpoint: Me	an Dry Biom	ass-mg		CET	IS Version	: CETISV	1.9.2	
Analyzed: 06	Dec-18 11:4	42 <b>An</b> a	alysis: Pa	rametric-Two	o Sample		Offic	ial Results	s: Yes		
Data Transform		Alt Hyp					Comparis	son Result			PMSD
Untransformed		C > T					MO-OXN	failed mear	n dry biomas	ss-mg	14.86%
Equal Variance t T	wo-Sample	Test									
Sample i vs	Sample II		Test Stat	Critical	MSD DF	P-Type	P-Value	Decision	ı(a:5%)		
Lab Water Control	MO-OXN*		6.13	1.94	0.149 6	CDF	4.3E-04	Significat	nt Effect		
ANOVA Table	ANOVA Table										
Source	Sum Sau	ares	Mean So	lare	DF	F Stat	P-Value	Decision	(a·5%)		
Between	0.439922		0.439922		1	37.6	8.6E-04	Significar	nt Effect		
Error	0.0702805	5	0.0117134	4	6			9			
Total	0.510203				7						
Distributional Test	S										
Attribute	Test				Test Stat	Critical	P-Value	Decision	ı(α:1%)		
Variances	Variance I	Ratio F Tes	t		1.13	47.5	0.9232	Equal Va	riances		
Distribution	Shapiro-W	/ilk W Norn	nality Test		0.948	0.645	0.6914	Normal D	istribution		
Mean Dry Biomass	s-mg Sumn	nary									
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
VCWPD_1124_PP	LW	4	1	0.834	1.17	1.01	0.867	1.12	0.0525	10.49%	0.00%
MO-OXN		4	0.532	0.354	0.709	0.492	0.449	0.693	0.0557	20.97%	46.88%
Graphics											
1.2						0.18					
e		.1				0.16					
10						0.14					
1.5						0.10				•	
				Reject Null	-	20.06 E 0.06					
0.8 2					ntere	2 0.04					
uass					ర	0,02					
0.6						-0.02					
			1114			-0.04					
Ž 0.4						-0.05		•			
						-0.10					
0.2						-0.12	-				
						-0.16					
0.0	VCWPD 1124 PP		MO-OM	N		-0.18 -1.5	-1.0	-0.5 0.0	0.5	1.0	1.5
			-0-04					Rankits			

Client: Test Material:	Ventur	a County V	Vatershed P MO-OXN	rotection D	District	Orga	mism Log#: m Supplier:	1130	13 A4	Age	LY8hr
Test ID#:	803	15	Project #:	29	9434		Control:	-	1	EP	АМН
Test Date:	11/24	118	Rai	ndomization	: 4.5.11	Control V	ater Batch:		2	12	
Test Treatment	Temp (°C)	new	H	D.O.	(ma/L)	Conductivity (µS/cm)	A	# Live ( B	Organisms C	D	SIGN-OFF
Lab Water Control	24.9	8.16		9.1		301	10	10	to	10	Date: 11/24/18 Test Solution Prep: JL
100%	24.8	7.31		9.4		350	10	10	10	10	Sample ID: 51384 Initiation Time: 127
Meter ID	108A	RILY		RADO		Eclo	New WQ:2	6			Initiation Signoff: R6
Lab Water Control	24.97	7.96	7.93	8.8	6.8	309	10	10	10	10	Date: 11/35/18 Test Solution Prep.
100%	24.6	7.06	7.05	9.3	4.0	354	10	10	10	10	Sample ID: 51'3 8 4 Renewal Time: 1040
Meter ID	1127A	PHN	PH 24	KDIO	AD13	ECIO	New WQ:	il .	Old WQ:	Н	Renewal Signoff. KG
Lab Water Control	24.4	7-95	7.89	8.9	8.0	303	10	10	10	10	Date: 1126/18 Test Solution Prep: 68
100%	24.3	6.96	7.30	8.0	6.8	356	1D	8	10	10	Sample ID: 51384 Renewal Time: 1250
Meter ID	8 A	6419	PHI9	FDIU	RAID	EUO	S	ιρ 	TV	4	Renewal Signoff: 16
Lab Water Control	24.4	7.85	7.65	8.4	8.2	300	10	01	10	10	Test Solution Prep:
100%	24.3	6-82	7.28	9.2	7.5	352	9	7	10	10	Sample ID: 51384 Renewal Time: 1029
Meter ID	81 A	PH25	PH25	RPID	RDID	ECID	New WQ: T	A	Old WQ: T	R	Renewal Signoff:
Lab Water Control	25.2	7.86	7.67	8.5	7.3	305	10	10	10	10	Date: 11/23/16 Test Solution Prep: NB
100%	25.0	6.62	7.35	7.7	6.7	353	9	7	10	10	Sample ID: 51384 ( Renoval Time: 11/3
Meter ID	107A	PH15	AHTAT	BP13	RDII	EC13	New WQ:	AT	Old WQ:	44	Renewal Signoff:
Lab Water Control	24.7	8.09	7-76	8.4	8-1	297	10	10	10	10	Date: 1129/18 Test Solution Prep: ER
100%	24.10	6.60	7.33	7.8	6.6	356	9	7	10	10	Sample ID: 51384 Renewal Time: 1537
Meter ID	BIA	PHIS	Pitta	RDIO	RDIO	ECIO	New WQ:	it.	Old WQ: 7	7	Renewal Signoff: KG
Lab Water Control	24.7	7.95	8.06	8.0	8-3	304	10	10	10	10	Date: 11/30/18 Test Solution Prep: KL
100%	24.9	6.68	7.55	7.0	7-1	356	9	7	61	10	Sample ID: 51384/ Renewal Time: 1533
Meter ID	107-A	10419	PH24	R013	RDI	EUS	New WQ:	Z	Old WQ:		Renewal Signoff:
Lab Water Control	24.6		7.80		6.7	321	10	(0)	10	()	Date: 12/1/18 Termination Time: 08/7
100%	24.7		7.39		6.8	382	9	7	10	(0	Termination Signoff:
Meter ID	SIA		PH24		PD13	ECIS			Old WQ:5	2	

#### 7 Day Chronic Fathead Minnow Toxicity Test Data

## Fathead Minnow Dry Weight Data Sheet

Client:	Ventura Cour	ity Water	Protection District	Test ID #:	80315	Project #: 29434
Test Material:		МО-О	XN	Tare Weight Date:	11/28/18	Sign-off: 7A
Test Date:	11/2	4/18		Final Weight Date:	12-4-18	Sign-off: AR
[						
Pan ID	Treatment	Replicate	Initial Pan Weight (mg)	Final Pan Weight (mg)	Initial # of Organisms	Biomass Value (mg)
1	Lab Water	A	414.87	424 80	10	0.993
2	Control B 411.65		422.87	10	Q 10 12/8/12	
3	с 49.77		419 97	10	1.02	
4		D	124187 409.65	418.35	10	0,867
17	100%	А	411.78	416.45	10	0.467
18		В	406.72	411-21	10	0,449
19		С	418-36	425.29	10	0.693
20		D	414.45	419 62	10	0,517
QA 2			411.94	411.94		
Balance ID:			Bal 04	Ba104		

 Report Date:
 12 Dec-18 14:51 (p 1 of 1)

 Test Code:
 VCWPD\_1201\_PP | 20-8079-5193

Chronic Larval Fish Survival and Growth Test Pacific EcoRisk												
Batch ID: 18-7 Start Date: 01 D	289-3293 ec-18 13:23	Te: 3 Pro	st Type: Gro otocol: EP	owth-Surviva A-821-R-02-	ıl (7d) 013 (2002)		A	nalyst: iluent:	Stev	i Vasquez Applicable		
Duration: 6d 1	l9h	s sp So	ecies: Pin urce: Aqi	uatox, AR	omeias		B A	rine: ge:	NOL /	Applicable		
Sample Code	Sample I	) Sa	mple Date	Receip	t Date	Sample Age	e C	lient N	ame	Pi	roject	
VCWPD_1201_PP	05-8914-8	651 01	Dec-18 13:23	3 01 Dec-	18 13:23	n/a (24.6 °C	) Ve	entura	County V	Natersh 29	9434	
MO-SPA	19-5530-9	933 29	Nov-18 02:00	0 30 Nov-	18 14:15	59h (0.4 °C)						
Sample Code	Material T	уре	Sai	mple Sourc	e	Sta	tion Loc	ation		Lat/Long		
VCWPD_1201_PP	Lab Water		Ver	ntura County	Watershee	d Prote LAE	QA					
MO-SPA	Ambient V	Vater	Vei	ntura County	Watershee	d Prote MO	-SPA					
Single Comparison Summary												
Analysis ID End	point		Comparis	on Method			P-Valu	e Co	omparis	on Result		
06-9901-2315 7d S	urvival Rate	•	Equal Var	iance t Two-	Sample Te	st	0.1822	М	O-SPA p	assed 7d s	urvival rate	
05-1096-0853 Mea	n Dry Bioma	ass-mg	Equal Var	iance t Two-	Sample Te	st	8.8E-04	4 M	O-SPA f	ailed mean	dry biomass	-mg
7d Survival Rate S	ummary											
Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	St	td Err	Std Dev	CV%	%Effect
VCWPD_1201_PP	LW	4	0.950	0.791	1.000	0.800	1.000	0.	050	0.100	10.53%	0.00%
MO-SPA		4	0.825	0.497	1.000	0.600	1.000	0.	103	0.206	24.99%	13.16%
Mean Dry Biomass	-mg Summ	ary										
Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Мах	St	td Err	Std Dev	CV%	%Effect
VCWPD_1201_PP	LW	4	0.79	0.62	0.96	0.64	0.872	0.	0534	0.107	13.54%	0.00%
MO-SPA		4	0.451	0.342	0.56	0.383	0.539	0.	0342	0.0684	15.17%	42.88%
7d Survival Rate D	etail											
Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4							
VCWPD_1201_PP	LW	1.000	1.000	1.000	0.800							
MO-SPA		1.000	0.700	0.600	1.000							
Mean Dry Biomass	-mg Detail											
Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4							
VCWPD_1201_PP	LW	0.861	0.786	0.872	0.64							
MO-SPA		0.468	0.414	0.383	0.539							
7d Survival Rate Bi	inomials											
Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4							
VCWPD_1201_PP	LW	10/10	10/10	10/10	8/10							
MO-SPA		11/11	7/10	6/10	11/11							

M Analyst: SVV QA: Attachment D Appendix T

CETIS Analytic	IS Analytical Report								12 VCWPD_1	Dec-18 14: 201_PP   2	50 (p 1 of 2 0-8079-5193
Chronic Larval Fis	h Survival	and Grow	th Test							Paci	fic EcoRisk
Analysis ID: 06-3 Analyzed: 12	9901-2315 Dec-18 14:	En 50 An	<b>dpoint:</b> 7d <b>alysis</b> : Par	Survival Rat ametric-Two	te o Sample		CET	IS Version ial Result	: CETISv s: Yes	1.9.2	
Data Transform		Alt Hyp					Comparis	son Result			PMSD
Angular (Corrected)		C > T					MO-SPA	passed 7d	survival rate		23.08%
Equal Variance t T	wo-Sample	e Test									
Sample I vs	Sample I		Test Stat	Critical	MSD DF	P-Type	P-Value	Decisior	n(a:5%)		
Lab Water Control	MO-SPA		0.981	1.94	0.311 6	CDF	0.1822	Non-Sigr	ificant Effect	t	
ANOVA Table											
Source	Sum Sau	ares	Mean Sou	are	DE	F Stat	P-Value	Decision	(a.5%)		
Between	0.049146	3	0.0491468		1	0.962	0.3645	Non-Sign	uficant Effec	t	
Error	0.306443		0.0510738	3	6			iten eigi			
Total	0.355589				7						
Distributional Test	s										
Attribute	Test				Test Stat	Critical	P-Value	Decision	(a:1%)		
Variances	Variance	Ratio F Tes	st		3.4	47.5	0.3421	Equal Va	riances		
Distribution	Shapiro-V	ilk W Norr	nality Test		0.873	0.645	0.1627	Normal D	istribution		
7d Survival Rate S	ummarv				_						-
Sample	Code	Count	Mean	95% I CI	95% [[C]	Median	Min	Max	Std Err	CV/9/	9/ Effect
VCWPD 1201 PP	IW	4	0.950	0 791	1 000	1 000	0.800	1 000	0.050	10 529/	70Enect
MO-SPA		4	0.825	0.497	1.000	0.850	0.600	1.000	0.103	24.99%	13.16%
Angular (Corrected	I) Transfor	med Sumr	nanu								
Sample	Code	Count	Moan	95% I CI	95% 1101	Modian	Min	Mox	644 E	C) /0/	0/ 5554
VCWPD 1201 PP	LW/	4	1 34	1 00	1 58	1 41	1 11	1.44	5t0 Err	44 440/	%Effect
MO-SPA		4	1.18	0.732	1.63	1.21	0.886	1.42	0.0702	23 83%	0.00%
Graphics									0.14	20.0070	11.7470
o aprilo											
1.0	1/////	1				0.30					
0.9						0.25				•	8
0.8			7779	ELL		0.20					
		aka ang	-	Deline Della		0.15					
0.7				Reject Hus	ted.	9 0.10 50		•			
<b>2</b> 0.6					Cente	0.05					
<b>8</b> 100 0.5						0.00		74			
Surviv						-0.05					
0.4						-0.10					
0.3						-0.15		•			
0.2						-0.20	٠	1			
						-0.25					
0.1						-0.35					
0.0	VCWPD_1201_PP		MO-SPA			-1.5	-1.0	-0.5 0.0	0.5	1.0	1.5
				-				Rankits		_	

<b>CETIS Analyti</b>	TIS Analytical Report							ort Date:	12	Dec-18 14:5	50 (p 2 of 2)
							Test	Code:	VCWPD_1	201_PP   20	0-8079-5193
Chronic Larval Fis	h Survival	and Growt	h Test							Pacif	ic EcoRisk
Analysis ID: 05-	1096-0853	Enc	point: Me	an Dry Biom	iass-mg		CET	IS Version	CETISV	1.9.2	
Analyzed: 12	Dec-18 14:5	50 Ana	alysis: Par	ametric-Two	o Sample		Offic	ial Results	s: Yes		
Data Transform		Alt Hyp					Comparis	son Result			PMSD
Untransformed		C > T					MO-SPA	failed mean	dry biomas	s-mg	15.61%
Equal Variance t T	wo-Sample	Test									
Sample I vs	Sample II		Test Stat	Critical	MSD DF	P-Type	P-Value	Decision	(a:5%)		
Lab Water Control	MO-SPA*		5.34	1.94	0.123 6	CDF	8.8E-04	Significar	nt Effect		
Source	Cum Cau		Mann Cou		DE	E 64-4	DValue	Desisters	(		
Between	0 220/11	ares	0 220411	lare		P Stat	P-value	Decision	(α:5%)		
Error	0.223411		0.229411	1	6	20.0	0.0016	Significar	IL Ellect		
Total	0.27774		0.0000040	,	7						
Distributional Test	.e										
Attribute	Toet				Toot Stat	Critical	B Value	Desision	(au 4 0/ )		
Variances	Variance F	Ratio E Test			2 44	47.5	0.4830	Equal Va	(u:1%)		
Distribution	Shapiro-W	lik W Norm	Iality Test		0.926	0.645	0.4030	Normal D	istribution		
	-				0.020			Norman D			
Mean Dry Biomass	-mg Summ	lary									
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
	LVV	4	0.79	0.62	0.96	0.823	0.64	0.872	0.0534	13.54%	0.00%
		4	0.451	0.342	0.50	0.441	0.383	0.539	0.0342	15.17%	42.88%
Graphics											
0.9						0.10					
	111111	Į				0.08		1	2	•	Ð l
0.8						0.05			•		
0.7						0.04					
0.6				Reject Null	3	0.02		1	0		
Бщ.					enter	0.00 -		•	8=92E	-vie 13/2*	
80.5 E						5 -0.0z					
EI <u>►</u> 0.4				- 8 - Lev		-0.04					
dean						-0.06	۰				
≤ 0.3						-0.08					
0.2						-0.10					
0.1						-0.12					
						-0.14					
0.0	VCWPD_1201_PP		MO-SPA			-1.5	-1.0	-0.5 0.0	0.5	1.0	1.5
								Rankits			1

Analyst: 201 QA: M Attachment D Appendix I

Client	Ventur	ra County V	Vatershed P	rotection D	listrict	Organism Log#: 11317			Age	Age: LUShours		
Test Material			MO-SPA			Organis	m Supplier:			ARU	AATAX	
Test ID#	803	16	Project #:	29	434	-	Control:			EP	AMH	
i est Date	1211	15	Kar	domization	9.2.1	_ Control V	Vater Batch:			212	3	
Test Treatment	Temp (°C)	new	eH old	D.O. new	(mu/L) old	Conductivity (µS/cm)	A	# Live (	Organisms C	D	SIGN-OFF	
Lab Water Control	24.4	8.06		8.5		303	10	10	10	10	Date: 121118 Test Solution Prep:	
100%	24.4	7.61		10.8		84	NR SILISING	10	10	10"	Sample ID: SIN96 Initiation Time: 1323	
Meter 1D	SIA	PH15		RDII		ECIL	New WQ:	ye			Initiation Signoff: NL	
Lab Water Control	24.4	8.08	7,69	9.0	7,1	305	10	10	10	10	Date: 12/2/122 Test Solution Prep: 15/0	
100%	24.9	7.48	6.99	11.0	6,4	88.4	1)	8	10	TRIAN	Sample ID: 51491 Renewal Time: 0950	
Meter ID	99A	PH24	PH24	RDIO	2010	ECIO	New WQ: T	p	Old WQ:	F	Renewal Signoff:	
Lab Water Control	24.5	8.12	7.85	9.0	8.0	303	10	10	10	9	Date: i 2/3/18 Test Solution Prep. NB	
100%	24.4	7.44	748	11.2	8.2	85	11	7	10	the .	Sample ID: 51494 Renewal Time: 1155	
Meter ID	1074	PH24	124	RDII	RD 11	EGI	New WQ:	yı_	Old WQ: 4	u.	Renewal Signoff: TK	
Lab Water Control	24.6	8.14	7.81	8.6	8-3	310	10	10	10	9	Date: 12/4/18 Test Solution Prop: LZ	
100%	24.8	7.47	7.65	10.9	8-2	86	и	7	7	11	Sample ID: 51496 Renewal Time: 1029	
Meter ID	NOOL	FH24	PH25	RDIO	ROII	ECIO	New WQ:	4	Old WQ:	A	Renewal Signoff: WB	
Lab Water Control	24.2	7.97	7,83	81	7.6	299	10	10	10	9	Date: 12/5/18 Test Solution Prep: 17	
100%	24.5	7,32	7.47	0.1 149.9m	GD	81	11	7	7	11	Sample ID: 51496 Renewal Time: 1040	
Meter ID	SOR	pitzy	PH25	HD13	RD12	8013	New WQ:	T	Old WQ:	17-	Renewal Signoff: APF	
.ab Water Control	24.6	8.03	7.52	8.3	6.2	303	10	10	10	8	Date: i 2.16/18 Test Solution Prep: TIX	
100%	24.7	8.00	7.12	9.8	5-1	84	))	7	7	17	Sample ID: 51496 Renewal Time: 1055	
Meter ID	100A	Pn 19	DH19	MB	Ron	EC13	New WQ: Y	K	Old WQ:	R	Renewal Signoff: KZ	
ab Water Control	25.1	8.06	8.09	8.1	8-1	326	10	10	10	8	Date: 12/7/18 Test Solution Prep: 108	
100%	25.1	7.6	7.59	8.8	7.1	92	11	7	6	11	Sample ID: 51496 Renowal Time: 1040	
Meter ID	93A	PH25	8419	RD 13	RDIO	ELB	New WQ:	201	old wo: TA		Renewal Signoff TF	
ab Water Control	25.5		8.07		8.3	320	10	10	10	8	Date: (2/8//8 Termination Time: 08/5	
100%	25.5		1.63		8.2	87	11	7	6	11	Termination Signoff:	
Meter ID	13A		PH24		2010	ECIO			Old WQ: PSN			

#### 7 Day Chronic Fathead Minnow Toxicity Test Data

# Fathead Minnow Dry Weight Data Sheet

Client:	Ventura Cou	nty Water	Protection District	Test ID #:	80316	Project #: 29434
Test Material:		MO-S	РА	Tare Weight Date:	12/4/18	Sign-off: TA
Test Date:		121	18	Final Weight Date:	12/11/18	Sign-off: <u></u>
0						
Pan ID	Treatment	Replicate	Initial Pan Weight (mg)	Final Pan Weight (mg)	Initial # of Organisms	Biomass Value (mg)
1	Lab Water	А	410.48	419.09	10	0.801
2	Control B 403-26		411.12	10	0.786	
3	c 411-61		420.33	10	0.872	
4		D	408.73	415.13	10	0.040
5	100%	А	400.67	405.82	11	0.468
6		В	411.85	415.99	10	0.414
7		С	411.88	415.71	0	0.383
8		D	405.25	411.18	11	0.537
QA			409.73	409.72		
Balance ID:			Bal 04	BAL04		

Appendix J. Dry-Weather Analytical Monitoring Results

	Site ID	Port Hueneme-3	Unincorporated-4	Camarillo-1	Fillmore-1
		DRY-HUE3	DRY-UNI4	MO-CAM	MO-FIL
	At Major Outfall?	No	No	Yes	Yes
	Location	Bubbling Springs @ RR xing	Arroyo Santa Rosa at Box Canyon confluence	Camarillo Hills Drain	North Fillmore Drain
	Date	08/20/19	08/21/19	08/21/19	08/20/19
	Time	14:10	09:45	07:30	9:35
	Conveyence Type	Natural channel	Box culvert	Box culvert	Box culvert
Site	Dimensions	N/A	N/A	8' x 24'	N/A
Description	Dominant Land Use	Commercial & residential	Residential & rural	Commercial & residential	Residential
	Site Elevation	0	250	100	430
	Weather	Clear	Clear	Clear	Clear
Weather	Wind Condtion	Slight breeze	Calm	Calm	Calm
	Air Temp. (C)	31	27	15.5	23.5
Trash	Trash (general area)	None	None	Light	Light
	I rash (stream banks)	Light	None	Light	Light
	Water Color	Brown	Brown	Clear	Clear
	Odors	None	None	None	None
	Floatables	Other	None	None	None
	Foam	None	None	None	None
Observations	Stains/ deposits	None	None	None	None
	Structural condition	Natural channel	Concrete channel	Concrete channel	Rip rap with concrete bottom
	Vegetation Condition	None	None	Sparse grasses	Grasses and watercress in channel
	Biology	Ducks in area	Aquatic snails	None	Aquatic snails
	Algae (suspended)	None	None	None	Green 30%
	Algae (substrate)	None	None	Green 40%	Green 90%
	Dissolved Oxygen (%)	192.9	168.8	98.8	198.6
	Dissolved Oxygen (mg/L)	15.32	15.31	9.33	16.92
Water	Conductivity (µS)	10500	1085	870	1265
Chemietry	Selipity (ppt)	10390	0.6	0.5	1301
(Field)	Water Temp (C)	25.7	20.4	18.1	23.4
(Pield)	Water Temp. (E)	78.3	68.7	64.6	74.1
	pH	8 29	8 71	7.82	8.82
	Turbidity (NTU)	14.1	2.33	4.18	1.59
	Total Organic Carbon (mg/L)	10.0	9.6	7.2	6.8
	Total Hardness as $CaCO_3$ (mg/L)	1,620	474	283	517
	Total Calcium (mg/L)	255	66.9	74.2	137
Water	Total Magnesium (mg/L)	240	74.6	23.7	42.7
Chemistry	Dissolved Copper (µg/L)	0.44 (DNQ)	5.0	3.7	13.0
(Lab)	Dissolved Lead (µg/L)	< 0.031	< 0.031	0.064 (DNQ)	0.031 (DNQ)
	Dissolved Zinc (µg/L)	1.1 (DNQ)	1.7 (DNQ)	3.7 (DNQ)	3.5 (DNQ)
	Total Coliform (MPN/100 mL)	64,880	120,330	298,700	7,270
	<i>E. coli</i> (MPN/100 mL)	15,531	473	12,997	10
	Flow Status	Flowing	Flowing	Flowing	Flowing
Estimated	Water Width (ft.)	12.0	1.0	0.5	3.0
Flow	Water Depth (ft.)	2.00	0.01	0.01	0.20
110w	Flow Velocity (ft/s)	0.05	1.50	2.00	0.01
	Flow Rate (ft <sup>3</sup> /s)	0.48	0.008	0.005	0.01
	Comments	Floatables leaf litter & bark	Channel recently scraped		

	Site ID	Moorpark-2	Ojai-6	Oxnard-2	Santa Paula-3
		DRY-MPK2	DRY-OJA6	DRY-OXN2	DRY-SPA3
	At Major Outfall?	No	No	No	No
	Location	Gabbert Drain	Tributary to Fox Barranca	Stroube Drain	Peck Rd Drain
	Date	08/21/19	08/20/19	08/20/19	08/20/19
	Time	08:15	11:35	08:10	10:45
	Conveyence Type	Box culvert	Natural channel	Natural channel	Box culvert
Site	Dimensions	5' x 12'	N/A	N/A	8' x 17'
Description	Dominant Land Use	Commercial & residential	Residential	Commercial & residential	Residential
	Site Elevation	460	720	70	224
	Weather	Clear	Clear	Clear	Clear
Weather	Wind Condtion	Calm	Calm	Calm	Calm
	Air Temp. (C)	19.5	30	20.1	30
Trash	Trash (general area)	Light	Light	Light	Moderate
	Trash (stream banks)	Moderate	Light	Light	Moderate
	Water Clarity	Clear	Clear	Clear	Clear
	Water Color	Clear	Clear	Clear	Clear
	Odors	None	None	None	None
	Floatables	None	None	None	None
	Foam	None	None	Very thin white scum upstream of sampling area	None
Observations	Stains/ deposits	None	None	None	None
	Structural condition	Concrete channel	Natural channel	Concrete channel to rip rap	Concrete channel
	Vegetation Condition	None	Berry and poison oak on banks	Abundant watercress	None
	Biology	None	None	None	Aquatic bugs
	Algae (suspended)	None	None	Green 30%	None
	Algae (substrate)	Red 30%, Green 15%	Brown 80%	Green 80%	Brown 90%, Green 1%
	Dissolved Oxygen (%)	Too shallow	93.1	95.8	201.5
	Dissolved Oxygen (mg/L)	Too shallow	8.42	8.94	15.20
	Conductivity (µS)	318.2	1293	1067	1819
Water	Specific Conductance (µS)	338.6	1428	1217	1674
Chemistry	Salinity (ppt)	0.2	0.7	0.6	0.8
(Field)	Water Temp. (C)	22.1	20.0	18.5	29.3
	Water Temp. (F)	71.8	68.0	65.3	84.7
	pH	8.64	8.12	7.92	8.//
	Turbidity (NTU) $T = 10$	2./1	1.24	1.29	2.16
	Total Organic Carbon (mg/L)	0	2.2	3	11
	Total Hardness as CaCO <sub>3</sub> (mg/L)	121	599	448	567
Water	Total Calcium (mg/L)	28.5	163	114	134
Chomiotry	Total Magnesium (mg/L)	12.0	46./	39.8	56.4
(Lab)	Dissolved Copper (µg/L)	5.5 0.1( (DNIO)	0.39 (DNQ)	2.7	5.40
(Lab)	Dissolved Lead (µg/L)	0.10 (DINQ) 2 (DNIO)	>.0.031	~0.051 4.5 (DN(0))	0.72
	Dissolved Zinc (µg/L)	5 (DNQ) 172 200	2.2 (DINQ)	4.5 (DNQ)	30 E 47E
	$E_{coli}$ (MPN/100 mL)	644	2,004	1,720	3,473
	Flow Statue	Flowing	Flowing	Flowing	Flowing
	Water Width (ft )	3.0	5.0	8.0	4.0
Estimated	Water Depth (ft )	0.01	0.15	0.40	1.0
Flow	Flow Velocity (ft/s)	1.00	0.15	0.05	0.50
	Elow Poto $(ft^3/2)$	0.03	0.25	0.05	0.50
	riow Rate (it /s)	Flow too aballana t	0.17	0.10	0.00
	Comments	submerge DO probe			

	Site ID	Simi Valley-1	Thousand Oaks-1	Ventura-5
		MO-SIM	MO-THO	DRY-VEN5
	At Major Outfall?	Yes	Yes	No
	Location	Bus Canyon Drain	North Fork Arroyo Conejo at Hill Canyon WWTP	Dent Drain
	Date	08/21/19	08/21/19	08/20/19
	Time	09:10	10:20	13:05
	Conveyence Type	Box culvert	Natural channel	Natural channel
Site	Dimensions	7' x 16'	N/A	7.5' x 20'(toe) x 35'(top)
Description	Dominant Land Use	Commercial & residential	Commercial, residential & rural	Residential & rural
	Site Elevation	760	280	66
	Weather	Clear	Clear	Clear
Weather	Wind Condtion	Calm	Calm	Slight breeze
	Air Temp. (C)	25	29	30
Trash	Trash (general area)	Light	None	Light
	Trash (stream banks)	Moderate	None	Light
	Water Clarity	Clear	Clear	Cloudy
	Water Color	Clear	Clear	Green
	Odors	Musty	None	None
	Floatables	None	Other	Oily sheen
	Foam	None	None	None
Observations	Stains/ deposits	None	None	None
	Structural condition	Concrete channel	Rip-rap with natural bottom	Flap gate RCP to natural channel
	Vegetation Condition	None	Herbaceous growth and trees at stream edge	River primrose and reeds
	Biology	None	None	None
	Algae (suspended)	None	None	Green 60%
	Algae (substrate)	Green 70%	Brown 70%	None
	Dissolved Oxygen (%)	104.9	95.1	87.3
	Dissolved Oxygen (mg/L)	9.49	8.54	7.74
	Conductivity (µS)	2672	1555	930
Water	Specific Conductance (µS)	2956	1772	995
Chemistry	Salinity (ppt)	1.5	0.9	0.5
(Field)	Water Temp. (C)	19.9	19.4	21.7
	Water Temp. (F)	67.8	66.9	71.1
	pH	7.87	8.13	7.41
	Turbidity (NTU)	1.39	1.14	9.74
	Total Organic Carbon (mg/L)	4.2	7.5	0.47
	Total Hardness as CaCO <sub>3</sub> (mg/L)	1,200	219	312
<b>NV</b> 7	Total Calcium (mg/L)	291	43.3	76.7
Water	Total Magnesium (mg/L)	114	26.9	29.2
Chemistry	Dissolved Copper (µg/L)	0.56	1.7	0.39 (DNQ)
(Lab)	Dissolved Lead (µg/L)	< 0.031	0.053 (DNQ)	< 0.031
	Dissolved Zinc (µg/L)	1.2 (DNQ)	42	0.99 (DNQ)
	Total Coliform (MPN/100 mL)	61,310	12,033	173
	<i>E. coli</i> (MPN/100 mL)	148	85	<10
	Flow Status	Flowing	Flowing	Flowing
Estimated	Water Width (ft.)	10.0	12.0	12.0
Flow	Water Depth (ft.)	0.05	0.80	1.00
110w	Flow Velocity (ft/s)	2.00	0.005	0.005
	Flow Rate (ft <sup>3</sup> /s)	1.00	0.05	0.06
	Comments		Floatables sparse, thin, clear scum	

Appendix K. Formulas for WQO determination

# BASIN PLAN and CALIFORNIA TOXICS RULE OBJECTIVES: FORMULAS

### AMMONIA (BASIN PLAN)

Basin Plan Ammonia Objective formula selection is based on wet or dry event, COLD/MIGR designation status, early life stages (ELS) status, and salinity.

See the flow charts below to determine which formula to use:

### **Basin Plan NH3-N Objectives for Wet Weather**



#### Table 3-1: One hour Average Objective for Ammonia-N for Freshwaters (mg N/L)

COLD and/or MIGR:

$$= \frac{0.275}{1+10^{7.204-pH}} + \frac{39.0}{1+10^{pH-7.204}}$$

NOT COLD and/or MIGR:

$$= \frac{0.411}{1+10^{7.204-pH}} + \frac{58.4}{1+10^{pH-7.204}}$$

#### Saltwater 1-hour objective for Ammonia-N

$$= 0.233 * (1 + 10^{\left[\left(9.245 + 0.116 * \frac{19.9273 * S}{1000 - 1.005109 * S}\right) + 0.0324(298 - T) + \frac{(0.0415)P}{T} - pH\right]})$$

Where T= temperature expressed in °K (Note: Kelvin = Celsius + 273) S = salinity (ppt) P = pressure (assumed to be 1 atm)



### **Basin Plan NH3-N Objectives for Dry Weather**

BPA 2005 p15-11 "Implementation actions to achieve applicable ammonia objectives must implement downstream objectives." NH3-N = NH3 x 0.822 4 day average objective = 2.5 x 30-day average objective

# Table 3-2: 30-Day Average Objective for Ammonia-N for Freshwaters Applicable to Waters Subject to the "Early Life Stage Present" Condition (mg N/L)

$$= \left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}}\right) * MIN(2.85, 1.45 * 10^{0.028 * (25-T)})$$

Where T= temperature expressed in °C.

Highest four-day average within the 30-day period shall not exceed 2.5 times the 30-day average objective as calculated above.

#### <u>Table 3-3: 30-Day Average Objective for Ammonia-N for Freshwaters Applicable to</u> <u>Waters Subject to the "Early Life Stage Absent" Condition (mg N/L)</u>

$$= \left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}}\right) * 1.45 * 10^{0.028*(25-MAX(T,7))}$$

Where T= temperature expressed in °C.

Highest four-day average within the 30-day period shall not exceed 2.5 times the 30-day average objective as calculated above.
## Saltwater 4-day objective for Ammonia-N

$$= 0.035 * (1 + 10^{\left[\left(9.245 + 0.116 * \frac{19.9273 * S}{1000 - 1.005109 * S}\right) + 0.0324(298 - T) + \frac{(0.0415)P}{T} - pH\right]})$$

Where T= temperature expressed in K (Note: Kelvin = Celsius + 273) S = salinity (ppt) P = pressure (assumed to be 1 atm)

## PENTACHLOROPHENOL (CTR)

 $CMC = \exp(1.005(pH) - 4.869)$  $CCC = \exp(1.005(pH) - 5.134)$ 

## **METALS (CTR)**

[cadmium, chromium, copper, lead, nickel, silver, zinc]

 $CMC = WER * (Acute Conversion Factor) * (exp\{m_A[1n(hardness)] + b_A\})$  $CCC = WER * (Chronic Conversion Factor) * (exp\{m_C[1n(hardness)] + b_C\})$ 

Note1: CCC formula contains error in CTR (says "Acute" not "Chronic" for Conversion Factor). Note2: see note to Table 2 of Paragraph (b)(2) in the CTR, "The term conversion factor represents the recommended conversion factor for converting a metal criterion expressed as the total recoverable fraction in the water column to a criterion expressed as the dissolved fraction in the water column." Note3: Conversion factors (CF) are provided as values in a table for chromium, copper, nickel, silver, and zinc. CF for cadmium and lead are calculated based on hardness, i.e.

> Cadmium Acute  $CF = 1.136672 - [(ln{hardness}) (0.041838)]$ Cadmium Chronic  $CF = 1.101672 - [(ln{hardness}) (0.041838)]$ Lead Acute and Chronic  $CF = 1.46203 - [(ln{hardness}) (0.145712)]$

Note4: Only two WER in Ventura County and no stations discharge within the applicable reaches - Lower Calleguas Creek (Reach 2 which is Portrero Rd south to Mugu Lagoon) has a WER for copper of 3.69 and Mugu Lagoon copper WER is 1.51.