

December 15, 2006

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009

Dear Client:

We received four, 4, samples, ME-CC, ME-SCR, ME-VR2, & USCR, from your staff Dec. 10th, 2006 for chronic sea urchin toxicity testing. The sea urchins we had secured to conduct this testing failed to spawn. Therefore we were unable to proceed with the testing. There will be no report generated for these samples. The five, 5, other samples, A-1 Wood, I-2 Ortega, R-1 Swan, W-3 La Vista and W-4 Revolon, submitted for acute ceriodaphnia testing were processed without incident.

Please feel free to phone me at your convenience if you have any questions.

Sincerely,

Michael J. Machuzak

Assistant Laboratory Director



January 4, 2007

Mr. Arnie Anselm Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, EPA-821-R-02-012. Results were as follows:

CLIENT:

Ventura County Watershed Protection District

SAMPLE I.D.:

A-1 Wood

DATE RECEIVED:

12 Dec - 06

ABC LAB. NO.:

VCF1206.088

ACUTE CERIODAPHNIA SURVIVAL BIOASSAY

Survival = 0 % Survival in 100% Sample

TU(a) = 14.08

LC50 = 7.10%

Yours very truly,

Thomas (Tim) Mikel Laboratory Director RECEIVED

JAN 1 1 2007

WATERSHED PROTECTION DIST.

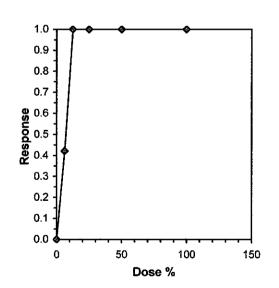
Ceriodaphnia Survival and Reproduction Test-96 Hr Survival											
Start Date:	12/11/2006		Test ID:	VCF1206088	Sample ID:	CA0000000					
End Date:	12/15/2006	i	Lab ID:	CAABC	Sample Type:	EFF1-POTW					
Sample Date:	12/9/2006		Protocol:	EPAA 85-EPA Acute	Test Species:	CD-Ceriodaphnia dubia					
Comments:	A-1 Wood					•					
Conc-%	1	2	3	4							
N Control	0.8000	1.0000	1.0000	1.0000							
6.25	1.0000	0.6000	0.4000	0.2000							
12.5	0.0000	0.0000	0.0000	0.0000		•					
25	0.0000	0.0000	0.0000	0.0000							
50	0.0000	0.0000	0.0000	0.0000							
100	0.0000	0.0000	0.0000	0.0000							

		_	Tra	Transform: Arcsin Square Root					1-Tailed		Isotonic		
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean	
N Control	0.9500	1.0000	1.2857	1.1071	1.3453	9.261	4				0.9500	1.0000	
*6.25	0.5500	0.5789	0.8449	0.4636	1.3453	44.446	4	2.238	1.943	0.3828	0.5500	0.5789	
12.5	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4				0.0000	0.0000	
25	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4				0.0000	0.0000	
50	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4				0.0000	0.0000	
100	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4				0.0000	0.0000	

Auxiliary Tests	Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.9025		0.749		0.67425	1.72749
F-Test indicates equal variances (p = 0.09)	9.94782		47.4683			
Hypothesis Test (1-tail, 0.05)	MSDu	MSDp	MSB	MSE	F-Prob	df
Homoscedastic t Test indicates significant differences	0.30443	0.33056	0.38864	0.0776	0.06654	1, 6
Treatments vs N Control						

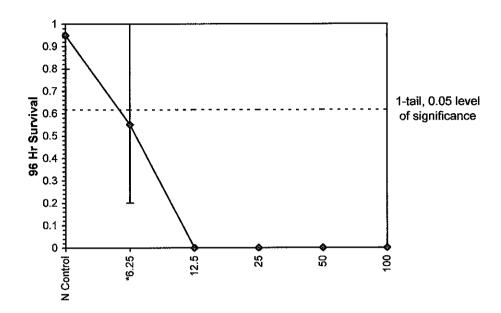
Linear Interpolation (200 Resamples) % 95% CL(Exp) **Point** SD Skew IC05* 0.7422 4.3187 0.9777 0.2850 8.5547 IC10* 1.4844 1.1736 0.5701 9.5800 2.7641 IC15* 2.2266 1.3145 0.8551 9.6641 1.8346 IC20* 2.9688 1.1402 9.7482 1.2334 1.4111 IC25* 3.7109 1.4501 1.4252 9.8323 0.7779 IC40* 1.3658 5.9375 2.2804 10.0846 -0.0605 IC50 7.1023 1.2694 3.0422 10.4445 -0.3557

* indicates IC estimate less than the lowest concentration



Ceriodaphnia Survival and Reproduction Test-96 Hr Survival CA0000000 Test ID: VCF1206088 Lab ID: CAABC Sample ID: Start Date: 12/11/2006 Sample Type: EFF1-POTW End Date: 12/15/2006 **Test Species:** CD-Ceriodaphnia dubia Sample Date: 12/9/2006 Protocol: EPAA 85-EPA Acute A-1 Wood Comments:

Dose-Response Plot



Start Date: 12/11/2006 Test ID: VCF1206088

Sample ID:

CA0000000

End Date:

0

12/15/2006 Sample Date: 12/9/2006

Lab ID: CAABC Protocol: EPAA 85-EPA Acute Sample Type:

EFF1-POTW CD-Ceriodaphnia dubia

Comments: A-1 Wood **Test Species:**

Auxiliary Data Summary CV% Ñ Conc-% **Parameter** Mean Min Max SD 2.93 3 Temp C 24.60 24.00 24.90 0.52 N Control 25.00 0.55 3.05 3 6.25 24.37 24.00 2.59 3 24.40 24.00 24.80 0.40 12.5 3 3.20 24.00 25.10 0.61 25 24.40 3 3.01 25.00 0.55 50 24.63 24.00 3 24.00 24.00 24.00 0.00 0.00 100 8.07 8.30 0.21 5.66 3 N Control 7.90 рН 4.28 3 7.80 8.00 0.12 7.93 6.25 0.20 5.66 3 7.70 8.10 12.5 7.90 5.82 3 8.00 0.21 25 7.83 7.60 5.73 3 7.80 7.60 8.00 0.20 50 7.50 7.90 0.21 5.90 3 100 7.73 5.60 8.00 1.23 15.95 3 6.97 N Control DO mg/L 4.30 8.30 2.23 21.74 3 6.87 6.25 7.80 1.69 19.58 3 12.5 6.63 4.70 6.43 4.70 7.70 1.55 19.37 3 25 3 50 6.30 4.60 7.50 1.51 19.53 19.69 3 100 6.17 4.50 7.30 1,47 2.00 3.06 3 N Control Hardness mg/L 87.33 84.00 90.00 0 6.25 0.00 0.00 0.00 0.00 0 0.00 0.00 0.00 0.00 12.5 0 0.00 0.00 0.00 0.00 25 0.00 0.00 0.00 0 0.00 50 0.00 0.00 3 250.00 250.00 250.00 100 0.00 3 0.00 Alkalinitymg/L 60.00 60.00 60.00 N Control 0 0.00 0.00 0.00 0.00 6.25 0.00 0.00 0 0.00 0.00 12.5 0 0.00 0.00 0.00 0.00 25 0 0.00 0.00 0.00 50 0.00 0.00 3 240.00 240.00 240.00 0.00 100 3 342.00 347.00 2.89 0.49 345.33 N Control Conductivity 0.72 3 588.00 620.00 18.48 598.67 6.25 36.37 0.78 3 756.00 819.00 777.00 12.5 0.68 3 1211.67 1173.00 1289.00 66.97 25 0.26 3 2085.33 2068.00 2120.00 30.02

3688.33 3631.00 3803.00

99.30

0.27

3

50

100

VENTURA COUNTY WATERSHED PROTECCTION DISTRICT PHASE 1 TOXICITY IDENTIFICATION EVALUATION (TIE) FOR A-1 WOOD SAMPLE COLLECTED IN DECEMBER OF 2006

Aquatic Bioassay and Consulting Laboratories, Inc.

29 North Olive Street Ventura, California 93001

(805) 643-5621



January 19, 2007

Mr. Arnie Anselm Ventura County Watershed Protection District 800 South Victoria Ave Ventura, CA 93009

Dear Mr. Anselm:

Please find the enclosed report Ventura County Watershed Protection District Phase 1 Toxicity Identification Evaluation (TIE) for A-1 Wood sample collected in December of 2006. The report describes in detail the five TIE treatments that were conducted on this sample. In addition, one 96-hour acute Baseline bioassay report is included. The initial bioassay test results, that triggered the TIE process, were reported earlier. A copy of the initial acute test results are included as well.

Please do not hesitate to contact us if you have any questions regarding this project.

Yours very truly,

Thomas (Tim) Mikel Laboratory Director

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SUMMARY

During the month of Dec, 2006, one sample was received in this laboratory from the Ventura Watershed Protection District, VCWSPD, for the analysis of acute toxicity of the water flea, *Ceriodaphnia dubia*. The sample was identified as A-1 Wood. An initial toxicity test was used to determine if further evaluations were necessary. The sample demonstrated sufficient toxicity, TUa of 14.08, to proceed with a Phase 1 Toxicity Identification Evaluations (TIE). Final analysis of results compared 96-hour LC50's from manipulated samples to that of an unaltered sample baseline. Following are the results of the TIE testing.

INTRODUCTION

The EPA Phase 1 TIE procedures were designed for the characterization of municipal and industrial effluents and stormwater runoff. After conducting an initial bioassay to determine the level of toxicity in a sample, various manipulations are performed to identify which group of compounds appear to be causing the toxicity. The toxicant groups targeted are volatile or oxidizable compounds, particulate-bound toxins, cationic metals, non-polar organics, and organophosphates. The following manipulations are typically performed:

<u>Particle Removal</u> identifies the extent to which sample toxicity is affected by particulates, particulate-bound toxicants, or compounds in suspension.

<u>C18-Solid Phase Extraction</u> uses a sorbent column to evaluate the contribution to sample toxicity of non-polar organic compounds and certain metals or metal chelates. Non-polar compounds are trapped in the column through solubility and polarity interactions with the C18.

<u>EDTA</u> reduces sample toxicity by chelation of certain cationic metals. For *Ceriodaphnia*, EDTA chelation has been shown to effectively remove or reduce the toxicity of Cd⁺⁺, Cu⁺⁺, Pb⁺⁺, Mn⁺⁺, Ni⁺⁺, and Zn⁺⁺. If cationic metals are present in the sample, toxicity should be diminished by small additions of EDTA but may be increased by larger additions, due to toxicity of the EDTA itself.

<u>Sodium Thiosulfate</u> neutralizes chemicals used in disinfection, chlorination, and some electrophilic organic chemicals.

<u>Piperonyl Butoxide (PBO)</u> blocks the action of metabolically-activated organophosphate compounds. The addition of PBO therefore reduces toxicity of samples containing organophosphates.

At the Phase 1 level of testing, relatively small sample sizes and limited replications make statistical inferences difficult. Often 95% confidence limits on LC50 values are not calculable, and thus the statistical significance of substantial changes in post-manipulation toxicity may not be possible to establish. This is especially true in cases of samples with low to moderate initial 96-hour toxicity (i.e. LC50's greater than 50%). Therefore, considerable latitude must be given when interpreting the results of Phase 1 TIE's.

MATERIALS AND METHODS

The following sample was received in this laboratory under chain-of-custody procedures on the following dates. The sample container was a new five-gallon HDPE bucket:

12/10/2006 A-1 Wood

Acute lethality toxicity tests were used throughout the TIE characterizations (the toxicity prescreen assessed 96-hour survival data from a 96-hour acute toxicity test). Initial testing was performed in accordance with Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA-821-R-02-012. If observed survival in the pre-screen yielded a 96 Hour TUa of >1.00, the TIE process was initiated. An initial 96 hour test of acute toxicity was set up on Day 1. Sample aliquots were manipulated the day following the end of the baseline test and TIE exposure concentrations, based on survival observed after 96 hours in the initial test, were set up. Final analyses compared Ceriodaphnia dubia 96-hour LC50's of each manipulated aliquot to that of the unaltered sample. Procedures of each chemical or physical manipulation followed those described in Methods for Aquatic Toxicity Identification Evaluations, Phase 1 Toxicity Characterization Procedures (Second Edition), EPA/600/6-91/003.

Particle removal was by vacuum induction through a 1.0-micron glass-fiber filter.

Solid phase extraction of the sample utilized a C₁₈ column. Two post-column aliquots were subjected to bioassay testing in each treatment. The first aliquot was taken after 25 ml of sample had passed the column to ensure that no dilution water is left in the system. To assess the extent of column overloading and possible toxicant breakthrough, a second aliquot was taken after 150 ml of sample had passed.

EDTA stock solution was added to each 10 ml test aliquot at six rates: 0.0125 ml, 0.025 ml, 0.05 ml, 0.1 ml, 0.2 ml, and 0.4 ml. The stock solution concentration was determined based on the initial effluent LC50 and a hardness titration.

Sodium thiosulfate stock was added to each 10 ml aliquot at five rates: 1.0 ml, 0.8 ml, 0.6 ml, 0.4 ml, and 0.2 ml. The stock solution concentration was based on sodium thiosulfate 96 hour LC50's for *Ceriodaphnia*.

Piperonyl butoxide stock solution was added to each 10 ml test aliquot at five rates: 25 ppb, 50 ppb, 100 ppb, 250 ppb and 500 ppb. The stock solution concentration was based on EPA recommendations.

Ceriodaphnia dubia used in testing were cultured in-house. The organisms are cultured in EPA reconstituted freshwater. All subsequent testing of manipulated samples were conducted in duplicate. The test temperature was 25 ± 1 deg C and the photoperiod was continuous at 400 ± 40 ft-c.

Toxicity tests were 96 hours in duration. Survival was the only endpoint evaluated in these tests. Sample concentration ranges for toxicity tests were dependent upon the sample's initial 96-hour LC50. The Baseline 96-hour LC50 was 27.28%, so a concentration series of 0.5X, 1X, 2X, and 4X the LC50 was used (13.5, 27.0, 54.5. and 100% for this sample). For EDTA, Sodium Thiosulfate, and PBO manipulations, the highest sample concentration of 100% was used.

For TIE comparisons, sample toxicity is expressed in Toxicity Units (TU) which increase directly with toxicity:

$$TU = 100$$

$$LC50$$

Calculation of LC50s was performed by the linear interpolation method (EPA Bootstrap; 120 iterations).

RESULTS

SAMPLE A-1 Wood

- A-1 Wood was collected on December 9th, 2006, and was received at 0300 hours on December 10, 2006. The sample was assigned laboratory identification number VCF1206.088. A 96-hour acute test was set up on December 11th. At the end of 96 hours the sample exhibited toxicity 96 Hour LC50 of 7.10%. TIE procedures were therefore initiated. The 96-hour LC50 for the initial test was 7.10%. The baseline sample yielded a 96 Hour LC50 of 27.28%. Based upon the 96-hour baseline LC50 of 27.28%, the dilution series for the baseline test was assigned at 13.5, 27.0, 54.5. and 100%. Bioassay results obtained from the manipulated aliquots were compared to the baseline test values (see Table 1), and are summarized below:
- * The baseline 96 h LC50 was 27.28%, which was higher than the initial 96 hour LC50 of 7.10%. The difference in LC50's in the two tests suggest that there was a decrease in toxicity over time, volatile compounds present.
- * Particle removal of the sample under basic conditions did affect sample toxicity. Therefore, particulate-bound toxicants probably did contribute to sample toxicity.
- * Solid phase extraction with C18 did reduce toxicity. Therefore, non-polar organic compounds are suspect.
- * Additions of EDTA did not reduce toxicity.
- * Additions of sodium thiosulfate did not reduce toxicity.
- * Treatment of the sample with PBO did not reduce the toxicity. Therefore, metabolically-activated organophosphate compounds are not suspected toxicants in the sample.

Based on the results of all sample manipulations, particulates and non-polar organic compounds contributed to the toxicity observed in this sample.

Table 1. Toxicity Characteristics of A-1 Wood Sample December 2006

TREATMENT	TOXICITY STATUS	INFERENCE
Original Untreated Sample	Toxic	Original sample shows toxicity (LC50 = 7.10%).
Baseline Untreated Sample	Toxic	Sample shows toxicity (LC50 = 27.28%).
Particle Removal	Reduced a	Under basic conditions, toxicity is indicated as particulate associated.
C18 Extraction	Reduced	Non-polar organic compounds contributing to toxicity.
PBO Treatment	Toxic	Toxicity present with PBO, which deactivates organophosphate pesticides.
EDTA Treatment	Toxic	Toxicity not associated with cationic metals.
Sodium Thiosulfate Treatment	Toxic	Toxicity not associated with chlorine or other oxidants.

APPENDIX 1 RESULTS OF INITIAL BIOASSAY TEST



January 4, 2007

Mr. Arnie Anselm Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA-821-R-02-012. Results were as follows:

CLIENT:

Ventura County Watershed Protection District

SAMPLE I.D.:

A-1 Wood

DATE RECEIVED:

12 Dec - 06

ABC LAB. NO.:

VCF1206.088

ACUTE CERIODAPHNIA SURVIVAL BIOASSAY

Survival = 0 % Survival in 100% Sample

TU(a) = 14.08

LC50 = 7.10%

Yours very truly,

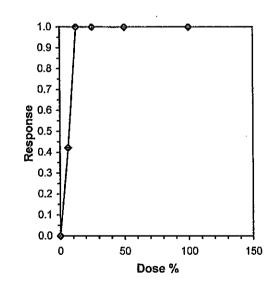
Thomas (Tim) Mikel Laboratory Director

			Ceriod	aphnia Survival and Re	production Test-96 H	r Survival
Start Date:	12/11/2006		Test ID:	VCF1206088	Sample ID:	CA000000
End Date:	12/15/2006	,	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	12/9/2006		Protocol:	EPAA 85-EPA Acute	Test Species:	CD-Ceriodaphnia dubia
Comments:	A-1 Wood					•
Conc-%	1	2	3	4		
N Control	0.8000	1.0000	1.0000	1.0000		
6.25	1.0000	0.6000	0.4000	0.2000		-
12.5	0.0000	0.0000	0.0000	0.0000		
25	0.0000	0.0000	0.0000	0.0000		
50	0.0000	0.0000	0.0000	0.0000		
100	0.0000	0.0000	0.0000	0.0000		

		_	Transform: Arcsin Square Root					_	1-Tailed	Isotonic		
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
N Control	0.9500	1.0000	1.2857	1.1071	1.3453	9.261	4				0.9500	1.0000
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12.5	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4				0.0000	0.0000
25	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4				0.0000	0.0000
50	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4	-			0.0000	0.0000
100	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4		•		0.0000	0.0000

Auxiliary Tests	Statistic	•	Critical		Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.9025		0.749		0.67425	1.72749
F-Test indicates equal variances (p = 0.09)	9.94782		47.4683			
Hypothesis Test (1-tail, 0.05)	MSDu	MSDp	MSB	MSE	F-Prob	df
Homoscedastic t Test indicates significant differences	0.30443	0.33056	0.38864	0.0776	0.06654	1, 6
Treatments vs N Control						

				Linea	r Interpolatio	n (200 Resamples)
Point	%	SD	95% CI	L(Exp)	Skew	
IC05*	0.7422	0.9777	0.2850	8.5547	4.3187	<u>.</u>
IC10*	1.4844	1.1736	0.5701	9.5800	2.7641	
IC15*	2.2266	1.3145	0.8551	9.6641	1.8346	1.0
IC20*	2.9688	1.4111	1.1402	9.7482	1.2334	0.9
IC25*	3.7109	1.4501	1.4252	9.8323	0.7779	0.9
IC40*	5.9375	1.3658	2.2804	10.0846	-0.0605	0.8
IC50	7.1023	1.2694	3.0422	10.4445	-0.3557	0.7
* indicates	IC estimate le	ss than th	e lowest o	concentrat	ion	



Start Date: 12/11/2006 End Date: 12/15/2006

Lab ID: CAABC

Test ID: VCF1206088 Sample ID:

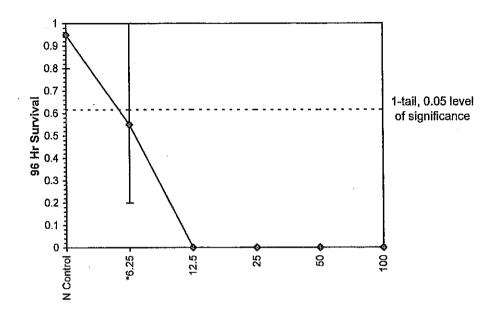
CA0000000 **EFF1-POTW**

Sample Date: 12/9/2006 Comments: A-1 Wood Protocol: EPAA 85-EPA Acute

Sample Type: Test Species:

CD-Ceriodaphnia dubia

Dose-Response Plot



Start Date: End Date:

12/11/2006 12/15/2006 Sample Date: 12/9/2006

Test ID: VCF1206088 Lab ID: CAABC

Protocol: EPAA 85-EPA Acute

Sample ID: Sample Type: CA0000000 **EFF1-POTW**

Test Species:

CD-Ceriodaphnia dubia

Comments: A-1 Wood **Auxiliary Data Summary** Mean Min CV% Conc-% **Parameter** Max SD N 2.93 N Control Temp C 24.60 24.00 24.90 0.52 3 6.25 24.37 24.00 25.00 0.55 3.05 3 12.5 24.40 24.00 24.80 0.40 2.59 3 25 24.40 3 24.00 25.10 0.61 3.20 50 3 24.63 24.00 25.00 0.55 3.01 100 24.00 24.00 24.00 0.00 0.00 3 N Control ьH 8.07 7.90 8.30 0.21 5,66 3 6.25 7.93 7.80 8.00 0.12 4.28 3 12.5 7.90 7.70 8.10 0.20 5.66 3 25 7.83 7.60 0.21 5.82 3 8.00 50 7.80 3 7.60 8.00 0.20 5.73 100 7.73 7.50 5.90 3 7.90 0.21 N Control DO mg/L 6.97 5.60 8.00 1.23 15.95 3 6.25 6.87 4.30 8.30 2.23 21.74 3 12.5 6.63 4.70 7.80 1.69 19,58 3 25 3 6.43 4.70 7.70 1.55 19.37 50 6.30 4.60 7.50 19.53 3 1.51 100 6.17 4.50 7.30 1.47 19.69 3 N Control Hardness mg/L 87.33 84.00 90.00 3.06 2.00 3 6.25 0.00 0.00 0.00 0.00 0 12.5 0.00 0.00 0.00 0.00 0 25 0.00 0.00 0.00 0.00 0 50 0.00 0.00 0.00 0 0.00 250.00 100 250.00 250.00 0.00 0.00 3 60.00 N Control Alkalinitymg/L 60.00 60.00 0.00 0.00 3 0 0.00 0.00 0.00 0.00 6.25 12.5 0.00 0 0.00 0.00 0.00 25 0.00 0.00 0.00 0.00 0 0.00 0.00 0.00 0.00 0 50 240.00 100 240.00 240.00 0.00 0.00 3 3 N Control Conductivity 345.33 342.00 347.00 2.89 0.49 6.25 598.67 588.00 620.00 18.48 0.72 3 12.5 756,00 36.37 777.00 819.00 0.78 3 25 1211.67 1173.00 1289.00 66.97 0.68 3

2085.33 2068.00 2120.00

3688.33 3631.00 3803.00

30.02

99.30

0.26

0.27

3

3

50

100

APPENDIX 2 RESULTS OF BASELINE BIOASSAY TEST



January 19, 2007

Mr. Arnie Anselm Ventura County Watershed Protection District 800 South Victoria Ave Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA-821-R-02-012.* Results were as follows:

CLIENT:

Ventura County Watershed Protection District

SAMPLE I.D.:

A-1 Wood TIE Baseline

DATE RECEIVED:

12 Dec - 06

ABC LAB. NO.:

VCF1206.088

ACUTE CERIODAPHNIA SURVIVAL BIOASSAY

Survival = 0 % Survival in 100% Sample

TU(a) = 3.67

LC50 = 27.28%

Yours very truly,

Thomas (Tim) Mikel Laboratory Director

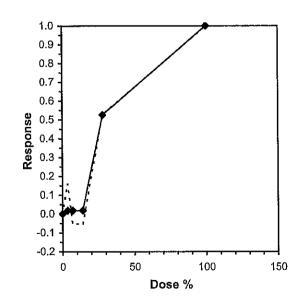
	Acute Ceriodaphnia Test-96 Hr Survival											
Start Date:	12/19/2006		Test ID:	VCF12060	88	Sample ID:	CA000000					
End Date:	12/23/2006		Lab ID:	CAABC		Sample Type:	EFF1-POTW					
Sample Date:	12/19/2006		Protocol:	EPAF 91-6	EPA Freshwater	Test Species:	CD-Ceriodaphnia dubia					
Comments:	A-1 Wood	TIE Ba	seline									
Conc-%	1	2	3	4								
N Control	1.0000	1.0000	1.0000	0.8000								
3.5	1.0000	1.0000	1.0000	0.2000								
7	1.0000	1.0000	1.0000	1.0000								
14	1.0000	1.0000	1.0000	1.0000								
28	0.0000	0.0000	1.0000	0.8000								
100	0.0000	0.0000	0.0000	0.0000								

			Tra	ansform:	Arcsin Sc	uare Root	t	Rank	1-Tailed	lsot	onic
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
N Control	0.9500	1.0000	1.2857	1.1071	1.3453	9.261	4			0.9500	1.0000
3.5	0.8000	0.8421	1.1249	0.4636	1.3453	39.188	4	17.50	10.00	0.9333	0.9825
7	1.0000	1.0526	1.3453	1.3453	1.3453	0.000	4	20.00	10.00	0.9333	0.9825
14	1.0000	1.0526	1.3453	1.3453	1.3453	0.000	4	20.00	10.00	0.9333	0.9825
28	0.4500	0.4737	0.7259	0.2255	1.3453	80.715	4	13.00	10.00	0.4500	0.4737
*100	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4	10.00	10.00	0.0000	0.0000

Auxiliary Tests					Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates nor	ı-normal dis	stribution ()	0.84173	0.884	-0.5392	1.93958	
Equality of variance cannot be co	nfirmed							
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU				
Steel's Many-One Rank Test	28	100	52.915	3.57143				

Treatments	vs N	Control	
116011161116	V 3 1 1	OUHUU	

				Linea	ar Interpola	tion (200 Resamples)
Point	%	SD	95% CL	.(Exp)	Skew	
IC05	14.893	7.031	0.000	19.754	-0.1569	
IC10	16.269	6.069	0.000	39.675	-0.3845	
IC15	17.645	5.170	0.000	44.992	0.6798	1.0 -
IC20	19.021	5.376	12.700	50.309	1.5420	0.9
IC25	20.397	5.840	14.059	55.626	2.1067	4
IC40	24.524	9.141	15.686	71.577	1.5305	0.8
1C50	27.276	12.016	16.434	82.210	1.1828	0.7
						1



Acute Ceriodaphnia Test-96 Hr Survival

Start Date: 12/19/2006 End Date:

12/23/2006

Test ID: VCF1206088

CAABC Lab ID:

Sample ID: Sample Type: CA0000000

EFF1-POTW

Comments:

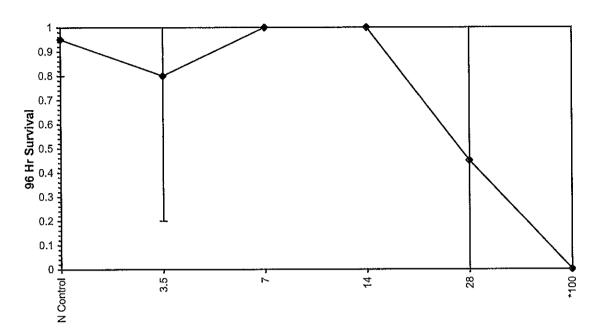
Sample Date: 12/19/2006

Protocol: EPAF 91-EPA Freshwater A-1 Wood TIE Baseline

Test Species:

CD-Ceriodaphnia dubia

Dose-Response Plot



Acute Ceriodaphnia Test-96 Hr Survival

Start Date:

Test ID: VCF1206088 12/19/2006

Lab ID: CAABC

Sample ID: Sample Type: CA0000000 EFF1-POTW

End Date: Sample Date: 12/19/2006

12/23/2006

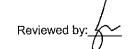
Protocol: EPAF 91-EPA Freshwater

Test Species:

CD-Ceriodaphnia dubia

A-1 Wood TIE Baseline Comments:

		Auxiliary Data Summary					
Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	24.13	24.00	24.40	0.23	1.99	3
3.5	•	24.13	24.00	24.40	0.23	1.99	3
7		24.13	24.00	24.40	0.23	1.99	3
14		24.13	24.00	24.40	0.23	1.99	3
28		24.13	24.00	24.40	0.23	1.99	3
100		24.13	24.00	24.40	0.23	1.99	3
N Control	pН	8.13	8.10	8.20	0.06	2.95	3
3.5	•	7.90	7.80	8.10	0.17	5.27	3
7		7.90	7.70	8.10	0.20	5.66	3
14		7.87	7.70	8.00	0.15	4.97	3
28		7.80	7.70	7.90	0.10	4.05	3
100		7.80	7.60	8.00	0.28	6.82	2
N Control	DO mg/L	6.87	6.00	7.50	0.78	12.83	3
3.5	*	7.07	6.00	8.30	1.16	15.23	3
7	ı	6.80	5.50	7.80	1.18	15.97	3
14		6.60	5.30	7.50	1.15	16.27	3
28		6.43	5.00	7.30	1.25	17.38	3
100		6.60	6.50	6.70	0.14	5.70	2
N Control	Hardness mg/L	96.00	96.00	96.00	0.00	0.00	3
3.5	_	0.00	0.00	0.00	0.00		0
7		0.00	0.00	0.00	0.00		0
14		0.00	0.00	0.00	0.00		0
28		0.00	0.00	0.00	0.00		0
100		250.00	250.00	250.00	0.00	0.00	2
N Control	Alkalinitymg/L	64.00	63.00	66.00	1.73	2.06	3
3.5		0.00	0.00	0.00	0.00		0
7		0.00	0.00	0.00	0.00		0
14		0.00	0.00	0.00	0.00		0
28		0.00	0.00	0.00	0.00		0
100		240.00	240.00	240.00	0.00	0.00	2
N Control	Conductivity	344.67	337.00	355.00	9.29	0.88	3
3.5	•	518.33	493.00	545.00	26.03	0.98	3
7		609.00	585.00	645.00	31.75	0.93	3
14		864.00	845.00	900.00	31.19	0.65	3
28		1366.33	1315.00	1444.00	68.41	0.61	3
100		3672.50	3504.00	3841.00	238.29	0.42	2





Ventura CountyWatershed Protection District NPDES Stormwater Monitoing Program

Grab Toxicity Samples - ABC

CHAIN-OF-CU CLIENT: Ve		Y RECORD ounty Watersh	ed Protection	n Diet	rict				-			<u> 1</u> O	F		_
SAMPLING DATE		Junty Watersti	ed i Totoolloi:	Diac	1100	Ε\	VEN	Γ#1	(Wet)					<u> </u>
SAMPLERS:															<u> </u>
SAMPLE INFORM	MATION	FOR GRAB	SAMPLES												
SAMPLE		DATE/TIME		%											
				100%	12.5,				ļ	-	İ				
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				ioda	chin					İ	İ				5
				Cer	음										72 L
l iD		COLLECTED	٠	Acute Ceriodaphnia	Chronic Echinoderm Fertilization							NOTE	ES	3	
ME-CG		12-9-06	23:30		×							See Note	Market Control		
ME-SCR		12-10-16	THE PARTY OF THE P		X							See Note	1		
ME:VR2		of the biode transport of the beauty	05:30		×	80			3			See Note	1		
A-1:Wood		12-4-De	CHARLES HER HAR THE PARTY OF TH	X							i in	See Note	2		
I 2 Ortega		The state of the same of the s		X								See Note	2 4		
* R-f Swan		11-72-11-1	STATE OF THE PARTY	X								See Note	2		
W/3 LaVista		170-7-06	21, 40	X								See Nore	2		
W4/Revolon		17 17 F0E	72.00	X								See Note	ż		
/			A STATE OF THE STA		or a least transfer	1000000	0 133674.32	. I sydnory							
	Relinquis	shed By:	نے ل	7	7 6	20 m) a .			Date/1	Time	~ 0b	03:	oO	
Signature Printed Name	-	1	DAVID F.									~06	04		
Affiliation			WPO		<u> </u>	<u>,, ,)</u>									
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-		Jan	/ Ell	<u>X</u>						12-	10	-06	<u>030</u>	<u>O</u>	
Printed Name									<u> </u>						
Affiliation		/							Ц						
Miscellaneous Notes		ous Materials, Qui				ples						··· ·-			
2 Land II	co: Pili	n TIE if Tue	(Acuta) is	>1	for	anv	wet	or	dry	weat	thei	event.			
12/15	106	chant h	otified.	of	u	rah		\mathcal{L}^{h}	M.	(A)	Ner	alī Ila	0-3°0	•	
hn	M-:	1100	., 			^-	. ¬, •	1021	for	۳					
29	Jan	- ///O h	13,-			1 c	of 1								



December 26, 2006

Ms. Darla Wise Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009

Dear Ms. Wise:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA-821-R-02-012. Results were as follows:

CLIENT:

Ventura County Watershed Protection District

SAMPLE I.D.:

I-2 Ortega

DATE RECEIVED:

12 Dec - 06

ABC LAB. NO.:

VCF1206.090

ACUTE CERIODAPHNIA SURVIVAL BIOASSAY

Survival = 100 % Survival in 100% Sample

TU(a) = 0.00

LC50 = >100.00%

0

Yours very truly,

Thomas (Tim) Mikel Laboratory Director

			Cerioda	aphnia Survival and Re	eproduction Test-96 H	r Survival
Start Date:	12/11/2006		Test ID:	VCF1206090	Sample ID:	CA0000000
End Date:	12/15/2006		Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	12/9/2006		Protocol:	EPAA 85-EPA Acute	Test Species:	CD-Ceriodaphnia dubia
Comments:	I-2 Ortega					
Conc-%	1	2	3	4		
N Control	1.0000	1.0000	1.0000	1.0000		
6.25	1.0000	1.0000	1.0000	1.0000		
12.5	1.0000	1.0000	1.0000	1.0000		
25	1.0000	1.0000	1.0000	1.0000		
50	0.8000	0.8000	1.0000	1.0000		
100	1.0000	1.0000	1.0000	1.0000		

			Tra	ansform:	Arcsin Sc	uare Roof	t	Rank	1-Tailed	Isoto	onic
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
N Control	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4			1.0000	1.0000
6.25	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
12.5	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
25	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
50	0.9000	0.9000	1.2262	1.1071	1.3453	11.212	4	14.00	10.00	0.9500	0.9500
100	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	0.9500	0.9500

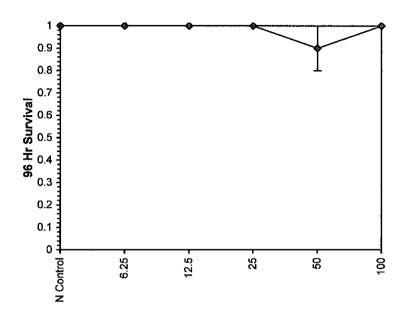
Auxiliary Tests					Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates nor	n-normal di	stribution (p <= 0.01)		0.57623	0.884	6.6E-15	4.03247
Equality of variance cannot be co	onfirmed							
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TÜ				
Steel's Many-One Rank Test	100	>100		1				
Treatments vs N Control								

Treatments vs N Control

Linear Interpolation (200 Resamples)
p) Skew **Point** SD 95% CL(Exp) IC05 >100 IC10 >100 IC15 >100 1.0 IC20 IC25 >100 0.9 >100 0.8 IC40 >100 IC50 >100 0.7

Ceriodaphnia Survival and Reproduction Test-96 Hr Survival Start Date: End Date: 12/11/2006 Test ID: VCF1206090 Sample ID: CA0000000 12/15/2006 Lab ID: CAABC Sample Type: **EFF1-POTW** Sample Date: 12/9/2006 Protocol: EPAA 85-EPA Acute **Test Species:** CD-Ceriodaphnia dubia Comments: I-2 Ortega

Dose-Response Plot



Start Date: 12/11/2006 End Date: 12/15/2006

Test ID: VCF1206090 Lab ID: CAABC

450.33

292.33

253.33

168.33

316.00

287.00

250.00

167.00

719.00

303.00

260.00

171.00

232.67

9.24

5.77

2.31

3.39

1.04

0.95

0.90

3 3

3

3

Sample ID: Sample Type: CA0000000

Sample Date: 12/9/2006

Protocol: EPAA 85-EPA Acute

Test Species:

EFF1-POTW CD-Ceriodaphnia dubia

Comments: I-2 Ortega

Auxiliary Data Summary Conc-% **Parameter** Mean Max SD CV% N Min N Control Temp C 24.43 24.00 25.20 0.67 3.34 3 3 6.25 24.23 24.00 24.60 0.32 2.34 12.5 24.30 24.00 24.70 0.36 2.47 3 25 24.27 24.00 24.60 0.31 2.28 3 50 24.17 24.00 24.30 0.15 1.62 3 100 24.03 24.00 24.10 0.06 1.00 3 N Control pН 8.07 7.90 8.30 0.21 5.66 3 6.25 8.00 7.90 8.20 0.17 5.20 3 12.5 8.10 7.90 8.40 0.26 6.35 3 25 8.10 7.90 8.40 0.26 6.35 3 50 3 8.07 7.90 8.30 0.21 5.66 100 8.07 7.90 8.30 0.21 5.66 3 N Control DO mg/L 7.33 6.70 8.00 0.65 11.00 3 4.70 7.40 18.90 6.25 6.30 1.42 3 12.5 6.17 4.60 7.30 1.40 19.20 3 25 6.27 4.60 7.70 1.56 19.95 3 50 6.30 4.50 7.70 1.64 20.31 3 1.69 3 100 6.37 4.50 7.80 20.43 87.33 84.00 90.00 3.06 2.00 3 N Control Hardness mg/L 0.00 0.00 0.00 0.000 6.25 0 0.00 0.00 0.00 0.00 12.5 0 0.00 0.00 0.00 0.00 25 0 50 0.00 0.00 0.00 0.00 55.00 100 55.00 55.00 0.00 0.00 3 N Control Alkalinitymg/L 60.00 60.00 60.00 0.00 0.00 3 0.00 0 6.25 0.00 0.00 0.00 12.5 0 0.00 0.00 0.00 0.00 25 0.00 0.00 0.00 0.00 0 50 0.00 0.00 0.00 0.00 0 100 25.00 25.00 25.00 0.00 0.00 3 3 N Control Conductivity 345.33 342.00 347.00 2.89 0.49 6.25 549.33 519.00 610.00 52.54 1.32 3

12.5

25

50

100



December 26, 2006

Ms. Darla Wise Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009

Dear Ms. Wise:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, *EPA-821-R-02-012*. Results were as follows:

CLIENT:

Ventura County Watershed Protection District

SAMPLE I.D.:

R-1 Swan

DATE RECEIVED:

12 Dec - 06

ABC LAB. NO.:

VCF1206.091

ACUTE CERIODAPHNIA SURVIVAL BIOASSAY

Survival = 95 % Survival in 100% Sample

TU(a) = 0.41

LC50 = >100.00%

Yours very truly,

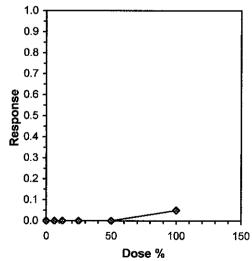
Thomas (Tim) Mikel Laboratory Director

			Ceriod	aphnia Survival and Re	production Test-96 H	Ir Survival
Start Date:	12/11/2006		Test ID:	VCF1206091	Sample ID:	CA0000000
End Date:	12/15/2006	;	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	12/9/2006		Protocol:	EPAA 85-EPA Acute	Test Species:	CD-Ceriodaphnia dubia
Comments:	R-1 Swan					
Conc-%	1	2	3	4		
N Control	1.0000	1.0000	1.0000	1.0000		
6.25	1.0000	1.0000	1.0000	1.0000		
12.5	1.0000	1.0000	1.0000	1.0000		
25	1.0000	1.0000	1.0000	1.0000		
50	1.0000	1.0000	1.0000	1.0000		
100	1.0000	1.0000	1.0000	0.8000		

		_	Tra	ansform:	Arcsin Sc	uare Roo	t	Rank	1-Tailed	lsot	onic
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
N Control	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4			1.0000	1.0000
6.25	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
12.5	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
25	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
50	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
100	0.9500	0.9500	1.2857	1.1071	1.3453	9.261	4	16.00	10.00	0.9500	0.9500

Auxiliary Tests					Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates nor	n-normal di	stribution (p <= 0.01)		0.46508	0.884	-3.0206	13.9892
Equality of variance cannot be co	onfirmed		-					
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	•			
Steel's Many-One Rank Test	100	>100		1				
Treatments vs N Control								

			Line	ear Interpolation (200 Resamples)
Point	%	SD	95% CL(Exp)	Skew
IC05	>100			
IC10	>100			
IC15	>100			1.0
IC20	>100			221
IC25	>100			0.9
IC40	>100			0.8 -
IC50	>100			0,7 ;



Start Date: End Date:

12/11/2006 12/15/2006

Test ID: VCF1206091 Lab ID: CAABC

Sample ID: Sample Type: CA0000000

Sample Date: 12/9/2006

R-1 Swan

EFF1-POTW

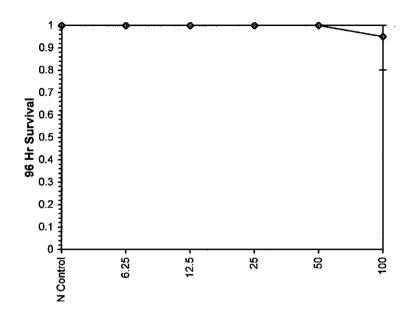
Comments:

Protocol: EPAA 85-EPA Acute

Test Species:

CD-Ceriodaphnia dubia

Dose-Response Plot



Start Date: End Date:

12/11/2006 12/15/2006 Test ID: VCF1206091

Lab ID: CAABC

Sample ID: Sample Type: CA0000000 **EFF1-POTW**

Sample Date: 12/9/2006

Protocol: EPAA 85-EPA Acute

149.33

148.00

152.00

2.31

1.02

3

Comments:

R-1 Swan

Test Species:

CD-Ceriodaphnia dubia

			Aux	iliary Data	Summa		
Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	24.47	24.00	25.30	0.72	3.48	3
6.25		24.43	24.00	25.10	0.59	3.13	3
12.5		24.30	24.00	24.90	0.52	2.97	3
25		24.17	24.00	24.50	0.29	2.22	3
50		24.17	24.00	24.40	0.21	1.89	3
100		24.07	24.00	24.20	0.12	1.41	3
N Control	рН	8.07	7.90	8.30	0.21	5.66	3
6.25	•	8.03	7.90	8.20	0.15	4.87	3
12.5		7.97	7.90	8.10	0.12	4.27	3
25		7.93	7.80	8.10	0.15	4.93	3
50		7.93	7.80	8.10	0.15	4.93	3
100		7.90	7.80	8.00	0.10	4.00	3
N Control	DO mg/L	7.33	6.70	8.00	0.65	11.00	3
6.25	•	6.43	4.80	7.80	1.52	19.15	3
12.5		6.33	4.80	7.60	1.42	18.81	3
25		6.33	4.70	7.60	1.48	19.24	3
50		6.17	4.50	7.40	1.50	19.85	3
100		5.97	4.40	7.00	1.38	19.69	3
N Control	Hardness mg/L	87.33	84.00	90.00	3.06	2.00	3
6.25	_	0.00	0.00	0.00	0.00		0
12.5		0.00	0.00	0.00	0.00		0
25		0.00	0.00	0.00	0.00		0
50		0.00	0.00	0.00	0.00		0
100		50.00	50.00	50.00	0.00	0.00	3
N Control	Alkalinitymg/L	60.00	60.00	60.00	0.00	0.00	3
6.25		0.00	0.00	0.00	0.00		0
12.5		0.00	0.00	0.00	0.00		0
25		0.00	0.00	0.00	0.00		0
50		0.00	0.00	0.00	0.00		0
100		24.00	24.00	24.00	0.00	0.00	3
N Control	Conductivity	345.33	342.00	347.00	2.89	0.49	3
6.25		304.67	299.00	316.00	9.81	1.03	3
12.5		306.00	300.00	318.00	10.39	1.05	3
25		288.00	284.00	296.00	6.93	0.91	3
50		241.67	237.00	251.00	8.08	1.18	3

100



January 4, 2007

Mr. Arnie Anselm Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, EPA-821-R-02-012. Results were as follows:

CLIENT:

Ventura County Watershed Protection District

SAMPLE I.D.:

W-3 La Vista

DATE RECEIVED:

12 Dec - 06

ABC LAB. NO.:

VCF1206.092

ACUTE CERIODAPHNIA SURVIVAL BIOASSAY

Survival = 0 % Survival in 100% Sample

TU(a) = 2.77

LC50 = 36.11%

Yours very truly,

Thomas (Tim) Mikel Laboratory Director

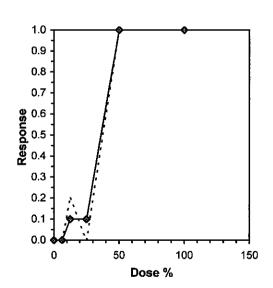
			Cerioda	aphnia Survival and Re	production Test-96 H	r Survival
Start Date:	12/11/200	6	Test ID:	VCF1206092	Sample ID:	CA0000000
End Date:	12/15/200	6	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	12/9/2006		Protocol:	EPAA 85-EPA Acute	Test Species:	CD-Ceriodaphnìa dubia
Comments:	W-3 La V	ista				·
Conc-%	1	2	3	4		
N Control	1.0000	1.0000	1.0000	1.0000	· ·	——————————————————————————————————————
6.25	1.0000	1.0000	1.0000	1.0000		
12.5	1.0000	0.6000	0.6000	1.0000		
25	1.0000	1.0000	1.0000	1.0000		
50	0.0000	0.0000	0.0000	0.0000		
100	0.0000	0.0000	0.0000	0.0000		

			Transform: Arcsin Square Root					Rank	1-Tailed	Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	· CV%	N	Sum	Critical	Mean	N-Mean
N Control	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4			1.0000	1.0000
6.25	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
12.5	0.8000	0.8000	1.1157	0.8861	1.3453	23.763	4	14.00	10.00	0.9000	0.9000
25	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	0.9000	0.9000
50	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4			0.0000	0.0000
100	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4			0.0000	0.0000

Auxiliary Tests		Statistic	Critical	Skew	Kurt			
Shapiro-Wilk's Test indicates nor	stribution	$(p \le 0.01)$		0.69656	0.844	2.2E-15	1.8956	
Equality of variance cannot be co	nfirmed							
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU				
Steel's Many-One Rank Test	25	50	35.3553	4				

Treatments vs N Control

			Linear Interpolation (200 Resamples)						
Point	%	SD	95% CL	(Exp)	Skew				
IC05	9.375	7.903	6.875	36.375	0.6277				
IC10	25.000	6.975	0.000	29.000	-1.0327				
IC15	26.389	4.183	1.667	30.167	-2.9759	1.0			
IC20	27.778	1.316	23.333	31.333	-0.3373	۱,			
IC25	29.167	1.233	25.000	32.500	-0.3373	0.9			
IC40	33.333	0.987	30.000	36.000	-0.3373	0.8 -			
IC50	36.111	0.822	33.333	38.333	-0.3373	0.7			



Start Date: End Date:

12/11/2006 12/15/2006 Test ID: VCF1206092 Lab ID: CAABC

Sample ID: Sample Type: CA0000000 **EFF1-POTW**

Sample Date: 12/9/2006 Comments:

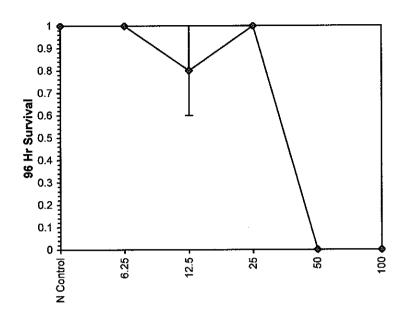
W-3 La Vista

Protocol: EPAA 85-EPA Acute

Test Species:

CD-Ceriodaphnia dubia

Dose-Response Plot



Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

Start Date: 12/11/2006 End Date: 12/15/2006

Test ID: VCF1206092 Lab ID: CAABC

Sample ID: Sample Type: CA0000000 **EFF1-POTW**

Sample Date: 12/9/2006

Protocol: EPAA 85-EPA Acute

Test Species:

CD-Ceriodaphnia dubia

Comments: W-3 La Vista

			Aux	iliary Dat	a Summa	гу	
Conc-%	Parameter	Mean	Min	Max	SD	CV%	Ń
N Control	Temp C	24.50	24.00	25.40	0.78	3.61	3
6.25		24.30	24.00	24.70	0.36	2.47	3
12.5		24.37	24.00	24.90	0.47	2.82	3
25		24.33	24.00	24.80	0.42	2.65	3
50		24.15	24.00	24.30	0.21	1.91	2
100		24.00	24.00	24.00	0.00	0.00	2
N Control	pН	8.07	7.90	8.30	0.21	5.66	3
6.25		7.93	7.80	8.00	0.12	4.28	3
12.5		7.73	7.70	7.80	0.06	3.11	3
25		7.73	7.70	7.80	0.06	3.11	3
50		7.75	7.60	7.90	0.21	5.94	2
100		7.70	7.50	7.90	0.28	6.91	2
N Control	DO mg/L	7.33	6.70	8.00	0.65	11.00	3
6.25		6.10	4.60	7.30	1.37	19.22	3
12.5		6.00	4.60	7.10	1.28	18.83	3
25		5.90	4.40	7.00	1.35	19.66	3
50		6.60	6.60	6.60	0.00	0.00	2
100		6.40	6.30	6.50	0.14	5.88	2
N Control	Hardness mg/L	87.33	84.00	90.00	3.06	2.00	3
6.25		0.00	0.00	0.00	0.00		0
12.5		0.00	0.00	0.00	0.00		0
25		0.00	0.00	0.00	0.00		0
50		0.00	0.00	0.00	0.00		0
100		250.00	250.00	250.00	0.00	0.00	2
N Control	Alkalinitymg/L	60.00	60.00	60.00	0.00	0.00	3
6.25		0.00	0.00	0.00	0.00		0
12.5		0.00	0.00	0.00	0.00		0
25		0.00	0.00	0.00	0.00		0
50		0.00	0.00	0.00	0.00		0
100		68.00	68.00	68.00	0.00	0.00	2
N Control	Conductivity	345.33	342.00	347.00	2.89	0.49	3
6.25		346.00	344.00	350.00	3.46	0.54	3
12.5		391.33	387.00	400.00	7.51	0.70	3
25		453.00	446.00	467.00	12.12	0.77	3
50		609.00	603.00	615.00	8.49	0.48	2
100		871.00	867.00	875.00	5.66	0.27	2

VENTURA COUNTY WATERSHED PROTECCTION DISTRICT PHASE 1 TOXICITY IDENTIFICATION EVALUATION (TIE) FOR W-3 La Vista SAMPLE COLLECTED IN DECEMBER OF 2006

Aquatic Bioassay and Consulting Laboratories, Inc.

29 North Olive Street Ventura, California 93001

(805) 643-5621



TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

January 19, 2007

Mr. Arnie Anselm Ventura County Watershed Protection District 800 South Victoria Ave Ventura, CA 93009

Dear Mr. Anselm:

Please find the enclosed report Ventura County Watershed Protection District Phase 1 Toxicity Identification Evaluation (TIE) for W-3 La Vista sample collected in December of 2006. The report describes in detail the five TIE treatments that were conducted on this sample. In addition, one 96-hour acute Baseline bioassay report is included. The initial bioassay test results, that triggered the TIE process, were reported earlier. A copy of the initial acute test results are included as well.

Please do not hesitate to contact us if you have any questions regarding this project.

Yours very truly,

Thomas (Tim) Mikel Laboratory Director

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SUMMARY

During the month of Dec, 2006, one sample was received in this laboratory from the Ventura Watershed Protection District, VCWSPD, for the analysis of acute toxicity of the water flea, *Ceriodaphnia dubia*. The sample was identified as W-3 La Vista. An initial toxicity test was used to determine if further evaluations were necessary. The sample demonstrated sufficient toxicity, TUa of 2.77, to proceed with a Phase 1 Toxicity Identification Evaluations (TIE). Final analysis of results compared 96-hour LC50's from manipulated samples to that of an unaltered sample baseline. Following are the results of the TIE testing.

INTRODUCTION

The EPA Phase 1 TIE procedures were designed for the characterization of municipal and industrial effluents and stormwater runoff. After conducting an initial bioassay to determine the level of toxicity in a sample, various manipulations are performed to identify which group of compounds appear to be causing the toxicity. The toxicant groups targeted are volatile or oxidizable compounds, particulate-bound toxins, cationic metals, non-polar organics, and organophosphates. The following manipulations are typically performed:

<u>Particle Removal</u> identifies the extent to which sample toxicity is affected by particulates, particulate-bound toxicants, or compounds in suspension.

<u>C18-Solid Phase Extraction</u> uses a sorbent column to evaluate the contribution to sample toxicity of non-polar organic compounds and certain metals or metal chelates. Non-polar compounds are trapped in the column through solubility and polarity interactions with the C18.

EDTA reduces sample toxicity by chelation of certain cationic metals. For *Ceriodaphnia*, EDTA chelation has been shown to effectively remove or reduce the toxicity of Cd⁺⁺, Cu⁺⁺, Pb⁺⁺, Mn⁺⁺, Ni⁺⁺, and Zn⁺⁺. If cationic metals are present in the sample, toxicity should be diminished by small additions of EDTA but may be increased by larger additions, due to toxicity of the EDTA itself.

<u>Sodium Thiosulfate</u> neutralizes chemicals used in disinfection, chlorination, and some electrophilic organic chemicals.

<u>Piperonyl Butoxide (PBO)</u> blocks the action of metabolically-activated organophosphate compounds. The addition of PBO therefore reduces toxicity of samples containing organophosphates.

At the Phase 1 level of testing, relatively small sample sizes and limited replications make statistical inferences difficult. Often 95% confidence limits on LC50 values are not calculable, and thus the statistical significance of substantial changes in post-manipulation toxicity may not be possible to establish. This is especially true in cases of samples with low to moderate initial 96-hour toxicity (i.e. LC50's greater than 50%). Therefore, considerable latitude must be given when interpreting the results of Phase 1 TIE's.

MATERIALS AND METHODS

The following sample was received in this laboratory under chain-of-custody procedures on the following dates. The sample container was a new five-gallon HDPE bucket:

12/10/2006 W-3 La Vista

Acute lethality toxicity tests were used throughout the TIE characterizations (the toxicity prescreen assessed 96-hour survival data from a 96-hour acute toxicity test). Initial testing was performed in accordance with Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA-821-R-02-012. If observed survival in the pre-screen yielded a 96 Hour TUa of >1.00, the TIE process was initiated. An initial 96 hour test of acute toxicity was set up on Day 1. Sample aliquots were manipulated the day following the end of the baseline test and TIE exposure concentrations, based on survival observed after 96 hours in the initial test, were set up. Final analyses compared Ceriodaphnia dubia 96-hour LC50's of each manipulated aliquot to that of the unaltered sample. Procedures of each chemical or physical manipulation followed those described in Methods for Aquatic Toxicity Identification Evaluations, Phase 1 Toxicity Characterization Procedures (Second Edition), EPA/600/6-91/003.

Particle removal was by vacuum induction through a 1.0-micron glass-fiber filter.

Solid phase extraction of the sample utilized a C18 column. Two post-column aliquots were subjected to bioassay testing in each treatment. The first aliquot was taken after 25 ml of sample had passed the column to ensure that no dilution water is left in the system. To assess the extent of column overloading and possible toxicant breakthrough, a second aliquot was taken after 150 ml of sample had passed.

EDTA stock solution was added to each 10 ml test aliquot at six rates: 0.0125 ml, 0.025 ml, 0.05 ml, 0.1 ml, 0.2 ml, and 0.4 ml. The stock solution concentration was determined based on the initial effluent LC50 and a hardness titration.

Sodium thiosulfate stock was added to each 10 ml aliquot at five rates: 1.0 ml, 0.8 ml, 0.6 ml, 0.4 ml, and 0.2 ml. The stock solution concentration was based on sodium thiosulfate 96 hour LC50's for *Ceriodaphnia*.

Piperonyl butoxide stock solution was added to each 10 ml test aliquot at five rates: 25 ppb, 50 ppb, 100 ppb, 250 ppb and 500 ppb. The stock solution concentration was based on EPA recommendations.

Ceriodaphnia dubia used in testing were cultured in-house. The organisms are cultured in EPA reconstituted freshwater. All subsequent testing of manipulated samples were conducted in duplicate. The test temperature was 25 ± 1 deg C and the photoperiod was continuous at 400 ± 40 ft-c.

Toxicity tests were 96 hours in duration. Survival was the only endpoint evaluated in these tests. Sample concentration ranges for toxicity tests were dependent upon the sample's initial 96-hour LC50. The Baseline 96-hour LC50 was 27.28%, so a concentration series of 0.5X, 1X, 2X, and 4X the LC50 was used (13.5, 27.0, 54.5. and 100% for this sample). For EDTA, Sodium Thiosulfate, and PBO manipulations, the highest sample concentration of 100% was used.

For TIE comparisons, sample toxicity is expressed in Toxicity Units (TU) which increase directly with toxicity:

$$TU = 100$$

$$LC50$$

Calculation of LC50s was performed by the linear interpolation method (EPA Bootstrap; 120 iterations).

RESULTS

SAMPLE W-3 La Vista

W-3 La Vista was collected on December 9th, 2006, and was received at 0300 hours on December 10, 2006. The sample was assigned laboratory identification number VCF1206.092. A 96-hour acute test was set up on December 11th. At the end of 96 hours the sample exhibited toxicity, 96 Hour LC50 of 36.11%. TIE procedures were therefore initiated. The 96-hour LC50 for the initial test was 36.11%. The baseline sample yielded a 96 Hour LC50 of 86.82%. Based upon the 96-hour baseline LC50 of 86.82%, the dilution series for the baseline test was assigned at 44, 87, and 100%. Bioassay results obtained from the manipulated aliquots were compared to the baseline test values (see Table 1), and are summarized below:

- * The baseline 96 h LC50 was 86.82%, which was higher than the initial 96 hour LC50 of 36.11%. The difference in LC50's in the two tests indicates that there was a decrease in toxicity over time, volatile compounds present.
- * Particle removal of the sample under basic conditions did affect sample toxicity. Therefore, particulate-bound toxicants probably did contribute to sample toxicity.
- * Solid phase extraction with C18 did reduce toxicity. Therefore, non-polar organic compounds are suspect.
- * Additions of EDTA did not reduce toxicity.
- * Additions of sodium thiosulfate did reduce toxicity. Toxicity associated with chlorine or other oxidants.
- * Treatment of the sample with PBO did not reduce the toxicity. Therefore, metabolically-activated organophosphate compounds are not suspected toxicants in the sample.

Based on the results of all sample manipulations, particulates, non-polar organic compounds and chlorine or other oxidants contributed to the toxicity observed in this sample.

Table 1. Toxicity Characteristics of A-1 Wood Sample December 2006

TREATMENT	TOXICITY STATUS	/INFERENCE
Original Untreated Sample	Toxic	Original sample shows toxicity (LC50 = 36.11%).
Baseline Untreated Sample	Toxic	Sample shows toxicity (LC50 = 86.82%).
Particle Removal	Reduced	Under basic conditions, toxicity is indicated as particulate associated.
C18 Extraction	Reduced	Non-polar organic compounds contributing to toxicity.
PBO Treatment	Toxic	Toxicity present with PBO, which deactivates organophosphate pesticides.
EDTA Treatment	Toxic	Toxicity not associated with cationic metals.
Sodium Thiosulfate Treatment	Reduced	Toxicity associated with chlorine or other oxidants.

APPENDIX 1 RESULTS OF INITIAL BIOASSAY TEST



TOXICITY TESTING . OCEANOGRAPHIC RESEARCH

January 4, 2007

Mr. Arnie Anselm Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, *EPA-821-R-02-012*. Results were as follows:

CLIENT:

Ventura County Watershed Protection District

SAMPLE I.D.:

W-3 La Vista

DATE RECEIVED:

12 Dec - 06

ABC LAB. NO.:

VCF1206.092

ACUTE CERIODAPHNIA SURVIVAL BIOASSAY

Survival = 0 % Survival in 100% Sample

TU(a) = 2.77

LC50 = 36.11%

Yours very truly,

Thomas (Tim) Mikel Laboratory Director

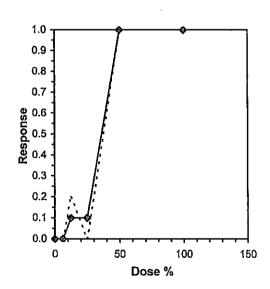
			Cerioda	phnia Survival and Rep	production Test-96 H	r Survival
Start Date:	12/11/200	6	Test ID:	VCF1206092	Sample ID:	CA0000000
End Date:	12/15/200	6 .	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	12/9/2006		Protocol:	EPAA 85-EPA Acute	Test Species:	CD-Ceriodaphnia dubia
Comments:	W-3 La V	ista			•	·
Conc-%	1	2	3	4		
N Control	1.0000	1.0000	1.0000	1.0000		
6.25	1.0000	1.0000	1.0000	1.0000		
12.5	1.0000	0.6000	0.6000	1.0000		
25	1.0000	1.0000	1.0000	1.0000		
50	0.0000	0.0000	0.0000	0.0000		
100	0.0000	0.0000	0.0000	0.0000		

			Tra	ansform:	Arcsin Sc	quare Roof	t	Rank	1-Tailed	lsot	onic
Conc-%	Mean	N-Mean	Mean	Min	Max	· CV%	N	Sum	Critical	Mean	N-Mean
N Control	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4			1.0000	1.0000
6.25	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
12.5	0.8000	0.8000	1.1157	0.8861	1.3453	23.763	4	14.00	10.00	0.9000	0.9000
25	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	0.9000	0.9000
50	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4			0.0000	0.0000
100	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4			0.0000	0.0000

Auxiliary Tests					Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test Indicates nor	n-normal di	stribution	$(p \le 0.01)$		0.69656	0.844	2.2E-15	1.8956
Equality of variance cannot be co	nfirmed							
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	ΤŲ		<u> </u>		
Steel's Many-One Rank Test	25	50	35.3553	4		· · · · · · · · · · · · · · · · · · ·		
To a state a set of the At A control								

Treatments vs N Control

			•	Linea	r Interpolation	(200 Resamples)
Point	%	SD	95% CL	.(Exp)	Skew	, ,
IC05	9.375	7.903	6.875	36.375	0.6277	, , , , , , , , , , , , , , , , , , ,
IC10	25.000	6.975	0.000	29.000	-1.0327	
IC15	26.389	4.183	1.667	30.167	-2.9759	1.0
IC20	27.778	1.316	23.333	31.333	-0.3373	201
IC25	29.167	1.233	25.000	32.500	-0.3373	0.9
IC40	33.333	0.987	30.000	36.000	-0.3373	0.8
IC50	36.111	0.822	33.333	38.333	-0.3373	0.7



Ceriodaphnia Survival and Reproduction Test-96 Hr Survival Test ID: VCF1206092

Start Date: 12/11/2006 End Date: 12/15/2006 Sample Date: 12/9/2006

Comments:

W-3 La Vista

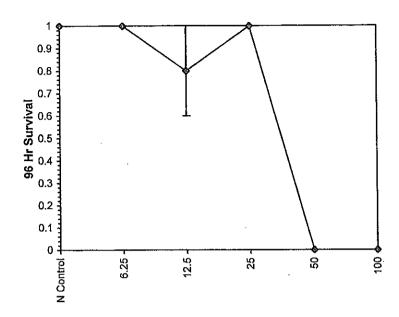
Lab ID: CAABC

Protocol: EPAA 85-EPA Acute

Sample ID: Sample Type: Test Species: CA0000000 EFF1-POTW

CD-Ceriodaphnia dubia

Dose-Response Plot



Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

Start Date: 12/11/2006 End Date: 12/15/2006 Test ID: VCF1206092 Lab ID: CAABC

Sample ID: Sample Type: CA0000000 **EFF1-POTW**

Sample Date: 12/9/2006

Protocol: EPAA 85-EPA Acute

Test Species:

CD-Ceriodaphnia dubia

Comments: W-3 La Vista

Offiniterits.	VV-3 La VISta		Aux	iliary Data			
Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	24.50	24.00	25.40	0.78	3.61	3
6.25		24.30	24.00	24.70	0.36	2.47	3
12.5		24.37	24.00	24.90	0.47	2.82	3
25		24.33	24.00	24.80	0.42	2.65	3
50		24.15	24.00	24.30	0.21	1.91	2
100		24.00	24.00	24.00	0.00	0.00	2
N Control	pН	8.07	7.90	8.30	0.21	5.66	3
6.25		7.93	7.80	8.00	0.12	4.28	3
12.5	•	7.73	7.70	7.80	0.06	3.11	3 3 3 2
25		7.73	7.70	7.80	0.06	3.11	3
50		7.75	7.60	7.90	0.21	5.94	2
100		7.70	7.50	7.90	0.28	6.91	2
N Control	DO mg/L	7.33	6.70	8.00	0.65	11.00	3
6.25	_	6.10	4.60	7.30	1.37	19.22	3
12.5		6.00	4.60	7.10	1.28	18.83	3
25		5.90	4.40	7.00	1.35	19.66	3
50		6.60	6.60	6.60	0.00	0.00	2
100		6.40	6.30	6.50	0.14	5.88	2
N Control	Hardness mg/L	87.33	84.00	90.00	3.06	2.00	3
6.25		0.00	0.00	0.00	0.00		0
12.5		0.00	0.00	0.00	0.00		.0
25		0.00	0.00	0.00	0.00		0
50		0.00	0.00	0.00	0.00		0
100		250.00	250.00	250.00	0.00	0.00	2
N Control	Alkalinitymg/L	60.00	60.00	60.00	0.00	0.00	3
6.25		0.00	0.00	0.00	0.00		0
12,5		0.00	0.00	0.00	0.00		0
25		0.00	0.00	0.00	0.00		0
50		0.00	0.00	0.00	0.00		0
100		68.00	68.00	68.00	0.00	0.00	2
N Control	Conductivity	345.33	342.00	347.00	2.89	0.49	3
6.25		346.00	344.00	350.00	3.46	0,54	3
12.5		391.33	387.00	400.00	7.51	0.70	3
25		453.00	446.00	467.00	12.12	0.77	3 2
50		609.00	603.00	615.00	8.49	0.48	
100		871.00	867.00	875.00	5.66	0.27	2

APPENDIX 2 RESULTS OF BASELINE BIOASSAY TEST



TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

January 19, 2007

Mr. Arnie Anselm Ventura County Watershed Protection District 800 South Victoria Ave Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, *EPA-821-R-02-012*. Results were as follows:

CLIENT:

Ventura County Watershed Protection District

SAMPLE I.D.:

W-3 La Vista TIE Baseline

DATE RECEIVED:

12 Dec - 06

ABC LAB. NO.:

VCF1206.092

ACUTE CERIODAPHNIA SURVIVAL BIOASSAY

Survival = 10 % Survival in 100% Sample

TU(a) = 1.15

LC50 = 86.82%

Yours very truly,

Thomas (Tim) Mikel Laboratory Director

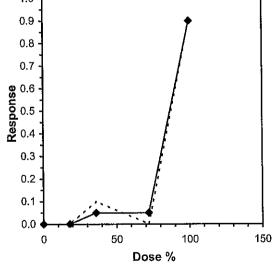
		W-1000		Acute Ceriodaphnia	a Test-96 Hr Survival	
Start Date:	12/19/200	6	Test ID:	VCF1206092	Sample ID:	CA000000
End Date:	12/23/2006	6	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	12/19/2000	6	Protocol:	EPA-821-R-02-012	Test Species:	CD-Ceriodaphnia dubia
Comments:	W-3 La V	ista TIE E	Baseline			
Conc-%	1	2	3	4		
N Control	1.0000	1.0000	1.0000	1.0000		
18	1.0000	1.0000	1.0000	1.0000		
36	0.8000	0.8000	1.0000	1.0000		
72	1.0000	1.0000	1.0000	1.0000		
100	0.0000	0.2000	0.2000	0.0000		

			Tra	ansform:	Arcsin Sc	uare Roof		Rank	1-Tailed	lsot	onic
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
N Control	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4			1.0000	1.0000
18	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
36	0.9000	0.9000	1.2262	1.1071	1.3453	11.212	4	14.00	10.00	0.9500	0.9500
72	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	0.9500	0.9500
*100	0.1000	0.1000	0.3446	0.2255	0.4636	39.900	4	10.00	10.00	0.1000	0.1000

Auxiliary Tests					Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates nor	n-normal dis	tribution	(p <= 0.01))	0.79317	0.868	1.6E-15	-0.2794
Equality of variance cannot be co								
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU				
Steel's Many-One Rank Test	72	100	84.8528	1.38889		· · · · · · · · · · · · · · · · · · ·		
T 1 N 0 f 1								

Treatments vs N Control

				Linea	ar Interpolatio	n (200 Resamples)	
Point	%	SD	95% CL	_(Exp)	Skew		
IC05	72.000	20.024	0.000	74.489	-0.8045		
IC10	73.647	0.780	71.012	75.990	-0.0990		
IC15	75.294	0.750	72.824	77.490	-0.0884	1.0 T	
IC20	76.941	0.735	74.635	79.151	-0.0597		
IC25	78.588	0.736	76.447	81.054	-0.0124	0.9	7
1C40	83.529	0.834	81.570	86.165	0.1652	0.8 -	- 1
IC50	86.824	0.958	84.323	89.986	0.2423		- 1
						0.7	- 1
						- 00	· · · · · · · · · · · · · · · · · · ·



Acute Ceriodaphnia Test-96 Hr Survival

Start Date: 12/19/2006 End Date:

12/23/2006

Test ID: VCF1206092 Lab ID: CAABC

Sample ID:

CA0000000 EFF1-POTW

Sample Date: 12/19/2006

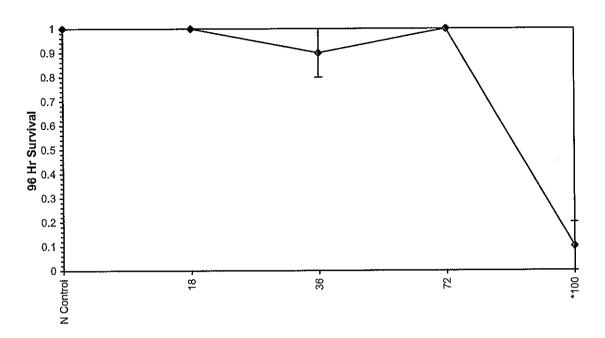
Protocol: EPA-821-R-02-012

Sample Type: Test Species:

CD-Ceriodaphnia dubia

W-3 La Vista TIE Baseline Comments:

Dose-Response Plot



Acute Ceriodaphnia Test-96 Hr Survival

Start Date: 12/19/2006 End Date:

Test ID: VCF1206092 Lab ID: CAABC

Sample ID:

CA0000000 EFF1-POTW

12/23/2006 Sample Date: 12/19/2006

Protocol: EPA-821-R-02-012

Sample Type: Test Species:

CD-Ceriodaphnia dubia

Comments: W-3 La Vista TIE Baseline

	***		Aux	iliary Data	a Summa	ry	
Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	24.13	24.00	24.40	0.23	1.99	3
18	·	24.13	24.00	24.40	0.23	1.99	3
36		24.13	24.00	24.40	0.23	1.99	3
72		24.13	24.00	24.40	0.23	1.99	3
100		24.13	24.00	24.40	0.23	1.99	3
N Control	рН	8.13	8.10	8.20	0.06	2.95	3
18	•	7.97	7.90	8.00	0.06	3.02	3
36		7.93	7.80	8.10	0.15	4.93	3
72		7.87	7.70	8.10	0.21	5.80	3
100		7.77	7.60	8.00	0.21	5.87	3
N Control	DO mg/L	6.87	6.00	7.50	0.78	12.83	3
18	_	6.43	5.20	7.20	1.08	16.14	3
36		6.27	5.00	7.00	1.10	16.75	3
72		6.23	5.00	6.90	1.07	16.59	3
100		6.23	5.00	7.00	1.08	16.66	3
N Control	Hardness mg/L	96.00	96.00	96.00	0.00	0.00	3
18		0.00	0.00	0.00	0.00		0
36		0.00	0.00	0.00	0.00		0
72		0.00	0.00	0.00	0.00		0
100		250.00	250.00	250.00	0.00	0.00	3
N Control	Alkalinitymg/L	64.00	63.00	66.00	1.73	2.06	3
18		0.00	0.00	0.00	0.00		0
36		0.00	0.00	0.00	0.00		0
72		0.00	0.00	0.00	0.00		0
100		68.00	68.00	68.00	0.00	0.00	3
N Control	Conductivity	344.67	337.00	355.00	9.29	88.0	3
18		537.00	455.00	682.00	125.93	2.09	3
36		478.67	394.00	527.00	73.57	1.79	3
72		596.67	384.00	715.00	184.57	2.28	3
100		717.67	428.00	870.00	250.97	2.21	3



CHAIN-OF-CUSTODY RECORD

Ventura CountyWatershed Protection District NPDES Stormwater Monitoing Program

Grab Toxicity Samples - ABC

1 OF 1

CLIENT: SAMPLIN		a County Water	shed Protection	n Distri		VENT #	1 (Wet)				· · · · · · · · · · · · · · · · · · ·
SAMPLER											′,
SAMPLE	NFORMAT	ION FOR GRAE	SAMPLES								
SAMPLE		DATE/TIME									
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				ioda	Echinoderm						Tem
				Cer						•	H ₂ O
ID		COLLECTED		Acute Ceriodaphnia -	Chronic				NOTE	•	Field H ₂ O Temp
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A 1 Wo	od	121420	THE RESERVE OF THE RE	X					See/Note	2	
l-2 Orte		AND DESCRIPTION OF THE PARTY OF	-9-07-01-400	X					Sée Note	2	
R4SW		ACCOUNTS OF THE PARTY OF THE PA	1.1.20	X.					See Note		
Wa3 La	Vista:	72.47.0	CONTRACTOR CONTRACTOR	X					See Note	2	
W-4 Re	volon	7.00	72.50	X					See Note	2	
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	<u> </u>										
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Affiliation		, ,,,,,			·····	·····					
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	1.0	, - , , , , ,			1 c	f 1	•				



TOXICITY TESTING . OCEANOGRAPHIC RESEARCH

January 19, 2007

Mr. Arnie Anselm Ventura County Watershed Protection District 800 South Victoria Ave Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA-821-R-02-012. Results were as follows:

CLIENT:

Ventura County Watershed Protection District

SAMPLE I.D.:

W-4 Revolon TIE Baseline

DATE RECEIVED:

12 Dec - 06

ABC LAB. NO.:

VCF1206.093

ACUTE CERIODAPHNIA SURVIVAL BIOASSAY

Survival = 70 % Survival in 100% Sample

TU(a) = 0.87

LC50 = >100.00%

Yours very truly,

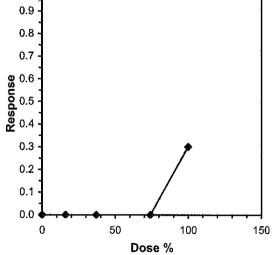
Thomas (Tim) Mikel Laboratory Director

				Acute Ceriodaphnia	a Test-96 Hr Survival	
Start Date:	12/19/2000	6	Test ID:	VCF1206093	Sample ID:	CA0000000
End Date:	12/23/2000	6	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	12/19/2000	6	Protocol:	EPA-821-R-02-012	Test Species:	CD-Ceriodaphnia dubia
Comments:	W-4 Revo	lon TIE I	Baseline		•	·
Conc-%	1	2	3	4		
N Control	1.0000	1.0000	1.0000	1.0000		
16	1.0000	1.0000	1.0000	1.0000		
37	1.0000	1.0000	1.0000	1.0000		
74	1.0000	1.0000	1.0000	1.0000		
100	1.0000	0.8000	0.8000	0.2000		

			Tra	ansform:	Arcsin Sc	uare Root	ŧ	Rank	1-Tailed	Isot	onic
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
N Control	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4			1.0000	1.0000
16	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
37	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
74	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
100	0.7000	0.7000	1.0058	0.4636	1.3453	37.629	4	12.00	10.00	0.7000	0.7000

Auxiliary Tests					Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates nor	n-normal dis	stribution (p <= 0.01)		0.52704	0.868	-2.0315	10.5678
Equality of variance cannot be co	nfirmed	•						
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU				
Steel's Many-One Rank Test	100	>100		1				
Treatments vs N Control								

			Line	ear Interpolatio	n (200 Resamples)	
Point	%	SD	95% CL(Exp)	Skew		
IC05	78.333					
IC10	82.667					
IC15	87.000				1.0	
IC20	91.333					
IC25	95.667				0.9	İ
1C40	>100				0.8 -	
IC50	>100				•	
,					0.7	
					9 0.6 -	



 Acute Ceriodaphnia Test-96 Hr Survival

 Test ID:
 VCF1206093
 Sample ID:
 CA0000000

 Lab ID:
 CAABC
 Sample Type:
 EFF1-POTW

 Protocol:
 EPA-821-R-02-012
 Test Species:
 CD-Ceriodaphnia dubia

Sample Date: 12/19/2006 Protoco Comments: W-4 Revolon TIE Baseline

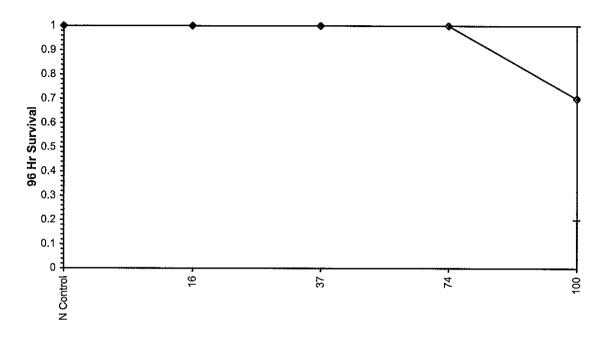
12/19/2006

12/23/2006

Start Date:

End Date:

Dose-Response Plot



Acute Ceriodaphnia Test-96 Hr Survival

12/19/2006 Start Date:

Test ID: VCF1206093 Lab ID: CAABC

Sample ID:

CA0000000 EFF1-POTW

End Date: Sample Date: 12/19/2006

12/23/2006

Protocol: EPA-821-R-02-012

Sample Type: Test Species:

CD-Ceriodaphnia dubia

W-4 Revolon TIE Baseline Comments:

			Au:	xiliary Data	a Summa	ry	
Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	24.13	24.00	24.40	0.23	1.99	3
16		24.13	24.00	24.40	0.23	1.99	3
37		24.13	24.00	24.40	0.23	1.99	3
74		24.13	24.00	24.40	0.23	1.99	3
100		24.13	24.00	24.40	0.23	1.99	3
N Control	рН	8.13	8.10	8.20	0.06	2.95	3
16		7.80	7.70	7.90	0.10	4.05	3
37		7.73	7.70	7.80	0.06	3.11	3
74		7.60	7.50	7.70	0.10	4.16	3
100		7.43	7.30	7.60	0.15	5.26	3
N Control	DO mg/L	6.87	6.00	7.50	0.78	12.83	3
16		6.67	5.80	7.30	0.78	13.22	3
37		6.40	5.70	6.90	0.62	12.35	3
74		6.37	5.70	6.80	0.59	12.02	3
100		6.20	5.70	6.70	0.50	11.40	3
N Control	Hardness mg/L	96.00	96.00	96.00	0.00	0.00	3
16		0.00	0.00	0.00	0.00		0
37		0.00	0.00	0.00	0.00		0
74		0.00	0.00	0.00	0.00		0
100		250.00	250.00	250.00	0.00	0.00	3
N Control	Alkalinitymg/L	64.00	63.00	66.00	1.73	2.06	3
16		0.00	0.00	0.00	0.00		0
37		0.00	0.00	0.00	0.00		0
74		0.00	0.00	0.00	0.00		0
100		74.00	74.00	74.00	0.00	0.00	3
N Control	Conductivity	344.67	337.00	355.00	9.29	0.88	3
16		462.00	455.00	470.00	7.55	0.59	3
37		617.67	599.00	644.00	23.46	0.78	3
74		894.00	875.00	921.00	24.02	0.55	3
100		1083.33	1049.00	1134.00	44.79	0.62	3



Ventura CountyWatershed Protection District NPDES Stormwater Monitoing Program

Grab Toxicity Samples - ABC

CHAIN-OF-CI													OF	1	
	entura C	ounty W	atershe	ed Protec	ction L	istri	ct	EVE	175 414	44.	43				
SAMPLING DAT	E:		•••					EVE	N I #1	(vve	t)			•	
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SAMPLE INFOR	MOITAMS	FOR G	RAB S	AMPLES	S				,						
SAMPLE		DATE/TI	ME		١,	اء									
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			æ			Acute Ceriodaphnia	Chronic Echinoderm Fertilization								Field H ₂ O Temp
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ME-CC		12-9	- 0£	23:30	0		X						See Note 1		
ME-SCR		12-1	۰۰06 یا	00.1	5		X		10-53				See Note 1	Control of the Contro	
ME-VR2		12-10	9-0B	03:3	io l		×						See Note 1	an disa	
A-1 Wood		10.4	-0 6	3-52	6	X							See Note 2		
I-2 Ortega		CHAMPAN CONTRACTOR	THE RESERVE TO SERVE	t, J.L. I							787		See Note 2		
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		W STREET, CONTRACT OF THE	SATE CONTRACTOR	i, 20 ad									THE RESERVE AND THE RESERVE AN		
W.3 La Vista		02-4	COLUMN TO SERVICE AND ADDRESS.	2) Y)	X							See Note 2		
W4 Revolon		12 7	+66	750	ō.	X							See Note 2		
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1. Mass E								s							
2. Land Us	se: Run	TIE if	Tua (Acute)	is >'	l fo	r anv	/ we	or	dry v	wea	the	r event.		
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27	you	1110	5 41:	5,-			1	of 1							



TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

January 4, 2007

Mr. Arnie Anselm Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA-821-R-02-012. Results were as follows:

CLIENT:

Ventura County Watershed Protection District

SAMPLE I.D.:

W-4 Revolon

DATE RECEIVED:

12 Dec - 06

ABC LAB. NO.:

VCF1206.093

ACUTE CERIODAPHNIA SURVIVAL BIOASSAY

Survival = 0 % Survival in 100% Sample

TU(a) = 2.76

LC50 = 36.21%

Yours very truly,

Thomas (Tim) Mikel Laboratory Director

			Cerioda	aphnia Survival and Rep	production Test-96 H	lr Survival
Start Date:	12/11/2006	3	Test ID:	VCF1206093	Sample ID:	CA0000000
End Date:	12/15/2006	3	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	12/9/2006		Protocol:	EPAA 85-EPA Acute	Test Species:	CD-Ceriodaphnia dubia
Comments:	W-4 Revo	lon				•
Conc-%	1	2	3	4		·
N Control	1.0000	1.0000	1.0000	1.0000		
6.25	0.8000	1.0000	0.8000	1.0000		
12.5	0.4000	0.6000	0.8000	1.0000		
25	1.0000	1.0000	0.8000	1.0000		
50	0.0000	0.0000	0.4000	0.0000		
100	0.0000	0.0000	0.0000	0.0000		

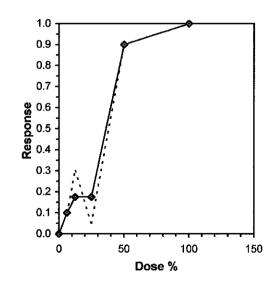
		_	Tra	ansform:	Arcsin Sc	uare Roo	t	Rank	1-Tailed	Isot	onic
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
N Control	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4			1.0000	1.0000
6.25	0.9000	0.9000	1.2262	1.1071	1.3453	11.212	4	14.00	10.00	0.9000	0.9000
12.5	0.7000	0.7000	1.0058	0.6847	1.3453	28.293	4	12.00	10.00	0.8250	0.8250
25	0.9500	0.9500	1.2857	1.1071	1.3453	9.261	4	16.00	10.00	0.8250	0.8250
*50	0.1000	0.1000	0.3403	0.2255	0.6847	67.468	4	10.00	10.00	0.1000	0.1000
100	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4			0.0000	0.0000

				Statistic	Critical	Skew	Kurt
distribu	tion (p >	0.01)		0.93173	0.868	0.50075	0.69758
med							
NOEC	LOEC	ChV	TU				
25	50	35.3553	4			_	
	ned IOEC	ned IOEC LOEC	OEC LOEC ChV	ned NOEC LOEC ChV TU	distribution (p > 0.01) 0.93173 med NOEC LOEC ChV TU	distribution (p > 0.01) 0.93173 0.868 ned	distribution (p > 0.01) 0.93173 0.868 0.50075 med NOEC LOEC ChV TU

Treatments vs N Control

				Linea	r Interpolatio	n (200 Resamples)
Point	%	SD	95% CL	(Exp)	Skew	
IC05*	3.125	2.835	0.625	11.458	4.3770	
IC10	6.250	5.802	1.250	37.334	2.4203	
IC15	10.417	8.731	1.250	37.323	0.4074	1.0
IC20	25.862	7.683	0.000	30.550	-0.7789	١,
IC25	27.586	4.717	1.448	32.020	-2.5762	0.9
IC40	32.759	1.763	27.241	37.501	0.0381	0.8 -
IC50	36.207	1.941	30.690	43.038	0.6614	0.7 1

^{*} indicates IC estimate less than the lowest concentration



Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

Start Date: 12/11/2006 End Date: 12/15/2006 Test ID: VCF1206093 Lab ID: CAABC Sample ID: Sample Type: CA0000000 EFF1-POTW

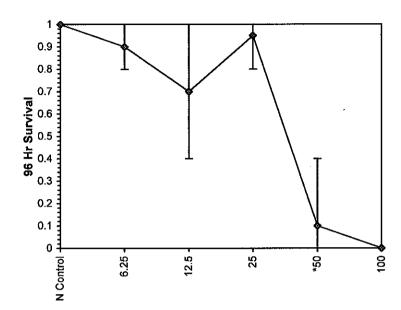
Sample Date: 12/9/2006 Comments: W-4 Revolon

Protocol: EPAA 85-EPA Acute

Test Species:

CD-Ceriodaphnia dubia

Dose-Response Plot



Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

Start Date: 12/11/2006 End Date: 12/15/2006 Test ID: VCF1206093 Lab ID: CAABC Sample ID: Sample Type: CA0000000 EFF1-POTW

Sample Date: 12/9/2006 Comments: W-4 Revolon

Protocol: EPAA 85-EPA Acute

Test Species:

CD-Ceriodaphnia dubia

Johnnenis.	VV-4 Revoluti		Au	xiliary Dat	a Summa	гу	
Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	24.40	24.00	25.10	0.61	3.20	3
6.25	•	24.37	24.00	24.90	0.47	2.82	3
12.5		24.40	24.00	24.80	0.40	2.59	3
25		24.30	24.00	24.50	0.26	2.12	3
50		24.10	24.00	24.20	0.10	1.31	3
100		24.00	24.00	24.00	0.00	0.00	2
N Control	рН	8.07	7.90	8.30	0.21	5.66	3
6.25		7.77	7.70	7.80	0.06	3.09	3
12.5		7.73	7.70	7.80	0.06	3.11	3
25		7.70	7.60	7.80	0.10	4.11	3
50		7.63	7.60	7.70	0.06	3.15	3
100		7.50	7.50	7.50	0.00	0.00	2
N Control	DO mg/L	7.33	6.70	8.00	0.65	11.00	3
6.25		6.43	4.50	8.40	1.95	21.71	3
12.5		6.23	4.70	7.80	1.55	19.97	3
25		6.23	4.80	7.50	1.36	18.69	3
50		6.13	4.80	7.10	1.19	17.81	3
100		6.45	5.90	7.00	0.78	13.67	2
N Control	Hardness mg/L	87.33	84.00	90.00	3.06	2.00	3
6.25		0.00	0.00	0.00	0.00		0
12.5		0.00	0.00	0.00	0.00		0
25		0.00	0.00	0.00	0.00		0
50		0.00	0.00	0.00	0.00		0
100		250.00	250.00	250.00	0.00	0.00	2
N Control	Alkalinitymg/L	60.00	60.00	60.00	0.00	0.00	3
6.25		0.00	0.00	0.00	0.00		0
12.5		0.00	0.00	0.00	0.00		0
25		0.00	0.00	0.00	0.00		0
50		0.00	0.00	0.00	0.00		0
100		74.00	74.00	74.00	0.00	0.00	2
N Control	Conductivity	345.33	342.00	347.00	2.89	0.49	3
6.25		392.33	388.00	401.00	7.51	0.70	3
12.5		415.00	406.00	433.00	15.59	0.95	3
25		538.00	537.00	540.00	1.73	0.24	3
50		706.00	704.00	710.00	3.46	0.26	3
100		1063.00	1063.00	1063.00	0.00	0.00	2



Ventura CountyWatershed Protection District NPDES Stormwater Monitoing Program

Grab Toxicity Samples - ABC

SAMPLING DAT	E:	EVENT #1 (Wet)													
SAMPLERS:															
SAMPLE INFOR	MATION	FOR GRAB SAM	MPLES												
SAMPLE		DATE/TIME		Acute Ceriodaphnia - 6.25, 12.5, 25, 50, 100%	Chronic Echinoderm Fertilization - 6.25, 12.5, ;							NOTES		Field H ₂ O Temp	
ID ME-CC	PAYS SALAS	COLLECTED	3:30	Y	x			w3143		YWY	entrales entrales	NOTES See Note 1		<u>u.</u>	
ME-SCR		12-10-06	- EXCENSE (PSG - 1 % N)		X		12 W.					See Note 1			
ME-VR2		12-10-06	13 4 6 7 10 10 10 1		Х	1000 M						See Note 1			
A-1 Wood		12-9-06	STATE TAXABLE CONTRACTORS	X					eralyingsi elektroni		96000 60000	See Note 2			
I-2 Ortega		12-9 h	personal designation of the second of	X								See Note 2			
R-1 Swan		MA 129m.	Wilder Control of the	X								See Note 2			
W-3 La Vista	ne operación Como como	12-4-06 2	radisanti holisidi sekali	X					asserie: Asserte:			See Note 2			
W-4 Revolon		12_9-06	contract soft statements	X						1501156 1501156 1511156		See Note 2			
Signature Printed Name Affiliation	ignature rinted Name Relinquished By: April 7 Illam DAVID F. THO MAS									Date/Time 12-10-06 03:00 12-10-06 04:00					
Printed Name Affiliation Date/Time 12-10-06										<i>030</i> ()				
1. Mass Er 2. Land Us	nmissi e: Run	us Materials, Quick tur on: No TIE for TIE if Tua (Ac	Chronicute) is	c Sa >1 f	amp or a	nv v	vet	or d	lry v	veat	her	event.			
12/15/ bn	106 a	1115h13	fred o	F	ul	chi	~ 7	Suj	nd-	(A)	Acr	apt =10-	o °C		



TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

January 19, 2007

Mr. Arnie Anselm Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009

Dear Mr. Anselm:

We received a sample from your staff in our laboratory on December 12, 2006, identified as W-4 Revolon. We conducted an initial acute toxicity test on this sample with the the water flea, *Ceriodaphnia dubia*, as directed in your NPDES permit.

The initial results on this sample exceeded 1.00 TUc. This result exceeded the limit set forth in your permit and triggered a TIE study. The initial component of the TIE process is to conduct a "baseline" test to determine the final TIE test dilutions. The "baseline" test was conducted and toxicity was reduced, TUa <1.00. Therefore, there was no purpose to continue with further TIE manipulations.

In conclusion, the fact that toxicity was observed in the initial chronic tests and reduced toxicity was observed during the "baseline" tests indicate that the toxicant was most likely associated with volatile compound(s). The compound(s) apparently dissipated to non-toxic levels between the time of the initiation of the initial chronic toxicity tests and the initiation of the "baseline" toxicity testing.

There will be no charges associated with the TIE investigation for this sample and no TIE report will be issued. The attached report are the results of the baseline test.

Please feel free to phone me at your convenience if you have any questions.

Sincerely.

Michael L Machuzak

Assistant Laboratory Director



NEW REPORT TO FOLLOW STATING & 1.43 TO

TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

February 23, 2007

Mr. Arnie Anselm Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009

Dear Mr. Anselm:

We received 4 samples from your staff in our laboratory on January 28, 2007, identified as USCR, ME-CC, ME-SCR, & ME-VR2. We conducted chronic toxicity tests on these samples with the the purple sea urchin, *Strongylocentrotus purpuratus*, as directed on the associated COC's. The COC's requested that we test sample concentrations of 6.25, 12.5, 25, 50, & 70%'s. These concentrations were tested. The final results for all samples produced TUc's of 1.43. This was the result of the maximum sample concentration being set at 70% not observed toxicity. None of the samples tested showed a statistical difference between the control and the maximum sample concentration, 70%. In most instances the percent fertilization in the 70% sample concentration was the same as or better than the controls. Further, by not including the 100% sample concentration in the dilution series the end result will always produce a TUc that exceeds 1. Based on these results no TIE's were performed.

We have discussed this with your staff and have changed the dilution series to include the 100% sample concentration for future tests. From now on the dilution series for all toxicity samples will be 6.25, 12.5, 25, 50, & 100%'s. This dilution series will be more effective in confirming that the TIE trigger of 1 TUc is exceeded.

Please feel free to phone me at your convenience if you have any questions.

Sincerely,

RECEIVED

Michael J Machuzak

FEB 2 7 2007

Assistant Laboratory Director

WATERSHED PROTECTION DIST.



TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

February 28, 2007

Mr. Arnie Anselm Ventura County Watershed Protection District 800 South Victoria Ave Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA-600/R95/136, 1995. Results were as follows:

CLIENT:

County of Ventura

SAMPLE I.D.:

ME-CC

DATE RECEIVED:

28 Jan - 07

ABC LAB. NO.:

VCF0107.260

CHRONIC SEA URCHIN FERTILIZATION BIOASSAY

NOEC = 70.00%

TUc = <1.43

IC25 = >70.00%

IC50 = >70.00%

Yours very truly,

Thomas (Tim) Mikel

Laboratory Director

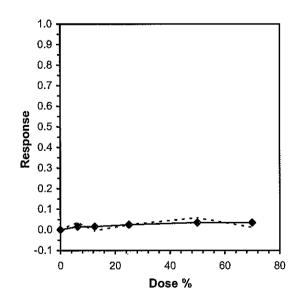
Sperm Cell Fertilization Test-Proportion Fertilized											
Start Date:	1/28/2007		Test ID:	VCF0107260	Sample ID:	CA000000					
End Date:	1/28/2007		Lab ID:	CAABC	Sample Type:	EFF1-POTW					
Sample Date:	1/27/2007		Protocol:	EPA600/R95/136	Test Species:	SP-Strongylocentrotus purpuratus					
Comments:	ME-CC										
Conc-%	1	2	3	4							
N Control	0.9400	0.8600	0.9100	0.8800							
6.25	0.8600	0.9300	0.9000	0.7700							
12.5	0.8300	0.9000	0.9300	0.9500							
25	0.9200	0.8800	0.8800	0.8200							
50	0.9000	0.8500	0.7200	0.9100							
70	0.9300	0.8700	0.8700	0.8800							

			Tra	ansform:	Arcsin Sc	uare Root	t		1-Tailed	Isotonic		
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
N Control	0.8975	1.0000	1.2484	1.1873	1.3233	4.771	4				0.8975	1.0000
6.25	0.8650	0.9638	1.2025	1.0706	1.3030	8.302	4	0.791	2.410	0.1399	0.8838	0.9847
12.5	0.9025	1.0056	1.2608	1.1458	1.3453	6.836	4	-0.213	2.410	0.1399	0.8838	0.9847
25	0.8750	0.9749	1.2127	1.1326	1.2840	5.113	4	0.616	2.410	0.1399	0.8750	0.9749
50	0.8450	0.9415	1.1754	1.0132	1.2661	9.820	4	1.259	2.410	0.1399	0.8663	0.9652
70	0.8875	0.9889	1.2310	1.2019	1.3030	3.944	4	0.301	2.410	0.1399	0.8663	0.9652

Auxiliary Tests					Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates nor		0.9405	9405 0.884			-0.594	-0.2549			
Bartlett's Test indicates equal var	iances (p =	0.72)			2.8884		15.0863			
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MŞDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	70	>70		1.42857	0.09856	0.10956	0.00394	0.00674	0.71173	5, 18

Treatments vs N Control

Trodunione	V3 14 OOHII OI		Line	ear Interpolation (200 Resamples)
Point	%	SD	95% CL(Exp)	Skew
IC05	>70			
IC10	>70			
IC15	>70			1.0
IC20	>70			0.9
IC25	>70			v. a]
IC40	>70			0.8
IC50	>70			0.7]



Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 1/28/2007 End Date:

1/28/2007

Test ID: VCF0107260 Lab ID: CAABC

Sample ID: Sample Type: CA000000 EFF1-POTW

Sample Date: 1/27/2007 Comments:

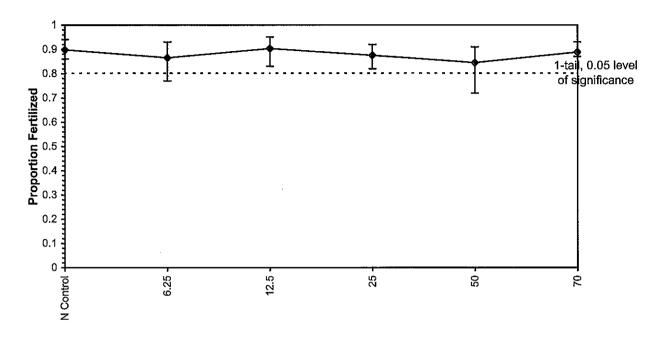
ME-CC

Protocol: EPA600/R95/136

Test Species:

SP-Strongylocentrotus purpuratus

Dose-Response Plot



Start Date: Test ID: VCF0107260 1/28/2007 End Date: 1/28/2007

CA000000 Sample ID: Lab ID: CAABC Sample Type: EFF1-POTW

Sample Date: 1/27/2007 Comments: ME-CC

Protocol: EPA600/R95/136

Test Species: SP-Strongylocentrotus purpuratus

			Aux	iliary Data	a Summa	ry	
Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	15.10	15.00	15.20	0.14	2.49	2
6.5		15.50	15.50	15.50	0.00	0.00	1
6.25		15.00	15.00	15.00	0.00	0.00	1
12.5		15.25	15.00	15.50	0.35	3.90	2
25		15.25	15.00	15.50	0.35	3.90	2
50		15.25	15.00	15.50	0.35	3.90	2
70		15.25	15.00	15.50	0.35	3.90	2
N Control	pН	7.70	7.70	7.70	0.00	0.00	2
6.5		7.70	7.70	7.70	0.00	0.00	1
6.25		7.70	7.70	7.70	0.00	0.00	1
12.5		7.70	7.70	7.70	0.00	0.00	2
25		7.70	7.70	7.70	0.00	0.00	2
50		7.75	7.70	7.80	0.07	3.43	2
70		7.80	7.70	7.90	0.14	4.82	2
N Control	DO mg/L	6.45	5.40	7.50	1.48	18.89	2
6.5		8.00	8.00	8.00	0.00	0.00	1
6.25		5.00	5.00	5.00	0.00	0.00	1
12.5		6.50	5.20	7.80	1.84	20.86	2
25		6.45	5.10	7.80	1.91	21.42	2
50		6.45	5.10	7.80	1.91	21.42	2
70		6.40	5.00	7.80	1.98	21.99	2
N Control	Salinity ppt	34.00	34.00	34.00	0.00	0.00	2
6. 5		34.00	34.00	34.00	0.00	0.00	1
6.25		34.00	34.00	34.00	0.00	0.00	1
12.5		34.00	34.00	34.00	0.00	0.00	2
25		34.00	34.00	34.00	0.00	0.00	2
50		34.00	34.00	34.00	0.00	0.00	2
70		34.00	34.00	34.00	0.00	0.00	2



February 28, 2007

Mr. Arnie Anselm Ventura County Watershed Protection District 800 South Victoria Ave Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA-600/R95/136, 1995*. Results were as follows:

CLIENT:

County of Ventura

SAMPLE I.D.:

ME-SCR

DATE RECEIVED:

28 Jan - 07

ABC LAB. NO.:

VCF0107.261

CHRONIC SEA URCHIN FERTILIZATION BIOASSAY

NOEC = 70.00%

TUc = <1.43

IC25 = >70.00%

IC50 = >70.00%

Yours very truly,

Thomas (Tim) Mikel Laboratory Director

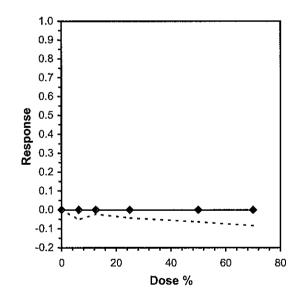
			S	perm Cell Fertilization	Test-Proportion Fertil	lized
Start Date:	1/28/2007		Test ID:	VCF0107261	Sample ID:	CA000000
End Date:	1/28/2007		Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	1/27/2007		Protocol:	EPA600/R95/136	Test Species:	SP-Strongylocentrotus purpuratus
Comments:	ME-SCR				·	
Conc-%	1	2	3	4		
N Control	0.8400	0.8400	0.8900	0.8700	1.1	
6.25	0.8800	0.9200	0.9400	0.8800		
12.5	0.8700	0.8200	0.8900	0.9400		
25	0.8800	0.9000	0.9200	0.8900		
50	0.9600	0.8400	0.9500	0.9100		
70	0.8900	0.9400	0.9700	0.9300		

			Transform: Arcsin Square Root						1-Tailed			Isotonic	
Conc-%	Mean	N-Mean [*]	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean	
N Control	0.8600	1.0000	1.1883	1.1593	1.2327	3.012	4				0.8983	1.0000	
6.25	0.9050	1.0523	1.2604	1.2171	1.3233	4.167	4	-1.590	2.410	0.1092	0.8983	1.0000	
12.5	0.8800	1.0233	1.2227	1.1326	1.3233	6.469	4	-0.758	2.410	0.1092	0.8983	1.0000	
25	0.8975	1.0436	1.2457	1.2171	1.2840	2.303	4	-1.267	2.410	0.1092	0.8983	1.0000	
50	0.9150	1.0640	1.2850	1.1593	1.3694	7.373	4	-2.134	2.410	0.1092	0.8983	1.0000	
70	0.9325	1.0843	1.3140	1.2327	1.3967	5.134	4	-2.772	2.410	0.1092	0.8983	1.0000	

Auxiliary Tests					Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates non	mal distribu	tion (p > (0.01)		0.97811	•	0.884		-0.1793	-0.1328
Bartlett's Test indicates equal var	iances (p =	0.42)			4.95401		15.0863			
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MŞDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	70	>70		1.42857	0.08361	0.09714	0.00796	0.00411	0.13759	5, 18
Treatments vs N Control										

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL(Exp)	Skew
IC05	>70			
IC10	>70			
IC15	>70			
IC20	>70			
IC25	>70			
1C40	>70			
IC50	>70			

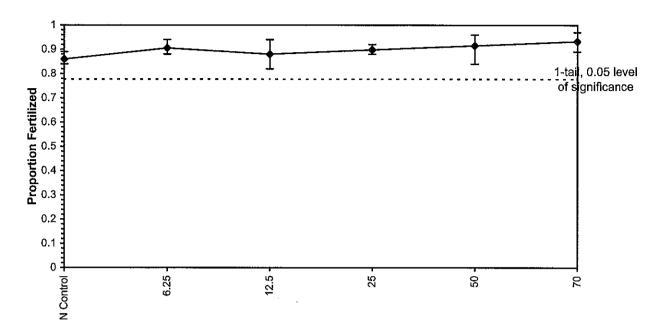


Start Date: 1/28/2007 Test ID: VCF0107261 Sample ID: CA000000 End Date: 1/28/2007 Lab ID: CAABC Sample Type:

Sample Date: 1/27/2007 Protocol: EPA600/R95/136 **EFF1-POTW**

Comments: ME-SCR **Test Species:**

SP-Strongylocentrotus purpuratus



Start Date: 1/28/2007 Test ID: VCF0107261

Sample ID:

CA000000

End Date: 1/28/2007 Sample Date: 1/27/2007

Lab ID: CAABC

Sample Type:

EFF1-POTW SP-Strongylocentrotus purpuratus

Protocol: EPA600/R95/136

Test Species:

				iliary Data			
Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	15.10	15.00	15.20	0.14	2.49	2
6.5		15.70	15.70	15.70	0.00	0.00	1
6.25		15.00	15.00	15.00	0.00	0.00	1
12.5		15.35	15.00	15.70	0.49	4.58	2
25		15.35	15.00	15.70	0.49	4.58	2
50		15.25	15.00	15.50	0.35	3.90	2
70		15.25	15.00	15.50	0.35	3.90	2
N Control	pН	7.70	7.70	7.70	0.00	0.00	2
6.5		7.80	7.80	7.80	0.00	0.00	1
6.25		7.80	7.80	7.80	0.00	0.00	1
12.5		7.80	7.80	7.80	0.00	0.00	2
25		7.80	7.80	7.80	0.00	0.00	2
50		7.85	7.80	7.90	0.07	3.39	2
70		7.90	7.80	8.00	0.14	4.76	2
N Control	DO mg/L	6.45	5.40	7.50	1.48	18.89	2
6.5		7.20	7.20	7.20	0.00	0.00	1
6.25		5.40	5.40	5.40	0.00	0.00	1
12.5		6.20	5.40	7.00	1.13	17.16	2
25		6.20	5.50	6.90	0.99	16.05	2
50		6.20	5.60	6.80	0.85	14.86	2
70		6.00	5.20	6.80	1.13	17.73	2
N Control	Salinity ppt	34.00	34.00	34.00	0.00	0.00	2
6.5		34.00	34.00	34.00	0.00	0.00	1
6.25		34.00	34.00	34.00	0.00	0.00	1
12.5		34.00	34.00	34.00	0.00	0.00	2
25		34.00	34.00	34.00	0.00	0.00	2
50		34.00	34.00	34.00	0.00	0.00	2
70		34.00	34.00	34.00	0.00	0.00	2



February 28, 2007

Mr. Arnie Anselm Ventura County Watershed Protection District 800 South Victoria Ave Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA-600/R95/136, 1995. Results were as follows:

CLIENT:

County of Ventura

SAMPLE I.D.:

ME-VR2

DATE RECEIVED:

28 Jan - 07

ABC LAB. NO.:

VCF0107.262

CHRONIC SEA URCHIN FERTILIZATION BIOASSAY

NOEC = 70.00%

TUc = <1.43

IC25 = >70.00%

IC50 = >70.00%

Yours very truly,

Laboratory Director

homas (Tim) Mike

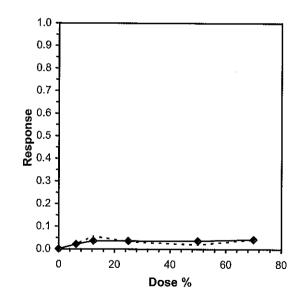
			S	perm Cell Fertilization	Test-Proportion Ferti	ized
Start Date:	1/28/2007		Test ID:	VCF0107262	Sample ID:	CA000000
End Date:	1/28/2007		Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	1/27/2007		Protocol:	EPA600/R95/136	Test Species:	SP-Strongylocentrotus purpuratus
Comments:	ME-VR2				•	0 ,
Conc-%	1	2	3	4		
N Control	0.9200	0.9200	0.9300	0.9500		
6.25	0.9300	0.9000	0.9200	0.8900		
12.5	0.9200	0.8400	0.8500	0.9000		
25	0.8900	0.9000	0.8600	0.9500		
50	0.9200	0.9200	0.9100	0.9000		
70	0.9300	0.9100	0.8600	0.8600		

		_	Tr	ansform:	Arcsin Sc	uare Roof	t	1-Tailed			Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
N Control	0.9300	1.0000	1.3041	1.2840	1.3453	2.214	4				0.9300	1.0000
6.25	0.9100	0.9785	1.2672	· 1.2327	1.3030	2.531	4	1.098	2.410	0.0809	0.9100	0.9785
*12.5	0.8775	0.9435	1.2164	1.1593	1.2840	4.928	4	2.612	2.410	0.0809	0.8967	0.9642
25	0.9000	0.9677	1.2536	1.1873	1.3453	5.303	4	1.504	2.410	0.0809	0.8967	0.9642
50	0.9125	0.9812	1.2708	1.2490	1.2840	1.321	4	0.991	2.410	0.0809	0.8967	0.9642
70	0.8900	0.9570	1.2359	1.1873	1.3030	4.705	4	2.029	2.410	0.0809	0.8900	0.9570

Auxiliary Tests				•	Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test Indicates nor	mal distribu	ition (p > 0	0.01)		0.96545		0.884		0.44708	-0.4388
Bartlett's Test indicates equal var	riances (p =	0.29)			6.15769		15.0863			
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	70	>70		1.42857	0.04661	0.05009	0.00369	0.00226	0.20129	5. 18
Treatments vs N Control										-,

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL(Exp)	Skew
IC05	>70			
IC10	>70			
IC15	>70			
IC20	>70			
IC25	>70			
IC40	>70			
IC50	>70			



Reviewed by:

Start Date: 1/28/2007 - End Date:

1/28/2007

Test ID: VCF0107262 Lab ID: CAABC

Sample ID: Sample Type:

CA000000 **EFF1-POTW**

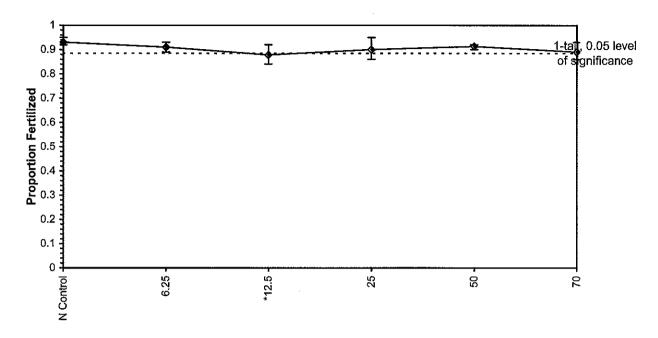
Sample Date: 1/27/2007 Comments:

ME-VR2

Protocol: EPA600/R95/136

Test Species:

SP-Strongylocentrotus purpuratus



1/28/2007 Start Date: - End Date:

1/28/2007

Test ID: VCF0107262 Lab ID: CAABC

Sample ID: Sample Type: Test Species: CA000000 EFF1-POTW

Sample Date: 1/27/2007 Comments:

ME-VR2

Protocol: EPA600/R95/136

SP-Strongylocentrotus purpuratus

			Aux	iliary Data	a Summa	ry	
Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	15.10	15.00	15.20	0.14	2.49	2
6.5	·	15.50	15.50	15.50	0.00	0.00	1
6.25		15.00	15.00	15.00	0.00	0.00	1
12.5		15.25	15.00	15.50	0.35	3.90	2
25		15.25	15.00	15.50	0.35	3.90	2
50		15.35	15.00	15.70	0.49	4.58	2
70		15.35	15.00	15.70	0.49	4.58	2
N Control	pН	7.70	7.70	7.70	0.00	0.00	2
6.5	•	7.80	7.80	7.80	0.00	0.00	1
6.25		7.80	7.80	7.80	0.00	0.00	1
12.5		7.80	7.80	7.80	0.00	0.00	2
25		7.80	7.80	7.80	0.00	0.00	2
50		7.85	7.80	7.90	0.07	3.39	2
70		7.90	7.80	8.00	0.14	4.76	2
N Control	DO mg/L	6.45	5.40	7.50	1.48	18.89	2
6.5		7.00	7.00	7.00	0.00	0.00	1
6.25		5.20	5.20	5.20	0.00	0.00	1
12.5		6.55	5.20	7.90	1.91	21.10	2
25		6.30	5.10	7.50	1.70	20.68	2
50		6.30	5.10	7.50	1.70	20.68	2
70		6.30	5.10	7.50	1.70	20.68	2
N Control	Salinity ppt	34.00	34.00	34.00	0.00	0.00	2
6.5		34.00	34.00	34.00	0.00	0.00	1
6.25		34.00	34.00	34.00	0.00	0.00	1
12.5		34.00	34.00	34.00	0.00	0.00	2
25		34.00	34.00	34.00	0.00	0.00	2
50		34.00	34.00	34.00	0.00	0.00	2
70		34.00	34.00	34.00	0.00	0.00	2



Ventura CountyWatershed Protection District NPDES Stormwater Monitoing Program

Grab Toxicity Samples - ABC

CLIEN	Γ: <u>Ventura C</u> LING DATE:		hed Protection	n Distr	ict	EVENT#	2 (Mot)			
SAMPL		27 JA DAVID	140MAS,	TON	1МЧ	LIDDE				
SAMPL	E INFORMATION	FOR GRAB	SAMPLES							
SAMF	PLE	DATE/TIME		Chronic Echinoderm Fertilization - 6.25, 12.5, 25, 50, 70%				5 gal. Buckets		Field H ₂ O Temp
[ID		COLLECTED	_	Chro				No. of	NOTES	Field
ME-C	C	01127107	1900	х				1	see note 1	14.9 %
f ME-S	CR	127107	1945	x				1	see note 1	13.304
ME-V	/R2	1127/07	2200	X		$\perp \perp$		1	see note 1	14.200
								ļ		
								<u> </u>		
Signature Printed N		X Ja	rul J		lom	~		e/Time - 28	-07 <i>9</i> 1:55	
Affiliation		VCWI								
	Received		2				1 1	e/Time	cers	
Printed N		Arnel R	gmos				<u> </u>			
Affiliation	<u> </u>	Agustic	Bionssry		•		1			
Miscellar	neous Notes (Hazardou	us Materials, Qui	ck turn-around tir	ne, etc.)	: 1 for	001/2 00	negouth	<i>1</i> 0 11:	ot woother events	
1. Mas	SS EMISSION: R	un HEITI	or 1 dry w) IS >	TIOT	any z co	nsecuii	e w	et weather events	5



March 9, 2007

Mr. Arnie Anselm Ventura County Watershed Protection District 800 South Victoria Ave Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA-600/R95/136, 1995.* Results were as follows:

CLIENT:

County of Ventura

SAMPLE I.D.:

ME-CC

DATE RECEIVED:

23 Feb - 07

ABC LAB. NO.:

VCF0207.282

CHRONIC SEA URCHIN FERTILIZATION BIOASSAY

NOEC = 100.00 %

TUc = 1.00

IC25 = >100.00%

IC50 = >100.00%

Yours very truly,

Thomas (Tim) Mikel Laboratory Director

			S	perm Cell Fertilizat	ion Test-Proportion Fertil	ized
Start Date:	2/23/2007		Test ID:	VCF0207282	Sample ID:	CA000000
End Date:	2/23/2007		Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	2/23/2007		Protocol:	EPA/600/R	Test Species:	SP-Strongylocentrotus purpuratus
Comments:	ME-CC					
Conc-%	1	2	3	4		
N Control	1.0000	1.0000	1.0000	1.0000		
6.25	1.0000	1.0000	1.0000	1.0000		
12.5	1.0000	1.0000	1.0000	1.0000		
25	1.0000	1.0000	1.0000	1.0000		
50	1.0000	1.0000	1.0000	1.0000		
100	1.0000	1.0000	1.0000	1.0000		

			Tra	ansform:	Arcsin Sc	juare Roof	:	Rank	1-Tailed	Isot	onic
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
N Control	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4			1.0000	1.0000
6.25	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
12.5	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
25	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
50	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
100	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000

Auxiliary Tests					Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates nor	mal distribu	ution (p > 0	0.01)		1	0.884		
Equality of variance cannot be co	onfirmed	**	•					
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU				
Steel's Many-One Rank Test	100	>100	*	1				,
Treatments vs N Control								

Linear Interpolation (200 Resamples) Point IC05 SD Skew % 95% CL(Exp) >100 IC10 >100 IC15 >100 1.0 IC20 >100 0.9 IC25 >100 8.0 IC40 >100 IC50 >100 0.7 9.0 0.5 0.4 0.4

0.3 -0.2 -0.1 -

0

50

Dose %

150

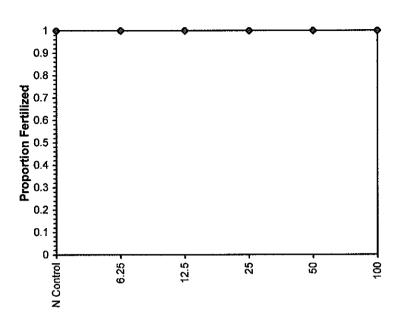
100

 Start Date:
 2/23/2007
 Test ID:
 VCF0207282
 Sample ID:
 CA000000

 End Date:
 2/23/2007
 Lab ID:
 CAABC
 Sample Type:
 EFF1-POTW

Sample Date: 2/23/2007 Protocol: EPA/600/R Test Species: SP-Strongylocentrotus purpuratus

Comments: ME-CC



Start Date: 2/23/2007 End Date: 2/23/2007

Test ID: VCF0207282

Sample ID:

CA000000 **EFF1-POTW**

Sample Date: 2/23/2007 Comments:

ME-CC

Lab ID: CAABC Protocol: EPA/600/R Sample Type: Test Species:

SP-Strongylocentrotus purpuratus

Aux	iliary	Data	Sumn	nary
 Min	Max	,	en.	C\/0/

			15.25 15.00 15.50 0.35 3.90 15.00 15.00 15.00 0.00 0.00 15.50 15.50 15.50 0.00 0.00 15.25 15.00 15.50 0.35 3.90 3.90 15.25 15.00 15.50 0.35 3.90 3.90 15.25 15.00 15.50 0.35 3.90 3.90 7.90 7.90 7.90 0.00 0.00 0.00 7.90 7.90 7.90 0.00 0.00 0.00 7.90 7.90 7.90 0.00 0.00 0.00 7.90 7.90 7.90 0.00 0.00 0.00 7.90 7.90 7.90 0.00 0.00 0.00 7.90 7.90 7.90 0.00 0.00 0.00 7.90 7.90 7.90 0.00 0.00 0.00 7.90 7.90 7.90 0.00 0.00 <t< th=""></t<>					
Conc-%	Parameter	Mean	Min	Max	SD	CV%	N	
N Control	Temp C	15.25	15.00	15.50	0.35	3.90	2	
6.5		15.00	15.00	15.00	0.00	0.00	1	
6.25		15.50	15.50	15.50	0.00	0.00	1	
12.5		15.25	15.00	15.50	0.35	3.90	2	
25		15.25	15.00	15.50	0.35	3.90	2	
50		15.25	15.00	15.50	0.35	3.90	2	
100		15.25	15.00	15.50	0.35	3.90	2	
N Control	pН	7.90	7.90	7.90	0.00	0.00	2	
6.5		7.90	7.90	7.90	0.00	0.00	1	
6.25		7.90	7.90	7.90	0.00	0.00	1	
12.5		7.90	7.90	7.90	0.00	0.00	2	
25		7.90	7.90	7.90	0.00	0.00	2	
50		7.90	7.90	7.90	0.00	0.00	2	
100		7.90	7.90	7.90	0.00	0.00	2	
N Control	DO mg/L	6.90	6.90	6.90	0.00	0.00	2	
6.5		8.10	8.10	8.10	0.00	0.00	1	
6.25		8.10	8.10	8.10	0.00	0.00	1	
12.5		8.10	8.10	8.10	0.00	0.00	2	
25		8.10	8.10	8.10	0.00	0.00	2	
50		8.10	8.10	8.10	0.00	0.00	2	
100		8.10	8.10	8.10	0.00	0.00	2	
N Control	Salinity ppt	34.00	34.00	34.00	0.00	0.00	2	
6.5		34.00	34.00	34.00	0.00	0.00	1	
6.25		34.00	34.00	34.00	0.00	0.00	1	
12.5		34.00	34.00	34.00	0.00	0.00	2	
25		34.00	34.00	34.00	0.00	0.00	2	
50		34.00	34.00	34.00	0.00	0.00	2	
100		34.00	34.00	34.00	0.00	0.00	2	



March 9, 2007

Mr. Arnie Anselm Ventura County Watershed Protection District 800 South Victoria Ave Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA-600/R95/136, 1995.* Results were as follows:

CLIENT:

County of Ventura

SAMPLE I.D.:

ME-SCR

DATE RECEIVED:

23 Feb - 07

ABC LAB. NO.:

VCF0207.283

CHRONIC SEA URCHIN FERTILIZATION BIOASSAY

NOEC = 50.00 %

TUc = 2.00

IC25 = >100.00%

IC50 = >100.00%

Yours very truly,

Thomas (Tim) Mikel Laboratory Director

			S	perm Cell Fertili:	ation Test-Proportion Fertilized	
Start Date:	2/23/2007		Test ID:	VCF0207283	Sample ID: CA000	000
End Date:	2/23/2007		Lab ID:	CAABC	Sample Type: EFF1-I	POTW
Sample Date:	2/23/2007		Protocol:	EPA/600/R	Test Species: SP-Str	ongylocentrotus purpuratus
Comments:	ME-SCR					
Conc-%	1	2	3	4		
N Control	1.0000	1.0000	1.0000	1.0000		
6.25	1.0000	1.0000	1.0000	1.0000		
12.5	1.0000	1.0000	1.0000	1.0000		
25	1.0000	1.0000	1.0000	1.0000		
50	1.0000	1.0000	1.0000	0.9700		
100	0.9900	0.9600	0.9500	0.9800		

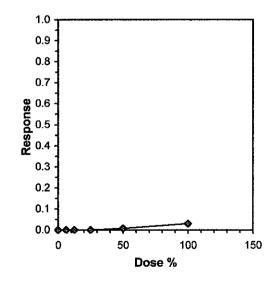
			Tra	ansform:	Arcsin Sc	uare Roo	t	Rank	1-Tailed	lsot	onic
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
N Control	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4		·	1.0000	1.0000
6.25	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
12.5	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
25	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
50	0.9925	0.9925	1.4898	1.3967	1.5208	4.164	4	16.00	10.00	0.9925	0.9925
*100	0.9700	0.9700	1.4036	1.3453	1.4706	4.051	4	10.00	10.00	0.9700	0.9700

Auxiliary Tests				٠	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates nor	n-normal di	stribution	(p <= 0.01)		0.76485	0.884	-1.0743	3.92896
Equality of variance cannot be co	onfirmed		-					
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU				
Steel's Many-One Rank Test	50	100	70.7107	2				
Treatments vs N Control								

Treatments vs N Control

Linear Interpolation (200 Resamples)

Point SD 95% CL(Exp) Skew % IC05 >100 IC10 >100 IC15 IC20 >100 >100 IC25 >100 IC40 >100 IC50 >100



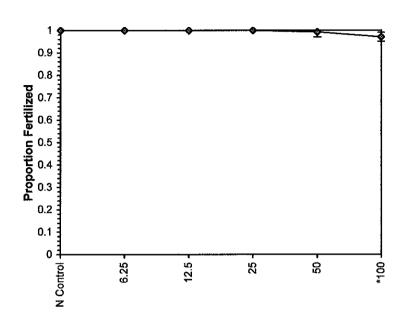
Sperm Cell Fertilization Test-Proportion Fertilized

Test ID: VCF0207283 Sample ID: CA000000

Lab ID: CAABC Sample Type: EFF1-POTW

Protocol: EPA/600/R Test Species: SP-Strongylocentrotus purpuratus

Dose-Response Plot



Start Date:

End Date:

Comments:

Sample Date: 2/23/2007

2/23/2007

2/23/2007

ME-SCR

Start Date: 2/23/2007 Test ID: VCF0207283 Sample ID: CA000000

End Date: 2/23/2007 Lab ID: CAABC Sample Type: EFF1-POTW

Sample Date: 2/23/2007 Protocol: EPA/600/R Test Species: SP-Strongylocentrotus purpuratus

34.00

34.00

34.00

Comments: ME-SCR

100

Auxiliary Data Summary CV% N Conc-% Mean Min Max SD **Parameter** 3.90 15.25 15.00 15.50 0.35 2 N Control Temp C 6.5 15.00 15.00 15.00 0.00 0.00 1 6.25 15.50 15.50 0.00 0.00 1 15.50 3.90 2 12.5 15.25 15.00 15.50 0.35 0.35 3.90 2 15.25 15.00 15.50 25 3.90 2 50 15.25 15.50 0.35 15.00 0.35 3.90 2 100 15.25 15.00 15.50 7.90 7.90 7.90 0.00 0.00 2 N Control рH 7.90 7.90 7.90 0.00 0.00 1 6.5 7.90 7.90 7.90 0.00 0.00 1 6.25 7.90 0.00 0.00 2 12.5 7.90 7.90 2 25 7.90 7.90 7.90 0.00 0.00 2 50 7.90 7.90 7.90 0.00 0.00 0.00 0.00 2 7.90 7.90 7.90 100 0.00 2 DO mg/L 6.90 6.90 6.90 0.00 N Control 8.40 8.40 8.40 0.00 0.00 1 6.5 6.25 8.40 8.40 8.40 0.00 0.00 1 0.00 0.00 2 12.5 8.40 8.40 8.40 2 0.00 0.00 25 8.40 8.40 8.40 2 0.00 0.00 50 8.40 8.40 8.40 2 100 8.40 8.40 8.40 0.00 0.00 Ž N Control Salinity ppt 34.00 34.00 34.00 0.00 0.00 34.00 34.00 34.00 0.00 0.00 1 6.5 34.00 34.00 0.00 0.00 1 34.00 6.25 0.00 0.00 2 12.5 34.00 34.00 34.00 2 0.00 25 34.00 34.00 34.00 0.00 2 34.00 34.00 34.00 0.00 0.00 50

0.00

0.00



March 9, 2007

Mr. Arnie Anselm Ventura County Watershed Protection District 800 South Victoria Ave Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA-600/R95/136, 1995.* Results were as follows:

CLIENT:

County of Ventura

SAMPLE I.D.:

ME-VR2

DATE RECEIVED:

23 Feb - 07

ABC LAB. NO.:

VCF0207.284

CHRONIC SEA URCHIN FERTILIZATION BIOASSAY

NOEC = 50.00%

TUc = 2.00

IC25 = >100.00 %

IC50 = >100.00%

Yours very truly,

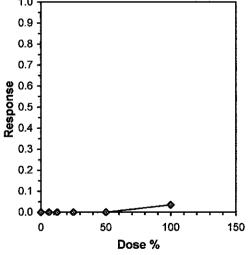
Thomas (Tim) Mikel Laboratory Director

			S	perm Cell Fer	ilization Test-Proportion Ferti	lized
Start Date:	2/23/2007		Test ID:	VCF0207284	Sample ID:	CA000000
End Date:	2/23/2007		Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	2/23/2007		Protocol:	EPA/600/R	Test Species:	SP-Strongylocentrotus purpuratus
Comments:	ME-VR2					
Conc-%	1	2	3	4		
N Control	1.0000	1.0000	1.0000	1.0000		
6.25	1.0000	1.0000	1.0000	1.0000		
12.5	1.0000	1.0000	1.0000	1.0000		
25	1.0000	1.0000	1.0000	1.0000		
50	1.0000	1.0000	1.0000	1.0000		
100	0.9600	0.9700	0.9800	0.9500		

			Tra	ansform:	Arcsin Sc	uare Root	t	Rank	1-Tailed	Isot	onic
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
N Control	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4			1.0000	1.0000
6.25	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
12.5	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
25	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
50	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
*100	0.9650	0.9650	1.3851	1.3453	1.4289	2.598	4	10.00	10.00	0.9650	0.9650

Auxiliary Tests	•				Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates nor	n-normal dis	stribution	(p <= 0.01)		0.54525	0.884	0.40667	8.98681
Equality of variance cannot be co	nfirmed							
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU				
Steel's Many-One Rank Test	50	100	70.7107	2				
Treatments vs N Control								

Linear Interpolation (200 Resamples)
p) Skew Point SD 95% CL(Exp) % >100 IC05 IC10 >100 IC15 >100 1.0 IC20 IC25 IC40 >100 0.9 >100 8.0 >100 IC50 >100 0.7



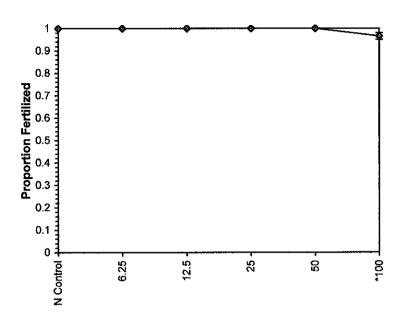
Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 2/23/2007 Test ID: VCF0207284 Sample ID: CA000000

End Date: 2/23/2007 Lab ID: CAABC Sample Type: EFF1-POTW

Sample Date: 2/23/2007 Protocol: EPA/600/R Test Species: SP-Strongylocentrotus purpuratus

Comments: ME-VR2



Start Date: 2/23/2007 End Date: 2/23/2007

2007 Test ID: VCF0207284 2007 Lab ID: CAABC Sample ID: Sample Type: CA000000 EFF1-POTW

End Date: 2/23/2007 Sample Date: 2/23/2007

Protocol: EPA/600/R

Test Species:

SP-Strongylocentrotus purpuratus

Comments: ME-VR2

			Aux	iliary Data	a Summa	ry	
Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	15.25	15.00	15.50	0.35	3.90	2
6.5	·	15.00	15.00	15.00	0.00	0.00	1
6.25		15.50	15.50	15.50	0.00	0.00	1
12.5		15.25	15.00	15.50	0.35	3.90	2
25		15.25	15.00	15.50	0.35	3.90	2
50		15.25	15.00	15.50	0.35	3.90	2
100		15.25	15.00	15.50	0.35	3.90	2
N Control	рН	7.90	7.90	7.90	0.00	0.00	2
6.5	•	8.00	8.00	8.00	0.00	0.00	1
6.25		8.00	8.00	8.00	0.00	0.00	1
12.5		8.00	8.00	8.00	0.00	0.00	2
25		8.00	8.00	8.00	0.00	0.00	2
50		8.00	8.00	8.00	0.00	0.00	2
100		8.00	8.00	8.00	0.00	0.00	2
N Control	DO mg/L	6.90	6.90	6.90	0.00	0.00	2
6.5		8.50	8.50	8.50	0.00	0.00	1
6.25		8.50	8.50	8.50	0.00	0.00	1
12.5		8.50	8.50	8.50	0.00	0.00	2
25		8.50	8.50	8.50	0.00	0.00	2
50		8.50	8.50	8.50	0.00	0.00	2
100		8.50	8.50	8.50	0.00	0.00	2
N Control	Salinity ppt	34.00	34.00	34.00	0.00	0.00	2
6.5		34.00	34.00	34.00	0.00	0.00	1
6.25		34.00	34.00	34.00	0.00	0.00	1
12.5		34.00	34.00	34.00	0.00	0.00	2
25		34.00	34.00	34.00	0.00	0.00	2
50		34.00	34.00	34.00	0.00	0.00	2
100		34.00	34.00	34.00	0.00	0.00	2



CHRONIC SEA URCHIN DEVELOPMENT BIOASSAY

DATE:

23 February - 07

STANDARD TOXICANT:

Copper Chloride

NOEC =

180.00 ug/l

IC25 =

>180.00 ug/l

IC50 =

>180.00 ug/l

Yours very truly,

Thomas (Tim) Mikel Laboratory Director

			Sı	oerm Cell Fertilizatio	n Test-Proportion Fertil	ized
Start Date:	2/23/2007		Test ID:	URC022307	Sample ID:	REF-Ref Toxicant
End Date:	2/23/2007		Lab ID:	ABC LABORA	Sample Type:	CUCL-Copper chloride
Sample Date:	2/23/2007		Protocol:	EPA/600/R	Test Species:	SP-Strongylocentrotus purpuratus
Comments:	Standard 7	Toxicant				
Conc-ug/L	1	2	3	4		
Control	1.0000	1.0000	1.0000	1.0000		
18	1.0000	1.0000	1.0000	1.0000		
32	1.0000	1.0000	1.0000	1.0000		
56	0.9200	1.0000	1.0000	1.0000		
100	0.9400	1.0000	1.0000	0.9700		
180	0.9600	1.0000	0.9800	0.9400		

			Tra	ansform:	Arcsin Sc	uare Root	:	Rank	1-Tailed	Isot	onic
Conc-ua/L	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
Control	1.0000	1.0000	1,5208	1.5208	1.5208	0.000	4			1.0000	1.0000
18	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
32	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
56	0.9800	0.9800	1.4616	1.2840	1.5208	8.099	4	16.00	10.00	0.9800	0.9800
100	0.9775	0.9775	1.4404	1.3233	1.5208	6.771	4	14.00	10.00	0.9775	0.9775
, 180	0.9700	0.9700	1.4106	1.3233	1.5208	6.041	4	12.00	10.00	0.9700	0.9700

Auxiliary Tests					Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates nor	n-normal di	stribution (p <= 0.01))	0.87758	0.884	-0.9351	1.86693
Equality of variance cannot be co						<u></u>		
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	ΤŲ			· · · · · · · · · · · · · · · · · · ·	<u> </u>
Steel's Many-One Rank Test	180	>180						
Treatments vs Control								

			Line	ar Interpolation	on (200 Resam	ıples)			
Point	ug/L	SD	95% CL(Exp)	Skew					
C05	>180								
C10	>180								
C15	>180				1.0	1			7
C20	>180				0.9	1			
C25	>180					1			1
C40	>180				0.8	1			
C50	>180				0.7	4			
					9 0.6	1			
					6 0.5	1			
					9.0.6 0.5 0.4]			
					0.3	}			
					0.2	}			1
					0.1	}			
					0.0	\$-0-0		*****	Н
						0 50	100	150	200

Dose ug/L

Start Date: End Date:

2/23/2007 2/23/2007 Test ID: URC022307

Sample Type: Lab ID: ABC LABORA

REF-Ref Toxicant

CUCL-Copper chloride

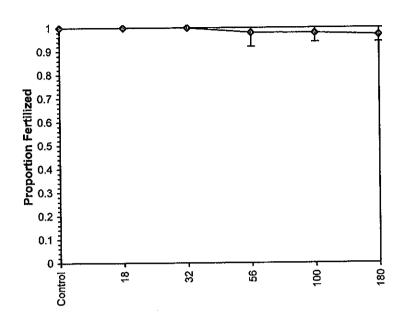
Comments:

Sample Date: 2/23/2007 Standard Toxicant

Protocol: EPA/600/R

Test Species:

SP-Strongylocentrotus purpuratus



Start Date: End Date:

2/23/2007 2/23/2007

Test ID: URC022307 Lab ID: ABC LABORA Sample ID: Sample Type: REF-Ref Toxicant

CUCL-Copper chloride

Comments

Sample Date: 2/23/2007 Standard Toxicant

Protocol: EPA/600/R

Test Species:

SP-Strongylocentrotus purpuratus

Comments:	Standard Loxicant		A - 1 -	ilianı Datı	Cumma	m.	
Cono uall	Parameter	Mean	Min	iliary Data Max	SD SUMME	CV%	N
Conc-ug/L Control	Temp C	15.25	15.00	15.50	0.35	3.90	2
18	temp C	15.25	15.00	15.50	0.35	3.90	2
32		15.25	15.00	15.50	0.35	3.90	2
56		15.25	15.00	15.50	0.35	3.90	2
100		15.25	15.00	15.50	0.35	3.90	2
180		15.25	15.00	15.50	0.35	3.90	2
Control	рН	7.90	7.90	7.90	0.00	0.00	2
18	P	7.90	7.90	7.90	0.00	0.00	2
32		7.90	7.90	7.90	0.00	0.00	2
56		7.90	7.90	7.90	0.00	0.00	2
100		7.90	7.90	7.90	0.00	0.00	2
180		7.90	7.90	7.90	0.00	0.00	2
Control	Diss Oxygen	6.90	6.90	6.90	0.00	0.00	2
18	,,,	7.00	7.00	7.00	0.00	0.00	2
32		7.00	7.00	7.00	0.00	0.00	2
56		7.00	7.00	7.00	0.00	0.00	2
100		7.00	7.00	7.00	0.00	0.00	2
180		7.00	7.00	7.00	0.00	0.00	2
Control	Salinity ppt	34.00	34.00	34.00	0.00	0.00	2
18		34.00	34.00	34.00	0.00	0.00	2
32		34.00	34.00	34.00	0.00	0.00	2
56		34.00	34.00	34.00	0.00	0.00	2
100		34.00	34.00	34.00	0.00	0.00	2
180		34.00	34.00	34.00	0.00	0.00	2



September 7, 2007

Mr. Arnie Anselm Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009

Dear Mr. Anselm:

We received three samples from your staff in our laboratory on May 15, 2007, identified as **ME-CC**, **ME-SCR**, & **ME-VR2**. We conducted initial chronic toxicity tests on these samples with the purple sea urchin, *Strongylocentrotus purpuratus*, as directed in your NPDES permit.

The initial results on samples **ME-SCR** and **ME-VR2** exceeded 1.00 TUc in the chronic sea urchin test. This result exceeded the limit set forth in your permit and triggered a TIE study. The initial component of the TIE process is to conduct a "baseline" test to determine the final TIE test dilutions. The "baseline" test was conducted and toxicity was reduced, TUa <1.00. Therefore, there was no purpose to continue with further TIE manipulations.

In conclusion, the fact that toxicity was observed in the initial chronic tests and reduced toxicity was observed during the "baseline" tests indicate that the toxicant was most likely associated with volatile compound(s). The compound(s) apparently dissipated to non-toxic levels between the time of the initiation of the initial chronic toxicity tests and the initiation of the "baseline" toxicity testing.

There will be no charges associated with the TIE investigation for this sample and no TIE report will be issued. The attached report are the results of the baseline test.

Please feel free to phone me at your convenience if you have any questions.

Sincerely,

Michael Machuzak

Michael Machuzak

Assistant Laboratory Director



May 29, 2007

Mr. Arnie Anselm Ventura County Watershed Protection District 800 South Victoria Ave Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA-600/R95/136, 1995*. Results were as follows:

CLIENT:

County of Ventura

SAMPLE I.D.:

ME-CC

DATE RECEIVED:

15 May - 07

ABC LAB. NO.:

VCF0507.188

CHRONIC SEA URCHIN FERTILIZATION BIOASSAY

NOEC = 100.00 %

TUc = 1.00

IC25 = >100.00 %

IC50 = >100.00 %

Yours very truly,

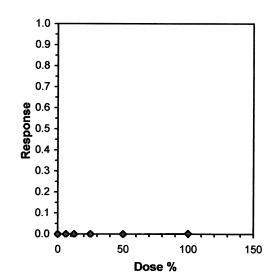
Thomas (Tim) Mikel Laboratory Director

			S	perm Cell Fer	tilization Test-Proportion Fertilized
Start Date:	5/15/2007		Test ID:	VCF0507188	Sample ID: CA000000
End Date:	5/15/2007		Lab ID:	CAABC	Sample Type: EFF1-POTW
Sample Date:	5/15/2007		Protocol:	EPA/600/R	Test Species: SP-Strongylocentrotus purpuratus
Comments:	ME-CC				
Conc-%	1	2	3	4	
N Control	1.0000	1.0000	1.0000	1.0000	
6.25	1.0000	1.0000	1.0000	1.0000	
12.5	1.0000	1.0000	1.0000	1.0000	
25	1.0000	1.0000	1.0000	1.0000	
50	1.0000	1.0000	1.0000	1.0000	
100	0.9900	1.0000	1.0000	1.0000	

		_	Tra	ansform:	Arcsin Sc	quare Roo	t	Rank	1-Tailed	Isot	onic
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
N Control	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4			1.0000	1.0000
6.25	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
12.5	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
25	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
50	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
100	0.9975	0.9975	1.5082	1.4706	1.5208	1.662	4	16.00	10.00	0.9975	0.9975

Auxiliary Tests					Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates nor	n-normal di	stribution ($(p \le 0.01)$)	0.46508	0.884	-3.0206	13.9892
Equality of variance cannot be co	onfirmed		. ,					
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU			· · · · · · · · · · · · · · · · · · ·	
Steel's Many-One Rank Test	100	>100		1			· · · · · · · · · · · · · · · · · · ·	
Treatments vs N Control								

		Line	ear Interpolation (200 Resamples)
%	SD	95% CL(Exp)	Skew
>100			
>100			
>100			1.0
>100			<u></u>
>100			0.9
>100			0.8 -
>100			0.7 :
	>100 >100 >100 >100 >100 >100 >100	>100 >100 >100 >100 >100 >100 >100	% SD 95% CL(Exp) >100 >100 >100 >100 >100 >100 >100 >10



Sperm Cell Fertilization Test-Proportion Fertilized
Test ID: VCF0507188 Sample ID: C/ CA000000 Sample Type: Lab ID: CAABC **EFF1-POTW** SP-Strongylocentrotus purpuratus

5/15/2007

5/15/2007

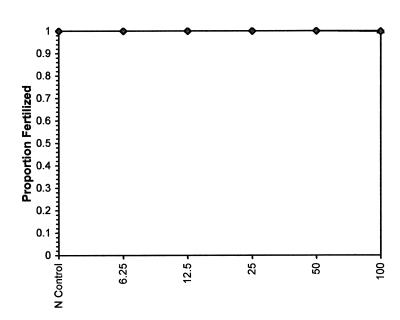
Protocol: EPA/600/R

Test Species:

Sample Date: 5/15/2007 Comments: ME-CC

Start Date:

End Date:



5/15/2007 Start Date: 5/15/2007 End Date:

Test ID: VCF0507188

Sample ID: Sample Type: CA000000 **EFF1-POTW**

Sample Date: 5/15/2007

Lab ID: CAABC Protocol: EPA/600/R

Test Species:

SP-Strongylocentrotus purpuratus

Comments: ME-CC

	Aux	iliary Data	a Summa	ry
	Min	Max	SD	CV%
5	15.00	15.50	0.35	3.9

			Aux	ciliary Data	a Summa	ry	
Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	15.25	15.00	15.50	0.35	3.90	2
6.5	·	15.50	15.50	15.50	0.00	0.00	1
6.25		15.00	15.00	15.00	0.00	0.00	1
12.5		15.25	15.00	15.50	0.35	3.90	2
25		15.25	15.00	15.50	0.35	3.90	2
50		15.25	15.00	15.50	0.35	3.90	2
100		15.25	15.00	15.50	0.35	3.90	2
N Control	рН	7.95	7.90	8.00	0.07	3.34	2
6.5	•	7.90	7.90	7.90	0.00	0.00	1
6.25		7.90	7.90	7.90	0.00	0.00	1
12.5		7.90	7.90	7.90	0.00	0.00	2
25		7.90	7.90	7.90	0.00	0.00	2
50		7.90	7.90	7.90	0.00	0.00	2
100		7.90	7.90	7.90	0.00	0.00	2
N Control	DO mg/L	6.45	5.90	7.00	0.78	13.67	2
6.5	· ·	7.10	7.10	7.10	0.00	0.00	1
6.25		6.00	6.00	6.00	0.00	0.00	1
12.5		6.50	5.90	7.10	0.85	14.17	2
25		6.50	5.90	7.10	0.85	14.17	2
50		6.50	5.80	7.20	0.99	15.31	2
100		6.60	5.80	7.40	1.13	16.12	2
N Control	Salinity ppt	34.00	34.00	34.00	0.00	0.00	2
6.5		34.00	34.00	34.00	0.00	0.00	1
6.25		34.00	34.00	34.00	0.00	0.00	1
12.5		34.00	34.00	34.00	0.00	0.00	2
25		34.00	34.00	34.00	0.00	0.00	2
50		34.00	34.00	34.00	0.00	0.00	2
100		34.00	34.00	34.00	0.00	0.00	2



May 29, 2007

Mr. Arnie Anselm Ventura County Watershed Protection District 800 South Victoria Ave Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA-600/R95/136, 1995.* Results were as follows:

CLIENT:

County of Ventura

SAMPLE I.D.:

ME-SCR

DATE RECEIVED:

15 May - 07

ABC LAB. NO.:

VCF0507.189

CHRONIC SEA URCHIN FERTILIZATION BIOASSAY

NOEC = 50.00 %

TUc = 2.00

IC25 = 62.50 %

IC50 = 75.00%

Yours very truly,

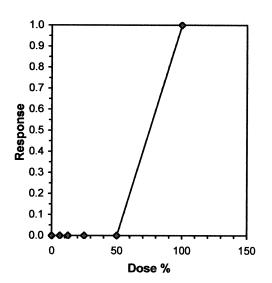
Thomas (Tim) Mikel Laboratory Director

			S	perm Cell Fer	rtilization Test-Proportion Fertilized
Start Date:	5/15/2007		Test ID:	VCF0507189	Sample ID: CA000000
End Date:	5/15/2007		Lab ID:	CAABC	Sample Type: EFF1-POTW
Sample Date:	5/15/2007		Protocol:	EPA/600/R	Test Species: SP-Strongylocentrotus purpuratus
Comments:	ME-SCR				
Conc-%	1	2	3	4	
N Control	1.0000	1.0000	1.0000	1.0000	
6.25	1.0000	1.0000	1.0000	1.0000	
12.5	1.0000	1.0000	1.0000	1.0000	
25	1.0000	1.0000	1.0000	1.0000	
50	1.0000	1.0000	1.0000	1.0000	
100	0.0000	0.0000	0.0000	0.0000	

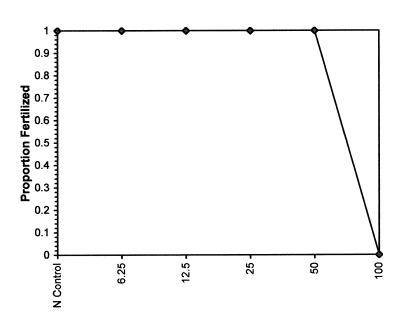
		_	Tra	ansform:	Arcsin Sc	uare Root	t	Rank	1-Tailed	Isot	onic
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
N Control	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4			1.0000	1.0000
6.25	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
12.5	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
25	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
50	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
100	0.0000	0.0000	0.0500	0.0500	0.0500	0.000	4			0.0000	0.0000

Auxiliary Tests					Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates no	mal distribu	ution (p >	0.01)		1	0.868		
Equality of variance cannot be co	onfirmed		•					
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU				
Steel's Many-One Rank Test	50	100	70.7107	2				,
Treatments vs N Control								

				Linea	ar Interpola	tion (200 Resamples)
Point	%	SD	95% CL	.(Exp)	Skew	
IC05	52.500	0.000	52.500	52.500	#DIV/0!	
IC10	55.000	0.000	55.000	55.000	#DIV/0!	
IC15	57.500	0.000	57.500	57.500	#DIV/0!	1.0
IC20	60.000	0.000	60.000	60.000	#DIV/0!	201
IC25	62.500	0.000	62.500	62.500	#DIV/0!	0.9
IC40	70.000	0.000	70.000	70.000	#DIV/0!	0.8
IC50	75.000	0.000	75.000	75.000	#DIV/0!	0.7
						0



Start Date: 5/15/2007 Test ID: VCF0507189 Sample ID: CA000000
End Date: 5/15/2007 Lab ID: CAABC Sample Type: EFF1-POTW
Sample Date: 5/15/2007 Protocol: EPA/600/R Test Species: SP-Strongylocentrotus purpuratus
Comments: ME-SCR



Start Date: 5/15/2007 End Date: 5/15/2007

Test ID: VCF0507189 Lab ID: CAABC

Sample ID: Sample Type: CA000000 **EFF1-POTW**

Sample Date: 5/15/2007 MF-SCR Comments:

Protocol: EPA/600/R

Test Species:

SP-Strongylocentrotus purpuratus

Conc-% Parameter Mean Min Max SD CV% N N Control Temp C 15.25 15.00 15.50 0.35 3.90 2 6.5 15.50 15.50 15.50 0.00 0.00 1 6.25 15.00 15.00 15.50 0.35 3.90 2 12.5 15.25 15.00 15.50 0.35 3.90 2 25 15.25 15.00 15.50 0.35 3.90 2 100 15.25 15.00 15.50 0.35 3.90 2 N Control pH 8.00 8.00 15.50 0.35 3.90 2 N Control pH 8.00 8.00 8.00 0.00 0.00 2 15.25 7.90 7.90 7.90 0.00 0.00 1 6.25 7.90 7.90 7.90 0.00 0.00 2 25 7.90	Comments:	ME-SCR						
N Control Temp C 15.25 15.00 15.50 0.35 3.90 2 6.5 15.50 15.50 15.50 0.00 0.00 1 6.25 15.00 15.00 15.00 0.00 0.00 0.00 12.5 15.25 15.00 15.50 0.35 3.90 2 25 15.25 15.00 15.50 0.35 3.90 2 100 15.25 15.00 15.50 0.35 3.90 2 100 15.25 15.00 15.50 0.35 3.90 2 100 15.25 15.00 15.50 0.35 3.90 2 N Control pH 8.00 8.00 8.00 0.00 0.00 0.00 2 6.5 7.90 7.90 7.90 0.00 0.00 1 1 6.25 7.90 7.90 7.90 0.00 0.00 2 1 0 0 0								
6.5	Conc-%	Parameter	Mean	Min	Max	SD	CV%	
15.00	N Control	Temp C	15.25	15.00	15.50	0.35	3.90	2
12.5	6.5		15.50	15.50	15.50	0.00	0.00	1
25 15.25 15.00 15.50 0.35 3.90 2 50 15.25 15.00 15.50 0.35 3.90 2 100 15.25 15.00 15.50 0.35 3.90 2 N Control pH 8.00 8.00 8.00 0.00 0.00 0.00 2 6.5 7.90 7.90 7.90 7.90 0.00 0.00 0.00 1 6.25 7.90 7.90 7.90 7.90 0.00 0.00 1 12.5 7.90 7.90 7.90 0.00 0.00 2 25 7.90 7.90 7.90 0.00 0.00 2 100 7.90 7.90 7.90 0.00 0.00 2 N Control DO mg/L 6.45 5.90 7.00 0.78 13.67 2 6.5 7.10 7.10 7.10 7.10 0.00 0.00 1 12.5 6.45 5.90 7.00 0.78 13.67 2	6.25		15.00	15.00	15.00			
50 15.25 15.00 15.50 0.35 3.90 2 100 15.25 15.00 15.50 0.35 3.90 2 N Control pH 8.00 8.00 8.00 0.00 0.00 0.00 2 6.5 7.90 7.90 7.90 0.00 0.00 1 6.25 7.90 7.90 7.90 0.00 0.00 1 12.5 7.90 7.90 7.90 0.00 0.00 2 25 7.90 7.90 7.90 7.90 0.00 0.00 2 50 7.90 7.90 7.90 7.90 0.00 0.00 2 N Control DO mg/L 6.45 5.90 7.00 0.78 13.67 2 6.5 7.10 7.10 7.10 7.10 0.00 0.00 1 6.25 5.90 5.90 5.90 0.00 0.00 1 12.5	12.5		15.25	15.00	15.50	0.35	3.90	
N Control pH 8.00 8.00 8.00 0.00 0.00 2	25		15.25	15.00	15.50	0.35	3.90	2
N Control pH 8.00 8.00 8.00 0.00 0.00 2 6.5 7.90 7.90 7.90 7.90 0.00 0.00 1 6.25 7.90 7.90 7.90 7.90 0.00 0.00 1 12.5 7.90 7.90 7.90 0.00 0.00 2 25 7.90 7.90 7.90 0.00 0.00 2 50 7.90 7.90 7.90 0.00 0.00 2 100 7.90 7.90 7.90 0.00 0.00 2 N Control DO mg/L 6.45 5.90 7.00 0.78 13.67 2 6.5 7.10 7.10 7.10 0.00 0.00 1 6.25 5.90 5.90 5.90 0.00 0.00 1 12.5 6.45 5.90 7.00 0.78 13.67 2 25 6.45 6.00	50		15.25	15.00	15.50	0.35	3.90	2
6.5 7.90 7.90 7.90 7.90 0.00 0.00 1 6.25 7.90 7.90 7.90 7.90 0.00 0.00 1 12.5 7.90 7.90 7.90 7.90 0.00 0.00 2 25 7.90 7.90 7.90 0.00 0.00 0.00 2 100 7.90 7.90 7.90 0.00 0.00 0.00 2 N Control DO mg/L 6.45 5.90 7.00 0.78 13.67 2 6.5 7.10 7.10 7.10 0.00 0.00 1 6.25 5.90 5.90 5.90 0.00 0.00 1 12.5 6.45 5.90 7.00 0.78 13.67 2 25 6.45 6.90 5.90 0.00 0.00 1 12.5 6.45 6.00 6.90 0.64 12.37 2 50 6.45 6.10 6.80 0.49 10.91 2 100 6	100		15.25	15.00	15.50	0.35	3.90	2
6.5 7.90 7.90 7.90 7.90 0.00 0.00 1 6.25 7.90 7.90 7.90 7.90 0.00 0.00 1 12.5 7.90 7.90 7.90 7.90 0.00 0.00 2 25 7.90 7.90 7.90 7.90 0.00 0.00 2 100 7.90 7.90 7.90 0.00 0.00 0.00 2 N Control DO mg/L 6.45 5.90 7.00 0.78 13.67 2 6.5 7.10 7.10 7.10 0.00 0.00 1 6.25 5.90 5.90 5.90 0.00 0.00 1 12.5 6.45 5.90 7.00 0.78 13.67 2 25 6.45 6.00 6.90 0.64 12.37 2 50 6.45 6.10 6.80 0.49 10.91 2 100 6.40 6.10 6.70 0.42 10.18 2 N Control	N Control	рН	8.00	8.00	8.00	0.00	0.00	2
12.5	6.5	•	7.90	7.90	7.90	0.00	0.00	1
12.5 7.90 7.90 7.90 0.00 0.00 2 25 7.90 7.90 7.90 7.90 0.00 0.00 2 50 7.90 7.90 7.90 7.90 0.00 0.00 2 100 7.90 7.90 7.90 0.00 0.00 2 N Control DO mg/L 6.45 5.90 7.00 0.78 13.67 2 6.5 7.10 7.10 7.10 0.00 0.00 1 6.25 5.90 5.90 5.90 0.00 0.00 1 12.5 6.45 5.90 7.00 0.78 13.67 2 25 6.45 6.00 6.90 0.64 12.37 2 50 6.45 6.10 6.80 0.49 10.91 2 100 6.40 6.10 6.70 0.42 10.18 2 N Control Salinity ppt 34.00 34.00 34.00 0.00 0.00 1 6.25 34.00 34.0	6.25		7.90	7.90	7.90	0.00	0.00	1
25 7.90 7.90 7.90 7.90 0.00 0.00 2 50 7.90 7.90 7.90 0.00 0.00 2 100 7.90 7.90 7.90 0.00 0.00 2 N Control DO mg/L 6.45 5.90 7.00 0.78 13.67 2 6.5 7.10 7.10 7.10 0.00 0.00 1 6.25 5.90 5.90 5.90 0.00 0.00 1 12.5 6.45 5.90 7.00 0.78 13.67 2 25 6.45 6.00 6.90 0.04 12.37 2 50 6.45 6.10 6.80 0.49 10.91 2 100 6.40 6.10 6.70 0.42 10.18 2 N Control Salinity ppt 34.00 34.00 34.00 0.00 0.00 1 6.25 34.00 34.00 34.00 0.00 0.00 0.00 1 12.5 34.00 3			7.90	7.90	7.90	0.00	0.00	2
100 7.90 7.90 7.90 0.00 0.00 2 N Control DO mg/L 6.45 5.90 7.00 0.78 13.67 2 6.5 7.10 7.10 7.10 0.00 0.00 1 6.25 5.90 5.90 5.90 0.00 0.00 1 12.5 6.45 5.90 7.00 0.78 13.67 2 25 6.45 6.00 6.90 0.64 12.37 2 50 6.45 6.10 6.80 0.49 10.91 2 100 6.40 6.10 6.70 0.42 10.18 2 N Control Salinity ppt 34.00 34.00 34.00 0.00 0.00 1 6.25 34.00 34.00 34.00 0.00 0.00 1 12.5 34.00 34.00 34.00 0.00 0.00 2 25 34.00 34.00 34.00	25		7.90	7.90	7.90	0.00	0.00	2
N Control DO mg/L 6.45 5.90 7.00 0.78 13.67 2 6.5 7.10 7.10 7.10 0.00 0.00 1 6.25 5.90 5.90 5.90 0.00 0.00 1 12.5 6.45 5.90 7.00 0.78 13.67 2 25 6.45 6.90 0.64 12.37 2 50 6.45 6.10 6.80 0.49 10.91 2 100 6.40 6.10 6.70 0.42 10.18 2 N Control Salinity ppt 34.00 34.00 34.00 0.00 0.00 2 6.5 34.00 34.00 34.00 0.00 0.00 1 6.25 34.00 34.00 34.00 0.00 0.00 1 12.5 34.00 34.00 34.00 0.00 0.00 2 25 34.00 34.00 34.00 0.00	50		7.90	7.90	7.90	0.00	0.00	2
6.5 7.10 7.10 7.10 0.00 0.00 1 6.25 5.90 5.90 5.90 0.00 0.00 1 12.5 6.45 5.90 7.00 0.78 13.67 2 25 6.45 6.00 6.90 0.64 12.37 2 50 6.45 6.10 6.80 0.49 10.91 2 100 6.40 6.10 6.70 0.42 10.18 2 N Control Salinity ppt 34.00 34.00 34.00 0.00 0.00 2 6.5 34.00 34.00 34.00 0.00 0.00 1 6.25 34.00 34.00 34.00 0.00 0.00 1 12.5 34.00 34.00 34.00 0.00 0.00 2 25 34.00 34.00 34.00 0.00 0.00 2 50 34.00 34.00 34.00 0.00 0.00 0.00 2	100		7.90	7.90	7.90	0.00	0.00	2
6.5 7.10 7.10 7.10 0.00 0.00 1 6.25 5.90 5.90 5.90 0.00 0.00 1 12.5 6.45 5.90 7.00 0.78 13.67 2 25 6.45 6.00 6.90 0.64 12.37 2 50 6.45 6.10 6.80 0.49 10.91 2 100 6.40 6.10 6.70 0.42 10.18 2 N Control Salinity ppt 34.00 34.00 34.00 0.00 0.00 2 6.5 34.00 34.00 34.00 0.00 0.00 1 6.25 34.00 34.00 34.00 0.00 0.00 1 12.5 34.00 34.00 34.00 0.00 0.00 2 25 34.00 34.00 34.00 0.00 0.00 2 50 34.00 34.00 34.00 0.00 0.00 0.00 2	N Control	DO mg/L	6.45	5.90	7.00	0.78	13.67	2
12.5 6.45 5.90 7.00 0.78 13.67 2 25 6.45 6.00 6.90 0.64 12.37 2 50 6.45 6.10 6.80 0.49 10.91 2 100 6.40 6.10 6.70 0.42 10.18 2 N Control Salinity ppt 34.00 34.00 34.00 0.00 0.00 1 6.25 34.00 34.00 34.00 34.00 0.00 0.00 1 12.5 34.00 34.00 34.00 34.00 0.00 0.00 2 25 34.00 34.00 34.00 34.00 0.00 0.00 2 25 34.00 34.00 34.00 0.00 0.00 2 26 34.00 34.00 34.00 0.00 0.00 2		J	7.10	7.10	7.10	0.00	0.00	1
25 6.45 6.00 6.90 0.64 12.37 2 50 6.45 6.10 6.80 0.49 10.91 2 100 6.40 6.10 6.70 0.42 10.18 2 N Control Salinity ppt 34.00 34.00 34.00 0.00 0.00 2 6.5 34.00 34.00 34.00 0.00 0.00 1 6.25 34.00 34.00 34.00 0.00 0.00 1 12.5 34.00 34.00 34.00 0.00 0.00 2 25 34.00 34.00 34.00 0.00 0.00 2 50 34.00 34.00 34.00 0.00 0.00 2	6.25		5.90	5.90	5.90	0.00	0.00	1
50 6.45 6.10 6.80 0.49 10.91 2 100 6.40 6.10 6.70 0.42 10.18 2 N Control Salinity ppt 34.00 34.00 34.00 0.00 0.00 0.00 2 6.5 34.00 34.00 34.00 0.00 0.00 1 1 6.25 34.00 34.00 0.00 0.00 1	12.5		6.45	5.90	7.00	0.78	13.67	2
50 6.45 6.10 6.80 0.49 10.91 2 100 6.40 6.10 6.70 0.42 10.18 2 N Control Salinity ppt 34.00 34.00 34.00 0.00 0.00 0.00 2 6.5 34.00 34.00 34.00 0.00 0.00 1 1 6.25 34.00 34.00 0.00 0.00 1	25		6.45	6.00	6.90	0.64	12.37	2
N Control Salinity ppt 34.00 34.00 34.00 0.00 0.00 2 6.5 34.00 34.00 34.00 0.00 0.00 1 6.25 34.00 34.00 34.00 0.00 0.00 1 12.5 34.00 34.00 34.00 0.00 0.00 2 25 34.00 34.00 34.00 0.00 0.00 2 50 34.00 34.00 34.00 0.00 0.00 2			6.45	6.10	6.80	0.49	10.91	2
6.5 34.00 34.00 34.00 0.00 0.00 1 6.25 34.00 34.00 34.00 0.00 0.00 1 12.5 34.00 34.00 34.00 0.00 0.00 2 25 34.00 34.00 34.00 0.00 0.00 2 50 34.00 34.00 34.00 0.00 0.00 2	100		6.40	6.10	6.70	0.42	10.18	
6.5 34.00 34.00 34.00 0.00 0.00 1 6.25 34.00 34.00 34.00 0.00 0.00 1 12.5 34.00 34.00 34.00 0.00 0.00 2 25 34.00 34.00 34.00 0.00 0.00 2 50 34.00 34.00 0.00 0.00 0.00 2	N Control	Salinity ppt	34.00	34.00	34.00	0.00	0.00	2
6.25 34.00 34.00 34.00 0.00 0.00 1 12.5 34.00 34.00 34.00 0.00 0.00 2 25 34.00 34.00 34.00 0.00 0.00 2 50 34.00 34.00 34.00 0.00 0.00 2			34.00	34.00	34.00	0.00	0.00	1
25 34.00 34.00 34.00 0.00 0.00 2 50 34.00 34.00 34.00 0.00 0.00 2			34.00	34.00	34.00	0.00	0.00	1
25 34.00 34.00 34.00 0.00 0.00 2 50 34.00 34.00 34.00 0.00 0.00 2	12.5		34.00	34.00	34.00	0.00	0.00	2
50 34.00 34.00 34.00 0.00 0.00 2			34.00	34.00	34.00	0.00	0.00	
100 34.00 34.00 34.00 0.00 0.00 2			34.00	34.00	34.00	0.00	0.00	2
	100		34.00	34.00	34.00	0.00	0.00	2



May 29, 2007

Mr. Arnie Anselm Ventura County Watershed Protection District 800 South Victoria Ave Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA-600/R95/136, 1995.* Results were as follows:

CLIENT:

County of Ventura

SAMPLE I.D.:

ME-VR2

DATE RECEIVED:

15 May - 07

ABC LAB. NO.:

VCF0507.190

CHRONIC SEA URCHIN FERTILIZATION BIOASSAY

NOEC = 50.00 %

TUc = 2.00

IC25 = 90.57%

IC50 = >100.00 %

Yours very truly,

Thomas (Tim) Mikel Laboratory Director

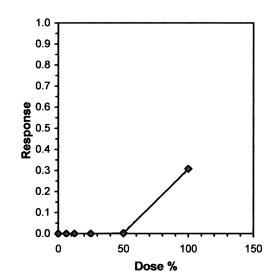
			S	perm Cell Ferti	ilization Test-Proportion Fertilized
Start Date:	5/15/2007		Test ID:	VCF0507190	Sample ID: CA000000
End Date:	5/15/2007		Lab ID:	CAABC	Sample Type: EFF1-POTW
Sample Date:	5/15/2007		Protocol:	EPA/600/R	Test Species: SP-Strongylocentrotus purpuratus
Comments:	ME-VR2				
Conc-%	1	2	3	4	
N Control	1.0000	1.0000	1.0000	1.0000	
6.25	1.0000	1.0000	1.0000	1.0000	
12.5	1.0000	1.0000	1.0000	1.0000	
25	1.0000	1.0000	1.0000	1.0000	
50	1.0000	0.9900	1.0000	1.0000	
100	0.8900	0.9400	0.6100	0.3300	

		_	Tra	ansform:	Arcsin Sc	uare Roo	t	Rank	1-Tailed	Isoto	onic
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
N Control	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4			1.0000	1.0000
6.25	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
12.5	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
25	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
50	0.9975	0.9975	1.5082	1.4706	1.5208	1.662	4	16.00	10.00	0.9975	0.9975
*100	0.6925	0.6925	1.0161	0.6119	1.3233	32.094	4	10.00	10.00	0.6925	0.6925

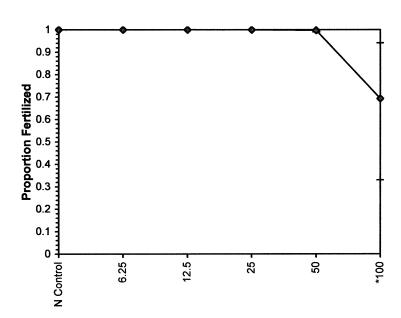
Auxiliary Tests					Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates nor	n-normal dis	stribution	(p <= 0.01)		0.60773	0.884	-0.823	7.58705
Equality of variance cannot be co	nfirmed							
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU				
Steel's Many-One Rank Test	50	100	70.7107	2				
Treatments vs N Control								

			Linea	ar Interpolation (200 Resamples)
Point	%	SD	95% CL(Exp)	Skew
IC05	57.787	6.717	52 176 92 518	2.5468

			00,00	·(-*F)	•
IC05	57.787	6.717	52.176	92.518	2.5468
IC10	65.984				
IC15	74.180				
IC20	82.377				
IC25	90.574				
IC40	>100				
IC50	>100				



Sperm Cell Fertilization Test-Proportion Fertilized Test ID: VCF0507190 Start Date: 5/15/2007 Sample ID: CA000000 Lab ID: CAABC 5/15/2007 Sample Type: **EFF1-POTW** End Date: **Test Species:** Sample Date: 5/15/2007 Protocol: EPA/600/R SP-Strongylocentrotus purpuratus Comments: ME-VR2



 Start Date:
 5/15/2007
 Test ID:
 VCF0507190
 Sample ID:
 CA000000

 End Date:
 5/15/2007
 Lab ID:
 CAABC
 Sample Type:
 EFF1-POTW

Sample Date: 5/15/2007 Protocol: EPA/600/R Test Species: SP-Strongylocentrotus purpuratus

Comments: ME-VR2

			Aux	iliary Data	a Summa		
Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	15.25	15.00	15.50	0.35	3.90	2
6.5		15.50	15.50	15.50	0.00	0.00	1
6.25		15.00	15.00	15.00	0.00	0.00	1
12.5		15.25	15.00	15.50	0.35	3.90	2
25		15.25	15.00	15.50	0.35	3.90	2
50		15.25	15.00	15.50	0.35	3.90	2
100		15.25	15.00	15.50	0.35	3.90	2
N Control	рН	8.00	8.00	8.00	0.00	0.00	2
6.5		7.90	7.90	7.90	0.00	0.00	1
6.25		7.90	7.90	7.90	0.00	0.00	1
12.5		7.90	7.90	7.90	0.00	0.00	2
25		7.90	7.90	7.90	0.00	0.00	2
50		7.90	7.90	7.90	0.00	0.00	2
100		7.90	7.90	7.90	0.00	0.00	2
N Control	DO mg/L	6.45	5.90	7.00	0.78	13.67	2
6.5		6.90	6.90	6.90	0.00	0.00	1
6.25		6.00	6.00	6.00	0.00	0.00	1
12.5		6.50	6.00	7.00	0.71	12.94	2
25		6.50	5.90	7.10	0.85	14.17	2
50		6.50	5.90	7.10	0.85	14.17	2
100		6.50	5.90	7.10	0.85	14.17	2
N Control	Salinity ppt	34.00	34.00	34.00	0.00	0.00	2
6.5		34.00	34.00	34.00	0.00	0.00	1
6.25		34.00	34.00	34.00	0.00	0.00	1
12.5		34.00	34.00	34.00	0.00	0.00	2
25		34.00	34.00	34.00	0.00	0.00	2
50		34.00	34.00	34.00	0.00	0.00	2
100		34.00	34.00	34.00	0.00	0.00	2



Ventura CountyWatershed Protection District NPDES Stormwater Monitoing Program

Grab Toxicity Samples - ABC

CHAIN-OF-C	CUSTOD	Y RECORD)							1OF	1
		ounty Watersh	ned Protection	n Dis	trict					77-T	····
SAMPLING DA	TE:	1970				EVEN.	T #5 (Dr)	y)			2300000 2000000000000000000000000000000
SAMPLERS:											
SAMPLE INFO	RMATION	FOR GRAB	SAMPLES								
SAMPLE		DATE/TIME		Acute Ceriodaphnia - 6.25, 12.5, 25, 50, 100%	Chronic Echinoderm Fertilization - 6.25, 12.5, 25, 50, 100%				5 gal. Buckets		Field H ₂ O Temp
ID		COLLECTED		cute	l Si				No. of	NOTES	ield
ME-CC		S-15-07	11:00	1	x					see note 1	19.4°C
ME-SCR		1,	12:30		х				1	see note 1	17.7°C
ME-VR2	THE STOCKER SECTION	11	10:15		х				1	see note 1	17.1°C
Signature Printed Name Affiliation	Relinquish	DAVID	run - o F. Tr icupo	5 con	<u>Zh</u>	0 m		Date/T	ime	'07 13:	% 0
Printed Name	Received	BETH M	ATVLIN					Date/T		ન હિન્દ	
Affiliation		ABC LAB	5							TOMP (A) WET	DIT - WI
Miscellaneous Note 1. Mass Emis						r anv 2	consec	utive	we	et weather event	2017 2 5.39 C
			or 1 dry w								



CHRONIC SEA URCHIN FERTILIZATION BIOASSAY

DATE:

15 May - 07

STANDARD TOXICANT:

Copper Chloride

NOEC =

32.00 ug/l

IC25 =

72.11 ug/l

IC50 =

91.75 ug/l

Yours very truly,

Thomas (Tim) Mikel Laboratory Director

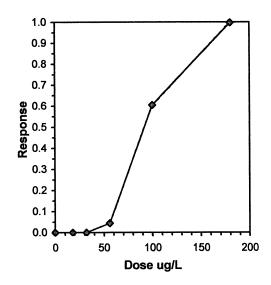
Sperm Cell Fertilization Test-Proportion Fertilized											
Start Date:	5/15/2007		Test ID:	URC051507	Sample ID:	REF-Ref Toxicant					
End Date:	5/15/2007		Lab ID:	ABC LABORA	Sample Type:	CUCL-Copper chloride					
Sample Date:	5/15/2007		Protocol:	EPA/600/R	Test Species:	SP-Strongylocentrotus purpuratus					
Comments:	Standard 7	Toxicant									
Conc-ug/L	1	2	3	4							
Control	1.0000	1.0000	1.0000	1.0000							
18	1.0000	1.0000	1.0000	1.0000							
32	1.0000	1.0000	1.0000	1.0000							
56	0.9000	0.9900	0.9600	0.9700							
100	0.6300	0.4800	0.2500	0.2200							
180	0.0000	0.0100	0.0000	0.0000							

			Transform: Arcsin Square Root					Rank	1-Tailed	Isotonic	
Conc-ug/L	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
Control	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4			1.0000	1.0000
18	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
32	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
*56	0.9550	0.9550	1.3715	1.2490	1.4706	6.717	4	10.00	10.00	0.9550	0.9550
*100	0.3950	0.3950	0.6735	0.4882	0.9169	30.246	4	10.00	10.00	0.3950	0.3950
*180	0.0025	0.0025	0.0626	0.0500	0.1002	40.080	4	10.00	10.00	0.0025	0.0025

Auxiliary Tests				Statistic	Critical	Skew	Kurt	
Shapiro-Wilk's Test indicates nor	n-normal dis	stribution	$(p \le 0.01)$		0.78044	0.884	0.4122	3.80494
Equality of variance cannot be co	nfirmed							
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU				
Steel's Many-One Rank Test	32	56	42.332					

Treatments vs Control

Heatinent	va Contito									
			Linear Interpolation (200 Resamples)							
Point	ug/L	SD	95% C	L(Exp)	Skew					
IC05	56.393	3.245	40.637	59.942	-1.4320					
IC10	60.321	1.434	55.799	65.299	-0.0032					
IC15	64.250	1.743	59.967	71.005	0.6013	1.0				
IC20	68.179	2.200	62.823	76.474	0.8548	0.9				
IC25	72.107	2.732	66.047	81.942	0.9335	0.9]				
IC40	83.893	4.502	73.962	99.376	0.9409	0.8				
IC50	91.750	6.014	78.960	113.471	1.0714	0.7				



Start Date: End Date:

5/15/2007 5/15/2007

Test ID: URC051507 Lab ID: ABC LABORA

Sample Type: Protocol: EPA/600/R

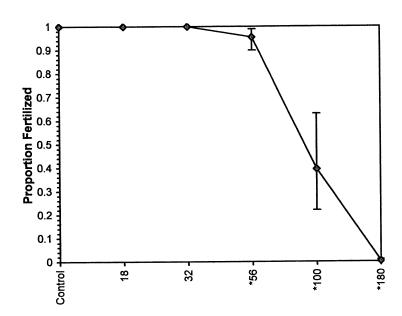
Test Species:

REF-Ref Toxicant

CUCL-Copper chloride SP-Strongylocentrotus purpuratus

Sample Date: 5/15/2007 Comments:

Standard Toxicant



Start Date: End Date:

5/15/2007 5/15/2007

Test ID: URC051507 Lab ID: ABC LABORA Protocol: EPA/600/R

Sample ID: Sample Type: **REF-Ref Toxicant CUCL-Copper chloride**

Test Species:

SP-Strongylocentrotus purpuratus

Sample Date: 5/15/2007 Comments:

Standard Toxicant

			Auxiliary Data Summary					
Conc-ug/L	Parameter	Mean	Min	Max	SD	CV%	N	
Control	Temp C	15.00	15.00	15.00	0.00	0.00	2	
18	•	15.00	15.00	15.00	0.00	0.00	2	
32		15.00	15.00	15.00	0.00	0.00	2	
56		15.00	15.00	15.00	0.00	0.00	2	
100		15.00	15.00	15.00	0.00	0.00	2	
180		15.00	15.00	15.00	0.00	0.00	2	
Control	рН	8.00	8.00	8.00	0.00	0.00	2	
18	•	7.95	7.90	8.00	0.07	3.34	2	
32		7.95	7.90	8.00	0.07	3.34	2	
56		7.95	7.90	8.00	0.07	3.34	2	
100		7.95	7.90	8.00	0.07	3.34	2	
180		7.95	7.90	8.00	0.07	3.34	2	
Control	Diss Oxygen	6.45	5.90	7.00	0.78	13.67	2	
18	••	6.40	5.80	7.00	0.85	14.39	2	
32		6.40	5.80	7.00	0.85	14.39	2	
56		6.40	5.80	7.00	0.85	14.39	2	
100		6.40	5.80	7.00	0.85	14.39	2	
180		6.40	5.80	7.00	0.85	14.39	2	
Control	Salinity ppt	34.00	34.00	34.00	0.00	0.00	2	
18		34.00	34.00	34.00	0.00	0.00	2	
32		34.00	34.00	34.00	0.00	0.00	2	
56		34.00	34.00	34.00	0.00	0.00	2	
100		34.00	34.00	34.00	0.00	0.00	2	
180		34.00	34.00	34.00	0.00	0.00	2	