AQUATIC
BIOASSAY &
CONSULTING
LABORATORIES, INC.

TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

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

29 NORTH OLIVE STREET, VENTURA, CA 93001 • (805) 643-5621

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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

Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

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

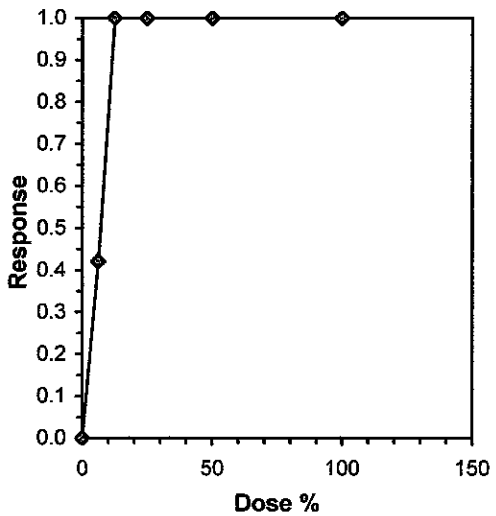
			Transform: Arcsin Square Root						1-Tailed		Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
N Control	0.9500	1.0000	1.2857	1.1071	1.3453	9.261	4				0.9500	1.0000
*6.25	0.5500	0.5789	0.8449	0.4636	1.3453	44.446	4	2.238	1.943	0.3828	0.5500	0.5789
12.5	0.0000	0.0000	0.2255	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 Treatments vs N Control	0.30443	0.33056	0.38864	0.0776	0.06654	1, 6

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL(Exp)		Skew
IC05*	0.7422	0.9777	0.2850	8.5547	4.3187
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	1.4111	1.1402	9.7482	1.2334
IC25*	3.7109	1.4501	1.4252	9.8323	0.7779
IC40*	5.9375	1.3658	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



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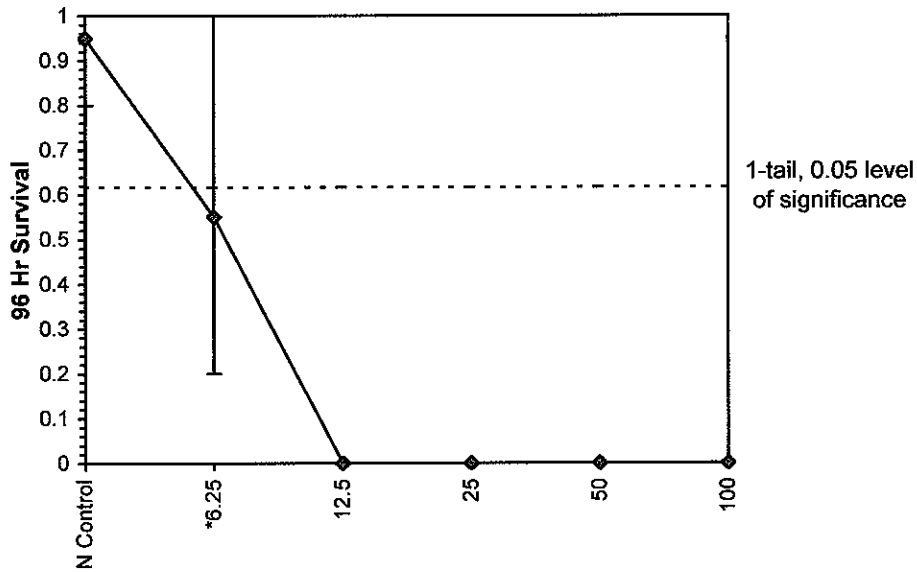
Sample Date:	12/9/2006	Protocol:	EPAA 85-EPA Acute	Test Species:	CD-Ceriodaphnia dubia
Comments:	A-1 Wood				

Dose-Response Plot



Reviewed by:

Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

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Sample Date:	12/9/2006	Protocol:	EPAA 85-EPA Acute	Test Species:	CD-Ceriodaphnia dubia
Comments:	A-1 Wood				

Auxiliary Data Summary

Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	24.60	24.00	24.90	0.52	2.93	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	24.00	25.10	0.61	3.20	3
50		24.63	24.00	25.00	0.55	3.01	3
100		24.00	24.00	24.00	0.00	0.00	3
N Control	pH	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	8.00	0.21	5.82	3
50		7.80	7.60	8.00	0.20	5.73	3
100		7.73	7.50	7.90	0.21	5.90	3
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		6.43	4.70	7.70	1.55	19.37	3
50		6.30	4.60	7.50	1.51	19.53	3
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	0.00		0
100		250.00	250.00	250.00	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		240.00	240.00	240.00	0.00	0.00	3
N Control	Conductivity	345.33	342.00	347.00	2.89	0.49	3
6.25		598.67	588.00	620.00	18.48	0.72	3
12.5		777.00	756.00	819.00	36.37	0.78	3
25		1211.67	1173.00	1289.00	66.97	0.68	3
50		2085.33	2068.00	2120.00	30.02	0.26	3
100		3688.33	3631.00	3803.00	99.30	0.27	3

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

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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:

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

C_{18}-Solid Phase Extraction 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 C_{18}.

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.

Sodium Thiosulfate neutralizes chemicals used in disinfection, chlorination, and some electrophilic organic chemicals.

Piperonyl Butoxide (PBO) 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 pre-screen 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 C_{18} 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:

$$TU = \frac{100}{LC50}$$

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 C_{18} 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	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 de-activates 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

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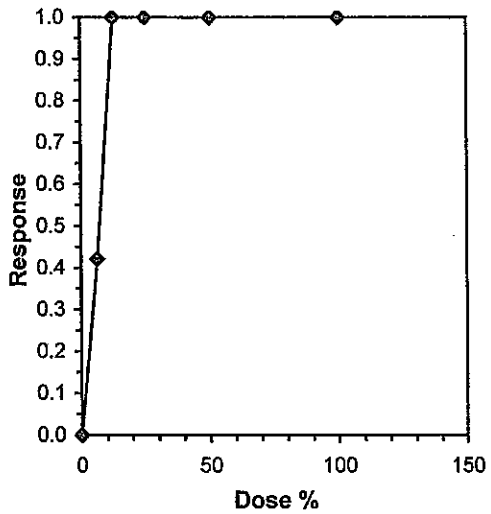

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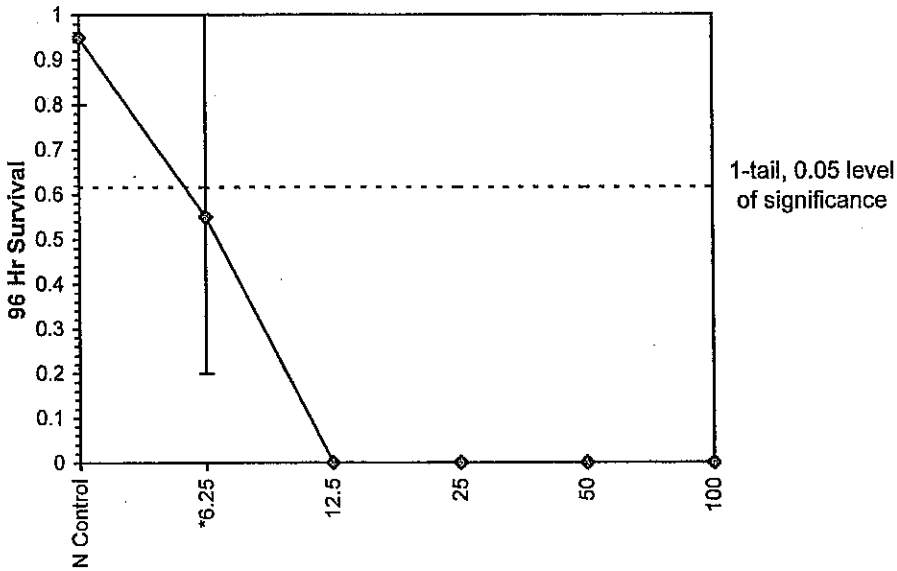

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12.5		24.40	24.00	24.80	0.40	2.59	3
25		24.40	24.00	25.10	0.61	3.20	3
50		24.63	24.00	25.00	0.55	3.01	3
100		24.00	24.00	24.00	0.00	0.00	3
N Control	pH	8.07	7.90	8.30	0.21	5.66	3
6.25		7.93	7.80	8.00	0.12	4.28	3
12.5		7.90	7.70	8.10	0.20	5.66	3
25		7.83	7.60	8.00	0.21	5.82	3
50		7.80	7.60	8.00	0.20	5.73	3
100		7.73	7.50	7.90	0.21	5.90	3
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		6.43	4.70	7.70	1.55	19.37	3
50		6.30	4.60	7.50	1.51	19.53	3
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	0.00		0
100		250.00	250.00	250.00	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		240.00	240.00	240.00	0.00	0.00	3
N Control	Conductivity	345.33	342.00	347.00	2.89	0.49	3
6.25		598.67	588.00	620.00	18.48	0.72	3
12.5		777.00	756.00	819.00	36.37	0.78	3
25		1211.67	1173.00	1289.00	66.97	0.68	3
50		2085.33	2068.00	2120.00	30.02	0.26	3
100		3688.33	3631.00	3803.00	99.30	0.27	3

APPENDIX 2

RESULTS OF BASELINE BIOASSAY TEST

AQUATIC
BIOASSAY &
CONSULTING
LABORATORIES, INC.

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.:	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:	VCF1206088	Sample ID:	CA0000000
End Date:	12/23/2006	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	12/19/2006	Protocol:	EPAF 91-EPA Freshwater	Test Species:	CD-Ceriodaphnia dubia
Comments:	A-1 Wood TIE Baseline				

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

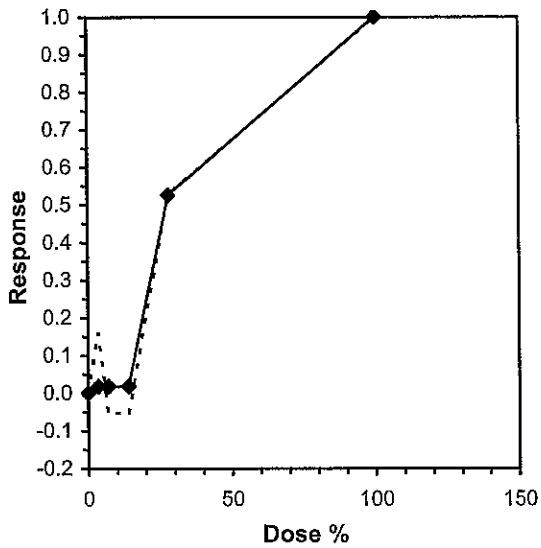
			Transform: Arcsin Square Root					Rank	1-Tailed	Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
N Control	0.9500	1.0000	1.2857	1.1071	1.3453	9.261	4			0.9500	1.0000
3.5	0.8000	0.8421	1.1249	0.4636	1.3453	39.188	4	17.50	10.00	0.9333	0.9825
7	1.0000	1.0526	1.3453	1.3453	1.3453	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 non-normal distribution (p <= 0.01)	0.84173	0.884	-0.5392	1.93958
Equality of variance cannot be confirmed				

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				

Linear Interpolation (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
IC20	19.021	5.376	12.700	50.309	1.5420
IC25	20.397	5.840	14.059	55.626	2.1067
IC40	24.524	9.141	15.686	71.577	1.5305
IC50	27.276	12.016	16.434	82.210	1.1828

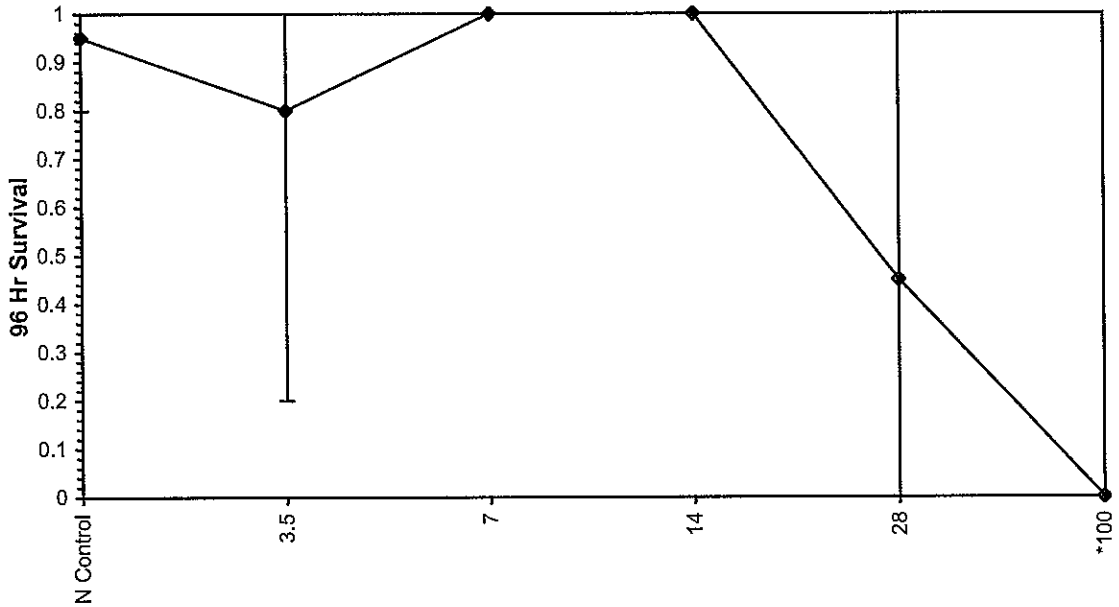


Reviewed by:

Acute Ceriodaphnia Test-96 Hr Survival

Start Date:	12/19/2006	Test ID:	VCF1206088	Sample ID:	CA0000000
End Date:	12/23/2006	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	12/19/2006	Protocol:	EPAF 91-EPA Freshwater	Test Species:	CD-Ceriodaphnia dubia
Comments:	A-1 Wood TIE Baseline				

Dose-Response Plot



Reviewed by:

Acute Ceriodaphnia Test-96 Hr Survival

Start Date:	12/19/2006	Test ID:	VCF1206088	Sample ID:	CA0000000
End Date:	12/23/2006	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	12/19/2006	Protocol:	EPAF 91-EPA Freshwater	Test Species:	CD-Ceriodaphnia dubia
Comments:	A-1 Wood TIE Baseline				

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	pH	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		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-CUSTODY RECORD 1 OF 1

CLIENT: Ventura County Watershed Protection District

SAMPLING DATE: EVENT #1 (Wet)

SAMPLERS:

SAMPLE INFORMATION FOR GRAB SAMPLES

SAMPLE ID	DATE/TIME COLLECTED	Acute Ceriodaphnia - 6.25, 12.5, 25, 50, 100%	Chronic Echinoderm Fertilization - 6.25, 12.5, :							NOTES	Field H_2O Temp
ME-CC	12-9-06 23:30		X							See Note 1	
ME-SCR	12-10-06 00:15		X							See Note 1	
ME-VR2	12-10-06 03:30		X							See Note 1	
A-1 Wood	12-9-06 22:30	X								See Note 2	
I-2 Ortega	~~N/A~~ 12-9-06 21:10	X								See Note 2	
R-1 Swan	~~N/A~~ 12-9-06 20:12	X								See Note 2	
W-3 La Vista	12-9-06 21:40	X								See Note 2	
W-4 Revolon	12-9-06 22:00	X								See Note 2	

10°C

		Date/Time
Signature	Relinquished By: [signature]	12-10-06 03:00
Printed Name	DAVID F. THOMAS	12-10-06 04:00
Affiliation	VCWPD	

		Date/Time
	Received By: [signature]	12-10-06 0300
Printed Name		
Affiliation		

Miscellaneous Notes (Hazardous Materials, Quick turn-around time, etc.):

1. **Mass Emmission: No TIE for Chronic Samples.**
2. **Land Use: Run TIE if Tua (Acute) is >1 for any wet or dry weather event.**

Temp @ Receipt = 10.0°C

12/15/06 client notified of urchin failure by mjm 1115 hrs.

AQUATIC
BIOASSAY &
CONSULTING
LABORATORIES, INC.

TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

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 %

Yours very truly,

Thomas (Tim) Mikel
Laboratory Director

Ceriodaphnia Survival and Reproduction Test-96 Hr 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

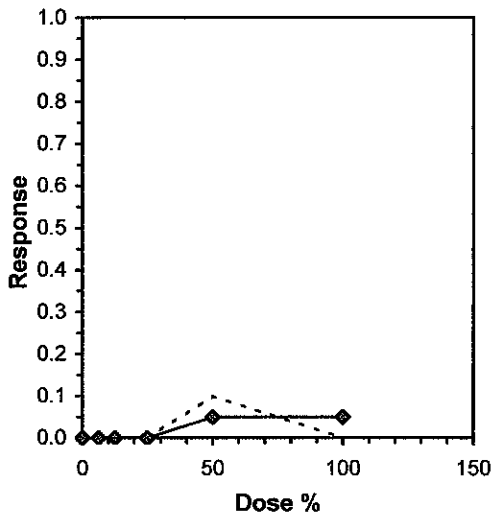
			Transform: Arcsin Square Root					Rank	1-Tailed	Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
N Control	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4			1.0000	1.0000
6.25	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
12.5	1.0000	1.0000	1.3453	1.3453	1.3453	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 non-normal distribution (p <= 0.01)	0.57623	0.884	6.6E-15	4.03247
Equality of variance cannot be confirmed				

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)

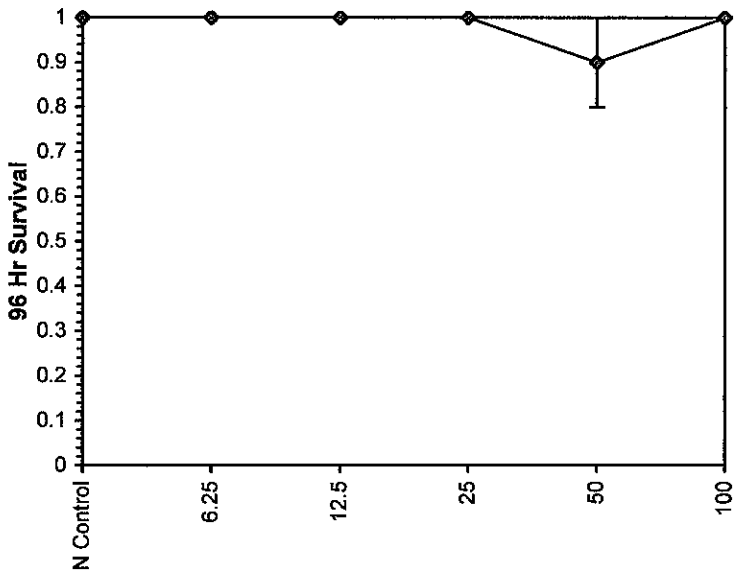
Point	%	SD	95% CL(Exp)	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Ceriodaphnia Survival and Reproduction Test-96 Hr 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				

Dose-Response Plot



Ceriodaphnia Survival and Reproduction Test-96 Hr 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				

Auxiliary Data Summary

Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	24.43	24.00	25.20	0.67	3.34	3
6.25		24.23	24.00	24.60	0.32	2.34	3
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	pH	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		8.07	7.90	8.30	0.21	5.66	3
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
6.25		6.30	4.70	7.40	1.42	18.90	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
100		6.37	4.50	7.80	1.69	20.43	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		55.00	55.00	55.00	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		25.00	25.00	25.00	0.00	0.00	3
N Control	Conductivity	345.33	342.00	347.00	2.89	0.49	3
6.25		549.33	519.00	610.00	52.54	1.32	3
12.5		450.33	316.00	719.00	232.67	3.39	3
25		292.33	287.00	303.00	9.24	1.04	3
50		253.33	250.00	260.00	5.77	0.95	3
100		168.33	167.00	171.00	2.31	0.90	3

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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

Ceriodaphnia Survival and Reproduction Test-96 Hr 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

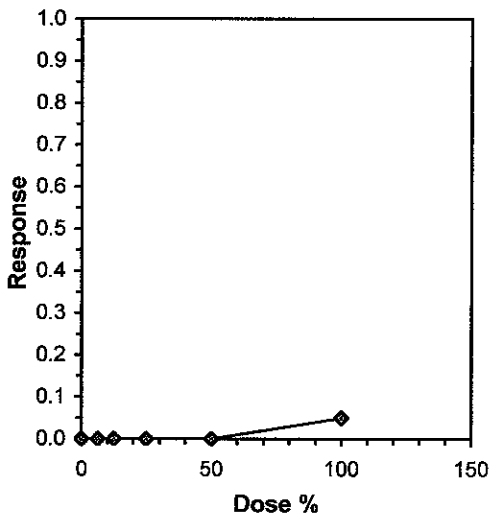
			Transform: Arcsin Square Root					Rank	1-Tailed	Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
N Control	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4			1.0000	1.0000
6.25	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
12.5	1.0000	1.0000	1.3453	1.3453	1.3453	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 non-normal distribution (p <= 0.01)	0.46508	0.884	-3.0206	13.9892
Equality of variance cannot be confirmed				

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)

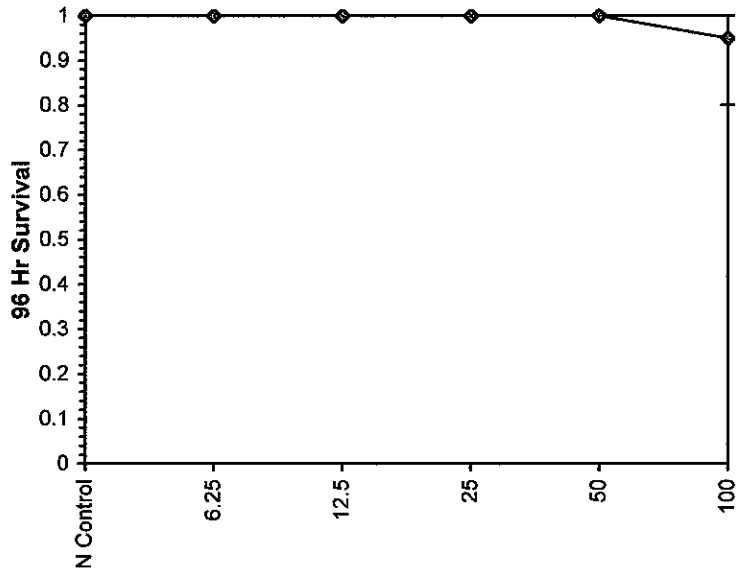
Point	%	SD	95% CL(Exp)	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Ceriodaphnia Survival and Reproduction Test-96 Hr 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				

Dose-Response Plot



Ceriodaphnia Survival and Reproduction Test-96 Hr 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				

Auxiliary Data Summary

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	pH	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		149.33	148.00	152.00	2.31	1.02	3

AQUATIC
BIOASSAY &
CONSULTING
LABORATORIES, INC.

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

Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

Start Date:	12/11/2006	Test ID:	VCF1206092	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:	W-3 La Vista				

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

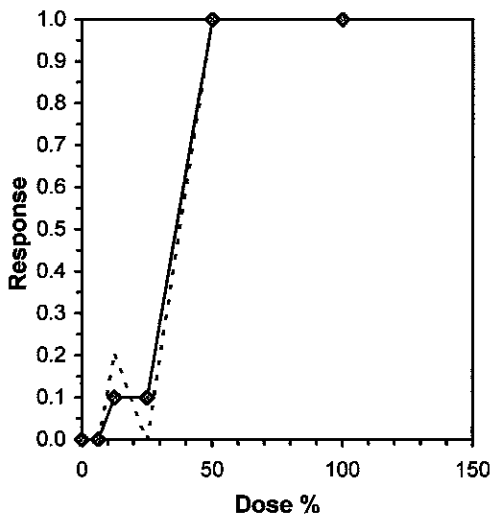
			Transform: Arcsin Square Root					Rank	1-Tailed	Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
N Control	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4			1.0000	1.0000
6.25	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
12.5	0.8000	0.8000	1.1157	0.8861	1.3453	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 non-normal distribution (p <= 0.01)	0.69656	0.844	2.2E-15	1.8956
Equality of variance cannot be confirmed				

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)

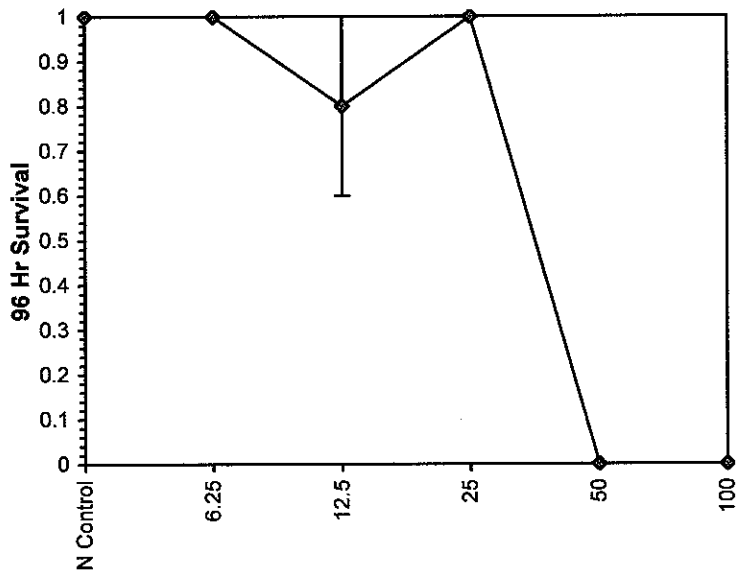
Point	%	SD	95% CL(Exp)		Skew
IC05	9.375	7.903	6.875	36.375	0.6277
IC10	25.000	6.975	0.000	29.000	-1.0327
IC15	26.389	4.183	1.667	30.167	-2.9759
IC20	27.778	1.316	23.333	31.333	-0.3373
IC25	29.167	1.233	25.000	32.500	-0.3373
IC40	33.333	0.987	30.000	36.000	-0.3373
IC50	36.111	0.822	33.333	38.333	-0.3373



Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

Start Date:	12/11/2006	Test ID:	VCF1206092	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:	W-3 La Vista				

Dose-Response Plot



Reviewed by: _____

Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

Start Date:	12/11/2006	Test ID:	VCF1206092	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:	W-3 La Vista				

Auxiliary Data Summary

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	pH	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

AQUATIC
BIOASSAY &
CONSULTING
LABORATORIES, INC.

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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APPENDIX 2 - RESULTS OF TIE BASELINE BIOASSAY TEST

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:

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

C_{18}-Solid Phase Extraction 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 C_{18}.

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.

Sodium Thiosulfate neutralizes chemicals used in disinfection, chlorination, and some electrophilic organic chemicals.

Piperonyl Butoxide (PBO) 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 pre-screen 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 C_{18} 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:

$$TU = \frac{100}{LC50}$$

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 C_{18} 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 de-activates 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

AQUATIC
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LABORATORIES, INC.

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

Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

Start Date:	12/11/2006	Test ID:	VCF1206092	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:	W-3 La Vista				

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 non-normal distribution (p <= 0.01)	0.69656	0.844	2.2E-15	1.8956
Equality of variance cannot be confirmed				

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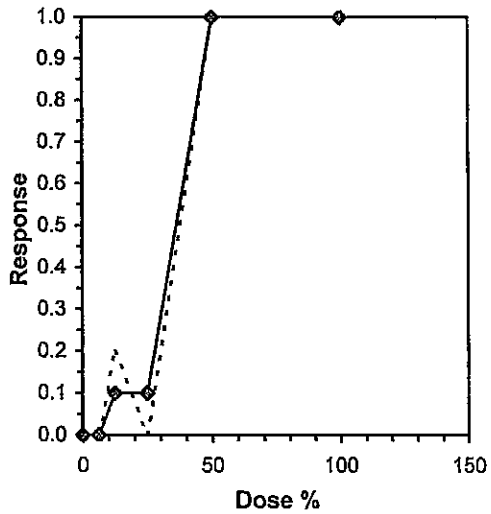
Steel's Many-One Rank Test	25	50	35.3553	4
Treatments vs N Control				

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
IC20	27.778	1.316	23.333	31.333	-0.3373
IC25	29.167	1.233	25.000	32.500	-0.3373
IC40	33.333	0.987	30.000	36.000	-0.3373
IC50	36.111	0.822	33.333	38.333	-0.3373

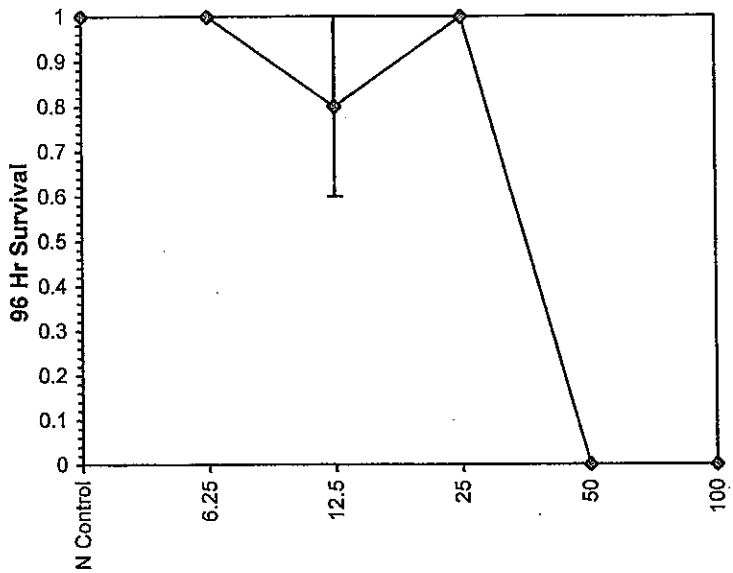


Reviewed by: _____

Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

Start Date:	12/11/2006	Test ID:	VCF1206092	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:	W-3 La Vista				

Dose-Response Plot



ToxCalc v5.0.23

Reviewed by:

Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

Start Date:	12/11/2006	Test ID:	VCF1206092	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:	W-3 La Vista				

Auxiliary Data Summary

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	pH	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

APPENDIX 2

RESULTS OF BASELINE BIOASSAY TEST

AQUATIC
BIOASSAY &
CONSULTING
LABORATORIES, INC.

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

Acute Ceriodaphnia Test-96 Hr Survival

Start Date:	12/19/2006	Test ID:	VCF1206092	Sample ID:	CA0000000
End Date:	12/23/2006	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	12/19/2006	Protocol:	EPA-821-R-02-012	Test Species:	CD-Ceriodaphnia dubia

Comments: W-3 La Vista TIE 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

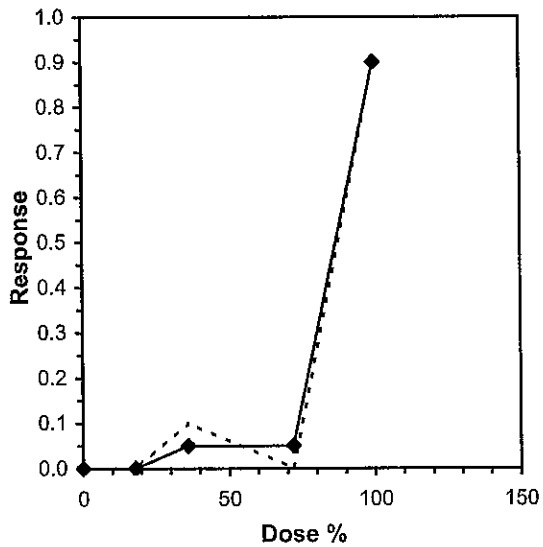
			Transform: Arcsin Square Root					Rank	1-Tailed	Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
N Control	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4			1.0000	1.0000
18	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
36	0.9000	0.9000	1.2262	1.1071	1.3453	11.212	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 non-normal distribution (p <= 0.01)	0.79317	0.868	1.6E-15	-0.2794
Equality of variance cannot be confirmed				

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	72	100	84.8528	1.38889
Treatments vs N Control				

Linear Interpolation (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
IC20	76.941	0.735	74.635	79.151	-0.0597
IC25	78.588	0.736	76.447	81.054	-0.0124
IC40	83.529	0.834	81.570	86.165	0.1652
IC50	86.824	0.958	84.323	89.986	0.2423

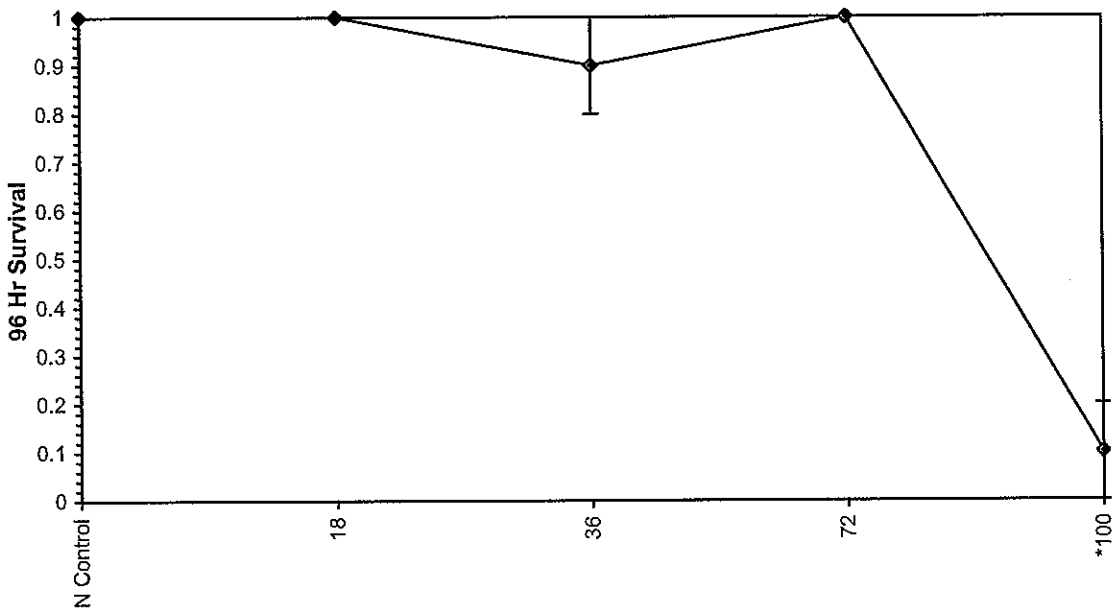


Reviewed by:

Acute Ceriodaphnia Test-96 Hr Survival

Start Date:	12/19/2006	Test ID:	VCF1206092	Sample ID:	CA0000000
End Date:	12/23/2006	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	12/19/2006	Protocol:	EPA-821-R-02-012	Test Species:	CD-Ceriodaphnia dubia
Comments:	W-3 La Vista TIE Baseline				

Dose-Response Plot



ToxCalc v5.0.23

Reviewed by:

Acute Ceriodaphnia Test-96 Hr Survival

Start Date:	12/19/2006	Test ID:	VCF1206092	Sample ID:	CA0000000
End Date:	12/23/2006	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	12/19/2006	Protocol:	EPA-821-R-02-012	Test Species:	CD-Ceriodaphnia dubia
Comments:	W-3 La Vista TIE Baseline				

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
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	pH	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	0.88	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

Ventura CountyWatershed Protection District

NPDES Stormwater Monitoing Program

Grab Toxicity Samples - ABC

CHAIN-OF-CUSTODY RECORD 1 OF 1

CLIENT: Ventura County Watershed Protection District

SAMPLING DATE: EVENT #1 (Wet)

SAMPLERS:

SAMPLE INFORMATION FOR GRAB SAMPLES

SAMPLE ID	DATE/TIME COLLECTED	Acute Ceriodaphnia - 6.25, 12.5, 25, 50, 100%	Chronic Echinoderm Fertilization - 6.25, 12.5, :							NOTES	Field H_2O Temp
ME-CC	12-9-06 23:30		X							See Note 1	
ME-SCR	12-10-06 00:15		X							See Note 1	
ME-VR2	12-10-06 03:30		X							See Note 1	
A-1 Wood	12-9-06 22:30	X								See Note 2	
I-2 Ortega	~~N/A~~ 12-9-06 21:10	X								See Note 2	
R-1 Swan	~~N/A~~ 12-9-06 20:12	X								See Note 2	
W-3 La Vista	12-9-06 21:40	X								See Note 2	
W-4 Revolon	12-9-06 23:00	X								See Note 2	

10°C

	Relinquished By:	Date/Time
Signature		12-10-06 03:00
Printed Name	DAVID F. THOMAS	12-10-06 04:00
Affiliation	VCWPD	

	Received By:	Date/Time
		12-10-06 0300
Printed Name		
Affiliation		

Miscellaneous Notes (Hazardous Materials, Quick turn-around time, etc.):

1. **Mass Emmission: No TIE for Chronic Samples.**
2. **Land Use: Run TIE if Tua (Acute) is >1 for any wet or dry weather event.**

Temp @ receipt = 10.0°C

12/15/06 client notified of urchin failure by [illegible] 1115 hrs.

AQUATIC
BIOASSAY &
CONSULTING
LABORATORIES, INC.

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 Test-96 Hr Survival

Start Date:	12/19/2006	Test ID:	VCF1206093	Sample ID:	CA0000000
End Date:	12/23/2006	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	12/19/2006	Protocol:	EPA-821-R-02-012	Test Species:	CD-Ceriodaphnia dubia
Comments:	W-4 Revolon TIE 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

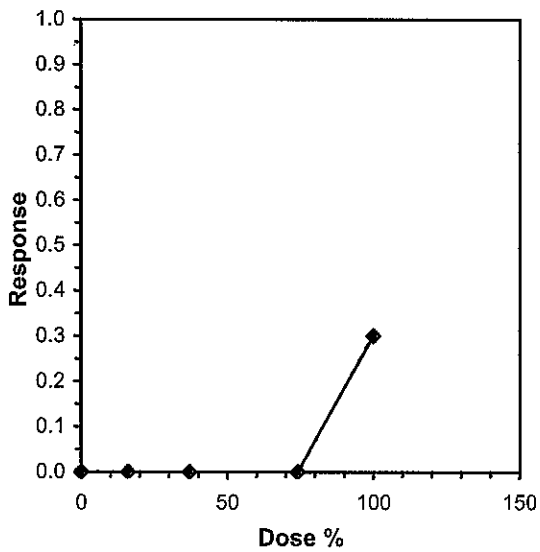
			Transform: Arcsin Square Root					Rank	1-Tailed	Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
N Control	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4			1.0000	1.0000
16	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
37	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	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 non-normal distribution (p <= 0.01)	0.52704	0.868	-2.0315	10.5678
Equality of variance cannot be confirmed				

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)

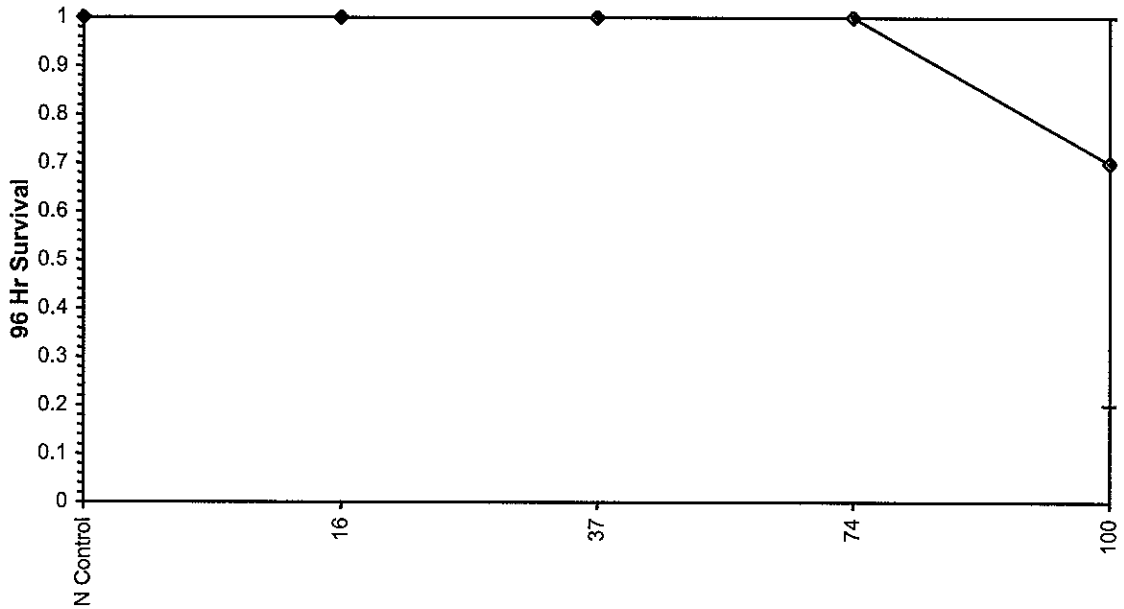
Point	%	SD	95% CL(Exp)	Skew
IC05	78.333			
IC10	82.667			
IC15	87.000			
IC20	91.333			
IC25	95.667			
IC40	>100			
IC50	>100			



Acute Ceriodaphnia Test-96 Hr Survival

Start Date:	12/19/2006	Test ID:	VCF1206093	Sample ID:	CA0000000
End Date:	12/23/2006	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	12/19/2006	Protocol:	EPA-821-R-02-012	Test Species:	CD-Ceriodaphnia dubia
Comments:	W-4 Revolon TIE Baseline				

Dose-Response Plot



Reviewed by:

Acute Ceriodaphnia Test-96 Hr Survival

Start Date:	12/19/2006	Test ID:	VCF1206093	Sample ID:	CA0000000
End Date:	12/23/2006	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	12/19/2006	Protocol:	EPA-821-R-02-012	Test Species:	CD-Ceriodaphnia dubia
Comments:	W-4 Revolon TIE Baseline				

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
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	pH	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-CUSTODY RECORD 1 OF 1

CLIENT: Ventura County Watershed Protection District

SAMPLING DATE: **EVENT #1 (Wet)**

SAMPLERS:

SAMPLE INFORMATION FOR GRAB SAMPLES

SAMPLE ID	DATE/TIME COLLECTED	Acute Ceriodaphnia - 6.25, 12.5, 25, 50, 100%	Chronic Echinoderm Fertilization - 6.25, 12.5, :							NOTES	Field H_2O Temp
ME-CC	12-9-06 23:30		X							See Note 1	
ME-SCR	12-10-06 00:15		X							See Note 1	
ME-VR2	12-10-06 03:30		X							See Note 1	
A-1 Wood	12-9-06 22:30	X								See Note 2	
I-2 Ortega	~~N/A~~ 12-9-06 21:10	X								See Note 2	
R-1 Swan	~~N/A~~ 12-9-06 20:42	X								See Note 2	
W-3 La Vista	12-9-06 21:40	X								See Note 2	
W-4 Revolon	12-9-06 23:00	X								See Note 2	

10°C

	Relinquished By:	Date/Time
Signature	[signature]	12-10-06 03:00
Printed Name	DAVID F. THOMAS	12-10-06 04:00
Affiliation	VCWPD	

	Received By:	Date/Time
Signature	[signature]	12-10-06 0300
Printed Name		
Affiliation		

Miscellaneous Notes (Hazardous Materials, Quick turn-around time, etc.):

1. **Mass Emmission: No TIE for Chronic Samples.**
2. **Land Use: Run TIE if Tua (Acute) is >1 for any wet or dry weather event.**

12/15/06 client notified of urchin failure by mjn 11:15 hrs. — Temp-@ Accept = 10.0°C

AQUATIC
BIOASSAY &
CONSULTING
LABORATORIES, INC.

TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

January 4, 2007

Mr. Arnie Anselm
Ventura County Watershed Protection District
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Ventura, CA 93009

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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

Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

Start Date:	12/11/2006	Test ID:	VCF1206093	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:	W-4 Revolon				

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

			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	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

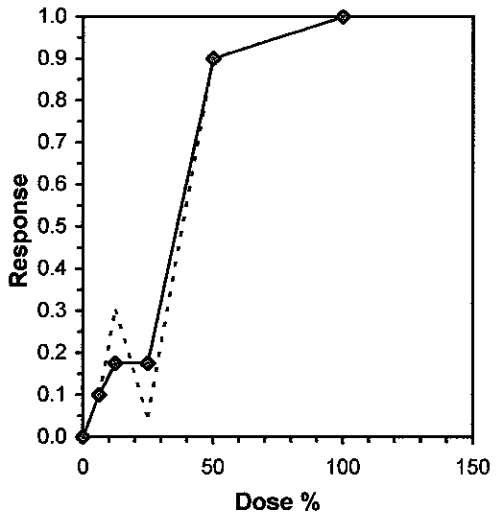
Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.93173	0.868	0.50075	0.69758
Equality of variance cannot be confirmed				

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*	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
IC20	25.862	7.683	0.000	30.550	-0.7789
IC25	27.586	4.717	1.448	32.020	-2.5762
IC40	32.759	1.763	27.241	37.501	0.0381
IC50	36.207	1.941	30.690	43.038	0.6614

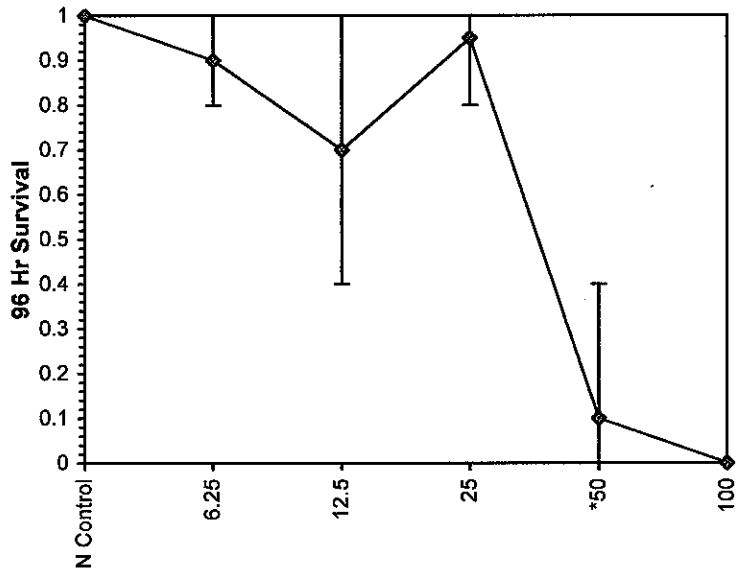
* indicates IC estimate less than the lowest concentration



Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

Start Date:	12/11/2006	Test ID:	VCF1206093	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:	W-4 Revolon				

Dose-Response Plot



Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

Start Date:	12/11/2006	Test ID:	VCF1206093	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:	W-4 Revolon				

Auxiliary Data Summary

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	pH	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

CHAIN-OF-CUSTODY RECORD 1 OF 1

CLIENT: Ventura County Watershed Protection District
SAMPLING DATE: **EVENT #1 (Wet)**
SAMPLERS:

SAMPLE INFORMATION FOR GRAB SAMPLES

SAMPLE ID	DATE/TIME COLLECTED	Acute Ceriodaphnia - 6.25, 12.5, 25, 50, 100%	Chronic Echinoderm Fertilization - 6.25, 12.5, :							NOTES	Field H_2O Temp
ME-CC	12-9-06 23:30		X							See Note 1	
ME-SCR	12-10-06 00:15		X							See Note 1	
ME-VR2	12-10-06 03:30		X							See Note 1	
A-1 Wood	12-9-06 22:30	X								See Note 2	
I-2 Ortega	~~N/A~~ 12-9-06 21:10	X								See Note 2	
R-1 Swan	~~N/A~~ 12-9-06 20:42	X								See Note 2	
W-3 La Vista	12-9-06 21:40	X								See Note 2	
W-4 Revolon	12-9-06 23:00	X								See Note 2	

10°C

	Relinquished By:	Date/Time
Signature	[signature]	12-10-06 03:00
Printed Name	DAVID F. THOMAS	12-10-06 04:00
Affiliation	VCWPD	

	Received By:	Date/Time
	[signature]	12-10-06 0300
Printed Name		
Affiliation		

Miscellaneous Notes (Hazardous Materials, Quick turn-around time, etc.):

1. **Mass Emmission: No TIE for Chronic Samples.**
2. **Land Use: Run TIE if Tua (Acute) is >1 for any wet or dry weather event.**

12/15/06 client notified of urchin failure by mjm 1115h15. Temp @ Receipt = 10.0°C

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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 initation 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 J. Machuzak
Assistant Laboratory Director

29 NORTH OLIVE STREET, VENTURA, CA 93001 • (805) 643-5621

FEB 2 6 2007

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TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

NEW REPORT TO FOLLOW
STATING ≤ 1.43 TU

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,

Michael J. Machuzak
Assistant Laboratory Director

RECEIVED
FEB 2 7 2007
WATERSHED PROTECTION DIST.

29 NORTH OLIVE STREET, VENTURA, CA 93001 • (805) 643-5621

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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	=	$\leq$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

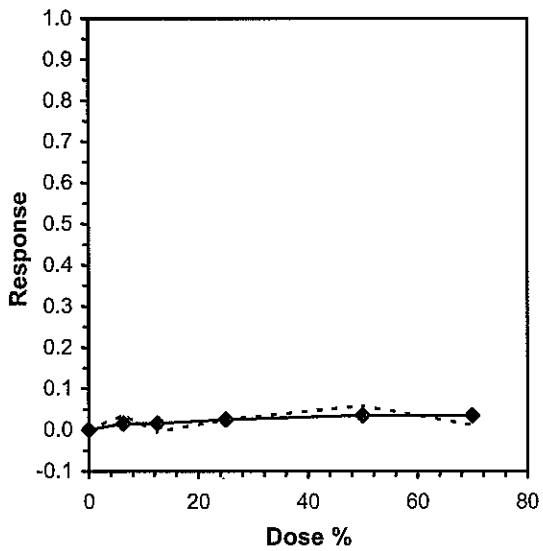
			Transform: Arcsin Square Root					1-Tailed			Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
N Control	0.8975	1.0000	1.2484	1.1873	1.3233	4.771	4				0.8975	1.0000
6.25	0.8650	0.9638	1.2025	1.0706	1.3030	8.302	4	0.791	2.410	0.1399	0.8838	0.9847
12.5	0.9025	1.0056	1.2608	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 normal distribution (p > 0.01)	0.9405	0.884	-0.594	-0.2549
Bartlett's Test indicates equal variances (p = 0.72)	2.8884	15.0863		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test Treatments vs N Control	70	>70		1.42857	0.09856	0.10956	0.00394	0.00674	0.71173	5, 18

Linear Interpolation (200 Resamples)

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

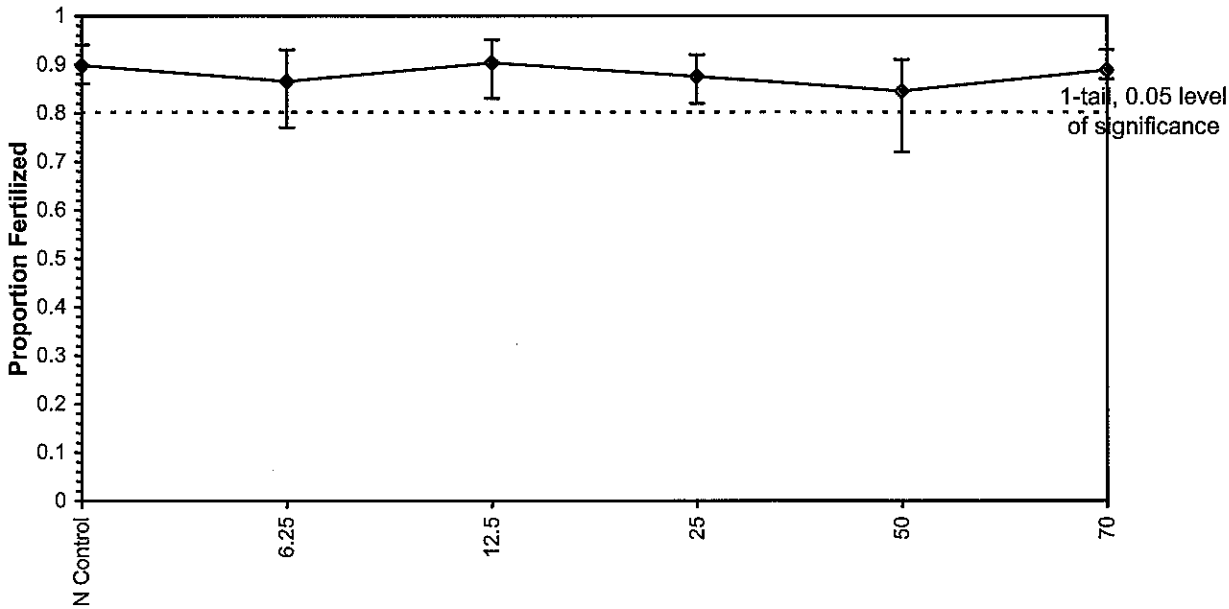


Reviewed by:

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				

Dose-Response Plot



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				

Auxiliary Data Summary

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	pH	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

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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-SCR
DATE RECEIVED:	28 Jan - 07
ABC LAB. NO.:	VCF0107.261

CHRONIC SEA URCHIN FERTILIZATION BIOASSAY

NOEC	=	70.00 %
TUc	=	$\leq$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:	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
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

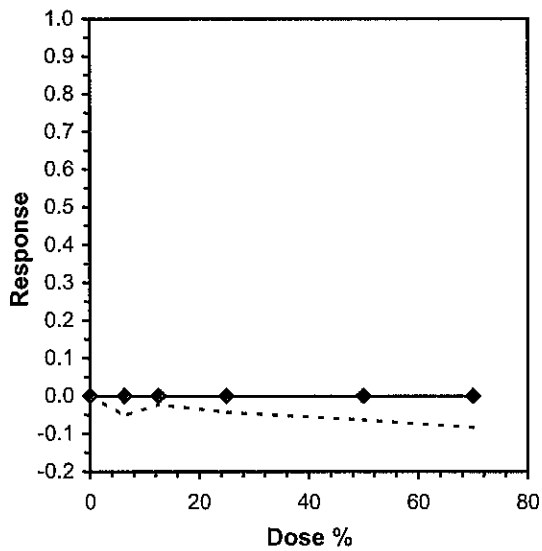
			Transform: Arcsin Square Root					1-Tailed			Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
N Control	0.8600	1.0000	1.1883	1.1593	1.2327	3.012	4				0.8983	1.0000
6.25	0.9050	1.0523	1.2604	1.2171	1.3233	4.167	4	-1.590	2.410	0.1092	0.8983	1.0000
12.5	0.8800	1.0233	1.2227	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 normal distribution (p > 0.01)	0.97811	0.884	-0.1793	-0.1328
Bartlett's Test indicates equal variances (p = 0.42)	4.95401	15.0863		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test Treatments vs N Control	70	>70		1.42857	0.08361	0.09714	0.00796	0.00411	0.13759	5, 18

Linear Interpolation (200 Resamples)

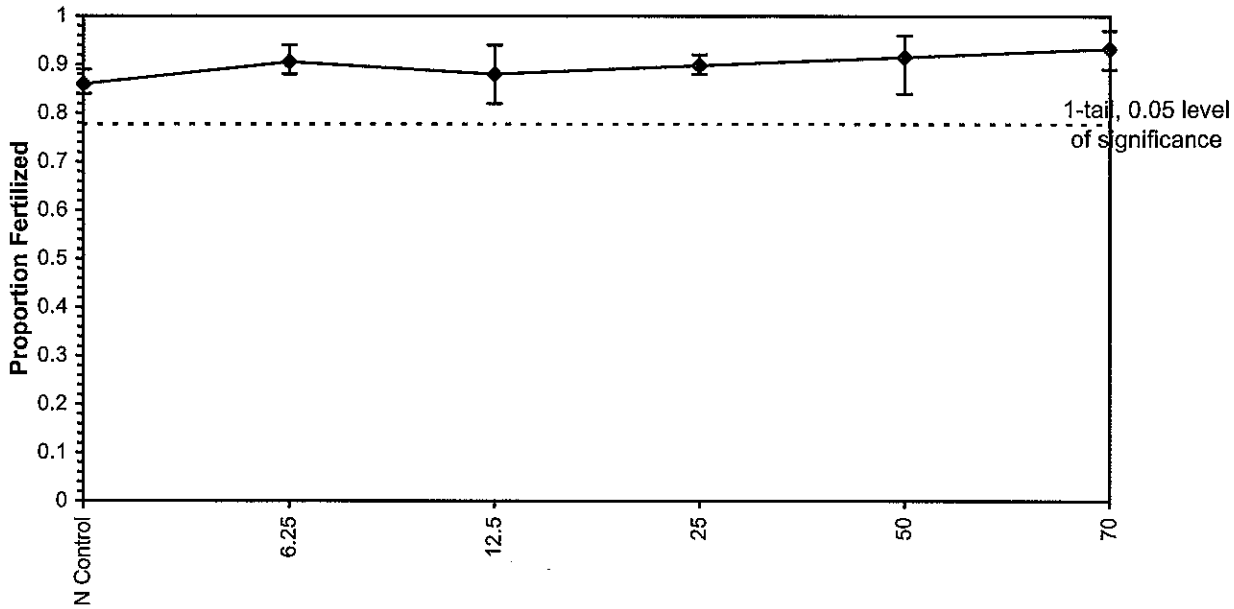
Point	%	SD	95% CL(Exp)	Skew
IC05	>70			
IC10	>70			
IC15	>70			
IC20	>70			
IC25	>70			
IC40	>70			
IC50	>70			



Sperm Cell Fertilization Test-Proportion Fertilized

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				

Dose-Response Plot



Reviewed by:

Sperm Cell Fertilization Test-Proportion Fertilized

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				

Auxiliary Data Summary

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	pH	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

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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,

Thomas (Tim) Mikel
Laboratory Director

Sperm Cell Fertilization Test-Proportion Fertilized

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				

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

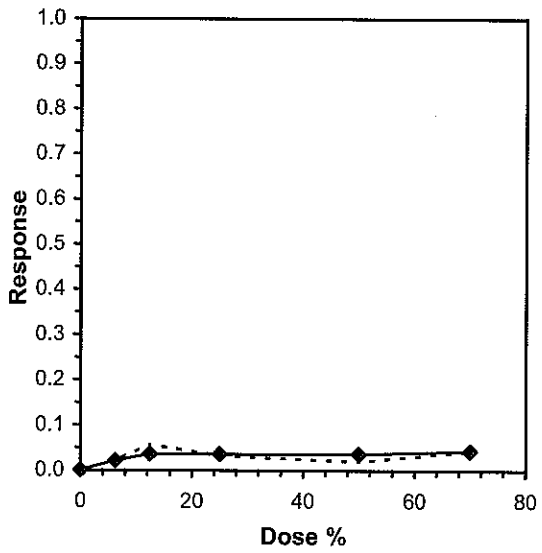
			Transform: Arcsin Square Root						1-Tailed		Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
N Control	0.9300	1.0000	1.3041	1.2840	1.3453	2.214	4				0.9300	1.0000
6.25	0.9100	0.9785	1.2672	1.2327	1.3030	2.531	4	1.098	2.410	0.0809	0.9100	0.9785
*12.5	0.8775	0.9435	1.2164	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 normal distribution (p > 0.01)	0.96545	0.884	0.44708	-0.4388
Bartlett's Test indicates equal variances (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 Treatments vs N Control	70	>70		1.42857	0.04661	0.05009	0.00369	0.00226	0.20129	5, 18

Linear Interpolation (200 Resamples)

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

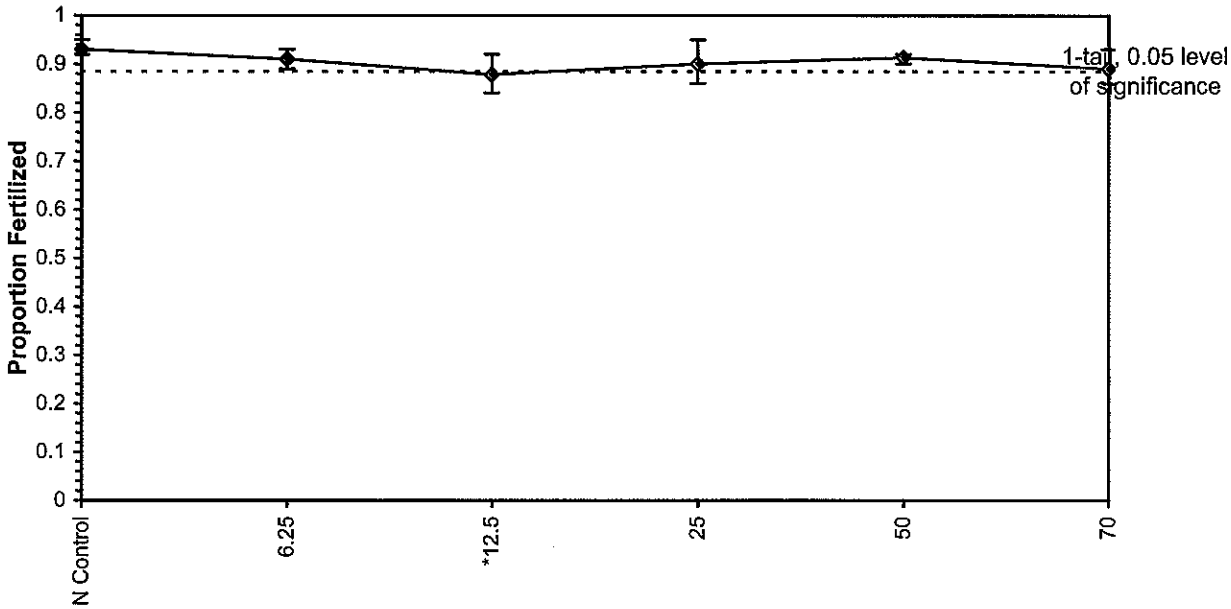


Reviewed by:

Sperm Cell Fertilization Test-Proportion Fertilized

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				

Dose-Response Plot



Sperm Cell Fertilization Test-Proportion Fertilized

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				

Auxiliary Data Summary

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	pH	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

CHAIN-OF-CUSTODY RECORD 1 OF 1

CLIENT: Ventura County Watershed Protection District

SAMPLING DATE: 27 JAN 2007 **EVENT #2 (Wet)**

SAMPLERS: DAVID THOMAS, TOMMY LIDDELL

SAMPLE INFORMATION FOR GRAB SAMPLES

	SAMPLE ID	DATE/TIME COLLECTED	Chronic Echinoderm Fertilization - 6.25, 12.5, 25, 50, 70%							No. of 5 gal. Buckets	NOTES	Field H_2O Temp
.260	ME-CC	01/27/07 1900	X							1	see note 1	14.9 °C
.261	ME-SCR	1/27/07 1945	X							1	see note 1	13.3°C
.262	ME-VR2	1/27/07 2200	X							1	see note 1	14.2°C

	Relinquished By:	Date/Time
Signature	David F Thomas	01-28-07 09:55
Printed Name	DAVID F. THOMAS	
Affiliation	VCWPD	

	Received By:	Date/Time
		1/29/07 0915
Printed Name	Arnel Ramos	
Affiliation	Aquatic Biology	

Miscellaneous Notes (Hazardous Materials, Quick turn-around time, etc.):

1. Mass Emission : Run TIE if Tuc (Chronic) is > 1 for any 2 consecutive wet weather events or 1 dry weather event.

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LABORATORIES, INC.

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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

Sperm Cell Fertilization Test-Proportion Fertilized

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

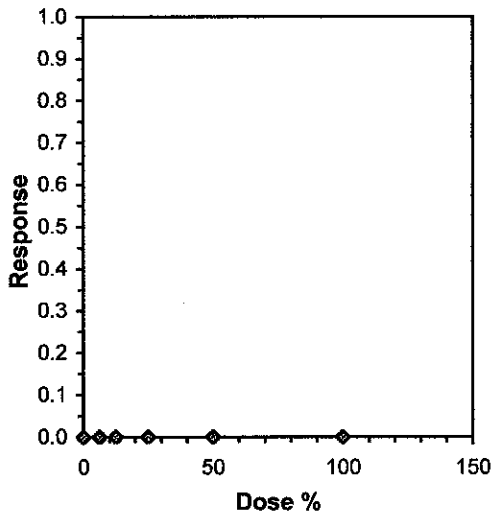
			Transform: Arcsin Square Root					Rank	1-Tailed	Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
N Control	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4			1.0000	1.0000
6.25	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
12.5	1.0000	1.0000	1.5208	1.5208	1.5208	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 normal distribution (p > 0.01)	1	0.884		
Equality of variance cannot be confirmed				

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

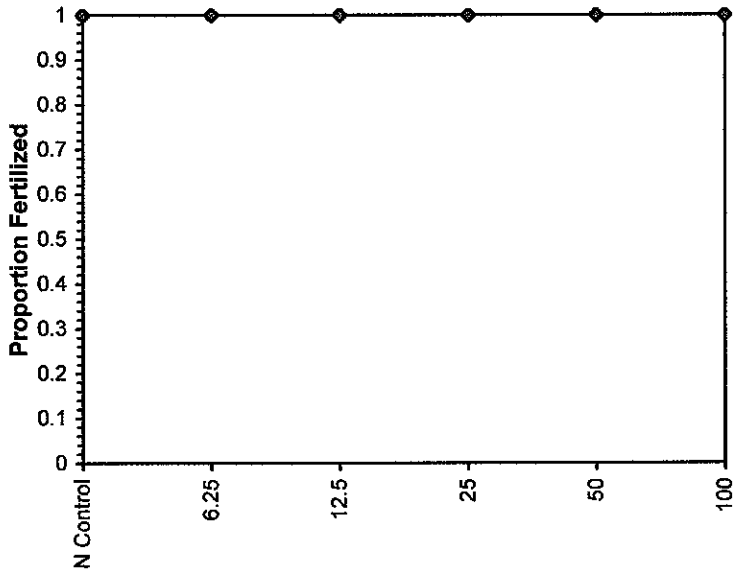


Reviewed by:

Sperm Cell Fertilization Test-Proportion Fertilized

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				

Dose-Response Plot



Sperm Cell Fertilization Test-Proportion Fertilized

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				

Auxiliary Data Summary

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	pH	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

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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,

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Laboratory Director

Sperm Cell Fertilization Test-Proportion Fertilized

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
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

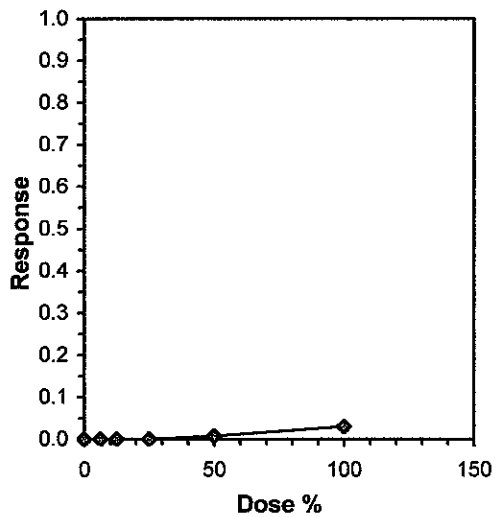
			Transform: Arcsin Square Root					Rank	1-Tailed	Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
N Control	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4			1.0000	1.0000
6.25	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
12.5	1.0000	1.0000	1.5208	1.5208	1.5208	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	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.76485	0.884	-1.0743	3.92896
Equality of variance cannot be confirmed				

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)

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



Sperm Cell Fertilization Test-Proportion Fertilized

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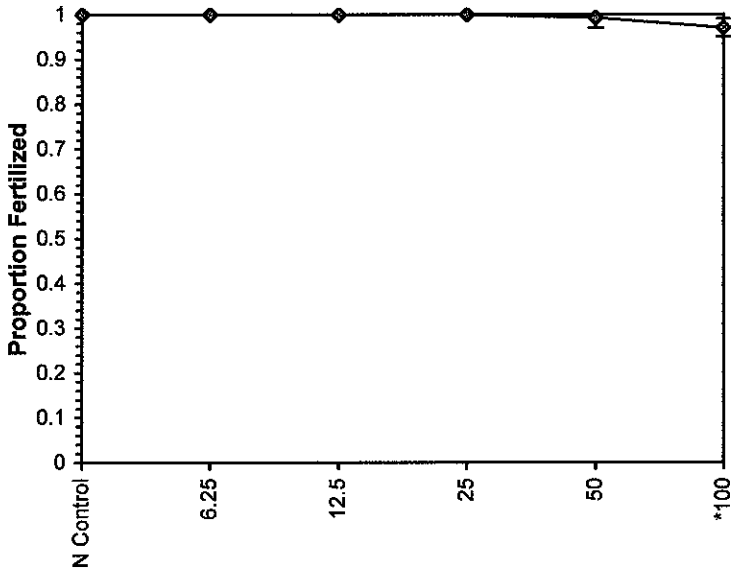
Comments:	ME-SCR				

Dose-Response Plot



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

Auxiliary Data Summary

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	pH	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		8.40	8.40	8.40	0.00	0.00	1
6.25		8.40	8.40	8.40	0.00	0.00	1
12.5		8.40	8.40	8.40	0.00	0.00	2
25		8.40	8.40	8.40	0.00	0.00	2
50		8.40	8.40	8.40	0.00	0.00	2
100		8.40	8.40	8.40	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

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ABC LAB. NO.:	VCF0207.284

CHRONIC SEA URCHIN FERTILIZATION BIOASSAY

NOEC	=	50.00 %
TUc	=	2.00
IC25	=	>100.00 %
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Yours very truly,

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Laboratory Director

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				

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

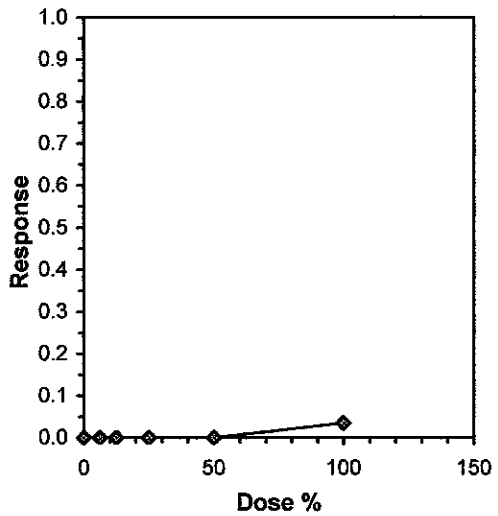
			Transform: Arcsin Square Root					Rank	1-Tailed	Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
N Control	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4			1.0000	1.0000
6.25	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
12.5	1.0000	1.0000	1.5208	1.5208	1.5208	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 non-normal distribution (p <= 0.01)	0.54525	0.884	0.40667	8.98681
Equality of variance cannot be confirmed				

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)

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

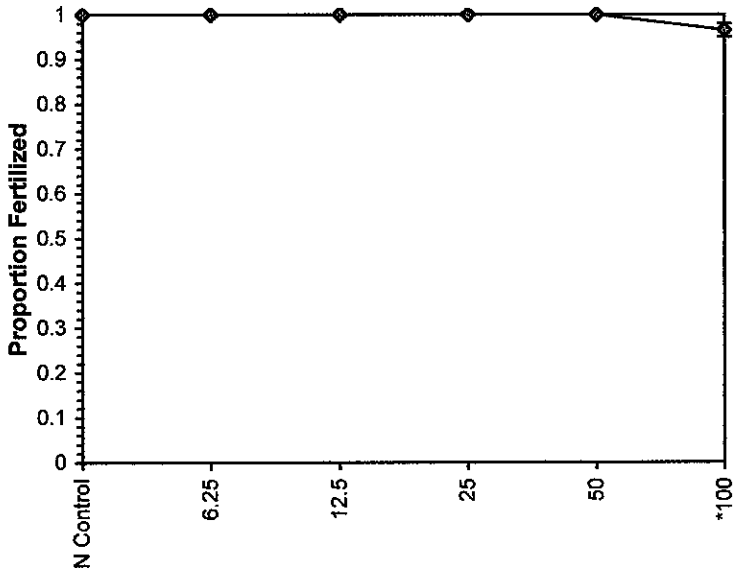


Reviewed by:

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				

Dose-Response Plot



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				

Auxiliary Data Summary

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	pH	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

AQUATIC
BIOASSAY &
CONSULTING
LABORATORIES, INC.

TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

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

29 NORTH OLIVE STREET, VENTURA, CA 93001 • (805) 643-5621

Sperm Cell Fertilization Test-Proportion Fertilized

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 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

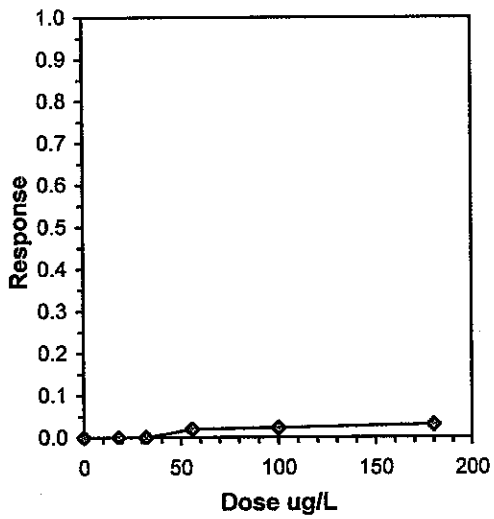
			Transform: Arcsin Square Root					Rank	1-Tailed	Isotonic	
Conc-ug/L	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
Control	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4			1.0000	1.0000
18	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
32	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
56	0.9800	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 non-normal distribution (p <= 0.01)	0.87758	0.884	-0.9351	1.86693
Equality of variance cannot be confirmed				

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	180	>180		
Treatments vs Control				

Linear Interpolation (200 Resamples)

Point	ug/L	SD	95% CL(Exp)	Skew
IC05	>180			
IC10	>180			
IC15	>180			
IC20	>180			
IC25	>180			
IC40	>180			
IC50	>180			

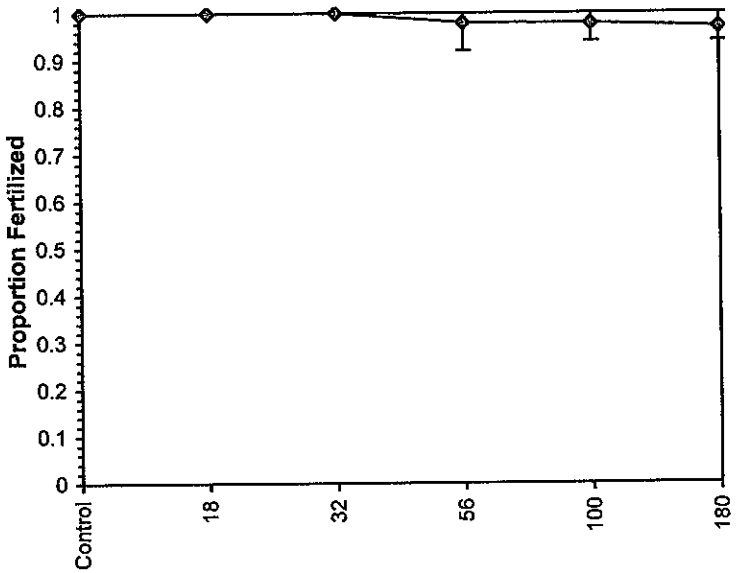


Reviewed by:

Sperm Cell Fertilization Test-Proportion Fertilized

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 Toxicant				

Dose-Response Plot



Reviewed by:

Sperm Cell Fertilization Test-Proportion Fertilized

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 Toxicant				

Auxiliary Data Summary

Conc-ug/L	Parameter	Mean	Min	Max	SD	CV%	N
Control	Temp C	15.25	15.00	15.50	0.35	3.90	2
18		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	pH	7.90	7.90	7.90	0.00	0.00	2
18		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