

Ms. Amy Storm Larry Walker Associates 2151 Alessandro Dr., Suite 100 Ventura, CA 93001 September 17, 2018

Dear Amy:

I have enclosed our report "Toxicity Characterization of Sediments Collected from the Calleguas Creek Watershed: Event 68" for samples collected August 7, 2018. As you will recall, the sediment samples were tested for toxicity to *Hyalella azteca*. The results of this testing are summarized below.

Effects of Calleguas Creek Sediments on Hyalella azteca

There were no significant reductions in survival in the Calleguas Creek sediments. There was a statistically significant reduction in growth in the in the 68-WOOD-317 sediment sample. There were no significant reductions in *Hyalella* growth in the remaining Calleguas Creek sediments.

Toxicity Summary for Calleguas Creek: Event 68 Sediments.					
	Toxicity relative to the	Lab Control treatment?			
Sample Station ID	Hyalella azteca				
	Survival	Growth			
68-PCH-301	no	no			
68-UNIV-304	no	no			
68-HOWAR-312	no	no			
68-WOOD-317	no	Yes			

If you have any questions regarding the performance and interpretation of these tests, feel free to contact my colleague Jeffrey Cotsifas or myself at (707) 207-7762.

Sincerely,

Michael McElroy Senior Project Manager



Pacific EcoRisk is accredited in accordance with NELAP (ORELAP ID 4043). Pacific EcoRisk certifies that the test results reported herein conform to the most current NELAP requirements for parameters for which accreditation is required and available. Any exceptions to NELAP requirements are noted, where applicable, in the body of the report. This report shall not be reproduced, except in full, without the written consent of Pacific EcoRisk. This testing was performed under Lab Order 29192.

A Toxicity Characterization Study of Sediments Collected from the Calleguas Creek Watershed: Event 68

(Sediment Samples Collected on August 7, 2018)

Prepared For

Larry Walker Associates 720 Wilshire Blvd., Suite 204 Santa Monica, CA 90401

Prepared By

Pacific EcoRisk 2250 Cordelia Rd. Fairfield, CA 94534

September 2018



Table of Contents

	Page
1. INTRODUCTION	1
2. COLLECTION AND DELIVERY OF SEDIMENT SAMPLE	ES1
3. TOXICITY TEST PROCEDURES FOR SEDIMENTS	1
3.1 Solid-Phase Sediment Toxicity Testing with Hyalella azte	<i>ca</i> 2
3.1.1 Reference Toxicant Testing of the <i>Hyalella azteca</i>	3
4. RESULTS OF BULK SEDIMENT TOXICITY TESTING	4
4.1 Effects of Calleguas Creek Sediment on Hyalella azteca	4
4.1.1 Reference Toxicant Toxicity to Hyalella azteca	4
5. SUMMARY AND CONCLUSIONS	5
5.1 QA/QC Summary	5

Appendices

Appendix A Chain-of-Custody Records for the Collection and Delivery of the Calleguas Creek Sediment Samples
 Appendix B Test Data and Summary of Statistics for the Evaluation of the Acute Toxicity of the Calleguas Creek Sediments to Hyalella azteca
 Appendix C Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the Hyalella azteca

1. INTRODUCTION

In support of the Calleguas Creek Watershed Monitoring Program, Larry Walker Associates (LWA) has contracted Pacific EcoRisk (PER) to evaluate the potential toxicity of sediments collected from within the Calleguas Creek Watershed. The toxicity evaluations consist of performing the 10-day survival sediment toxicity test with the amphipod *Hyalella azteca*.

In order to document that the test organisms were responding to toxic stress in a typical fashion, reference toxicant tests were also performed.

This report describes the performance and results of the Event 68 sediment toxicity testing performed in support of the Calleguas Creek Watershed Monitoring Program.

2. COLLECTION AND DELIVERY OF SEDIMENT SAMPLES

On August 7, 2018, Kinnetics Laboratories, Inc. (KLI) collected freshwater sediment samples from four locations within the Calleguas Creek watershed (Table 1). These samples were transported on ice and under chain-of-custody to the PER laboratory facility in Fairfield within 24 hrs of collection. The sediment samples were stored at 0-6°C. All sediment tests were initiated within 14 days of sample collection. The chain-of-custody records for the collection and delivery of these samples are provided in Appendix A.

Table 1. Collection of Calleguas Creek Watershed Coalition Sediment Samples.					
Sample Station ID	Collection Date	Test Initiation Date			
68-PCH-301	8/7/18	8/16/17			
68-UNIV-304	8/7/18	8/16/17			
68-HOWAR-312	8/7/18	8/16/17			
68-WOOD-317	8/7/18	8/16/17			

3. TOXICITY TEST PROCEDURES FOR SEDIMENTS

The Calleguas Creek ambient sediments were tested for toxicity using the 10-day survival sediment toxicity test with the amphipod *Hyalella azteca*. The method used in conducting these toxicity tests followed the US EPA guidelines "Methods for Measuring the Toxicity and Bioaccumulation of Sediment-Associated Contaminants with Freshwater Invertebrates, Second Edition" (EPA 600/R-99/064).

3.1 Solid-Phase Sediment Toxicity Testing with Hyalella azteca

The freshwater sediment toxicity test with *H. azteca* consists of exposing the amphipods to the bulk sediment for 10 days, after which effects on survival and growth are evaluated. The specific procedures used in these tests are described below.

The *H. azteca* used in these tests were obtained from a commercial supplier (Aquatic BioSystems, Fort Collins, CO). Upon receipt at the PER lab, the organisms were maintained in aerated tanks of EPA moderately-hard water at 23°C, and were fed *S. capricornutum* and *Spirulina*-amended YCT *ad libitum*.

At the time of test initiation, eight "replicates" of 10 randomly-selected organisms were collected, dried, and weighed to determine the mean dry weight of the test organisms at test initiation (Table 2). These mean dry weight test data are attached in Appendix B.

Table 2. Initial Mean Dry Weight of the *Hyalella azteca* Test Organisms.

Mean dry weight = 0.026 mg

Each of the site sediments was tested at the 100% concentration only. The Lab Control sediment consisted of a composited and homogenized mixture of sediments collected from several reference sites; this sediment has been continuously incubated in freshwater at 23°C for several months prior to use.

There were eight replicates for each test treatment. Each replicate container consisted of a 300-mL tall-form glass beaker with a 3-cm ribbon of 540 µm NITEX® mesh attached to the top of the beaker with silicone sealant. Approximately 24 hrs prior to test initiation, each of the sediment samples was homogenized, after which ~100 mL of the homogenized sediment was loaded into each test replicate. Each of the test replicates was then carefully filled with overlying water, which consisted of EPA synthetic moderately-hard water, modified for use with *H. azteca* as per the EPA test guidelines. The replicates with sediments and clean overlying water were established in temperature-controlled rooms at 23°C under cool-white fluorescent lighting on a 16:8 L:D photoperiod.

After this initial ~24 hr period, the overlying water in each replicate was flushed with two volumes of fresh overlying water medium. A small aliquot of the renewed overlying water from each of the eight replicates per sediment was then collected and composited for measurement of "initial" water quality characteristics (pH, D.O., conductivity, alkalinity, hardness, and total ammonia). The tests were initiated with the random allocation of ten 10-11 day old amphipods into each replicate, followed by the addition of 1.0 mL of *Spirulina*-amended YCT food. The test replicates were then returned to the temperature controlled rooms.

Each day, for the following nine days, each test replicate was examined for the presence of any dead amphipods. A small aliquot of the overlying water from each of the eight replicates was then collected as before for measurement of "old" D.O., after which each replicate was flushed with one volume of fresh water. Another small aliquot of the overlying water in each of the eight replicates was then collected as before for measurement of "new" D.O., after which each replicate was fed 1.0 mL of *Spirulina*-amended YCT.

After 10 days exposure, the tests were terminated. An aliquot of overlying water was collected from each replicate for analysis of the "final" water quality characteristics. The sediments in each replicate container were then carefully washed out and sieved, and the number of surviving amphipods determined. The surviving amphipods from each replicate were then euthanized in methanol, rinsed with de-ionized water, and transferred to a pre-dried and pre-tared weighing pan. These were then dried at 100°C for >24 hrs and re-weighed to determine the mean dry weight per individual organism. The survival and weight data for each site sediment treatment were analyzed and compared to the appropriate Lab Control treatment to determine whether or not any statistically significant reductions were observed. All statistical analyses were performed using CETIS® statistical software (TidePool Scientific, McKinleyville, CA).

3.1.1 Reference Toxicant Testing of the Hyalella azteca

In order to assess the sensitivity of the *H. azteca* test organisms to toxic stress, a concurrent reference toxicant test was performed. The reference toxicant test was performed similarly to the ambient water tests, except that test solutions consisted of the Lab Water Control medium spiked with KCl at concentrations of 0.1, 0.2, 0.4, 0.8, and 1.6 g/L. The resulting test response data were statistically analyzed to determine key concentration-response point estimates (e.g., EC50); all statistical analyses were performed using the CETIS® software. These response endpoints were then compared to the typical response range established by the mean \pm 2 SD of the point estimates generated by the 20 most-recent previous reference toxicant tests performed by this lab.

4. RESULTS OF BULK SEDIMENT TOXICITY TESTING

4.1 Effects of Calleguas Creek Sediment on Hyalella azteca

The results of these tests are summarized below in Table 3. There were no significant reductions in survival in the Calleguas Creek sediments. There was a statistically significant reduction in growth in the in the 68-WOOD-317 sediment sample. There were no significant reductions in *Hyalella* growth in the remaining Calleguas Creek sediments.

The test data and the summary of statistical analyses for these tests are presented in Appendix B.

Table 3. Toxicity of Calleguas Creek Sediment Samples to Hyalella azteca.						
Sediment Treatment	Mean % Survival	Mean Dry Weight (mg)				
Lab Control	82.5	0.094				
68-PCH-301	82.5	0.087				
68-UNIV-304	72.5	0.085				
68-HOWAR-312	87.5	0.104				
68-WOOD-317	75	0.074*				

^{*} The test response at this treatment was significantly less than the Control treatment response (p < 0.05).

4.1.1 Reference Toxicant Toxicity to Hyalella azteca

The results of this test are summarized below in Table 4. The survival LC50 for this test was consistent with the typical response range established by the reference toxicant test database for this species, indicating that these organisms were responding to toxic stress in a typical fashion. The test data and summary of statistical analyses for this test are presented in Appendix C.

Table 4. Reference Toxicant Testing: Effects of KCl on Hyalella azteca.						
KCl Treatment (g/L)	Mean % Survival					
Lab Control	90					
0.1	100					
0.2	80					
0.4	20*					
0.8	0*					
1.6	0*					
Summary of Statistics						
Survival LC50 =	0.29 g/L KCl					
Typical Response Range (mean ± 2 SD)	0.28 – 0.55 g/L KCl					

^{* -} The response at this test treatment was significantly less than the Lab Control treatment response at p < 0.05.

5. SUMMARY AND CONCLUSIONS

A summary of the sediment testing performed on the Calleguas Creek Watershed Event 68 samples is presented below.

Effects of Calleguas Creek Sediments on Hyalella azteca

There were no significant reductions in survival in the Calleguas Creek sediments. There was a statistically significant reduction in growth in the in the 68-WOOD-317 sediment sample. There were no significant reductions in *Hyalella* growth in the remaining Calleguas Creek sediments.

Toxicity Summary for Calleguas Creek: Event 68 Sediments.						
	Toxicity relative to the	Toxicity relative to the Lab Control treatment?				
Sample Station ID	Hyalella azteca					
	Survival	Growth				
68-PCH-301	no	no				
68-UNIV-304	no	no				
68-HOWAR-312	no	no				
68-WOOD-317	no	Yes				

5.1 QA/QC Summary

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

Negative Control – The biological responses for the test organisms in the Lab Control treatments were within acceptable limits.

Positive Control – The results for the reference toxicant test were consistent with the respective reference toxicant test databases for these species, indicating that the test organisms were responding to toxic stress in a typical fashion.

Concentration Response Relationships – The concentration-responses for these tests were evaluated as per EPA guidelines (EPA 8268-B-00-004), and were found to be acceptable.

Appendix A

Chain-of-Custody Record for the Collection and Delivery of the Calleguas Creek Sediment Samples

Larry Walker Associates

2151 Alessandro Drive, Suite 100 Ventura, CA 93001 805-585-1835 805-585-1840 Fax

CHAIN-OF-CUSTO	DDY RE	CORD					Da	ate:		Lab	ID:	
Phone: Fax: Sampled By: LWA Contact:	Jeff Cot 2250 Co Fairfield 707-207 707-207 Amy Sto Callege	sifas ordelia Roa I, CA 94534 7-7761 7-7916	t Watersh			LARRY WALKER		Chronic Hyalella				
		Sample	Sample	Sample		Containe	r	ella az				
Client Sample	e ld	Date	Time	Matrix	#	Туре	Pres.	teca				Notes
CCWTMP-68-PCH-301		8-7-18	1315	Sediment	1	4-mil poly bag	none	х				
CCWTMP-68-UNIV-304			0915	Sediment	1	4-mil poly bag	none	X				
CCWTMP-68-HOWAR-3	312		1045	Sediment	1	4-mil poly bag	none	X				
CCWTMP-68-WOOD-31	17	V	1210	Sediment	1	4-mil poly bag	none	х				

Sender Comments:	Relinquished By (1): Relinquished By (2):
1) Prior approval must be obtained if methods or RLs other than those specified in the QAPP are used. 2) Please PDF a copy of the COCs to Michael Marson at michaelm@lwa.com. 3) Send final report to Michael Marson and edd@kinneticlabs.com.	Signature: Print: Organization: K Date: 8 - 8 - 18 Time: 200 Date: 8 . 9 /8 Time: 7; 3 D
Laboratory Comments:	Received By (1): Beceived By (2):
	Print: Creehan Ciasparyan James Lan
	Organization: Ki Lagistics PER
	Date: 8/8/18 Time: 0730

Crew: KLI-Sed

Appendix B

Test Data and Summary of Statistics for the Evaluation of the Acute Toxicity of the Calleguas Creek Sediments to *Hyalella azteca*

CETIS Summary Report

Report Date:

10 Sep-18 14:14 (p 1 of 2)

Test Code:

CCWTMP_68HA_C1 | 15-1458-2509

Pacific EcoRisk

Batch ID:	07-4553-6689	Test Type:	Survival-Growth (10 day)
Start Date:	16 Aug-18 11:00	Protocol:	EPA/600/R-99/064 (2000)

Analyst: Ashleigh Findley
Diluent: Not Applicable

Ending Date: 26 Aug-18 11:30

Species: Hyalella azteca

Brine: Not Applicable

Duration: 10d

10d Oh

Hyalella 10-d Survival and Growth Sediment Test

Source: Aquatic Biosystems, CO

Age: 11

Sample Code	Sample ID	Sample Date	Receipt Date	Sample Age	Client Name	Project
CCWTMP_68HA_C	03-9992-3841	16 Aug-18 11:00	16 Aug-18 11:00	n/a (22.5 °C)	Larry Walker Associates	29192
68-PCH-301	11-9125-4642	07 Aug-18 13:15	09 Aug-18 07:30	8d 22h (0 °C)		
68-UNIV-304	10-6571-2147	07 Aug-18 09:13	09 Aug-18 07:30	9d 2h (0 °C)		
68-HOWAR-312	19-7176-4100	07 Aug-18 10:45	09 Aug-18 07:30	9d 0h (0 °C)		
68-WOOD-317	18-4312-7501	07 Aug-18 12:10	09 Aug-18 07:30	8d 23h (0 °C)		

Sample Code	Material Type	Sample Source	Station Location Lat/Long
CCWTMP_68HA_0	C Control Sediment	Calleguas Creek	LABQA
68-PCH-301	Sediment	Calleguas Creek	CCWTMP-68-PCH-301
68-UNIV-304	Sediment	Calleguas Creek	CCWTMP-68-UNIV-304
68-HOWAR-312	Sediment	Calleguas Creek	CCWTMP-68-HOWAR-312
68-WOOD-317	Sediment	Calleguas Creek	CCWTMP-68-WOOD-317

Single Compa	arison Summary			
Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
20-3335-1554	Mean Dry Weight-mg	Equal Variance t Two-Sample Test	0.1955	68-PCH-301 passed mean dry weight-mg
09-8639-4513	Mean Dry Weight-mg	Equal Variance t Two-Sample Test	0.2251	68-UNIV-304 passed mean dry weight-mg
20-3307-7558	Mean Dry Weight-mg	Equal Variance t Two-Sample Test	0.9109	68-HOWAR-312 passed mean dry weight-mg
01-1471-6677	Mean Dry Weight-mg	Equal Variance t Two-Sample Test	0.0108	68-WOOD-317 failed mean dry weight-mg
08-2552-9173	Survival Rate	Equal Variance t Two-Sample Test	0.4862	68-PCH-301 passed survival rate
06-1584-1947	Survival Rate	Equal Variance t Two-Sample Test	0.0760	68-UNIV-304 passed survival rate
20-3377-9911	Survival Rate	Equal Variance t Two-Sample Test	0.7207	68-HOWAR-312 passed survival rate
02-7670-4277	Survival Rate	Equal Variance t Two-Sample Test	0.1090	68-WOOD-317 passed survival rate

Sample Co	ode	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
CCWTMP_68HA_C LV	٧	8	0.0945	0.0798	0.109	0.0767	0.129	0.00621	0.0176	18.61%	0.00%
68-PCH-301		8	0.0868	0.0726	0.101	0.0656	0.11	0.00602	0.017	19.63%	8.11%
68-UNIV-304		8	0.0851	0.0609	0.109	0.0171	0.111	0.0102	0.029	34.03%	9.85%
68-HOWAR-312		8	0.104	0.0969	0.112	0.0912	0.116	0.00314	0.00888	8.52%	-10.45%
68-WOOD-317		8	0.0737	0.0617	0.0857	0.06	0.103	0.00508	0.0144	19.52%	21.99%

У										
de	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
1	8	0.825	0.678	0.972	0.500	1.000	0.062	0.175	21.24%	0.00%
	8	0.825	0.693	0.957	0.600	1.000	0.056	0.158	19.17%	0.00%
	8	0.725	0.628	0.822	0.600	0.900	0.041	0.116	16.07%	12.12%
	8	0.875	0.768	0.982	0.600	1.000	0.045	0.128	14.65%	-6.06%
	8	0.750	0.673	0.827	0.600	0.900	0.033	0.093	12.34%	9.09%
	de	de Count 8 8 8	de Count Mean 8 0.825 8 0.825 8 0.725 8 0.875	de Count Mean 95% LCL I 8 0.825 0.678 8 0.825 0.693 8 0.725 0.628 8 0.875 0.768	de Count Mean 95% LCL 95% UCL I 8 0.825 0.678 0.972 8 0.825 0.693 0.957 8 0.725 0.628 0.822 8 0.875 0.768 0.982	de Count Mean 95% LCL 95% UCL Min I 8 0.825 0.678 0.972 0.500 8 0.825 0.693 0.957 0.600 8 0.725 0.628 0.822 0.600 8 0.875 0.768 0.982 0.600	ode Count Mean 95% LCL 95% UCL Min Max I 8 0.825 0.678 0.972 0.500 1.000 8 0.825 0.693 0.957 0.600 1.000 8 0.725 0.628 0.822 0.600 0.900 8 0.875 0.768 0.982 0.600 1.000	Ide Count Mean 95% LCL 95% UCL Min Max Std Err I 8 0.825 0.678 0.972 0.500 1.000 0.062 8 0.825 0.693 0.957 0.600 1.000 0.056 8 0.725 0.628 0.822 0.600 0.900 0.041 8 0.875 0.768 0.982 0.600 1.000 0.045	Ide Count Mean 95% LCL 95% UCL Min Max Std Err Std Dev I 8 0.825 0.678 0.972 0.500 1.000 0.062 0.175 8 0.825 0.693 0.957 0.600 1.000 0.056 0.158 8 0.725 0.628 0.822 0.600 0.900 0.041 0.116 8 0.875 0.768 0.982 0.600 1.000 0.045 0.128	Ide Count Mean 95% LCL 95% UCL Min Max Std Err Std Dev CV% I 8 0.825 0.678 0.972 0.500 1.000 0.062 0.175 21.24% 8 0.825 0.693 0.957 0.600 1.000 0.056 0.158 19.17% 8 0.725 0.628 0.822 0.600 0.900 0.041 0.116 16.07% 8 0.875 0.768 0.982 0.600 1.000 0.045 0.128 14.65%

Analyst: ALF QA: _____

Report Date:

10 Sep-18 13:45 (p 2 of 2)

Test Code: CCWTMP_68HA_C1 | 15-1458-2509

Hyalella 10-d Sur	vival and C	Frowth Sedi	ment Test							Pacific EcoRis
Mean Dry Weight	-mg Detail									
Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	
CCWTMP_68HA_	C LW	0.0843	0.102	0.089	0.0767	0.086	0.129	0.109	0.08	
68-PCH-301		0.11	0.0733	0.0712	0.0922	0.11	0.0656	0.081	0.091	
68-UNIV-304		0.0171	0.0883	0.0844	0.0917	0.103	0.0862	0.0988	0.111	
68-HOWAR-312		0.0912	0.113	0.094	0.116	0.103	0.107	0.1	0.11	
68-WOOD-317		0.085	0.0743	0.103	0.06	0.075	0.0656	0.0625	0.0643	
Survival Rate Det	ail									
Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	
CCWTMP_68HA_0	C LW	0.700	0.900	1.000	0.900	0.500	0.700	0.900	1.000	
68-PCH-301		0.800	0.600	0.800	0.900	0.600	0.900	1.000	1.000	
68-UNIV-304		0.700	0.600	0.900	0.600	0.600	0.800	0.800	0.800	
68-HOWAR-312		0.800	0.900	1.000	1.000	0.600	0.900	0.900	0.900	
68-WOOD-317		0.800	0.700	0.700	0.600	0.800	0.900	0.800	0.700	
Survival Rate Bin	omials									
Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	
CCWTMP_68HA_0	C LW	7/10	9/10	10/10	9/10	5/10	7/10	9/10	10/10	
68-PCH-301		8/10	6/10	8/10	9/10	6/10	9/10	10/10	10/10	
68-UNIV-304		7/10	6/10	9/10	6/10	6/10	8/10	8/10	8/10	
68-HOWAR-312		8/10	9/10	10/10	10/10	6/10	9/10	9/10	9/10	
68-WOOD-317		8/10	7/10	7/10	6/10	8/10	9/10	8/10	7/10	

10-Day Hyalella azteca Sediment Toxicity Test Data

Client:	LWA - Calleguas Creek	Org. Supplier:	ABS	
Project#:	29192	Org. Log #:	11134	
Test ID#:	79265-79268	Org. Age/Size:	10-11-01	

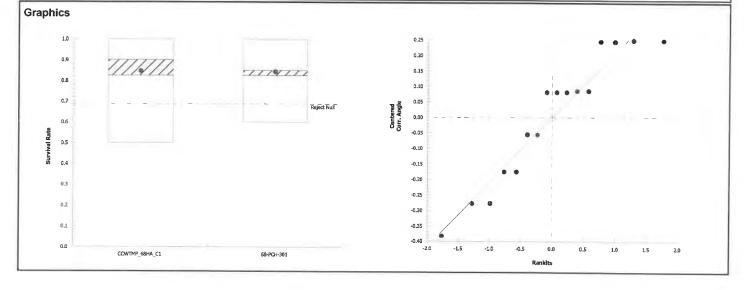
-			Test N	/Iaterial		Water Qual	ity Measure	ments	G1 00
Day	Date		Lab (Control		Parameter	Value	Meter ID	Sign-off:
			# Live C	Organisms		pН	7.13	PH19	AM Change: My
0	8/14/18	A lb	BIO	CIU	Div	D.O. (mg/L)	8.3	RDII	WQ: Myl
		E lu	F io	G IV	Н чъ	Conductivity (µS/cm)	460	ECII	Initiation Time: (100
						Alkalinity (mg/L)	45.2		Initiation Counts:
				10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Hardness (mg/L)	PERS E		Confirmation Counts:
		10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				Ammonia (mg/L)	21.00	DR3800	PM Feed: 0
						Temp. (°C)	22.5	107A	
			# of M	ortalities		Old D.O. (mg/L)	6.7	ADIO	AM Change: UB WQ: UB
1	21/2/10	A ()	B 0	c O	DO	New D.O. (mg/L)	7.5	RDIO	Mortality Count Mb
	9/17/18	EO	F	6 D	H O	Temp. (°C)	22.7	48A	PM Change: F7 PM Feed: F7
			# of M	ortalities		Old D.O. (mg/L)	7.4	RDIO	AM Change: 16 WO: 16
2	9/10/10	A 0	вО	c 6	D 0	New D.O. (mg/L)	8.1	PDID	Mortality Count
	Allon	E O	FU	G ()	н ()	Temp. (°C)	22.7	484	PM Chan PM Feduro
			# of M	ortalities		Old D.O. (mg/L)	6.6	RDII	AM Change: MY WQ: MYL
3	8/19/18	A ()	B 0	c O	DO	New D.O. (mg/L)	7.9	edu	Mortality Count myL
	211.4.0	E ()	F O	G A	H O	Temp. (°C)	22.7	48A	PM Change: PM Feed PM
			# of M	ortalities		Old D.O. (mg/L)	8.0	ROIO	AM Change: ARWQ: AR
4	8/20/18	A O	BO	c 0	DO	New D.O. (mg/L)	8.2	RDIO	Mortality Count AR
	01201.0	E G	FO	G O	н о	Temp. (°C)	22.9	48A	PM Change: AR PM Feed: A
-			# of M	ortalities		Old D.O. (mg/L)	6.0	RDIZ	AM Change WQ: 44
5		A ()	B 0	c 0	D O	New D.O. (mg/L)	7.3	ROIZ	Mortality Count
	8-21-18	E O	FO	G 0	H P	Temp. (°C)	22.8	48A	PM Change: PM Feed: W
			# of M	ortalities		Old D.O. (mg/L)	5.1	FD12	AM Change: WQ:
6	812418	A 0	ВО	c O	DO	New D.O. (mg/L)	8.0	PO12	Mortality Count
	Dr. 221	E)	FO	G D	н О	Temp. (°C)	23.4	48A	PM Change M Feetur
			# of M	ortalities		Old D.O. (mg/L)	6.3	RD12	AM Change: WQ: M41
7	8 23 18	A ()	B 0	c O	D O	New D.O. (mg/L)	8.2	RD12	Mortality Count MY
	1	EO	F O	G ()	н О	Temp. (°C)	22.6	489	PM Change: PM Feed: Y
			# of M	ortalities		Old D.O. (mg/L)	6.5	RDIO	AM Change: AR WQ: AR
8	8124118	A O	ВО	CO	D	New D.O. (mg/L)	8.1	RDIO	Mortality Count AR
	0,2,7.0	E Ø	F d	G O	НО	Temp. (°C)	23-0	48A	PM Change: ARPM Feed: AR
	,		# of M	ortalities		Old D.O. (mg/L)	6.	ROID	AM Change: WQ: MY
9	8 25/18	A D	B 0	c 0	DO	New D.O. (mg/L)	77	ROID	Mortality Count
		E O	FO	G O	H 0	Temp. (°C)	23.1	48A	PM Change PM Feed W/
			# A	Alive		pH	7.74		WQ: AR
10	8126/18	A 7	в 9	010	Da	D.O. (mg/L)	7.0	RD12	Termination Counts:
		E 5	F 7	g 9	H 10	Conductivity (µS/cm)	488	ECII	Termination Time: 1130
					**************************************	Alkalinity (mg/L)	165.2		
						Hardness (mg/L)	V136		
			The state of the s			Ammonia (mg/L)	+ <1.00	DR3800	
447545456545675						Temp. (°C)	- Transfill	48A	

Report Date:

01 Sep-18 11:59 (p 5 of 8)

Test Code: CCWTMP_68HA_C1 | 15-1458-2509

Hyalella 10-d Surv	ival and Gr	owth Sedim	nent Test							Paci	fic EcoRis
Analysis ID: 08-2	2552-9173	End	point: Su	rvival Rate			CET	IS Version:	CETISv1	.9.2	
Analyzed: 01	Sep-18 11:5	8 Ana	lysis: Pa	rametric-Two	Sample		Offic	cial Results	: Yes		
Data Transform		Alt Hyp					Comparis	son Result			PMSD
Angular (Corrected)		C > T					68-PCH-3	01 passed	survival rate		16.60%
Equal Variance t T	wo-Sample	Test									
Sample I vs	Sample II		Test Stat	Critical	MSD DF	P-Type	P-Value	Decision	(α:5%)		
Lab Water Control	68-PCH-30	01	0.0353	1.76	0.189 14	CDF	0.4862	Non-Signi	ificant Effect		
ANOVA Table											
Source	Sum Squa	ires	Mean Squ	uare	DF	F Stat	P-Value	Decision	(a:5%)		
Between	5.740E-05		5.740E-05	5	1	0.00124	0.9724		ficant Effect		
Error	0.646156		0.046154		14						
Total	0.646213				15						
Distributional Test	\$										
Attribute	Test				Test Stat	Critical	P-Value	Decision((α:1%)		
Variances	Variance R	atio F Test			1.17	8.89	0.8454	Equal Var	iances		
Distribution	Shapiro-W	ilk W Norma	ality Test		0.906	0.841	0.1017	Normal Di	stribution		
Survival Rate Sum	mary										
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CCWTMP_68HA_C	LW	8	0.825	0.678	0.972	0.900	0.500	1.000	0.062	21.24%	0.00%
68-PCH-301		8	0.825	0.693	0.957	0.850	0.600	1.000	0.056	19.17%	0.00%
Angular (Corrected) Transforn	ned Summa	ary								
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CCWTMP_68HA_C	LW	8	1.17	0.981	1.35	1.25	0.785	1.41	0.0788	19.09%	0.00%
68-PCH-301		8	1.16	0.991	1.34	1.18	0.886	1.41	0.073	17.75%	0.32%



Analyst: APF QA: Jo

68-PCH-301

0.885

1.76

Lab Water Control

Report Date:

0.1955

01 Sep-18 11:59 (p 1 of 8)

Test Code: CCWTMP_68HA_C1 | 15-1458-2509

Non-Significant Effect

Hyalella 10-d Survival and Growth Sediment Test

Analysis ID: 20-3335-1554

Analyzed: 01 Sep-18 11:59

Analysis: Parametric-Two Sample

Pacific EcoRisk

CETIS Version: CETISv1.9.2

Official Results: Yes

Data TransformAlt HypComparison ResultPMSDUntransformedC > T68-PCH-301 passed mean dry weight-mg16.14%

Equal Variance t Two-Sample Test
Sample I vs Sample II Test Stat Critical MSD DF P-Type P-Value Decision(α:5%)

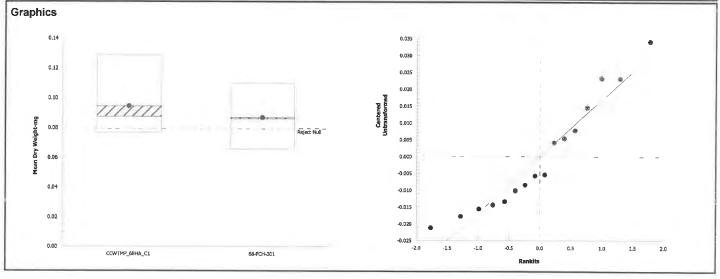
14 CDF

0.015

ANOVA Table Sum Squares Source Mean Square DF F Stat P-Value Decision(a:5%) Between 0.0002347 0.0002347 1 0.783 0.3911 Non-Significant Effect Error 0.0041943 0.0002996 14 Total 0.004429 15

Distributional Tests Attribute Test Test Stat Critical P-Value Decision(a:1%) Variances Variance Ratio F Test 1.06 8.89 0.9364 Equal Variances Distribution Shapiro-Wilk W Normality Test 0.924 0.841 0.1929 Normal Distribution

Mean Dry Weight-mg Summary Sample Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect CCWTMP_68HA_C LW 8 0.0945 0.0798 0.109 0.0875 0.0767 0.129 0.00621 18.61% 0.00% 68-PCH-301 8 0.0868 0.0726 0.101 0.086 0.0656 0.11 0.00602 19.63% 8.11%



Analyst: ARF QA: Jo

10-Day Hyalella azteca Sediment Toxicity Test Data

Client:	LWA - Calleguas Creek	Org. Supplier:	ABS
Project#:	29192	Org. Log #:	11134
Test ID#:	79265	Org. Age/Size:	10-1101

D.	Dete		Test M	I aterial		Water Qual	ity Measure	ments	Cian affe
Day	Date		CCWTMP-	68-PCH-3	01	Parameter	Value	Meter ID	Sign-off:
			# Live O	rganisms		pН	7.82	PHIA	AM Change: My
0	8/16/18	AID	B	Clo	D 10	D.O. (mg/L)	8.2	RDII	WQ: MYL
	1.7.0	EIU	Fiv	GID	H (O	Conductivity (µS/cm)	447	ECIL	Initiation Time: 100
				2		Alkalinity (mg/L)	146.4		Initiation Counts:
	100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			**************************************	MAN OF STREET,	Hardness (mg/L)	1179.2		Confirmation Counts:
		1				Ammonia (mg/L)	4.00	DR3800	PM Feed: W
					200 000 000 000 000 000 000 000 000 000	Temp. (°C)	22.7	107A	
			# of Me	ortalities		Old D.O. (mg/L)	7.4	f-010	AM Change WO: UB
1	8117/10	A ()	ВО	c O	DO	New D.O. (mg/L)	7.7	PDIO	Mortality Count
	191,	E O	F O	G D	н О	Temp. (°C)	22.5	48A	PM Change: 7 PM Feed:
			# of Me	ortalities		Old D.O. (mg/L)	7.9	PD10	AM Change UBWQ: MB
2	8/18/18	A (0	B ()	0	0 0	New D.O. (mg/L)	8.2	PD10	Mortality Count
	Pholi	E ()	F O	G o	H O	Temp. (°C)	22.8	484	PM Change PM Feet
			# of Me	ortalities		Old D.O. (mg/L)	68	RDII	AM Change: MYC WYC
3	8/19/18	A D	B 0	c 0	DO	New D.O. (mg/L)	7.8	POII	Mortality Count Myse
	01.1	E O	F O	G 0	H	Temp. (°C)	22-8	48A	PM Change:
1 1 1		X Total	# of M	ortalities		Old D.O. (mg/L)	6.4	RDIO	AM Change: AR WQ: AR
4	8120118	A 0	ВО	CO	DO	New D.O. (mg/L)	7.6	RDIO	Mortality Count AR
	8120110	E O	F O	G O	н О	Temp. (°C)	22.8	48A	PM Change: ARPM Feed: AR
			# of M	ortalities		Old D.O. (mg/L)	5.1	14012	AM Change YWW. WW
5		A 0	B 0	CO	D 0	New D.O. (mg/L)	5.9	12012	Mortality Count 44
	8-2118	E O	F つ	G O	H 10	Temp. (°C)	22.9	48A	PM Change PM Feed PM
			# of M	ortalities		Old D.O. (mg/L)	6-2	PO12	AM Change: MB WQ: MB
6	1.116	A ()	B	c D	D ()	New D.O. (mg/L)	8.0	RDIZ	Mortality Count
	8/22/18	E ()	FO	c 0	Н ()	Temp. (°C)	73.5	48A	PM Chang DPM Feed WF
			# of Me	ortalities		Old D.O. (mg/L)	6.9	PDIZ	AM Change WQ: MYK
7	8/23/18	A 0	B ()	0	D 0	New D.O. (mg/L)	8.1	RDIZ	Mortality Count My
	olo 1	E ()	FO	0	н ()	Temp. (°C)	22.7	48A	PM Change PM Feed PM
			# of Me	ortalities		Old D.O. (mg/L)	6.2	RDIO	AM Change: AR WQ: AR
8	8124118	A O	В	c o	DO	New D.O. (mg/L)	8.3	RDIO	Mortality Count RR
		E O	FO	G Q	H O	Temp. (°C)	22 9	48A	PM Change: RIPM Feed: AR
			# of Me	ortalities		Old D.O. (mg/L)	6.6	RDIO	AM Change: WQ: myr
9	8/25/18	A O	B 0	c 0	DO	New D.O. (mg/L)	7.7	ROW	Mortality Count
		E ()	F O	G 0	H O	Temp. (°C)	23.1	HSA	PM Change: PM Feed: MV
	-		# A	live		pH	7 66	PH25	W. AR
10	8126118	8	B 6	c 8	D 9	D.O. (mg/L)	6.2	RD12	Termination Counts:
		E 6	F 9	G lo	H 10	Conductivity (µS/cm)	823	ECII	Termination Time: 1215
		THE PROPERTY OF THE PROPERTY O				Alkalinity (mg/L)	179.2		
		THE PROPERTY OF THE PROPERTY O			A PRINTED TO THE PRIN	Hardness (mg/L)	156		
		**************************************	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	**************************************		Ammonia (mg/L)	2.73	DR3800	
					1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Temp. (°C)	22.9	48A	

Hyalella azteca Weight Data Sheets

 Client:
 LWA - Calleguas Creek
 Project #:
 29192
 Balance ID:
 BALOU

 Sample ID:
 CCWTMP-68-PCH-301
 Tare Wt Date:
 8/18/18
 Sign-Off:
 MUL

 Test ID #:
 79265
 Final Wt Date:
 8/24/18
 Sign-Off:
 W

Pan	Concentration Replicate		Initial Weight. (mg)	Final Weight. (mg)	# organisms	Ave Weight (mg)
1	Control	A	72.61	73.20	7	0.0843
2	Sediment	В	61.53	62.45	9	0.1022
3		С	63.99	64.88	10	0.0 890
4		D	57.46	58.15	9	0.0767
5		Е	65.56	65.99	5	0.0860
6	, .	F	65.24	66.14	7	0.1286
7		G	63.20	64.18	9	0.1089
8		Н	65.56	66.36	10	0,0800
9	CCWTMP-68-PCH-301	A	61.96	62.84	g	0.1100
10		В	64.51	64.95	6	0.6733
11		С	60.14	60.71	8	0.0713
12		D	64.74	65.57	9	0.0922
13		Е	62.54	63.20	6	0.1100
14		F	67.38	67. 97	9	D Dussi
15		G	54.77	55.58	lo	0.0810
16		Н	66.11	67.02	10	0.0910
QA31			54.93	54.91		

mod 8/12/15

CCWTMP_68HA_C LW

68-UNIV-304

8

8

1.17

1.03

0.981

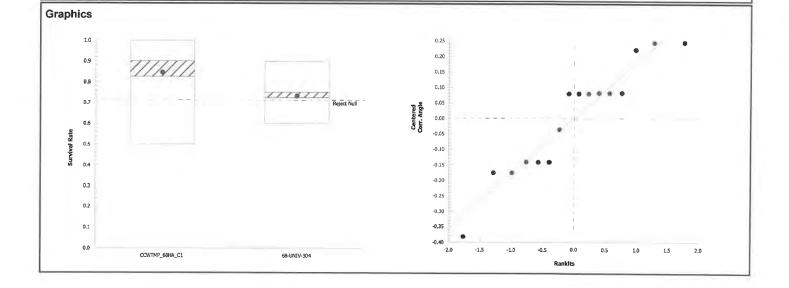
0.914

Report Date:

01 Sep-18 11:59 (p 6 of 8)

Test Code: CCWTMP_68HA_C1 | 15-1458-2509

Hyalella 10-d Sur	vival and G	rowth Sec	liment Test							Paci	fic EcoRis
Analysis ID: 06	-1584-1947	Eı	ndpoint: S	Survival Rate			CET	IS Version	n: CETISv	1.9.2	
Analyzed: 01	Sep-18 11:	58 A ı	nalysis: F	Parametric-Tw	o Sample		Offic	ial Resul	ts: Yes		
Data Transform		Alt Hyp					Comparis	on Resul	it		PMSD
Angular (Corrected	d)	C > T					68-UNIV-	304 passe	d survival rat	е	13.65%
Equal Variance t	Two-Sample	e Test									
Sample I vs	Sample II	L	Test Sta	at Critical	MSD DF	P-Type	P-Value	Decisio	n(a:5%)		
Lab Water Control	68-UNIV-	304	1.52	1.76	0.163 14	CDF	0.0760	Non-Sig	nificant Effec	t	
ANOVA Table											
Source	Sum Squ	ares	Mean S	quare	DF	F Stat	P-Value	Decisio	n(α:5%)		
Between	0.0782602	2	0.07826	02	1	2.3	0.1519	Non-Sig	nificant Effec	t	
Error	0.477157		0.03408	27	14			·			
Total	0.555418				15						
Distributional Tes	its										
Attribute	Test				Test Stat	Critical	P-Value	Decisio	n(α:1%)		
Variances	Variance I	Ratio F Te	st		2.69	8.89	0.2157	Equal V	ariances		
Distribution	Shapiro-V	Vilk W Nor	mality Test		0.914	0.841	0.1351	Normal	Distribution		
Survival Rate Sun	nmary										
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CCWTMP_68HA_0	C LW	8	0.825	0.678	0.972	0.900	0.500	1.000	0.062	21.24%	0.00%
68-UNIV-304		8	0.725	0.628	0.822	0.750	0.600	0.900	0.041	16.07%	12.12%
Angular (Correcte	d) Transfor	med Sum	mary								
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
										/0	,0=11001



1.35

1.14

1.25

1.05

0.785

0.886

1.41

1.25

0.0788

0.0481

19.09%

13.23%

0.00%

11.98%



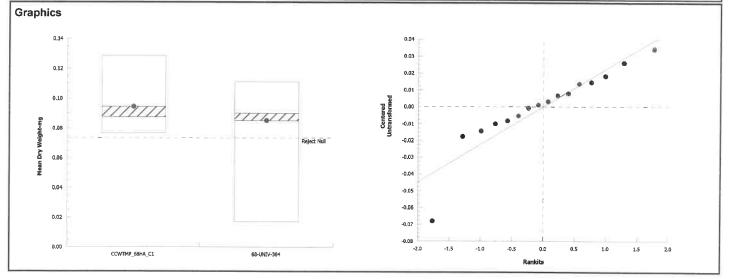
Report Date:

01 Sep-18 11:59 (p 2 of 8)

Test Code: CCWTMP_68HA_C1 | 15-1458-2509 Hyalella 10-d Survival and Growth Sediment Test Pacific EcoRisk 09-8639-4513 Analysis ID: Endpoint: Mean Dry Weight-mg **CETIS Version:** CETISv1.9.2 Analyzed: 01 Sep-18 11:59 Analysis: Parametric-Two Sample Official Results: Yes **Data Transform** Alt Hyp **Comparison Result PMSD** Untransformed C > T 68-UNIV-304 passed mean dry weight-mg 22.34% **Equal Variance t Two-Sample Test** Sample I ٧S Sample II **Test Stat Critical** DF P-Type MSD P-Value Decision(a:5%) Lab Water Control 68-UNIV-304 14 CDF 0.777 1.76 0.021 0.2251 Non-Significant Effect **ANOVA Table** Source **Sum Squares** Mean Square DF F Stat P-Value Decision(a:5%) Between 0.0003466 0.0003466 1 0.604 0.4502 Non-Significant Effect Error 0.0080388 0.0005742 14 Total 0.0083853 15 **Distributional Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variances	Variance Ratio F Test	2.72	8.89	0.2106	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.879	0.841	0.0376	Normal Distribution

Mean Dry Weight-mg Summary											
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CCWTMP_68HA_C	: LW	8	0.0945	0.0798	0.109	0.0875	0.0767	0.129	0.00621	18.61%	0.00%
68-UNIV-304		8	0.0851	0.0609	0.109	0.09	0.0171	0.111	0.0102	34.03%	9.85%





10-Day Hyalella azteca Sediment Toxicity Test Data

Client:	LWA - Calleguas Creek	Org. Supplier:	ABS	
Project#:	29192	Org. Log #:	11134	
Test ID#:	79266	Org. Age/Size:	10-110	

D.	Date	Test Material				Water Qual	ity Measure	ments	(1) 00
Day	Date	C	CWTMP-	68-UNIV-	304	Parameter	Value	Meter ID	Sign-off:
			# Live C)rganisms		рН	7.72	PHIA	AM Change:
0	8/16/18	A IO	BO	C 10	D (O	D.O. (mg/L)	7.7	RDII	WQ: myl
		EIU	F 16	GIB	H (D	Conductivity (µS/cm)	422	ECII	Initiation Time: 1100
		2				Alkalinity (mg/L)	150		Initiation Counts: 6
						Hardness (mg/L)	1518 126		Confirmation Counts:
						Ammonia (mg/L)	4.00	DR3800	PM Feed: W
						Temp. (°C)	22.6	107A	
	1,4)		# of M	ortalities		Old D.O. (mg/L)	4.3	2010	AM Change UhWO: Wh
1	01/2/19	A O	в 0	c 0	D 0	New D.O. (mg/L)	6.8	RDIO	Mortality Count MD
		E O	F D	G ()	О н	Temp. (°C)	22.5	489	PM Change: F 7 PM Feed: F-7
			# of M	ortalities		Old D.O. (mg/L)	4.5	PD 10	AM Change: MB WQ: MB
2	8/18/18	^ 0	BO	° O	DO	New D.O. (mg/L)	7.5	RDIU	Mortality Count MB
	Blidia	E O	F O	G O	H O	Temp. (°C)	22.7	48A	PM Change PM Feel Ch
			# of M	ortalities		Old D.O. (mg/L)	6.5	RDII	AM Change: WQ: MUL
3	8/19/18	A ()	ВО	c O	DO	New D.O. (mg/L)	7.5	RDII	Mortality Count Mys
	oltin	E D	FO	G O	H 0	Temp. (°C)	22.7	48A	PM Change: PM Feeding
			# of Me	ortalities		Old D.O. (mg/L)	4.9	RDIO	AM Change: AR WQ: AR
4	8/20/18	A O	ВО	c o	D O	New D.O. (mg/L)	7.7	RDIO	Mortality Count AR
		E O	F O	G O	н О	Temp. (°C)	22.8	48A	PM Change: AR PM Feed: AR
				ortalities		Old D.O. (mg/L)	3.5	2012	AM Change: Ye WQ: YU
5		A 10	BO	c po	D 0	New D.O. (mg/L)	7.5	2012	Mortality Count Vu
	8-2148	E O	F O	G 0	H iO	Temp. (°C)	22.8	48A	PM Change PM Feed Yu
	1.		# of Mo	ortalities		Old D.O. (mg/L)	5.3	KD12	AM Change: B WQ: MB
6	8/22/18	A O	BO	c O	DO	New D.O. (mg/L)	7.9	PDIZ	Mortality Count
		E D	F O	G O	H	Temp. (°C)	23.8	484	PM Change PM Feet L
	1 10		# of Mo	ortalities		Old D.O. (mg/L)	5.6	RD12	AM Change MY WQ: MY
7	8 23/18	A 0	B ()	c O	DO	New D.O. (mg/L)	77	RD12	Mortality Count My
	· ·	E ()	F O	G O	н О	Temp. (°C)	22.7	48A	PM Change PM Feed:
			# of Mo	ortalities		Old D.O. (mg/L)	6.5	RDIO	AM Change: AR WQ: AR
8	8/24/18	A 0	BG	c 0	DO	New D.O. (mg/L)	8.1	RD10	Mortality Count AR
			FO	G G	HO	Temp. (°C)	22.9	48F	PM Change: ARPM Feed: AR
			# of Mo	ortalities		Old D.O. (mg/L)	6.2	RDVO	AM Change: WQ: mgk
9	8/26/19	A ()	В	c (O	DO	New D.O. (mg/L)	75	RDIO	Mortality Count my
		E O	F O	G O	н О	Temp. (°C)	23.0	48A	PM Change PM Feed:
				live		pН	7.51	pH25	WQ: AR
10	8126/18	A 7	B 6 9/8	9 1146 a	D 6	D.O. (mg/L)	5.8	RD12	Termination Counts:
-		E 10	F 3	G 8	H 9	Conductivity (µS/cm)	442	ECII	Termination Time: 1130
						Alkalinity (mg/L)	175.6	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
						Hardness (mg/L)	1142		
						Ammonia (mg/L)	1.13	DR3800	
						Temp. (°C)	22.9	48 P	

Hyalella azteca Weight Data Sheets

LWA - Calleguas Creek Client: Project #: Balance ID: BAL04 29192 CCWTMP-68-UNIV-304 Sample ID: Tare Wt Date: 8/18/18 Sign-Off: Myl Final Wt Date: 8/24/8 Sign-Off: Test ID #: 79266

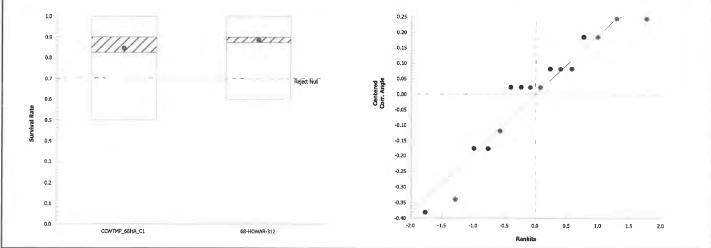
Pan	Concentration Replicate		Initial Weight. (mg)	Final Weight. (mg)	# organisms	Ave Weight (mg)
1	Control	A	72.61	73.20	7	0.0543
2	Sediment	В	61.53	62.45	9	0.1022
3		С	63.99	64.88	16	0.0890
4		D	57.46	58.15	9	00767
5		Е	65.56	65.99	5	0.0860
6		F	65.24	66.14	7	0.12810
7		G	63.20	64.18	9	0.1089
8		Н	65.56	66.36	10	0.0800
17	CCWTMP-68-UNIV-304	A	60.61	60.73	7	0.0171
18		В	65.91	66.44	6	0.0863
19		С	64.47	65.23	9	0.0844
20		D	55.95	56.50	6	0.0917
21		E	67.60	68.22	6	0.1033
22		F	75.41	76.10	8	0.0862
23		G	61.71	62.50	8	0.0957
24		Н	60.94	61.83	8	0.1/13
QA32			61.56	61.54		

Report Date:

01 Sep-18 11:59 (p 7 of 8)

Test Code: CCWTMP_68HA_C1 | 15-1458-2509

Hyalella 10-d Survi	ival and Grov	wth Sedir	ment Test							Paci	fic EcoRis
	3377-9911 Sep-18 11:58			rvival Rate rametric-Two	o Sample			IS Version ial Resul		1.9.2	
Data Transform		Alt Hyp					Comparis	on Resul	lt		PMSD
Angular (Corrected)	(C > T					68-HOWA	R-312 pa	ssed survival	rate	14.95%
Equal Variance t T	wo-Sample T	est									
Sample I vs	Sample II		Test Stat	Critical	MSD DF	P-Type	P-Value	Decisio	n(α:5%)		
Lab Water Control	68-HOWAR-	-312	-0.599	1.76	0.174 14	CDF	0.7207	Non-Sig	nificant Effec	t	
ANOVA Table											
Source	Sum Square	es	Mean Squ	ıare	DF	F Stat	P-Value	Decisio	n(a:5%)		
Between	0.0140755		0.0140755	5	1	0.359	0.5586	Non-Sig	nificant Effec	t	
Error	0.548719		0.0391942	2	14						
Total	0.562794				15						
Distributional Test	s										
Attribute	Test				Test Stat	Critical	P-Value	Decisio	n(α:1%)		
Variances	Variance Ra	tio F Test			1.73	8.89	0.4867	Equal V	ariances		
Distribution	Shapiro-Wilk	W Norm	ality Test		0.917	0.841	0.1497	Normal	Distribution		
Survival Rate Sum	mary										
Sample	Code 0	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CCWTMP_68HA_C	LW 8	3	0.825	0.678	0.972	0.900	0.500	1.000	0.062	21.24%	0.00%
68-HOWAR-312	8	3	0.875	0.768	0.982	0.900	0.600	1.000	0.045	14.65%	-6.06%
Angular (Corrected	l) Transforme	d Summ	ary								
Sample	Code C	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CCWTMP_68HA_C	LW 8	3	1.17	0.981	1.35	1.25	0.785	1.41	0.0788	19.09%	0.00%
68-HOWAR-312	8	3	1.23	1.09	1.37	1.25	0.886	1.41	0.0599	13.81%	-5.08%
Graphics											
1.0						0.25					
0.9						0.20					
1	1/4///		1//0/	111		0.15					
0.8											



Report Date:

01 Sep-18 11:59 (p 3 of 8)

Test Code: CCWTMP_68HA_C1 | 15-1458-2509

Hyalella 10-d Survival and Growth Sediment Test

Analysis ID: 20-3307-7558 Endpoint: Mean Dry Weight-mg CETIS Version: CETIS V1.9.2

Analysis ID:20-3307-7558Endpoint:Mean Dry Weight-mgCETIS Version:CETIS v1.9.2Analyzed:01 Sep-18 11:59Analysis:Parametric-Two SampleOfficial Results:Yes

Analyzeu. 01 Sep-10 11.59 Analysis. Farametric-1 wo Sample Official Results; 1es

Data TransformAlt HypComparison ResultPMSDUntransformedC > T68-HOWAR-312 passed mean dry weight-mg12.98%

Equal Variance t Two-Sample Test

Sample I vs Sample II Test Stat Critical DF P-Type Decision(a:5%) MSD P-Value 68-HOWAR-312 Lab Water Control -1.4214 CDF 1.76 0.012 0.9109 Non-Significant Effect

ANOVA Table

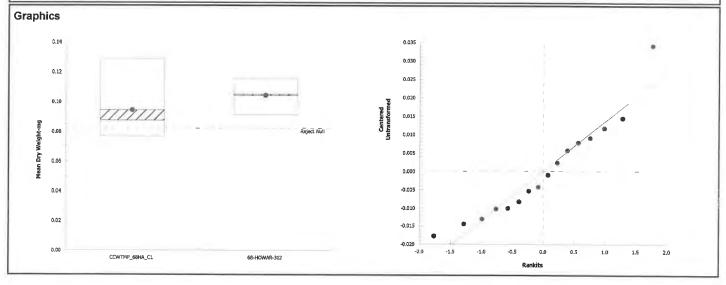
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)	
Between	0.0003896	0.0003896	1	2.01	0.1783	Non-Significant Effect	
Error	0.0027151	0.0001939	14			-	
Total	0.0031046		15				

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Variance Ratio F Test	3.91	8.89	0.0923	Equal Variances	
Distribution	Shapiro-Wilk W Normality Test	0.931	0.841	0.2544	Normal Distribution	

Mean Dry Weight-mg Summary

	-	-									
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CCWTMP_68HA_0	C LW	8	0.0945	0.0798	0.109	0.0875	0.0767	0.129	0.00621	18.61%	0.00%
68-HOWAR-312		8	0.104	0.0969	0.112	0.105	0.0912	0.116	0.00314	8.52%	-10.45%



10-Day Hyalella azteca Sediment Toxicity Test Data

Client:	LWA - Calleguas Creek	Org. Supplier:	ABS
Project#:	29192	Org. Log #:	11134
Test ID#:	79266 7	Org. Age/Size:	10-11d

D	Dota	Test Material				Water Quali	ity Measure	ments	Sign-off:
Day	Date	CC	CWTMP-68	3-HOWAR	1-312	Parameter	Value	Meter ID	Sign-on.
			# Live C	rganisms		рН	7.70	PHI9	AM Change: myl
0	8/16/18	AID	Bio	CIO	D 10	D.O. (mg/L)	7.8	RDII	WQ: MYL
		E 10	F 10	G ,U	H 10	Conductivity (µS/cm)	420	ECII	Initiation Time: 1100
						Alkalinity (mg/L)	147.6		Initiation Counts: الن
		1				Hardness (mg/L)	F- 29-27		Confirmation Counts:
						Ammonia (mg/L)	L1.00	DR3800	PM Feed:
						Temp. (°C)	22.7	107A	
	. 02		# of M	ortalities		Old D.O. (mg/L)	W.4	RD10	AM Change: 16 WOLL
1	8/17/190	A О	B ()	c 0	PO	New D.O. (mg/L)	14270	2010	Mortality Count
	יט	e O	F O	c ()	н Ә	Temp. (°C)	227	48A	PM Change: F7 PM Feed: F7
			# of M	ortalities		Old D.O. (mg/L)	7.4	RDIO	AM Change: WQ: MB
2	કાાકાા <i>હ</i>	A ()	ВО	c O	DO	New D.O. (mg/L)	7.8	PDIO	Mortality Count
	Succe	E ()	FO	G O	нО	Temp. (°C)	227	48A	PM Change: PM Feed
			# of M	ortalities		Old D.O. (mg/L)	6.2	RDII	AM Change: My WO: My
3	8/19/18	A 0	ВО	c 0	D	New D.O. (mg/L)	7.7	RDII	Mortality Count MAHL
	81111	EA	F ()	G ()	н	Temp. (°C)	229	4817	PM Change PM Feed My
	-	- 12	# of M	ortalities		Old D.O. (mg/L)	6.0	RDIO	AM Change: ARWQ: AR
4	8120118	A G	ВО	c o	D O	New D.O. (mg/L)	7.8	RDIO	Mortality Count AR
	01-0110	E 0	F Ø	G O	н О	Temp. (°C)	22.9	48A	PM Change: AR PM Feed: A
			# of M	ortalities		Old D.O. (mg/L)	7.1	RDIZ	AM Change: WQ: WQ:
5	1	A 0	В	C 0	D O	New D.O. (mg/L)	74	2012	Mortality Count Yu
	8-21-18	E O	FO	G O	H 0	Temp. (°C)	22.9	48 A	PM Change PM Feed: 14
	3 61 11		# of M	ortalities		Old D.O. (mg/L)	4.7	PD12	AM Change: WQ:
6		A 0	ВО	c O	D ()	New D.O. (mg/L)	8.7	PD12	Mortality Count
	8122/18	E O	FU	G O	н	Temp. (°C)	23.9	484	PM Change PM Fulls
			# of M	ortalities		Old D.O. (mg/L)	5.9	RD12	AM Change WQ: WY
7	8/28/18	A ()	B ()	c O	D /)	New D.O. (mg/L)	78	PD12	Mortality Count MyC
	dolla	E ()	F ()	G ()	н	Temp. (°C)	22.8	48A	PM Change. PM Feed
			# of M	ortalities		Old D.O. (mg/L)	6.9	RDIO	AM Change: ARWQ: AR
8	Qhulia	A 0	B 0	C O	D 0	New D.O. (mg/L)	8.3	RDIO	Mortality Count AR
	8/24/18	E O	F O	G Ø	н О	Temp. (°C)	23.0	48A	PM Change: AFM Feed: PM
			# of M	ortalities		Old D.O. (mg/L)	6.7	PDIO	
9	8/25/18	A 0	B O	C O	D 0	New D.O. (mg/L)	7.7	R010	AM Change: WQ: MYC
	012010	E O	F O	G O	н о	Temp. (°C)	23.0	48A	PM Change:
				Alive		рН	7.66	PH25	WQ: AR
10	8/26/18	A 8	в 9	c to	D 10	D.O. (mg/L)	6.1	RD12	Termination Counts:
		E 6	FQ	0.4	H 9	Conductivity (µS/cm)	463	ECII	Termination Time:
						Alkalinity (mg/L)	v 69.6		
						Hardness (mg/L)	1 142		
						Ammonia (mg/L)	<1.00	%80C	
						Temp. (°C)	22.9	48A	

Hyalella azteca Weight Data Sheets

 Client:
 LWA - Calleguas Creek
 Project #:
 29192
 Balance ID:
 BALDY

 Sample ID:
 CCWTMP-68-HOWAR-312
 Tare Wt Date:
 8/18/18
 Sign-Off:
 MYL

 Test ID #:
 79267
 Final Wt Date:
 8/24/18
 Sign-Off:
 4/24/18

Pan	Concentration Replicate	Initial Weight. (mg)	Final Weight. (mg)	# organisms	Ave Weight (mg)
1	Control A	72.61	73.26	7	0.0843
2	Sediment B	61.53	62.45	9	0.1022
3	С	63.99	64.88	10	0.0890
4	D	57.46	58.15	9	0.0767
5	E	65.56	65.99	5	0.0860
6	F	65.24	66.14	7	0,12810
7	G	63.20	64.18	9	0.11.89
8	Н	65.56	66.36	10	0.0800
25	CWTMP-68-HOWAR-312 A	59.00	59.73	8	0.0912
26	В	65.60	66.62	9	0.1133
27	С	73.14	74.08	lo	0.0940
28	D	56.26	57.42	10	04110
29	Е	61.59	62.21	6	0.1033
30	F	63.10	64.06	9	Di 10107
31	G	64.94	65.84	9	0 1000
32	Н	71.31	72.36	9	0.1100
QA3		67.77	67.77		

Angular (Corrected) Transformed Summary

Code

Count

8

Mean

1.17

0.981

Sample

CCWTMP_68HA_C LW

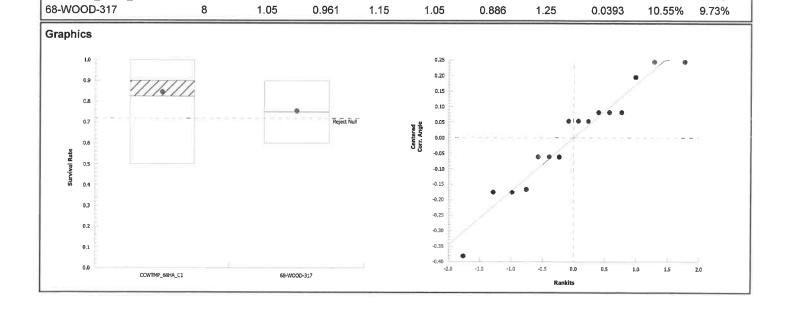
Report Date:

01 Sep-18 11:59 (p 8 of 8)

Test Code:

CCWTMP_68HA_C1 | 15-1458-2509

Hyalella 10-d Survival and Growth Sediment Test Pacific EcoR											cific EcoRisk
J	7670-4277 Sep-18 11:58			vival Rate ametric-Two	Sample			IS Version: ial Results		.9.2	
Data Transform	F	lit Hyp					Comparis	on Result			PMSD
Angular (Corrected)	C	: > T					68-WOOI	0-317 passe	d survival ra	ate	12.83%
Equal Variance t To	wo-Sample T	est									
Sample I vs	Sample II		Test Stat	Critical	MSD DF	P-Type	P-Value	Decision	(a:5%)		
Lab Water Control	68-WOOD-3	17	1.29	1.76	0.155 14	CDF	0.1090	Non-Signi	ficant Effect	t	
ANOVA Table											
Source	Sum Square	s	Mean Squ	are	DF	F Stat	P-Value	Decision((α:5%)		
Between	0.0516246		0.0516246		1	1.66	0.2179	Non-Signi	ficant Effect		
Error	0.434284		0.0310203		14						
Total	0.485908				15						
Distributional Tests	3										
Attribute	Test				Test Stat	Critical	P-Value	Decision((α:1%)		
Variances	Variance Rat	io F Test			4.02	8.89	0.0867	Equal Var	iances		
Distribution	Shapiro-Wilk	W Norma	ality Test		0.942	0.841	0.3716	Normal Di	stribution		
Survival Rate Sum	nary										
Sample	Code C	ount	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CCWTMP_68HA_C	LW 8		0.825	0.678	0.972	0.900	0.500	1.000	0.062	21.24%	0.00%
68-WOOD-317	8		0.750	0.673	0.827	0.750	0.600	0.900	0.033	12.34%	9.09%



95% LCL 95% UCL Median

1.25

1.35

Min

0.785

Max

1.41

Std Err

0.0788

CV%

19.09%

%Effect

0.00%

Analyst: AF QA: NV

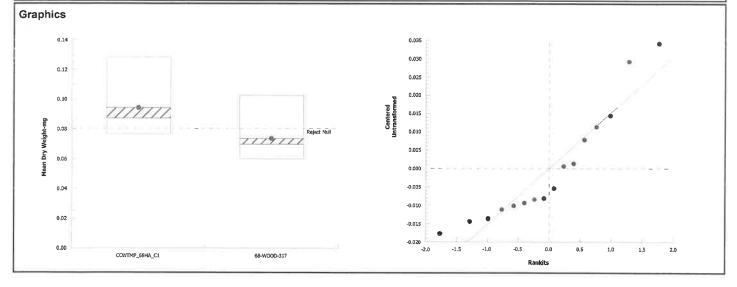
Report Date:

10 Sep-18 13:45 (p 1 of 1)

Hyalella 10-d Surv	rival and Growth Sec	liment Test						Pacifi	c EcoRisk
Analysis ID: 01-	1471-6677 E i	ndpoint: Me	an Dry Wei	ight-mg			CET	S Version: CETISv1.9.2	
Analyzed: 10	Sep-18 13:44 A	nalysis: Par	ametric-Tw	o Sample			Offic	ial Results: Yes	
Data Transform	Alt Hyp)					Comparis	on Result	PMSD
Untransformed	C > T						68-WOOE	0-317 failed mean dry weight-mg	14.97%
Equal Variance t	wo-Sample Test								
Sample I vs	Sample II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)	
Lab Water Control	68-WOOD-317*	2.59	1.76	0.014	14	CDF	0.0108	Significant Effect	
ANOVA Table									
Source	Sum Squares	Mean Squ	ıare	DF		F Stat	P-Value	Decision(α:5%)	
	0.0017254	0.0017254		1		6.69	0.0215	Significant Effect	
Between				4.4					
Between Error	0.0036106	0.0002579)	14					

Distributional Tes	sts				
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	1.49	8.89	0.6097	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.878	0.841	0.0366	Normal Distribution

Mean Dry Weight-r	ng Summa	ry									
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CCWTMP_68HA_C	LW	8	0.0945	0.0798	0.109	0.0875	0.0767	0.129	0.00621	18.61%	0.00%
68-WOOD-317		8	0.0737	0.0617	0.0857	0.0699	0.06	0.103	0.00508	19.52%	21.99%



10-Day Hyalella azteca Sediment Toxicity Test Data

Client:	LWA - Calleguas Creek	Org. Supplier:	ABS	
Project#:	29192	Org. Log #:	11134	
Test ID#:	7926 8	Org. Age/Size:	10-110	

		Test Material	Water Qual	ity Measurer	nents	G: 00
Day	Date	CCWTMP-68-WOOD-317	Parameter	Value	Meter ID	Sign-off:
		# Live Organisms	pН	7.78	PH19	AM Change: MYC
0	8/16/18		D.O. (mg/L)	7.7	ROII	WY MYL
1 /.	91.91.0	E 10 F 10 G 10 H 10	Conductivity (µS/cm)	439	ECV	Initiation Time: 1100
			Alkalinity (mg/L)	151.2		Initiation Counts: سنن
			Hardness (mg/L)	709-239		Confirmation Counts:
			Ammonia (mg/L)	4.00	DR3800	PM Feed: W
			Temp. (°C)	22.7	107A	
		# of Mortalities	Old D.O. (mg/L)	7.0	RP10	AM Change: WQ WQ
1	8/17/18	A O B O C O D O	New D.O. (mg/L)	7.5	RDIO	Mortality Count MB
			Temp. (°C)	22-7	48A	PM Change: F 7 PM Feed: F 7
	11	# of Mortalities	Old D.O. (mg/L)	7.0	RDIO	AM Change BWQ: MB
2	8/18/18	A D B D C O D O	New D.O. (mg/L)	7.6	RDIO	Mortality Count MB
	Pirot		Temp. (°C)	22.80	48A	PM Change PM Feld
		# of Mortalities	Old D.O. (mg/L)	6.9	PDII	AM Change: MY WQ: MY
3	8/19/18	A 0 B 0 C 0 D 0	New D.O. (mg/L)	7.7	RAIL	Mortality Count
		$E \ O \ F \ O \ G \ O \ H \ O$	Temp. (°C)	22.9	48A	PM Change MY PM Feed My
		# of Mortalities	Old D.O. (mg/L)	5.8	RDIO	AM Change: AR WQ: AR
4	8/20/18		New D.O. (mg/L)	8.0	RDIO	Mortality Count AR
		E O F O G O H O	Temp. (°C)	22.9	48A	PM Change: ARPM Feed: AF
		# of Mortalities	Old D.O. (mg/L)	6.0	12012	AM Change WQ: 44
5		A O BO C O D C	New D.O. (mg/L)	7.4	2012	Mortality County
	8-2118	E O F O G O H O	Temp. (°C)	02.9	48A	PM Change: MPM Feed. 14
		# of Mortalities	Old D.O. (mg/L)	6.6	PP12	AM Change: 6 WQ: MB
6	8/22/18	A O B O C O D O	New D.O. (mg/L)	82	2012	Mortality Count
	of. I.	E O F O G O H O	Temp. (°C)	23.0	48A	PM Change: M Feed /
	11.	# of Mortalities	Old D.O. (mg/L)	6.4	PN12	AM Change: WQ: MY
7	8 23/18	A 0 B 0 C O D 0	New D.O. (mg/L)	7.9	RD12	Mortality Count Wy
	,	E O F O G O H O	Temp. (°C)	22,9	4817	PM Change NePM Feed.
		# of Mortalities	Old D.O. (mg/L)	5.9	RDIO	AM Change: ARWQ: AR
8	8/24/18		New D.O. (mg/L)	8.2	RDIO	Mortality Count AR
			Temp. (°C)	23.0	48A	PM Change: ARPM Feed: AR
	, 1	# of Mortalities	Old D.O. (mg/L)	6.3	RDIO	AM Change: WQ: myc. Mortality Count
9	8/25/18	A 0 B 0 C 0 D 0	New D.O. (mg/L)	7.9	RD10	mac
			Temp. (°C)	229	4819	PM Change: PM Feed
		# Alive	pН	7.74	PH25	WQ: AR
10	8/26/18	A 9 B 7 C 7 D 6	D.O. (mg/L)	6.5	RD12	Termination Counts:
######################################	597124793979397924792	E 9 F 9 G 9 H 7	Conductivity (µS/cm)	10	ECIL	Termination Time: 1130
			Alkalinity (mg/L)	v 92		
			Hardness (mg/L)	162		
			Ammonia (mg/L)	<1.00	DR380G	
			Temp. (°C)	22.9	48A	

Hyalella azteca Weight Data Sheets

 Client:
 LWA - Calleguas Creek
 Project #:
 29192
 Balance ID:
 BALOH

 Sample ID:
 CCWTMP-68-WOOD-317
 Tare Wt Date:
 8/18/18
 Sign-Off:
 MYL

 Test ID #:
 79268
 Final Wt Date:
 8/29/18
 Sign-Off:
 Y

Pan	Concentration Replicate	Initial Weight. (mg)	Final Weight. (mg)	# organisms	Ave Weight (mg)
1	Control A	72.61	73.26	7	0.0843
2	Sediment B	61.53	62.45	9	01022
3	С	63.99	64.88	10	0.0890
4	D	57.46	58.15	9	00767
5	Е	65.56	65.99	5	0.0860
6	F	65.24	66.14	7	0.1286
7	G	63.20	64.18	9	0.1089
8	Н	65.56	66.36	10	0.0800
33	CCWTMP-68-WOOD-317 A	64.36	65.04	8	0.0850
34	В	64.18	64.70	7	0.0743
35	C	58.13	58.85	7	P.1029
36	D	6234	62.37	6	00600
37	Е	68.82	69.42	9	0,0750
38	F	60.82	61.41	9	D. Dloslo
39	G	59 98	60.48	8	0.010765
40	Н	59.07	59.5Z	7	0.0643
QA3		67.77	67.77		

Hyalella azteca Weight Data Sheets

LWA- Calleguas Creek Client: Test Init Date: 8/10/18 Balance ID: Balo4 Sample ID: T10- TO Tare Wt Date: 8/10/18 Sign-Off: Myc 79265 -79268 Final Wt Date: 2-17-18 Sign-Off: Test ID: Project #: 29192

Pan	Concentration Replicate	Initial Weight. (mg)	Final Weight. (mg)	# Organisms	Ave Weight (mg)
1	Control Sed. A	62.77	62,99	10	0.022
2	В	64.91	65.1821	10	0.030
3	С	66.11	66.37	10	120026 0.026
4	D	62.73	63.01	10	0.0311-0.028
5	Е	61.35	61.64	10	1-21-18 0.029
6	F	57.45	57.70	10	8.22-6 0.025
7	G	64.49	64.75	10	0.076
8	Н	67.75	67.99	10	0.024
QA		62.71	62.68		

X = 0.0263

Appendix C

Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the *Hyalella azteca*

CETIS Summary Report

Report Date: Test Code: 27 Aug-18 16:21 (p 1 of 1) 79426 | 12-7542-2334

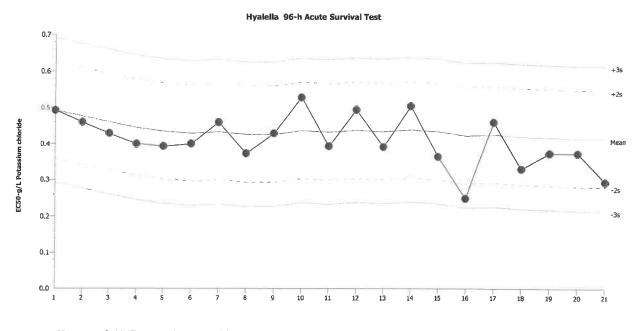
							- 11	est code.		79420 1	2-1042-	233
Hyalella 96-	h Acute Surviv	al Test								Pacit	fic EcoF	Risk
_	01-1876-5473 16 Aug-18 11 : 20 Aug-18 11 96h	:27 :24	Protocol: Species:	Survival (96h) EPA-821-R-02 Hyalella aztec	2-012 (2002) a	1	D B	nalyst: iluent: rine:	Stevi Vasquez Laboratory Wa Not Applicable	ter		
Duration:	9611		Source:	Aquatic Biosys	stems, CO		A	ge:	11			
Sample ID:	01-3463-9003	3 (Code:	KCI			С	Client: Reference Toxicant				
Sample Date	: 16 Aug-18 11	:27	Material:	Potassium chl	oride		P	roject:	29276			
	: 16 Aug-18 11	:27	Source:	Reference Tox	dcant							
Sample Age:	n/a (23.8 °C)		Station:	In House								
Multiple Com	nparison Sumr	nary										
Analysis ID	Endpoint		Comp	arison Method	k		NOEL	LOEL	TOEL	TU	PMSI	D.
06-8790-2026	96h Survival F	Rate	Fisher	Exact/Bonferro	oni-Holm Te	st	0.2	0.4	0.2828		n/a	
Point Estima	te Summary											
Analysis ID	Endpoint		Point	Estimate Meth	od		Level	g/L	95% LCL	95% UCL	TU	J
14-0979-7400	96h Survival F	Rate	Regre	ssion: Log-Norr	nal (Probit)		EC5	0.162		0.23		_
			-		, ,		EC10	0.185		0.253		
							EC15	0.202	0.0631	0.27		
							EC20	0.217		0.286		
							EC25	0.23	0.0942	0.301		
							EC40	0.268		0.352		
							EC50	0.294	0.184	0.398		
96h Survival	Rate Summary	1										
Conc-g/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E	rr Std Dev	CV%	%Effe	ect
0	LW	10	0.900	0.674	1.000	0.000	1.000	0.100	0.316	35.14%	0.00%	6
0.1		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	-11.11	1%
0.2		10	0.800	0.498	1.000	0.000	1.000	0.133	0.422	52.70%	11.119	%
0.4		10	0.200	0.000	0.502	0.000	1.000	0.133	0.422	210.82%	77.789	%
0.8		10	0.000	0.000	0.000	0.000	0.000	0.000	0.000		100.00	0%
1.6		10	0.000	0.000	0.000	0.000	0.000	0.000	0.000		100.00	0%
96h Survival I	Rate Detail											
Conc-g/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 1	0
0	LW	1.000	1.000	1.000	1.000	0.000	1.000	1.000	1.000	1.000	1.000	
0.1		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
0.2		1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.000	1.000	1.000	
0.4		0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	1.000	0.000	
0.8		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
1.6		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
96h Survival F	Rate Binomials											
Conc-g/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10	0
0	LW	1/1	1/1	1/1	1/1	0/1	1/1	1/1	1/1	1/1	1/1	
0.1		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	
0.2		1/1	1/1	1/1	1/1	1/1	1/1	0/1	0/1	1/1	1/1	
0.4		0/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	1/1	0/1	
			514	0.14								
0.8		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	

Analyst: SVV QA: APF

CETIS QC Plot Report Date: 27 Aug-18 16:22 (1 of 1)

Hyalella 96-h Acute Survival Test

Test Type: Survival (96h)
Organism: Hyalella azteca (Freshwater Amphip Protocol: EPA-821-R-02-012 (2002)
Endpoint: 96h Survival Rate
Source: Reference Toxicant-REF



 Mean:
 0.4147
 Count:
 20
 -2s Warning Limit:
 0.2818
 -3s Action Limit:
 0.2154

 Sigma:
 0.06643
 CV:
 16.00%
 +2s Warning Limit:
 0.5475
 +3s Action Limit:
 0.614

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2017	Aug	10	15:58	0.4925	0.07776	1.171			08-4781-5295	04-7807-7811
2			13	14:00	0.4595	0.04478	0.6741			03-2555-5005	07-3822-0721
3		Sep	2	12:45	0.4287	0.01401	0.2109			00-8891-9372	16-8329-5833
4			12	16:53	0.4	-0.0147	-0.2213			12-7066-3429	06-8588-1925
5			24	16:23	0.3931	-0.02157	-0.3247			05-3672-3483	11-7202-5835
6		Oct	23	15:20	0.4	-0.0147	-0.2213			05-6411-1970	13-8116-2372
7		Nov	8	16:16	0.4595	0.04478	0.6741			19-7659-7997	01-3839-2915
8			17	16:00	0.3732	-0.04149	-0.6245			17-6978-3883	17-5467-8698
9			25	14:10	0.4287	0.01401	0.2109			11-3183-2495	08-9083-9227
10		Dec	4	16:30	0.5278	0.1131	1.703			09-9590-2070	18-7306-3573
11	2018	Jan	9	19:13	0.3931	-0.02157	-0.3247			05-2232-4768	00-9328-2087
12			17	15:40	0.4938	0.07915	1.191			17-7568-9822	12-5928-4930
13		Feb	8	15:57	0.391	-0.02366	-0.3562			13-6969-1958	02-2461-7172
14		Mar	2	17:52	0.5037	0.08897	1.339			10-1610-0738	05-9100-3645
15		Apr	8	13:38	0.3642	-0.05054	-0.7608			14-6470-8596	05-1973-4354
16		May	16	17:55	0.2486	-0.1661	-2.5	(-)		05-9866-1037	11-2195-3653
17		Jun	14	16:35	0.4595	0.04478	0.6741			18-1605-2758	14-8406-0239
18		Jul	18	16:20	0.3299	-0.08476	-1.276			11-4094-7394	20-3811-7615
19		Aug	6	14:44	0.3732	-0.04149	-0.6245			16-9077-3352	08-2793-0151
20			9	17:00	0.3732	-0.04149	-0.6245			14-1761-7282	03-9488-5843
21			16	11:27	0.2941	-0.1206	-1.815			12-7542-2334	14-0979-7400

Pacific EcoRisk

Quality Control Data

96 Hour Hyalella azteca Reference Toxicant Test Data

Client:	Pacific EcoRisk	Organism Log #:	11134 Age: 10-1	days
Test Material:	Potassium Chloride	Organism Supplier:	ABS	
Test ID#:	79426 Project # 29276	Control/Diluent:	SAM-5	
Test Date:	8/16/18 Randomization: 10.7 5.	Control Water Batch:	343	
Feeding To	Time: OGU Initials:	Feeding T46	Time: 1155 Initia	als: TK

Tuestas ent (a/L)	Temp	-TI	D.O.	Conductivity				#	Live.	Anima	als				2: 0%
Treatment (g/L)	(°C)	pН	(mg/L)	(µS/cm)	A	В	С	D	Е	F	G	Н	I	J	Sign-Off
Control	23.8	7.95	8.7	407	1	1	1	1	1	ī	1	1	1	1	Test Solution Prep: SM
0.1	23.7	7.96	88	596	1	1	ı	1	1	1	1	1	t	1	New WQ:
0.2	23.9	7.92	9.0	781	1	1	1	1	1	١	1	1	ì	1	Initiation Date: 8/16/
0.4	23-6	7.92	9.3	1142	1	1	1	1	1	1	-	1	1	1	Initiation Date: 8/16/ Initiation Time: (12-7) Initiation Signoff: SM RT Batch #: 20
0.8	23.6	7.88	9.7	1852	1	1	1	1	1	-	1	1	1	1	Initiation Signoff:
1.6	23.4	7.85	10.4	3328	1	1	1	1	1	1	1	1	i	1	RT Batch #: 20
Meter ID	107 A	PH24	RD12	EC13											
Control	22.10				1	1	1	1	1	1	1	1	1	1	Count Date:
0.1	22.7				1	1	,	1	1	1	1	1	1	1	Count Time: 0949
0.2	22.6				1	1	1	1	1	1	1	1	1	1	Count Date: 8/17/18 Count Time: 6949 Count Signoff: -
0.4	22 (0				1	1	1	1	1	1	1	1	1	1	
0.8	22.6				Ô	0	0	0	0	6	0	0		0	
1.6	22.6				0	0	0	10	0	0	0		.0	_	
Meter ID	107A									TH					
Control	72.8				1	7	1	ī	ı		ï	1	-	1	Count Date: IK
0.1	27.9				1	1	1		. 1	1	1	1	1		Count Date: 8 Jrs 18
0.2	23.0				1	1	1	1	1	1		0	1	1	Count Signoff: TK
0.4	22:7				0	0	1	1	1	0	Ô	1	1	1	
0.8	72.8				_		-	_	_	_		-	-	-	
1.6	22.8				-	-	-	- 1	-	-	-	-	-	_	
Meter ID	100Å														
Control	22.5				1)	1	1	0	1	1	1	1	17	Count Date: 8/19/19
0.1	22.7				1	1	1	-1	1	1	ī	1	-1	1	Count Time: 1339
0.2	22.7					1	1	1	Y	1	0	_	1	1	Count Signoff:
0.4	22.8				-		200	0	34.	-	-	P	- State	Q	
0.8	144				1		_	-	-	_	-	-	-	_	
1.6	-				_	_	_	= 1	-	-	-	_	-	-	
Meter ID	8/A									$\overline{\mathbb{H}}$					
Control	22.4	7.81	8.3	424	i	1	1	1	_	1	1	X		1	Termination Date: Xirch
	22.5	7.80	8.2	634	1	1	1	1	1	1	1				Termination Time:
	22.6	7.70	8.6	834	1	1		i	1	,	-	Ù			Termination Date she li Termination Time: 1124 Termination Signoff: 114 Old WQ:
	22.3	7.81	8.1	1181	-	_	N	Ō	1	_	-	_	1	-	Old WQ:
0.8	22.4	7.78	7.9	1872		-	PEINI	EP8/	1/19_	_	-	-	-	-	
1.6	22.4	7.80	7.9	3354	-	-	_	-	_	-	-	-	-		
Meter ID	404	8425	R& 12	EC13											



Ms. Amy Storm Larry Walker Associates 2151 Alessandro Dr., Suite 100 Ventura, CA 93001 September 17, 2018

Dear Amy:

I have enclosed our report "A Toxicity Characterization Study of Ambient Waters Collected from the Calleguas Creek Watershed: Event 68" for samples collected August 8, 2018. The results of our evaluation are summarized below.

Effects of Calleguas Creek Ambient Waters on Ceriodaphnia dubia

There were no significant reductions in survival or reproduction in the Calleguas Creek ambient water samples tested with this species.

Effects of Calleguas Creek Ambient Waters on Hyalella azteca

The 68-WOOD-119 ambient water was the only sample tested with this species; there were no significant reductions in survival in this sample.

Tox	icity Summary for C	alleguas Creek: Ever	nt 68 Ambient Waters.								
	Toxicity relative to the Lab Control treatment?										
Sample Station ID	Ceriodapl	nia dubia	Hyalella azteca								
	Survival Reproduction Survival										
68-UNIV-029	no	testing with this species was not performed									
68-ADOLF-067	no	no	testing with this species was not performed								
68-HITCH-158	no	no	testing with this species was not performed								
68-GATE-219	no	no	testing with this species was not performed								
68-BELT-222	no	testing with this species was not performed									
68-WOOD-119	testing with this species was not performed no										

If you have any questions regarding the performance and interpretation of these tests, feel free to contact my colleague Jeffrey Cotsifas or myself at (707) 207-7763.

Sincerely,

Michael McElroy Senior Project Manager



Pacific EcoRisk is accredited in accordance with NELAP (ORELAP ID 4043). Pacific EcoRisk certifies that the test results reported herein conform to the most current NELAP requirements for parameters for which accreditation is required and available. Any exceptions to NELAP requirements are noted, where applicable, in the body of the report. This report shall not be reproduced, except in full, without the written consent of Pacific EcoRisk. This testing was performed under Lab Order 29192.

A Toxicity Characterization Study of Ambient Waters Collected from the Calleguas Creek Watershed

(Water Samples Collected on August 8, 2018)

Event 68

Prepared For

Larry Walker Associates 720 Wilshire Blvd., Suite 207 Santa Monica, CA 90401

Prepared By

Pacific EcoRisk 2250 Cordelia Rd. Fairfield, CA 94534

September 2018



Page

Table of Contents

1. INTRODUC	CTION	1
	ON AND DELIVERY OF AMBIENT WATER SAMPLES	
3. TOXICITY	TEST PROCEDURES FOR AMBIENT WATERS	2
3.1 Survival	and Reproduction Chronic Toxicity Testing with Ceriodaphnia dubia	2
	rence Toxicant Testing of the Ceriodaphnia dubia	
	Toxicity Testing of Ambient Waters with Hyalella azteca	
	rence Toxicant Testing of the Hyalella azteca	
	OF THE AMBIENT WATER TOXICITY EVALUATIONS	
4.1. Effects	of Calleguas Creek Ambient Waters on Ceriodaphnia dubia	6
	rence Toxicant Toxicity to Ceriodaphnia dubia	
	of Calleguas Creek Ambient Water on Hyalella azteca	
	rence Toxicant Toxicity to Hyalella azteca	
5. SUMMARY	Y AND CONCLUSIONS	12
5.1 QA/QC	Summary	12
	Appendices	
Appendix A	Chain-of-Custody Record for the Collection and Delivery of the Calleg Creek Ambient Water Samples	guas
Appendix B	Test Data and Summary of Statistics for the Evaluation of the Chronic of the Calleguas Creek Ambient Waters to <i>Ceriodaphnia dubia</i> : Data A	•

Including Statistical Outliers

Excluding Statistical Outliers

- Appendix D Test Data and Summary of Statistics for the Reference Toxicant Evaluation of
 - the Ceriodaphnia dubia
- Appendix E Test Data and Summary of Statistics for the Evaluation of the Toxicity of the
 - Calleguas Creek Ambient Waters to Hyalella azteca
- Appendix F Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the *Hyalella azteca*

1. INTRODUCTION

In support of the Calleguas Creek Watershed Monitoring Program, Larry Walker Associates (LWA) has contracted Pacific EcoRisk (PER) to evaluate the potential toxicity of surface waters and sediments collected from within the Calleguas Creek Watershed. The current evaluation, which comprises Event 68 of the overall study, consisted of performing the following U.S. EPA toxicity tests:

- 3-brood (6-8 day) survival and reproduction chronic toxicity test with the crustacean *Ceriodaphnia dubia*; and
- For ambient water samples with a conductivity >3000 μS/cm but <15 ppt salinity, the 10-day survival test with the freshwater amphipod, Hyalella azteca was performed in place of the C. dubia test.

In order to evaluate the magnitude of any observed toxicity, all water samples were tested using a series of sample dilutions (100%, 50%, 25%, 12.5%, and 6.25%). In order to document that the test organisms were responding to toxic stress in a typical fashion, reference toxicant tests were also performed. This report describes and summarizes the performance and results of the Event 68 surface water toxicity testing performed in support of the Calleguas Creek Watershed Monitoring Program.

2. COLLECTION AND DELIVERY OF AMBIENT WATER SAMPLES

On August 8, 2018, Kinnetic Laboratories, Inc. (KLI) collected ambient water samples from six locations within the Calleguas Creek watershed (Table 1). Each water sample was collected into two pre-cleaned 5-gallon fluorocarbon-lined polyethylene jerricans. The samples were transported on ice and under chain-of-custody to the PER laboratory facility in Fairfield, CA, arriving approximately 24 hrs after collection. Upon receipt at the testing laboratory, aliquots of each water sample were collected for analysis of initial water quality characteristics (Table 2). The remainder of the water samples were stored at 0-6°C. All initial surface water tests were initiated within 36 hrs of sample collection. The chain-of-custody record for the collection and delivery of these samples is presented in Appendix A.

Table 1. Collection of Calleguas Creek Watershed Ambient Water Samples.				
Station Code	Sample Collection Date (Time)	Test Initiation Date (Time)		
UNIV	8/8/18 (0830)	8/9/18 (1625)		
ADOLF	8/8/18 (0920)	8/9/18 (1550)		
HITCH	8/8/18 (1745)	8/9/18 (1520)		
GATE	8/8/18 (1320)	8/9/18 (1558)		
BELT	8/8/18 (1435)	8/9/18 (1642)		
WOOD	8/8/18 (1520)	8/9/18 (1547)		

Table 2. Initial Water Quality Characteristics of Calleguas Creek Ambient Water Samples.								
Sample ID	Temp (°C)	рН	D.O. (mg/L)	Alkalinity (mg/L as CaCO ₃)	Hardness (mg/L as CaCO ₃)	Conductivity (µS/cm)	Salinity (ppt)	Total Ammonia (mg/L)
68-UNIV-029	0.7	8.05	7.0	201	396	1726	0.9	<1.0
68-ADOLF-067	0.6	8.03	8.1	137	253	1044	0.5	<1.0
68-HITCH-158	3.8	8.00	8.1	197	560	1754	0.9	<1.0
68-GATE-219	2.0	7.80	7.8	114	224	968	0.5	<1.0
68-BELT-222	1.4	8.38	8.6	227	470	1299	0.7	<1.0
68-WOOD-119	1.5	8.60	10.1	165	1440	4213	2.3	<1.0

3. TOXICITY TEST PROCEDURES FOR AMBIENT WATERS

The Calleguas Creek ambient waters were tested for toxicity using the following chronic toxicity tests:

- Water samples with a conductivity $<3000 \mu S/cm$ were tested using the 3-brood (6-8 day) survival and reproduction test with the freshwater crustacean *C. dubia*; and
- Water samples with a conductivity >3000 μ S/cm but <15 ppt salinity were tested using the 10-day survival test with the amphipod *H. azteca*.

The methods used in conducting the chronic toxicity tests (and any follow-up TIEs) followed the guidance established by the following EPA manuals:

- Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013); and
- A Surface Water Ambient Monitoring Program (SWAMP) test protocol based on a modification of the US EPA guidelines, "Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates" (EPA/630/R-99/064).

3.1 Survival and Reproduction Chronic Toxicity Testing with Ceriodaphnia dubia

The chronic toxicity test with *C. dubia* consists of exposing individual females to the ambient water samples for the length of time it takes for the Lab Control treatment females to produce three broods (typically 6-8 days), after which effects on survival and reproduction are evaluated. The specific procedures used in these tests are described below.

The Lab Water Control medium for this test consisted of a modified EPA moderately-hard water. For each water sample, the Lab Control water and 100% water sample were used to prepare test solutions at additional interim test treatment concentrations of 6.25%, 12.5%, 25%, and 50% ambient water. For each treatment, 200 mL aliquots of test solution were amended with the alga *Selenastrum capricornutum* and Yeast-Cerophyll®-Trout Food (YCT) to provide food for the test

organisms. "New" water quality characteristics (pH, D.O., and conductivity) were measured on these food-amended test solutions prior to use in these tests.

There were 10 replicates each for each test treatment, each replicate consisting of 15 mL of test solution in a 30-mL plastic cup. These "3-brood" tests were initiated by allocating one neonate (<24 hrs old, and within 8 hours of age) *C. dubia*, obtained from in-house laboratory cultures, into each replicate cup. The replicate cups were placed into a temperature-controlled room at 25°C, under cool-white fluorescent lighting on a 16L:8D photoperiod.

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

After it was determined that \geq 60% of the *C. dubia* in a Lab Water Control treatment had produced their third brood of offspring, the corresponding ambient water test was terminated. The resulting survival and reproduction (number of offspring) data were analyzed to evaluate any impairment(s) caused by the effluent sample; all statistical analyses were made using the CETIS® statistical software (TidePool Scientific, McKinleyville, CA).

3.1.1 Reference Toxicant Testing of the Ceriodaphnia dubia

In order to assess the sensitivity of the *C. dubia* test organisms to toxic stress, a concurrent reference toxicant test was performed. This reference toxicant test was performed similarly to the ambient water test except that test solutions consisted of Lab Water Control medium spiked with NaCl at test concentrations of 500, 1000, 1500, 2000, and 2500 mg/L. The resulting test response data were statistically analyzed to determine key concentration-response point estimates (e.g., EC50); all statistical analyses were made using the CETIS® software. These response endpoints were then compared to the typical response range established by the mean \pm 2 SD of the point estimates generated by the most recent previous reference toxicant tests performed by this lab.

3.2 Survival Toxicity Testing of Ambient Waters with Hyalella azteca

This test consists of exposing individual *H. azteca* to the ambient water samples for 10 days, after which effects on survival are evaluated. The specific procedures used in this testing are described below.

The *H. azteca* used in this testing were obtained from a commercial supplier (Aquatic BioSystems, CO); upon receipt at the lab, the test organisms were held in aerated tanks containing Lab Control water, and were fed *S. capricornutum* and *Spirulina*-amended YCT *ad libitum* during this pre-test holding period.

The Lab Water Control medium for this testing consisted of EPA synthetic moderately-hard water, modified for use with *H. azteca* as per EPA test guidelines, and adjusted to the conductivity of the site water via addition of an artificial sea salt (Crystal Seas®- bioassay grade). For each ambient water sample, the Lab Control water and 100% ambient water sample were used to prepare test solutions at additional interim test treatment concentrations of 6.25%, 12.5%, 25%, and 50% ambient water. A "Culture" Control, consisting of *H. azteca* culture water was also prepared and tested. "New" water quality characteristics (pH, D.O., and conductivity) were measured on these test solutions prior to use in the test(s).

There were five replicates for each test treatment, each replicate consisting of a 250-mL glass beaker containing 100 mL of test solution; a small (~1 cm x 2 cm) piece of NITEX® mesh was placed in the beaker to provide an attachment substrate for the thigmotactic amphipods. Testing was initiated by allocating ten 8-9 day old *H. azteca*, into each replicate. The replicate beakers were placed into a temperature-controlled room at 23°C, under cool-white fluorescent lighting on a 16L:8D photoperiod.

Each day of the test(s), each replicate beaker was examined and the number of surviving organisms determined; 'old' water quality characteristics of the test solutions were measured in one randomly-selected beaker at each test treatment at this time. On Days 2, 4, 6, and 8 of the tests, 1.0 mL of *Spirulina*-amended YCT food was added to each test replicate to provide food for the test organisms.

On Day 5 of the 10-day test(s), fresh test solutions were prepared and characterized as before. Each replicate was examined, with any dead animals, uneaten food, wastes, and other detritus being removed. The number of live organisms in each replicate was determined and then approximately 80% of the old test solution in each beaker was carefully poured out and replaced with fresh test solution. "Old" water quality characteristics (pH, D.O., and conductivity) were measured on the old test solution that had been discarded from one randomly-selected replicate at each treatment.

After 10 days of exposure, testing was terminated and the number of live organisms in each replicate was recorded. The resulting survival data were analyzed to evaluate any impairment(s) caused by the ambient water sample; all statistical analyses were made using the CETIS® statistical software.

3.2.1 Reference Toxicant Testing of the Hyalella azteca

In order to assess the sensitivity of the *H. azteca* test organisms to toxic stress, a concurrent reference toxicant test was performed. The reference toxicant test was performed similarly to the ambient water tests, except that test solutions consisted of the Lab Water Control medium spiked with KCl at concentrations of 0.1, 0.2, 0.4, 0.8, and 1.6 g/L. The resulting test response data were statistically analyzed to determine key concentration-response point estimates (e.g., EC50); all statistical analyses were performed using the CETIS® software. These response endpoints were

then compared to the typical response range established by the mean $\pm\,2$ SD of the point estimates generated by the 20 most-recent previous reference toxicant tests performed by this lab.

4. RESULTS OF THE AMBIENT WATER TOXICITY EVALUATIONS

4.1 Effects of Calleguas Creek Ambient Water on Ceriodaphnia dubia

The results of the ambient water tests with *C. dubia* are summarized below in Tables 3 through 7. There were no significant reductions in survival or reproduction in the Calleguas Creek ambient water samples tested with this species.

The test data and summary of statistical analyses for these tests, excluding statistical outliers where appropriate, are presented in Appendix B; the summary of statistical analyses for these tests, including statistical outliers, is presented in Appendix C.

Table 3. Effects of Ambient Water 68-UNIV-029 on <i>Ceriodaphnia dubia</i> .			
Ambient Water Treatment	% Survival	Reproduction (# neonates /female)	
Lab Water Control	100	31.6 ^b	
6.25%	90	17.9 ^c	
12.5%	100	26.7	
25%	90	21.2	
50%	100	30.2	
100%	100	30.9	
Summary (of Statistics		
No Observable Effect Concentration (NOEC) =	100% ambient water	100% ambient water	
TUc (where TUc = 100/NOEC) =	1	1	
Survival EC25 or Reproduction IC25 =	>100% ambient water ^a	>100% ambient water	
Survival EC50 or Reproduction IC50 =	>100% ambient water ^a	>100% ambient water	
TUc (where TUc = 100/EC50 or 100/IC50) =	<1	<1	

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% ambient water.

b - The reproduction response for one of the replicates at this test treatment was determined to be a statistical outlier, and the results reported above are for the analysis of the test data excluding this outlier. As per EPA guidelines, the test data were analyzed both with and without the outlier, and the results of both sets of analyses are reported in the appendices.

c - There was an interrupted concentration-response with a statistically significant reduction in reproduction at this ambient water concentration. However, as there were no significant reductions in reproduction at the higher 12.5, 25, 50, and 100% concentrations, the reduction at this interim concentration is not considered toxicologically significant.

Table 4. Effects of Ambient Water 68-ADOLF-067 on <i>Ceriodaphnia dubia</i> .				
Ambient Water Treatment	% Survival	Reproduction		
Lab Water Control	100	32.6		
6.25%	100	32.3		
12.5%	100	27.3		
25%	100	25.5 ^b		
50%	100	28.6 ^{b,c}		
100%	100	32.2		
Summary of Key Statistics				
No Observable Effect Concentration (NOEC) =	100% ambient water	100% ambient water		
TUc (where TUc = 100/NOEC) =	1	1		
Survival EC25 or Reproduction IC25 =	>100% ambient water ^a	>100% ambient water		
Survival EC50 or Reproduction IC50 =	>100% ambient water ^a	>100% ambient water		
TUc (where TUc = 100/EC50 or 100/IC50) =	<1	<1		

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% ambient water.

c - The reproduction response for one of the replicates at this test treatment was determined to be a statistical outlier, and the results reported above are for the analysis of the test data excluding this outlier. As per EPA guidelines, the test data were analyzed both with and without the outlier, and the results of both sets of analyses are reported in the appendices.

Table 5. Effects of Ambient Water 68-HITCH-158 on <i>Ceriodaphnia dubia</i> .					
Ambient Water Treatment	% Survival	Reproduction			
Lab Water Control	90	28.0			
6.25%	100	22.2			
12.5%	100	23.8			
25%	100	13.8 ^b			
50%	100	14.6 ^b			
100%	100	19.9			
Summary of Key Statistics					
No Observable Effect Concentration (NOEC) =	100% ambient water	100% ambient water			
TUc (where TUc = 100/NOEC) =	1	1			
Survival EC25 or Reproduction IC25 =	>100% ambient water ^a	16.1% ambient water			
Survival EC50 or Reproduction IC50 =	>100% ambient water ^a	>100% ambient water			
TUc (where TUc = 100/EC50 or 100/IC50) =	<1	<1			

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% ambient water.

b - There was an interrupted concentration-response with a statistically significant reduction in reproduction at this ambient water concentration. However, as there was no significant reduction in reproduction at the higher 100% concentration, the reduction at this interim concentration is not considered toxicologically significant.

b - There was an interrupted concentration-response with a statistically significant reduction in reproduction at this ambient water concentration. However, as there was no significant reduction in reproduction at the higher 100% concentration, the reduction at this interim concentration is not considered toxicologically significant.

Table 6. Effects of Ambient Water 68-GATE-219 on Ceriodaphnia dubia.				
Ambient Water Treatment	% Survival	Reproduction		
Lab Water Control	100	27.9		
6.25%	100	15.9 ^b		
12.5%	100	19.5 ^b		
25%	100	14.4 ^b		
50%	100	19.1 ^b		
100%	100	28.4		
Summary of Key Statistics				
No Observable Effect Concentration (NOEC) =	100% ambient water	100% ambient water		
TUc (where TUc = 100/NOEC) =	1	1		
Survival EC25 or Reproduction IC25 =	>100% ambient water ^a	5.17% ambient water		
Survival EC50 or Reproduction IC50 =	>100% ambient water ^a	>100% ambient water		
TUc (where TUc = $100/EC50$ or $100/IC50$) =	<1	<1		

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% ambient water.

b - There was an interrupted concentration-response with a statistically significant reduction in reproduction at this ambient water concentration. However, as there was no significant reduction in reproduction at the higher 100% concentration, the reduction at this interim concentration is not considered toxicologically significant.

Table 7. Effects of Ambient Water 68-BELT-222 on Ceriodaphnia dubia.					
Ambient Water Treatment	Mean % Survival	Mean Reproduction			
Lab Water Control	100	20.5			
6.25%	100	18.2			
12.5%	100	20.6			
25%	100	20.6			
50%	100	29.6			
100%	80	24.9			
Summary of Key Statistics					
No Observable Effect Concentration (NOEC) =	100% ambient water	100% ambient water			
TUc (where TUc = 100/NOEC) =	1	1			
Survival EC25 or Reproduction IC25 =	>100% ambient water ^a	>100% ambient water			
Survival EC50 or Reproduction IC50 =	>100% ambient water ^a	>100% ambient water			
TUc (where TUc = 100/EC50 or 100/IC50) =	<1	<1			

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% ambient water.

4.1.2 Reference Toxicant Toxicity to Ceriodaphnia dubia

The results of this test are summarized in Table 8. The EC50 and IC50 for these tests were both consistent with the typical response ranges established by the reference toxicant test database for this species, thus providing further evidence that the organisms used for ambient water testing were responding to toxic stress in a typical and consistent fashion. The test data and summary of statistical analyses for this test are presented in Appendix D.

Table 8. Reference toxicant testing: effects of NaCl on Ceriodaphnia dubia.				
NaCl Treatment (mg/L)	Mean % Survival	Mean Reproduction (# neonates/female)		
Lab Water Control	100	34.3		
500	100	32.4		
1000	100	26.6*		
1500	100	20.2*		
2000	60	2.3*		
2500	0*	-		
Summary of Statistics				
Survival EC50 or Reproduction IC50 =	2020 mg/L NaCl	1590 mg/L NaCl		
Typical Response Range (mean ± 2 SD)	1751-2303 mg/L NaCl	1198-1787 mg/L NaCl		

^{*} The response at this test treatment was significantly less than the Lab Control treatment response at p<0.05

4.2 Effects of Calleguas Creek Ambient Water on Hyalella azteca

The results of this test are summarized below in Table 9. The 68-WOOD-119 ambient water sample was the only sample tested with this species; there were no significant reductions in survival in this sample. The test data and summary of statistical analyses for this test are presented in Appendix E.

Table 9. Effects of Ambient Water 68-WOOD-119 on <i>Hyalella azteca</i> Survival.			
Ambient Water Treatment	10-Day Mean % Survival		
Lab Control	100		
6.25%	96.7		
12.5%	98.0		
25%	98.0		
50%	92.0		
100%	90.0		
Culture Control	100		
Summary of Key Statistics			
No Observable Effect Concentration (NOEC) =	100% ambient water		
TUc (where TUc = 100/NOEC) =	1		
Survival EC25 =	>100% ambient water ^a		
Survival EC50 =	>100% ambient water ^a		
TUc (where TUc = 100/EC50) =	<1		

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% ambient water.

4.2.1 Reference Toxicant Toxicity to Hyalella azteca

The results of this test are summarized below in Table 10. The LC50 for this test was consistent with the typical response range established by the reference toxicant test database for this species, thus providing further evidence that the organisms used for ambient water testing were responding to toxic stress in a typical and consistent fashion. The test data and summary of statistical analyses for this test are presented in Appendix F.

Table 10. Reference Toxicant Testing: Effects of KCl on Hyalella azteca.			
KCl Treatment (g/L)	Mean % Survival		
Lab Control	100		
0.1	100		
0.2	100		
0.4	40*		
0.8	0*		
1.6	0*		
Summary of Statistics			
Survival LC50 =	0.37 g/L KCl		
Typical Response Range (mean ± 2 SD)	0.29 – 0.55 g/L KCl		

^{* -} The response at this test treatment was significantly less than the Lab Control treatment response at p < 0.05.

5. SUMMARY AND CONCLUSIONS

Effects of Calleguas Creek Ambient Waters on Ceriodaphnia dubia

There were no significant reductions in survival or reproduction in the Calleguas Creek ambient water samples tested with this species.

Effects of Calleguas Creek Ambient Waters on Hyalella azteca

The 68-WOOD-119 ambient water was the only sample tested with this species; there were no significant reductions in survival in this sample.

Toxicity Summary for Calleguas Creek: Event 63 Ambient Waters.					
	Toxicity relative to the Lab Control treatment?				
Sample Station ID	Ceriodaphnia dubia		Hyalella azteca		
	Survival	Reproduction	Survival		
68-UNIV-029	no	no	testing with this species was not performed		
68-ADOLF-067	no	no	testing with this species was not performed		
68-HITCH-158	no	no	testing with this species was not performed		
68-GATE-219	no	no	testing with this species was not performed		
68-BELT-222	no	no	testing with this species was not performed		
68-WOOD-119	testing with this species was not performed		no		

5.1 QA/QC Summary

Test Conditions – All test conditions (pH, D.O., temperature, etc.) were all within acceptable limits during testing. All test analyses were performed according to laboratory Standard Operating Procedures.

Negative Control – The biological responses for the test organisms in the Lab Control treatments were within acceptable limits.

Positive Control –All reference toxicant test results were consistent with the "typical response" ranges established by the reference toxicant test database, indicating that these test organisms were responding to toxic stress in a typical fashion.

Concentration Response Relationships – The concentration-response relationships for these tests were evaluated as per EPA guidelines (EPA-821-B-00-004), and were determined to be acceptable.

Appendix A

Chain-of-Custody Record for the Collection and Delivery of the Calleguas Creek Ambient Water Samples

Larry Walker Associates
2151 Alessandro Drive, Suite 100 Ventura, CA 93001 805-585-1835 805-585-1840 Fax

CHAIN-OF-CUSTO	AIN-OF-CUSTODY RECORD						Da	ate:					La	b ID:			500
Phone:	Jeff Cod 2250 C Fairfield 707-20 707-20	tsifas ordelia Ro d, CA 9453 7-7761 7-7916				CARSINGS CARRY WALKER	y	Chronic dilution test - Ce	Chronic dilution test - Hyalella	Chronic dilution test - Ameri							
Project: Calleguas Creek Watershed TMDL Monitoring Program (391.78)				ASSOCIATES	9	Ceriodaphia - E	azteca -	Americamysis - EC>									
015-14-0-11-11-1	1.1	Sample		Sample		Containe	r] C &	EC>3000	>25							
Client Sample	e Ia	Date	Time	Matrix	#	Туре	Pres.	3000	8	25000						Notes	1
CCWTMP-68-UNIV-029		8-8-18	30830	Surface Water	2	20-L Jerrican	none		X						E E	4390w	ka
CCWTMP-68-ADOLF-0	67	[1]	0920	Surface Water	2	20-L Jerrican	none	X									1
CCWTMP-68-WOOD-1	19		1520	Surface Water	2	20-L Jerrican	none	X									1
CONTMP 68 UPLAND	152	-		Surface Water	2	20-L Jerrican	none	-		-							1
CCWTMP-68-HITCH-15	58 .		17:45	Surface Water	2	20-L Jerrican	none	X	1								ĺ
CCWTMP-68-GATE-219	9		13:20	Surface Water	2	20-L Jerrican	none	X									1
CCWTMP-68-BELT-222	2 ,	V	14:35		2	20-L Jerrican	none	X				Ti					1

Sender Comments: 1) Prior approval must be obtained if methods or RLs other than those	Relinquished By (1):	Relinquished By (2):
specified in the QAPP are used. 2) Please PDF a copy of the COCs to Michael Marson at	Print: 6reg 6Hen	af
michaelm@lwa.com. 3) Send final report to Michael Marson and edd@kinneticlabs.com.	Organization: KC\ Date: 8-8-18 Time: 2000	Date: 8, 9, 18 Time: 7:30
Laboratory Comments:	Received By (1):	Received By (2):
	Print: Godham Gaspargen Organization: Ki Logistica	Times Lang
	Date: 18/8/18 Time: 8:00	Date: 8/9/18 Time: 0730

Crew: KLI

Appendix B

Test Data and Summary of Statistics for the
Evaluation of the Chronic Toxicity of the Calleguas Creek
Ambient Waters to Ceriodaphnia dubia:
Data Analyses Excluding Statistical Outliers

CETIS Summary Report

Report Date:

21 Aug-18 10:50 (p 1 of 2)

Test Code:

79258 | 17-8303-4899

Ceriodaphnia	a Survival and R	eproductio	n Test							Pacific	c EcoRi	isk
Batch ID: Start Date: Ending Date: Duration:	20-4812-1806 09 Aug-18 16:2 : 15 Aug-18 14:3 5d 22h	5 Pro 8 Sp e	t Type: tocol: cies: irce:	Reproduction-S EPA-821-R-02- Ceriodaphnia d In-House Cultu	-013 (2002) lubia		Dil	alyst: uent: ne: e:	Jessica Okutsu Laboratory Wate Not Applicable 1	er		
•	11-5389-0433 : 08 Aug-18 08:3 : 09 Aug-18 07:3 32h (0.7 °C)	0 Sou	de: erial: irce: tion:	38-UNIV-029 Ambient Water Calleguas Cree UNIV				ent: oject:	Larry Walker As 29192	sociates		
Comments: Stats excludin	ng reproductive o	utlier Lab W	ater Con	trol - replicate A	i.							
Multiple Com	parison Summa	ary										
Analysis ID	Endpoint		Comp	arison Method			NOEL	LOE	_ TOEL	TU	PMSD) /
09-3122-8277	Reproduction		Wilco	kon/Bonferroni A	\dj Test		100	> 100	n/a	1	27.3%	6
09-4037-0861	Survival		Fisher	Exact/Bonferro	ni-Holm Tes	t	100	> 100	n/a	1	n/a	
Point Estimat	te Summary											
Analysis ID	nalysis ID Endpoint Point Estimate Method								95% LCL	95% UCL	TU	,
16-0388-5191	Reproduction		Linear	Interpolation (IC	CPIN)		IC5	1.6	1.12	3.11	62.63	
							IC10	3.19	2.23	6.21	31.31	
							IC15	4.79	3.35	n/a	20.88	
							IC20	>100	n/a	n/a	<1	
							IC25	>100	n/a	n/a	<1	
							IC40	>100		n/a	<1	
							IC50	>100	n/a	n/a	<1	_
Reproduction												
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E		CV%	%Effe	
0	LW	9	31.6	29.4	33.7	27	36	0.93	2.79	8.84%	0.00%	
6.25		10	17.9	10	25.8	0	36	3.49	11	61.68%	43.27	
12.5		10	26.7	21	32.4	14	35	2.53	8	29.97%	15.399	
25 50		10 10	21.2 30.2	13.3 27.6	29.1 32.8	0	35 37	3.5	11.1	52.19%	32.829	
100		10	30.2	26.9	34.9	24 19	3 <i>7</i> 36	1.14 1.78	3.61 5.63	11.97%	4.30% 2.08%	
		10	50.9	20.9	34.9	19		1.76	5.65	18.21%	2.00%	
Survival Sum	-											
Conc-%	Code LW	10	1.000	95% LCL 1.000	95% UCL 1.000	Min 1.000	1.000	0.000		0.00%	%Effe 0.00%	_
6.25	∟v v	10	0.900	0.674	1.000	0.000	1.000	0.100		35.14%	10.00%	
12.5		10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%	
25		10	0.900	0.674	1.000	0.000	1.000	0.100		35.14%	10.00%	
								550		30		
50		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%	,

Analyst: JO OARB

Report Date: Test Code: 21 Aug-18 10:50 (p 2 of 2)

 	′
79258 17-8303-4899	9

0 1 1 1 1 1	0 1 1	D	T								
Ceriodaphnia	Survival and	Reproduction	on lest							Paci	fic EcoRisI
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW		27	33	31	36	34	31	28	32	32
6.25		29	12	0	36	12	31	11	15	13	20
12.5		32	32	16	35	14	35	28	29	29	17
25		26	19	16	0	30	35	29	13	12	32
50		30	31	37	28	30	32	34	24	28	28
100		35	35	35	36	19	28	32	34	24	31
Survival Detai	l										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25		1.000	1.000	1.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Survival Binor	nials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	0/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	0/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Analyst: Jo QA: Rb

Report Date:

21 Aug-18 10:03 (p 1 of 1)

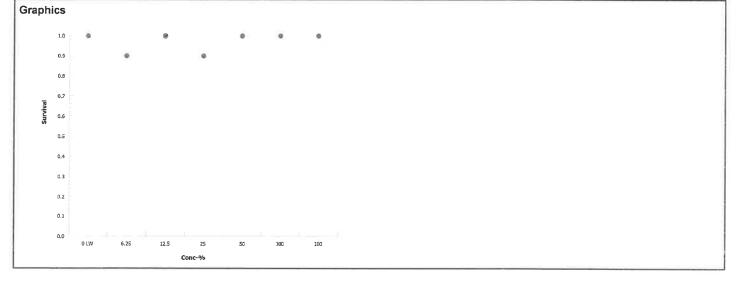
Test Code:

79258 | 17-8303-4899

Ceriodaphnia	Survival and Repro	duction Test						Pacific EcoRisk
Analysis ID: Analyzed:	09-4037-0861 21 Aug-18 10:01	Endpoint: Analysis:	Survival STP 2xK Contingency Tables		TIS Version		/1.9.2	
Data Transfor	m Alt	t Нур		NOEL	LOEL	TOEL	ΤU	
Untransformed	1 C:	> T		100	> 100	n/a	1	

Control vs	Group	Test Stat	P-Type	P-Value	Decision(a:5%)	
Lab Water Contr	6.25	0.500	Exact	1.0000	Non-Significant Effect	
	12.5	1.000	Exact	1.0000	Non-Significant Effect	
	25	0.500	Exact	1.0000	Non-Significant Effect	
	50	1.000	Exact	1.0000	Non-Significant Effect	
	100	1.000	Exact	1.0000	Non-Significant Effect	

Data Summary							
Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	LW	10	0	10	1	0	0.0%
6.25		9	1	10	0.9	0.1	10.0%
12.5		10	0	10	1	0	0.0%
25		9	1	10	0.9	0.1	10.0%
50		10	0	10	1	0	0.0%
100		10	0	10	1	0	0.0%



Analyst: Jo QA: Rb

Report Date: Test Code: 21 Aug-18 10:03 (p 1 of 1)

de: 79258 | 17-8303-4899

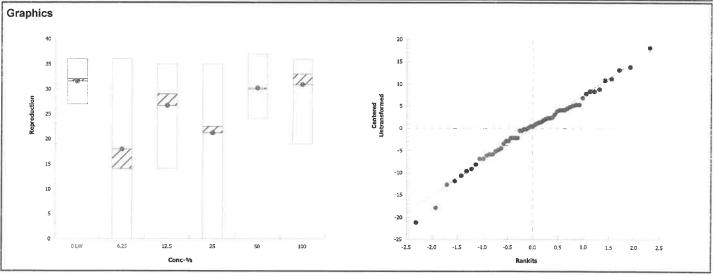
Ceriodaphnia	Survival and Repro	duction Test							Pacific EcoRisk
Analysis ID: Analyzed:	09-3122-8277 21 Aug-18 10:01	Endpoint: Analysis:	Reproduction Nonparametric-Multiple Comparison			Version:	CETISv Yes	1.9.2	
Data Transfor	rm Alt	Нур		NOEL		LOEL	TOEL	TU	PMSD
Untransformed	d C:	> T		100	>	100	n/a	1	27.31%
Wilessen (Des	ofourous Adi Took								

Wilcoxon/Bonferr	oni Adj Test							
Control vs	Control II	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Lab Water Contr	6.25*	68.5	n/a	2	17	Exact	0.0202	Significant Effect
	12.5	86.5	n/a	2	17	Exact	0.7091	Non-Significant Effect
	25	72	n/a	1	17	Exact	0.0510	Non-Significant Effect
	50	88	n/a	4	17	Exact	0.8652	Non-Significant Effect
	100	104	n/a	5	17	Exact	1.0000	Non-Significant Effect

ANOVA Table							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	1579.56	315.912	5	5.17	6.2E-04	Significant Effect	
Error	3239.32	61.1193	53				
Total	4818.88		58				

Distributional Tests										
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)					
Variances	Bartlett Equality of Variance Test	22.4	15.1	4.3E-04	Unequal Variances					
Distribution	Shapiro-Wilk W Normality Test	0.988	0.945	0.8289	Normal Distribution					

Reproduction	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	9	31.6	29.4	33.7	32	27	36	0.93	8.84%	0.00%
6.25		10	17.9	10	25.8	14	0	36	3.49	61.68%	43.27%
12.5		10	26.7	21	32.4	29	14	35	2.53	29.97%	15.39%
25		10	21.2	13.3	29.1	22.5	0	35	3.5	52.19%	32.82%
50		10	30.2	27.6	32.8	30	24	37	1.14	11.97%	4.30%
100		10	30.9	26.9	34.9	33	19	36	1.78	18.21%	2.08%

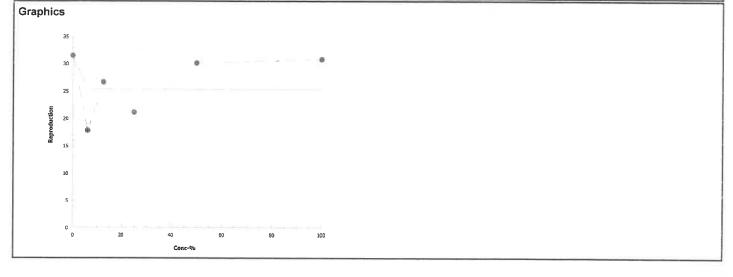


Report Date: Test Code: 21 Aug-18 10:03 (p 1 of 1)

79258 | 17-8303-4899

Ceriod	aphnia	Survival and Re	eproductio	n Test						Pacific EcoRisk
Analys	is ID:	16-0388-5191	End	lpoint:	Reproduction			CETIS Version:	CETISv1.9.2	
Analyz	ed:	21 Aug-18 10:0)2 A na	lysis:	Linear Interpola	tion (ICPIN)		Official Results:	Yes	
Linear	Interpo	lation Options								
X Tran	sform	Y Transform	n See	d	Resamples	Exp 95% CL	Method			
Linear		Linear	593	427	200	Yes	Two-Point	Interpolation		
Point E	stimate	es								
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL				
IC5	1.6	1.12	3.11	62.63	32.2	89.6				
IC10	3.19	2.23	6.21	31.31	16.1	44.8				
IC15	4.79	3.35	n/a	20.88	n/a	29.87				
IC20	>100	n/a	n/a	<1	n/a	n/a				
IC25	>100	n/a	n/a	<1	n/a	n/a				
IC40	>100	n/a	n/a	<1	n/a	n/a				
	>100	n/a	n/a	<1	n/a	n/a				

Reproduction	Summary					Calculated Va	riate		
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	9	31.6	27	36	0.93	2.79	8.84%	0.0%
6.25		10	17.9	0	36	3.49	11	61.70%	43.3%
12.5		10	26.7	14	35	2.53	8	30.00%	15.4%
25		10	21.2	0	35	3.5	11.1	52.20%	32.8%
50		10	30.2	24	37	1.14	3.61	12.00%	4.3%
100		10	30.9	19	36	1.78	5.63	18.20%	2.08%



CI	ient:		LW.	A - Call	eguas C	reek		Ma	terial:	C	СТМР	-68-U	NIV-0	29		Test	Date:	18/9/18
Proje	ct #:	29	192		Γest ID:	792	258	Rai	ndomiz	zation:		10.7	.3		Co	ntrol '		
	Day	pН		D.O.		Cond.	Temp				Sur	vival / R	eproduc	ction				SIGN-OFF
		New	Old	New	Old	(µS/cm)	(°C)	A	В	С	D	Е	F	G	Н	I	J	
	0	7.99		7.2		351	24.5	0	0	Ö	0	0	0	ಲ	C	0	0	Date 8 19 New WQ: Test Init.: 16 Sol'n Prepage TF Time: 1615
	1	7.98	7.72	8-1	C.C	353	243	0	0	0	0	0	0	0	0	0	0	Date: PIP New WQ: TA Counts: R6 Sol'n Prep: ASC Old WQ: 58 Time: 100
	2	7.88	713	7.7	9.1	354	260	0	0	0	0	0	0	0	0	0	0	Date: 8/14/18 New WQ: MB Counts: Old WQ: RA P Time: 1217
itrol	3	7.91	7.87	7.9	8.0	355	24.7	0	0	0	0	0	0	0	0	0	0	Date: \$1748New WQ: AR Counts: US Sol'n Prep: GR Old WQ: MY Time/354
r Con	4	7,99	737	7,4	6.5	350	24.8	4	7	6	7	6	7	7	5	5	6	Date 13 13 New WQ: M Counts: 25 / Sol'n Prep: B Old WQ: M Time: 1313
Lab Water Control	5	7.82	7,81	0.9	7.9	357	240	9	8	12	9	12	10	9	10	9	11	Date Will Panew WQ: TA Counts 26 Sol'n Prep: Sol Old WQ: To Time: 349
Lab	6	_	7.85	_	5.0	383	24.1	0	12	15	15	17	15	15	13	18	15	Date: 0/17/17 New WQ Counts: 12.6 Sol'n Prep: Old WQ: 74 Time: 438
	7									15	10	18	17	्रां इस्त्र इ				Date: New WQ: Counts: Sol'n Prep: Old WQ: Time:
	8			K K K K K K K K K K K K K K K K K K K														Date: Old WQ: Counts: Time:
							Total=	13	27	33	31	36	34	31	28	32	32	Mean Neonates/Female = 29.7
	Day	р	Н	D	.O.	Cond.				-	Survival	-	duction					Sample ID
		New	Old	New	Old	(µS/cm)		Α	В	C	D	Е	F	G	Н	I	J	Gample 1D
	0	7.96		7.3		446	24.4	0	0	0	0	0	0	0	0	0	0	50513
	1	8.03	7.87	8-1	7.5	447	24.5	0	0	0	0	0	0	0	0	0	0	50513
	2	7.93	4,02	7.8	જ.1	444	253	0	0	0	0	0	0	0	0	0	0	50513
	3	7.92	7.92	8.1	7.8	441	24,8	0	0	×/0	0	0	0	0	0	0	0	50513
6.25%	4	8,00	7.88	7,6	7.2	439	25.9	3	4	-	8	4	6	3	6	4	7	50513
6.2	5	7.86	7.93	9.0	7.9	453	244	11	0	-	12	8	11	8	9	9	13	50 513
	6	_	7.81	_	6.0	482	24.6	15	8	_	16	0	14	0	0	0	ပ	_
	7									_								
	8									-								
							Total=	29	12	1/0	36	12	31	1	15	13	20	Mean Neonates/Female = 17.9

CI	ient:		LWA	A - Calle	eguas C	reek		Ma	terial:	C	СТМР	-68-U	NIV-0	29		Test	Date:	819/18
Proje	ct #:	291	92	Т	est ID:	792	58								Со	ntrol \	Vater:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp				Surv	ival / R	eproduc	ction				SIGN-OFF
		New	Old	New	Old	(µS/cm)	(°C)	Α	В	С	D	Е	F	G	Н	I	J	SIGN-OIT
	0	7.96	20.000 M	7.5		539	243	0	0	0	0	0	O	0	0	Q	0	
	1	8.06	7.88	8.2	7.4	543	24.7	0	0	0	0	0	J	0	0	0	0	
	2	7,97	% .05	7,9	8.1	533	25.4	0	Ö	0	0	0	0	0	0	0	0	
	3	7.96			7.8	543	25.3	0	0	0	O	0	0	0	0	0	0	
12.5%	4	8,04	7.88	7.8	7-2	531	उङ्ग	5	7	5	6	4	7	2	5	4	6	
12	5	7.89	7.97	9.0	7.8	544	25.0	12	11	11	9	10	11	11	10	lo	11	
	6		7.87	-	5.7	580	24.7	15	14	0	20	0	17	15	14	15	O	
	7																	
	8																	
							Total=	33	32	16	35			28	29	29	17	Mean Neonates/Female = 26.7
	Day	p	Н	D.	.O.	Cond.				_		/ Repro	duction	_				
		New	Old	New	Old	(µS/cm)		Α	В	С	D	Е	F	G	Н	I	J	
	0	7.95		7.5		704	24.3	0	0	O	0	0	0	0	0	a	0	
	1	8-08	801	8-1	7:6	704	24.8	0	0	0	4/0	0	0	O	0	0	0	
	2	7,99	8.16	7.9	8.1	497	25.5	0	0	0	-	0	0	0	0	0	Ò	
	3	8.00	_	-	7.9	710	25.3	0	0	Q	-	0	0	0	0	٥	O	
25%	4	80,8	8.00	7,7	7.7	707	258	6	7	0	-	4	6	5	Ч	3	4	
	5	7.94	8.00	9.0	7.4	703	25,4	8	12	0	_	9	9	9	9	9	10	
	6	~	7.90		6.0	769	241	12	ව	16	-	17	20	15	0	0	18	
	7	10003981222		H2181818181824							_							
	8		0.423.4230v5x		*[*[*]*[*]*	#1#2#2#2#2#2#2				, ,	V			2.5	1.00		2	
							Total=	26	61	16	×10	30	35	29	13	12	52	Mean Neonates/Female = 2 . 2

Cl	ient:		LWA	A - Calle	eguas C	reek		Ma	terial:	C(СТМР	-68-U	NIV-0	29		Test	Date:	8/9/13
Proje	ct #:	291	192	Т	est ID:	792	58								Со	ntrol V	Water:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp				Surv	ival / R	eproduc	ction				SIGN-OFF
		New	Old	New	Old	(µS/cm)	(°C)	Α	В	С	D	Е	F	G	Н	I	J	31011-011
	0	7.90		7.5		1050	24.3	0	Ó	C	0	0	0	0	0	0	C	
	1	8.08	8.11	8.2	7-7	1050	24,9	0	0	0	0	0	0	0	0	0	0	
	2	7.99	8.2%	8,1	8.0	1035	25,9	0	0	0	0	0	0	0	0	0	0	
	3	8.03	8.2	8.0	7.9	1057	25.4	0	0	0	0	0	0	0	0	0	0	
20%	4	8,08	6.21	7,7	7.9	1048	26.0	6	5	6	4	5	5	4	4	4	4	
Δ.	5	7.96	8,21	9.0	7.9	1050	25.5	10	11	10	9	10	10	12	8	8	9	
	6	-	8-11	سنت	6.8	1106	24.3	14	15	21	15	15	17	18	12	16	15	
	7	H.																
	8																	
							Total=	30	31	37	28	30	32	34	24	28	28	Mean Neonates/Female = 30.2
	Day	p	Н	D.	.O.	Cond.				5	Survival	/ Repro	duction					
		New	Old	New	Old	(µS/cm)		Α	В	С	D	Е	F	G	Н	I	J	
	0	7.83		7.3		1711	243	0	0	0	0	0	O	0	0	0	0	
	1	8.08	8,21	8-3	7-1	1723	24.9	0	0	0	O	0	0	0	C	0	0	
	2	7.97	46,47	8,2	8.0	1703	25,7	0	0	0	0	0	0	0	0	0	0	
	3	8.03	8.39	8.6	7.7	1715	25.3	0	O	C	0	0	0	0	0	O	0	
100%	4	8,08	8.38	7,9	78	1698	259	8	7	7	7	OF	467	6	5	0	3	
31	5	7.97	2	8.9	77	1718	2526	11	10	12	13	6	8	10	13	8	9	
	6	_	8-30	<u> </u>	7.5	1803	25.1	16	18	16	16	12	13	16	16	16	19	
	7	. 1																
	8																	
							Total=	35	35	39	36	19	28	32	34	24	3)	Mean Neonates/Female = TT

30.9 8/25/19

CETIS Summary Report

Report Date:

25 Aug-18 09:14 (p 1 of 2)

Test Code:

79259 | 16-3645-9239

Ceriodaphnia	a Survival and R	eproduction 1	Test	-						Pacifi	c EcoRisk
Batch ID: Start Date: Ending Date: Duration:	09-8772-2331 09 Aug-18 15:50 15 Aug-18 16:09 6d 0h	0 Protoc	col: E es: C	teproduction-S PA-821-R-02- eriodaphnia d n-House Cultu	-013 (2002) Iubia		Dil	alyst: uent: ne: e:	Jessica Okutsu Laboratory Wat Not Applicable 1	er	
	21-0301-4145 : 08 Aug-18 09:20 : 09 Aug-18 07:30 30h (0.6°C)		ial: A e: C	8-ADOLF-067 mbient Water alleguas Cree DOLF				ent: oject:	Larry Walker As 29192	sociates	
Comments: Stats exclude	reproduction outl	ier 50-B									
Multiple Com	parison Summa	ry									
Analysis ID 10-6375-2121 13-0532-4504	Endpoint Reproduction Survival		Vilcoxo	rison Method n/Bonferroni A xact/Bonferro	dj Test	t	100 100	> 100 > 100	n/a n/a	TU 1 1	PMSD / 17.1% n/a
Point Estimat	te Summary										
Analysis ID	Endpoint	F	Point Es	stimate Metho	od		Level	%	95% LCL	95% UCL	TU ✓
12-3400-7299	Reproduction		Linearii	nterpolation (IC	SFIN)		IC5 IC10 IC15 IC20 IC25 IC40 IC50	8.38 11 >100 >100 >100 >100 >100	3.2 6.59 n/a n/a n/a n/a	11.5 n/a n/a n/a n/a n/a n/a	11.94 9.107 <1 <1 <1 <1
Reproduction	n Summary										
Conc-% 0 6.25 12.5 25 50 100	Code LW	10 3 10 3 10 2 10 2 9 2	Mean 32.6 32.3 27.3 25.5 28.6 32.2	95% LCL 30.7 28.8 22.1 20.5 26.8 29.1	95% UCL 34.5 35.8 32.5 30.5 30.3 35.3	29 22 15 16 25 25	Max 36 39 34 36 32 39	0.846 1.56 2.31 2.23 0.766 1.39	2.67 4.95 7.3 7.04	8.21% 15.31% 26.75% 27.62% 8.05% 13.64%	%Effect 0.00% 0.92% 16.26% 21.78% 12.41% 1.23%
Survival Sum	mary										
Conc-% 0 6.25 12.5 25	Code LW	10 1 10 1 10 1	Mean 1.000 1.000 1.000	95% LCL 1.000 1.000 1.000 1.000	95% UCL 1.000 1.000 1.000 1.000	1.000 1.000 1.000 1.000	1.000 1.000 1.000 1.000	0.000 0.000 0.000 0.000	0.000 0.000 0.000	0.00% 0.00% 0.00% 0.00%	%Effect 0.00% 0.00% 0.00% 0.00%

Analyst: JO QA: R6

CETIS Summary Report

Report Date: Test Code: 25 Aug-18 09:14 (p 2 of 2)

79259 | 16-3645-9239

Ceriodaphnia	Survival and	Reproduction	on Test							Pacif	fic EcoRisI
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	34	36	30	34	30	31	35	31	29	36
6.25		38	31	34	39	34	28	22	31	31	35
12.5		27	15	33	30	34	21	32	32	16	33
25		30	28	30	29	36	28	26	16	16	16
50		28		29	32	29	25	25	30	30	29
100		25	33	33	25	35	32	39	32	32	36
Survival Detai	l										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Survival Binor	mials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Analyst: Jo QA: Rb

Report Date:

25 Aug-18 09:14 (p 1 of 1)

Test Code:

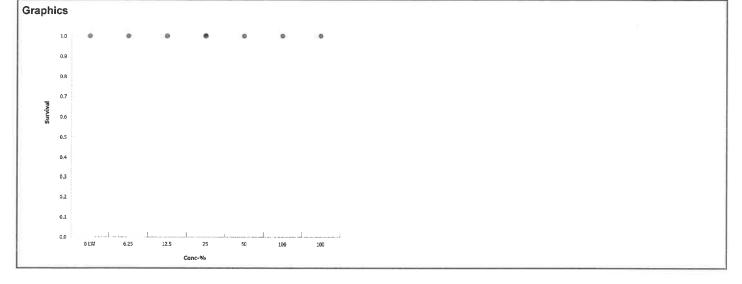
79259 | 16-3645-9239

Ceriodaphnia	Survival and Repro	duction Test			Pacific EcoRisk
Analysis ID:	13-0532-4504	Endpoint:	Survival	CETIS Version:	CETISv1.9.2
Analyzed:	21 Aug-18 10:45	Analysis:	STP 2xK Contingency Tables	Official Results:	Yes

	Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU
Ī	Untransformed	C > T	100	> 100	n/a	1

Fisher Exac	t/Bonfe	erroni-Holm Test				
Control	vs	Group	Test Stat	P-Type	P-Value	Decision(α:5%)
Lab Water C	ontr	6.25	1.000	Exact	1.0000	Non-Significant Effect
		12.5	1.000	Exact	1.0000	Non-Significant Effect
		25	1.000	Exact	1.0000	Non-Significant Effect
		50	1.000	Exact	1.0000	Non-Significant Effect
		100	1.000	Exact	1.0000	Non-Significant Effect

Data Summary	y						
Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	LW	10	0	10	1	0	0.0%
6.25		10	0	10	1	0	0.0%
12.5		10	0	10	1	0	0.0%
25		10	0	10	1	0	0.0%
50		10	0	10	1	0	0.0%
100		10	0	10	1	0	0.0%



Analyst: JO QA: PG

Report Date: Test Code: 25 Aug-18 09:13 (p 1 of 1)

79259 | 16-3645-9239

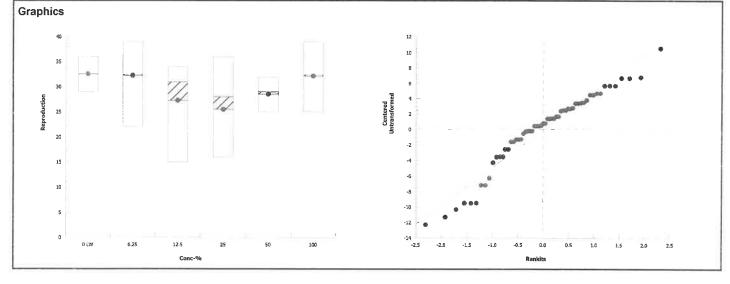
	ourvivai ario Repro	duction Test					Pa	cific EcoRisk
. and you	10-6375-2121 25 Aug-18 9:13		Reproduction Nonparametric-Multiple Comparison		TIS Version:		1.9.2	
Data Transform	n Al	t Hyp		NOEL	LOEL	TOEL	TU	PMSD
Untransformed	С	> T		100	> 100	n/a	1	17.07%

Wilcoxon/Bonferre	oni Adj Test						
Control vs	Conc-%	Test Stat	Critical	Ties	DF P-Type	P-Value	Decision(α:5%)
Lab Water Contr	6.25	106	n/a	3	18 Exact	1.0000	Non-Significant Effect
	12.5	83	n/a	2	18 Exact	0.2494	Non-Significant Effect
	25*	68.5	n/a	4	18 Exact	0.0112	Significant Effect
	50*	55.5	n/a	2	17 Exact	0.0073	Significant Effect
	100	106	n/a	3	18 Exact	1.0000	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	459.756	91.9511	5	3.42	0.0095	Significant Effect
Error	1426.92	26.9231	53			
Total	1886.68	and the second section of the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the section is a second section in the section in the section is a section in the section in the section in the section is a section in the section in the section in the section is a section in the section in the section in the section is a section in the section in the section in the section is a section in the section is a section in the section in	58			

Distributional T	ests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variances	Bartlett Equality of Variance Test	16.4	15.1	0.0057	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.947	0.945	0.0118	Normal Distribution

Reproduction	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0 -	LW	10	32.6	30.7	34.5	32.5	29	36	0.846	8.21%	0.00%
6.25		10	32.3	28.8	35.8	32.5	22	39	1.56	15.31%	0.92%
12.5		10	27.3	22.1	32.5	31	15	34	2.31	26.75%	16.26%
25		10	25.5	20.5	30.5	28	16	36	2.23	27.62%	21.78%
50		9	28.6	26.8	30.3	29	25	32	0.766	8.05%	12.41%
100		10	32.2	29.1	35.3	32.5	25	39	1.39	13.64%	1.23%

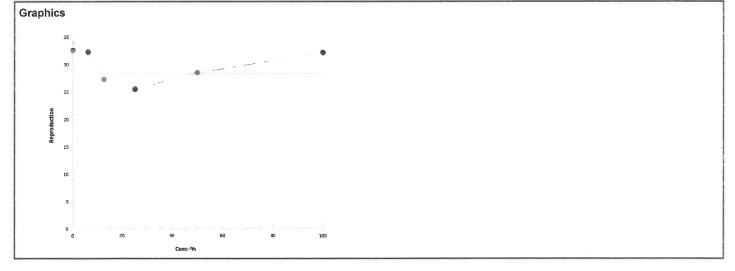


Report Date: Test Code: 25 Aug-18 09:13 (p 1 of 1)

79259 | 16-3645-9239

Ceriod	aphnia	Survival and Re	production	1 Test							Pacific EcoRisk
Analys	is ID:	12-5460-7299	End	point:	Rep	roduction			CETIS Version:	CETISv1.9.2	
Analyz	ed:	25 Aug-18 9:13	Ana	lysis:	Line	ar Interpola	tion (ICPIN)		Official Results:	Yes	
Linear	Interpo	lation Options									
X Trans	sform	Y Transform	See	d	Res	amples	Exp 95% CL	Method			
Linear		Linear	7582	208	200		Yes	Two-Point	Interpolation		
Point E	Stimate	9S									
Level	%	95% LCL	95% UCL	TU		95% LCL	95% UCL				
IC5	8.38	3.2	11.5	11.94		8.709	31.22				
IC10	11	6.59	n/a	9.107		n/a	15.17				
IC15	>100	n/a	n/a	<1		n/a	n/a				
IC20	>100	n/a	n/a	<1		n/a	n/a				
IC25	>100	n/a	n/a	<1		n/a	n/a				
IC40	>100	n/a	n/a	<1		n/a	n/a				
IC50	>100	n/a	n/a	<1		n/a	n/a				

Reproduction	Summary								
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	10	32.6	29.	36	0.846	2.67	8.21%	0.0%
6.25		10	32.3	22	39	1.56	4.95	15.30%	0.92%
12.5		10	27.3	15	34	2.31	7.3	26.80%	16.3%
25		10	25.5	16	36	2.23	7.04	27.60%	21.8%
50		9	28.6	25	32	0.766	2.3	8.05%	12.4%
100		10	32.2	25	39	1.39	4.39	13.60%	1.23%



C	lient:		LW	A - Call	eguas C	reek		Ma	terial:	CC	ТМР-	68-AD	OLF-	067		Test	Date:	8/9/14
Proje	ect #:	291	92	7	Test ID:	792	59	Rar	ıdomiz	ation:	10	۱, ۲,			Co	ntrol	Water:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp					ival / R						SIGN-OFF
	0	7.92	Old	7.4	Old	(µS/cm)	(°C) 25.0	A O	B	С	D	E	F O	G	О	1 C	0	Date 3 4 H New WQ: Test Init.:
	1	8.15	7.72		6.8		74 D			0	0	n	D	D	D	0		Sol'n Prep: Sir TF Time:/Sso Date: Will New WQ: TA Counts US
	2	7,85			8.2	355 350	246	0	0	0	0	0	0	0	0	0	0	Sol'n Prep: Cold WQ: AR Time: 100z Date: 5 IN 116 New WQ: DB Counts Sol'n Prep: SMC Old WQ: AR Time: 1140
lor	3	7.99	7.87	7.8	7.2	359	25.1	0	0	0	0	0	0	0	0	0	0	Date: 12/gNew WQ: WY Times 20
r Cont	4	786	7.90	7.6	7.7	7	25.2	5	8	6	6	6	6	7	ч	3	7	Date: 8/13/18/18 WQ: SW Counts: DL Sol'n Prep: 8 Old WQ: K Time: 1624
Lab Water Control	5	7.83	7.65		7.2	350	24.7	11	12	12	13	12	11	12	12	12	17	Date: 6 cel Wew WQ: TA Counts: K L Sol'n Prep: SV Old WQ: AR Time: SS
Lat	6	_	781	-	6.6	374	248	18	16	12	15	12	14	16	15	14	16	Date: New WQ: — Counts: Z Sol'n Prep: No Old WQ: TA Time:
	7																	Date: New WQ: Counts: Sol'n Prep: Old WQ: Time:
	8																	Date: Old WQ: Counts: Time:
7.0.0.0							Total=	34	36	30	34			35	31	29	36	Mean Neonates/Female = 32.
	Day	New	H Old	D. New	O. Old	Cond. (µS/cm)		Α	В	C	Survival D	/ Repro	duction F	G	Н	I	J	Sample ID
	0	7.94	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7.7		399	1.23	0	ဎ	O	0	O	0	0	0	O	G	50514
	1	8.10	7.72	8.3	7.6	399	26.2	0	0	0	0	0	0	0	0	0	0	50514
	2	7.89	8.03	€.0	8.3	402	24.9	0	0	0	0	0	0	0	0	0	0	50514
	3	8.08	7.94	8,0	7.6	401	24.9	0	0	σ	0	0	0	0	0	0	C	50514
6.25%	4	7.58	8.00	77	8.0	396	25.3	C	6	5	7	6	0	2	5	5	4	50514
6.7	5	7.88	7.71	8.9	7.2	402	24.7	15	12	12	13	12	13	龙山	12	11	13	50514
	6	_	7.84	_	7.1	419	248	17	13	17	19	16	15	11	14	15	18	50514
	7																	
	8				120120411111			-~	7.1		_		Q		7.1	2.1	-	
							Total=	38	3	34	37	34	28	w	3	3	35	Mean Neonates/Female = 32-3

Cl	ient:	#: 29192 Test ID: 7925						Ma	terial:	CC'	ТМР-	68-AD	OLF-	067		Test	Date:	8/9/19
Proje	ect #:	291	92	ı	Test ID:	792	59								Co	ntrol \	Water:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp				Surv	ival / R	eproduc	tion				SIGN-OFF
		New	Old	New	Old	(µS/cm)	(°C)	Α	В	С	D	Е	F	G	Н	I	J	
	0	7.95		7.9		445	24.9	O	0	ပ	0	۵	0	0	0	0	C	
	1	8-09	7.82	8.2	7.8	446	26.4	0	D	0	0	D	0	D	0	0	0	
	2	7,93	8.06	8:0	8-3	444	24.8	ථ	0	0	0	0	0	0	0	0	0	
	3	8.11	7.97	8.1	7.7	446	25.0	0	0	0	O	0	0	0	٥	0	0	
12.5%	4	7.91	7.95	7.7	8.1	પ્ ષ5	25.3	5	5	6	7	5	O	6	6	4	5	
12	5	7.90	7.92	8.9	7.9	448	24,6	11	10	12	10	12	10	13	11	12	12	
	6	_	7.86	-	7.0	476	250	il	0	15	13	17	u	13	15	0	16	
	7																	
	8																	
							Total=	27	15	33	30	34	21	32	32	16	33	Mean Neonates/Female = 27, 3
	Day	_	Н		.O.	Cond.	2012013			_		/ Repro						
	_	New	Old	New	Old	(µS/cm)		Α	В	С	D	Е	F	G	Н	I	J	
	0	7.93	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7.9		526	શ્પ. વ	0	0	O	0	0	၁	0	0	0	0	
	1	8.08	7.87	8-3	8.3	524	26.2	G	0	0	0	O	0	0	O	0	0	
	2	7.94	8.07	8,0	8.2	523	24,7	Ô	0	0	0	0	0	0	0	0	0	
	3		8.03		7.8	533	25.0	0	0	0	0	0	0	0	0	0	0	
25%	4	7.95	7.99		8.1	527	25.4	4	4	5	5	G	4	4	5	G	5	
7	5	7.93	7 - 92	9.1	7.9	534	243	9	8	10	10	13	11	9	11	01	1)	
	6	_	7.92		6-6	561	249	17	16	15	14	17	13	13	0	0	0	
	7											7						
	8																	
							Total=	30	28	30	29	36	28	26	16	16	ile	Mean Neonates/Female = 7/5.5

Cl	ient:		LWA - Calleguas Creek 29192 Test ID: 79259					Ma	terial:	CC'	TMP-	68-AD	OLF-	067		Test	Date:	8/9/12
Proje	ect #:	291	192	7	est ID:	792	59								Со	ntrol V	Vater:	Mod EPAMH
	Day	рН		D.O.		Cond.	Temp				_	ival / R	^					SIGN-OFF
	0	New	Old	New	Old	(µS/cm)	(°C)	A O	B G	С	D G	E	F	G	Н	I 0	O I	
		7.90		8-1		700		0	0									
	1	8-06	7.99	8.4	8.1	700	26.3	6	D	0	D	0	D	D	0	D	0	
	2	7.92	8-18	8.4	8-1	703	24.7	0	0	0	0	0	0	0	0	0	0	
	3	8.10	8.12	8.6	7.8	704	24.8	0	0	0	0	0	0	0	0	0	0	
20%	4	7.43	8.00	7.7	8.1	700	25.3	5	4	5	6	6	1	4	4	5	5	
, v	5	7.96	8.04	9-1	8.0	700	24.5	10	11	10	11	ĺΟ	12	9	11	11	9	
	6	_	8.02	_	7.3	731	24.8	13	0	14	15	13	12	12	15	14	15	
	7																	
	8												10					
							Total=	28	15	29	32	29	25	25	30	30	29	Mean Neonates/Female = 27.2
	Day	_	Н	_	.0.	Cond. (µS/cm)	.124.611.61		- D	_		/ Repro			11			
	0	New	Old	9.0	Old	1039	25,0		В	С	D	E	F O	G ə	H	I O	J	
		7.85				- //	-	-					0					
	1	8.07	8.15	8-5	7.9	1010	26.3	0	D	0	0	0	D	0	0	0	0	
	2	7.92	8.32	8.9	8.2	1033	247	0	0	0	0	0	0	0	0	0	0	
	3	8.07	8.24	9.4	7.8	1039	24.7	0	0	0	O	0	S	0	0	0	0	
100%	4	3.03	8.20	7.9	8,1	1036	24.8	4	6	6	6	7	6	6	6	4	7	
	5	7.97	8.25	9.3	7.8	1037	24.8	9	12	11	4	12	13	13	11	14	11	
	6	-	8.24	-	7-6	1087	24.9	13	12	19	15	13	13	飞	15	14	18	
	7							V= 8/5	1540	14 8/15	12	108/5	158/2	13gal				
	8																	
							Total=	25	33	33	75	35	32	39	32	32	360	Mean Neonates/Female = 32.2

CETIS Summary Report

Report Date:

21 Aug-18 11:08 (p 1 of 2)

Test Code:

79262 | 17-8841-9933

Ceriodaphnia	Survival and Re	production Test							Pacific	EcoRi	isk
Batch ID:	07-3491-2627	Test Type:	Reproduction-S	Survival (7d)		An	alyst:	Jessica Okutsu			
Start Date:	09 Aug-18 15:20	Protocol:	EPA-821-R-02-	013 (2002)		Dil	uent:	Laboratory Wate	er		
Ending Date:	15 Aug-18 15:35	Species:	Ceriodaphnia d	ubia		Bri	ne:	Not Applicable			
Duration:	6d 0h	Source:	In-House Cultu	re		Ag	e:	1			
Sample ID:	17-4346-4046	Code:	68-HITCH-158			Cli	ent:	Larry Walker As	sociates		
	08 Aug-18 17:45	Material:	Ambient Water			Pro	oject:	29192			
	09 Aug-18 07:30		Calleguas Cree	:k							
Sample Age:	22h (3.8 °C)	Station:	HITCH								
Multiple Com	parison Summa	ry									
Analysis ID	Endpoint	Com	parison Method			NOEL	LOEL	TOEL	TU	PMS) v
14-9129-0722	Reproduction	Dunr	ett Multiple Com	parison Test	:	100	> 100	n/a	1	34.4%	6
18-8759-6009	Survival	Fishe	er Exact/Bonferro	ni-Holm Tes	t	100	> 100	n/a	1	n/a	
Point Estimat	e Summary										
Analysis ID	Endpoint	Poin	t Estimate Meth	od		Level	%.	95% LCL	95% UCL	TU	
12-5253-2436		Linea	ar Interpolation (IC	CPIN)		IC5	1.75	0.967	14.9	57.14	
						IC10	3.5	1.93	17.5	28.57	
						IC15	5.25	2.9	20.2	19.05	
						IC20	13.6	3.87	22.9	7.36	
						IC25	16.1	4.83	n/a	6.202	
						IC40	23.7	13.9	n/a	4.214	
						IC50	>100	n/a	n/a	<1	
Reproduction	Summary										
Conc-%	Code	Count Mean	n 95% LCL	95% UCL	Min	Max	Std E	rr Std Dev	CV%	%Effe	
0	LW	10 28	19.7	36.3	0	39	3.66	11.6	41.31%	0.00%	
6.25		10 22.2	17.4	27	11	31	2.13	6.75	30.39%	20.71	
12.5		10 23.8	17.5	30.1	4	33	2.78	8.8	36.99%	15.00	
25		10 13.8	5.79	21.8	0	31	3.54	11.2	81.18%	50.71	
50		10 14.6	9.63	19.6	4	25	2.2	6.95	47.59%	47.86	
100		10 19.9	12.7	27.1	0	33	3.16	10	50.28%	28.93	%
Survival Sum	mary										
Conc-%	Code	Count Mea		95% UCL	Min	Max	Std E		CV%	%Effe	
0 .	LW	10 0.90		1.000	0.000	1.000	0.100		35.14%	0.00%	
6.25		10 1.00		1.000	1.000	1.000	0.000		0.00%	-11.11	
12.5		10 1.00		1.000	1.000	1.000	0.000		0.00%	-11.11	
25		10 1.000		1.000	1.000	1.000	0.000		0.00%	-11.11	
50		10 1.00		1.000	1.000	1.000	0.000		0.00%	-11.11	
100		10 1.00	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	-11.11	1%

Report Date: Test Code: 21 Aug-18 11:08 (p 2 of 2) 79262 | 17-8841-9933

								c oodo.			
Ceriodaphnia :	Survival and	Reproduction	on Test							Pacif	ic EcoRisi
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	16	29	32	32	32	0	37	39	31	32
6.25		31	18	28	20	31	27	19	21	11	16
12.5		28	23	4	27	24	33	33	29	22	15
25		1	19	7	26	31	21	21	2	0	10
50		18	22	13	25	13	21	4	15	7	8
100		33	8	23	14	22	0	27	28	19	25
Survival Detail											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	0.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Survival Binon	nials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	0/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Report Date:

21 Aug-18 11:08 (p 1 of 1)

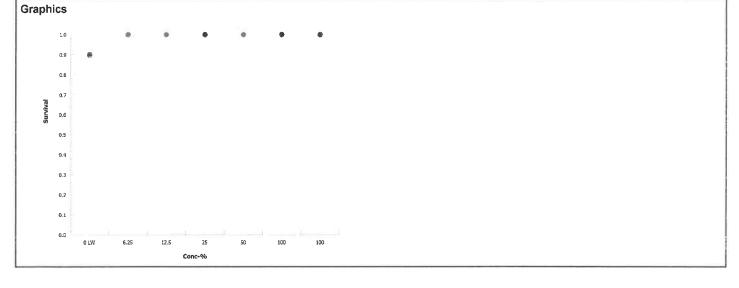
Test Code:

79262 | 17-8841-9933

Ceriodaphnia Survival and Reproduction Test Pacific EcoRisk									
Analysis ID:	-						CETISv1.9.2		
Analyzed:			STP 2xK Contingency Tables	Off	ficial Results	s: Yes	Yes		
Data Transform Alt Hyp		NOEL	LOEL	TOEL	TU				
Untransformed	C >	• T		100	> 100	n/a	1		

Control vs	Group	Test Stat	P-Type	P-Value	Decision(a:5%)	
_ab Water Contr	6.25	1.000	Exact	1.0000	Non-Significant Effect	
	12.5	1.000	Exact	1.0000	Non-Significant Effect	
	25	1.000	Exact	1.0000	Non-Significant Effect	
	50	1.000	Exact	1.0000	Non-Significant Effect	
	100	1.000	Exact	1.0000	Non-Significant Effect	

Data Summary							
Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	LW	9	1	10	0.9	0.1	0.0%
6.25		10	0	10	1	0	-11.1%
12.5		10	0	10	1	0	-11.1%
25		10	0	10	1	0	-11.1%
50		10	0	10	1	0	-11.1%
100		10	0	10	1	0	-11.1%



Report Date:

21 Aug-18 11:08 (p 1 of 1)

Test Code:

79262 | 17-8841-9933

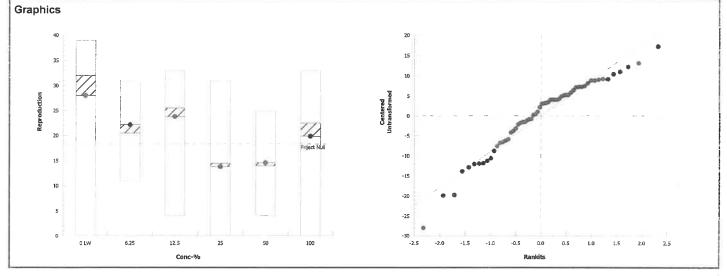
Ceriodaphnia	Survival and Repro	duction Test					Pad	cific EcoRisk
Analysis ID: Analyzed:	14-9129-0722 21 Aug-18 11:07		Reproduction Parametric-Control vs Treatments		TIS Version		1.9.2	
Data Transfor	m Alt	Нур		NOEL	LOEL	TOEL	ΤU	PMSD
Untransformed	l C>	> T		100	> 100	n/a	1	34.39%

Dunnett Multiple	Comparison Test							
Control vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(a:5%)
Lab Water Contr	6.25	1.38	2.29	9.63	18	CDF	0.2594	Non-Significant Effect
	12.5	0.999	2.29	9.63	18	CDF	0.4172	Non-Significant Effect
	25*	3.38	2.29	9.63	18	CDF	0.0031	Significant Effect
	50*	3.19	2.29	9.63	18	CDF	0.0053	Significant Effect
	100	1.93	2.29	9.63	18	CDF	0.1049	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	1500.08	300.017	5	3.39	0.0098	Significant Effect
Error	4776.1	88.4463	54			
Total	6276.18		59			

Distributional 1	Tests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	4.44	15.1	0.4881	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.954	0.946	0.0242	Normal Distribution

Reproduction	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	10	28	19.7	36.3	32	0	39	3.66	41.31%	0.00%
6.25		10	22.2	17.4	27	20.5	11	31	2.13	30.39%	20.71%
12.5		10	23.8	17.5	30.1	25.5	4	33	2.78	36.99%	15.00%
25		10	13.8	5.79	21.8	14.5	0	31	3.54	81.18%	50.71%
50		10	14.6	9.63	19.6	14	4	25	2.2	47.59%	47.86%
100		10	19.9	12.7	27.1	22.5	0	33	3.16	50.28%	28.93%



Report Date:

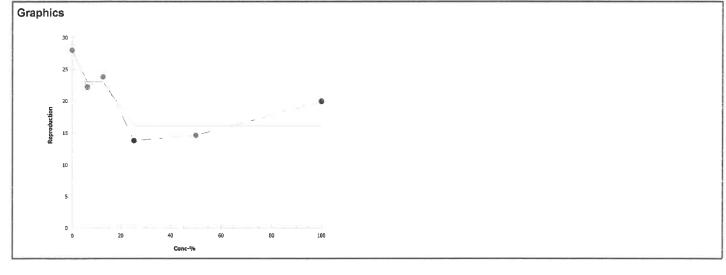
21 Aug-18 11:08 (p 1 of 1)

Test Code:

79262 | 17-8841-9933

Ceriod	aphnia	Survival and Re	eproduction	n Test					Pacific EcoRisk
Analys	is ID:	12-5253-2436	End	point:	Reproduction		CETIS Version:	CETISv1.9.2	
Analyz	ed:	21 Aug-18 11:0	7 Ana	lysis:	Linear Interpola	ation (ICPIN)	Official Results:	Yes	
Linear	Interpo	lation Options							
X Trans	sform	Y Transform	See	d	Resamples	Exp 95% CL	Method		
Linear		Linear	1790)227	200	Yes	Two-Point Interpolation		
Point E	stimate	es							
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL			
IC5	1.75	0.967	14.9	57.14	6.697	103.4			
IC10	3.5	1.93	17.5	28.57	5.708	51.72			
IC15	5.25	2.9	20.2	19.05	4.95	34.48			
IC20	13.6	3.87	22.9	7.36	4.373	25.86			
IC25	16.1	4.83	n/a	6.202	n/a	20.69			
IC40	23.7	13.9	n/a	4.214	n/a	7.215			
IC50	>100	n/a	n/a	<1	n/a	n/a			

Reproduction	Summary				C	alculated Va	riate		
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	10	28	0	39	3.66	11.6	41.30%	0.0%
6.25		10	22.2	11	31	2.13	6.75	30.40%	20.7%
12.5		10	23.8	4	33	2.78	8.8	37.00%	15.0%
25		10	13.8	0	31	3.54	11.2	81.20%	50.7%
50		10	14.6	4	25	2.2	6.95	47.60%	47.9%
100		10	19.9	0	33	3.16	10	50.30%	28.9%



Cl	ient:		LWA - Calleguas Creek 29192 Test ID: 79262						terial:	C(СТМР	-68-H	itch-1	58		Test	Date:	8/9/18
Proje	et #:	291	92	T	Test ID:	792	62	Ran	domiz	ation:	10	7.3			Со	ntrol \	Water:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp (°C)			0		ival / R						SIGN-OFF
	0	7.92	Old	7.2	Old	348	24.3	A O	B 0	C	D Ø	E O	F O	G O	Н	0	O I	Date: 819 118 New WQ: Test Init.: 7
	1	7.99	7.46	7.7	60	359	25.3	D	Р	D	D	ð	b	D	D	0	0	Date: 6/10/18 New WQ: 74 Counts: 33 Sol'n Prep: 12 Old WQ: 56 Time: 624
	2	794	8.05	7.4	8.3	350	24.6	0	0	0	0	0	*/o	0	ð	0	0	Date: VIII New WQ: MY Counts: R Sol'n Prep: SM Old WQ: RAP Time: 0945
trol	3	8.05	792	7.9	7.7	360	25,6	6	0	0	0	0	-	0	0	0	0	Date: \$1718 New WQ: MS Counts: ER Sol'n Prep: ER Old WQ: MS Time: Vict
er Control	4	7.91	7.97	8.5	7.3	355	25.0	5	5	6	6	5	ſ	8	7	5	5	Date: 13 review WQ: (UK Counts: CA Sol'n Prep: 3 Old WQ: K Time: 1524
Lab Water	5	7.82	7.88	8.9	8.0	354	25,3	11	9	[0	9	12)	11	12	10	11	Date WO: Counts: Now WO: Time: JU
La	6	_	7.7%	_	7.9	361	24,2	0	中	16	17	15		18	20	16	16	Date: Afficiency WQ: — Counts: 16 Sol'n Prep: No Old WQ: RAP Time: 1535
	7								15				1					Date: New WQ: Counts: Sol'n Prep: Old WQ: Time:
	8	100 May 100 Ma					.,,		3(11)									Date: Old WQ: Counts: Time:
		X X X X X X X X X X X X X X X X X X X					Total=	16	29		32	32	1/0	37	39	31	32	Mean Neonates/Female = ¬ ♀ • 0
	Day	New	H	D New	.O.	Cond. (µS/cm)		A	В	C	Survival D	/ Repro	duction F	G	Н	I	J	Sample ID
	0	7.94		7-4		451	24.3	O	0	0	0	0	0	0	0	0	0	50516
	1	7.93	7.35	7.9	4.8	454	24.6	0	D	0	0	D	D	0	D	D	0	50516
	2	7.92	8.05	7.8	6,4	447	25.4	0	0	0	0	0	0	O	0	0	0	50516
	3	8.08	7.99	8.0	75	456	24.9	0	0	0	0	0	0	0	0	0	0	50516
6.25%	4	7.92	7.94	8.5	7.4	452	24,7	6	5	5	5	6	6	3	6	2	6	50516
6.5	5	7.90	8.00	8.9	8.	460	248	13	12	8	0	10	9	10	9	9	10	
	6	_	78%	_	7,9	489	240	12	1	15	15	Ø	12	6	6	0	0	30514 RL 8/146
	7											15	हर शुक्रीम					
	8			+ N N N N N N N N N N N N N N N N N N N	e constant de la cons													
							Total=	31	18	28	20	31	27	19	2	11	16	Mean Neonates/Female = 722

Cl	ient:		LWA	A - Call	eguas C	reek		Ma	terial:	C	СТМР	-68-H	itch-1	58		Test	Date:	8/9/18
Proje	ect#:	291	192		Γest ID:	792	.62								Со	ntrol \	Water:	Mod EPAMH
	Day			D.O.		Cond.	Temp					ival / R	_					SIGN-OFF
		New	Old	New	Old	(µS/cm)		A ()	В	C	D	E	F	G	Н	1	J	
	0	7.94		7.5		554	24.3	0	0	0	0	0	0	0	0	0	0	
	1	8-02	8,0	8-1	6.7	551	24,5	0	V	D	0	O	0	D	0	D	0	
	2	7.93	8.10	8.0	8.3	550	24.9	0	O	0	U	O	0	0	O	0	0	
	3	8.09	7.98	8.3	7.2	555	25.4	0	0	0	0	0	0	0	0	0	0	
12.5%	4	1000		8.6	7.10	549	24.6	1	1	1	3	5	3	1	4	6	6	
12.	5	7.93	801	8.8	8.0	557	24-8	11	9	3	10	9	12	11	11	10	9	
	6	-	7.93			595	242	16	13	0	14	10	18	21	14	6	0	
	7		135		0.0	042			17		11							
	8							nes	128/12									768/25/19
							Total=	28	23	ч	27	24	33	33	29	22	15	Mean Neonates/Female = 243-23.8
	Day	T p	<u>НШШШ</u> Н	D	.O.	Cond.	Total	12	(0)		Survival		11	11	-1	C	V	Wean Neonates/remaie = 113
		New	Old	New	Old	(µS/cm)		A	В	С	D	Е	F	G	Н	I	J	
	0	7.91		7.8	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	728	24.2	Ö	0	0	0	0	0	0	0	0	0	
	1	8.02	8.01	8.2	6.5	728	25.4	b	0	0	0	0	0	0	0	0	0	
	2	790	8.14	8.1	8.3	721	24.9	Ô	0	Ô	0	0	0	0	0	0	0	
	3	8.07		Δ.	7.0	726	25.5	0	0	0	0	0	0	0	0	0	0	
1 22	4	100	7.95		7.3	719	24.8	0	4	6	6	5	6	2	2	0	1	
25%	5		8.07		7.8	724	24.6	0	(0)	0	6	9	4	8	0	0	1	
	6	1-16		0-8			24.1	1	15	ī	14	17	11	u	0	9	5	
	7		8000		8.1	782	- 1.1	-		-	17	1/	* 1	U			2	
	-				**************************************													
	8						Im. 4-1	-	19		7/	21	- 1	÷ 1			10	7
							Total=	1	121	1	26	31	21	21	2	()	10	Mean Neonates/Female = 1.3.8

Cl	ient:	_	LWA	A - Calle	eguas C	reek		Ma	terial:	CC	СТМР	-68-H	itch-1	58		Test	Date:	819118
Proje	ect #:	291	92	Т	est ID:	792	62								Co	ntrol V	Water:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp	1			Surv	ival / R	eproduc	ction				SIGN-OFF
		New	Old	New	Old	(µS/cm)	(°C)	Α	В	С	D	Е	F	G	Н	1	J	
	0	7.88		8.0		1077	24.3	0	0	0	0	0	0,	0	0	0	0	
	1	g.0j	8.4	84	7.0	1073	25.3	D	0	0	0	0	0	O	0	0	0	
	2	7.87	 «,33	8.6	8,5	1064	25.5	0	0	0	0	0	0	0	0	0	0	
	3	8,05	823	8.5	7.5	1079	25.1	0	0	0	0	0	0	0	0	0	0	
20%	4	7.99	8.10	8.8	7.10	1064	24.8	4	0	0	9	6	ð	0	5	O	0	
N.	5		1,24	9.0	7.8	1065	26.0	2	10	1	8	0	5	0	9	5	4	
	6	و	8.5		7.9	1126	24.1	12	12	12	li	7	16	4	1	2	T	
	7		<i>a</i> 10 j															
	8																	
							Total=	18	22	13	25	13	21	4	15	7	8	Mean Neonates/Female = 14.6
	Day	р	Н	D	.O.	Cond.				9	Survival	/ Repro	duction	1				
		New	Old	New	Old	(µS/cm)		A	В	С	D	Е	F	G	Н	I	J	
	0	7.83		8.3		1733	24.0	0	0	0	0	0	0	0	0	0	0	
	1	8.00	8.29	9.0	(7	1744	25.0	0	0	0	0	0	6	0	Ō	0	ن	
	2	7.79	8.46	9.7	8.5	1747	25.5	0	0	0	0	Ó	O	0	0	0	0	
	3	8.03	8.41	9.0	7.6	1738	25.1	0	0	0	0	0	0	0	0	0	0	
100%	4	7.98	8.28	9,0	7.8	1718		6	4	7	0	4	0	4	7	5	ð	
=	5	7.97	8.40	9.1	7.9	1745	25.6	12	1	5	2	11	0	10	6	Ò	7	
	6	_	824	_	7.9	1811	243	15	Q	H	6	7	0	13	15	14	18	
	7								3	c6 81	074							
	8																	
							Total=	33	28	23	14	22	0	27	28	19	25	Mean Neonates/Female =

81110

9,9

CETIS Summary Report

Report Date:

21 Aug-18 10:53 (p 1 of 2)

Test Code:

79263 | 17-4198-5350

Ceriodaphnia	a Survival and Re	eproduction T	est							Pacific	E E COR	lisk
Batch ID: Start Date: Ending Date: Duration:	18-7931-5944 09 Aug-18 15:58 : 15 Aug-18 17:04 6d 1h	Protoc	ol: EF s: Ce	eproduction-S PA-821-R-02- eriodaphnia d House Cultur	013 (2002) ubia		Dil	alyst: uent: ine: e:	Jessica Okutsu Laboratory Wat Not Applicable 1	әг		
	14-1729-6107 : 08 Aug-18 13:20 : 09 Aug-18 07:30 27h (2 °C)		al: An : Ca	-GATE-219 nbient Water illeguas Cree ATE	k			ent: oject:	Larry Walker As 29192	sociates		
Multiple Com	nparison Summa	ry										
Analysis ID	Endpoint	С	ompari	son Method			NOEL	LOEL	TOEL	TÜ	PMS	D v
05-8148-0906	Reproduction	D	unnett N	/lultiple Comp	parison Test		100	> 100	n/a	1	24.09	/ /
20-5503-5044	Survival	F	isher Ex	act/Bonferro	ni-Holm Tes	t	100	> 100	n/a	1	n/a	
Point Estima	te Summary											
Analysis ID	Endpoint	Р	oint Est	timate Metho	od		Level	%	95% LCL	95% UCL	TU	,
	Reproduction	Li	near Int	erpolation (IC	PIN)		IC5	1.03	0.773	1.75	96.8	
					•		IC10	2.07	1.55	3.51	48.4	
							IC15	3.1	2.32	5.26	32.27	7
							IC20	4.13	3.09	n/a	24.2	
							IC25	5.17	3.86	n/a	19.36	3
							IC40	>100	n/a	n/a	<1	
							IC50	>100	n/a	n/a	<1	
Reproduction	n Summary											
Conc-%	Code	Count M	ean	95% LCL	95% UCL	Min	Max	Std E	rr Std Dev	CV%	%Effe	ect
0	LW	10 2	7.9	23	32.8	15	35	2.18	6.89	24.69%	0.00%	6
6.25		10 19	5.9	11.3	20.5	7	25	2.05	6.49	40.81%	43.01	%
12.5			9.5	14.6	24.4	8	28	2.18	6.88	35.30%	30.11	%
25			4.4	10.1	18.7	9	28	1.89	5.97	41.43%	48.39	
50			9.1	14.5	23.7	7	26	2.04	6.45	33.79%	31.54	%
100		10 28	3.4	23.8	33	17	36	2.05	6.48	22.83%	-1.79°	%
Survival Sum	nmary											
Conc-%	Code		ean	95% LCL	95% UCL	Min	Max	Std E		CV%	%Effe	ect
0	LW		000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%	
6.25			000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%	
12.5			000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%	
25		10 1.	000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%	6
											_	
50 100			000 000	1.000 1.000	1.000 1.000	1.000 1.000	1.000 1.000	0.000	0.000 0.000	0.00% 0.00%	0.00%	

Analyst: JO QA: Rb

Report Date: Test Code: 21 Aug-18 10:53 (p 2 of 2)

79263 | 17-4198-5350

Ceriodaphnia	Survival and	Reproduction	on Test							Pacif	ic EcoRis
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	16	28	35	30	32	30	29	30	15	34
6.25		15	7	12	25	25	24	14	15	11	11
12.5		12	25	26	22	8	28	16	26	18	14
25		9	13	15	11	28	20	9	9	16	14
50		18	24	22	25	24	26	12	13	20	7
100		36	36	26	30	34	17	27	29	30	19
Survival Detail	l										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Survival Binor	nials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Report Date:

21 Aug-18 09:36 (p 1 of 1)

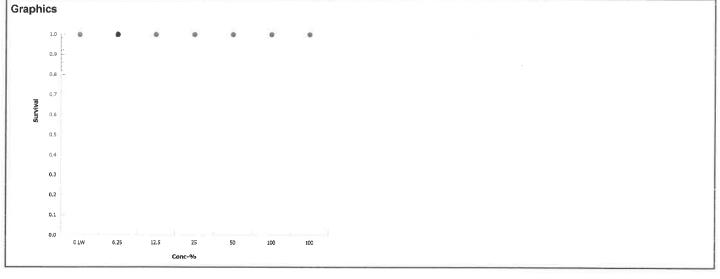
Test Code:

79263 | 17-4198-5350

Ceriodaphnia	Survival and Rep	roduction Test						Pacific EcoRisk
Analysis ID: Analyzed:	20-5503-5044 21 Aug-18 9:35	Endpoint: Analysis:	Survival STP 2xK Contingency Tables		TIS Version		v1.9.2	
Data Transfoi	rm .	Alt Hyp		NOEL	LOEL	TOEL	TU	
Untransformed	d (C > T		100	> 100	n/a	1	
Eichar Evact/	Bonforroni-Holm 1	Toet						

Control vs	Group	Test Stat	P-Type	P-Value	Decision(α:5%)	
Lab Water Contr	6.25	1.000	Exact	1.0000	Non-Significant Effect	
	12.5	1.000	Exact	1.0000	Non-Significant Effect	
	25	1.000	Exact	1.0000	Non-Significant Effect	
	50	1.000	Exact	1.0000	Non-Significant Effect	
	100	1.000	Exact	1.0000	Non-Significant Effect	

Data Summar	У						
Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	LW	10	0	10	1	0	0.0%
6.25		10	0	10	1	0	0.0%
12.5		10	0	10	1	0	0.0%
25		10	0	10	1	0	0.0%
50		10	0	10	1	0	0.0%
100		10	0	10	1	0	0.0%



Analyst: To QA: Nb

Report Date: Test Code: 21 Aug-18 09:36 (p 1 of 1)

79263 | 17-4198-5350

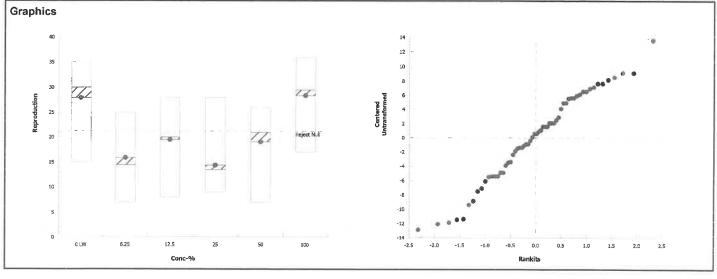
Ceriodaphnia	Survival and Rep	roduction Test					F	Pacific EcoRisk
Analysis ID: Analyzed:	05-8148-0906 21 Aug-18 9:36	•	Reproduction Parametric-Control vs Treatments		TIS Version: ficial Results:	CETISv Yes	1.9.2	
Data Transfor	rm A	Alt Hyp		NOEL	LOEL	TOEL	TU	PMSD
Untransformed	d C	C > T		100	> 100	n/a	1	23.98%

Dunnett Multiple Comparison Test													
Control vs	Control II	Test Stat	Critical	MSD	DF P-1	ype P-Value	Decision(α:5%)						
Lab Water Contr	6.25*	4.11	2.29	6.69	18 CD	F 3.2E-04	Significant Effect						
	12.5*	2.87	2.29	6.69	18 CD	F 0.0123	Significant Effect						
l.	25*	4.62	2.29	6.69	18 CD	F 5.9E-05	Significant Effect						
	50*	3.01	2.29	6.69	18 CD	F 0.0085	Significant Effect						
	100	-0.171	2.29	6.69	18 CD	F 0.8792	Non-Significant Effect						

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	1776.93	355.387	5	8.32	6.9E-06	Significant Effect
Error	2306	42.7037	54			
Total	4082.93		59			

Distributional 1	rests rests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variances	Bartlett Equality of Variance Test	0.237	15.1	0.9987	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.974	0.946	0.2405	Normal Distribution

Reproduction	Reproduction Summary														
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect				
0	LW	10	27.9	23	32.8	30	15	35	2.18	24.69%	0.00%				
6.25		10	15.9	11.3	20.5	14.5	7	25	2.05	40.81%	43.01%				
12.5		10	19.5	14.6	24.4	20	8	28	2.18	35.30%	30.11%				
25		10	14.4	10.1	18.7	13.5	9	28	1.89	41.43%	48.39%				
50		10	19.1	14.5	23.7	21	7	26	2.04	33.79%	31.54%				
100		10	28.4	23.8	33	29.5	17	36	2.05	22.83%	-1.79%				



Analyst: Jo QA: R6

Report Date:

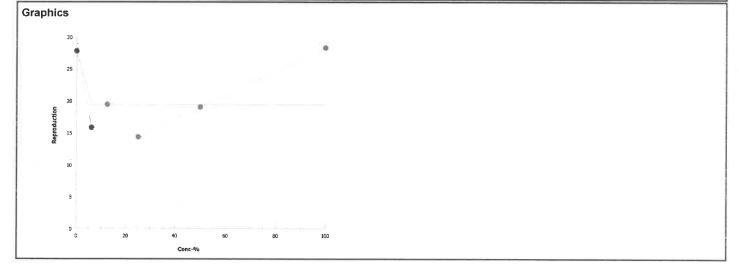
21 Aug-18 09:36 (p 1 of 1)

Test Code:

79263 | 17-4198-5350

Ceriod	aphnia	Survival and Re	eproductio	n Test						Pacific EcoRisk
Analys	is ID:	18-4480-9506	End	point:	Reproduction			CETIS Version:	CETISv1.9.2	
Analyz	ed:	21 Aug-18 9:36	Ana	lysis:	Linear Interpola	tion (ICPIN)		Official Results:	Yes	
Linear	Interpo	lation Options								
X Tran	sform	Y Transform	See	d	Resamples	Exp 95% CL	Method			
Linear		Linear	141:	2103	200	Yes	Two-Point	Interpolation		
Point E	stimate	es								
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL				
IC5	1.03	0.773	1.75	96.8	57.01	129.4				
IC10	2.07	1.55	3.51	48.4	28.51	64.71				
IC15	3.1	2.32	5.26	32.27	19	43.14				
IC20	4.13	3.09	n/a	24.2	n/a	32.35				
IC25	5.17	3.86	n/a	19.36	n/a	25.88				
	>100	n/a	n/a	<1	n/a	n/a				
IC40	-100									

Reproduction	eproduction Summary			Calculated Variate									
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect				
0	LW	10	27.9	15	35	2.18	6.89	24.70%	0.0%				
6.25		10	15.9	7	25	2.05	6.49	40.80%	43.0%				
12.5		10	19.5	8	28	2.18	6.88	35.30%	30.1%				
25		10	14.4	9	28	1.89	5.97	41.40%	48.4%				
50		10	19.1	7	26	2.04	6.45	33.80%	31.5%				
100		10	28.4	17	36	2.05	6.48	22.80%	-1.79%				



C	lient:		LW	A - Call	eguas C	reek		Ma	terial:	CC	СТМР	-68-G	ATE-2	219		Test	Date:	8/9/18
Proje	ect#:	291	192	7	est ID:	792	63	Ran	domiz	ation:	10	.7.3	3		Co	ntrol \	Water:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp						eproduc					SIGN-OFF
	0	7.95	Old	New 7.4	Old	(µS/cm)	(°C)	A O	В	C	D	E 0	F	G	Н	I T	J	Dates 1916 New WQ: Test Init.: APP Sol'n Prep: ST TF Time: 1532
	1	8.02	7.94	8.1	Ç.(351	2513	0	0	0	0	0	0	0	.0	0	6	Date: MOld New WQ: TA Counts: MAS Sol'n Prep: Art Old WQ: 5B Time: MA
	2	7.90	7.50	7.7	6.5	406	14.2	0	0	0	0	0	0	0	0	0	0	Date: Will New WQ: My/Counts: 50 Sol'n Prep: SMC Old WQ: PAP Time: 534
trol	3	7.89	7.84	7.7	6.8	354	25.0	0	0	0	O	0	0	0	0	0	0	Date: \$1218 New WQ: AR Counts: Sol'n Prep: & Old WQ: MY Time: 1450
er Control	4	7.96	7.7-1	8.4	6.6	355	25.4	4	4	6	4	6.	6	5	6	5	٦	Date: 13/15/New WQ: Counts: UV Sol'n Prep: WO Old WQ: W Time: (57)
Lab Water	5	7.91	1.74	8.5	7.2	355	24.9	12	11	17	12	lO	11	12	11	10		Date: W Ever WC: 15 Counts: K/ Sol'n Prep: 8V Old WQ: 12 Time: 1350 Date 5 15 16 New WC: 12 Counts: 10 Prep
Ë	6	6.06	7,91	७. ५	7.7	353	214,0	0	13	1)	14	16	13	12	13	0	14	Date: New WO: Counts:
	7																	Sol'n Prep: Old WQ: Time:
	8																	Date: Old WQ: Counts:
JORGANIA				(x)			Total=	16	28	35	30	32	30	29	30	15	34	Mean Neonates/Female = 27.9
	Day	New	H	New	.O.	Cond. (µS/cm)		Α	В	C	Survival D	/ Repro	oduction F	G	Н	I	J	Sample ID
	0	7.90		7.5		394	24.0	0	0	0	0	0	0	0	0	0	ව	50317
	1	8.02	7.76	8.1	6.6	394	2515	0	٥	0	0	0	0	0	0	٥	0	50517
	2	7.95	7.563	7.7	6.1	403	24.0	0	5	0	0	0	0	0	0	-	0	50517
	3	7.90	4-5	7.7	7.0	392	25.1	0	0	G	0	0	0	0	0	0	9	50517
6.25%	4	7.96	7.74	8.8	6.9	394	25.3	5	1	3	2	5	3	4	4	2	1	50517
6.	5	7-91	7.82	8,6	7.5	394	24,6	10	6	0	9	10	8	10	11	9	10	50517
	6	% ०५	7.86	8,5	7,6	393	24.1	0	0	9	14	10	13	O	0	0	0	50517
	7																	
	8						70	10		100	0.0	20	0.		1	1.	1.	
							Total=	15)	12	25	25	24	14	15	11	11	Mean Neonates/Female = \S.9

CI	ient:		LWA	A - Calle	eguas C	reek		Ma	terial:	CC	тмр.	68-G	ATE-2	19		Test	Date:	919118
Proje	ct #:	291	92	Т	est ID:	792	63								Co	ntrol \	Water:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp					ival / Re	_					SIGN-OFF
	0	New - cc2	Old	New 7.5	Old	(µS/cm)	(°C) 24.0	A	В	C	D	E	F	G	Н	I	J	
		7.88						0	0	0	0	0	0	0	0	0	0	
	1	8.02	7,91	8-2	7.6		25.4	0	0	D	ð		0			0		
	2	7.93	7.83	7.9	6.3	435	24,D	.0	0	0	0	0	0	0	0	0	0	
	3	7.91	7.83	7.9	7.0	437	25.2	0	0	O	0	0	0	0	0	0	٥	
12.5%	4	7.95	7.77	8.6	7.2	438	25.3	2	4	5	1	0	4	5	3	5	5	
12	5	7.88	7.84	8,8	7.5	435	248	10	11	10	11	8	12	11	12	13	2	
	6	8.01	7,86	8.5	7.6	436	24.1	0	(0)	п	10	O	12	C	11	0	7	
1	7			,														
	8																	
							Total=	12	25	26	22	8	28	16	26	18	14	Mean Neonates/Female = 19,5
	Day	р	Н	D	.O.	Cond.						/ Repro	_					
		New	Old	New	Old	(µS/cm)		A	В	С	D	Е	F	G	Н	I	J	
	0	7.83		7.5		505	24,2	0	0	0	0	0	0	0	0	0	0	
	1	8-00	7.95	8.3	7.7	509	25.2	D	0	٥	0	O	0	0	D	٥	0	
	2	7.88	7.81	8.0	6.7	510	24.0	E	0	0	0	0	0	0	0	0	0	
1	3	7-88	7.89	7.9	7.3	510	25.2	0	S	0	C	0	O	O	0	0	ی	
25%	4	7.93	792	8.7	7.5	512	25.2	0	3	4	0	4	3	0	Q	i	3	
25	5	7.88	7.88	8.8	7-6	507	24.9	9	10	11	11	10	11	9	9	10	11	
	6	7.99	-4		72	511	24.0	0	U	O	0	14	C	0	0	S	U	
	7	1000		0 0														
	8																	
							Total=	9	13	15	11	28	20	9	9	16	14	Mean Neonates/Female = 14, 4

C	ient:		LW	A - Call	eguas C	reek		Ma	terial:	CC	СТМР	-68-G	ATE-2	219		Test	Date:	8/9/18
Proje	ct #:	29	192	T	Test ID:	792	63								Со	ntrol \	Water:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp					ival / R		_				SIGN-OFF
	0	New	Old	New	Old	(µS/cm)	(°C)	A	В	С	D	E	F	G	Н	I	J	
		7.74		7.6		662	24.2	8	0	0	0	0	0	0	0	0	0	
	1	7.96	8.00	8-4	7.8	664	25,3	0	0	0	0	9	0	0	0	D	0	
	2	7.81	7.90	8.1	6.4	657	24.0	6	0	0	0	0	0	0	6	0	0	
	3	7.81	7.94	8.2	7.2	662	25.2	0	0	0	0	0	0	0	٥	0	٥	
20%	4	7.84	7.99	8.7	7.8	659	24.9	0		2	3	2	3	2	5	j	0	
)X	5	7.89	7.98	8.8	7.9	640	244	8	9	9	9	9	8	10	8	10	7	
	6	7.94	7,94	8.9	7.8	662	24.0	10	14	12	13	13	15	0	0	9	0	
	7	1. 104		0.1		062			- 1	100		1	,,,			-		
	8																	
							Total=	218	1/24	المالة	1225	124	11-26	12/2	133	+the	7.7	Mean Neonates/Female = 16.5 19.)
	Day	р	Н	D	.O.	Cond.		PERS	1915	Mo b	Survival	/ Repro	duction	1 100	13/15	2/13	3/4	
		New	Old	New	Old	(µS/cm)		A	В	С	D	Е	F	G	Н	I	J	
	0	7.61		7-9		962	25.1	0	0	0	D	0	0	0	0	0	O	
	1	7.86	E.A	8.7	8.0	971	25.4	٥	0	0	0	0	٥	0	0	0	0	
	2	7.70	8.10	8.9	7.3	964	24.1	0	0	0	10	0	0	n	0	0	0	
	3	וד.ד	8.05	9.1	7.0	962	25.3	0	0	0	0	0	0	0	0	0	С	
%001	4	7.79	8.12	9.1	7.6	964	24.9	7	7	3	7	6	6	2	5	5	6	
01	5	7.84		8,9	7.8	955	24,6	15	14	11	10	12	11	11	12	13	13	
	6	7.84	8,11	9.3	8, 1	975	24.6	14	15	12	13	16	0	14	12	12	0	
	7	. 0 (-11	11.5	J. ,	117		1	,	,	-1	10	-		1			
	8																	
							Total=	36	36	26	30	34	17	27	29	30	19	Mean Neonates/Female = 28.4

CETIS Summary Report

Report Date:

25 Aug-18 08:34 (p 1 of 2)

Test Code:

79264 | 17-1680-4907

Ceriodaphnia	a Survival and Re	production Tes	t						Pacifi	c EcoRisk
Batch ID: Start Date: Ending Date: Duration:	17-9339-8214 09 Aug-18 16:42 : 15 Aug-18 15:30 5d 23h	Protocol:	e: Reproductio : EPA-821-R- Ceriodaphni In-House Cu	02-013 (2002) a dubia		Dil	alyst: uent: ine: e:	Jessica Okutsu Laboratory Wate Not Applicable 1	et.	
Sample ID:	06-6599-1097	Code:	68-BELT-22	2		Cli	ent:	Larry Walker As	sociates	
Sample Date:	: 08 Aug-18 14:35	Material:	Ambient Wa	ter		Pro	oject:	29192		
Receipt Date	: 09 Aug-18 07:30	Source:	Calleguas C	reek						
Sample Age:	26h (1.4 °C)	Station:	BELT							
Multiple Com	nparison Summa	ry								
Analysis ID	Endpoint	Cor	nparison Meth	od		NOEL	LOEL	TOEL	TU	PMSD .
08-0128-1783	Reproduction	Stee	el Many-One Ra	ank Sum Test		100	> 100	n/a	1	49.6%
12-5644-8695	Survival	Fish	ner Exact/Bonfe	rroni-Holm Tes	t	100	> 100	n/a	1	n/a
Point Estimat	te Summary			=						
Analysis ID	Endpoint	Poi	nt Estimate Me	thod		Level	%	95% LCL	95% UCL	TU 🗸
09-4920-2491	Reproduction	Line	ar Interpolation	(ICPIN)		IC5	>100	n/a	n/a	<1
						IC10	>100	n/a	n/a	<1
						IC15	>100	n/a	n/a	<1
						IC20	>100	n/a	n/a	<1
						IÇ25	>100	n/a	n/a	<1
						IC40	>100	n/a	n/a	<1
						IC50	>100	n/a	n/a	<1
Reproduction	n Summary									
Conc-%	Code	Count Mea	n 95% LC	L 95% UCL	Min	Max	Std E	rr Std Dev	CV%	%Effect
0	LW	10 20.5	15.2	25.8	11	31	2.35	7.43	36.23%	0.00%
6.25		10 18.2	12.2	24.2	9	30	2.67	8.44	46.39%	11.22%
12.5		10 20.6	15.1	26.1	12	30	2.45	7.73	37.55%	-0.49%
25		10 20.6		27	8	33	2.82	8.92	43.31%	-0.49%
50		10 29.6	22.6	36.6	9	37	3.08	9.75	32.96%	-44.39%
100		10 24.9	14.1	35.7	0	40	4.79	15.2	60.89%	-21.46%
Survival Sum	ımary									
Conc-%	Code	Count Mea			Min	Max	Std E		CV%	%Effect
0	LW	10 1.00		1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
6.25		10 1.00		1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
12.5		10 1.00		1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
25		10 1.00		1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
50		10 1.00	0 1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
100		10 0.80		1.000	0.000	1.000	0.133	0.422	52.70%	20.00%

Report Date: Test Code: 25 Aug-18 08:34 (p 2 of 2) 79264 | 17-1680-4907

				163	t Code:		79264 17-1660-4907				
Ceriodaphnia	Survival and	Reproducti	on Test							Paci	ic EcoRisk
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	13	11	25	23	31	26	27	24	13	12
6.25		27	12	12	29	12	30	25	9	11	15
12.5		15	28	13	25	13	30	29	27	12	14
25		16	13	31	8	28	30	33	16	16	15
50		33	35	35	32	37	36	9	32	33	14
100		40	0	36	36	39	19	0	23	35	21
Survival Detai	I										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	0.000	1.000	1.000	1.000	1.000	0.000	1.000	1.000	1.000
Survival Binor	nials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	0/1	1/1	1/1	1/1	1/1	0/1	1/1	1/1	1/1

Report Date:

21 Aug-18 11:23 (p 1 of 1)

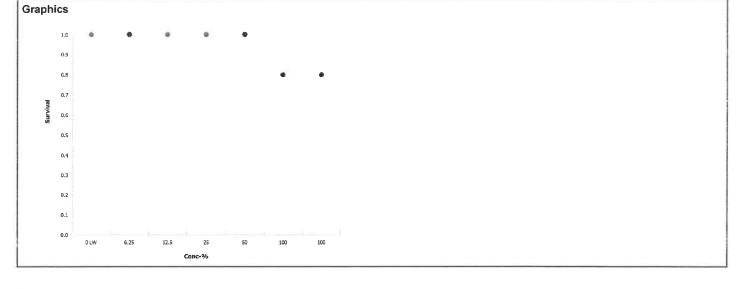
Test Code:

79264 | 17-1680-4907

Ceriodaphnia	Survival and Repro	duction Test						Pacific EcoRisk
Analysis ID: Analyzed:	12-5644-8695 21 Aug-18 11:22	Endpoint: Analysis:	Survival STP 2xK Contingency Tables		TIS Version: icial Results		/1.9.2	
Data Transfor	m Alt	Нур		NOEL	LOEL	TOEL	TU	
Untransformed	l C	· T		100	> 100	n/a	1	
Fisher Exact/	Bonferroni-Holm Tes	at						

Control vs	Group	Test Stat	P-Type	P-Value	Decision(a:5%)	
Lab Water Contr	6.25	1.000	Exact	1.0000	Non-Significant Effect	
	12.5	1.000	Exact	1.0000	Non-Significant Effect	
	25	1.000	Exact	1.0000	Non-Significant Effect	
	50	1.000	Exact	1.0000	Non-Significant Effect	
	100	0.237	Exact	1.0000	Non-Significant Effect	

Code	NR	R	NR + R	Prop NR	Prop R	%Effect
LW	10	0	10	1	0	0.0%
	10	0	10	1	0	0.0%
	10	0	10	1	0	0.0%
	10	0	10	1	0	0.0%
	10	0	10	1	0	0.0%
	8	2	10	0.8	0.2	20.0%
		LW 10 10 10 10	LW 10 0 10 0 10 0 10 0 10 0	LW 10 0 10 10 0 10 10 0 10 10 0 10 10 0 10	LW 10 0 10 1 10 0 10 1 10 0 10 1 10 0 10 1 10 0 10 1	LW 10 0 10 1 0 10 0 10 1 0 10 0 10 1 0 10 0 10 1 0 10 0 10 1 0 10 0 10 1 0



Report Date: Test Code: 25 Aug-18 08:35 (p 1 of 1)

79264 | 17-1680-4907

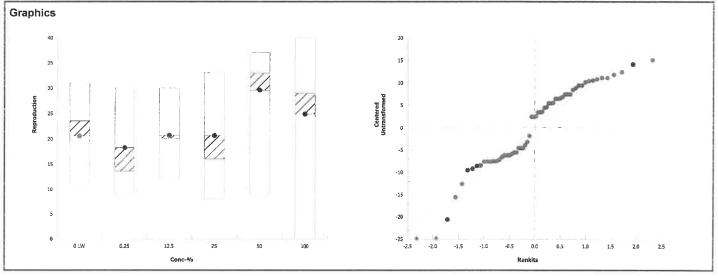
Ceriodaphnia	Ceriodaphnia Survival and Reproduction Test Pacific EcoRisk												
Analysis ID: Analyzed:	08-0128-1783 25 Aug-18 8:34		Reproduction Nonparametric-Control vs Treatments		TIS Version: icial Results:	CETISv Yes	/1.9.2						
Data Transfor	m .	Alt Hyp		NOEL	LOEL	TOEL	TU	PMSD					
Untransformed	t e	C > T		100	> 100	n/a	1	49.56%					
Stool Many O	ne Pank Sum Tee	4											

Steel Many-One R	ank Sum Test						
Control vs	Conc-%	Test Stat	Critical	Ties	DF P-Type	P-Value	Decision(α:5%)
Lab Water Contr	6.25	97	75	4	18 Asymp	0.5980	Non-Significant Effect
	12.5	112	75	4	18 Asymp	0.9503	Non-Significant Effect
	25	112	75	2	18 Asymp	0.9403	Non-Significant Effect
	50	139	75	0	18 Asymp	1.0000	Non-Significant Effect
	100	118	75	1	18 Asymp	0.9824	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	858.2	171.64	5	1.74	0.1406	Non-Significant Effect
Error	5318.2	98.4852	54			
Total	6176.4	F	59			

Distributional 1	Tests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	6.91	15.1	0.2275	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.935	0.946	0.0032	Non-Normal Distribution

Reproduction	Reproduction Summary													
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect			
0	LW	10	20.5	15.2	25.8	23.5	11	31	2.35	36.23%	0.00%			
6.25		10	18.2	12.2	24.2	13.5	9	30	2.67	46.39%	11.22%			
12.5		10	20.6	15.1	26.1	20	12	30	2.45	37.55%	-0.49%			
25		10	20.6	14.2	27	16	8	33	2.82	43.31%	-0.49%			
50		10	29.6	22.6	36.6	33	9	37	3.08	32.96%	-44.39%			
100		10	24.9	14.1	35.7	29	0	40	4.79	60.89%	-21.46%			



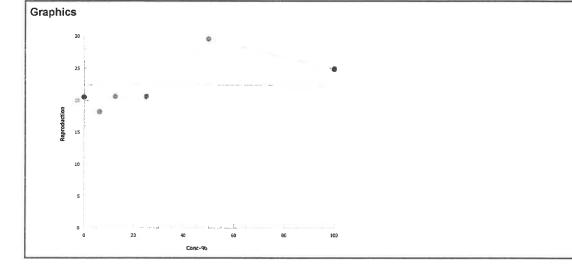
Report Date:

25 Aug-18 08:35 (p 1 of 1)

Test Code: 79264 | 17-1680-4907

Ceriod	aphnia	Survival and Re	eproduction	on Test						Pacific EcoRisi	
Analys	is ID:	09-4920-2491	En	dpoint:	Reproduction			CETIS Version:	CETISv1.9.2		
Analyz	Analyzed: 25 Aug-18 8:34			alysis:	Linear Interpola	tion (ICPIN)		Official Results:	Yes		
Linear Interpolation Options											
X Transform Y Transform Seed Resamples Exp 95% CL Method											
Linear		Linear	85	6044	200	Yes	Two-Point	Interpolation			
Point E	stimate	es									
Level	%	95% LCL	95% UC	L TU	95% LCL	95% UCL					
IC5	>100	n/a	n/a	<1	n/a	n/a					
IC10	>100	n/a	n/a	<1	n/a	n/a					
IC15	>100	n/a	n/a	<1	n/a	n/a					
IC20	>100	n/a	n/a	<1	n/a	n/a					
IC25	>100	n/a	n/a	<1	n/a	n/a					
IC40	>100	n/a	n/a	<1	n/a	n/a					
IC50	>100	n/a	n/a	<1	n/a	n/a					

Reproduction	Summary				C	Calculated Va	ariate		
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	10	20.5	11	31	2.35	7.43	36.20%	0.0%
6.25		10	18.2	9	30	2.67	8.44	46.40%	11.2%
12.5		10	20.6	12	30	2.45	7.73	37.50%	-0.49%
25		10	20.6	8	33	2.82	8.92	43.30%	-0.49%
50		10	29.6	9	37	3.08	9.75	33.00%	-44.4%
100		10	24.9	0	40	4.79	15.2	60.90%	-21.5%



CI	ient:		LWA	A - Calle	eguas C	reek		Ma	terial:	CC	тмр.	-68-BI	ELT-2	22		Test	Date:	819118
Proje	ect#:	291	92	7	Test ID:	792	64	Ran	domiz	ation:	18	0.7.	3		Co	ntrol V	Vater:	Mod EPAMH
	Day	pН		D.O.		Cond. (µS/cm)	Temp		n	0			eproduc		77			SIGN-OFF
	0	7-93	Old	7. 5	Old	351	(°C) 24.\$	A D	B	C O	D	E	F	G O	Н	D	0	Dates 11 New WQ: Test Init.: 167 Sol'n Prep: 5 T Time: 1642
	1	8.01	7.93		5.8	353	24.	0	0	Ø	0	Ò	0	0	0	0	0	Date: 8 10 118 New WQ: TA Counts: R L Sol'n Prep: APF Old WQ: SB Time: 09 10
	2	7.94	7.86	7.5	7.2	402	24.2	0	0	0	0	0	0	0	0	0	0	Date & A. II' New WQ: MY Counts: 50 Sol'n Prep: 6 Old WQ: MY Time: 15 Date: 1718 New WQ: AR Counts: 6
trol	3	7.96	7.80	7.9	6.8	360	24.\	Ô	0	0	0	0	0	6	0	0	0	Sol'n Prep: Co Old WQ: MYL Time: 1424
Lab Water Control	4	7,93	7.83	8,0	67	362	24.1	5	2	4	3	6	5	4	5	5	4	Date: 13 12 New WQ: 14 Counts: 66 J Sol'n Prep: Old WQ: Time: 427
ıb Wat	5	רהר	7.83	9.0	7.9	355	24.6	8	9	8	7	10	8	9	ঠ	8	8	Date 1/4/8 New WQ: So Counts: 62 Sol'n Prep: Old WQ: AR Time: 335
La	6	8.06	7.86	84	7.9	352	24.0	100	0	13	13	15	13	12	11	0	0	Date: \$15/4New WQ: RA Counts: SO/ Sol'n Prep: NO Old WQ: // Time: 530
	7							<u></u>	8									Date: New WQ: Counts: Sol'n Prep: Old WQ: Time:
	8																	Date: Old WQ: Counts: Time:
							Total=	13	11	25	23	31	26	27	24	13	12	Mean Neonates/Female = 20.5
7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Day	New P	H Old	D New	.O.	Cond. (µS/cm)		A	В	C	Survival D	/ Repro	duction F	G	Н	Ι	J	Sample ID
	0	7.99		7.5		418	29.9	0	0	0	0	O	0	0	ð	0	ರ	56518
	1	8.07	7.45	8.2	6.5	419	43	0	0	0	0	0	0	0	0	0	0	50518
	2	8.02	7.91	78	7.1	422	24.4	0	0	0	0	0	0	0	0	0	0	50518
	3	8.02	7.86		6.6	415	242	6	0	0	0	0	0	0	0	0	0	50518
6.25%	4	792	7:90	8,0	6.1	418	241	5	3	4	5	4	5	4	2	4	4	50578
6.2	5	7.90	7.96	9.1	8.0	419	25,4	8	9	8	9	8	9	8	0	7	0	50518
	6	8.12	7.97	816	7,9	419	24.2	14	0	0	15	0	16	13	7	0	11	50518
	7																	
	8																	
							Total=	27	12	12	29	12	30	25	9	11	15	Mean Neonates/Female = 18.2

CI	ient:		LW	A - Call	eguas C	reek		Ma	terial:	CC	СТМР	-68-Bl	ELT-2	22		Test	Date:	8 (9/1%
Proje	ct #:	291	92	<u>"</u>	Γest ID:	792	.64								Со	ntrol \	Water:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp				Surv	ival / R	_					SIGN-OFF
		New	Old	New	Old	(µS/cm)		A	В	С	D	Е	F	G	H	I	J	
	0	80.8		7.4		482	24.3	0	Ò	0	0	0	0	0	0	0	9	
	1	8.09	8.04	8-1	G.5	484	24.7	0	0	0	0	O	0	O	0	0	0	
	2	8,07	8.01	7.8	6.9	498	24.6	0	0	6	0	o	0	0	0	0	0	
	3	8.08	7.93	7.8	6.8	480	25.1	0	0	0	0	0	0	0	0	0	0	
12.5%	4	7,86	7,90	8,2	6.3	496	24.2	5	5	4	4	5	5	5	3	4	4	
12.	5		7.99	9.3	8.0	482	25.5	10	9	9	8	8	10	8	a	8	O	
	6		8,02		8.0	પજ્ય	24.4	0	14	0	13	0	15	16	15	0	10	
	7		0,00															
	8		T															
							Total=	15	R	13	25	13	30	29	27	12	14	Mean Neonates/Female = 20.6
	Day		Н		.O.	Cond.	7,7 7,7 7,8					/ Repro		_				
	_	New	Old	New	Old	(µS/cm)		A	В	С	D	Е	F	G	Н	I	J	
	0	8.12		7.7		597	24.3	0	0	0	0	Ô	0	0	0	0	Ö	
	1	8.24	8.13	8.3	6,9	602	24.9	0	0	0	0	0	O	0	O	0	0	
	2	8.18	8.10	8.2	7.0	609	24.7	0	0	0	0	0	0	0	0	0	0	
	3	8.11	8.05	8.1	6.7	590	24.4	0	0	0	ō	0	O	0	0	0	0	
25%	4	799	7.98	8,2,	6.4	548	24.2	5	5	4	0	3	5	6	6	15	5	
22	5		8.17		8.2	598	25.0	11	8	10	8	01	10	11	10	0	10	
	6	872		-	8,0		24.0	0	0	17	0	16	15	16	0	11	0	
	7																	
	8								-									
							Total=	16	13	31	8	28	30	33	16	16	15	Mean Neonates/Female = 20.6

Cl	ient:		LWA	A - Calle	eguas C	reek		Ma	terial:	C	СТМР	-68-Bl	ELT-2	22		Test	Date:	819118
Proje	ect #:	291	192	T	est ID:	792	64								Co	ntrol V	Water:	Mod EPAMH
	Day	рН		D.O.		Cond.	Temp						eproduc					SIGN-OFF
	-	New	Old	New	Old	(µS/cm)	(°C)	Α	В	С	D	Е	F	G	Н	I	J	
Π,	0	8.20		7.9		837	24.2	0	0	0	0	0	0	0	0	0	0	
	1	8.32	8.31	8.7	7.2	839	25.0	0	0	0	O	0	ð	O	0	0	0	
	2	8.27	8,28	8.9	7.0	848	24.7		0	0	0	0	0	6	0	0	0	
	3	8.26	8.23	8.4	6.9	827	25.2	0	Q	0	0	0	0	D	0	0	D	
20%	4	010	8,22	8,6	6.3	819	24.3	5	6	4	5	6	5	4	6	6	5	
)S	5	8.20	8.32	9.7	8.1	825	25,7	11	11	12	10	12	K	9	10	10	9	
	6	8.29	828		8,0		24.3	17	18	19	17	19	19	18	16	17	0	
	7					0.10								201-21131				
	8																	
							Total=	33	35	35	32	37	36	9	32	33	14	Mean Neonates/Female = 27-6
	Day	Р	Н	D.	.O.	Cond.					urvival							
		New	Old	New	Old	(µS/cm)		A	В	С	D	Е	F	G	Н	I	J	
	0	8.21		9.2		1286	24.2	0	0	0	0	0	0	ଚ	0	0	0	
	1	8-37	8.49	9.5	6.6	1289	25,1	0	0	0	0	0	0	0	0	0	0	
	2	8.32	8.48	10,2	7.3	1302	24.7	0	0	0	0	0	٥	0	٥	ن	0	
	3	8.32	8,45	9.8	6.8	1270	24.8	0	1/6	0	0	0	O	×	0	0	O	
%001	4		8.43		6.0	1286	244	7	-	5	6	7	5	-	0	6	7	
01	5		8.50		8.0	1269		14	-	j (12	14	14	-	10	10	14	
	6		8,44		7.3	1304		19	_	20	18	19	0	-	13	19	0	
	7								_					-			[1]	
	8								~					-				
							Total=	40	40	36	36	39	19	×10	23	35	21	Mean Neonates/Female = 24.9

Appendix C

Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of the Calleguas Creek Ambient Waters to *Ceriodaphnia dubia*:

Data Analyses Including Statistical Outliers

CETIS Summary Report

Report Date:

25 Aug-18 08:46 (p 1 of 2)

Test Code:

79258 | 17-8303-4899

Ceriodapiiiii	a Survival and R	eproduction	rest							Pacific	c EcoF	
Batch ID: Start Date: Ending Date: Duration:	20-4812-1806 09 Aug-18 16:2 15 Aug-18 14:3 5d 22h	5 Prot 8 Spe	tocol: E	Reproduction-S EPA-821-R-02- Ceriodaphnia d n-House Cultu	·013 (2002) ubia		Dil	alyst: uent: ne: e:	Jessica Okutsu Laboratory Wa Not Applicable 1			
	11-5389-0433 : 08 Aug-18 08:3 : 09 Aug-18 07:3 32h (0.7 °C)		erial: A	8-UNIV-029 Ambient Water Calleguas Cree JNIV				ent: oject:	Larry Walker A 29192	ssociates		
Comments: Stats including	g reproductive ou	tlier Lab Wa	ter Contro	ol - replicate A.								
Multiple Com	parison Summa	ary										
Analysis ID	Endpoint		Compa	rison Method			NOEL	LOEI	L TOEL	TU	PMS	D 🗸
18-3874-4327	Reproduction		Dunnett	Multiple Com	parison Test	t	100	> 100	n/a	1	27.99	%
12-9297-8484	Survival		Fisher E	Exact/Bonferro	ni-Holm Tes	t	100	> 100	n/a	1	n/a	
Point Estimat	te Summary											
Analysis ID	Endpoint		Point E	stimate Metho	od		Level	%	95% LCL	95% UCL	TU	1
16 1027 1157	Reproduction		Linear I	nterpolation (IC	CPINY		IC5	2.15	1.22	n/a	46.55	5
10-1037-1137			Lilicalii	nicipolation (n	J. 111/		100	2.10				
10-1037-1137			Lineari	merporation (in	J. 111 <i>)</i>		IC10	4.3	2.43	n/a	23.27	
10-1037-1137			Lincari	morpolation (N	Si iiv,				2.43	n/a n/a		
10-1037-1137			Lincari	morpolation (N	51 IIV)		IC10	4.3	2.43 n/a		23.27	
10-1037-1137			Lineari	merporation (N	51 114)		IC10 IC15	4.3 >100	2.43 n/a n/a	n/a	23.27 <1	
10-1037-1137			Lineari	morpolation (N	51 114)		IC10 IC15 IC20	4.3 >100 >100	2.43 n/a n/a n/a	n/a n/a	23.27 <1 <1	
10-1037-1137			Lineari	morpolation (N	,		IC10 IC15 IC20 IC25	4.3 >100 >100 >100	2.43 n/a n/a n/a n/a	n/a n/a n/a	23.27 <1 <1 <1	
Reproduction			Lineari	morpolation (K			IC10 IC15 IC20 IC25 IC40	4.3 >100 >100 >100 >100	2.43 n/a n/a n/a n/a	n/a n/a n/a n/a	23.27 <1 <1 <1 <1	
		Count	Mean	95% LCL	95% UCL	Min	IC10 IC15 IC20 IC25 IC40	4.3 >100 >100 >100 >100	2.43 n/a n/a n/a n/a n/a	n/a n/a n/a n/a	23.27 <1 <1 <1 <1	7
Reproduction Conc-%	n Summary	Count 10				Min 13	IC10 IC15 IC20 IC25 IC40 IC50	4.3 >100 >100 >100 >100 >100	2.43 n/a n/a n/a n/a n/a	n/a n/a n/a n/a n/a	23.27 <1 <1 <1 <1 <1	ect
Reproduction	n Summary Code		Mean	95% LCL	95% UCL		IC10 IC15 IC20 IC25 IC40 IC50	4.3 >100 >100 >100 >100 >100	2.43 n/a n/a n/a n/a n/a	n/a n/a n/a n/a n/a	23.27 <1 <1 <1 <1 <1	ect
Reproduction Conc-% 0 6.25	n Summary Code	10	Mean 29.7	95% LCL 25.1	95% UCL 34.3	13	IC10 IC15 IC20 IC25 IC40 IC50 Max 36	4.3 >100 >100 >100 >100 >100 Std E	2.43 n/a n/a n/a n/a n/a Err Std Dev 6.43	n/a n/a n/a n/a n/a CV%	23.27 <1 <1 <1 <1 <1 ***********************	ect
Reproduction Conc-% 0 6.25 12.5	n Summary Code	10 10	Mean 29.7	95% LCL 25.1 10	95% UCL 34.3 25.8	13 0	IC10 IC15 IC20 IC25 IC40 IC50 Max 36 36	4.3 >100 >100 >100 >100 >100 Std E 2.03 3.49	2.43 n/a n/a n/a n/a n/a err Std Dev 6.43 11	n/a n/a n/a n/a n/a 21.65% 61.68%	23.27 <1 <1 <1 <1 <1 ** ** ** ** ** ** ** ** ** ** ** ** **	ect %
Reproduction Conc-%	n Summary Code	10 10 10	Mean 29.7 17.9 26.7	95% LCL 25.1 10 21	95% UCL 34.3 25.8 32.4	13 0 14	IC10 IC15 IC20 IC25 IC40 IC50 Max 36 36 35	4.3 >100 >100 >100 >100 >100 Std E 2.03 3.49 2.53	2.43 n/a n/a n/a n/a n/a 11 8	n/a n/a n/a n/a n/a 21.65% 61.68% 29.97%	23.27 <1 <1 <1 <1 <1 *1 *1 *0.009 39.73 10.10	ect % 8% 9%
Reproduction Conc-% 0 6.25 12.5 25 50	n Summary Code	10 10 10 10	Mean 29.7 17.9 26.7 21.2	95% LCL 25.1 10 21 13.3	95% UCL 34.3 25.8 32.4 29.1	13 0 14 0	IC10 IC15 IC20 IC25 IC40 IC50 Max 36 36 35 35	4.3 >100 >100 >100 >100 >100 Std E 2.03 3.49 2.53 3.5	2.43 n/a n/a n/a n/a n/a 1.1	n/a n/a n/a n/a n/a CV% 21.65% 61.68% 29.97% 52.19%	23.27 <1 <1 <1 <1 <1 <1 0.009 39.73 10.10 28.62	ect % 9% 9%
Reproduction Conc-% 0 6.25 12.5 25	n Summary Code LW	10 10 10 10 10	Mean 29.7 17.9 26.7 21.2 30.2	95% LCL 25.1 10 21 13.3 27.6	95% UCL 34.3 25.8 32.4 29.1 32.8	13 0 14 0 24	IC10 IC15 IC20 IC25 IC40 IC50 Max 36 36 35 35 37	4.3 >100 >100 >100 >100 >100 Std E 2.03 3.49 2.53 3.5 1.14	2.43 n/a n/a n/a n/a n/a 1.1 8 11.1 3.61	n/a n/a n/a n/a n/a CV% 21.65% 61.68% 29.97% 52.19% 11.97%	23.27 <1 <1 <1 <1 <1 <1 0.009 39.73 10.10 28.62 -1.68	ect % 8% 9%
Reproduction Conc-% 0 6.25 12.5 25 50 100	n Summary Code LW	10 10 10 10 10	Mean 29.7 17.9 26.7 21.2 30.2	95% LCL 25.1 10 21 13.3 27.6	95% UCL 34.3 25.8 32.4 29.1 32.8	13 0 14 0 24	IC10 IC15 IC20 IC25 IC40 IC50 Max 36 36 35 35 37	4.3 >100 >100 >100 >100 >100 Std E 2.03 3.49 2.53 3.5 1.14	2.43 n/a n/a n/a n/a n/a 14 6.43 11 8 11.1 3.61 5.63	n/a n/a n/a n/a n/a CV% 21.65% 61.68% 29.97% 52.19% 11.97%	23.27 <1 <1 <1 <1 <1 <1 0.009 39.73 10.10 28.62 -1.68	ect % 3% 9% 9% %
Reproduction Conc-% 0 6.25 12.5 25 50 100 Survival Sum Conc-%	n Summary Code LW	10 10 10 10 10 10	Mean 29.7 17.9 26.7 21.2 30.2 30.9	95% LCL 25.1 10 21 13.3 27.6 26.9	95% UCL 34.3 25.8 32.4 29.1 32.8 34.9	13 0 14 0 24 19	IC10 IC15 IC20 IC25 IC40 IC50 Max 36 36 35 35 37 36	4.3 >100 >100 >100 >100 >100 Std E 2.03 3.49 2.53 3.5 1.14 1.78	2.43 n/a n/a n/a n/a n/a 11 8 11.1 3.61 5.63	n/a n/a n/a n/a n/a 21.65% 61.68% 29.97% 52.19% 11.97% 18.21%	23.27 <1 <1 <1 <1 <1 <1 0.009 39.73 10.10 28.62 -1.68 -4.04	ect % 3% 0% 2% %
Reproduction Conc-% 0 6.25 12.5 25 50 100 Survival Sum Conc-%	n Summary Code LW amary Code	10 10 10 10 10 10 10	Mean 29.7 17.9 26.7 21.2 30.2 30.9	95% LCL 25.1 10 21 13.3 27.6 26.9	95% UCL 34.3 25.8 32.4 29.1 32.8 34.9	13 0 14 0 24 19	IC10 IC15 IC20 IC25 IC40 IC50 Max 36 36 35 37 36	4.3 >100 >100 >100 >100 >100 Std E 2.03 3.49 2.53 3.5 1.14 1.78	2.43 n/a n/a n/a n/a n/a n/a 11 8 11.1 3.61 5.63 Err Std Dev 0.000	n/a n/a n/a n/a n/a CV% 21.65% 61.68% 29.97% 52.19% 11.97% 18.21%	23.27 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 %Effi 0.009 39.73 10.10 28.62 -1.68 -4.04 %Effi	ect % 3% 9% % %
Reproduction Conc-% 0 6.25 12.5 25 50 100 Survival Sum Conc-% 0 6.25	n Summary Code LW amary Code	10 10 10 10 10 10 10	Mean 29.7 17.9 26.7 21.2 30.2 30.9 Mean 1.000	95% LCL 25.1 10 21 13.3 27.6 26.9 95% LCL 1.000	95% UCL 34.3 25.8 32.4 29.1 32.8 34.9 95% UCL 1.000	13 0 14 0 24 19 Min	IC10 IC15 IC20 IC25 IC40 IC50 Max 36 36 35 37 36 Max 1.000	4.3 >100 >100 >100 >100 >100 Std E 2.03 3.49 2.53 3.5 1.14 1.78 Std E	2.43 n/a n/a n/a n/a n/a n/a 11 8 11.1 3.61 5.63 Err Std Dev 0 0.000 0 0.316	n/a n/a n/a n/a n/a CV% 21.65% 61.68% 29.97% 52.19% 11.97% 18.21% CV%	23.27 <1 <1 <1 <1 <1 <1 <1 0.009 39.73 10.10 28.62 -1.68 -4.04 %Efft 0.009	ect % % % % % ect % % %
Reproduction Conc-% 0 6.25 12.5 25 50 100 Survival Sum Conc-%	n Summary Code LW amary Code	10 10 10 10 10 10 10	Mean 29.7 17.9 26.7 21.2 30.2 30.9 Mean 1.000 0.900	95% LCL 25.1 10 21 13.3 27.6 26.9 95% LCL 1.000 0.674	95% UCL 34.3 25.8 32.4 29.1 32.8 34.9 95% UCL 1.000 1.000	13 0 14 0 24 19 Min 1.000 0.000	IC10 IC15 IC20 IC25 IC40 IC50 Max 36 36 35 37 36 Max 1.000 1.000	4.3 >100 >100 >100 >100 >100 Std E 2.03 3.49 2.53 3.5 1.14 1.78 Std E 0.000 0.100	2.43 n/a n/a n/a n/a n/a n/a 11 8 11.1 3.61 5.63 Err Std Dev 0.000 0.316 0.000	n/a n/a n/a n/a n/a n/a 21.65% 61.68% 29.97% 52.19% 11.97% 18.21% CV% 0.00% 35.14%	23.27 <1 <1 <1 <1 <1 <1 <1 0.009 39.73 10.10 28.62 -1.68 -4.04 %Efficition 0.009 10.00	ect % 3% 9% 2% % %
Reproduction Conc-% 0 6.25 12.5 25 50 100 Survival Sum Conc-% 0 6.25 12.5	n Summary Code LW amary Code	10 10 10 10 10 10 10 10	Mean 29.7 17.9 26.7 21.2 30.2 30.9 Mean 1.000 0.900 1.000	95% LCL 25.1 10 21 13.3 27.6 26.9 95% LCL 1.000 0.674 1.000	95% UCL 34.3 25.8 32.4 29.1 32.8 34.9 95% UCL 1.000 1.000 1.000	13 0 14 0 24 19 Min 1.000 0.000 1.000	IC10 IC15 IC20 IC25 IC40 IC50 Max 36 36 35 37 36 Max 1.000 1.000	4.3 >100 >100 >100 >100 >100 Std E 2.03 3.49 2.53 3.5 1.14 1.78 Std E 0.000 0.100 0.000	2.43 n/a n/a n/a n/a n/a n/a 11 8 11.1 3.61 5.63 Err Std Dev 0.000 0.316 0.000 0.316	n/a n/a n/a n/a n/a n/a 21.65% 61.68% 29.97% 52.19% 11.97% 18.21% CV% 0.00% 35.14% 0.00%	23.27 <1 <1 <1 <1 <1 <1 0.009 39.73 10.10 28.62 -1.68 -4.04 %Effe 0.009 10.00 0.009	ect % 3% 9% 9% % % 6 9% 6

CETIS Summary Report

Report Date: Test Code: 25 Aug-18 08:46 (p 2 of 2)

79258 | 17-8303-4899

Ceriodaphnia	Survival and	Reproduction	on Test							Pacif	ic EcoRisk
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	13	27	33	31	36	34	31	28	32	32
6.25		29	12	0	36	12	31	11	15	13	20
12.5		32	32	16	35	14	35	28	29	29	17
25		26	19	16	0	30	35	29	13	12	32
50		30	31	37	28	30	32	34	24	28	28
100		35	35	35	36	19	28	32	34	24	31
Survival Detail											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25		1.000	1.000	1.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Survival Binor	nials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	0/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	0/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Analyst: Jo QA:

Report Date:

21 Aug-18 09:48 (p 1 of 1)

Test Code:

79258 | 17-8303-4899

Ceriodaphnia	Survival and Rep	production Test						Pacific EcoRisk
Analysis ID: Analyzed:	12-9297-8484 21 Aug-18 9:48	Endpoint:	Survival STP 2xK Contingency Tables		TIS Version:		v1.9.2	
Data Transfor		Alt Hyp	211 ZXIX Containgency Fabics	NOEL	LOEL	TOEL	TU	
Untransformed	1	C > T		100	> 100	n/a	1	
Fisher French	Danfarra di Hales	Tank						

Fisher Exact/	Bonfe	rroni-Holm Test				
Control	vs	Group	Test Stat	P-Type	P-Value	Decision(a:5%)
Lab Water Co	ntr	6.25	0.500	Exact	1.0000	Non-Significant Effect
		12.5	1.000	Exact	1.0000	Non-Significant Effect
		25	0.500	Exact	1.0000	Non-Significant Effect
		50	1.000	Exact	1.0000	Non-Significant Effect
		100	1.000	Exact	1.0000	Non-Significant Effect

у							
Code	NR	R	NR + R	Prop NR	Prop R	%Effect	
LW	10	0	10	1	0	0.0%	
	9	1	10	0.9	0.1	10.0%	
	10	0	10	1	0	0.0%	
	9	1	10	0.9	0.1	10.0%	
	10	0	10	1	0	0.0%	
	10	0	10	1	0	0.0%	
	Code	Code NR LW 10 9 10 9 10	Code NR R LW 10 0 9 1 10 0 9 1 10 0	Code NR R NR + R LW 10 0 10 9 1 10 10 0 10 9 1 10 10 0 10	Code NR R NR + R Prop NR LW 10 0 10 1 9 1 10 0.9 10 0 10 1 9 1 10 0.9 10 0 10 1	Code NR R NR + R Prop NR Prop R LW 10 0 10 1 0 9 1 10 0.9 0.1 10 0 10 1 0 9 1 10 0.9 0.1 10 0 10 1 0	Code NR R NR + R Prop NR Prop R %Effect LW 10 0 10 1 0 0.0% 9 1 10 0.9 0.1 10.0% 10 0 10 1 0 0.0% 9 1 10 0.9 0.1 10.0% 10 0 10 1 0 0.0%



Analyst: To QA: Rb

Report Date: Test Code: 21 Aug-18 09:48 (p 1 of 1)

79258 | 17-8303-4899

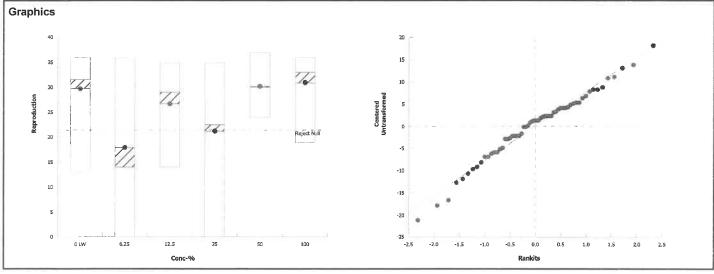
Analysis ID: 18-3874-4327 Endpoint: Reproduction CETIS Version: CETISv1.9.2 Analyzed: 21 Aug-18 9:48 Analysis: Parametric-Control vs Treatments Official Results: Yes Data Transform Alt Hyp NOEL LOEL TOEL TU	
Data Transform Alt Hyp NOEL LOEL TOFI TU	
Date Hallowith 10th 10th 10th 10th 10th 10th 10th 10	PMSD
Untransformed C > T 100 > 100 n/a 1	27.95%

Dunnett Multiple (Comparison Test							
Control vs	Control II	Test Stat	Critical	MSD	DF P	P-Type	P-Value	Decision(α:5%)
Lab Water Contr	6.25*	3.25	2.29	8.3	18 C	DF	0.0044	Significant Effect
	12.5	0.827	2.29	8.3	18 C	CDF	0.4960	Non-Significant Effect
	25*	2.34	2.29	8.3	18 C	DF	0.0443	Significant Effect
	50	-0.138	2.29	8.3	18 C	DF	0.8711	Non-Significant Effect
	100	-0.331	2.29	8.3	18 C	DDF	0.9133	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1444.2	288.84	5	4.39	0.0020	Significant Effect
Error	3549.2	65.7259	54			
Total	4993.4		59			

Distributional Te	ests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variances	Bartlett Equality of Variance Test	13.8	15.1	0.0171	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.981	0.946	0.4810	Normal Distribution

Reproduction	Summary										
Conc-%	Cođe	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	10	29.7	25.1	34.3	31.5	13	36	2.03	21.65%	0.00%
6.25		10	17.9	10	25.8	14	0	36	3.49	61.68%	39.73%
12.5		10	26.7	21	32.4	29	14	35	2.53	29.97%	10.10%
25		10	21.2	13.3	29.1	22.5	0	35	3.5	52.19%	28.62%
50		10	30.2	27.6	32.8	30	24	37	1.14	11.97%	-1.68%
100		10	30.9	26.9	34.9	33	19	36	1.78	18.21%	-4.04%

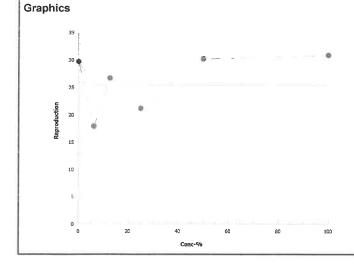


Report Date: Test Code: 21 Aug-18 09:48 (p 1 of 1)

79258 | 17-8303-4899

aphnia	Survival and Re	eproductio	n Test					Pacific EcoRisk
is ID:	16-1037-1157	End	point:	Reproduction		CETIS Version:	CETISv1.9.2	
ed:	21 Aug-18 9:48	Ana Ana	lysis:	Linear Interpola	ation (ICPIN)	Official Results	: Yes	
Interpo	lation Options							
sform	Y Transform	See	d	Resamples	Exp 95% CL	Method		
	Linear	226	735	200	Yes	Two-Point Interpolation		
stimate	es							
%	95% LCL	95% UCL	TU	95% LCL	95% UCL			
2.15	1.22	n/a	46.55	n/a	82.14			
4.3	2.43	n/a	23.27	n/a	41.07			
>100	n/a	n/a	<1	n/a	n/a			
>100	n/a	n/a	<1	n/a	n/a			
>100	n/a	n/a	<1	n/a	n/a			
>100	n/a	n/a	<1	n/a	n/a			
>100	n/a	n/a	<1	n/a	n/a			
	s ID: ed: Interpo sform stimate % 2.15 4.3 >100 >100 >100 >100	s ID: 16-1037-1157 ed: 21 Aug-18 9:48 Interpolation Options form Y Transform Linear stimates % 95% LCL 2.15 1.22 4.3 2.43 >100 n/a >100 n/a >100 n/a >100 n/a >100 n/a	S ID: 16-1037-1157 End	### Analysis: Interpolation Options Seed Linear 226735 ### Stimates Stimates	SID: 16-1037-1157	SID: 16-1037-1157 Endpoint: Reproduction Linear Interpolation (ICPIN)	S ID: 16-1037-1157	S ID:

Reproduction	Summary				C	Calculated Va	riate		
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	10	29.7	13	36	2.03	6.43	21.60%	0.0%
6.25		10	17.9	0	36	3.49	11	61.70%	39.7%
12.5		10	26.7	14	35	2.53	8	30.00%	10.1%
25		10	21.2	0	35	3.5	11.1	52.20%	28.6%
50		10	30.2	24	37	1.14	3.61	12.00%	-1.68%
100		10	30.9	19	36	1.78	5.63	18.20%	-4.04%



Analyst: Jo QA:

CETIS Summary Report

Report Date:

25 Aug-18 09:11 (p 1 of 2)

Test Code:

79259 | 16-3645-9239

Ceriodaphnia	Survival and R	Reproduction	Test							Pacifi	c EcoRis
_	09-8772-2331 09 Aug-18 15:5 15 Aug-18 16:0 6d 0h	0 Prot	ocol: cies:	Reproduction-S EPA-821-R-02- Ceriodaphnia d In-House Cultu	013 (2002) ubia		Dil	alyst: uent: ne: e:	Jessica Okutsu Laboratory Wate Not Applicable 1	ər	
Sample Date:	21-0301-4145 08 Aug-18 09:2 09 Aug-18 07:3 30h (0.6°C)		rial: ce:	38-ADOLF-067 Ambient Water Calleguas Cree ADOLF				ent: oject:	Larry Walker As 29192	sociates	
Comments: Stats include re	eproduction outl	ier 50-B									
Multiple Comp	parison Summa	ary									
Analysis ID 05-7414-6420 13-0532-4504			Steel N	arison Method Many-One Rank Exact/Bonferro		t	100 100	> 100 > 100	n/a n/a	TU 1	PMSD 17.1% n/a
Point Estimate	e Summary										
Analysis ID 15-8406-9044	Endpoint Reproduction			Estimate Metho Interpolation (IC			IC5 IC10	% 8.21 10.6	95% LCL 3.02 6.05	95% UCL 12.8 n/a	12.19 9.431
							IC15 IC20 IC25 IC40	>100 >100 >100 >100	n/a n/a n/a n/a	n/a n/a n/a n/a	<1 <1 <1 <1
							IC50	>100	n/a	n/a	<1
Reproduction	Summary										
Conc-% 0 6.25 12.5 25 50 100	Code LW	10 10 10 10 10 10 10	32.6 32.3 27.3 25.5 27.2 32.2	95% LCL 30.7 28.8 22.1 20.5 23.8 29.1	95% UCL 34.5 35.8 32.5 30.5 30.6 35.3	Min 29 22 15 16 15 25	Max 36 39 34 36 32 39	0.846 1.56 2.31 2.23 1.52 1.39		8.21% 15.31% 26.75% 27.62% 17.66% 13.64%	%Effec 0.00% 0.92% 16.26% 21.78% 16.56% 1.23%
Survival Sumn	mary										
Conc-% 0 6.25 12.5 25	Code	10 10 10 10	Mean 1.000 1.000 1.000 1.000	95% LCL 1.000 1.000 1.000 1.000	95% UCL 1.000 1.000 1.000 1.000	Min 1.000 1.000 1.000 1.000	1.000 1.000 1.000 1.000	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000	0.00% 0.00% 0.00% 0.00%	%Effec 0.00% 0.00% 0.00% 0.00%
50 100		10 10	1.000 1.000	1.000 1.000	1.000 1.000	1.000 1.000	1.000 1.000	0.000		0.00% 0.00%	0.00% 0.00%

Analyst: Jo QA: Rb

Report Date:

25 Aug-18 09:11 (p 2 of 2)

Test Code:

79259 | 16-3645-9239

Ceriodaphnia	Survival and	Reproduction	on Test							Pacif	ic EcoRisk
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	34	36	30	34	30	31	35	31	29	36
6.25		38	31	34	39	34	28	22	31	31	35
12.5		27	15	33	30	34	21	32	32	16	33
25		30	28	30	29	36	28	26	16	16	16
50		28	15	29	32	29	25	25	30	30	29
100		25	33	33	25	35	32	39	32	32	36
Survival Detai	I										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Survival Bino	mials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Report Date:

21 Aug-18 10:46 (p 1 of 1)

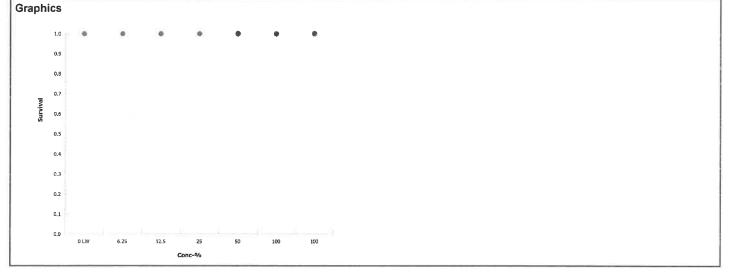
Test Code:

79259 | 16-3645-9239

Centuapinna S	urvival and Reproc	luction Test						Pacific EcoRisk
	13-0532-4504 21 Aug-18 10:45	Endpoint: Analysis:	Survival STP 2xK Contingency Tables		TIS Version: icial Results:		/1.9.2	
Data Transform	Alt	Нур		NOEL	LOEL	TOEL	TU	
Untransformed	C >	Т		100	> 100	n/a	1	

Control vs	Group	Test Stat	P-Type	P-Value	Decision(α:5%)
Lab Water Contr	6.25	1.000	Exact	1.0000	Non-Significant Effect
	12.5	1.000	Exact	1.0000	Non-Significant Effect
	25	1.000	Exact	1.0000	Non-Significant Effect
	50	1.000	Exact	1.0000	Non-Significant Effect
	100	1.000	Exact	1.0000	Non-Significant Effect
Data Summary					
Conc-%	Code	NR R	NR + R	Prop NR	Prop R %Effect

Data Gammary	1						
Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	LW	10	0	10	1	0	0.0%
6.25		10	0	10	1	0	0.0%
12.5		10	0	10	1	0	0.0%
25		10	0	10	1	0	0.0%
50		10	0	10	1	0	0.0%
100		10	0	10	1	0	0.0%



Report Date:

21 Aug-18 10:46 (p 1 of 1)

Test Code:

79259 | 16-3645-9239

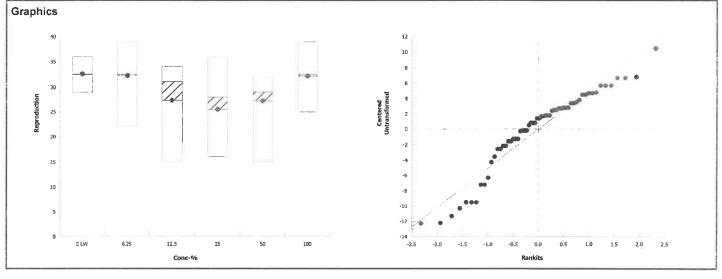
Ceriodaphnia	Survival and Repr	oduction Test					P	acific EcoRisk
Analysis ID: Analyzed:	05-7414-6420 21 Aug-18 10:46	Endpoint: Analysis:	Reproduction Nonparametric-Control vs Treatments		TIS Version: ficial Results:		/1.9.2	
Data Transfor	m A	lt Hyp		NOEL	LOEL	TOEL	TU	PMSD
Untransformed	I C	> T		100	> 100	n/a	1	17.05%
	ne Rank Sum Test			100	7 100	11/4		17.0

Steel Many-One R	ank Sum Test						
Control vs	Conc-%	Test Stat	Critical	Ties	DF P-Type	P-Value	Decision(a:5%)
Lab Water Contr	6.25	106	75	3	18 Asymp	0.8650	Non-Significant Effect
	12.5	83	75	2	18 Asymp	0.1611	Non-Significant Effect
	25*	68.5	75	4	18 Asymp	0.0126	Significant Effect
	50*	65.5	75	2	18 Asymp	0.0063	Significant Effect
	100	106	75	3	18 Asymp	0.8650	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	508.683	101.737	5	3.45	0.0089	Significant Effect
Error	1592.3	29.487	54			
Total	2100.98		59			

Distributional Tests										
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)					
Variances	Bartlett Equality of Variance Test	10	15.1	0.0750	Equal Variances					
Distribution	Shapiro-Wilk W Normality Test	0.928	0.946	0.0016	Non-Normal Distribution					

Reproduction Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	10	32.6	30.7	34.5	32.5	29	36	0.846	8.21%	0.00%
6.25		10	32.3	28.8	35.8	32.5	22	39	1.56	15.31%	0.92%
12.5		10	27.3	22.1	32.5	31	15	34	2.31	26.75%	16.26%
25		10	25.5	20.5	30.5	28	16	36	2.23	27.62%	21.78%
50		10	27.2	23.8	30.6	29	15	32	1.52	17.66%	16.56%
100		10	32.2	29.1	35.3	32.5	25	39	1.39	13.64%	1.23%



IC40

IC50

>100

>100

n/a

n/a

n/a

n/a

<1

<1

n/a

n/a

Report Date:

21 Aug-18 10:46 (p 1 of 1)

Test Code:

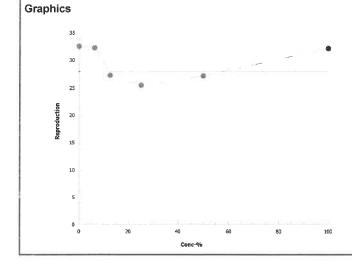
79259 | 16-3645-9239

									rest Code:	192	:59 10-3045-9239
Ceriod	aphnia	Survival and Re	production	Test							Pacific EcoRisk
Analysis ID:		15-8406-9044		Endpoint:		Reproduction			CETIS Version:	CETISv1.9.2	
Analyze	Analyzed: 21 Aug-18 10:46		6 Anal	Analysis:		Linear Interpolation (ICPIN)			Official Results:	Yes	
Linear	Interpo	lation Options									
X Transform		Y Transform	See	Seed		mples	Exp 95% CL	Method			
Linear		Linear	5669	566922			Yes	Two-Point Interpolation			
Point E	stimate	es									
Level	%	95% LCL	95% UCL	TU		95% LCL	95% UCL				
IC5	8.21	3.02	12.8	12.19		7.814	33.07				
IC10	10.6	6.05	n/a	9.431		n/a	16.53				
IC15	>100	n/a	n/a	<1		n/a	n/a				
IC20	>100	n/a	n/a	<1		n/a	n/a				
IC25	>100	n/a	n/a	<1		n/a	n/a				

Reproduction Summary									
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	10	32.6	29	36	0.846	2.67	8.21%	0.0%
6.25		10	32.3	22	39	1.56	4.95	15.30%	0.92%
12.5		10	27.3	15	34	2.31	7.3	26.80%	16.3%
25		10	25.5	16	36	2.23	7.04	27.60%	21.8%
50		10	27.2	15	32	1.52	4.8	17.70%	16.6%
100		10	32.2	25	39	1.39	4.39	13.60%	1.23%

n/a

n/a



Environmental Consu	Iting and	1 esting
---------------------	-----------	----------

Appendix D

Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the *Ceriodaphnia dubia*

CETIS Summary Report

Report Date: Test Code:

20 Aug-18 15:59 (p 1 of 2) 77556 | 09-0694-5539

							'	est Code:		77556 0	9-0094-33	
Ceriodaphnia	a Survival and I	Reproducti	on Test							Pacif	ic EcoRis	
Batch ID:	07-3124-5846	Te	st Type:	Reproduction-	Survival (7d)	A	nalyst:	Natalie Lynch			
Start Date:	09 Aug-18 13:1	10 P r	otocol:	EPA-821-R-02-013 (2002)				iluent:	Laboratory Wa	atory Water		
Ending Date:	15 Aug-18 13:2	20 S r	ecies:	Ceriodaphnia	dubia		E	rine:	Not Applicable			
Duration:	6d Oh	Sc	urce:	In-House Cultu	ıre		A	ge:	1			
Sample ID:	20-3435-5351	Co	de:		C	lient:	Reference Tox	icant				
Sample Date:	: 09 Aug-18 13:1	0 M a	terial:	Sodium chloric		Р	roject:	28694				
Receipt Date	: 09 Aug-18 13:1	0 Sc	urce:									
Sample Age:	n/a (24.5 °C)	Sta	ation:	In House								
Multiple Com	parison Summa	ary										
Analysis ID	Endpoint		Comp	arison Method	l		NOEL	LOEL	. TOEL	TU	PMSD	
20-4536-6999	•		Steel I	Many-One Rank	Sum Test		500	1000	707.1		13.9%	
14-0437-8553	Survival		Fisher	Exact/Bonferro	ni-Holm Tes	st	2000	> 2000	n/a		n/a	
Point Estimat	e Summary											
Analysis ID	Endpoint		Point	Estimate Meth	od		Level	mg/L	95% LCL	95% UCL	TU	
21-1613-8729	Reproduction		Linear	Interpolation (I	CPIN)		IC5	451	215	671		
							IC10	632	431	965		
							IC15	780	599	1080		
							IC20	928	710	1180		
							IC25	1070	809	1290		
							IC40	1470	1180	1560		
							IC50	1590	1480	1640		
07-7427-3644	Survival		Spearr	nan-Kärber			EC50	2020	1870	2190		
Reproduction	Summary											
Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL		Max	Std E	rr Std Dev	CV%	%Effect	
)	LW	10	34.3	31.8	36.8	27	38	1.09	3.43	10.01%	0.00%	
500		10	32.4	30.9	33.9	29	35	0.653	2.07	6.38%	5.54%	
1000		10	26.6	20.9	32.3	5	33	2.5	7.9	29.72%	22.45%	
1500		10	20.2	16.5	23.9	7	26	1.63	5.16	25.54%	41.11%	
2000		10	2.3	0.0618	4.54	0	10	0.989	3.13	136.03%	93.29%	
2500		10	0	0	0	0	0	0	0		100.00%	
Survival Sumr	nary											
Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E		CV%	%Effect	
)	LW	10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%	
000		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%	
000		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%	
500		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%	
2000		10	0.600	0.231	0.969	0.000	1.000	0.163	0.516	86.07%	40.00%	
2500		10	0.000	0.000	0.000	0.000	0.000	0.000	0.000		100.00%	

Analyst: N QA: SVV

Report Date: Test Code:

20 Aug-18 15:59 (p 2 of 2) 77556 | 09-0694-5539

							1 es	t Code:		77556 0	9-0694-553
Ceriodaphnia S	Survival and			Paci	fic EcoRisi						
Reproduction I	Detail										
Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	27	36	37	34	38	34	34	30	37	36
500		35	34	30	32	33	29	34	34	33	30
1000		26	27	31	27	5	30	33	28	28	31
1500		20	21	22	20	23	7	26	24	21	18
2000		2	1	4	0	4	0	0	0	10	2
2500		0	0	0	0	0	0	0	0	0	0
Survival Detail											
Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
500		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1500		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2000		1.000	1.000	1.000	0.000	1.000	0.000	0.000	0.000	1.000	1.000
2500		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Survival Binom	ials										
Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
500		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
1000		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
1500		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
2000		1/1	1/1	1/1	0/1	1/1	0/1	0/1	0/1	1/1	1/1
2500		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Report Date:

20 Aug-18 16:00 (1 of 1)

Ceriodaphnia Survival and Reproduction Test

Pacific EcoRisk

Test Type: Reproduction-Survival (7d) Protocol: EPA-821-R-02-013 (2002)

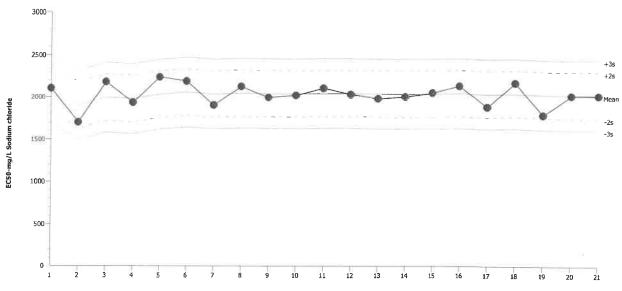
Organism: Ceriodaphnia dubia (Water Flea)

Endpoint: Survival

Material: Sodium chloride

Source: Reference Toxicant-REF

Ceriodaphnia Survival and Reproduction Test



Mean: Sigma:

2027 137.9

Count: CV:

20 6.80%

-2s Warning Limit: +2s Warning Limit:

1751 2303

-3s Action Limit: 1613 +3s Action Limit: 2441

Quality	Control	Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2018	May	15	13:30	2105	78.43	0.5688			16-4268-6120	20-7219-2293
2			16	16:20	1699	-328	-2.378	(-)		20-5222-9935	20-8130-5363
3			22	10:35	2180	152.7	1.107			20-7596-9858	09-4058-4083
4			29	11:37	1932	-94.57	-0.6858			09-8749-9744	04-2627-6300
5		Jun	5	14:08	2236	209.1	1.516			04-5822-6675	02-2081-1071
6			7	11:31	2187	160.2	1.162			08-4916-1928	13-5513-7455
7			12	11:41	1901	-126	-0.914			14-4745-2011	18-9035-3977
8			13	14:25	2125	97.71	0.7086			19-2393-8522	07-5834-3927
9			19	14:34	1993	-34.1	-0.2473			03-7063-4652	04-3563-8944
10			26	16:28	2019	-8.098	-0.05872			09-6580-2317	07-9413-5393
11			27	14:43	2105	78.43	0.5688			03-9707-5652	20-4809-0982
12			28	13:15	2031	4.473	0.03244			16-4401-3277	19-4921-0162
13		Jul	4	9:42	1979	-48.09	-0.3487			13-9510-4137	10-4592-1027
14			10	13:24	2003	-23.9	-0.1733			01-4657-2498	01-5796-5182
15			19	10:56	2050	22.88	0.1659			18-6392-3673	18-4330-1296
16			24	13:59	2133	106.1	0.7691			13-3663-2790	12-3150-8357
17			26	15:50	1882	-145.2	-1.053			01-7685-3194	04-2471-7658
18			31	11:58	2170	142.8	1.035			06-2404-4020	09-7719-1196
19		Aug	7	13:57	1788	-238.9	-1.733			01-0160-7769	18-8978-8811
20			8	9:55	2019	-8.098	-0.05872			01-0572-3154	15-4606-8444
21			9	13:10	2019	-8.098	-0.05872			09-0694-5539	07-7427-3644

Ceriodaphnia Survival and Reproduction Test

Pacific EcoRisk

Test Type: Reproduction-Survival (7d) Protocol: EPA-821-R-02-013 (2002)

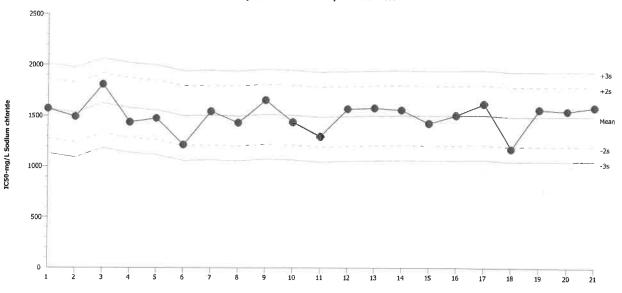
Organism: Ceriodaphnia dubia (Water Flea)

Endpoint: Reproduction

Material: Sodium chloride

Source: Reference Toxicant-REF

Ceriodaphnia Survival and Reproduction Test



Mean: Sigma:

1493 147.1 Count: 20 CV: 9.85%

-2s Warning Limit: 1198 +2s Warning Limit:

1787

-3s Action Limit: 1051

+3s Action Limit: 1934

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2018	May	15	13:30	1572	78.84	0.536			16-4268-6120	12-4013-1950
2			16	16:20	1489	-3.563	-0.02422			20-5222-9935	15-6036-6555
3			22	10:35	1807	314.3	2.137	(+)		20-7596-9858	13-3271-6615
4			29	11:37	1434	-59	-0.4011			09-8749-9744	08-7109-7854
5		Jun	5	14:08	1472	-21.04	-0.143			04-5822-6675	13-8948-8302
6			7	11:31	1212	-281.3	-1.912			08-4916-1928	00-1438-9970
7			12	11:41	1542	49.02	0.3332			14-4745-2011	12-8648-9916
8			13	14:25	1428	-65.03	-0.4421			19-2393-8522	21-4567-7885
9			19	14:34	1652	159.5	1.084			03-7063-4652	11-3261-1315
10			26	16:28	1434	-58.53	-0.3979			09-6580-2317	16-2552-7203
11			27	14:43	1293	-199.5	-1.356			03-9707-5652	10-7898-6671
12			28	13:15	1567	73.9	0.5024			16-4401-3277	16-4152-8097
13		Jul	4	9:42	1575	81.64	0.555			13-9510-4137	19-4211-3444
14			10	13:24	1555	61.82	0.4203			01-4657-2498	02-2185-2355
15			19	10:56	1421	-71.75	-0.4878			18-6392-3673	06-5513-3930
16			24	13:59	1500	7	0.04759			13-3663-2790	13-8151-7318
17			26	15:50	1616	123.4	0.8386			01-7685-3194	13-4137-5261
18			31	11:58	1171	-321.7	-2.187	(-)		06-2404-4020	03-7705-2658
19		Aug	7	13:57	1562	68.64	0.4666			01-0160-7769	01-7843-4848
20			8	9:55	1547	54.1	0.3678			01-0572-3154	07-9535-1554
21			9	13:10	1585	92.2	0.6268			09-0694-5539	21-1613-8729

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

	lient:					oxicant				terial:		Sodiu	ım Ch	lorid	e		Test	Date:	8/9/19
Proj	ect#:	286	694		Γest ID:		77556		Ran	domiz	ation:		0.7	١.		Co	ntrol '	Water:	Mod EPAMH
	Day	р	Н			Cond.	(μS/cm)	Temp				Survi	val / R	Reprod	uction				Axov 0.11
		New	Old	New	Old	New	Old	(°C)	A	В	С	D	E	F	G	Н	I	J	SIGN-OFF
	0	8.00		7.4		346		24.5	0	C	0	0	0	0	0	0	0	0	Date: 8/9/18 New WQ: Test Init.: OX Sol'n Prep: 15 Time: 1316
	1	8.00	-	8-2	74	352	371	25.6	0	0	0	0	0	0	0	0	0	0	Date S/tolle New WQ: TA Counts: MA Sol'n Prep: Old WO: Make Time: 307
	2	7.95	7.86	8.3	7.2	354	373	24.1	0	0	O	0	0	0	0	0	0	0	Date: 8/n/1/8 New WQ: NB Counts: SD Sol'n Prep: SD Old WQ: MHC Time: 1635
Control	3	7.91	7.92	8.2	6.9	363	371	24.6	0	0	0	Ó	0	5	0	0	0	0	Date: 2/11/8 New WQ: SV Counts: CR Soln Prep: 8 Old WO: myt Time: 16/2
er C	4	10.8	7,75	8.2 7	4.5	362	368	24.7	6	6	7	7	7	0	6	7	6	6	Date 1/3/18 New WQ: Counts: TK Sol'n Prep: Old WO: Time: IMIZ
Water	5	7.77	7.81	1.0	7.5	351	367	25.1	11	B	14	13	14	13	13	17	15	13	Date: 3/4/1/4 New WO: NB Counts: 1/4 Sol'n Prep: 1-15 Old WO: BR Time: 16/5
Lab	6	8.25	7,90	6-7	7.7	356	374	24.0	10	17	16	14	17	lb	15	11	الو	17	Date:8/15/18 New WQ: TA Counts: 5D Sol'n Prep: 1/2 Old WQ: DH Time: 1320
	7		1		11.21														Date: New WQ: Counts: Sol'n Prep: Old WQ: Time:
	8																		Date: Old WQ: Term.:
								Total=	27	36	37	34	38	34	34	30	37	36	Mean Neonates/Female = 34.3
	Day	_	Н		О.	Cond. (Temp				Survi	val / R	eprod	uction				RT BATCH NUMBER
		New	Old	New	Old	New	Old	(°C)	A	В	С	D	Е	F	G	Н	I	J	RI BAICH NUMBER
	0	8.00		7.4		1321		24.4	0	C	0	C	0	0	0	0	0	0	280
	1	7-99	7.75	8.3	7.7	1337	1375	52.7	0	0	0	0	0	0	0	0	0	٥	280/281
	2	4.89	7.86	8.4	7.5	1248		24.3	0	O	0	0	0	O	0	0	0	0	28
ل ا	3 -	1.91	7.90	8-1	6.6	1364	1384	24.9	0	Ô	0	0	Ò	5	0	0	0	0	28
500 mg/L	4	7.90	7.79	9,6	6.5	1305	142		5	6	5	6	7	0	7	7	6	5	281
200	5	7,28		8.9	7.8	1318	1350	24.9	12	14	14	11	12	1)	12	11	13	12	25/1
	6	8.15	7.93	7-2	7.8	1257	(400)	24.1	18	14	11	15	14	13	15	lle	14	13	281
	7	*************	1	**************************************		HIADRO CO													
	8				************										34	J - 1			
								Total=	35	34	30	32	33	B29	24	34	33	30	Mean Neonates/Female = 31.4
															\$12118				

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

	lient:				ence To					aterial:		Sodiu			•		Test	Date:	8/9/18
Proje	ect #:	286	594		Гest ID:		77556		Ran	domiz	ation:		2,T,	1		Co	ntrol \	Water:	Mod EPAMH
	Day	_	Н		.O.	Cond. ((μS/cm)	Temp				Survi	val / F	Reprod	uction	1			
		New	Old	New	Old	New	Old	(°C)	A	В	С	D	Е	F	G	Н	I	J	
	0	7.89		7.9		2264		24.7	0	0	0	0	0	0	0	0	0	C	
	1	7.99	7.74	8.5	7.5	2225	2366	57	0	0	0	0	0	0	0	0	0	0	
	2	7.86	7.84	8.5	7.6	2248	2374	24.1	0	0	O	0	٥	6	0	0	0	0	
	3	7.90	7.85	8.1	7.5	2292	2357	24.7	0	Ó	0	0	3	6	0	0	0	0	
mg/L	4	7.87		8.8	1	2302			5	5	5	5	0	0	7	6	3	7	
1000	-5	7,77	7.80	9,4	7.9		2367	2. 0	13	10	13	11	2	11	12	10	11	12	
	6	8.09	100 DC	7.6	7.8			24.0	8	12	13	U	0	13	14	12	14	12	
	7													U				10	
	8																		
						2		Total=	260	27	31	27	5	30	33	28	28	31	Mean Neonates/Female = 26.6
	Day	p	Н	D.	.O.	Cond. ((μS/cm)	Temp				Survi	val / F	eprod	uction				
		New	Old	New	Old	New	Old	(°C)	Α	В	С	D	Е	F	G	Н	I	J	
	0	7.85		8.2		3199		24.7	0	0	0	O	C	0	0	0	0	O	
	1	7-98	7.71	8.7	7.5	3240	3324	25.8	٥	0	٥	0	0	0	0	0	0	0	
	2	7.84	7.81	8.6	7.4	the second	3376		6	0	0	0	0	0	0	0	0	0	
	3	7.40	7.76	8.3	6.9	3200	3341	24.7	Ô	0	0	0	0	3	0	0	2	6	
mg/L	4	1.84	7.76	9.1	6,6	3107	3/83	24.6	3	3	3	1	1	0	ч	ч	8	7	
500	5	718	7.84	9.5	7.9		3357	01.0	7	9	8	10	9	0	9	10	8	7	
-	6	8.04		7.9	7.7	3080	3723	24.1	10	9	11	a	13	4	13	10	11	9	
	7								147		-11		19		19	(U	11	1	
	8																		
								Total=	20	21	22	20	23	7	26	24	21	18	Mean Neonates/Female = 20.2

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

	lient:				ence To	xicant				terial:			ım Ch		:		Test	Date:	8/9/18
Proj	ect #:	280	594	-	Γest ID:		77556		Ran	domiz	ation:	10	<u>5.7.</u>	1		Co	ntrol \	Water:	Mod EPAMH
	Day		H		O.		(µS/cm)					Survi	val / F	eprod	uction				
		New	Old	New	Old	New	Old	(°C)	Α	В	С	D	Е	F	G	Н	I	J	
	0	7.82		8.6		4146		24.8	0	0	0	0	0	0	O	O	0	0	
	1	7.96	7.72	8.9	7.7	4149	4379	25.6	0	0	0	×/6	0	0	×/0	X/0	0	0	
	2	1.83	7.79	8.7	7.5	4084	4445	24.4	0	0	0	-	0	0	-	-	0	0	
	3	7.89	7:71	8.6	7		4275	25.0	Ö	0	0	-	0	×/6	_		0	0	
2000 mg/L	4	7.83	1	9.3	-		3952		Ò	0	0	_	0				0	0	
90	5	7,78	7.81			-	4236	1.00	2	1	0	_	0	_			3	Z	
~	6	7.99		8.3	7.6	4065			0-	-0	4	_	4	_			7		
	7	1.97		8.5	1.6	406)	90.0	24.1		0	4		7	-			1	0	
							-							-	-	-			
	8														_				
CT 10-1								Total=	2		4	×/0		*/0		×/v	10	2	Mean Neonates/Female = 2.3
	Day	New P	H Old	D. New	O.	Cond. (μS/cm)		A	D		_	val / R	_	_				
	0		Old		Old		Old	(°C)	A O	В	С	D	E	F	G	Н	I	J	
	1	7.79		8.9		5037		24.6		0	0	0	0	0	0	0	0	0	
	_	7.94	7.71	9.2	7.5	5042	5215	25.4	×/0	1/0	1/0	X/6	X/0	1/2	1/0	2/0	1/0	1/0	
	2	_	-	-	-	-	-		-	-	_	`	-	-	~	-	,	-	
L	3	_	-	-	-	-	-	_	,	-	-		-	-	-	-	-	-	
/gm	4	-	-	-	-	-	-	-	-		•	=	-	-		-	_	F	
2500 mg/L	5	-	1	_	1	-	-	-	,	(-)	1	-	-	_	-	_	- 1	-	
	6	_	_	-	-	-1	-		-	1	,	_	-	-	-	_	-	F	
	7		-	721			/												
	8						1. 1												
								Total=	1/6	4/1	×/0	m/o	%	2/0	×/6	1/0	×/6	2/0	Mean Neonates/Female = 0.0

Appendix E

Test Data and Summary of Statistics for the Evaluation of the Toxicity of the Calleguas Creek Ambient Waters to *Hyalella azteca*

CETIS Summary Report

Hyalella Survival and Growth Test

Report Date: Test Code: 28 Aug-18 14:57 (p 1 of 1) 79260 | 14-3407-2701

Pacific EcoRisk

A Landa Carlo

Batch ID: 17-6135-1557 Test Type: Survival Analyst: Jessica Okutsu 09 Aug-18 15:47 EPA/600/R-99/064 M Start Date: Protocol: Diluent: Laboratory Water Ending Date: 19 Aug-18 12:47 Brine: Species: Hyalella azteca Not Applicable

Duration: 9d 21h Source: Aquatic Biosystems, CO Age: 9

Sample ID:12-6507-7001Code:68-WOOD-119Client:Larry Walker AssociatesSample Date:08 Aug-18 15:20Material:Ambient WaterProject:29192

Sample Date: 08 Aug-18 15:20 Material: Ambient Water Project: 29192
Receipt Date: 09 Aug-18 07:30 Source: Calleguas Creek

Sample Age: 24h (1.5 °C) Station: WOOD

Analusia ID		O	
Single Comp	parison Summary		

Analysis ID Endpoint Comparison Method P-Value Comparison Result

19-9809-0156 Survival Rate Wilcoxon Rank Sum Two-Sample Test 1.0000 Culture Control passed survival rate

Multiple Comparison Summary

N	Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD /
	11-8768-6983	Survival Rate	Steel Many-One Rank Sum Test	100	> 100	n/a	1	11.7%

Survival Rate	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	cu	5	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
0	LW	5	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
6.25		5	0.967	0.874	1.000	0.833	1.000	0.033	0.075	7.71%	3.33%
12.5		5	0.980	0.924	1.000	0.900	1.000	0.020	0.045	4.56%	2.00%
25		5	0.980	0.924	1.000	0.900	1.000	0.020	0.045	4.56%	2.00%
50		5	0.920	0.758	1.000	0.700	1.000	0.058	0.130	14.17%	8.00%
100		5	0.900	0.724	1.000	0.700	1.000	0.063	0.141	15.71%	10.00%

Survival Rate	Detail					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	cu	1.000	1.000	1.000	1.000	1.000
0	LW	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	0.833	1.000
12.5		1.000	1.000	0.900	1.000	1.000
25		1.000	1.000	0.900	1.000	1.000
50		1.000	0.700	0.900	1.000	1.000
100		1.000	0.800	0.700	1.000	1.000

Survival Rate I	Binomials						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	cu	10/10	10/10	10/10	10/10	10/10	
0	LW	10/10	10/10	10/10	11/11	10/10	
6.25		10/10	10/10	10/10	10/12	10/10	
12.5		10/10	10/10	9/10	10/10	10/10	
25		10/10	10/10	9/10	10/10	10/10	
50		10/10	7/10	9/10	10/10	10/10	
100		10/10	8/10	7/10	10/10	10/10	

Analyst: Jo QA:

CETIS Analytical Report

Report Date: Tes

21 Aug-18 09:22 (p 1 of 3) 01

, , , , , , , , , , , , , , , , , , , ,	-	 9	. •		- (12	•	٠.	,
st Code:		79	260	14	-340	7	-27	70

Hyalel								lest				
	la Survi	ival and Grow	th Test								Pac	ific EcoRis
Analy: Analy:	sis ID: zed:	19-9809-015 21 Aug-18 9:			urvival Rate onparametric	-Two Sampi	e		IS Version		1.9.2	
Data 1	ransfor	m	Alt Hyp					Comparis	son Result	t		PMSD
Angula	ar (Corre	cted)	C > T							ed survival r	ate	2.54%
Wilco	xon Ran	ık Sum Two-S	ample Test									
Contro		vs Contro		Test Sta	t Critical	Ties DF	P-Type	P-Value	Decisio	n(a:5%)		
	ater Cor		Control	27.5	n/a	1 8	Exact	1.0000		nificant Effec	t	
ANOV	A Table											
Sourc	e	Sum So	quares	Mean So	quare	DF	F Stat	P-Value	Decision	n(a:5%)		
3etwe	∋n	5.547E-	06	5.547E-0		1	1	0.3466		nificant Effec	t	
Error		4.437E-		5.547E-0)6	8						
Total		4.992E-	05			9						
Distrib	utional	Tests										
Attribu	ıte	Test				Test Stat	Critical	P-Value	Decision	η(α:1%)		
√arian	ces		Equality of V			7.11	11.3	0.0285	Equal Va			
√arian	ces	Mod Lev	ene Equality	of Variance	e Test	1	13.7	0.3559	Equal Va	ariances		
Distrib	ution	Shapiro-	-Wilk W Norr	mality Test		0.625	0.741	1.1E-04	Non-Nor	mal Distributi	on	
Surviv	al Rate	Summary										
Conc-	%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
	%	Code	Count 5	Mean 1.000	95% LCL 1.000	95% UCL 1.000	Median 1.000	1.000	1.000		CV% 0.00%	
)	%									0.000 0.000	0.00% 0.00%	%Effect 0.00% 0.00%
)		cu	5 5	1.000 1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%
Conc- ⁽) Angula	ar (Corre	cu LW	5 5	1.000 1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00% 0.00%	0.00%
) Angula	ar (Corre	cu LW ected) Transfo	5 5 ormed Sumi	1.000 1.000 mary	1.000 1.000	1.000 1.000	1.000 1.000	1.000	1.000 1.000	0.000	0.00%	0.00%
Angula Conc- ^c	ar (Corre	cu LW ected) Transfo Code	5 5 ormed Sumi Count	1.000 1.000 mary Mean	1.000 1.000 95% LCL	1.000 1.000 95% UCL	1.000 1.000 Median	1.000 1.000 Min	1.000 1.000 Max	0.000 0.000 Std Err	0.00% 0.00%	0.00% 0.00% %Effect
) Angula	ar (Corre	cu LW ected) Transfo Code cu	5 5 ormed Sumi Count 5	1.000 1.000 mary Mean 1.41	1.000 1.000 95% LCL 1.41	1.000 1.000 95% UCL 1.41	1.000 1.000 Median 1.41	1.000 1.000 Min 1.41	1.000 1.000 Max 1.41	0.000 0.000 Std Err	0.00% 0.00% CV% 0.00%	0.00% 0.00% %Effect 0.00%
) Angula Conc- ^c)	ar (Corre	cu LW ected) Transfo Code cu LW	5 5 ormed Sumi Count 5	1.000 1.000 mary Mean 1.41 1.41	1.000 1.000 95% LCL 1.41 1.41	1.000 1.000 95% UCL 1.41	1.000 1.000 Median 1.41	1.000 1.000 Min 1.41	1.000 1.000 Max 1.41	0.000 0.000 Std Err	0.00% 0.00% CV% 0.00%	0.00% 0.00% %Effect 0.00%
) Angula Conc- ^c)		cu LW ected) Transfo Code cu	5 5 ormed Sumi Count 5	1.000 1.000 mary Mean 1.41	1.000 1.000 95% LCL 1.41 1.41	1.000 1.000 95% UCL 1.41	1.000 1.000 Median 1.41 1.41	1.000 1.000 Min 1.41	1.000 1.000 Max 1.41	0.000 0.000 Std Err	0.00% 0.00% CV% 0.00%	0.00% 0.00% %Effect 0.00%
) Angula Conc- ^c)	ccs	cu LW ected) Transfo Code cu LW	5 5 ormed Sumi Count 5	1.000 1.000 mary Mean 1.41 1.41	1.000 1.000 95% LCL 1.41 1.41	1.000 1.000 95% UCL 1.41	1.000 1.000 Median 1.41 1.41	1.000 1.000 Min 1.41	1.000 1.000 Max 1.41	0.000 0.000 Std Err	0.00% 0.00% CV% 0.00%	0.00% 0.00% %Effect 0.00%
) Angula Conc- ^c)		cu LW ected) Transfo Code cu LW	5 5 ormed Sumi Count 5	1.000 1.000 mary Mean 1.41 1.41	1.000 1.000 95% LCL 1.41 1.41	1.000 1.000 95% UCL 1.41	1.000 1.000 Median 1.41 1.41	1.000 1.000 Min 1.41	1.000 1.000 Max 1.41	0.000 0.000 Std Err	0.00% 0.00% CV% 0.00%	0.00% 0.00% %Effect 0.00%
Angula Conc-G	ccs	cu LW ected) Transfo Code cu LW	5 5 ormed Sumi Count 5	1.000 1.000 mary Mean 1.41 1.41	1.000 1.000 95% LCL 1.41 1.41	1.000 1.000 95% UCL 1.41 1.42	1.000 1.000 Median 1.41 1.41	1.000 1.000 Min 1.41	1.000 1.000 Max 1.41	0.000 0.000 Std Err	0.00% 0.00% CV% 0.00%	0.00% 0.00% %Effect 0.00%
Angula Conc-S	ar (Corre	cu LW ected) Transfo Code cu LW	5 5 ormed Sumi Count 5	1.000 1.000 mary Mean 1.41 1.41	1.000 1.000 95% LCL 1.41 1.41	1.000 1.000 95% UCL 1.41 1.42	1.000 1.000 Median 1.41 1.41	1.000 1.000 Min 1.41	1.000 1.000 Max 1.41	0.000 0.000 Std Err	0.00% 0.00% CV% 0.00%	0.00% 0.00% %Effect 0.00%
Angula Conc-		cu LW ected) Transfo Code cu LW	5 5 ormed Sumi Count 5	1.000 1.000 mary Mean 1.41 1.41	1.000 1.000 95% LCL 1.41 1.41	1.000 1.000 95% UCL 1.41	1.000 1.000 Median 1.41 1.41	1.000 1.000 Min 1.41	1.000 1.000 Max 1.41	0.000 0.000 Std Err	0.00% 0.00% CV% 0.00%	0.00% 0.00% %Effect 0.00%
angula Conc- ^C Graphi		cu LW ected) Transfo Code cu LW	5 5 ormed Sumi Count 5	1.000 1.000 mary Mean 1.41 1.41	1.000 1.000 95% LCL 1.41 1.41	1.000 1.000 95% UCL 1.41 1.42	1.000 1.000 Median 1.41 1.41	1.000 1.000 Min 1.41	1.000 1.000 Max 1.41	0.000 0.000 Std Err	0.00% 0.00% CV% 0.00%	0.00% 0.00% %Effect 0.00%
Angula Conc- ⁴		cu LW ected) Transfo Code cu LW	5 5 ormed Sumi Count 5	1.000 1.000 mary Mean 1.41 1.41	1.000 1.000 95% LCL 1.41 1.41	1.000 1.000 95% UCL 1.41 1.42	1.000 1.000 Median 1.41 1.41 0.006 0.005 0.004	1.000 1.000 Min 1.41	1.000 1.000 Max 1.41	0.000 0.000 Std Err	0.00% 0.00% CV% 0.00%	0.00% 0.00% %Effect 0.00%
Angula Conc-G		cu LW ected) Transfo Code cu LW	5 5 ormed Sumi Count 5	1.000 1.000 mary Mean 1.41 1.41	1.000 1.000 95% LCL 1.41 1.41	1.000 1.000 95% UCL 1.41 1.42	1.000 1.000 Median 1.41 1.41 0.006 0.005 0.004	1.000 1.000 Min 1.41	1.000 1.000 Max 1.41	0.000 0.000 Std Err	0.00% 0.00% CV% 0.00%	0.00% 0.00% %Effect 0.00%
Angula Conc- ^c)		cu LW ected) Transfo Code cu LW	5 5 ormed Sumi Count 5	1.000 1.000 mary Mean 1.41 1.41	1.000 1.000 95% LCL 1.41 1.41	1.000 1.000 95% UCL 1.41 1.42	1.000 1.000 Median 1.41 1.41 0.006 0.005 0.004	1.000 1.000 Min 1.41	1.000 1.000 Max 1.41	0.000 0.000 Std Err	0.00% 0.00% CV% 0.00%	0.00% 0.00% %Effect 0.00%
Angula Conc- ^c)	CS 1.0 0.9 0.7 0.6 0.5 0.4	cu LW ected) Transfo Code cu LW	5 5 ormed Sumi Count 5	1.000 1.000 mary Mean 1.41 1.41	1.000 1.000 95% LCL 1.41 1.41	1.000 1.000 95% UCL 1.41 1.42	1.000 1.000 Median 1.41 1.41 0.006 0.005 0.004	1.000 1.000 Min 1.41	1.000 1.000 Max 1.41	0.000 0.000 Std Err	0.00% 0.00% CV% 0.00%	0.00% 0.00% %Effect 0.00%
Angula Conc- ⁴	1.0 0.9 0.8 0.7 0.6 0.5 0.4 0.3	cu LW ected) Transfo Code cu LW	5 5 ormed Sumi Count 5	1.000 1.000 mary Mean 1.41 1.41	1.000 1.000 95% LCL 1.41 1.41	1.000 1.000 95% UCL 1.41 1.42	1.000 1.000 Median 1.41 1.41 0.006 0.005 0.004 0.003 0.002 0.001 0.000 -0.001	1.000 1.000 Min 1.41	1.000 1.000 Max 1.41	0.000 0.000 Std Err	0.00% 0.00% CV% 0.00%	0.00% 0.00% %Effect 0.00%

CETIS Analytical Report

Report Date:

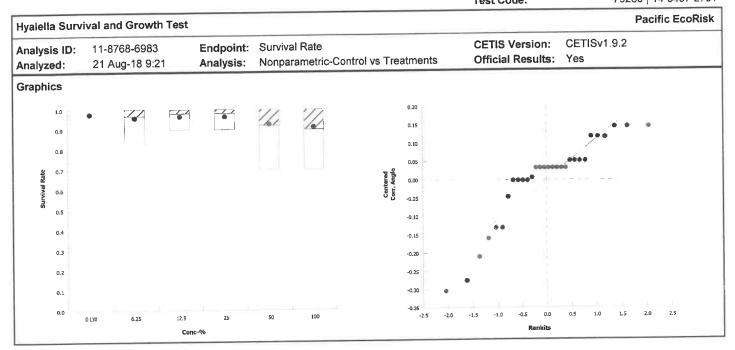
21 Aug-18 09:22 (p 2 of 3)

Test Code: 79260 | 14-3407-2701

Hyalella Surviv	al and Growl	h Test									Paci	fic EcoRis
Analysis ID:	11-8768-6983	B En	dpoint: Su	vival Rate				CETI	S Version:	CETISV	1.9.2	
Analyzed:	21 Aug-18 9:	21 A n	alysis: No	nparametric	-Control	vs T	reatments	Offic	ial Results	: Yes		
Data Transform	n	Alt Hyp						NOEL	LOEL	TOEL	TU	PMSD
Angular (Correc	ted)	C > T						100	> 100	n/a	1	11.73%
Steel Many-On	e Rank Sum	Test										
Control v	s Conc-%	0	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision	(α:5%)		
Lab Water Cont	r 6.25		25	16	1	8	Asymp	0.6353	Non-Sign	ificant Effec	t	
	12.5		25	16	1	8	Asymp	0.6353	Non-Sign	ificant Effec	t	
	25		25	16	1	8	Asymp	0.6353	Non-Sign	ificant Effec	t	
	50		22.5	16	1	8	Asymp	0.3937	Non-Sign	ificant Effec	t	
	100		22.5	16	1	8	Asymp	0.3937		ificant Effec		
ANOVA Table												
Source	Sum Sq	uares	Mean Squ	are	DF		F Stat	P-Value	Decision	(α:5%)		
Between	0.078799	99	0.01576		5		0.951	0.4666	Non-Sign	ificant Effec	t	
Error	0.397593	3	0.0165664		24							
Total	0.476393	3			29		-					
Distributional 7	Tests											
Attribute	Test				Test S	tat	Critical	P-Value	Decision	(α:1%)		
Variances	Bartlett E	quality of V	ariance Test		29.7		15.1	1.7E-05	Unequal \	/ariances		
Distribution	Shapiro-	Wilk W Norr	nality Test		0.859		0.903	9.5E-04	Non-Norn	nal Distribut	on	
Survival Rate S	Summary											
Conc-%	Code	Count	Mean	95% LCL	95% U	CL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	5	1.000	1.000	1.000		1.000	1.000	1.000	0.000	0.00%	0.00%
6.25		5	0.967	0.874	1.000		1.000	0.833	1.000	0.033	7.71%	3.33%
		5	0.980	0.924	1.000		1.000	0.900	1.000	0.020	4.56%	2.00%
12.5			0.000									0.000/
		5	0.980	0.924	1.000		1.000	0.900	1.000	0.020	4.56%	2.00%
25		5 5			1.000 1.000		1.000 1.000	0.900 0.700	1.000 1.000	0.020 0.058	4.56% 14.17%	2.00% 8.00%
25 50			0.980	0.924								
12.5 25 50 100 Angular (Correc	cted) Transfo	5 5	0.980 0.920 0.900	0.924 0.758	1.000		1.000	0.700	1.000	0.058	14.17%	8.00%
25 50 100 Angular (Correc	cted) Transfo Code	5 5	0.980 0.920 0.900	0.924 0.758	1.000	CL	1.000	0.700	1.000	0.058	14.17%	8.00%
25 50 100 Angular (Correc Conc-%	•	5 5 rmed Sumr	0.980 0.920 0.900 nary	0.924 0.758 0.724	1.000	CL	1.000	0.700 0.700	1.000 1.000	0.058 0.063	14.17% 15.71%	8.00% 10.00%
25 50 100 Angular (Correc Conc-%	Code	5 5 rmed Sumr Count	0.980 0.920 0.900 nary Mean	0.924 0.758 0.724 95% LCL	1.000 1.000 95% U	CL	1.000 1.000 Median	0.700 0.700 Min	1.000 1.000 Max	0.058 0.063 Std Err	14.17% 15.71% CV%	8.00% 10.00% %Effect
25 50 100 Angular (Correc Conc-% 0 6.25	Code	5 5 rmed Sumr Count 5	0.980 0.920 0.900 nary Mean 1.41	0.924 0.758 0.724 95% LCL 1.41	1.000 1.000 95% U	CL	1.000 1.000 Median 1.41	0.700 0.700 Min	1.000 1.000 Max 1.42	0.058 0.063 Std Err 0.00149	14.17% 15.71% CV% 0.24%	8.00% 10.00% %Effect 0.00%
25 50 100 Angular (Correct Conc-% 0 6.25 12.5	Code	5 5 rmed Sumr Count 5 5	0.980 0.920 0.900 Mean 1.41 1.36	0.924 0.758 0.724 95% LCL 1.41 1.21	1.000 1.000 95% U	CL	1.000 1.000 Median 1.41 1.41	0.700 0.700 Min 1.41 1.15	1.000 1.000 Max 1.42 1.41	0.058 0.063 Std Err 0.00149 0.0524	14.17% 15.71% CV% 0.24% 8.61%	8.00% 10.00% %Effect 0.00% 3.81%
25 50 100	Code	5 5 rmed Sumr Count 5 5 5	0.980 0.920 0.900 mary Mean 1.41 1.36 1.38	0.924 0.758 0.724 95% LCL 1.41 1.21 1.29	1.000 1.000 95% U 1.42 1.51 1.47	CL	1.000 1.000 Median 1.41 1.41 1.41	0.700 0.700 Min 1.41 1.15 1.25	1.000 1.000 Max 1.42 1.41 1.41	0.058 0.063 Std Err 0.00149 0.0524 0.0326	14.17% 15.71% CV% 0.24% 8.61% 5.28%	8.00% 10.00% %Effect 0.00% 3.81% 2.41%

CETIS Analytical Report

Report Date: Test Code: 21 Aug-18 09:22 (p 3 of 3) 79260 | 14-3407-2701



10 Day Acute Hyalella azteca Toxicity Test Data

Client:	LWA-Calleguas (Creek	Organism Log#:	11127	Age: 8-9d
Test Material:	Controls		Organism Supplier:	AB	5
Test ID#:	- Project #:	29192	Control/Diluent:	SAM 5 (Cor	iductivity Adjusted)
Test Date:	8/9/18		Control Water Batch:	31	+3

Test Date:		8/9	118			Control Wat	er Batch:			3	43	
Treatment	Temp		Н	_	(mg/L)	Conductivity			ve Organ			SJGN-OFF
Lab Control	(°C)	new	old	new	old	(µS/cm)	A	В	С	D	Е	N 8/9/18
(Cond. Adj.)	13.2	7.79		7.3		4240	10	10	10	178	10	Sample In 50515
Culture Control	22.4	7.96		7.7		398	w	(0	10	10	10	Test Solution Prep: 6V New WQ: 7F
Meter ID	1(3)	PH 19		RDIO		E(13						Initiation Time: 1547 Initiation Signoff: NB
Lab Control (Cond. Adj.)	22.0				7.7		10	10	10	100	10	Date: 3/101/7 Count Time: 0Gul
Culture Control	22.0				7.6		W	10	10	10	10	Count Signoff: All
Meter ID	110A				K-Dil							
Lab Control (Cond. Adj.)	22,9				6,0		lo	10	10	100	10	Count Time: 0817
Culture Control	22,9	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.000000000000000000000000000000000000		6.8 1013		w	lo	ĮΟ	lo	(0	Count Signoff: R6 Old WQ: RAP
Meter ID Lab Control	TIOF											Peed: 126 Date: 8/12/18
(Cond. Adj.)	23.1		・		65		10	10	10	11	10	Count Time: 1021
Culture Control Meter ID	23.1 814				6.4 ROU		10	10	10	10	(0	Old WQ: 2 M
Lab Control	72.1						22233333	21313111111	81115411111	201101222	3000000	Date: 6/3/18
(Cond. Adj.)	23.3				2.6		10	10	10	11	10	Count Time:
Culture Control	23.1				2.7		10	10	10	10	10	Old WO. 75
Meter ID Lab Control	81A				ROIG							Date: 3/1141.0
(Cond. Adj.)	22.9	7.82	7.83	8.6	8.	4236	10	10	10	11 10 10	10	Date: 8/14/18 Sample ID:
Culture Control	23.0	7.93	7.84	8.5	7.8	411	10	10	10	10	10	Test Solution Prep: US New WQ: 62
					M			**************************************				Renewal Time: 1656 Renewal Signoff: Sm(
Meter ID	404	PM25	PHZ	8-411	RPIL	GCII						Old WQ: KL
Lab Control (Cond. Adj.)	23.1		2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	W.Y. A & & & & & & & & & & & & & & & & & &	6.5		io	10	10	n	10	Count Time: 102c
Culture Control	23.1				6.6		10	10	jo	10	10	Count Signoff: Se Old WQ: DH
Meter ID	LIDA				ROIL							Feed: K
Lab Control (Cond. Adj.)	23.3				5.2		10	10	10	11	10	Date: 8116/18 Count Time: 1420
Culture Control	233				4.8		10	10	10	10	10	Count Signoff: SV
Meter ID	434				RD12							
Lab Control (Cond. Adj.)	23.4				5.0		10	10	10	11	10	Date: 8/17/18 Count Time: /0/20
Culture Control	23.3		### WEST OF THE PROPERTY OF TH		4.1		10	10	10	10	10	Count Signoff: TO Old WQ: SMC
Meter ID	107A				2010							Feed: JO
Lab Control (Cond. Adj.)	22.7				7.5		(0)	10	10	11	10	Date: 8/18/18 Count Time: 1637
Culture Control	22.4				7.5		10	10	10	07	10	Count Signoff: April
	1074			4 4 4 4	RDII							
Lab Control (Cond. Adj.)	23.3		7.78		7.6	4879	10	10	10	11	10	Date: 3 19 18 Termination Time: 24
Culture Control	23.7		7.82		7.7	493	10	10	10	10	10	Termination Signoff: Old WQ:
Meter ID	SIA		PH24		POIL	ECID						

228

iwa

23.1

23.2

23.5

236

33.0

810

100%

Meter ID

Lab Control

(Cond. Adj.)

6.25%

12.5%

25%

50%

100%

Meter ID

			10 Da	y Acut	e <i>Hyalel</i>	la azte	ca T	oxicit	y Tes	t Dat	a			
Client:		LWA-	Callegua	s Creek			Organis	m Log#:	10	27		Age:	8.90	Ł
Test Material:			1P-68-W				_	Supplier:			BS	- 1.60.		
Test ID#:		260	Project #:		192		_	/Diluent:	_		-	nductivi	ty Adjusted	d)
Test Date:		8/9/18	3			Cont	trol Wate	er Batch:				34	3	
	- T													
Treatment	Temp (°C)	new	H	D.O.	(mg/L)	Conduc (µS/c		A	# Li	ve Orgar C	D	E	SIG	N-OFF
Lab Control (Cond. Adj.)	23.2	7.79		7.3		424	0	10	10	10	11	w	Date: Sample ID:	9/16
6.25%	22,3	7.94		7-8		422	1	lo	10	10	12/	10	Test Solution New WQ:	n Prep: B∨
12.5%	22.3	8.10		7.9		42	90	10	10	10	10	10	Initiation Ti Initiation Si	me: 1547 gnoff: NB
25%	22.3	8.26		8-1		428		10	10	lo	10	10		
50%	22,4	8.39		8.4		432	10	0)	10	(0	10	16	######################################	
100%	22.4	8.47		10.4		421	10	10	10	10	10	10		A STANDARD S
Meter ID	H-514	PH19		RDIO		E(/)								
Lab Control (Cond. Adj.)	22.0				7.7			W	w	10	Work	10	Date: Count Time:	0046
6.25%	22.0				7.4			10	10	10	12 has	10	Count Signo Old WQ: 5	ff: LOX
12.5%	22.0				7.6			io	10	10	10	10	PART OF THE PART O	
25%	22.0				7			10	10	10	10	10		
50%	22.1				8.4			10	10	10	10	10		
100%	22.0				8.2			10	W	10	w	10		
Meter ID	110#				ROIZ							311	i	
Lab Control (Cond. Adj.)	22.9				6.0	M M C C C C C M M M M C C C C C C C C C		lo	w	lυ	10	io	Date: 8/10 Count Time:	12817
6.25%	22.9				5.1			10	10	lo	12	10	Count Signor	fin /
12.5%	228				54			(0	lo	lo	10	10	Feed: P.6	
25%	21.8				5.4			W	10	lo	10	lo	A CONTRACTOR OF THE CONTRACTOR	
50%	22.9				5.5			10	10	U	101	lo		

10

10

10

10

10

10

10 9

10

O

10 10

(0

(0)

9

lu

19

10

(5

10

Co

10

(0)

10 10

10

10

10

(0

10

6)

10

Date: 8/12/18
Count Time: 102/
Count Signoff: 3V

Old WO ZA

5.8

RD13

6,4

6.5

6.2

ROU

10 Day Acute Hyalella azteca Toxicity Test Data

Client		LWA	-Callegua	as Creek		Organis	m Log#:	/_	27		Age:	8-91
Test Material:		CCWTN	AP-68-W	OOD-1	19	Organism :	Supplier:			4B5	_	
Test ID#:	79	260	Project #:	29	192	Control	/Diluent:		SA	M 5 (Co	onductiv	ity Adjusted)
Test Date:		8/9/	18			Control Wat	er Batch:			3	343	
	Temp	T T	Н	D.O.	(mg/L)	Conductivity		# Li	ve Отдал	isms		1
Treatment	(°C)	new	old	new	old	(μS/cm)	A	В	С	D	Е	SIGN-OFF
Lab Control (Cond. Adj.)	23.3				2.6		10	10	10	11	01	Date: 8/13/18 Count Time: 1024
6.25%	23.5				2.5		io	(0	10	10	10	Count Signoff: 130
12.5%	23.5				2.9		10	10	9	10	10	Feed:
25%	23.6				3.1		10	10	10	10	(D	
50%	23.5				3.3		10	9	10	(0	10	
100%	23.3				2.9		10	8	8	10	10	
Meter ID Lab Control	81A				RPIO							Date: 9/111/0
(Cond. Adj.)	22.9	7.82	7.83	8.6	8.1	4236	10	10	10	11	10	Sample ID: SOS 5 Test Solution Prep: [-2
6.25%	22.9	7.99	7.80	8.8	7.7	4258	10	10	10	10	10	New WQ: EP
12.5%	23.0	8.17	7.90	8.8	7.8	4282	10	10	9	10	10	Renewal Signoff: SMC
25%	23.1	8.28	8,61	9.0	8.0	4325	io	10	10	10	10	Old WO: XC
50%	23.1	8.40	8.08	9.2	7.8	4322	10	9	10	10	10	
100%	23.0	8.48	8.32 PHZS	10.1	80	4205	10	8	8	10	10	
Meter ID Lab Control	40A	11175	1000	Pall	KDA	ECU						Date: 8 115 18
(Cond. Adj.)	23.1				6.5		10	19	10	i	10	Count Time: 1020
6.25%	23.1				7.2		10	10	10	10	10	Old WQ: DH
12.5%	23.2				7.4		ю	10	9	0	10	
25%	23.3				7,2		10	19	10	0	10	
50%	23.1				7.2		10	9	10	10	10	
100%	23.2				7.3		10	8	8	10	10	
Meter ID Lab Control	404				ROII							Date: β/16/18
(Cond. Adj.)	23.3				5,2		10	10	10	11	10	Count Signoff: 57°
6.25%	23.3				4.8		0	10	10	10	10	Old WO () //
12.5%	23.3		AND CONTROL OF THE PROPERTY OF		515		10	10	9	10	10	
25%	23.4				5.6		10	10	10	10	10	
50%	13.3				5.6		10	9	9	10	10	
100%	233				5.8		lò	8	8	ĺb	10	
Meter ID	40 A				KOID							

10 Day Acute Hyalella azteca Toxicity Test Data

Client:	LW.	A-Calleguas (Creek	Organism Log#:	11127 Age:	8-91
Test Material:	CCWT	Г МР-68-WO	OD-119	Organism Supplier:	AB5	
Test ID#:	79260	Project #:	29192	Control/Diluent:	SAM 5 (Conductiv	ity Adjusted)
Test Date:	8/	9/10		Control Water Batch:	343	

Test Date	-	8/7/	10			Control Wat	er Batch:	_		2	43	
Treatment	Temp		Н		(mg/L)	Conductivity			ve Organ			SIGN-OFF
	(°C)	new	old	new	old	(μS/cm)	A	В	С	D	Е	
Lab Control (Cond. Adj.)	23 4				5.0		10	10	10	/1	10	Count Time: 1020
6.25%	23.2				4.3		10	10	10	10	10	Count Signoff: J.C.
12.5%	23.5				4.5		10	10	9	10	10	Feed: To
25%	23,5				4.6		10	10	10	10	10	
50%	23.4				4.9		10	7	9	10	10	
100%	23.3				4.5		10	8	7	10	10	
Meter ID	1079			1 + + + .	PD10			* * *				
Lab Control (Cond. Adj.)	22.7				7.5		10	10	10	1(10	Date: 8/15/10 Count Time: 163
6.25%	22.7				7.6		10	10	10	10	10	Count Signoff: Account Signoff: Old WQ:
12.5%	22.9		7.5 E. C.	A TOTAL OF THE PROPERTY OF THE	7.7		10	10	9	10	10	
25%	22.8		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	M 1 M 1 M 1 M 1 M 1 M 1 M 1 M 1 M 1 M 1	7.8		10	10	9	10	10	
50%	22.7				7.7		10	ì	9	10	10	
100%	226				7.7		10	8	7	10	10	PART OF THE PART O
Meter ID	107A				ROIL			* * *				
Lab Control (Cond. Adj.)	23.3		7.78		7.6	4879	10	10	10	11	10	Date: \$ 19 19 Termination Time: 120
6.25%	23.4		7.82		7.7	4758	10	10	10	10	10	Termination Signoff: Old WQ:
12.5%	23.6		7.93		7.7	4931	10	10	9	10	10	
25%	23.8		7.81		6.7	5006	10	10	9	10	10	
50%	23.5		8.15		7.5	5030	10	7	9	10	10	
100%	23.4		8.32		7.6	4862	10	8	7	10	10	
Meter ID	SIA		PH24		RAIL	ECIO						

Appendix F

Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the *Hyalella azteca*

CETIS Summary Report

Report Date:

19 Aug-18 09:59 (p 1 of 1)

Test Code:

79270 | 14-1761-7282

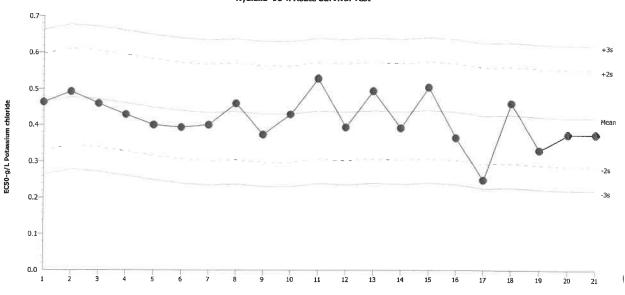
								rest code.		19210 12	1701-72
Hyalella 96-h	n Acute Surviva	al Test								Pacifi	ic EcoRi
Batch ID:	07-1269-3570	T	est Type:	Survival (96h)				Analyst:	Bella Volpatti		
Start Date:	09 Aug-18 17:	00 P	rotocol:	EPA-821-R-02	-012 (2002)			Difuent:	Laboratory Wa	ter	
Ending Date:	13 Aug-18 16:	05 S	pecies:	Hyalella azteca	ı			Brine:	Not Applicable		
Duration:	95h	S	ource:	Aquatic Biosys	tems, CO			Age:	9		
Sample ID:	05-5893-1130	С	ode:	KCI				Client:	Reference Toxi	cant	
Sample Date:	: 09 Aug-18 17:	00 M	laterial:	Potassium chlo	ride			Project:	29293		
Receipt Date:	: 09 Aug-18 17:	00 S	ource:	Reference Toxi	cant			-			
Sample Age:	n/a (22.1 °C)	Si	tation:	In House							
Multiple Com	parison Summ	ary									
Analysis ID	Endpoint		Comp	arison Method			NOE	L LOEI	- TOEL	TU	PMSD
20-5434-0420	96h Survival R	ate	Fisher	Exact/Bonferro	ni-Holm Tes	st	0.2	0.4	0.2828		n/a
Point Estimat	te Summary										
Analysis ID	Endpoint		Point	Estimate Metho	od		Leve	l g/L	95% LCL	95% UCL	TU
03-9488-5843	96h Survival R	ate	Spear	man-Kärber			EC50		0.301	0.463	
96h Survival I	Rate Summary										
Conc-g/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E	rr Std Dev	CV%	%Effec
0	LW	10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
0.1		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
0.2		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
0.4		10	0.400	0.031	0.769	0.000	1.000	0.163	0.516	129.10%	60.00%
0.8		10	0.000	0.000	0.000	0.000	0.000	0.000	0.000		100.009
1.6		10	0.000	0.000	0.000	0.000	0.000	0.000	0.000		100.009
96h Survival F	Rate Detail										
Conc-g/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep (Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.1		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.2		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.4		0.000	0.000	0.000	1.000	1.000	0.000	0.000	0.000	1.000	1.000
8.0		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1.6		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
96h Survival F	Rate Binomials										
Conc-g/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 8			Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
0.1		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
0.2		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
0.4		0/1	0/1	0/1	1/1	1/1	0/1	0/1	0/1	1/1	1/1
0.8		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
1.6		0/1								0, 1	0/ 1

Hyalella 96-h Acute Survival Test

Pacific EcoRisk

Test Type:Survival (96h)Organism:Hyalella azteca (Freshwater AmphipMaterial:Potassium chlorideProtocol:EPA-821-R-02-012 (2002)Endpoint:96h Survival RateSource:Reference Toxicant-REF





 Mean:
 0.4192
 Count:
 20
 -2s Warning Limit:
 0.2861
 -3s Action Limit:
 0.2196

 Sigma:
 0.06653
 CV:
 15.90%
 +2s Warning Limit:
 0.5522
 +3s Action Limit:
 0.6188

Quality	Control	Data
---------	---------	------

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2017	Aug	9	15:25	0.4634	0.04423	0.6648			18-4403-8702	13-5000-0166
2			10	15:58	0.4925	0.07326	1.101			08-4781-5295	04-7807-7811
3			13	14:00	0.4595	0.04028	0.6054			03-2555-5005	07-3822-0721
4		Sep	2	12:45	0.4287	0.009509	0.1429			00-8891-9372	16-8329-5833
5			12	16:53	0.4	-0.0192	-0.2886			12-7066-3429	06-8588-1925
6			24	16:23	0.3931	-0.02607	-0.3919			05-3672-3483	11-7202-5835
7		Oct	23	15:20	0.4	-0.0192	-0.2886			05-6411-1970	13-8116-2372
8		Nov	8	16:16	0.4595	0.04028	0.6054			19-7659-7997	01-3839-2915
9			17	16:00	0.3732	-0.04599	-0.6912			17-6978-3883	17-5467-8698
10			25	14:10	0.4287	0.009509	0.1429			11-3183-2495	08-9083-9227
11		Dec	4	16:30	0.5278	0.1086	1.632			09-9590-2070	18-7306-3573
12	2018	Jan	9	19:13	0.3931	-0.02607	-0.3919			05-2232-4768	00-9328-2087
13			17	15:40	0.4938	0.07465	1.122			17-7568-9822	12-5928-4930
14		Feb	8	15:57	0.391	-0.02816	-0.4233			13-6969-1958	02-2461-7172
15		Mar	2	17:52	0.5037	0.08447	1.27			10-1610-0738	05-9100-3645
16		Apr	8	13:38	0.3642	-0.05504	-0.8273			14-6470-8596	05-1973-4354
17		May	16	17:55	0.2486	-0.1706	-2.564	(-)		05-9866-1037	11-2195-3653
18		Jun	14	16:35	0.4595	0.04028	0.6054			18-1605-2758	14-8406-0239
19		Jul	18	16:20	0.3299	-0.08926	-1.342			11-4094-7394	20-3811-7615
20		Aug	6	14:44	0.3732	-0.04599	-0.6912			16-9077-3352	08-2793-0151
21			9	17:00	0.3732	-0.04599	-0.6912			14-1761-7282	03-9488-5843

96 Hour Hyalella azteca Reference Toxicant Test Data

Client:	Reference Toxicant	Organism Log #:_	11127 Age: 8-9 days
Test Material:	Potassium Chloride	Organism Supplier:	ABS
Test ID#:	79270 Project # 29293	Control/Diluent:	SAM-5
Test Date: 8/	7/18 Randomization: 10.6.1	Control Water Batch:	343
Feeding T-2	Time: 0900 Initials: KL	Feeding T48	Time: 0850 Initials:

Treatment	Temp		D.O.	Conductivity # Live Animals											
(g/L)	(°C)	pН	(mg/L)	(μS/cm)	A	В	С	D	Е	F	G	Н	I	J	Sign-Off
Control	22.1	7.96	8.0	401	,	1	1	,	1	(1	/	1	1	Test Solution Prep:
0.1	22.0	7.92	8.0	589	1	1	1	1	1	1	1	1	1	1	New WQ: TF
0.2	22.0	7.88	8.	779	1		T	1	1		-1	1	1	1	Initiation Date:
0.4	22.0	7.86	8.3	1146	,	1	1	1	1	1	1	1	1	1	Initiation Time:
0.8	270	7.81	8.9	1910	1	1	1	(1	1	1	1	1	1	Initiation Signoff: RT Batch #: 20
1.6	22	7.74	10.7	3328	1	1	1	1	1	1	1	1	1	1	RT Batch #: 20
Meter ID	IIDA	PH 19	RDIO	E(13											
Control	22.0				ī	ı	1	1	1	1	1	1	1	l	Count Date: 8/10/1
0.1	21.4				1	1	(t	1	1	1	1	1	(Count Time: 085
0.2	21.6				i	1	1	1	1	1	1	1	1	1	Count Signoff App
0.4	21.5				1	1	1	1	1	1	1	1	1	1	
0.8	21.9				0	0	0	D	0	ð	0	0	0	0	
1.6	21.9				0	0	0	0	0	0	0	0	0	0	
Meter ID	11 OA														
Control	22.0				1	1		1	1	1	1	1	1	1	Count Date: 8/11/1
0.1	21.7				1	1	1	1	1	1	- (1	-1	1	Count Time: 0948
0.2	21.8				1	1	1	1	1	1	ı	1	1	1	Count Signoff Act
0.4	21.9				1	1	1	1	10	0	0	0	1	1	
0.8	22.0				_	~	_	-	-	_	1	I	-		
1.6	22.0				-	HC	-	-	-	1	1	-	-	~	
Meter ID	107A														
Control	22.1				1	1	1	1	1	(Ĩ	1	1	1	Count Date: 9 /12/18
0.1	22.2				1	1	1	1	1	I	1	1	1	1	Count Date: 9 (2)18
0.2	22.1				1	ı	1	1	1	1	(1	1	ı	Count Signoff:
0.4	22.0				1	0	0	1	1	_	1	_	1	1	
0.8	22.0				-	-	_	-	-	-	1	-	-	1	
1.6	22.1					-	-	-	-	1	_	1	1	-	1
Meter ID	40A	***	4 + + +												
Control	221	7.66	8.2	468	1	1	1	1	1	ı	1	-1	1		Termination Date:
0.1	22.2	7.61	8.1	669	1	1	1	1	1	1	1	1	ı	1	Termination Time:
0.2	21.1	7.62	8.1	825	1	1	1	1	1	. \	1	1	1)	Termination Signoff:
0.4	22.3	7.58	8.1	1212	0			1	١	_	_	_	1		Old WQ:
0.8	22.1	7.62	8.2	2038	-	-	-	^	_	1	1	_	1	-	
1.6	22.3	7.62	8.3	35ZI	1	/	1	1	-	_	/	_	1	1	
Meter ID	BIA	DH24	RDIO	ECV2											



Ms. Amy Storm Larry Walker Associates 2151 Alessandro Dr., Suite 100 Ventura, CA 93001

November 26, 2018

Dear Amy:

I have enclosed our report "A Toxicity Characterization Study of Ambient Waters Collected from the Calleguas Creek Watershed: Event 69" for samples collected November 7, 2018. The results of our evaluation are summarized below.

Effects of Calleguas Creek Ambient Waters on Ceriodaphnia dubia

There were no significant reductions in survival in the Calleguas Creek ambient water samples tested. There were significant reductions in reproduction in the following Calleguas Creek water samples tested:

- 69-UNIV-029
- 69-ADOLF-045
- 69-HITCH-150, and
- 69-GATE-202.

There were no significant reductions in reproduction in the remaining Calleguas Creek ambient water sample tested with this species.

Effects of Calleguas Creek Ambient Waters on Hyalella azteca

The 69-WOOD-097 ambient water was the only sample tested with this species; there were no significant reductions in survival in this sample.

Tox	Toxicity Summary for Calleguas Creek: Event 69 Ambient Waters.										
	Tox	Toxicity relative to the Lab Control treatment?									
Sample Station ID	Ceriodapl	inia dubia	Hyalella azteca								
	Survival	Reproduction	Survival								
69-UNIV-029	no	yes	testing with this species was not performed								
69-ADOLF-045	no	yes	testing with this species was not performed								
69-HITCH-150	no	yes	testing with this species was not performed								
69-GATE-202	no	yes	testing with this species was not performed								
69-BELT-208	no no testing with this species was not performed										
69-WOOD-097	testing with this species was not performed no										

If you have any questions regarding the performance and interpretation of these tests, feel free to contact my colleague Jeffrey Cotsifas or myself at (707) 207-7763.

Sincerely,

Michael McElroy Senior Project Manager



Pacific EcoRisk is accredited in accordance with NELAP (ORELAP ID 4043). Pacific EcoRisk certifies that the test results reported herein conform to the most current NELAP requirements for parameters for which accreditation is required and available. Any exceptions to NELAP requirements are noted, where applicable, in the body of the report. This report shall not be reproduced, except in full, without the written consent of Pacific EcoRisk. This testing was performed under Lab Order 29418.

A Toxicity Characterization Study of Ambient Waters Collected from the Calleguas Creek Watershed

(Water Samples Collected on November 7, 2018)

Event 69

Prepared For

Larry Walker Associates 720 Wilshire Blvd., Suite 207 Santa Monica, CA 90401

Prepared By

Pacific EcoRisk 2250 Cordelia Rd. Fairfield, CA 94534

November 2018



Page

INTEROPTION

Table of Contents

I. INTRODUC	_11UN	1
2. COLLECTI	ON AND DELIVERY OF AMBIENT WATER SAMPLES	1
3. TOXICITY	TEST PROCEDURES FOR AMBIENT WATERS	2
3.1 Survival	and Reproduction Chronic Toxicity Testing with Ceriodaphnia dubia	2
3.1.1 Refe	rence Toxicant Testing of the Ceriodaphnia dubia	3
3.2 Survival	Toxicity Testing of Ambient Waters with Hyalella azteca	3
3.2.1 Refe	rence Toxicant Testing of the Hyalella azteca	4
	OF THE AMBIENT WATER TOXICITY EVALUATIONS	
4.1. Effects	of Calleguas Creek Ambient Waters on Ceriodaphnia dubia	6
	rence Toxicant Toxicity to Ceriodaphnia dubia	
	of Calleguas Creek Ambient Water on Hyalella azteca	
	rence Toxicant Toxicity to Hyalella azteca	
	Y AND CONCLUSIONS	
	Summary	
	Appendices	
Appendix A	Chain-of-Custody Record for the Collection and Delivery of the Callego Creek Ambient Water Samples	ıas
A manadin D	Test Date and Commons of Statistics for the Evaluation of the Chaptier	7

- of the Calleguas Creek Ambient Waters to Ceriodaphnia dubia: Data Analyses **Excluding Statistical Outliers**
- Appendix C Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of the Calleguas Creek Ambient Waters to Ceriodaphnia dubia: Data Analyses **Including Statistical Outliers**
- Appendix D Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the Ceriodaphnia dubia
- Appendix E Test Data and Summary of Statistics for the Evaluation of the Toxicity of the Calleguas Creek Ambient Waters to Hyalella azteca
- Appendix F Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the Hyalella azteca

1. INTRODUCTION

In support of the Calleguas Creek Watershed Monitoring Program, Larry Walker Associates (LWA) has contracted Pacific EcoRisk (PER) to evaluate the potential toxicity of surface waters and sediments collected from within the Calleguas Creek Watershed. The current evaluation, which comprises Event 69 of the overall study, consisted of performing the following U.S. EPA toxicity tests:

- 3-brood (6-8 day) survival and reproduction chronic toxicity test with the crustacean *Ceriodaphnia dubia*; and
- For ambient water samples with a conductivity >3000 μS/cm but <15 ppt salinity, the 10-day survival test with the freshwater amphipod, Hyalella azteca was performed in place of the C. dubia test.

In order to evaluate the magnitude of any observed toxicity, all water samples were tested using a series of sample dilutions (100%, 50%, 25%, 12.5%, and 6.25%). In order to document that the test organisms were responding to toxic stress in a typical fashion, reference toxicant tests were also performed. This report describes and summarizes the performance and results of the Event 69 surface water toxicity testing performed in support of the Calleguas Creek Watershed Monitoring Program.

2. COLLECTION AND DELIVERY OF AMBIENT WATER SAMPLES

On November 7, 2018, Kinnetic Laboratories, Inc. (KLI) collected ambient water samples from six locations within the Calleguas Creek watershed (Table 1). Each water sample was collected into two pre-cleaned 5-gallon fluorocarbon-lined polyethylene jerricans. The samples were transported on ice and under chain-of-custody to the PER laboratory facility in Fairfield, CA, arriving approximately 24 hrs after collection. Upon receipt at the testing laboratory, aliquots of each water sample were collected for analysis of initial water quality characteristics (Table 2). The remainder of the water samples were stored at 0-6°C. All initial surface water tests were initiated within 36 hrs of sample collection. The chain-of-custody record for the collection and delivery of these samples is presented in Appendix A.

Table 1. Collection of Calleguas Creek Watershed Ambient Water Samples.			
Station Code	Sample Collection Date (Time)	Test Initiation Date (Time)	
UNIV	11/7/18 (1525)	11/8/18 (1305)	
ADOLF	11/7/18 (0845)	11/8/18 (1509)	
HITCH	11/7/18 (1650)	11/8/18 (1510)	
GATE	11/7/18 (1300)	11/8/18 (1518)	
BELT	11/7/18 (1410)	11/8/18 (1410)	
WOOD	11/7/18 (1215)	11/8/18 (1635)	

Table 2. Initia	Table 2. Initial Water Quality Characteristics of Calleguas Creek Ambient Water Samples.							
Sample ID	Temp (°C)	рН	D.O. (mg/L)	Alkalinity (mg/L as CaCO ₃)	Hardness (mg/L as CaCO ₃)	Conductivity (µS/cm)	Salinity (ppt)	Total Ammonia (mg/L)
69-UNIV-029	2.7	8.06	10.0	227	380	1698	0.9	<1.0
69-ADOLF-045	0.6	8.05	9.7	146	256	1102	0.6	<1.0
69-HITCH-150	0.8	7.87	9.3	189	556	1740	0.9	<1.0
69-GATE-202	0.6	7.84	9.1	125	222	1026	0.6	<1.0
69-BELT-208	0.5	8.25	9.9	266	505	1362	0.7	<1.0
69-WOOD-097	2.1	8.29	10.8	251	1650	3922	2.1	<1.0

3. TOXICITY TEST PROCEDURES FOR AMBIENT WATERS

The Calleguas Creek ambient waters were tested for toxicity using the following chronic toxicity tests:

- Water samples with a conductivity $<3000 \mu S/cm$ were tested using the 3-brood (6-8 day) survival and reproduction test with the freshwater crustacean *C. dubia*; and
- Water samples with a conductivity >3000 μ S/cm but <15 ppt salinity were tested using the 10-day survival test with the amphipod *H. azteca*.

The methods used in conducting the chronic toxicity tests (and any follow-up TIEs) followed the guidance established by the following EPA manuals:

- Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013); and
- A Surface Water Ambient Monitoring Program (SWAMP) test protocol based on a modification of the US EPA guidelines, "Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates" (EPA/630/R-99/064).

3.1 Survival and Reproduction Chronic Toxicity Testing with Ceriodaphnia dubia

The chronic toxicity test with *C. dubia* consists of exposing individual females to the ambient water samples for the length of time it takes for the Lab Control treatment females to produce three broods (typically 6-8 days), after which effects on survival and reproduction are evaluated. The specific procedures used in these tests are described below.

The Lab Water Control medium for this test consisted of a modified EPA moderately-hard water. For each water sample, the Lab Control water and 100% water sample were used to prepare test solutions at additional interim test treatment concentrations of 6.25%, 12.5%, 25%, and 50% ambient water. For each treatment, 200 mL aliquots of test solution were amended with the alga *Selenastrum capricornutum* and Yeast-Cerophyll®-Trout Food (YCT) to provide food for the test

organisms. "New" water quality characteristics (pH, D.O., and conductivity) were measured on these food-amended test solutions prior to use in these tests.

There were 10 replicates each for each test treatment, each replicate consisting of 15 mL of test solution in a 30-mL plastic cup. These "3-brood" tests were initiated by allocating one neonate (<24 hrs old, and within 8 hours of age) *C. dubia*, obtained from in-house laboratory cultures, into each replicate cup. The replicate cups were placed into a temperature-controlled room at 25°C, under cool-white fluorescent lighting on a 16L:8D photoperiod.

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

After it was determined that ≥60% of the *C. dubia* in a Lab Water Control treatment had produced their third brood of offspring, the corresponding ambient water test was terminated. The resulting survival and reproduction (number of offspring) data were analyzed to evaluate any impairment(s) caused by the effluent sample; all statistical analyses were made using the CETIS® statistical software (TidePool Scientific, McKinleyville, CA).

3.1.1 Reference Toxicant Testing of the Ceriodaphnia dubia

In order to assess the sensitivity of the *C. dubia* test organisms to toxic stress, a concurrent reference toxicant test was performed. This reference toxicant test was performed similarly to the ambient water test except that test solutions consisted of Lab Water Control medium spiked with NaCl at test concentrations of 500, 1000, 1500, 2000, and 2500 mg/L. The resulting test response data were statistically analyzed to determine key concentration-response point estimates (e.g., EC50); all statistical analyses were made using the CETIS® software. These response endpoints were then compared to the typical response range established by the mean \pm 2 SD of the point estimates generated by the most recent previous reference toxicant tests performed by this lab.

3.2 Survival Toxicity Testing of Ambient Waters with Hyalella azteca

This test consists of exposing individual *H. azteca* to the ambient water samples for 10 days, after which effects on survival are evaluated. The specific procedures used in this testing are described below.

The *H. azteca* used in this testing were obtained from a commercial supplier (Aquatic BioSystems, CO); upon receipt at the lab, the test organisms were held in aerated tanks containing Lab Control water, and were fed *S. capricornutum* and *Spirulina*-amended YCT *ad libitum* during this pre-test holding period.

The Lab Water Control medium for this testing consisted of EPA synthetic moderately-hard water, modified for use with *H. azteca* as per EPA test guidelines, and adjusted to the conductivity of the site water via addition of an artificial sea salt (Crystal Seas®- bioassay grade). For each ambient water sample, the Lab Control water and 100% ambient water sample were used to prepare test solutions at additional interim test treatment concentrations of 6.25%, 12.5%, 25%, and 50% ambient water. A "Culture" Control, consisting of *H. azteca* culture water was also prepared and tested. "New" water quality characteristics (pH, D.O., and conductivity) were measured on these test solutions prior to use in the test(s).

There were five replicates for each test treatment, each replicate consisting of a 250-mL glass beaker containing 100 mL of test solution; a small (~1 cm x 2 cm) piece of NITEX® mesh was placed in the beaker to provide an attachment substrate for the thigmotactic amphipods. Testing was initiated by allocating ten 12-13 day old *H. azteca*, into each replicate. The replicate beakers were placed into a temperature-controlled room at 23°C, under cool-white fluorescent lighting on a 16L:8D photoperiod.

Each day of the test(s), each replicate beaker was examined and the number of surviving organisms determined; 'old' water quality characteristics of the test solutions were measured in one randomly-selected beaker at each test treatment at this time. On Days 2, 4, 6, and 8 of the tests, 1.0 mL of *Spirulina*-amended YCT food was added to each test replicate to provide food for the test organisms.

On Day 5 of the 10-day test(s), fresh test solutions were prepared and characterized as before. Each replicate was examined, with any dead animals, uneaten food, wastes, and other detritus being removed. The number of live organisms in each replicate was determined and then approximately 80% of the old test solution in each beaker was carefully poured out and replaced with fresh test solution. "Old" water quality characteristics (pH, D.O., and conductivity) were measured on the old test solution that had been discarded from one randomly-selected replicate at each treatment.

After 10 days of exposure, testing was terminated and the number of live organisms in each replicate was recorded. The resulting survival data were analyzed to evaluate any impairment(s) caused by the ambient water sample; all statistical analyses were made using the CETIS® statistical software.

3.2.1 Reference Toxicant Testing of the Hyalella azteca

In order to assess the sensitivity of the *H. azteca* test organisms to toxic stress, a concurrent reference toxicant test was performed. The reference toxicant test was performed similarly to the ambient water tests, except that test solutions consisted of the Lab Water Control medium spiked with KCl at concentrations of 0.1, 0.2, 0.4, 0.8, and 1.6 g/L. The resulting test response data were statistically analyzed to determine key concentration-response point estimates (e.g., EC50); all statistical analyses were performed using the CETIS® software. These response endpoints were

then compared to the typical response range established by the mean $\pm\,2$ SD of the point estimates generated by the 20 most-recent previous reference toxicant tests performed by this lab.

4. RESULTS OF THE AMBIENT WATER TOXICITY EVALUATIONS

4.1 Effects of Calleguas Creek Ambient Water on Ceriodaphnia dubia

The results of the ambient water tests with *C. dubia* are summarized below in Tables 3 through 7. There were no significant reductions in survival in the Calleguas Creek ambient water samples tested. There were significant reductions in reproduction in the following Calleguas Creek water samples tested:

- 69-UNIV-029
- 69-ADOLF-045
- 69-HITCH-150, and
- 69-GATE-202.

There were no significant reductions in reproduction in the remaining Calleguas Creek ambient water sample tested with this species.

The test data and summary of statistical analyses for these tests, excluding statistical outliers where appropriate, are presented in Appendix B; the summary of statistical analyses for these tests, including statistical outliers, is presented in Appendix C.

Table 3. Effects of Ambient Water 69-UNIV-029 on Ceriodaphnia dubia.				
Ambient Water Treatment	% Survival	Reproduction (# neonates /female)		
Lab Water Control	100	35.9 ^b		
6.25%	100	28.7 ^{b,c}		
12.5%	100	29.8 ^{b,c}		
25%	100	29.9 ^{b,c}		
50%	100	34.4		
100%	100	30.9*		
Summary of Statistics				
No Observable Effect Concentration (NOEC) =	100% ambient water	50% ambient water		
TUc (where TUc = 100/NOEC) =	1	2		
Survival EC25 or Reproduction IC25 =	>100% ambient water ^a	>100% ambient water		
Survival EC50 or Reproduction IC50 =	>100% ambient water ^a	>100% ambient water		
TUc (where TUc = 100/EC50 or 100/IC50) =	<1	<1		

^{* -} The test response at this treatment was significantly less than the Control treatment response (p < 0.05).

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% ambient water.

b - The reproduction response for one of the replicates at this test treatment was determined to be a statistical outlier, and the results reported above are for the analysis of the test data excluding this outlier. As per EPA guidelines, the test data were analyzed both with and without the outlier, and the results of both sets of analyses are reported in the appendices.

c - There was an interrupted concentration-response with a statistically significant reduction in reproduction at this ambient water concentration. However, as there was no significant reduction in reproduction at the higher 50% concentration, the reduction at these interim concentrations are not considered toxicologically significant.

Table 4. Effects of Ambient Water 69-ADOLF-045 on Ceriodaphnia dubia.				
Ambient Water Treatment	% Survival	Reproduction		
Lab Water Control	100	31.6		
6.25%	100	29.0 ^b		
12.5%	100	27.5		
25%	100	29.8 ^b		
50%	100	23.4		
100%	100	23.0*		
Summary of Key Statistics				
No Observable Effect Concentration (NOEC) =	100% ambient water	50% ambient water		
TUc (where TUc = 100/NOEC) =	1	2		
Survival EC25 or Reproduction IC25 =	>100% ambient water ^a	48.6% ambient water		
Survival EC50 or Reproduction IC50 =	>100% ambient water ^a	>100% ambient water		
TUc (where TUc = 100/EC50 or 100/IC50) =	<1	<1		

^{* -} The test response at this treatment was significantly less than the Control treatment response (p < 0.05).

b - The reproduction response for one of the replicates at this test treatment was determined to be a statistical outlier, and the results reported above are for the analysis of the test data excluding this outlier. As per EPA guidelines, the test data were analyzed both with and without the outlier, and the results of both sets of analyses are reported in the appendices.

Table 5. Effects of Ambient Water 69-HITCH-150 on Ceriodaphnia dubia.				
Ambient Water Treatment	% Survival	Reproduction		
Lab Water Control	100	34.0		
6.25%	100	28.6		
12.5%	100	27.4		
25%	100	29.9		
50%	100	26.0		
100%	100	25.6*		
Summary of Key Statistics				
No Observable Effect Concentration (NOEC) =	100% ambient water	50% ambient water		
TUc (where TUc = 100/NOEC) =	1	2		
Survival EC25 or Reproduction IC25 =	>100% ambient water ^a	>100% ambient water		
Survival EC50 or Reproduction IC50 =	>100% ambient water ^a	>100% ambient water		
TUc (where TUc = 100/EC50 or 100/IC50) =	<1	<1		

^{* -} The test response at this treatment was significantly less than the Control treatment response (p < 0.05).

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% ambient water.

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% ambient water.

Table 6. Effects of Ambient Water 69-GATE-202 on Ceriodaphnia dubia.				
Ambient Water Treatment	% Survival	Reproduction		
Lab Water Control	100	32.8		
6.25%	100	24.9		
12.5%	100	16.3 ^b		
25%	100	26.2		
50%	100	23.5*		
100%	100	22.1*		
Summary of Key Statistics				
No Observable Effect Concentration (NOEC) =	100% ambient water	25% ambient water		
TUc (where TUc = 100/NOEC) =	1	4		
Survival EC25 or Reproduction IC25 =	>100% ambient water ^a	6.9% ambient water		
Survival EC50 or Reproduction IC50 =	>100% ambient water ^a	>100% ambient water		
TUc (where TUc = 100/EC50 or 100/IC50) =	<1	<1		

^{* -} The test response at this treatment was significantly less than the Control treatment response (p < 0.05).

b - There was an interrupted concentration-response with a statistically significant reduction in reproduction at this ambient water concentration. However, as there was no significant reduction in reproduction at the higher 25% concentration, the reduction at this interim concentration is not considered toxicologically significant.

Table 7. Effects of Ambient Water 69-BELT-208 on Ceriodaphnia dubia.				
Ambient Water Treatment	Mean % Survival	Mean Reproduction		
Lab Water Control	100	31.9		
6.25%	100	33.7		
12.5%	100	32.0		
25%	100	34.7		
50%	100	30.9		
100%	100	32.6		
Summary of Key Statistics				
No Observable Effect Concentration (NOEC) =	100% ambient water	100% ambient water		
TUc (where TUc = 100/NOEC) =	1	1		
Survival EC25 or Reproduction IC25 =	>100% ambient water ^a	>100% ambient water		
Survival EC50 or Reproduction IC50 =	>100% ambient water ^a	>100% ambient water		
TUc (where TUc = 100/EC50 or 100/IC50) =	<1	<1		

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% ambient water.

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% ambient water.

4.1.2 Reference Toxicant Toxicity to Ceriodaphnia dubia

The results of this test are summarized below in Table 8. The EC50 and IC50 for these tests were both consistent with the typical response ranges established by the reference toxicant test database for this species, thus providing further evidence that the organisms used for ambient water testing were responding to toxic stress in a typical and consistent fashion. The test data and summary of statistical analyses for this test are presented in Appendix D.

Table 8. Reference toxicant testing: effects of NaCl on Ceriodaphnia dubia.				
NaCl Treatment (mg/L)	Mean % Survival	Mean Reproduction		
		(# neonates/female)		
Lab Water Control	100	28.7		
500	100	30.8		
1000	100	21.1		
1500	90	14.1*		
2000	100	8.7*		
2500	0*	-		
Summary of Statistics				
Survival EC50 or Reproduction IC50 =	2170 mg/L NaCl	1440 mg/L NaCl		
Typical Response Range (mean ± 2 SD)	1657 - 2405 mg/L NaCl	1373 - 1841 mg/L NaCl		

^{*} The response at this test treatment was significantly less than the Lab Control treatment response at p<0.05

4.2 Effects of Calleguas Creek Ambient Water on Hyalella azteca

The results of this test are summarized below in Table 9. The 69-WOOD-097 ambient water sample was the only sample tested with this species; there were no significant reductions in survival in this sample. The test data and summary of statistical analyses for this test are presented in Appendix E.

Table 9. Effects of Ambient Water 69-WOOD-097 on Hyalella azteca Survival.			
Ambient Water Treatment	10-Day Mean % Survival		
Lab Control	98		
6.25%	94		
12.5%	94		
25%	96		
50%	100		
100%	92		
Culture Control	98		
Summary of Key Statistics			
No Observable Effect Concentration (NOEC) =	100% ambient water		
TUc (where TUc = 100/NOEC) =	1		
Survival EC25 =	>100% ambient water ^a		
Survival EC50 =	>100% ambient water ^a		
TUc (where TUc = 100/EC50) =	<1		

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% ambient water.

4.2.1 Reference Toxicant Toxicity to Hyalella azteca

The results of this test are summarized below in Table 10. The LC50 for this test was consistent with the typical response range established by the reference toxicant test database for this species, thus providing further evidence that the organisms used for ambient water testing were responding to toxic stress in a typical and consistent fashion. The test data and summary of statistical analyses for this test are presented in Appendix F.

Table 10. Reference Toxicant Testing: Effects of KCl on Hyalella azteca.			
KCl Treatment (g/L)	Mean % Survival		
Lab Control	100		
0.1	100		
0.2	90		
0.4	20*		
0.8	0*		
1.6	0*		
Summary of Statistics			
Survival LC50 =	0.30 g/L KCl		
Typical Response Range (mean ± 2 SD)	0.23 - 0.54 g/L KCl		

^{* -} The response at this test treatment was significantly less than the Lab Control treatment response at p < 0.05.

5. SUMMARY AND CONCLUSIONS

Effects of Calleguas Creek Ambient Waters on Ceriodaphnia dubia

There were no significant reductions in survival in the Calleguas Creek ambient water samples tested. There were significant reductions in reproduction in the following Calleguas Creek water samples tested:

- 69-UNIV-029
- 69-ADOLF-045
- 69-HITCH-150, and
- 69-GATE-202.

There were no significant reductions in reproduction in the remaining Calleguas Creek ambient water sample tested with this species.

Effects of Calleguas Creek Ambient Waters on Hyalella azteca

The 69-WOOD-097 ambient water was the only sample tested with this species; there were no significant reductions in survival in this sample.

Toxicity Summary for Calleguas Creek: Event 69 Ambient Waters.					
	Toxicity relative to the Lab Control treatment?				
Sample Station ID	Ceriodaphnia dubia		Hyalella azteca		
	Survival	Reproduction	Survival		
69-UNIV-029	no	yes	testing with this species was not performed		
69-ADOLF-045	no	yes	testing with this species was not performed		
69-HITCH-150	no	yes	testing with this species was not performed		
69-GATE-202	no	yes	testing with this species was not performed		
69-BELT-208	no	no	testing with this species was not performed		
69-WOOD-097	testing with this species was not performed		no		

5.1 QA/QC Summary

Test Conditions – All test conditions (pH, D.O., temperature, etc.) were all within acceptable limits during testing. All test analyses were performed according to laboratory Standard Operating Procedures.

Negative Control – The biological responses for the test organisms in the Lab Control treatments were within acceptable limits.

Positive Control –All reference toxicant test results were consistent with the "typical response" ranges established by the reference toxicant test database, indicating that these test organisms were responding to toxic stress in a typical fashion.

Concentration Response Relationships – The concentration-response relationships for these tests were evaluated as per EPA guidelines (EPA-821-B-00-004), and were determined to be acceptable.

Appendix A

Chain-of-Custody Record for the Collection and Delivery of the Calleguas Creek Ambient Water Samples

Larry Walker Associates

2151 Alessandro Drive, Suite 100 Ventura, CA 93001 805-585-1835 805-585-1840 Fax

CHAIN-OF-CUSTODY RECORD						Da	ite:			Lab ID:	Lab ID:		
Destination Lab: Pacific EcoRisk Jeff Cotsifas Address: 2250 Cordelia Road Fairfield, CA 94534 Phone: 707-207-7761 Fax: 707-207-7916 Sampled By: /C_C(LWA Contact: Amy Storm Project: Calleguas Creek Watershed TMDL Monitoring Program (391.78)					LARS 1979-2009 LARS Y WALKER ASSOCIATES			Chronic dilution test - Hyalella azteca	Chronic dilution test - Americamysis -				
Client Sample Id	Sample	Sample Time	Sample Matrix	Container			-EC<3000	- EC>3000	EC>25000				
	Date			#	Туре	Pres.	00	8	8	No	otes		
CCWTMP-69-UNIV-029	11-7-18	1525	Surface Water	2	20-L Jerrican	none	X						
CCWTMP-69-ADOLF-045	1	0845	Surface Water	2	20-L Jerrican	none	X						
CCWTMP-69-WOOD-097		1215	Surface Water	2	20-L Jerrican	none		X					
CCWTMP-69-UPLAND 144	_		Surface Water	2	20-L Jerrican	none	-		F				
CCWTMP-69-HITCH-150		1650	Surface Water	2	20-L Jerrican	none	X						
CCWTMP-69-GATE-202		1300	Surface Water	2	20-L Jerrican	none	X						
CCWTMP-69-BELT-208	1	1410	Surface Water	2	20-L Jerrican	none	X						

Samantha Cowdin PER 11/7/18 June Cen

Sender Comments:	Relinquished By (1):	Relinquished By (2):
1) Prior approval must be obtained if methods or RLs other than those specified in the QAPP are used. 2) Please PDF a copy of the COCs to Michael Marson at michaelm@lwa.com. 3) Send final report to Michael Marson and edd@kinneticlabs.com.	Signature: Organization: KCl Date: 11-7-18 Time: 1830	Date: 11-08-15he: 7:40a W
Laboratory Comments:	Signature: Received By (1): Signature: RFZnik Organization: Anno Express Date: 11 7 - 18 Time: 18130	Samantha Cowdin PER Date: 11/8/18 Time: 0737

Crew: KLI

Appendix B

Test Data and Summary of Statistics for the
Evaluation of the Chronic Toxicity of the Calleguas Creek
Ambient Waters to Ceriodaphnia dubia:
Data Analyses Excluding Statistical Outliers

CETIS Summary Report

Report Date:

16 Nov-18 15:17 (p 1 of 2)

Test Code:

80638 | 14-4434-5511

Ceriodaphnia	Ceriodaphnia Survival and Reproduction Test Pacific EcoRisk Pacific EcoRisk														
Batch ID: Start Date: Ending Date: Duration:	04-4203-1345 08 Nov-18 13:0 15 Nov-18 13:2 7d 0h	5 Prot	ocol: cies:	Reproduction-S EPA-821-R-02- Ceriodaphnia d In-House Cultu	-013 (2002) Iubia			Analyst: Diluent: Brine: Age:	Mike McElroy Laboratory Wa Not Applicable 1	ter					
	00-9280-2736 : 07 Nov-18 15:2: : 08 Nov-18 07:3 22h (2.7 °C)		erial: rce:	69-UNIV-029 Ambient Water Calleguas Cree UNIV				Client: Project:	Larry Walker A 29418	ssociates					
Comments: Excludes repre	Comments: Excludes reproduction outliers (Lab Control-E, 6.25%-J, 12.5%-J, and 25% E) Multiple Comparison Summary														
Multiple Com	parison Summa	ıry													
Analysis ID	Endpoint		Comp		NOE		L TOEL	TU	PMSD ✓						
	Reproduction			roni Adj t Test			50	100	70.71	2	12.8%				
16-3822-8615	Survival		Fisher	Exact/Bonferro	ni-Holm Tes	t	100	> 100	n/a	1	n/a				
Point Estimat	te Summary														
Analysis ID	Endpoint		Point	Estimate Meth	od		Leve	el %	95% LCL	. 95% UCL	TU ✓				
01-8718-6241	Reproduction		Linear	Interpolation (I	CPIN)		IC5	2.17	1.73	3.86	46.03				
							IC10	4.35	3.45	72.4	23.01				
							IC15	>100	n/a	n/a	<1				
							IC20) n/a	n/a	<1				
							IC25			n/a	<1				
							IC40			n/a	<1				
							IC50	>100) n/a	n/a	<1				
Reproduction	Summary														
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std	Err Std Dev	CV%	%Effect				
0	LW	9	35.9	33.9	37.9	33	41	0.87	3 2.62	7.30%	0.00%				
6.25		9	28.7	24.4	32.9	19	34	1.86	5.57	19.42%	20.12%				
12.5		9	29.8	27.2	32.4	24	36	1.13	3.38	11.36%	17.03%				
25		9	29.9	26.9	32.9	25	36	1.32		13.22%	16.72%				
50		10	34.4	31.3	37.5	28	43	1.37		12.57%	4.15%				
100		10	30.9	27.8	34	26	39	1.39	4.38	14.18%	13.90%				
Survival Sum	mary														
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std		CV%	%Effect				
0	LW	10	1.000	1.000	1.000	1.000	1.000			0.00%	0.00%				
6.25		10	1.000	1.000	1.000	1.000	1.000			0.00%	0.00%				
12.5		10	1.000	1.000	1.000	1.000	1.000			0.00%	0.00%				
25		10	1.000	1.000	1.000	1.000	1.000			0.00%	0.00%				
50 100		10 10	1.000	1.000	1.000	1.000	1.000			0.00%	0.00%				
100		10	1.000	1.000	1.000	1.000	1.000	0.00	0.000	0.00%	0.00%				

Report Date:

16 Nov-18 15:17 (p 2 of 2)

80638 | 14-4434-5511

Test Code: Ceriodaphnia Survival and Reproduction Test Pacific EcoRisk Reproduction Detail Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 Rep 6 Rep 8 Rep 7 Rep 9 Rep 10 LW 0 35 37 38 35 41 34 33 33 37 6.25 19 32 25 31 34 34 23 34 26 12.5 30 26 30 24 32 36 30 30 30 25 26 30 29 35 36 33 28 25 27 50 35 31 32 43 30 37 28 36 35 37 100 39 27 32 37 27 26 29 32 28 32 Survival Detail Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 Rep 6 Rep 7 Rep 8 Rep 9 Rep 10 0 LW 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 6.25 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 12.5 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 25 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 50 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 100 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 Survival Binomials Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 Rep 6 Rep 7 Rep 8 Rep 9 Rep 10 0 LW 1/1 1/1 1/1 1/1 1/1 1/1 1/1 1/1 1/1 1/1 6.25 1/1 1/1 1/1 1/1 1/1 1/1 1/1 1/1 1/1 1/1 12.5 1/1 1/1 1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

25

50

100

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

12.5

Report Date:

16 Nov-18 15:17 (p 1 of 1)

Test Code:

80638 | 14-4434-5511

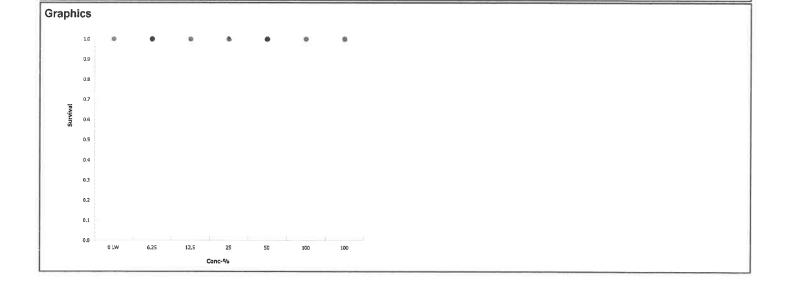
Ceriodaphnia Survival and Reproduction Test													
Analysis ID: Analyzed:		-3822-8615 Nov-18 14:3		•	urvival TP 2xK Cont	tingency Tabl	es			S Version: al Results:	CETISV Yes	/1.9.2	
Data Transfe	orm		Alt H	/p				NOEL		LOEL	TOEL	TU	
Untransform	ed		C > T					100	>	100	n/a	1	
Fisher Exac	t/Bon	ferroni-Holn	n Test										
Control	vs	Group		Test Sta	t P-Type	P-Value	Decision(α:5%)					
Lab Water C	ontr	6.25		1.000	Exact	1.0000	Non-Signi	ficant Ef	fect				
		12.5		1.000	Exact	1.0000	Non-Signi	ficant Ef	fect				
		25		1.000	Exact	1.0000	Non-Signi	ficant Ef	fect				
		50		1.000	Exact	1.0000	Non-Signi	ficant Ef	fect				
		100		1.000	Exact	1.0000	Non-Signi	ficant Ef	fect				
Data Summa	ary												
Conc-%		Code	NR	R	NR + R	Prop NR	Prop R	%Effe	ct				
0		LW	10	0	10	1	0	0.0%					
6.25			10	0	10	1	0	0.0%					

0.0%

0.0%

0.0%

0.0%



Report Date: Test Code: 16 Nov-18 15:17 (p 1 of 1)

80638 | 14-4434-5511

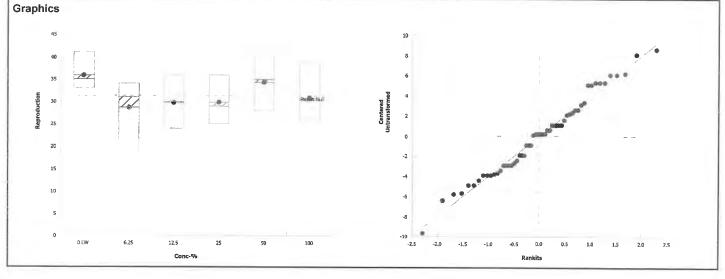
							00000	0 11 1101 001
Ceriodaphnia	Survival and Repro	duction Test				P	Pacific EcoRisk	
Analysis ID: Analyzed:	17-5507-1194 16 Nov-18 15:17		Reproduction Parametric-Multiple Comparison		IS Version: cial Results:	CETISv Yes	1.9.2	
Data Transfor	rm Alt	Нур		NOEL	LOEL	TOEL	TU	PMSD
Untransformed	d C:	> T		50	100	70.71	2	12.77%

Control vs	Control II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Lab Water Contr	6.25*	3.69	2.4	4.7	16	CDF	0.0014	Significant Effect
	12.5*	3.12	2.4	4.7	16	CDF	0.0074	Significant Effect
	25*	3.07	2.4	4.7	16	CDF	0.0087	Significant Effect
	50	0.781	2.4	4.58	17	CDF	1.0000	Non-Significant Effect
	100*	2.62	2.4	4.58	17	CDF	0.0292	Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	382.492	76.4983	5	4.44	0.0020	Significant Effect
Error	860.633	17.2127	50			
Total	1243.13		55			

Distributional Tests													
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)								
Variances	Bartlett Equality of Variance Test	4.74	15.1	0.4489	Equal Variances								
Distribution	Shapiro-Wilk W Normality Test	0.982	0.943	0.5817	Normal Distribution								

Reproduction Summary														
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect			
-0.	LW	9	35.9	33.9	37.9	35	33	41	0.873	7.30%	0.00%			
6.25		9	28.7	24.4	32.9	31	19	34	1.86	19.42%	20.12%			
12.5		9	29.8	27.2	32.4	30	24	36	1.13	11.36%	17.03%			
25		9	29.9	26.9	32.9	29	25	36	1.32	13.22%	16.72%			
50		10	34.4	31.3	37.5	35	28	43	1.37	12.57%	4.15%			
100		10	30.9	27.8	34	30.5	26	39	1.39	14.18%	13.90%			



Report Date:

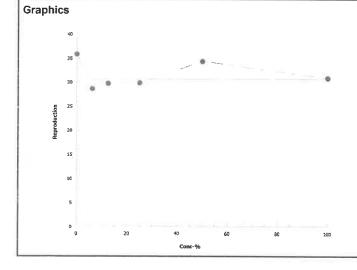
16 Nov-18 15:17 (p 1 of 1)

Test Code:

80638 | 14-4434-5511

Ceriodaphnia Survival and Reproduction Test Pacific EcoRisk													
Analys	is ID:	01-8718-6241	En	dpoint:	Reproduction			CETIS Version:	CETISv1.9.2				
Analyz	ed:	16 Nov-18 15:1	7 An	alysis:	Linear Interpola	ition (ICPIN)		Official Results:	Yes				
Linear	Interpo	lation Options											
X Trans	sform	Y Transform	se Se	ed	Resamples	Exp 95% CL	Method						
Linear		Linear	500	0884	200	Yes	Two-Point	Interpolation					
Point E	stimate	es											
Level	%	95% LCL	95% UCL	. TU	95% LCL	95% UCL							
IC5	2.17	1.73	3.86	46.03	25.94	57.9							
IC10	4.35	3.45	72.4	23.01	1.381	28.95							
IC15	>100	n/a	n/a	<1	n/a	n/a							
IC20	>100	n/a	n/a	<1	n/a	n/a							
IC25	>100	n/a	n/a	<1	n/a	n/a							
IC40	>100	n/a	n/a	<1	n/a	n/a							
IC50	>100	n/a	n/a	<1	n/a	n/a							
Reprod	luction	Summary				Calcula	ted Variate						

Reproduction	Reproduction Summary				C	alculated Va	riate			
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	
0	LW	9	35.9	33	41	0.873	2.62	7.30%	0.0%	
6.25		9	28.7	19	34	1.86	5.57	19.40%	20.1%	
12.5		9	29.8	24	36	1.13	3.38	11.40%	17.0%	
25		9	29.9	25	36	1.32	3.95	13.20%	16.7%	
50		10	34.4	28	43	1.37	4.33	12.60%	4.15%	
100		10	30.9	26	39	1.39	4.38	14.20%	13.9%	



C	lient:		LW	A: Calle	eguas C	reek		Ma	terial:	C	CWT	MP-69	-UNI	1020	1	Test	Date:	11/8/18
Proje	ect#:	294	118	1	Γest ID:	806	38	Ran	ıdomiz	ation:	10	.7.6			Co	ntrol V	Vater:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp					ival / R	_					SIGN-OFF
		New	Old	New	Old	(μS/cm)	(°C)	Α	В	С	D	Е	F	G	Н	I	J	Dates /8/ • New WQ: Test Init.: AFF
١.,	0	7.94		8.0		352	25.	0	0	0	٥	0	0	0	0	0	0	Sol'n Prep:gnc Time: 13
	1	7.94	8.10	10.8	8.1	354	24.2	0	0	0	0	0	0	٥	0	0	0	Date: \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
	2	7.96	7.87	9.6	8.4	364	24.8	0	0	0	0	0	0	0	0	0	0	Date: Wife New WQ: SD Counts: Sol'n Prep: SMC Old WQ: SD Time: 133
0-1	3	8:06	7.95	9.6	7.4		24.0	0	0	0	0	0	0	6	0	0		Date: 1 11 & New WQ: TP Counts: Sol'n Prep: W Old WQ: TP Time:
Lab Water Control	4			10.5			14.6	6		8	6	8	8	0	8	7	10	Date: 11 Will New WQ: AR Counts: Sol'n Prep: 32 Old WQ: WT Time: 1448
Water	5	7-75					25.4	12	14	13	11	13	nle	12	11	10	17	Date: 11/13/12New WQ: TO Counts: CF
Lab	-											_	1-1	_			0	Sol'n Prep: SMC Old WO. Time: 350 Date: 114 8 New WQL Counts
	6	7.64	7.79	9.2	8,5	360	24.3	0	0	17	18	3	19	16	14	0		Sol'n Prep: Old WQ: Time: 359 Date: 155 New WQ: Counts: 2
	7		8 80		8.2	391	252	17	i6	Ö	0	0	0	16	0	16	18	Sol'n Prep: Old WQ: NB Time 321
	8							210	37	4								Date: Old WQ: Counts: Time:
							Total=	18	24	38	35	24	41	34	33	33	37	Mean Neonates/Female
	Day		Н		.O.	Cond.	590900					/ Repro						Sample ID
	-	New	Old	New	Old	(μS/cm)		A	В	С	D	Е	F	G	Н	1-	J	
	0	7.99	10000000000000000000000000000000000000	810		526	4.4	0	0	0	0	0	0	0	0	0	D	51276
	1	7,95	8.14	10,9	8.2	443	243	0	0	0	0	0	0	0	0	0	0	51276
	2	7.95	7.91	9.6	8.3	450	47	0	0	0	0	0	0	0	0	0	0	51276
	3	8.05		9.9	8.0	442	24.1	0	0	0	0	0	0	0	0	0	0	51276
6.25%	4	7.88	7.88	10.9			25.3	85	.7	6	7	6	9	7	4	6	3	51276
6.2	5	7-95		10.4	7.5	445	14.6	0	10	7	11	12	14	13	12	7	0	51276
	6	7.79	7.75	9.5	7.5	448	343	14	0	12	13	16	11	2	0	12	0	51276
	7		8.43		75	492	255	17	15	0	0	0	Ö	(1)	18	(1)	0	
	8	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7					- 0.0	1					1	13 m	16-18		0	
							Total=	19	32	75	21	34	34	報	34	26	3	Mean Neonates/Female = 40 26
*	4 I.\	, <u> </u>	-A (Zemo	ve fo	om re	orogu	chio		tat	311	2.5		11/15		- 4		11.16.

C	ient:		LW	A: Calle	eguas C	reek		Ma	terial:	C	CWT	MP-69	-UNI	/-020	\	Test	Date:	11/8/18
Proje	ct #:	294	418		Γest ID:	806	38								Co	ntrol V	Water:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp				Surv	_	eprodu	ction				SIGN-OFF
		New	Old	New	Old	(μS/cm)	(°C)	A	В	С	D	Е	F	G	H	I	J	
	0	7.97		8,0		528	25,0	0	0	0	0	0	0	0	0	0	ð	
	1	7,95	8-20	10,09	8.1	505	24.6	0	0	0	0	0	0	0	O	0	0	
	2	7.98	7.95	9.9	8.2	530	248	0	0	0	0	0	0	0	0	0	0	
	3	8.06	8.04	10,0	7,9	531	25:0	0	0	0	0	0	0	0	0	0	0	
12.5%	4	7.93	7.94	10.8	9.1	531	25,5	0	j	7	6	6	6	7	2	5	0	
12.	5	7.99	7.84	10.6	7.5	538	25.7	10	11	7	13	11	15	8	11	12	0	
	6	7.83	7.108	9.6	10.3	338	243	0	14	16	5	15	15	15	17	13	0	
	7	_	8.34		7.7	581		20	0	0	Ö	19	0	O	0	0	0	
	8						20-1					-/						
							Total=	30	210	30	24	37	210	30	30	30	0	Mean Neonates/Female = 26 8
	Day	р	Н	D	.O.	Cond.		ZV	10		urvival				JU	70		Mean Neonales/Female =
		New	Old	New	Old	(μS/cm)		Α	В	С	D	Е	F	G	Н	1	J	
	0	7.90		8.1		700	25.5	0	0	0	0	0	0	0	0	0	0	
	1	7-95	8.20	10.9	8.1	680	24.5	0	0	0	0	0	0	0	0	0	0	
	2	7.99	8.00	9.9	8.3	700	24.8	0	0	0	0	0	0	0	0	0	0	
	3	80,8	8.12	10.1	8.0	678	249	0	0	0	0	0	0	0	0	0	0	
25%	4	7.95	7.97	10.9	7.9	693	248	i	0	0	8	6	5	5	7	7	0	
25	5	8.01	7.84	10.3	7-6	710	25,5	7	10	12	13	0)	13	13	S	7	12	
П	6	7.87	773	9.7	5.5	700	243	0	13	0	14	D	18	15	14	1(is	
	7		8.34		7.8	747		18		17	0	0	7	20	0	0	0	
	8					. • •		· U	_	1			-	-0				
							Total=	7-6	30	291	35	15	360	32	W	25	27	Mean Neonates/Female = 78,4
	. S.C.		ererezetiti	***************************************		A C	_	VV	34	-	111		· JW	4	/11	11	-	Transport Single

* 4th Grood. Exclude from reproduction statistics.

Cl	lient:		LW		Ma	terial:	C	CWT	MP-69	-UNI	-02	1	Test	Date:	11/8/18			
Proje	ect #:	294	118		Γest ID:	806	38								Со	ntrol \	Water:	Mod EPAMH
	Day	pН		D,O.		Cond.	Temp				Surv	ival / R	eproduc	ction				SIGN-OFF
		New	Old	New	Old	(μS/cm)	(°C)	Α	В	С	D	Е	F	G	Н	I	J	
	0	7.98		8.4		1034	25.1	Ð	0	0	0	0	0	O	D	0	O	
	1	7.98	8.35	10.01	8.2	1605	24.6	0	0	0	0	0	0	0	0	0	0	
	2	8.01	8.10	9.9	8.3	1023	24.9	0	0	0	0	0	0	0	0	0	0	
	3	8.12	8.24	9.9	7.9	1016	25.0	0	0	0	0	0	0	0	0	0	0	
20%	4	8.03	20.8	10.6	7.8	997	24.8	7	8	7	9	4	7	168	57	4	5	
5.	5		8.03		7.3	1625	25.6	11	7	15	16	15	17	12	14	11	12	
	6	7.97	7.99	9.9	6.6	1028	24.3	17	16	10	18	11	13	16	14	13	0	
	7	_	8.47	_	8.1	1126	25.4	0	0	0	0	20	0	0	0	ပ	20	
	8			XXX														
							Total=	35	31	32	43	30		360	35	28	37	Mean Neonates/Female = 34,4
	Day	_	H Old	D New	O. Old	Cond. (µS/cm)		A	В	C	Survival D	/ Repro	duction	G	Н	I	J	
*******	0	New 7,95		9. 9	Oid	1678	1	Ð	D D	6	0	0	0	0	0	0	0	
	1	7.98	8.58	10.8	8.1	1653		0	0	0	0	0	0	0	0	0	0	
	2		8.27		8.3	1671		0	O	D	0	D	0	0	0	0	0	
	3	8.20	8.44	9.9	8.0		245		0	0	0	0	0	ما	0	0	D	
%001	4	7.99	8.34	10.5	7.9		24,7	6	1	7	6	3	0	0	4	2	1 1	
10	5	8,09	8-18	[0.5	6.8	1679	25.1	14	10	Oj	13	(0)	10	3	13	8	14	
	6	7.99	8-24	10.6	7.4	1672	24.3	19	16	15	9	14	16	20	15	18	17	
	7	-	8.47	-	8.2	1764	75.9	0	0	O	V	0	0	2	0	0	0	
	8											1-1						
			7 + F + F + F + F + F + F + F + F + F +				Total=	39	27	32	37	27	26	29	32	18	32	Mean Neonates/Female = 30 9

* 4th broad. Exclude from statisties.

CETIS Summary Report

Report Date: Test Code: 16 Nov-18 11:59 (p 1 of 2)

80639 | 09-8502-3333

							•	cot couc.		00000 00	0002 000
Ceriodaphnia	a Survival and R	eproduction T	est							Pacific	: EcoRisi
Batch ID:	12-3530-4939	Test Ty	ype: F	Reproduction-S	urvival (7d)		A	nalyst:	Jessica Okutsu		
Start Date:	08 Nov-18 15:09			EPA-821-R-02-				iluent:	Laboratory Wat	er	
Ending Date:	14 Nov-18 15:30	O Specie		Deriodaphnia d			Е	rine:	Not Applicable		
Duration:	6d 0h	Source	e: I	n-House Cultur	re		A	ge:	1		
Sample ID:	16-6131-6900	Code:	6	69-ADOLF-045			C	lient:	Larry Walker As	sociates	
-	: 07 Nov-18 08:45			Ambient Water			Р	roject:	29418		
•	: 08 Nov-18 07:37		e: (Calleguas Cree	k						
Sample Age:		Station		ADOLF							
Comments:											
Stats excludin	ig reproductive ou	utliers 6.25%-J	and 25	5%-J. 							
•	nparison Summa	•									
Analysis ID	Endpoint			rison Method			NOEL			TU	PMSD
	Reproduction			on/Bonferroni A	-		50	100	70.71	2	21.8%
17-5227-9364	Survival	F	isher I	Exact/Bonferror	ni-Holm Tes	t 	100	> 100	n/a 	1	n/a
Point Estimat	te Summary										
Analysis ID	Endpoint	P	oint E	stimate Metho	od		Level	%	95% LCL	95% UCL	TU
11-2812-8711	Reproduction	L	inear I	nterpolation (IC	CPIN)		IC5	3.8	1.72	36	26.33
							IC10	25.9	3.44	49.1	3.854
							IC15	33.5	5.16	78.2	2.986
							IC20	41	12.1	n/a	2.437
							IC25	48.6	33	n/a	2.059
							IC40	>100		n/a	<1
							IC50	>100	n/a	n/a 	<1
Reproduction	n Summary										
Conc-%	Code		lean	95% LCL	95% UCL	Min	Max	Std E		CV%	%Effect
0	LW		1.6	26.1	37.1	18	39	2.41	7.62	24.11%	0.00%
6.25			9	25.1	32.9	17	34	1.71	5.12	17.67%	8.23%
12.5			7.5	22.9	32.1	17	36	2.04	6.45	23.46%	12.97%
25			9.8	28.7	30.8	28	32	0.465		4.68%	5.77%
50			3.4	17.3	29.5	11	39	2.7	8.55	36.55%	25.95%
100		10 2	3	18.5	27.5	11	30	1.98	6.25	27.19%	27.22%
Survival Sum	-		_								
Conc-%	Code		lean		95% UCL		Max	Std E		CV%	%Effect
0	LW		.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%
6.25			.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%
12.5			.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%
25			.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%
50 100			.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%
3.010		10 1	.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%

CETIS Summary Report

Report Date: Test Code: 16 Nov-18 11:59 (p 2 of 2)

80639 | 09-8502-3333

							163	t Code:		00039 0	9-8502-333
Ceriodaphnia	Survival and	Reproduction	on Test							Pacif	ic EcoRisk
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	18	39	31	36	38	31	34	18	35	36
6.25		27	31	31	33	27	32	34	29	17	
12.5		29	17	27	36	26	26	31	34	17	32
25		30	32	31	29	29	30	31	28	28	
50		18	14	11	17	39	30	23	27	25	30
100		15	30	27	27	11	28	28	20	23	21
Survival Detai	ſ										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Survival Binor	mials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Report Date: Test Code: 16 Nov-18 11:59 (p 1 of 1)

80639 | 09-8502-3333

Ceriodaphnia	Survival and Repro	duction Test					Pacific Eco	oRisk
Analysis ID:	17-5227-9364	Endpoint:	Survival	CE	TIS Version:	CETIS	v1.9.2	
Analyzed:	16 Nov-18 11:52	Analysis:	STP 2xK Contingency Tables	Of	ficial Results:	Yes		
Data Transfor	m Alt	Нур		NOEL	LOEL	TOEL	TU	
Untransformed	i C>	• Т		100	> 100	n/a	1	

Fisher Exact/Bo	nterroni-Holm	lest			
Control vs	Group	Test Stat	P-Type	P-Value	Decision(a:5%)
Lab Water Contr	6.25	1.000	Exact	1.0000	Non-Significant Effect
	12.5	1.000	Exact	1.0000	Non-Significant Effect
	25	1.000	Exact	1.0000	Non-Significant Effect
	50	1.000	Exact	1.0000	Non-Significant Effect
	100	1.000	Exact	1.0000	Non-Significant Effect

Data Summar	y						
Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	LW	10	0	10	1	0	0.0%
6.25		10	0	10	1	0	0.0%
12.5		10	0	10	1	0	0.0%
25		10	0	10	1	0	0.0%
50		10	0	10	1	0	0.0%
100		10	0	10	1	0	0.0%

phics										
1.0	•		9	۰	0		•			
0.9										
8.0										
0.7										
Survival 9.0										
0.5										
0.4										
0.3										
0.2										
0.1										
0.0	0 LW	6.25	12.5	25	50	100	100			
	- 311			onc-%						

Analyst: Jo QA: APF

Report Date: Test Code: 16 Nov-18 11:59 (p 1 of 1)

80639 | 09-8502-3333

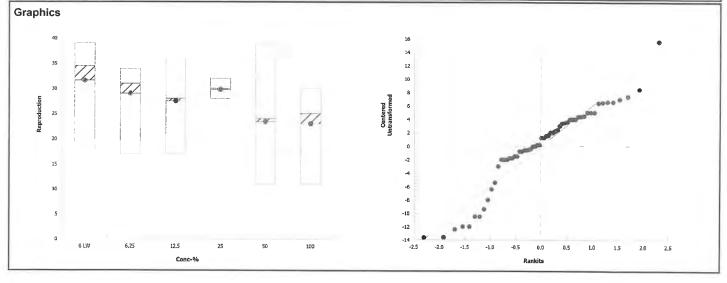
Ceriodaphnia	Survival and Repro	duction Test						Pacific EcoRisk
Analysis ID: Analyzed:	11-3872-8815 16 Nov-18 11:58	Endpoint: Analysis:	Reproduction Nonparametric-Multiple Comparison		ΓIS Version: cial Results:		1.9.2	
Data Transfor	m Alt	Нур		NOEL	LOEL	TOEL	TU	PMSD
Untransformed	d C:	> T		50	100	70.71	2	21.75%

Control vs	Conc-%	Test Stat	Critical	Ties	DF P-Type	P-Value	Decision(a:5%)
Lab Water Contr	6.25	69.5	n/a	2	17 Exact	0.2420	Non-Significant Effect
	12.5	81.5	n/a	3	18 Exact	0.1970	Non-Significant Effect
	25	67	n/a	1	17 Exact	0.1513	Non-Significant Effect
	50	75.5	n/a	2	18 Exact	0.0598	Non-Significant Effect
	100*	71	n/a	0	18 Exact	0.0206	Significant Effect

ANOVA Table							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	603.558	120.712	5	2.94	0.0206	Significant Effect	
Error	2132.86	41.0165	52				
Total	2736.41		57				

Distributional T	ests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	19.1	15.1	0.0019	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.934	0.944	0.0036	Non-Normal Distribution

Reproduction Summary												
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect	
.0	LW	10	31.6	26.1	37.1	34.5	18	39	2.41	24.11%	0.00%	
6.25		9	29	25.1	32.9	31	17	34	1.71	17.67%	8.23%	
12.5		10	27.5	22.9	32.1	28	17	36	2.04	23.46%	12.97%	
25		9	29.8	28.7	30.8	30	28	32	0.465	4.68%	5.77%	
50		10	23.4	17.3	29.5	24	11	39	2.7	36.55%	25.95%	
100		10	23	18.5	27.5	25	11	30	1.98	27.19%	27.22%	



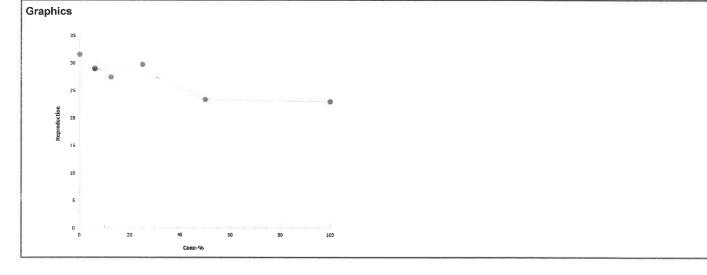
Report Date:

16 Nov-18 11:59 (p 1 of 1)

Test Code: 80639 | 09-8502-3333

										<u>'</u>
Ceriod	aphnia	Survival and Re	eproductio	n Test						Pacific EcoRisk
Analys	is ID:	11-2812-8711	End	point:	Reproduction			CETIS Version:	CETISv1.9.2	
Analyz	ed:	16 Nov-18 11:5	8 Ana	lysis:	Linear Interpola	tion (ICPIN)		Official Results:	Yes	
Linear	Interpo	lation Options								
X Trans	sform	Y Transform	n See	d	Resamples	Exp 95% CL	Method			
Linear		Linear	1226	3804	200	Yes	Two-Point	Interpolation		
Point E	stimate	es								
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL				
IC5	3.8	1.72	36	26.33	2.78	58.17				
IC10	25.9	3.44	49.1	3.854	2.036	29.08				
IC15	33.5	5.16	78.2	2.986	1.279	19.39				
IC20	41	12.1	n/a	2.437	n/a	8.238				
IC25	48.6	33	n/a	2.059	n/a	3.033				
IC40	>100	n/a	n/a	<1	n/a	n/a				
IC50	>100	n/a	n/a	<1	n/a	n/a				
_										

Reproduction Summary				C	Calculated Va	riate			
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	10	31.6	18	39	2.41	7.62	24.10%	0.0%
6.25		9	29	17	34	1.71	5.12	17.70%	8.23%
12.5		10	27.5	17	36	2.04	6.45	23.50%	13.0%
25		9	29.8	28	32	0.465	1.39	4.68%	5.77%
50		10	23.4	11	39	2.7	8.55	36.60%	25.9%
100		10	23	11	30	1.98	6.25	27.20%	27.2%



Cl	ient:		LW.	A: Calle	guas C	reek		Ma	terial:	CC	WTM	P-69-	ADOL	F-04	(5	Test	Date:	11/8/18
Proje	ct #:	294	418	1	Test ID:	806	39	Ran	ndomiz	ation:	10.	7			Co	ntrol V	Vater:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp						eproduc					SIGN-OFF
	0	New 7.94	Old	New 8.8	Old	(μS/cm)	(°C)	A O	g B	0	D	Е 0	F Ô	G ©	О	I O	9 J	Date: 11/8/18/lew WQ: Test Init. 77 Sol'n Prep: SMC 74 Time: 50 9
	1	8.02	7.85	10.9	8.0	349	24,4	0	0	0	0	0	Ô	0	0	0	2	Date: \\G\text{If\text{INew WQ: TA} Counts: T\text{Sol'n Prep: \(\text{A} Old WQ: TI Time: \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
	2	8.06		9.9	8.4	354	251	0	0	0	0	0	0	0	0	0		Date:
itrol	3	7.93	7.86	9.8	7.8	348	24.4	0	0	0	0	0	O	0	O	0	0	Date: No Wew WQ: TP Counts & Sol'n Prep: By Old WQ: Time: 13-4
Lab Water Control	4	700	7.88	11.2	6.0	346	241	7	8	8	7	8	7	6	6	7	8	Date: 11/12/18/New WQ: SF Counts: SF Sol'n Prep: St Old WQ: Time: 14 Date: 11/13/16/New WQ: TO Counts: 7
Lab Wi	5	7-83	7-75	10.2	8.3	359	24.8	0	16	9	11	13	11	12	12	12	14	Sol'n Prep: SwY Old WQ: Time: "FOR Date: (1) Poly New WQ: Counts:
	6 7	-	7.74	-	8,5	403	24.1	11	15	14	18	17	13	16	0	16	14	Sol'n Prep: Old WQ: Time: 157 Date: New WQ: Counts: Sol'n Prep: Old WQ: Time:
	8	## N X X X X X X X X X X X X X X X X X X																Date: Old WQ: Counts: Time:
							Total=	18	39	N TO	36	38	31	34	18	35	36	Mean Neonates/Female = 3 i .6
4	Day	New	Old	D New	O.	Cond. (µS/cm)		A	В	31 S	Survival D	/ Repro	duction	G	Н	I	J	Sample ID
	0	7.94		2.7		402	249	0	0	0	0	0	0	0	6	0	ð	51277
	1	8.08	7.92	10.le	8.	397	24.6	მ	σ	0	0	0	0	0	0	0	0	51277
	2	8.05	7.46	10.0	83	407	249	0	0	0	0	0	0	0	0	0	0	51277
	3	7.95	7.95	9.8	8.0	400	243	0	0	0	0	0	0	0	0	0	0	51277
6.25%	4	7.91	7.91	11.0	7.1	392	24.1	G	5	7	ય	6	5	7	3	7	٥	51277
6.	5	7.89	7.76	10-4	8.2	397	25	10	1.3	11	12	12	12	U	12	10	0	51277
	6	-	7.71	-	8.1	448	244	11	13	13	17	9	15	16	14	0	0	
	8				-[+84]+2+2+?+?+	\$x2~\$*\$*\$*\$*												
							Total=	27	31	31	33	27	32	34	29	17	0	Mean Neonates/Female = 24 . 1

C	lient:		LW.	A: Calle	eguas C	reek		Ma	terial:	CC	CWTM	IP-69-	ADOI	F-0	45	Test	Date:	11/8/18
Proje	ect#:	294	118	. 1	Γest ID:	806	39								Co	ntrol \	Water:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp				Surv		eprodu	ction				SIGN-OFF
		New	Old	New	Old	(μS/cm)		Α	В	С	D	Е	F	G	Н	L	J	
	0	7.95		8.7		451	24.8	0	0	0	9	0	ପ	0	0	0	0	
	1	8.06	7.96	10.7	8.2	439	24.6	Û	Ó	0	0	0	0	0	0	0	0	
	2	8.01	7.99	10.3	8.1	446	24.8	0	0	0	0	0	0	0	0	0	0	
	3	7.99	7.96	9.6	7.9	450	24.9	0	0	0	0	0	O	0	0	0	O	
2%	4	7.91	7 99	11.0	7.2	440	246	7	9	5	la	1-	5	5	8	ч	6	
12.	5	7.92	7-72	10.7	6.8	453	25.3	10	1)	8	12	6	7	13	14	13	11	
	6	-	7,58		64	511	III.lo	12	o	14	18	14	14	13	12	0	15	
	7		1200				-	12		101	70	, (.,		12			
	8																	
							Total=	29	17	72	36	26	74	31	34	17	77	
	Day	р	H	D	.O.	Cond.	1000	01	\ 1		Survival		4.5		37		34	Mean Neonates/Female = 2.7.5
		New	Old	New	Old	(µS/cm)		Α	В	С	D	Е	F	G	Н	I	J	
	0	7.95		8.7		541	24.5	0	Ö	0	0	0	0	0	0	0	0	
	1	8.05	8.50	10.8	8.2	530	24.7	0	0	0	0	0	0	0	0	ô	0	
	2	7.99		10.3	8.3	531	25.0	0	0	0	0	0	0	0	0	0	0	
	3	7,99		9,8	8.0	535	24.8	0	0	0	0	0	0	0	0	0	0	
25%	4		7.92		7.0	526	14.4	7-	8	X	4	6		76	6	5	6	
25	5		7.69			545		13	11	10	10	9	11	13	11	9	0	
	6	_	7.73		1.3	591	246	11	12	16.	10	14	14	12	N	14	12	
	7		-(v 155		1.0	011	0.00	1,	1)	16	16	14	1*1	14	11	1-1	13	
	8																	
							Teal	, air	-0.75		- 06	5.0	20	-		- 2	19	-0-2
							Total=	30	32	31	29	29	30	31	23	28	11	Mean Neonates/Female = 28.7

Cl	ient:		LW.	A: Calle	guas C	reek		Ma	terial:	CC	WTM	P-69-	ADOI	.F- 0	45	Test	Date:	11/8/18
Proje	ct #:	294	118	_ 1	Γest ID:	806	39								Со	ntrol \	Water:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp				_	/ival / R	·					SIGN-OFF
		New	Old	New	Old	(μS/cm)	(°C)	A	B B	C	D	Е	F	G	Н	I	J	
	0	7.93		8-8		724	24.9	0	0	O	0	0	0	0	0	0	0	
]	8.06	8.05	10.8	8.2		24.2	0	0	0	0	O	0	0	0	0	0	
	2	7.94	8.03	10.2	8.1	710	21.9	0	0	0	0	0	0	0	0	0	0	
	3	8.02	8.06	9.9	8,0	718	24.4	0	0	0	0	0	0	0	0	0	0	
20%	4	7.80	8.04	10.9	7.1	700	246	Ġ	3	0	6	7	8	0	6	4	6	
5	5	7-89	7-85	10.9	6-8	725	24.6	12	11	10	11	16	10	9	12	10	1)	
	6	-	7.74	-	7.4	850	246	0	0	1	0	16	2	14	9	11	13	
	7																	
	8																	
							Total=	18	14	11	H	361	30	23	27	25	30	Mean Neonates/Female = 7.3
1,1,1,1	Day		Н		О.	Cond.				_		/ Repro		_				
	_	New	Old	New	Old	(μS/cm)	-		В	С	D	E ∂	F	G	Н	1	J	
	0	7.93		9.4		1098	242	0	δ	Ø.	0	0	0	0	0	0	8	
	1	8.02	7.92	10.7	8.6	1081	24.6	0	0	0	0	0	0	d	0	Ô	0	
	2	8.03	804	9.7	8.0	1086	24.8	0	0	0	0	0	0	0	0	0	0	
	3	\$.01	8.17	10.0	7.9	1085	24.1	0	0	0	0	0	0	0	0	0	0	
100%	4	7.85	8.14	11.0	7-2	1044	24.4	6	4	5	4	X.	4	6	5	7	7	
100	5	7.88	7.73	10.7	4.3	1089	25,3	9	14	10	10	7	7	11	10	9	8	
	6		7.85		4.3	1229	246	0	12	12	13	4	17	17	5	7	ا	
	7																	
	8																	
							Total=	15	30	17	27	11	28	18	20	23	21	Mean Neonates/Female = 230

CETIS Summary Report

Report Date:

16 Nov-18 14:41 (p 1 of 2)

Test Code:

80641 | 07-4972-9453

Cariadanhai	ia Survival and Re		Toot							Pacific	East	Sin le
Ceriodapiiiii	a Survivar and Re	=======								Pacific	EUUr	
Batch ID:	16-2355-6672	Test	Type: Re	eproduction-S	Survival (7d)		Ana	ılyst:	Jessica Okutsu			
Start Date:	08 Nov-18 15:10		ocol: Ei	PA-821-R-02-	-013 (2002)		Dilu	ient:	Laboratory Wat	er		
Ending Date	: 14 Nov-18 15:15	5 Spec	cies: Ce	eriodaphnia d	ubia		Brit	ne:	Not Applicable			
Duration:	6d 0h	Sour	rce: In	-House Cultu	re		Age):	1			
Sample ID:	14-9038-7350	Code	e: 69	-HITCH-150			Clie	nt:	Larry Walker As	sociates		
Sample Date	e: 07 Nov-18 16:50) Mate	rial: Ar	nbient Water			Pro	ject:	29418			
Receipt Date	e: 08 Nov-18 07:37	7 Sour	ce: Ca	alleguas Cree	k							
Sample Age	: 22h (0.8 °C)	Stati	on: HI	TCH								
Multiple Con	nparison Summa	ry										
Analysis ID	Endpoint		Compari	son Method			NOEL	LOEL	TOEL	TU	PMS	D v
05-5260-4390	0 Reproduction		Dunnett I	Multiple Com	parison Test		50	100	70.71	2	24.69	%
19-4006-272	1 Survival		Fisher Ex	cact/Bonferro	ni-Holm Tes	t	100	> 100	n/a	1	n/a	
Point Estima	ate Summary											
Analysis ID	Endpoint		Point Es	timate Metho	od		Level	%	95% LCL	95% UCL	TU	/
02-8259-8407	7 Reproduction		Linear In	terpolation (IC	CPIN)		IC5	1.98	1.38	11	50.51	$\overline{}$
							IC10	3.96	2.75	36	25.25	5
							IC15	5.94	4.13	n/a	16.84	1
							IC20	38.6	5.51	n/a	2.59	
							IC25	>100	n/a	n/a	<1	
							IC40	>100	n/a	n/a	<1	
							IC50	>100	n/a	n/a	<1	
Reproductio	n Summary											_
Conc-%												
JUIIU-/0	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Er	r Std Dev	CV%	%Eff	ect
0	LW	Count 10	Mean 34	95% LCL 31.5	95% UCL 36.5	Min 28	Max 40	Std Er 1.11	Std Dev	CV% 10.28%	%Eff	_
0 6.25												%
0 6.25 12.5		10 10 10	34 28.6 27.4	31.5 23.9 21.3	36.5 33.3 33.5	28 19 18	40	1.11	3.5	10.28%	0.009	% 3%
0 6.25 12.5 25		10 10 10 10	34 28.6 27.4 29.9	31.5 23.9 21.3 23.3	36.5 33.3 33.5 36.5	28 19 18 12	40 36	1.11 2.07	3.5 6.54	10.28% 22.85%	0.009	% 3% I%
0 6.25 12.5 25 50		10 10 10 10 10	34 28.6 27.4 29.9 26	31.5 23.9 21.3 23.3 18.6	36.5 33.3 33.5 36.5 33.4	28 19 18 12 9	40 36 40 40 40	1.11 2.07 2.71 2.93 3.29	3.5 6.54 8.57 9.27 10.4	10.28% 22.85% 31.26%	0.009 15.88 19.41	% 3% 1% 5%
0 6.25 12.5 25		10 10 10 10	34 28.6 27.4 29.9	31.5 23.9 21.3 23.3	36.5 33.3 33.5 36.5	28 19 18 12	40 36 40 40	1.11 2.07 2.71 2.93	3.5 6.54 8.57 9.27	10.28% 22.85% 31.26% 30.99%	0.009 15.88 19.41 12.06	% 3% 1% 5%
0 6.25 12.5 25 50	LW	10 10 10 10 10	34 28.6 27.4 29.9 26	31.5 23.9 21.3 23.3 18.6	36.5 33.3 33.5 36.5 33.4	28 19 18 12 9	40 36 40 40 40	1.11 2.07 2.71 2.93 3.29	3.5 6.54 8.57 9.27 10.4	10.28% 22.85% 31.26% 30.99% 39.97%	0.009 15.88 19.41 12.06 23.53	% 3% 1% 5%
0 6.25 12.5 25 50 100 Survival Sun Conc-%	LW nmary Code	10 10 10 10 10 10	34 28.6 27.4 29.9 26 25.6	31.5 23.9 21.3 23.3 18.6 19.2	36.5 33.3 33.5 36.5 33.4 32	28 19 18 12 9 9	40 36 40 40 40 38	1.11 2.07 2.71 2.93 3.29 2.82	3.5 6.54 8.57 9.27 10.4 8.92	10.28% 22.85% 31.26% 30.99% 39.97% 34.85%	0.00% 15.88 19.41 12.06 23.53 24.71	% 3% 1% 5% 3% 1%
0 6.25 12.5 25 50 100 Survival Sun Conc-%	LW	10 10 10 10 10 10 10 Count	34 28.6 27.4 29.9 26 25.6 Mean 1.000	31.5 23.9 21.3 23.3 18.6 19.2 95% LCL	36.5 33.3 33.5 36.5 33.4 32 95% UCL	28 19 18 12 9 9	40 36 40 40 40 38 Max 1.000	1.11 2.07 2.71 2.93 3.29 2.82 Std Er	3.5 6.54 8.57 9.27 10.4 8.92	10.28% 22.85% 31.26% 30.99% 39.97% 34.85% CV% 0.00%	0.009 15.88 19.41 12.06 23.53 24.71 %Eff 0.009	% 3% 1% 5% 3% 1% ect
0 6.25 12.5 25 50 100 Survival Sun Conc-% 0 6.25	LW nmary Code	10 10 10 10 10 10 10 10	34 28.6 27.4 29.9 26 25.6 Mean 1.000 1.000	31.5 23.9 21.3 23.3 18.6 19.2 95% LCL 1.000 1.000	36.5 33.3 33.5 36.5 33.4 32 95% UCL 1.000 1.000	28 19 18 12 9 9 9 Min 1.000 1.000	40 36 40 40 40 38 Max 1.000 1.000	1.11 2.07 2.71 2.93 3.29 2.82 Std Er 0.000 0.000	3.5 6.54 8.57 9.27 10.4 8.92 T Std Dev 0.000 0.000	10.28% 22.85% 31.26% 30.99% 39.97% 34.85% CV% 0.00%	0.009 15.88 19.41 12.06 23.53 24.71 %Eff 0.009 0.009	% 3% 1% 5% 1% ect
0 6.25 12.5 25 50 100 Survival Sun Conc-% 0 6.25 12.5	LW nmary Code	10 10 10 10 10 10 10 10	34 28.6 27.4 29.9 26 25.6 Mean 1.000 1.000	31.5 23.9 21.3 23.3 18.6 19.2 95% LCL 1.000 1.000	36.5 33.3 33.5 36.5 33.4 32 95% UCL 1.000 1.000 1.000	28 19 18 12 9 9 Min 1.000 1.000	40 36 40 40 40 38 Max 1.000 1.000	1.11 2.07 2.71 2.93 3.29 2.82 Std Er 0.000 0.000 0.000	3.5 6.54 8.57 9.27 10.4 8.92 T Std Dev 0.000 0.000	10.28% 22.85% 31.26% 30.99% 39.97% 34.85% CV% 0.00% 0.00%	0.009 15.88 19.41 12.06 23.53 24.71 %Eff 0.009 0.009	% 1% 5% 3% 1% ect
0 6.25 12.5 25 50 100 Survival Sun Conc-% 0 6.25 12.5 25	LW nmary Code	10 10 10 10 10 10 10 10 10 10	34 28.6 27.4 29.9 26 25.6 Mean 1.000 1.000 1.000	31.5 23.9 21.3 23.3 18.6 19.2 95% LCL 1.000 1.000 1.000	36.5 33.3 33.5 36.5 33.4 32 95% UCL 1.000 1.000 1.000	28 19 18 12 9 9 Min 1.000 1.000 1.000	40 36 40 40 40 38 Max 1.000 1.000 1.000	1.11 2.07 2.71 2.93 3.29 2.82 Std Er 0.000 0.000 0.000 0.000	3.5 6.54 8.57 9.27 10.4 8.92 T Std Dev 0.000 0.000 0.000	10.28% 22.85% 31.26% 30.99% 39.97% 34.85% CV% 0.00% 0.00% 0.00%	0.009 15.88 19.41 12.06 23.53 24.71 %Eff 0.009 0.009 0.009	% 3% 1% 5% 3% 1% ect
0 6.25 12.5 25 50 100 Survival Sun Conc-% 0 6.25 12.5	LW nmary Code	10 10 10 10 10 10 10 10	34 28.6 27.4 29.9 26 25.6 Mean 1.000 1.000	31.5 23.9 21.3 23.3 18.6 19.2 95% LCL 1.000 1.000	36.5 33.3 33.5 36.5 33.4 32 95% UCL 1.000 1.000 1.000	28 19 18 12 9 9 Min 1.000 1.000	40 36 40 40 40 38 Max 1.000 1.000	1.11 2.07 2.71 2.93 3.29 2.82 Std Er 0.000 0.000 0.000	3.5 6.54 8.57 9.27 10.4 8.92 T Std Dev 0.000 0.000	10.28% 22.85% 31.26% 30.99% 39.97% 34.85% CV% 0.00% 0.00%	0.009 15.88 19.41 12.06 23.53 24.71 %Eff 0.009 0.009	% 3% 1% 5% 3% 1% ect % %



CETIS Summary Report

Report Date: Test Code:

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

16 Nov-18 11:42 (p 2 of 2) 80641 | 07-4972-9453

Ceriodaphnia S	Survival and	Reproduction	on Test							Pacif	ic EcoRisk
Reproduction I	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	36	36	36	35	28	40	32	30	35	32
6.25		30	19	35	24	31	36	21	36	32	22
12.5		20	25	40	19	22	35	18	22	37	36
25		34	36	18	40	12	22	36	31	36	34
50		9	31	28	34	34	40	10	18	29	27
100		27	19	38	22	37	21	9	26	23	34
Survival Detail											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Survival Binom	nials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

1/1

1/1

1/1

1/1

50

100

1/1

1/1

1/1

1/1

1/1

1/1

Report Date:

16 Nov-18 11:42 (p 1 of 1)

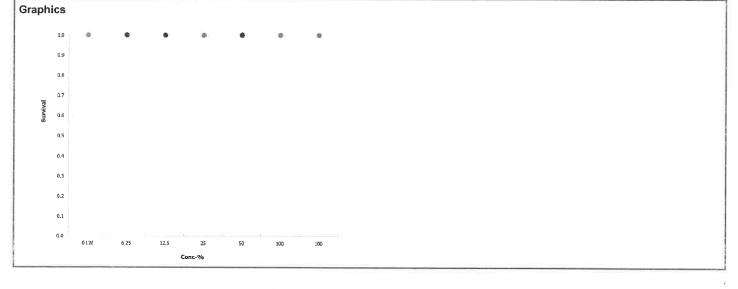
Test Code:

80641 | 07-4972-9453

Ceriodaphnia	Survival and Repro	duction Test							Pacific Eco
Analysis ID: Analyzed:	19-4006-2721 16 Nov-18 11:35	Endpoint: Analysis:	Survival STP 2xK Con	tingency Tab	es		FIS Version: cial Results		<i>r</i> 1.9.2
Data Transfor	m Alt	Нур			NO	EL	LOEL	TOEL	TU
Untransformed	d C>	• T			100		> 100	n/a	1
Fisher Exact/l	Bonferroni-Holm Tes	st							
Control	vs Group	Test	Stat P-Type	P-Value	Decision(a:5%)			

I ISHCI LXCCDOIN	CITOTII-LIOIIII I	est			
Control vs	Group	Test Stat	P-Type	P-Value	Decision(α:5%)
Lab Water Contr	6.25	1.000	Exact	1.0000	Non-Significant Effect
	12.5	1.000	Exact	1.0000	Non-Significant Effect
	25	1.000	Exact	1.0000	Non-Significant Effect
	50	1.000	Exact	1.0000	Non-Significant Effect
	100	1.000	Exact	1.0000	Non-Significant Effect

Data Summary	y						
Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	LW	10	0	10	1	0	0.0%
6.25		10	0	10	1	0	0.0%
12.5		10	0	10	1	0	0.0%
25		10	0	10	1	0	0.0%
50		10	0	10	1	0	0.0%
100		10	0	10	1	0	0.0%



Report Date:

16 Nov-18 11:42 (p 1 of 1)

Test Code:

80641 | 07-4972-9453

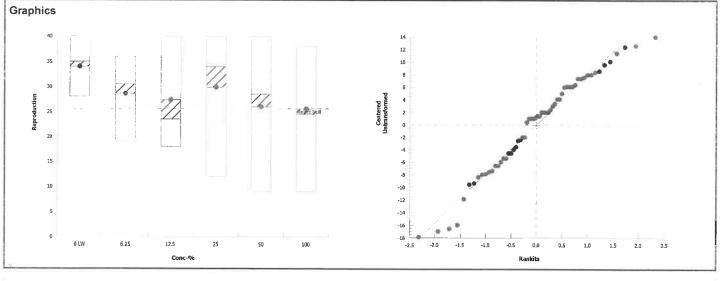
Ceriodaph	nia Sı	urvival and Repro	duction Test							Pa	cific EcoRisk
Analysis ID Analyzed:		5-5260-4390 6 Nov-18 11:35		production rametric-Co	ontrol vs	Treatments		IS Versior		1.9.2	
Data Trans	form	Alt	Нур				NOEL	LOEL	TOEL	ΤU	PMSD
Untransforn	ned	C >	→ T				50	100	70.71	2	24.64%
Dunnett Mu	ultiple	Comparison Tes	t								
Control	vs	Conc-%	Test Stat	Critical	MSD	DF P-Type	P-Value	Decisio	n(a:5%)		
Lab Water (Contr	6.25	1.48	2.29	8.38	18 CDF	0.2253	Non-Sig	nificant Effe	ct	
		12.5	1.0	2.20	0.20	40 CDE	0.4944	Man Cin	-:E	-1	

Control vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(a:5%)
Lab Water Contr	6.25	1.48	2.29	8.38	18	CDF	0.2253	Non-Significant Effect
	12.5	1.8	2.29	8.38	18	CDF	0.1314	Non-Significant Effect
	25	1.12	2.29	8.38	18	CDF	0.3634	Non-Significant Effect
	50	2.19	2.29	8.38	18	CDF	0.0624	Non-Significant Effect
	100*	2.3	2.29	8.38	18	CDF	0.0493	Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	480.483	96.0967	5	1.44	0.2266	Non-Significant Effect
Error	3616.1	66.9648	54			
Total	4096.58		59			

Distributional 1	Гests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variances	Bartlett Equality of Variance Test	10	15.1	0.0751	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.969	0.946	0.1278	Normal Distribution

Reproduction	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	10	34	31.5	36.5	35	28	40	1.11	10.28%	0.00%
6.25		10	28.6	23.9	33.3	30.5	19	36	2.07	22.85%	15.88%
12.5		10	27.4	21.3	33.5	23.5	18	40	2.71	31.26%	19.41%
25		10	29.9	23.3	36.5	34	12	40	2.93	30.99%	12.06%
50		10	26	18.6	33.4	28.5	9	40	3.29	39.97%	23.53%
100		10	25.6	19.2	32	24.5	9	38	2.82	34.85%	24.71%



Report Date:

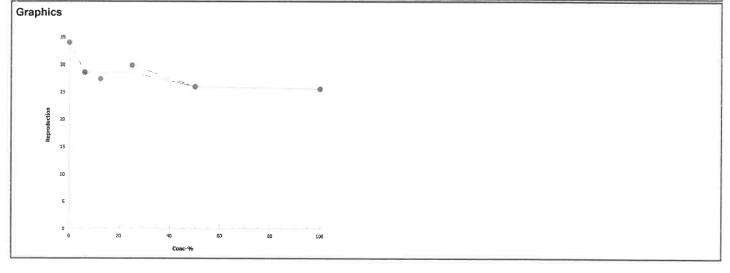
16 Nov-18 11:42 (p 1 of 1)

Test Code:

80641 | 07-4972-9453

Ceriod	aphnia	Survival and Re	eprodu	ction	Test						Pacific EcoRisi
Analys	is ID:	02-8259-8407		Endp	oint:	Reproduction			CETIS Version:	CETISv1.9.2	
Analyz	ed:	16 Nov-18 11:3	5	Analy	ysis:	Linear Interpola	tion (ICPIN)		Official Results:	Yes	
Linear	Interpo	lation Options									
X Trans	sform	Y Transform	ı	Seed	I	Resamples	Exp 95% CL	Method			
Linear		Linear		1770	989	200	Yes	Two-Point	Interpolation		
Point E	stimate	es									
Level	%	95% LCL	95% L	UCL	TU	95% LCL	95% UCL				
IC5	1.98	1.38	11		50.51	9.101	72.64				
IC10	3.96	2.75	36		25.25	2.781	36.32				
IC15	5.94	4.13	n/a		16.84	n/a	24.21				
IC20	38.6	5.51	n/a		2.59	n/a	18.16				
IC25	>100	n/a	n/a		<1	n/a	n/a				
IC40	>100	n/a	n/a		<1	n/a	n/a				
IC50	>100	n/a	n/a		<1	n/a	n/a				
Reproc	luction	Summary					Calculat	ted Variate			

Reproduction	Summary				C	Calculated Va	riate		
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	10	34	28	40	1.11	3.5	10.30%	0.0%
6.25		10	28.6	19	36	2.07	6.54	22.90%	15.9%
12.5		10	27.4	18	40	2.71	8.57	31.30%	19.4%
25		10	29.9	12	40	2.93	9.27	31.00%	12.1%
50		10	26	9	40	3.29	10.4	40.00%	23.5%
100		10	25.6	9	38	2.82	8.92	34.90%	24.7%



Analyst: JO QA: ARE

C	lient:	: LWA: Calleguas Creek : 29418 Test ID: 8064												:H- <i>1</i> 5	.0	Test	Date:	11/8/18
Proje	ect#:	294	418	1	Γest ID:	806	41	Rar	ndomiz	zation:	10	17.			Co	ntrol \	Water:	Mod EPAMH
	Day	рН		D.O.		Cond.	Temp						Leprodu					SIGN-OFF
	0	New 7.72	Old	New 8.5	Old	(μS/cm)	(°C) 24.2	A	В	С	D	E	F	G	Н	O	O 1	Dates 1/8/6New WQ: Test Init. (1) Sol'n Prepsyn C SR Time: 1510
	1	8.04	8.11	10.3	8.1	358	25.2	0	0	0	0	0	0	0	0	0	0)	Date:\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
	2	7.90	7.78	9.8	8.3	348	24.0	0	0	0	0	8	0	0	0	0	3	Date: 11/16/18 New WQ: SD Counts: Sol'n Prep: SMC Old WQ: SD Time: 134
frol	3	8.12	8.01	9.8	8.0	350	24.6	Ò	0	6	0	3	8	0	6	7	0	Date: 1/11/16 New WQ: 5 Counts: Sol'n Prep: WO Old WQ: TP Time: 75
er Con	4	7.88	8.12	11.3	8.1	348	24.7	5	8	0	8	5	0	0	7	0	8	Date:\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
ab Water Control	5	7.86	7.76	10:7	8-0	357	282	13	13.	4	13	13	15	12	10	13	4.1	Date: W1946 New WQ: W Counts: 6
	6	1984	7 41	-	8.5	341	75.4	18	15	11P	14	7	17	14	13	15	13	Date: WM/18 New WQ: — Counts: St Sol'n Prep: - Old WQ: YG Time St S
	7																	Date: New WQ: Counts: Sol'n Prep: Old WQ: Time:
	8																	Date: Old WQ: Counts: Time:
							Total=	36	36	36		28		32	30	35	32	Mean Neonates/Female = 34.0
N. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4.	Day	New P	H Old	D. New	O. Old	Cond. (µS/cm)		A	В	C	D D	/ Repro	duction F	G	Н	1	J	Sample ID
and and a dealer	0	7.77	**************************************	8.4		446	Z5,5	0	0	0	0	0	0	0	0	0	Ò	51279
	1	8.07	8.18	9.6	8.1	442	249	0	0	0	0	0	0	0	0	0	0	51279
	2	7.88	7.87	9.9	8.2	450	24.0	0	0	0	0	0	0	0	0	0	0	51279
	3	8.03	8.06	10.1	8.1	453	245	5	B	7	0	0	7	6	0	6	٥	51279
6.25%	4	7.86	20.8	11.0	8.1	454	24.8	6	8	0	O	4	0	7	0	0	6	51279
9	5	7:89	7-24	ID 9	8.1	448	25.1	13	17	13	8	10	13	0	14	9	9	51279
	6	-	7.48	-	8.2	468	25.6	12	0	15	16	17	16	14	16	17	7	1700
	7																	
	8																	
							Total=	30	19	35	24	31	360	21	36	32	22	Mean Neonates/Female = 28.6

CI	ient:		LW	A: Calle	guas C	reek		Ma	terial:	CC	CWTN	1P-69-	HITC	:H- <i>15</i>	o	Test	Date:	11/8/18
Proje	ct #:	294	418	1	est ID:	806	41								Co	ntrol \	Water:	Mod EPAMH
	Day	pН	011	D.O.	011	Cond. (µS/cm)	Temp (°C)		D	0			eprodu		TY		J	SIGN-OFF
	0	7.81	Old	New 8.5	Old	556		A O	В	С	D	E	F	G	Н		(
			100 H				- 1.	7	0	0	0	0	0		0	0		
	1	8-11	8.21	9,4			25.1	0	0	0	0	0	0	0	0	0	0	
١.	2	7.88	7.91	10.1	8.3	535	O.PS	0	0	0	0	0	0	0	Ò	0	O	
	3	8.02	7,99	0.2	7.6	542	251	6	0	٦	0	0	7	0	0	0	0	
12.5%	4	7.85	8.09	11.2	8.1	543	25.0	0	6	0	6	0	0	7	7	7	8	
12.	5	7.90	7.85	11.0	8.0	543	25.3	11	4	15	13	12	12	8	2	13	10	
	6		7.70	-	8.0	Slo4	25.4		15	18	0	4	16	3	13	17	18	
	7		1.70		0.0	SWI	23.1		15	18			10	Ť	1		10	
	8	100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0																
							Total-	2	- 1	210	19	22	7 4	18	22	7-7	7(.	
	Day	р	Н	D.	О.	Cond.	Total=	10	25		Survival				LL	71	74	Mean Neonates/Female = 27.4
		New	Old	New	Old	(µS/cm)		Α	В	С	D	Е	F	G	Н	I	J	
	0	7.83	日本の大田田の大田の大田の 日本の大田田の大田の大田の 日本の大田田の大田の大田の 大田田の大田の田の大田の 大田田の大田の田の大田の 大田田の大田の田の大田の	8.6		725	24,9	0	0	0	0	0	0	0	0	0	0	
	1	8.13	8.24	9.4	8.1	702	25.3	0	0	0	0	0	0	0	0	0	0	
	2		7.94	10.2		723		0	D	0	0	0	0	0	0	0	0	
	3		8.15		7.9	722	2514	7	O	6	0	0	6	0	0.4	- Y	0	
,,	4		8.12		8.1	709	24.1		6	0	7	0	0	6	5	0	6	
25%	5						-	_		12			11.	13	11	15	13	
		7.89	7.90	11.1	8.1		24.9				13	6	11					
	6	_	7.70	-	7.8	755	256	17	16	0	20	0	5	17	15.	17	15	
	7																	
	8																	
							Total=	34	36	18	५०	12	22	36	31	36	34	Mean Neonates/Female = 29.9

Cl	ient:		LW.	A: Calle	eguas C	reek		Ma	terial:	CC	CWTN	IP-69-	нтс	H- /=	50	Test	Date:	11/8/18
Proje	ct #:	294	118	1	Γest ID:	806	41								Co	ntrol V	Water:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp				Surv	/ival / R	eprodu	ction				SIGN-OFF
		New	Old	New	Old	(µS/cm)	(°C)	Α	В	С	D	Е	F	G	Н	I	J	
	0	7.87		8.6		1049	25,0	0	0	0	0	0	0	0	0	0	0	
	1	9.14	8.32	9.2	8.2	1033	25.3	0	0	0	0	0	0	0	0	0	0	
	2	7.84	8.03	10.1	8.3	१०७८	٥.٢٤	0	0	0	P	0	0	0	0	0	0	
	3	8.00	8.24	10.1	7.9	1042	25.72	0	0	0	0	6	0	0	0	0	0	
20%	4	7.90	8.11	10.7	7.7	1030	14.8	0	4	5	4	0	8	5	6	4	0	
S	5	7.90	8.00	10.9	7.9	1073	253	9	11	10	13	12	14	2	13	12	14	
	6	-	7.77	_	7.0	1153	25.4	0	16	13	17	16	18	3	0	13	7	
	7																	
	8																	
							Total=	9	31	28	34	34	40	10	90	29	27	Mean Neonates/Female = 260
	Day	р	Н	D.	.O.	Cond.	100 100 10				Survival		_					
		New	Old	New	Old	(µS/cm)		-	В	C	D	Е	F	G	Н	I	J	
	0	7.87		8.9		1719	25,0	0	0	0	0	0	0	0	0	0	0	
	1	8.16	8.46	9.1	8.1	1683	25.2	0	0	0	0	0	0	0	0	0	Q	
	2	7.34	8.12	9.7	8.4	1723	24.0	0	0	0	0	0	0	0	0	0	6	
	3	7.91	8.40	9.7	8.0	1710	24.9	Lö	0	Q	0	0	0	0	0	1	3	
100%	4	7.82	8.30	10.2	7.8	1679	24.9	0	0	0	2	7	1	3	5	G	0	
=	5	7.84	8.16	10.4	7.3	1727	25.5	14	10	12	VO	12	15	3	0	15	12	
	6	_	7.99	1	7.4	1777		7	9	20	16	18	5	D.	21	7	19	
	7																	
	8																	
							Total=	27	19	38	22	37	21	Je alkili	26	23	34	Mean Neonates/Female = 25-3 25.6

CETIS Summary Report

Report Date:

26 Nov-18 09:48 (p 1 of 2)

Test Code:

80642 | 01-7159-0088

Ceriodaphni	a Survival and Re	eproduction	n Test							Pacific	: EcoF	≀isk
Batch ID:	09-8326-0482	Tes	Type:	Reproduction-S	Survival (7d)		Ana	ılyst:	Jessica Okutsu			
Start Date:	08 Nov-18 15:18	B Pro	ocol:	EPA-821-R-02	-013 (2002)		Dile	ient:	Laboratory Wate	er		
Ending Date :	: 14 Nov-18 16:34	Spe	cies:	Ceriodaphnia d	lubia		Bri	ne: I	Not Applicable			
Duration:	6d 1h	Sou	rce:	In-House Cultu	re		Age):	1	_		
Sample ID:	20-0689-8905	Cod	e:	69-GATE-202			Clie	nt:	Larry Walker As	sociates		
Sample Date	: 07 Nov-18 13:00) Mat	erial:	Ambient Water	•		Pro	ject: 2	29418			
Receipt Date	: 08 Nov-18 07:37	' Sou	rce:	Calleguas Cree	ek							
Sample Age:	26h (0.6 °C)	Stat	ion:	GATE								
Multiple Com	nparison Summa	ry										
Analysis ID	Endpoint			arison Method			NOEL	LOEL	TOEL	TU	PMS	D .
	Reproduction		Dunne	tt Multiple Com	parison Tes	t	25	50	35.36	4	26.79	6
15-3880-5173	3 Survival		Fisher	Exact/Bonferro	ni-Holm Tes	t	100	> 100	n/a	1	n/a	
Point Estima	te Summary											
Analysis ID	Endpoint		Point I	Estimate Meth	od		Level	%	95% LCL	95% UCL	TU	
03-7239-2020	Reproduction		Linear	Interpolation (IC	CPIN)		IC5	1.3	0.807	6.8	77.07	,
							IC10	2.59	1.61	8.17	38.54	ŀ
							IC15	3.89	2.42	11.9	25.69	}
							IC20	5.19	3.23	73.3	19.27	,
							IC25	6.9	4.04	n/a	14.49	ł
							IC40	>100	n/a	n/a	<1	
							IC50	>100	n/a	n/a	<1	
Reproduction	n Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Er	r Std Dev	CV%	%Eff	ect
0	LW	10	32.8	26.8	38.8	4.0						
						18	42	2.65	8.38	25.54%	0.00%	6
6.25		10	24.9	19.2	30.6	13	42 35	2.65 2.5	8.38 7.91	25.54% 31.76%	24.09	
12.5		10	16.3	19.2 10.9			35 32					%
12.5 25		10 10	16.3 26.2	19.2 10.9 21.2	30.6 21.7 31.2	13 6 13	35 32 36	2.5	7.91	31.76%	24.09	9% 9%
12.5 25 50		10 10 10	16.3	19.2 10.9	30.6 21.7	13 6	35 32	2.5 2.37	7.91 7.48	31.76% 45.91%	24.09 50.30	9% 9% 2%
12.5		10 10	16.3 26.2	19.2 10.9 21.2	30.6 21.7 31.2	13 6 13	35 32 36	2.5 2.37 2.21	7.91 7.48 6.97	31.76% 45.91% 26.61%	24.09 50.30 20.12	9% 9% 9% 9%
12.5 25 50	nmary	10 10 10	16.3 26.2 23.5	19.2 10.9 21.2 16.7	30.6 21.7 31.2 30.3	13 6 13 3	35 32 36 36	2.5 2.37 2.21 2.99	7.91 7.48 6.97 9.44	31.76% 45.91% 26.61% 40.18%	24.09 50.30 20.12 28.35	9% 9% 9% 9%
12.5 25 50 100 Survival Sum Conc-%	Code	10 10 10 10	16.3 26.2 23.5 22.1 Mean	19.2 10.9 21.2 16.7 14.5	30.6 21.7 31.2 30.3 29.7	13 6 13 3 9	35 32 36 36 37	2.5 2.37 2.21 2.99 3.37	7.91 7.48 6.97 9.44 10.7	31.76% 45.91% 26.61% 40.18% 48.29%	24.09 50.30 20.12 28.35	9% 9% 9% 9% 9%
12.5 25 50 100 Survival Sum Conc-%	•	10 10 10 10 10 Count	16.3 26.2 23.5 22.1 Mean 1.000	19.2 10.9 21.2 16.7 14.5 95% LCL	30.6 21.7 31.2 30.3 29.7 95% UCL	13 6 13 3 9 Min	35 32 36 36 37 Max 1.000	2.5 2.37 2.21 2.99 3.37 Std Er 0.000	7.91 7.48 6.97 9.44 10.7 Std Dev 0.000	31.76% 45.91% 26.61% 40.18% 48.29% CV% 0.00%	24.09 50.30 20.12 28.35 32.62	9% 9% 9% 9% 9%
12.5 25 50 100 Survival Sum Conc-% 0 6.25	Code	10 10 10 10 10 Count 10	16.3 26.2 23.5 22.1 Mean 1.000 1.000	19.2 10.9 21.2 16.7 14.5 95% LCL 1.000 1.000	30.6 21.7 31.2 30.3 29.7 95% UCL 1.000 1.000	13 6 13 3 9 Min 1.000 1.000	35 32 36 36 37 Max 1.000 1.000	2.5 2.37 2.21 2.99 3.37 Std Er 0.000 0.000	7.91 7.48 6.97 9.44 10.7	31.76% 45.91% 26.61% 40.18% 48.29%	24.09 50.30 20.12 28.35 32.62 %Effe	9% 9% 9% 9% 9%
12.5 25 50 100 Survival Sum Conc-% 0 6.25 12.5	Code	10 10 10 10 10 Count 10 10	16.3 26.2 23.5 22.1 Mean 1.000 1.000	19.2 10.9 21.2 16.7 14.5 95% LCL 1.000 1.000	30.6 21.7 31.2 30.3 29.7 95% UCL 1.000 1.000 1.000	13 6 13 3 9 Min 1.000 1.000	35 32 36 36 37 Max 1.000 1.000	2.5 2.37 2.21 2.99 3.37 Std Er 0.000 0.000 0.000	7.91 7.48 6.97 9.44 10.7 Std Dev 0.000	31.76% 45.91% 26.61% 40.18% 48.29% CV% 0.00%	24.09 50.30 20.12 28.35 32.62 %Effe 0.00%	9% 9% 9% 9% 9% 9%
12.5 25 50 100 Survival Sum Conc-% 0 6.25 12.5 25	Code	10 10 10 10 10 Count 10 10 10	16.3 26.2 23.5 22.1 Mean 1.000 1.000 1.000 1.000	19.2 10.9 21.2 16.7 14.5 95% LCL 1.000 1.000 1.000	30.6 21.7 31.2 30.3 29.7 95% UCL 1.000 1.000 1.000	13 6 13 3 9 Min 1.000 1.000 1.000	35 32 36 36 37 Max 1.000 1.000 1.000	2.5 2.37 2.21 2.99 3.37 Std Er 0.000 0.000 0.000 0.000	7.91 7.48 6.97 9.44 10.7 r Std Dev 0.000 0.000	31.76% 45.91% 26.61% 40.18% 48.29% CV% 0.00% 0.00%	24.09 50.30 20.12 28.35 32.62 %Effe 0.00% 0.00%	9% 9% 9% 6% 9% ect 6
12.5 25 50 100 Survival Sum Conc-% 0 6.25 12.5	Code	10 10 10 10 10 Count 10 10	16.3 26.2 23.5 22.1 Mean 1.000 1.000	19.2 10.9 21.2 16.7 14.5 95% LCL 1.000 1.000	30.6 21.7 31.2 30.3 29.7 95% UCL 1.000 1.000 1.000	13 6 13 3 9 Min 1.000 1.000	35 32 36 36 37 Max 1.000 1.000	2.5 2.37 2.21 2.99 3.37 Std Er 0.000 0.000 0.000	7.91 7.48 6.97 9.44 10.7 r Std Dev 0.000 0.000 0.000	31.76% 45.91% 26.61% 40.18% 48.29% CV% 0.00% 0.00% 0.00%	24.09 50.30 20.12 28.35 32.62 %Effe 0.00% 0.00%	9% 9% 9% 9% 9% 9% 66 66 66

Report Date:

26 Nov-18 09:48 (p 2 of 2)

Test Code:

80642 | 01-7159-0088

							169	t Code:		00042 0	1-/159-008
Ceriodaphnia	Survival and	Reproducti	on Test							Pacif	ic EcoRisl
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	42	37	33	35	34	41	33	37	18	18
6.25		15	13	32	27	29	35	24	34	23	17
12.5		13	9	22	18	12	6	13	32	21	17
25		22	31	19	29	28	31	36	13	31	22
50		26	28	31	36	29	18	3	19	28	17
100		37	10	9	20	32	13	13	36	26	25
Survival Detai	I										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Survival Binor	nials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Report Date:

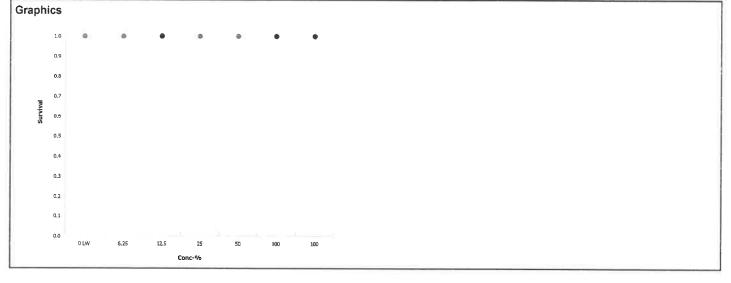
26 Nov-18 09:48 (p 1 of 1)

Test Code:

80642 | 01-7159-0088

Ceriodaphnia	Survival and R	eproduction Test								Pacific EcoRisk
Analysis ID: Analyzed:	15-3880-5173 16 Nov-18 12:	Endpoint: I4 Analysis:		tingency Tab	les		IS Version:	CETIS Yes	v1.9.2	
Data Transfori	m	Alt Hyp			N	OEL	LOEL	TOEL	·TU	
Untransformed		C > T			10	00	> 100	n/a	1	
Fisher Exact/E	Bonferroni-Holn	n Test								
Control v	s Group	Test	Stat P-Type	P-Value	Decision(a:5	%)				
Control v Lab Water Con		1.000		P-Value 1.0000	Decision(α:5 Non-Signification					
			Exact			nt Effect				
	itr 6.25	1.000	Exact Exact	1.0000	Non-Significal	nt Effect				
	itr 6.25 12.5	1.000 1.000	Exact Exact Exact	1.0000 1.0000	Non-Signification	nt Effect nt Effect nt Effect				

Data Summary							
Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	LW	10	0	10	1	0	0.0%
6.25		10	0	10	1	0	0.0%
12.5		10	0	10	1	0	0.0%
25		10	0	10	1	0	0.0%
50		10	0	10	1	0	0.0%
100		10	0	10	1	0	0.0%



Analyst: 50 QA: M

Report Date:

26 Nov-18 09:48 (p 1 of 1)

Test Code:

80642 | 01-7159-0088

Ceriodaphi	nia Sui	rvival and Reprod	luction Test								Pa	cific EcoRisk
Analysis ID Analyzed:		-3783-3496 5 Nov-18 12:14		oroduction ametric-Co	ontrol vs	Trea	tments		IS Version		1.9.2	
Data Trans	form	Alt	Нур					NOEL	LOEL	TOEL	TU	PMSD
Untransform	ned	C >	Т					25	50	35.36	4	26.74%
Dunnett Mu	ıltiple	Comparison Test										
Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decisio	n(a:5%)		
Lab Water (Contr	6.25	2.06	2.29	8.77	18	CDF	0.0805	Non-Sig	nificant Effec	t	
		12.5*	4.31	2.29	8.77	18	CDF	1.7E-04	Significa	ant Effect		
		25	1.72	2.29	8.77	18	CDF	0.1514	Non-Sig	nificant Effec	t	
		50*	2.43	2.29	8.77	18	CDF	0.0367	Significa	ant Effect		
		100*	2.79	2.29	8.77	18	CDF	0.0151	Significa	ant Effect		
ANOVA Tab	ole											
Source		Sum Squares	Mean Squ	are	DF		F Stat	P-Value	Decisio	n(a:5%)		
Between		1457	291.4		5		3.97	0.0039	Significa	ant Effect		
Error		3963.6	73.4		54							

Distri	ibuti	onal	Tests

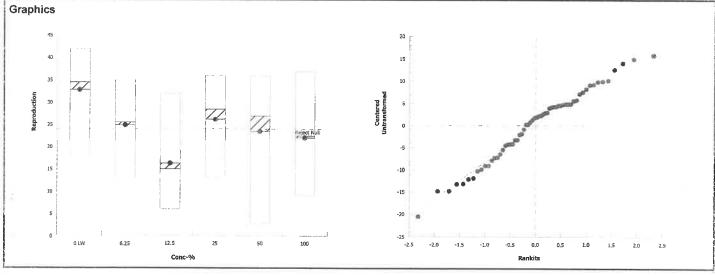
5420.6

Total

Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variances	Bartlett Equality of Variance Test	2.19	15.1	0.8229	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.979	0.946	0.3709	Normal Distribution

59

Reproduction	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	10	32.8	26.8	38.8	34.5	18	42	2.65	25.54%	0.00%
6.25		10	24.9	19.2	30.6	25.5	13	35	2.5	31.76%	24.09%
12.5		10	16.3	10.9	21.7	15	6	32	2.37	45.91%	50.30%
25		10	26.2	21.2	31.2	28.5	13	36	2.21	26.61%	20.12%
50		10	23.5	16.7	30.3	27	3	36	2.99	40.18%	28.35%
100		10	22.1	14.5	29.7	22.5	9	37	3.37	48.29%	32.62%



Report Date: Test Code:

Official Results: Yes

26 Nov-18 09:48 (p 1 of 1)

80642 | 01-7159-0088

Cerio	aphnia	Survival and Rep	roduction Test				Pacific EcoRisk
Analys	sis ID:	03-7239-2020	Endpoint:	Reproduction	CETIS Version:	CETISv1.9.2	

Analysis: Linear Interpolation (ICPIN)

Linear Interpolation Options

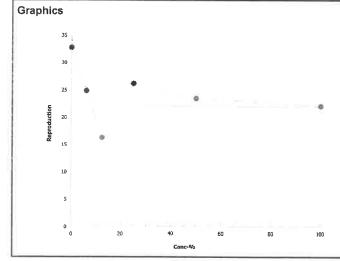
16 Nov-18 12:14

Analyzed:

Emedi interper	duon options				
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1782271	200	Yes	Two-Point Interpolation

	Linear	1702	2271 4	200	163	two-Point interpolation
stimates						
%	95% LCL	95% UCL	TU	95% LCL	95% UCL	
1.3	0.807	6.8	77.07	14.7	123.8	
2.59	1.61	8.17	38.54	12.24	61.92	
3.89	2.42	11.9	25.69	8.401	41.28	
5.19	3.23	73.3	19.27	1.365	30.96	
6.9	4.04	n/a	14.49	n/a	24.77	
>100	n/a	n/a	<1	n/a	n/a	
>100	n/a	n/a	<1	n/a	n/a	
	% 1.3 2.59 3.89 5.19 6.9 >100	% 95% LCL 1.3 0.807 2.59 1.61 3.89 2.42 5.19 3.23 6.9 4.04 >100 n/a	% 95% LCL 95% UCL 1.3 0.807 6.8 2.59 1.61 8.17 3.89 2.42 11.9 5.19 3.23 73.3 6.9 4.04 n/a >100 n/a n/a	% 95% LCL 95% UCL TU 1.3 0.807 6.8 77.07 2.59 1.61 8.17 38.54 3.89 2.42 11.9 25.69 5.19 3.23 73.3 19.27 6.9 4.04 n/a 14.49 >100 n/a n/a <1	Estimates % 95% LCL 95% UCL TU 95% LCL 1.3 0.807 6.8 77.07 14.7 2.59 1.61 8.17 38.54 12.24 3.89 2.42 11.9 25.69 8.401 5.19 3.23 73.3 19.27 1.365 6.9 4.04 n/a 14.49 n/a >100 n/a n/a <1	Estimates % 95% LCL 95% UCL TU 95% LCL 95% UCL 1.3 0.807 6.8 77.07 14.7 123.8 2.59 1.61 8.17 38.54 12.24 61.92 3.89 2.42 11.9 25.69 8.401 41.28 5.19 3.23 73.3 19.27 1.365 30.96 6.9 4.04 n/a 14.49 n/a 24.77 >100 n/a n/a <1

Reproduction	Summary				C	Calculated Va	riate		
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	10	32.8	18	42	2.65	8.38	25.50%	0.0%
6.25		10	24.9	13	35	2.5	7.91	31.80%	24.1%
12.5		10	16.3	6	32	2.37	7.48	45.90%	50.3%
25		10	26.2	13	36	2.21	6.97	26.60%	20.1%
50		10	23.5	3	36	2.99	9.44	40.20%	28.4%
100		10	22.1	9	37	3.37	10.7	48.30%	32.6%



Analyst: 50 QA:

C	lient:		LW	A: Calle	eguas C	reek			terial:						2	Test	Date:	11/8/18	
Proj	ect #:	294	418	-	Γest ID:	806	42	Rar	ndomiz	zation:	1	0.7	.5		Co	ntrol \	Water:	Mod EPAMH	
	Day	рН		D.O.		Cond.	Temp				Surv	vival / R	eprodu	ction				SIGN-OFF	
		New	Old	New	Old	(µS/cm)		Α	В	С	D	Е	F	G	Н	I	J	Date: 11/2/18 New WQ: Test Init.: Ca	
	0	7.90		8.5		352	24.1	0	0	0	0	0	0	0	0	0	0	Sol'n Prepsinc TA Time: 1518	
	1	8-17	8 00	10.0	80	361	25.4	0	0	0	0	0	0	0	0	0	0	Date \ Al & New WQ: TA Counts: CD Sol'n Prep: RO Old WQ: SD Time (407)	
	2									-				7		_	_	Date: 11 /10/6New WQ: SD Counts: 2	
	4	7.91	7.79	10.1	8.4	355	25.5	0	0	0	0	0	0	0	0	0	0	Sol'n Prepare Old WQ: TA Time/o/o Date: h/h/t 6New WQ: TA Counts: \$4	
rol	3	8.01	8.09	9.5	0.8	349	24.7	0	0	0	0	0	0	0	0	0	0	Sol'n Prep: By Old WQ: AR Time: \230	
Cab Water Control	4	8.00	7.93	in 9	8.1	346	24.7	7	5	6	7	8	7	8	5	6	/	Date: 11:12/19New WQ:3F Counts: KL	
Nater				1071	-						-	U	/	U				Sol'n Prep: 3 Old WQ: SF Time: 1520 Date: V 16/16 New WQ 16/1 Counts: 50	
Lab \	5	7.83	7.69	10.9	8-0	356	24.0		11	9	11	11	13	10	14	12	12	Sol'n Prep: Cane Old WQ: IO Time: 52/	normall
	6	_	7.65	_	8,2	409	24.7	21	N	18	17	15	21	15	18	0	0	Date: V(W)New WQ: Counts: R. Sol'n Prep: Old WQ: N Time: 115	1634
	7								rough	แห								Date: New WQ: Counts:	
										_								Sol'n Prep: Old WQ: Time: Date: Old WQ: Counts:	
	8																	Time:	
							Total=	43	37	_	35			33	37	18	18	Mean Neonates/Female = 32.8	
	Day	-	Н	-	.0.	Cond. (µS/cm)	100000000000000000000000000000000000000			_	Survival				1.7			Sample ID	
		New	Old	New	Old			A	В	C	D	Е	F	G	H	0	J		
	0	7.92		8.6		397	24.6	0	0	0	0	0	0	0	0	0	0	51280	
	1	8-13	8.10	10.0	8.0	392	24.7	0	0	0	0	0	0	0	0	0	0	51280	
	2	7.91	7-91	10.1	8-6	397	25.9	0	0	0	0	0	0	0	0	0	0	51280	
	3	7.99	8.04	10.0	8.4	397	24.6	0	0	0	0	0	0	0	0	0	0	51280	
6.25%	4	1.96	7-37	10.8	8.2	385	243	4	0	7	6	6	8	7	7	6	6	51280	
6.2	5	7.84	7.64		7.5	394	24.0	il	13	8	10	10	12	0	9	7	11	51280	
	6		7,59		7.1	433	24.6		0	17	11	13	15	17	18	15	0		
			4701			103	- 1.0	U		-	11	10	LJ	1	ιg	נט	0		
	7	HOLENS ST. 1807		********				-										14,055,000,000,005,000,000,000,000,000,00	
	8																		
							Total=	15	13	33	27	29	35	24	34	23	17	Mean Neonates/Female = 24.9	

Cl	ient:		LW	A: Calle	guas C	reek		Ma	terial:	C	CWTN	1P-69	-GAT	E- 20	2	Test	Date:	11/8/18
Proje	ct #:	294	118	1	est ID:	806	42								Co	ntrol V	Water:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp					_	eproduc	1				SIGN-OFF
		New	Old	New	Old	(μS/cm)	(°C)	Α	В	С	D	E	F	G	Н	I	J	
	0	7.92		8.6		435	24.8	0	0	0	0	0	0	0	0	0	0	
	1	8-11	8.12	9.9	8.(432	24.9	0	0	0	0	0	0	0	0	0	0	
	2	7.90	7.90	10.1	8.6	459	25.2	-0	0	0	0	0	0	0	0	0	O	
	3	7.96	90.8	9.9	8.4	440	24.6	0	0	0	0	0	0	0	0	0	S	
12.5%	4	7.91	7,89	10.7	8.1	430	24.6	6	0	6	6	5	6	5	7	6	5	
12	5	7.83	7-65	ua	7.0	441	24.0	7	9	12	12	5	0	8	10	0	12	
	6	-	761		6.9	471	240	0	O	4	0	2	0	0	15	15	0	
	7																	
	8.															6		
							Total=	13	9	22	18	12	6	13.	32	21	17	Mean Neonates/Female = 16.3
	Day	_	Н	_	O.	Cond.	and earth and						duction		11	,	,	
		New	Old	New	Old	(µS/cm)			В	С	D	E	F	G	Н	I]	
	0	7.90		8.7		525	25.4	0	0	0	0	0	0	0	0	0	0	
	1	8.08	8.13	9.8	8.1	509	253	0	0	0	0	0	0	0	0	0	0	
	2	7.87	7.95	10.1	8.5	523	25.4	0	0	0	0	0	O	0	0	0	0	
	3	7.92	8.11	10.1	8.5	521	44	0	0	0	0	0	σ	0	0	0	0	
25%	4	7.86	7.91	10.7	8.1	513	24.7	5	4	3	5	5	6	3	3	4	0	
2	5	7.81	7.58	161	5.4	516	24.0	Z	8	9	8	8	10	13	10	9	1)	
	6	_	7,66		7,1	548	242	15	19	7	16	15	15	20	0	18	11	
	7											lei						
	8																	
							Total=	22	31	19	29	28	31	36	13	31	22	Mean Neonates/Female = 26.2

Cl	ient:		LW	A: Calle	guas C	reek		Ma	terial:	C	CWTN	1P-69-	-GAT	E- 20				11/8/18
Proje	ct #:	294	118	1	Test ID:	806	42								Co	ntrol V	Vater:	Mod EPAMH
	Day	pН	Old	D.O.	Old	Cond. (µS/cm)	Temp (°C)	A	В	С	Surv	rival / R	eproduc F	ction	Н	I	J	SIGN-OFF
	0	New 7 89	Ola	8-8			24.8	0	0	0	0	0	0	0	G	0	0	
	1		8-14		8.1	2.17	252	0	0	0	0	0	0	0	0	0	0	
	2					687	20.7	0	0	0	0	O	0	0	0	0	0	
	3	7.87					24.5	0	0	0	0	0	0	0	D	0	Ò	
20%	4	7.79	7.94	10.6	8.3	666	24.3	6	5	6	4	3	4	0	5	5	4	
5	5	7.75	7-67	רוסו	6.1	682	24,0		H	5	13	7	7	3	1	7	1	
	6	_	7.76	_	7.8	749	24.3	15	19	20	19	19	7	0	13	16	12	
	7							nell	14/13									
	8	# 1																
							Total=	26	28			29			19	28	17	Mean Neonates/Female = 23.5 23.
	Day	New	Old	D New	.O.	Cond. (µS/cm)		A	В	C	Survival	/ Repro	duction F	G	Н	I	J	
	0	7-83		0.1			25.7	5	0	0	0	0	0	0	0	G	0	
	1			9.4		1	25,0		0	0	0	0	0	0	0	Ô	Ò	
	2			9.4			24.9	0	0	0	0	0	0	0	0	0	0	
	3			9.3					0	4	0	0	0	0	0	0	0	
%001	4	7-69	7.97	10.4	8.1	978	24.3	4	0	0	6	5	l	0	4	3	6	
2	5	7.61	7.83	10.1	7.4	1008			6	4	14	12	12	1	13	9	5	
	6	-	7.77	_	7,6	1088	24.4	22	4	1	0	15	0	12	19	14	14	
	7	1000000000		Telephonists.														
	8			100 100 100 100 100 100 100 100 100 100	**************************************	CHRHISTATATATATA						-			2.1	- /	0 6	
							Total=	37	10	19	20	37	13	13	36	20	97	Mean Neonates/Female = '22.1

CETIS Summary Report

Report Date:

16 Nov-18 14:47 (p 1 of 2)

Test Code:

80644 | 15-6236-7441

Ceriodaphnia	Survival and Re	eproduction Test							Pacifi	c EcoRisk
Batch ID:	13-3768-2325	Test Type	: Reproduction-S	Survival (7d)		Ar	nalyst:	Mike McElroy		
Start Date:	08 Nov-18 14:10	Protocol:	EPA-821-R-02	-013 (2002)		Di	luent:	Laboratory Water	er	
Ending Date:	14 Nov-18 14:42	Species:	Ceriodaphnia d	dubia		Br	ine:	Not Applicable		
Duration:	6d 1h	Source:	In-House Cultu	ire		Ag	je:	1		
Sample ID:	00-6126-7957	Code:	69-BELT-208			CI	ient:	Larry Walker As	sociates	
Sample Date:	07 Nov-18 14:10	Material:	Ambient Water	r		Pr	oject:	29418		
Receipt Date:	08 Nov-18 07:37	Source:	Calleguas Cree	ek						
Sample Age:	24h (0.5 °C)	Station:	BELT							
Multiple Com	parison Summa	ry								
Analysis ID	Endpoint	Com	parison Method	<u> </u>		NOEL	LOE	TOEL	TU	PMSD
17-7174-7477	Reproduction		erroni Adj t Test			100	> 100	n/a	1	15.3%
01-3183-4633	Survival	Fishe	er Exact/Bonferro	ni-Holm Tes	st	100	> 100	n/a	1	n/a
Point Estimat	e Summary									
Analysis ID	Endpoint	Poin	t Estimate Meth	od		Level	%	95% LCL	95% UCL	TU .
10-6762-1909	Reproduction	Linea	ar Interpolation (I	CPIN)		IC5	>100	n/a	n/a	<1
						IC10	>100	n/a	n/a	<1
						IC15	>100	n/a	n/a	<1
						IC20	>100	n/a	n/a	<1
						IC25	>100	n/a	n/a	<1
						IC40	>100	n/a	n/a	<1
						IC50	>100	n/a	n/a	<1
Reproduction	Summary									
Conc-%	Code	Count Mean		95% UCL	Min	Max	Std E	rr Std Dev	CV%	%Effect
0	LW	10 31.9	29.2	34.6	27	37	1.19	3.75	11.77%	0.00%
6.25		9 33.7	31.1	36.3	29	39	1.13	3.39	10.07%	-5.54%
12.5		10 32	29.7	34.3	26	36	1.03	3.27	10.21%	-0.31%
25		10 34.7	32.2	37.2	30	41	1.09	3.43	9.89%	-8.78%
50		10 30.9	27.4	34.4	21	38	1.57	4.95	16.03%	3.13%
100		10 32.6	27.5	37.7	22	42	2.26	7.15	21.94%	-2.19%
Survival Sum	mary									
Conc-%	Code	Count Mear		95% UCL	Min	Max	Std E		CV%	%Effect
0	LW	10 1.000		1.000	1.000	1.000	0.000		0.00%	0.00%
6.25		9 1.000		1.000	1.000	1.000	0.000		0.00%	0.00%
12.5		10 1.000		1.000	1.000	1.000	0.000		0.00%	0.00%
25 50		10 1.000		1.000	1.000	1.000	0.000		0.00%	0.00%
50 100		10 1.000		1.000	1.000	1.000	0.000		0.00%	0.00%
100		10 1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%



Report Date:

16 Nov-18 14:47 (p 2 of 2)

Test Code:

80644 | 15-6236-7441

							162	t Code:		00044 1	5-6236-744
Ceriodaphnia	Survival and	Reproduction	on Test							Pacif	ic EcoRisk
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	27	37	32	27	29	34	31	35	30	37
6.25		35	34	32	36	29	37	31	30	39	
12.5		32	31	36	31	36	32	29	31	26	36
25		32	38	34	38	34	35	30	31	34	41
50		25	34	30	31	31	32	36	38	21	31
100		30	23	22	26	39	40	34	37	33	42
Survival Detail	l										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Survival Binor	nials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Report Date: Test Code: 16 Nov-18 14:47 (p 1 of 1)

80644 | 15-6236-7441

								16	st Code:		80644 15-62	36-744
Ceriodaphn	ia Sur	vival and	Reprod	uction Test							Pacific E	coRisi
Analysis ID: Analyzed:	-		Endpoint: Survival Analysis: STP 2xK Contingency Table			CETIS Version: CETISv es Official Results: Yes			1.9.2			
Data Transform Alt Hyp								NOEL	LOEL	TOEL	TU	
Untransform	ed		C > .	Т				100	> 100	n/a	1	
Fisher Exac	t/Bont	ferroni-Ho	Im Test									
Control	vs	Group		Test Sta	t P-Type	P-Value	Decision	(a:5%)				
Lab Water C	ontr	6.25		1.000	Exact	1.0000	Non-Sign	ificant Effe	ect			
		12.5		1.000	Exact	1.0000	Non-Sign	ificant Effe	ect			
		25		1.000	Exact	1.0000		ificant Effe				
		50		1.000	Exact	1.0000		ificant Effe				
		100		1.000	Exact	1.0000	Non-Sign	ificant Effe	ect			
Data Summ	ary											
Conc-%		Code	NR	R	NR + R	Prop NR	Prop R	%Effec	t			
0		LW	10	0	10	1	0	0.0%				
6.25			9	0	9	1	0	0.0%				
12.5			10	0	10	1	0	0.0%				
25			10	0	10	1	0	0.0%				
50			10	0	10	1	0	0.0%				
100			10	0	10	1	0	0.0%				
Graphics												
1,0		•	•									
0.9												
9.8												
V ,3												
0.7												
o.6												
0.5												
0.4												

0.3 0.2 0.1 0.0

6.25

12.5

25

Report Date: Test Code: 16 Nov-18 14:45 (p 1 of 1)

80644 | 15-6236-7441

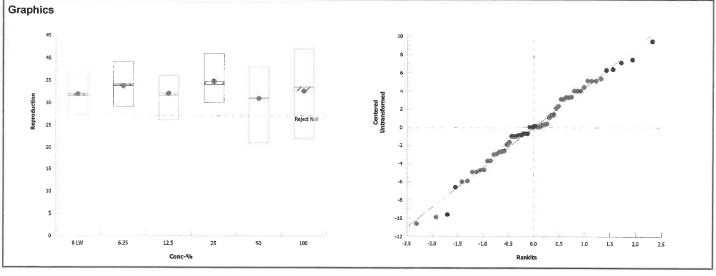
Ceriodaphnia	Survival and Repro	duction Test					Pad	cific EcoRisk
Analysis ID: Analyzed:	17-7174-7477 16 Nov-18 14:44	•	Reproduction Parametric-Multiple Comparison		TIS Version		1.9.2	
Data Transfor	m Alt	: Нур		NOEL	LOEL	TOEL	TU	PMSD
Untransformed	i C:	> T		100	> 100	n/a	1	15.34%

Control vs	Conc-%	Test Stat	Critical	MSD	DF P-Type	e P-Value	Decision(a:5%)
Lab Water Contr	6.25	-0.843	2.4	5.03	17 CDF	1.0000	Non-Significant Effect
	12.5	-0.049	2.4	4.89	18 CDF	1.0000	Non-Significant Effect
	25	-1.37	2.4	4.89	18 CDF	1.0000	Non-Significant Effect
	50	0.49	2.4	4.89	18 CDF	1.0000	Non-Significant Effect
	100	-0.343	2.4	4.89	18 CDF	1.0000	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	91.7339	18.3468	5	0.882	0.4996	Non-Significant Effect
Error	1102.3	20.7981	53			
Total	1194.03		58			

Distributional 1	Tests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	9.35	15.1	0.0958	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.984	0.945	0.6168	Normal Distribution

Reproduction	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	10	31.9	29.2	34.6	31.5	27	37	1.19	11.77%	0.00%
6.25		9	33.7	31.1	36.3	34	29	39	1.13	10.07%	-5.54%
12.5		10	32	29.7	34.3	31.5	26	36	1.03	10.21%	-0.31%
25		10	34.7	32.2	37.2	34	30	41	1.09	9.89%	-8.78%
50		10	30.9	27.4	34.4	31	21	38	1.57	16.03%	3.13%
100		10	32.6	27.5	37.7	33.5	22	42	2.26	21.94%	-2.19%



Analyst: Analyst: QA:

Report Date: Test Code: 16 Nov-18 14:45 (p 1 of 1)

80644 | 15-6236-7441

Ceriodaphnia	Survival and Repr	roduction Test		Pacific Ec	oRisk
Analysis ID:	10-6762-1909	Endpoint: Reproduction	CETIS Version:	CETISv1.9.2	

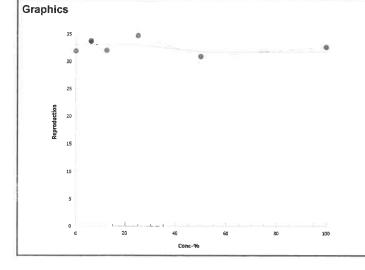
Analyzed: 16 Nov-18 14:44 Analysis: Linear Interpolation (ICPIN) Official Results: Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method	
Linear	Linear	1008615	200	Yes	Two-Point Interpolation	

Linear		Linear	1008	3615	200	Yes	Two-Point Interpolation
Point E	Estimates						
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL	
IC5	>100	n/a	n/a	<1	n/a	n/a	
IC10	>100	n/a	n/a	<1	n/a	n/a	
IC15	>100	n/a	n/a	<1	n/a	n/a	
IC20	>100	n/a	n/a	<1	n/a	n/a	
IC25	>100	n/a	n/a	<1	n/a	n/a	
IC40	>100	n/a	n/a	<1	n/a	n/a	
IC50	>100	n/a	n/a	<1	n/a	n/a	

Reproduction	Summary								
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	10	31.9	27	37	1.19	3.75	11.80%	0.0%
6.25		9	33.7	29	39	1.13	3.39	10.10%	-5.54%
12.5		10	32	26	36	1.03	3.27	10.20%	-0.31%
25		10	34.7	30	41	1.09	3.43	9.89%	-8.78%
50		10	30.9	21	38	1.57	4.95	16.00%	3.13%
100		10	32.6	22	42	2.26	7.15	21.90%	-2.19%



C	lient:		LW.	A: Calle	eguas C	reek		Ma	terial:	C	CWT	MP-69	-BEL	T- 20	8	Test	Date:	11/8/18
Proje	ect#:	294	418	1	Γest ID:	806	44	Ran	domiz	ation:	11	0.7	. 3		Co	ntrol \	Water:	Mod EPAMH
	Day	pН		D.O.		Cond. (µS/cm)	Temp					-	eprodu		**			SIGN-OFF
	0	7.90	Old	7.9	Old	349	24.1)	D A	В О	0	D 0	Е 0	F 0	G \bigcirc	Н	0	J	Date: 1/8/18 New WQ: Test Init.: To
	1	7.63	8.13	10,7	8.2	355	255	0	0	0	0	0	0	0	0	0	0	Date 1911 New WO F Counts Sol'n Prep: 16 Old WQ: TA Time: 1445
	2	7.99	7.86	9.8	8.4	366	24.0	0	0	0	0	0	0	0	0	0		Date: Novi 8 New WQ: 50 Counts Sol'n Prep: Sol' Old WQ: The Time: Old WQ:
trol	3	7.90	7.89	9,7	8.0	351	25.5	9	7	7	7	7	7	7	7	7	7	Date: 1/11 16New WQ: TP Counts Sol'n Prep: 13 Old WQ: TP Time: 1441
Lab Water Control	4	7.87	7,89	10.9	8ત	352	ruis	10	0	12	0	9	0	0	0	0	0	Date 31/12/18 New WQ: AR Counts: 322 Sol'n Prep: Old WQ Time: 325
ab Wa	5	7,93	7.73	10.3	8.2	354	24,6	0	15	0	10	0	12	11	14	11	14	Date: What he New WQ: DH Counts: RUS Sol'n Prep: Swy Old WQ: TA Time: [150]
	6	_	8.08		6.9	364	227	11	15	13	10	13	15	13	14	12	16	Date: U. 19/3 New WQ: — Counts: 178 Sol'n Prep: — Old WQ: D Time: 14/2
	7																	Date: New WQ: Counts: Sol'n Prep: Old WQ: Time:
	8	**************************************																Date: Old WQ: Counts: Time:
							Total≔	27	37	32	27	29	34	31	35	30	37	Mean Neonates/Female = 31.9
	Day	New	H	D. New	O. Old	Cond. (µS/cm)	*********	A	В	C	urvival D	/ Repro	duction	G	Н	1	J	Sample ID
101.10	0	7.98		7.8		422	24.5	0	O	0	0	0	0	0	0	0	0	51275
	1	7.79	y.07	10.6	8.2	418	25.7	0	ą.	0	0	0	0	0	0	0	0	51275
	2	8.00	7.92	9.8	8.4	422	84 D	0	ar.	0	Ò	0	0	0	0	0	0	51275
	3	7.98	7.74	9.8	7.8	422	24.8	8	-	7	6	7	6	7	5	6	8	51275
6.25%	4	7.94	7.94	11.11	8.2	419	24.7	11	_	11	12	0	10	0	0	0	6	51275
6.	5	7.92	7.78	10.8	2.1	423	24.6	0	-	0	0	14	0	14	9	19	14	51275
	6	_	4.03	_	7.0	435	724	16	_	16	14	15	13	16	17	12	1	
	7	eses eses es		121212222222					1									
	8		1051101010		121010525255	\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$		3.6		arl	2.12		- 0	. 7	71	7		
							Total=	45	-	34	32	36	29	37	3	30	39	Mean Neonates/Female = 23.

CI	ient:		LW	A: Calle	guas C	reek		Ma	terial:	C	CWT	AP-69	-BELT	- 2.0	8	Test	Date:	11/8/19
Proje	ct #:	294	18	I	Test ID:	806	44								Co	ntrol V	Vater:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp					-	eproduc	-				SIGN-OFF
		New	Old	New	Old	(μS/cm)		A	В	C	D	E	F	G	Н	I	J	
	0	8.02		8.6	4444 4444 4444 4444 4444 4444 4444 4444 4444	486	24.3	0	0	0	0	0	0	0	0	0	0	
	1	7.84	8.08	9,9	8.0	476	25.7	0	0	0	0	0	0	0	0	0	0	
	2	8.01	8-00	9,8	8-4	485	24.0	0	0	0	0	0	0	0	0	0	.0	
	3	8.05	8.03	5,0	7.9	489	24.4	8	4	8	0	7	6	7	5	6	8	
12.5%	4	10.8	10.8	11.1	8.0	480	Z4.6	10	11	13	0	0	11	10	12	0	0	
12.	5	7,98	7.83	10,9	8-1	491	24.6		0	0	12	12	0	0	0	lo	13	
	6	_	8.02		7.1	502		14	16		13	17	15	12	14	10	15	
	7		6.02		7*)	30-	50.1	-/-	, 4	, -		1	13		1	10		
	8																	
							Total=	27	2.1	71	2.1	21	27	201	31	21	21	Mean Neonates/Female = 32.0
	Day	р	H H	D.	.O.	Cond.	Total=	32	31		Burvival				2	26	20	Mean Neonates/Female = 5/20
***************************************	Day	New	Old	New	Old			Α	В	С	D	Е	F	G	Н	I	J	
	0	8.07		8.2		615	24.3	0	0	0	0	0	0	0	0	0	0	
	1	7.96	8-13		8-1	614	25.6	0	0	0	0	0	0	0	0	0	0	
	2		8.12		8.4		24.0	0	Ð	0	0	0	0	0	O	0	0	
	3	8.12	8.09		7.7		2512	7	-	7	7	7	0	7	5	0	8	
8	4	8.08	8,09	11.1	8.1		24.6	12	0	13	0	11	0	10	0	0	0	
25%	5	8.03	7.97		8-1		246	0	14	0	12	0	13	0	12	13	16	
	6				7.3					111	19	16	10	13	14	15	17	
	7		8.03		1.0	039	000	12	10	17	//	14	IV	()	17	10	//	
	-																	
	8						Total=	27	28	34	29	34	35	70	11	34	111	Mean Neonates/Female = 34.
							10tai-	170	50	74	120	74	177	1//	12	174	4	Iviean Neonates/Female = 74

Cl	ient:		LW	A: Calle	guas C	reek		Ma	terial:	C	CWT	/IP-69	-BELT	[- 2 ,0	8	Test	Date:	11/8/18
Proje	ct #:	294	18	I	est ID:	806	44								Co	ntrol \	Water:	Mod EPAMH
	Day	рН		D.O.		Cond.	Temp					ival / R						SIGN-OFF
	0	New	Old	New	Old	(μS/cm)	(°C)	A	В	C	D	E O	F O	G	Н	1	1	
	-	8.09	A CONTRACTOR OF THE CONTRACTOR	8,5		870	24.3	0		-0				0	0	0	0	
	1	8,05	8.28	10-9	8-2	854	25.7	0	0	0	0	0	0	0	0	0	0	
	2	8.10	8.27	9.8	8-3	864	24.0	0	0	0	0	0	10	0	0	0	0	
	3	8.22	8131	9.8	7.8	858	25.3	0	7	B	7	8	0	5	7	5	7	
%05	4	8.18	8.25	11.2	8.1	839	24.6	11	0	11	10	9	O	6	0	0	0	
)S	5	8,10	8-14	10.9	8.0	862	24.7	0	13	11	0	0	9	12	15	14	4	
	6		8-24	_	- bd	894	22.3	14	14	0	14	14	17	19	16	2	20	
	7							,										
	8																	
							Total=	25	34		3	31	32	36	38	21	3	Mean Neonates/Female = 30.9
	Day	p.		D.		Cond. (µS/cm)			D.		urvival				11	,	J	
	0	New	Old	New	Old				В	C	D	E	F	G	Н	0	0	
		8.09		9,1		1352		0	0	0	0	0	0	0	0		0	
	1	8.13	8.41	11.2	82	1333	25,9	0	0	0	0	0	0	0	0	0	0	
	2	8.13	8.412	9.9	8-1	1323	27.0	0	0	0	0	0	0	0	0	0	0	
	3	8.29	8.50	10.0	7.9	1336	25.2	6	8	6	7	7	8	8	7	4	7	
100%	4	8.20	3,40	11.1	7.6	1317	24.7	11	0	12	11	0	0	Fins	0	0	0	
10	5	8.16	8.34	10.8	7-3	1351	249	0	10	0	0	15	15	0	13	11	15	
	6	_	9.44	-	6.2	1381	22.8	13	5	4	8	17	17	19	17	18	20	
	7											1	1		,			
	8																	
							Total=	20	23	22	26	39	40	34	37	33	42	Mean Neonates/Female = 37.0

Appendix C

Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of the Calleguas Creek Ambient Waters to *Ceriodaphnia dubia*:

Data Analyses Including Statistical Outliers

CETIS Summary Report

Report Date:

16 Nov-18 15:15 (p 1 of 2)

Test Code:

Ceriodaphnia	a Survival and F	Reproducti	on Test							Pacifi	c EcoR	lisk
Batch ID: Start Date: Ending Date: Duration:	04-4203-1345 08 Nov-18 13:0 : 15 Nov-18 13:2 7d 0h	5 Pr 5 S p	st Type: otocol: ecies: urce:	Reproduction-S EPA-821-R-02 Ceriodaphnia o In-House Cultu	-013 (2002) lubia		Dil	uent: ine:	Mike McElroy Laboratory Wate Not Applicable 1	er		
	00-9280-2736 : 07 Nov-18 15:2 : 08 Nov-18 07:3 22h (2.7°C)	5 M a	ode: iterial: iurce: ation:	69-UNIV-029 Ambient Water Calleguas Cree UNIV					Larry Walker As 29418	sociates		
Comments: Includes repro	oduction outliers	(Lab Contro	ol-E, 6.25	%-J, , 12.5%-J,	and 25% E)							
Multiple Com	parison Summa	агу										
Analysis ID	Endpoint		Comp	arison Method			NOEL	LOEL	TOEL	TU	PMSI	D /
12-2081-9541	Reproduction		Steel	Many-One Rank	Sum Test		100	> 100	n/a	1	20.4%	6
16-3822-8615	Survival		Fisher	Exact/Bonferro	ni-Holm Tes	st	100	> 100	n/a	1	n/a	
Point Estimat	te Summary											
Analysis ID	Endpoint		Point	Estimate Meth	od		Level	%	95% LCL	95% UCL	TU	/
02-3854-4486	Reproduction		Linear	Interpolation (I	CPIN)		IC5	2.02	1.4	6.14	49.61	
							IC10	4.03	2.79	n/a	24.81	
							IC15	6.05	4.19	n/a	16.54	,
							IC20	>100	n/a	n/a	<1	
							IC25	>100	n/a	n/a	<1	
							IC40	>100	n/a	n/a	<1	
							IC50	>100	n/a	n/a	<1	
Reproduction	n Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E	rr Std Dev	CV%	%Effe	ect
0	LW	10	34.7	31.5	37.9	24	41	1.42	4.5	12.96%	0.00%	6
6.25		10	26.1	19.2	33	3	34	3.06	9.67	37.03%	24.78	%
12.5		10	26.8	19.7	33.9	0	36	3.14	9.94	37.10%	22.77	%
25		10	28.4	24.1	32.7	15	36	1.9	6	21.14%	18.16	%
50		10	34.4	31.3	37.5	28	43	1.37	4.33	12.57%	0.86%	ó
100		10	30.9	27.8	34	26	39	1.39	4.38	14.18%	10.95	%
Survival Sum	mary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E	r Std Dev	CV%	%Effe	ct
0	LW	10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%	, D
6.25		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%	b
12.5		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%	á
						4 000	4 000	0.000	0.000			
25		10	1.000	1.000	1.000				0.000	0.00%	0.00%	b
25 50 100		10 10 10	1.000 1.000 1.000	1.000 1.000	1.000 1.000	1.000 1.000	1.000 1.000	0.000 0.000	0.000	0.00%	0.00%	



Report Date:

16 Nov-18 15:15 (p 2 of 2)

Test Code:

Ceriodaphnia	Survival and	Reproduction	on Test							Paci	ic EcoRisi
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	35	37	38	35	24	41	34	33	33	37
6.25		19	32	25	31	34	34	23	34	26	3
12.5		30	26	30	24	32	36	30	30	30	0
25		26	30	29	35	15	36	33	28	25	27
50		35	31	32	43	30	37	36	35	28	37
100		39	27	32	37	27	26	29	32	28	32
Survival Detail	l										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Survival Binon	nials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Report Date: Test Code: 16 Nov-18 14:36 (p 1 of 1)

Ceriodaphnia	Survival and Repro	duction Test				Pacific EcoRisk
Analysis ID:	16-3822-8615	Endpoint:	Survival	CETIS Version:	CETISv1.9.2	
Analyzed:	16 Nov-18 14:35	Analysis:	STP 2xK Contingency Tables	Official Results:	Yes	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU
Untransformed	C > T	100	> 100	n/a	1

Fisher Exact/Bo	nferroni-Holm Tes	t				
Control vs	Group	Test Stat	P-Type	P-Value	Decision(α:5%)	
Lab Water Contr	6.25	1.000	Exact	1.0000	Non-Significant Effect	
	12.5	1.000	Exact	1.0000	Non-Significant Effect	
	25	1.000	Exact	1.0000	Non-Significant Effect	
	50	1.000	Exact	1.0000	Non-Significant Effect	
	100	1.000	Exact	1.0000	Non-Significant Effect	

Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	LW	10	0	10	1	0	0.0%
6.25		10	0	10	1	0	0.0%
12.5		10	0	10	1	0	0.0%
25		10	0	10	1	0	0.0%
50		10	0	10	1	0	0.0%
100		10	0	10	1	0	0.0%

hics									
1.0	•	•			0	•	•		
0.9									
6.3									
0.7									
0.6									
0.5									
0.4									
0.3									
0,2									
0.1									
0.0	0 LW	6.25	12.5	25	50	100	100		
		ap mind		опс-%	25	230			

Report Date: Test Code: 16 Nov-18 14:36 (p 1 of 1)

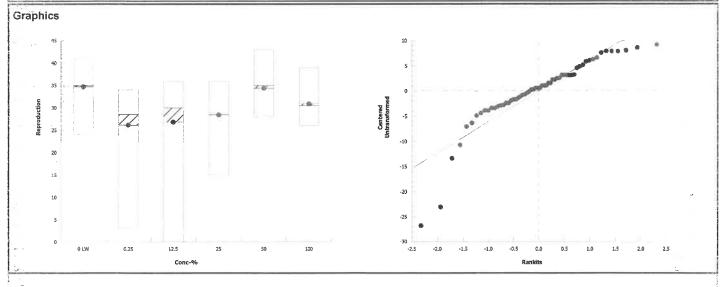
				Ceriodaphnia Survival and Reproduction Test Pacific EcoRisk											
	nt: Reproduction s: Nonparametric-Control vs Treatments		TIS Version: ficial Results:		1.9.2										
Alt Hyp		NOEL	LOEL	TOEL	TU	PMSD									
C > T		100	> 100	n/a	1	20.39%									
	Alt Hyp	Alt Hyp	Alt Hyp NOEL	Alt Hyp NOEL LOEL	Alt Hyp NOEL LOEL TOEL	Alt Hyp NOEL LOEL TOEL TU									

Steel Many-One F	Steel Many-One Rank Sum Test											
Control vs	Control II	Test Stat	Critical	Ties	DF P-Type	P-Value	Decision(a:5%)					
Lab Water Contr	6.25*	69.5	75	1	18 Asymp	0.0156	Significant Effect					
	12.5*	68.5	75	1	18 Asymp	0.0126	Significant Effect					
	25*	74	75	2	18 Asymp	0.0384	Significant Effect					
	50	99	75	2	18 Asymp	0.6654	Non-Significant Effect					
	100	79	75	1	18 Asymp	0.0904	Non-Significant Effect					

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	699.883	139.977	5	2.93	0.0206	Significant Effect
Error	2578.3	47.7463	54			
Total	3278.18		59			

Distributional 1	Tests Tests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variances	Bartlett Equality of Variance Test	13.7	15.1	0.0176	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.848	0.946	2.6E-06	Non-Normal Distribution

Reproduction	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	10	34.7	31.5	37.9	35	24	41	1.42	12.96%	0.00%
6.25		10	26.1	19.2	33	28.5	3	34	3.06	37.03%	24.78%
12.5		10	26.8	19.7	33.9	30	0	36	3.14	37.10%	22.77%
25		10	28.4	24.1	32.7	28.5	15	36	1.9	21.14%	18.16%
50		10	34.4	31.3	37.5	35	28	43	1.37	12.57%	0.86%
100		10	30.9	27.8	34	30.5	26	39	1.39	14.18%	10.95%



Ceriodaphnia Survival and Reproduction Test

Report Date: Test Code:

16 Nov-18 14:36 (p 1 of 1)

80638 | 14-4434-5511

Pacific EcoRisk

CETIS Version: CETISv1.9.2 Endpoint: Reproduction Analysis ID: 02-3854-4486

Analyzed: 16 Nov-18 14:36 Analysis: Linear Interpolation (ICPIN) Official Results: Yes

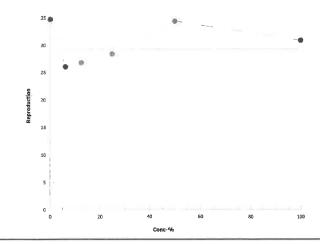
Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method	
Linear	Linear	88555	200	Yes	Two-Point Interpolation	

Point E	stimates						
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL	
IC5	2.02	1.4	6.14	49.61	16.29	71.58	
IC10	4.03	2.79	n/a	24.81	n/a	35.79	
IC15	6.05	4.19	n/a	16.54	n/a	23.86	
IC20	>100	n/a	n/a	<1	n/a	n/a	
IC25	>100	n/a	n/a	<1	n/a	n/a	
IC40	>100	n/a	n/a	<1	n/a	n/a	
IC50	>100	n/a	n/a	<1	n/a	n/a	

Reproduction	Summary				C	alculated Va	riate	_	
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	10	34.7	24	41	1.42	4.5	13.00%	0.0%
6.25		10	26.1	3	34	3.06	9.67	37.00%	24.8%
12.5		10	26.8	0	36	3.14	9.94	37.10%	22.8%
25		10	28.4	15	36	1.9	6	21.10%	18.2%
50		10	34.4	28	43	1.37	4.33	12.60%	0.87%
100		10	30.9	26	39	1.39	4.38	14.20%	11.0%

Graphics



CETIS Summary Report

Report Date:

16 Nov-18 11:57 (p 1 of 2)

Test Code: 80639 | 09-8502-3333

								st Code.		00009 09	000	
Ceriodaphnia	a Survival and R	eproduction	Test							Pacific	EcoR	isk
Batch ID:	12-3530-4939	Test	Type:	Reproduction-S	Survival (7d)		An	alyst:	Jessica Okutsu			
Start Date:	08 Nov-18 15:09			EPA-821-R-02-				uent:	Laboratory Wat	er		
Ending Date:	14 Nov-18 15:30) Spe	cies:	Ceriodaphnia d	ubia		Bri	ine:	Not Applicable			
Duration:	6d 0h	Sou	rce:	In-House Cultu	re		Ag	e:	1			
Sample ID:	16-6131-6900	Cod	e:	69-ADOLF-045			Cli	ent:	Larry Walker As	sociates		_
Sample Date	: 07 Nov-18 08:45	5 Mate	erial:	Ambient Water			Pro	oject:	29418			
Receipt Date	: 08 Nov-18 07:37	7 Sou	rce:	Calleguas Cree	k							
Sample Age:	30h (0.6 °C)	Stati	on:	ADOLF								
Comments:	g reproductive out	tliers 6 25%-	.l and 2	5%1								
	parison Summa		o ana z								-	_
Analysis ID	Endpoint		Comp	arison Method			NOEL	LOE	L TOEL	TU	PMSI	٠, د
05-6678-1190	Reproduction		Steel N	/lany-One Rank	Sum Test		50	100	70.71	2	24.1%	6
17-5227-9364	Survival		Fisher	Exact/Bonferro	ni-Holm Tes	t	100	> 100	n/a	1	n/a	
Point Estima	te Summary											
Analysis ID	Endpoint		Point I	Estimate Metho	od		Level	%	95% LCL	95% UCL	TU	,
06-0657-3735	Reproduction		Linear	Interpolation (IC	CPIN)		IC5	2.37	1.26	33.5	42.19	
							IC10	4.74	2.53	52.9	21.1	
							IC15	28.6	3.79	n/a	3.502	
							IC20	38.3	5.05	n/a	2.608	
							IC25	48.1	11.1	n/a	2.077	
							IC40	>100		n/a	<1	
							IC50	>100	n/a 	n/a	<1	
Reproduction	•											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E		CV%	%Effe	
0	LW	10	31.6	26.1	37.1	18	39	2.41	7.62	24.11%	0.00%	
6.25		10	26.1	18.7	33.5	0	34	3.28	10.4	39.71%	17.41	
12.5		10	27.5	22.9	32.1	17	36	2.04	6.45	23.46%	12.97	
25		10	28.7	26.1	31.3	19	32	1.16	3.65	12.73%	9.18%	
50		10	23.4	17.3	29.5	11	39	2.7	8.55	36.55%	25.95	
100		10	23	18.5	27.5	11	30	1.98	6.25	27.19%	27.22	% —
Survival Sum												
Conc-% 0	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E		CV%	%Effe	_
0 6.25	LW	10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%	
		10 10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%	
		IU	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%)
12.5				4 666	4.000	4 000	4 600					
12.5 25		10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%	
0.25 12.5 25 50 100				1.000 1.000 1.000	1.000 1.000 1.000	1.000 1.000 1.000	1.000 1.000 1.000	0.000	0.000	0.00% 0.00% 0.00%	0.00% 0.00% 0.00%	

CETIS Summary Report

Report Date: Test Code:

16 Nov-18 11:57 (p 2 of 2)

80639 | 09-8502-3333

							ies	t Code:		80639 0	9-8502-333
Ceriodaphnia	Survival and	Reproducti	on Test							Pacif	fic EcoRisk
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	18	39	31	36	38	31	34	18	35	36
6.25		27	31	31	33	27	32	34	29	17	0
12.5		29	17	27	36	26	26	31	34	17	32
25		30	32	31	29	29	30	31	28	28	19
50		18	14	11	17	39	30	23	27	25	30
100		15	30	27	27	11	28	28	20	23	21
Survival Detai											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Survival Binor	nials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

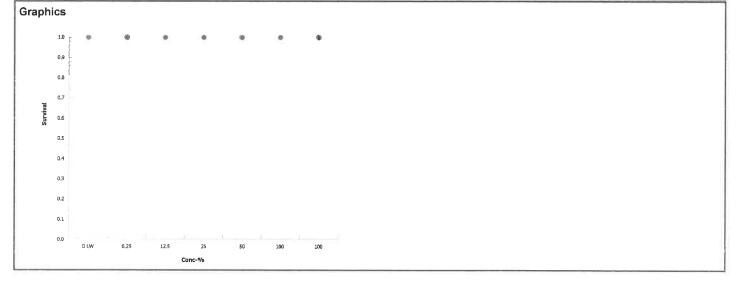
Report Date: Test Code: 16 Nov-18 11:57 (p 1 of 1)

80639 | 09-8502-3333

Ceriodaphnia	Survival and Repro	duction Test					Pacific EcoRisk
Analysis ID: Analyzed:	17-5227-9364 16 Nov-18 11:52	Endpoint: Analysis:	Survival STP 2xK Contingency Tables		TIS Version: icial Results:		1.9.2
Data Transfor	m Alt	Нур		NOEL	LOEL	TOEL	TU
Untransformed	d C>	• T		100	> 100	n/a	1

Fisher Exact/Bont	erroni-Holm Test				
Control vs	Group	Test Stat	P-Type	P-Value	Decision(α:5%)
Lab Water Contr	6.25	1.000	Exact	1.0000	Non-Significant Effect
	12.5	1.000	Exact	1.0000	Non-Significant Effect
	25	1.000	Exact	1.0000	Non-Significant Effect
	50	1.000	Exact	1.0000	Non-Significant Effect
	100	1.000	Exact	1.0000	Non-Significant Effect

Data Summar	у						
Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	LW	10	0	10	1	0	0.0%
6.25		10	0	10	1	0	0.0%
12.5		10	0	10	1	0	0.0%
25		10	0	10	1	0	0.0%
50		10	0	10	1	0	0.0%
100		10	0	10	1	0	0.0%



Report Date:

16 Nov-18 11:57 (p 1 of 1)

Test Code:

80639 | 09-8502-3333

								Test	Code:		80639 0	9-8502-33
Ceriodaphnia Su	ırvival and	Reproduc	tion Test								Paci	fic EcoRis
	5-6678-1190			production					IS Versio		1.9.2	
Analyzed: 1	6 Nov-18 11	:52 A	nalysis: No	nparametric	-Contro	vs T	reatments	Offic	ial Resul	ts: Yes		
Data Transform		Alt Hy	р					NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T						50	100	70.71	2	24.12%
Steel Many-One	Rank Sum	Test										
Control vs	Conc-%	6	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decisio	n(α:5%)		
Lab Water Contr	6.25		79.5	75	2	18	Asymp	0.0977	Non-Sig	nificant Effec	t	
	12.5		81.5	75	3	18	Asymp	0.1312	Non-Sig	nificant Effec	t	
	25		79	75	1	18	Asymp	0.0904	Non-Sig	nificant Effec	t	
	50		75.5	75	2	18	Asymp	0.0505	Non-Sig	nificant Effec	t	
	100*		71	75	0	18	Asymp	0.0214	Significa	ant Effect		
ANOVA Table												
Source Sum Squares Mean Square					DF		F Stat	P-Value	Decisio	n(α:5%)		
Between	535.883 107.177		5		1.93	0.1039	Non-Sig	nificant Effec	t			
Error	2994.3		55.45		54							
Total	3530.18				59							
Distributional Te	sts											
Attribute	Test				Test S	Stat	Critical	P-Value	Decisio	n(α:1%)		
Variances	Bartlett E	Equality of	Variance Test		9.29		15.1	0.0982	Equal Va	ariances		
Distribution	Shapiro-	Wilk W No	rmality Test		0.906		0.946	2.2E-04	Non-Nor	rmal Distribut	ion	
Reproduction Su	mmary											
Conc-%	Code	Count	Mean	95% LCL	95% L	JCL	Median	Min	Max	Std Err	CV%	%Effect
0.	LW	10	31.6	26.1	37.1		34.5	18	39	2.41	24.11%	0.00%
6.25		10	26.1	18.7	33.5		30	0	34	3.28	39.71%	17.41%
12.5		10	27.5	22.9	32.1		28	17	36	2.04	23.46%	12.97%
12.0		10	28.7	26.1	31.3		29.5	19	32	1.16	12.73%	9.18%
		10	20.1									
25 50		10	23.4	17.3	29.5		24	11	39	2.7	36.55%	25.95%

Analyst: To QA: APE

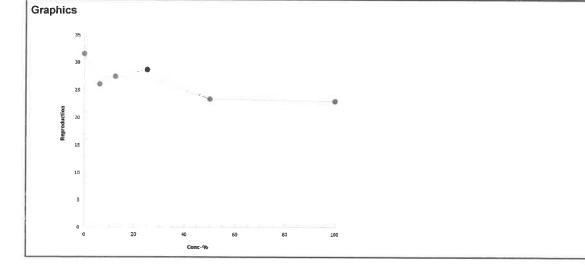
Report Date:

16 Nov-18 11:57 (p 1 of 1)

Test Code: 80639 | 09-8502-3333

Ceriodaphnia	Survival and Repro	duction Test					Pacific EcoRisk
Analysis ID:	06-0657-3735	Endpoint:	Reproduction		CETIS Version:	CETISv1.9.2	
Analyzed:	16 Nov-18 11:52	Analysis:	Linear Interpola	ation (ICPIN)	Official Results:	Yes	
Linear Interpo	olation Options						
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method		
Linear	Linear	2066013	200	Yes	Two-Point Interpolation		
Point Estimat	es						
Level %	95% I CL 95	% LICL TH	95% I CI	95% 1101			

Reproduction	Summary									
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	
0	LW	10	31.6	18	39	2.41	7.62	24.10%	0.0%	
6.25		10	26.1	0	34	3.28	10.4	39.70%	17.4%	
12.5		10	27.5	17	36	2.04	6.45	23.50%	13.0%	
25		10	28.7	19	32	1.16	3.65	12.70%	9.18%	
50		10	23.4	11	39	2.7	8.55	36.60%	25.9%	
100		10	23	11	30	1.98	6.25	27.20%	27.2%	



Analyst: JO QA: AM

Appendix D

Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the *Ceriodaphnia dubia*

CETIS Summary Report

Report Date:

16 Nov-18 09:18 (p 1 of 2)

Test Code:

80523 | 07-3988-3316

							103	L Coue.		00023 07	-5500-	JO 10
Ceriodaphnia	a Survival and R	eproductio	n Test							Pacifi	c EcoF	≀isk
Batch ID:	10-3237-5975	Tes	t Type:	Reproduction-S	Survival (7d)		Ana	alyst:	Jessica Okutsu			
Start Date:	08 Nov-18 16:1	1 Pro	tocol:	EPA-821-R-02-	-013 (2002)		Dilu	uent:	Laboratory Wate	er		
Ending Date:	14 Nov-18 15:23	3 Sp	ecies:	Ceriodaphnia d	lubia		Brit	ne:	Not Applicable			
Duration:	5d 23h		urce:	In-House Cultu	re		Age	: :	1			
Sample ID:	06-0772-9697	Co	de:	NaCl			Clie	ent:	Reference Toxic	ant		
Sample Date:	: 08 Nov-18 16:1	1 Ma	terial:	Sodium chlorid	е		Pro	ject:	29535			
Receipt Date:	: 08 Nov-18 16:1	1 Soi	ırce:	Reference Toxi	icant							
Sample Age:	n/a (25.1 °C)	Sta	tion:	In House								
Multiple Com	parison Summa	ıry										
Analysis ID	Endpoint		Comp	arison Method			NOEL	LOEL	TOEL	TU	PMS	0 /
12-2108-4697	Reproduction		Steel	Many-One Rank	Sum Test		1000	1500	1225		24.69	6
07-7902-8110	Survival		Fisher	Exact/Bonferro	ni-Holm Tes	st	2000	> 2000	n/a		n/a	
Point Estimat	te Summary											
Analysis ID	Endpoint		Point	Estimate Meth	od		Level	mg/L	95% LCL	95% UCL	TU	/
04-7517-9392	Reproduction		Linear	Interpolation (IC	CPIN)		IC5	586	143	682		
							IC10	672	287	864		
							IC15	758	430	1020		
							IC20	844	583	1090		
							IC25	930	681	1170		
							IC40	1230	929	1520		
							IC50	1440	1170	1730		
08-3419-0126	Survival		Spear	man-Kärber			EC50	2170	2040	2300		
Reproduction	Summary											
Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E	rr Std Dev	CV%	%Effe	ect
0	LW	10	28.7	22.7	34.7	14	36	2.66	8.42	29.34%	0.00%	6
500		10	30.8	25	36.6	16	39	2.59	8.18	26.54%	-7.32	%
1000		10	21.1	16.1	26.1	14	30	2.22	7.02	33.25%	26.48	%
1500		10	14.1	8.8	19.4	0	22	2.34	7.42	52.59%	50.87	%
2000		10	8.7	6.34	11.1	5	14	1.04	3.3	37.95%	69.69	%
2500		10	0	0	0	0	0	0	0		100.0	0%
Survival Sum	mary											
Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL		Max	Std E		CV%	%Effe	
0	LW	10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%	
500		10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%	
1000		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%	
1500		10	0.900	0.674	1.000	0.000	1.000	0.100	0.316	35.14%	10.00	
2000		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%	
2500		10	0.000	0.000	0.000	0.000	0.000	0.000	0.000		100.0	0%

Analyst: To QA: AWF

Report Date:

16 Nov-18 09:18 (p 2 of 2)

							Tes	t Code:		80523 0	7-3988-3316
Ceriodaphnia S	Survival and	Reproducti	on Test							Paci	fic EcoRisk
Reproduction E	Detail										
Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	36	17	33	35	27	33	35	36	21	14
500		34	37	16	36	32	28	39	37	32	17
1000		14	29	25	14	28	15	30	14	26	16
1500		0	8	21	12	22	18	8	21	20	11
2000		9	7	7	14	13	12	5	9	5	6
2500		0	0	0	0	0	0	0	0	0	0
Survival Detail											
Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
500		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1500		0.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2500.		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Survival Binom	ials										
Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
500		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
1000		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
1500		0/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
2000		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
2500		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Ceriodaphnia Survival and Reproduction Test

Pacific EcoRisk

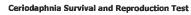
Test Type: Reproduction-Survival (7d)

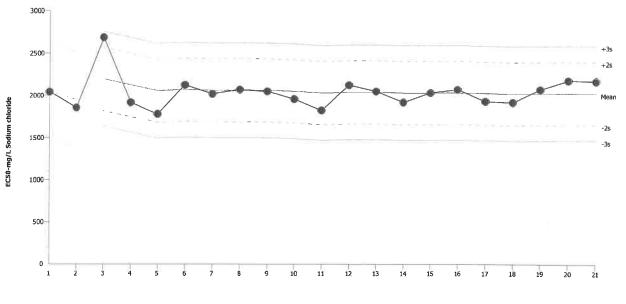
Organism: Ceriodaphnia dubia (Water Flea)

Protocol: EPA-821-R-02-013 (2002) Endpoint: Survival

Material: Sodium chloride

Source: Reference Toxicant-REF





Mean:	2031	Count:	20	-2s Warning Limit:	1657	-3s Action Limit:	1470
Sigma:	187	CV:	9.21%	+2s Warning Limit:	2405	+3s Action Limit:	2592

Quality (Control	Data
-----------	---------	------

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2018	Aug	10	14:10	2043	12	0.06419			03-5579-8214	07-2599-0973
2			14	16:20	1855	-176.1	-0.9415			02-7663-9913	12-7365-5677
3			21	13:35	2686	655.1	3.503	(+)	(+)	13-4099-7080	12-0540-2436
4			28	14:48	1918	-112.6	-0.6023			06-2614-3668	06-1377-5657
5			29	14:50	1780	-250.7	-1.34			03-9264-7933	02-8153-7063
6		Sep	11	14:40	2125	93.71	0.5011			17-7763-6788	12-2919-7286
7			12	14:04	2019	-12.1	-0.06469			17-4569-5270	18-9812-2558
8			18	12:26	2071	40.13	0.2146			20-2968-4066	17-1744-5971
9			19	11:34	2050	18.88	0.101			16-4284-4765	03-9142-8586
10			25	17:25	1957	-73.58	-0.3935			14-3900-9954	21-1313-3142
11		Oct	3	15:35	1825	-206	-1.102			07-6007-9059	16-4049-1493
12			9	16:46	2125	93.71	0.5011			04-5469-0891	20-3055-9291
13			11	14:50	2050	18.88	0.101			20-2439-9413	10-4540-0750
14			16	13:11	1918	-112.6	-0.6023			03-5850-8111	20-6659-7771
15			18	15:16	2032	0.6381	0.003412			05-8033-5759	02-3631-3458
16			19	15:05	2071	40.13	0.2146			02-1441-2791	17-1340-7957
17			23	15:40	1930	-100.5	-0.5376			10-7048-8617	14-7553-0745
18			30	10:35	1918	-112.6	-0.6023			05-8645-6876	01-6608-5367
19			31	14:47	2071	40.13	0.2146			15-6701-8818	10-0650-6684
20		Nov	6	15:55	2180	148.7	0.7951			06-4622-5066	07-3608-9199
21			8	16:11	2170	138.8	0.7421			07-3988-3316	08-3419-0126

CETIS QC Plot Report Date: 16 Nov-18 09:19 (1 of 1)

Ceriodaphnia Survival and Reproduction Test

Pacific EcoRisk

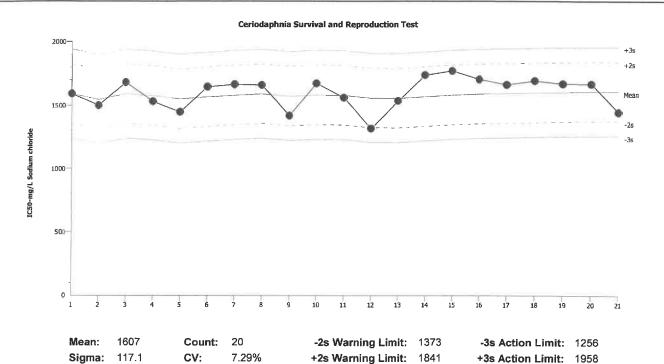
Test Type: Reproduction-Survival (7d)
Protocol: EPA-821-R-02-013 (2002)

Organism: Ceriodaphnia dubia (Water Flea)

Endpoint: Reproduction

Material: Sodium chloride

Source: Reference Toxicant-REF



Quali	ty Con	trol Data	а								
Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2018	Aug	10	14:10	1592	-15.09	-0.1288			03-5579-8214	04-8905-8154
2			14	16:20	1500	-107	-0.9137			02-7663-9913	03-5731-3515
3			21	13:35	1683	75.75	0.6469			13-4099-7080	08-6153-3008
4			28	14:48	1531	-76.18	-0.6505			06-2614-3668	05-2952-0377
5			29	14:50	1447	-160.1	-1.367			03-9264-7933	16-8090-8266
6		Sep	11	14:40	1646	39.43	0.3367			17-7763-6788	12-3840-6964
7			12	14:04	1666	58.78	0.5019			17-4569-5270	09-7553-7941
8			18	12:26	1660	53.12	0.4537			20-2968-4066	11-3715-5377
9			19	11:34	1418	-188.9	-1.613			16-4284-4765	11-9866-6961
10			25	17:25	1673	66.42	0.5672			14-3900-9954	18-5535-4978
11		Oct	3	15:35	1561	-46.21	-0.3946			07-6007-9059	08-5057-3824
12			9	16:46	1317	-290.2	-2.478	(-)		04-5469-0891	07-2283-5254
13			11	14:50	1535	-71.65	-0.6118			20-2439-9413	04-4179-5524
14			16	13:11	1738	131.1	1.12			03-5850-8111	05-4684-8364
15			18	15:16	1772	164.7	1.407			05-8033-5759	10-5626-5735
16			19	15:05	1704	96.95	0.8279			02-1441-2791	18-9658-3991
17			23	15:40	1663	56.4	0.4816			10-7048-8617	19-2272-0008
18			30	10:35	1694	86.9	0.7421			05-8645-6876	20-8136-4320
19			31	14:47	1670	63.45	0.5419			15-6701-8818	09-4862-8045
20		Nov	6	15:55	1669	61.63	0.5263			06-4622-5066	01-6239-3016
21			8	16:11	1445	-162.4	-1.386			07-3988-3316	04-7517-9392

Analyst: To QA: AFF

Cl: Proje	ient:	295	35		ence Tox Fest ID:	cicant 805	23		Ma	terial: _domiz	ation:	Sodiu	m Chi	oride		Co	Test	Date:	Mod EPAMH
Particular Service	_	p)		D.		Cond. (тТ	Kan	domiz	ation.	Survi			ation		111101	water.	Mod Bi Tilvili
	Day	New	Old	New	O. Old	New	Old	(°C)	A	В	С	D	E I	F	G	н	I	J	SIGN-OFF
198988	0	7.76		100		357		21.1	0	0	Û	٥	ð	đ	0	0	0	0	Date A 1816 New WQ: Test Init: TF Sol'n Prep: RG Time: 16 i
	1	8.12	7.98	10.1	8.4	354	382	24.5	0	0	0	0	0	0	0	0	0	0	Date: I A I Sol'n Prep: Old WQ: SD Time: 444
	2	8.03	7,93	10.5	8.4	354	335	24.0	0	0	0	0	0	0	0	0	0	0	Date 11 10/13 New WQ: TA Counts: To Sol'n Prep: 17 Old WQ: TP Time: 1144
ntrol	3	7.93	7.90	12.0	7.9	360	377	24.8	0	0	7	D	0	6	7	0	0	0	Date: WIN IN New WQ: TP Counts: EP Sol'n Prep: Y-Old WQ: TP Time: 1508
Lab Water Control	4	7.90	7,88	10.9	8,5	352	361	24.1	7	6	0	7	3	0	0	6	4	7	Date Apply New WQ: AR Counts: YG Sol'n Prep: YG Old WQ: M Time A 4216
o Wat	5	7-92	7.93	10.4	6.1	375	401	24.4	12	11	10	12	7	13	11	12	8	7	Date: 1/3/16 New WQ: ID Counts: W Sol'n Prep: 12 Old WQ: To Time: 154
Lal	6	-	7-76	_	8-6	-	450	24.0	17	0	16	16	17	15	17	18	9	0	Date: 144118 New WQ: Counts: AFF Sol'n Prep: Old WQ: TA Time: \$23
	7			1															Date: New WQ: Counts: Sol'n Prep: Old WQ: Time:
	8							DATE:											Date: Counts: Old WQ: Time:
								Total=	36	17	33	35	27	33	35	36	21	14	Mean Neonates/Female = 28.7
	Day	р	H	D.	O.	Cond.	μS/cm)	Temp				Survi	val / R	eprodi	uction				RT BATCH NUMBER
		New	Old	New	Old	New	Old	(°C)	Α	В	С	D	Е	F	G	H	I	J	KI BATCH NOWIDER
	0	7.73		平 1943	NAME OF STREET O	1356		24.4	0	0	0	0	0	0	0	0	0	0	287
	1	8.05	8.04	10.5	8.2	1318	1400	24.7	0	0	0	0	0	0	0	0	0	0	287
	2	7-95	7.90	10.1	8.5	1368	1418	240	0	0	0	0	0	0	0	0	0	0	287
		7,92		11.9	7.8	1328	1482	249	6	0	0	0	D	0	0	0	0	0	287
mg/L	4	7.84	7.84	10.6	8,5	1338	1373	24.0	0	7	7	6	6	VP	7	6	6	0	287
200	5	7-94	7.91	10.3	6.8	1330	1550	244	13	14	9	13	12	9	14	15	11	11	287
	6	-	7.80	-	8-2	-	1452	24.0	15	16	0	17	14	13	18	16	15	0	
	7	= 1												1	V				
	8																		
								Total=	34	37	16	36	32	28	39	37	32	17	Mean Neonates/Female = 30.8

		LOILISI			Short-T	Гerm С	hronic	3-Bro	od <i>Ce</i>	erioda	phni	a dub	<i>ia</i> Su	ırviva	al & I	Repro	ducti	ion T	Cest Data
C1 Proje	ient: ct#:	295	35		ence Tox Test 1D:	kicant 805	523	_	Ma Ran	terial:	ation:	Sodiu	m Ch	loride		Co	Test ntrol V	Date: Vater:	
	Day	p]		D.	0.	Cond. (μS/cm)	Temp					val / R		ıction				SIGN-OFF
		New	Old	New	Old	New	Old	(°C)	Α	В	С	D	Е	F	G	Н	I	J	SIGN-OFF
	0	7.73		8.7		1378		24.6	0	Ó	ð	ð	0	0	ව	0	0	Ō	
	1	8.04	8.01	10.6	8.1	2307	2560	24.8	0	0	0	0	0	0	0	0	0	0	
	2	7.89	7.88	10.1	8.4	2319	2475	240	0	0	0	0	0	0	0	0	0	0	
	3	7.89	7.81	11.8	7.4	2327	2527	25.0	0	0	0	0	6	0	6	0	0	0	
1000 mg/L	4	7.82	7.83	11.1	8.6	2227	2415	24.2	ig	7	5	8	0	6	0	8	0	7	
1000	5	7-94	7.90	11.0	7.2	2334	2489	24.1	8	11	9	8	10	9	11	8	10	9	
	6	_	7.79	_	8-3	_	-	ey 10	0	11.	11	O	12	0	13	0	10	0	
	7							7											
	8															}			
								Total=	14	29	25	14	28	15	30	14	26	16	Mean Neonates/Female = 21.1
	Day		Н	D.	_		(µS/cm)						val / R	eprod	1				SAMPLE ID
		New	Old	New	Old	New	Old	(°C)	A	В	С	D	E	F	G	Н	I	J	50000000000000000000000000000000000000
	0	7.78		8.7		3265		25.9	0	0	Ð	0	(i)	0	0	0	0	0	
	1	7.93	7.99	10.6	8.0	3226	3572	249	/-	0	0	0	0	0	0	0	0	0	
1	2	7.84	7.85	10.4	8.4	3249	3469	24,0	í	0	0	0	0	0	0	0	0	0	
	3	7.87	7.79	11.6	7.5	3297	3470	24.7	_ ^	0	0	0	0	0	0	0	0	0	
1500 mg/L	4	7.81	7.77	11.2	8.5	3220	3395	24.6	-	4	3	6	4	4	3	-5	3	5	
1500	5	7-92	7.88	11-2	7.6	3278	3477	240	1	4	8	6	9	6	5	6	8	6	
	6	_	7-80		8.4	-	3647	240	_	0	10	0	9	8	0	64	9	ට	
	7		- 4		T To				1										
	8		1_1						_		1								
								Total=	1/0	8	21	12	22	18	8	21	20	41	Mean Neonates/Female = M.

				1	Short-	Term C	Chronic	c 3-Bro	od Ca	erioda	phni	a dub	oia Su	ırviv	al & I	Repro	duct	ion T	est Data
C) Proje	lient:	29:	535		ence To:	xicant 80:	523			nterial: ndomiz			m Ch		_	C	Test ontrol	Date:	\(\/8\/\/9 Mod EPAMH
	Day		Н	-	O.		μS/cm)	Temp	TCUL	IGOIITZ	ation.		val / R		ıction		лиот	water.	WOOLEF AIVIT
	Day	New	Old	New	Old	New	Old	(°C)	Α	В	С	D	E	F	G	Н	I	J	SIGN-OFF
	0	7,68		8.9		4021		25.9	0	0	0	0	0	0	θ	0	0	0	
	1	7.98	8.00	10.5	0.8	4115	4164	249	0	0	0	0	0	0	0	0	0	0	
1	2	7-83	7.81	10-4	8.4	4182	4454	24.0	0	0	Ö	0	0	0	0	0	0	0	
	3	7.84	7.82	11.7	7.6		4766		0	0	0	0	0	0	0	0	0	0	
2000 mg/L	4	7.80	7.73	11.2	8.5	4022	4291	24.5	3	2	2	3	4	3	0	3	0	3	
2000	5	7.89	7.87	11.3	76	4221	4448	24.2	6	5	5	4	5	3	5	0	0	3	
	6	-	7.80	_	8.4	_	4652	O.PG	.0	0	0	7	4	6	0	6	5	0	
1	7																		
1	8													411			Ш		
								Total=	9	7	7	14	13	12	5	9	5	6	Mean Neonates/Female = 8.7
	Day		H		О.		μS/cm)		167				val / R	-					SAMPLE ID
	\vdash	New	Old	New	Old	New	Old	(°C)	Α	В	С	D	Е	F	G	Н	I	J	
	0	7.72		8.9		5085		24.5	0	0	0	0	0	0	0	0	0	0	
	1	7.96		10.5	7.9	5082	5321	25	0	0	0	0	0	0	0	0	0	0	
	2	7-77	7.78	10.5	8.3	5126	5555	24.0	1/0	×/0	1/0	×/0	×/6	2/0	1/0	1/0	2/0	×/0	
[-]	3	_	-	-	_	-	_	-	-	-	_	-	,	_		_	_	_	
0 mg/L	4		-	-	- Name	_		-	-	-	-	-	-	-	_		,	-	
2500	5	-	-	_	_	_	_	-	_	-	-	-		-	-	-	-	_	
	6	_	_	_	_	-	_		-	-	-	-	-	_	-	-	-	_	
	7	_			-		_	-	-	Ĺ	,	_	^	-	^	_	-		
	8				9899998		-	_	-	<u>ب</u>	_	_	ار ا	-	_	-		-	
								Total=	40	X/0	%₀	1/0	7/0	1/0	×/0	7/0	7/0	1/0	Mean Neonates/Female = \mathcal{O} . \mathcal{O}

Appendix E

Test Data and Summary of Statistics for the Evaluation of the Toxicity of the Calleguas Creek Ambient Waters to *Hyalella azteca*

CETIS Summary Report

Report Date:

19 Nov-18 09:28 (p 1 of 1)

Test Code:

80640 | 08-1263-9556

							iest	Code:		80640 0	8-1263-9556
Hyalella azte	ca 10-Day Water	Toxicity Te	st ———							Paci	fic EcoRisk
Batch ID: Start Date: Ending Date: Duration:	13-0826-3340 08 Nov-18 16:35 : 18 Nov-18 15:09 9d 23h	Prot	ocol: cies:	Survival EPA/600/R-99/0 Hyalella azteca Aquatic Biosyst			Anal Dilue Brine Age:	ent: La e: N	ames Lem aboratory Wate ot Applicable 2	er	
Sample ID:	20-4262-4811	Cod	e:	69-WOOD-097			Clier	nt: La	arry Walker As	sociates	
Sample Date	: 07 Nov-18 12:15	Mate	erial:	Ambient Water			Proje		9418		
Receipt Date	: 08 Nov-18 07:37	Sou	rce:	Calleguas Cree	k						
Sample Age:	28h (2.1 °C)	Stat	ion:	WOOD							
Single Comp	arison Summary										
Analysis ID	Endpoint		Comp	arison Method			P-Value	Compa	rison Result		
00-8065-8938	Survival Rate			on Rank Sum T	wo-Sample	Test	0.7778		Control passe	d survival	rate
Multiple Com	nparison Summar	у									
Analysis ID	Endpoint		Comp	arison Method			NOEL	LOEL	TOEL	TU	PMSD ✓
13-3030-5653	Survival Rate		Dunne	tt Multiple Comp	parison Test		100	> 100	n/a	1	9.1%
Survival Rate	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	cu	5	0.980	0.924	1.000	0.900	1.000	0.020	0.045	4.56%	0.00%
0	LW	5	0.980	0.924	1.000	0.900	1.000	0.020	0.045	4.56%	0.00%
6.25		5	0.940	0.829	1.000	0.800	1.000	0.040	0.089	9.52%	4.08%
12.5		5	0.940	0.872	1.000	0.900	1.000	0.025	0.055	5.83%	4.08%
25		5	0.960	0.892	1.000	0.900	1.000	0.025	0.055	5.71%	2.04%
50		5	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	-2.04%
100		5	0.920	0.816	1.000	0.800	1.000	0.037	0.084	9.09%	6.12%
Survival Rate	e Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	cu	1.000	0.900	1.000	1.000	1.000				*	
0	LW	1.000	0.900	1.000	1.000	1.000					
6.25		1.000	1.000	0.900	0.800	1.000					
12.5		0.900	1.000	1.000	0.900	0.900					
25		0.900	1.000	1.000	0.900	1.000					
50		1.000	1.000	1.000	1.000	1.000					
100		0.900	1.000	1.000	0.900	0.800					
Survival Rate	Binomials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	cu	10/10	9/10	10/10	10/10	10/10					
0	LW	10/10	9/10	10/10	10/10	10/10					
6.25		10/10	10/10	9/10	8/10	10/10					
12.5		9/10	10/10	10/10							
					9/10	9/10					
25		9/10	10/10	10/10	9/10	10/10					
50		10/10	10/10	10/10	10/10	10/10					
100		9/10	10/10	10/10	9/10	8/10					

Report Date: Test Code: 19 Nov-18 09:28 (p 1 of 3)

8

80640 | 08-1263-9556

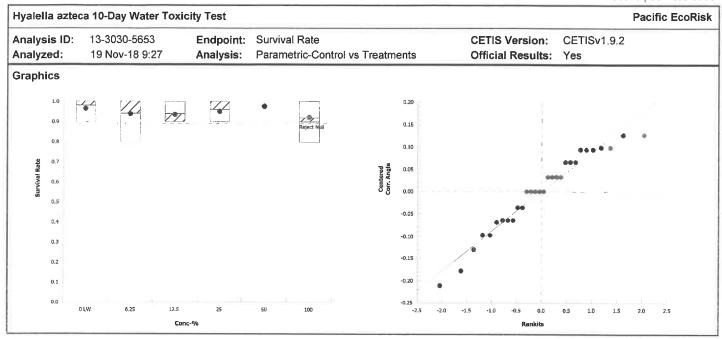
Hyalella azteca 1	0-Day Wate	r Toxicity T	est							Paci	fic EcoRisk
											IIC ECONIST
	3-3030-5653			rvival Rate				S Version		.9.2	
Analyzed: 19	9 Nov-18 9:2	2/ An	alysis: Pa	rametric-Co	ntrol vs Trea	tments	Offic	ial Results	s: Yes		
Data Transform		Alt Hyp					NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected	d)	C > T					100	> 100	n/a	1	9.10%
Dunnett Multiple	Compariso	n Test									
Control vs	Conc-%	, 0	Test Stat	Critical	MSD DF	P-Type	P-Value	Decision	ı(α:5%)		
Lab Water Contr	6.25		0.991	2.36	0.145 8	CDF	0.4240	Non-Sigr	ificant Effect		
	12.5		1.06	2.36	0.145 8	CDF	0.3938	Non-Sigr	ificant Effect		
	25		0.53	2.36	0.145 8	CDF	0.6339	Non-Sign	ificant Effect		
	50		-0.53	2.36	0.145 8	CDF	0.9441	Non-Sign	ificant Effect		
	100		1.52	2.36	0.145 8	CDF	0.2174	Non-Sign	ificant Effect		
ANOVA Table											
Source	Sum Sq	uares	Mean Sq	uare	DF	F Stat	P-Value	Decision	(α:5%)		
Between	0.054000)4	0.010800	1	5	1.14	0.3663	Non-Sign	ificant Effect		
Error	0.227198	3	0.009466	6	24						
Total	0.281198	3			29						
Distributional Tes	ete										
Distributional res	313										
Attribute	Test				Test Stat	Critical	P-Value	Decision	ι(α:1%)		
	Test	Equality of V	ariance Test		Test Stat	Critical	P-Value 0.0026		ı(α:1%) Variances		
Attribute	Test Levene E		ariance Test						Variances		
Attribute Variances	Test Levene E Mod Lev		of Variance		5.06	3.9	0.0026	Unequal Equal Va	Variances		
Attribute Variances Variances	Test Levene E Mod Levene Shapiro-1	ene Equality	of Variance		5.06 0.956	3.9 4.25	0.0026 0.4700	Unequal Equal Va	Variances riances		
Attribute Variances Variances Distribution	Test Levene E Mod Levene Shapiro-1	ene Equality	of Variance		5.06 0.956	3.9 4.25	0.0026 0.4700	Unequal Equal Va	Variances riances	CV%	%Effect
Attribute Variances Variances Distribution Survival Rate Sur	Test Levene E Mod Levene Shapiro-I mmary	ene Equality Wilk W Norn	of Variance nality Test	Test	5.06 0.956 0.949	3.9 4.25 0.903	0.0026 0.4700 0.1615	Unequal Equal Va Normal D	Variances riances Distribution	CV% 4.56%	%Effect 0.00%
Attribute Variances Variances Distribution Survival Rate Sur Conc-%	Test Levene E Mod Levene Shapiro- mmary Code	ene Equality Wilk W Norn Count	of Variance nality Test Mean	Test 95% LCL	5.06 0.956 0.949 95% UCL	3.9 4.25 0.903 Median	0.0026 0.4700 0.1615 Min	Unequal Equal Va Normal D	Variances riances bistribution		
Attribute Variances Variances Distribution Survival Rate Sur Conc-% 0	Test Levene E Mod Levene Shapiro- mmary Code	ene Equality Wilk W Norn Count 5	of Variance nality Test Mean 0.980	95% LCL 0.924	5.06 0.956 0.949 95% UCL 1.000	3.9 4.25 0.903 Median 1.000	0.0026 0.4700 0.1615 Min 0.900	Unequal Equal Va Normal D Max 1.000	Variances riances pistribution Std Err 0.020	4.56%	0.00%
Attribute Variances Variances Distribution Survival Rate Sur Conc-% 0 6.25	Test Levene E Mod Levene Shapiro- mmary Code	ene Equality Wilk W Norn Count 5 5	Mean 0.980 0.940	95% LCL 0.924 0.829	5.06 0.956 0.949 95% UCL 1.000 1.000	3.9 4.25 0.903 Median 1.000 1.000	0.0026 0.4700 0.1615 Min 0.900 0.800	Unequal Equal Va Normal D Max 1.000	Variances riances pistribution Std Err 0.020 0.040	4.56% 9.52%	0.00% 4.08%
Attribute Variances Variances Distribution Survival Rate Sur Conc-% 0 6.25 12.5	Test Levene E Mod Levene Shapiro- mmary Code	Count 5 5 5	Mean 0.980 0.940	95% LCL 0.924 0.829 0.872	5.06 0.956 0.949 95% UCL 1.000 1.000	3.9 4.25 0.903 Median 1.000 1.000 0.900	0.0026 0.4700 0.1615 Min 0.900 0.800 0.900	Unequal Equal Va Normal D Max 1.000 1.000	Variances riances pistribution Std Err 0.020 0.040 0.025	4.56% 9.52% 5.83%	0.00% 4.08% 4.08%
Attribute Variances Variances Distribution Survival Rate Sur Conc-% 0 6.25 12.5 25	Test Levene E Mod Levene Shapiro- mmary Code	Count 5 5 5 5	Mean 0.980 0.940 0.960	95% LCL 0.924 0.829 0.872 0.892	95% UCL 1.000 1.000 1.000 1.000	3.9 4.25 0.903 Median 1.000 1.000 0.900 1.000	0.0026 0.4700 0.1615 Min 0.900 0.800 0.900 0.900	Unequal Equal Va Normal D Max 1.000 1.000 1.000	Variances riances pistribution Std Err 0.020 0.040 0.025 0.025	4.56% 9.52% 5.83% 5.71%	0.00% 4.08% 4.08% 2.04%
Attribute Variances Variances Distribution Survival Rate Sur Conc-% 0 6.25 12.5 25 50	Test Levene E Mod Levene Shapiro- mmary Code LW	Count 5 5 5 5 5 5	Mean 0.980 0.940 0.940 0.960 1.000 0.920	95% LCL 0.924 0.829 0.872 0.892 1.000	5.06 0.956 0.949 95% UCL 1.000 1.000 1.000 1.000	3.9 4.25 0.903 Median 1.000 1.000 0.900 1.000 1.000	0.0026 0.4700 0.1615 Min 0.900 0.800 0.900 0.900 1.000	Unequal Equal Va Normal D Max 1.000 1.000 1.000 1.000 1.000	Variances riances pistribution Std Err 0.020 0.040 0.025 0.025 0.000	4.56% 9.52% 5.83% 5.71% 0.00%	0.00% 4.08% 4.08% 2.04% -2.04%
Attribute Variances Variances Distribution Survival Rate Sur Conc-% 0 6.25 12.5 25 50 100	Test Levene E Mod Levene Shapiro- mmary Code LW	Count 5 5 5 5 5 5	Mean 0.980 0.940 0.940 0.960 1.000 0.920	95% LCL 0.924 0.829 0.872 0.892 1.000	5.06 0.956 0.949 95% UCL 1.000 1.000 1.000 1.000	3.9 4.25 0.903 Median 1.000 1.000 0.900 1.000 1.000	0.0026 0.4700 0.1615 Min 0.900 0.800 0.900 0.900 1.000	Unequal Equal Va Normal D Max 1.000 1.000 1.000 1.000 1.000	Variances riances pistribution Std Err 0.020 0.040 0.025 0.025 0.000	4.56% 9.52% 5.83% 5.71% 0.00%	0.00% 4.08% 4.08% 2.04% -2.04%
Attribute Variances Variances Distribution Survival Rate Sur Conc-% 0 6.25 12.5 25 50 100 Angular (Correcte	Test Levene E Mod Levene Shapiro- mmary Code LW ed) Transfo	Count 5 5 5 5 7 7 7 7 7 7 7 7 8 7 8 8 8 8 8 8	Mean 0.980 0.940 0.940 0.960 1.000 0.920	95% LCL 0.924 0.829 0.872 0.892 1.000 0.816	5.06 0.956 0.949 95% UCL 1.000 1.000 1.000 1.000 1.000	3.9 4.25 0.903 Median 1.000 1.000 0.900 1.000 0.900	0.0026 0.4700 0.1615 Min 0.900 0.800 0.900 1.000 0.800	Max 1.000 1.000 1.000 1.000 1.000	Variances riances riances bistribution Std Err 0.020 0.040 0.025 0.025 0.000 0.037	4.56% 9.52% 5.83% 5.71% 0.00% 9.09%	0.00% 4.08% 4.08% 2.04% -2.04% 6.12%
Attribute Variances Variances Distribution Survival Rate Sur Conc-% 0 6.25 12.5 25 50 100 Angular (Correcte	Test Levene E Mod Levene Shapiro- mmary Code LW ed) Transfo Code	Count 5 5 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Mean 0.980 0.940 0.940 0.960 1.000 0.920 mary Mean	95% LCL 0.924 0.829 0.872 0.892 1.000 0.816	95% UCL 1.000 1.000 1.000 1.000 1.000 95% UCL	3.9 4.25 0.903 Median 1.000 1.000 0.900 1.000 0.900 Median	0.0026 0.4700 0.1615 Min 0.900 0.800 0.900 1.000 0.800	Max 1.000 1.000 1.000 1.000 1.000 Max	Variances riances riances bistribution Std Err 0.020 0.040 0.025 0.025 0.000 0.037 Std Err	4.56% 9.52% 5.83% 5.71% 0.00% 9.09% CV% 5.28%	0.00% 4.08% 4.08% 2.04% -2.04% 6.12% %Effect 0.00%
Attribute Variances Variances Distribution Survival Rate Sur Conc-% 0 6.25 12.5 25 50 100 Angular (Correcte Conc-% 0	Test Levene E Mod Levene Shapiro- mmary Code LW ed) Transfo Code	Count 5 5 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Mean 0.980 0.940 0.940 0.960 1.000 0.920 mary Mean 1.38	95% LCL 0.924 0.829 0.872 0.892 1.000 0.816 95% LCL 1.29	95% UCL 1.000 1.000 1.000 1.000 95% UCL 1.47	3.9 4.25 0.903 Median 1.000 1.000 0.900 1.000 0.900 Median 1.41	0.0026 0.4700 0.1615 Min 0.900 0.800 0.900 1.000 0.800 Min 1.25	Max 1.000 1.000 1.000 1.000 1.000 1.4000 1.41	Variances riances riances bistribution Std Err 0.020 0.040 0.025 0.025 0.000 0.037 Std Err 0.0326	4.56% 9.52% 5.83% 5.71% 0.00% 9.09% CV% 5.28% 10.44%	0.00% 4.08% 4.08% 2.04% -2.04% 6.12% %Effect 0.00% 4.42%
Attribute Variances Variances Distribution Survival Rate Sur Conc-% 0 6.25 12.5 25 50 100 Angular (Correcte Conc-% 0 6.25	Test Levene E Mod Levene Shapiro- mmary Code LW ed) Transfo Code	Count 5 5 5 5 rmed Sumn Count 5 5 5	Mean 0.980 0.940 0.940 0.960 1.000 0.920 mary Mean 1.38 1.32	95% LCL 0.924 0.829 0.872 0.892 1.000 0.816 95% LCL 1.29 1.15	95% UCL 1.000 1.000 1.000 1.000 1.000 1.000 1.47 1.47	3.9 4.25 0.903 Median 1.000 1.000 0.900 1.000 0.900 Median 1.41 1.41	0.0026 0.4700 0.1615 Min 0.900 0.800 0.900 1.000 0.800 Min 1.25 1.11	Max 1.000 1.000 1.000 1.000 1.41 1.41	Variances riances riances pistribution Std Err 0.020 0.040 0.025 0.025 0.000 0.037 Std Err 0.0326 0.0615	4.56% 9.52% 5.83% 5.71% 0.00% 9.09% CV% 5.28%	0.00% 4.08% 4.08% 2.04% -2.04% 6.12% %Effect 0.00% 4.42% 4.73%
Attribute Variances Variances Distribution Survival Rate Sur Conc-% 0 6.25 12.5 25 50 100 Angular (Correcte Conc-% 0 6.25 12.5	Test Levene E Mod Levene Shapiro- mmary Code LW ed) Transfo Code	Count 5 5 5 5 rmed Sumn Count 5 5 5 5 7	Mean 0.980 0.940 0.940 0.960 1.000 0.920 mary Mean 1.38 1.32 1.31	95% LCL 0.924 0.829 0.872 0.892 1.000 0.816 95% LCL 1.29 1.15 1.2	95% UCL 1.000 1.000 1.000 1.000 1.000 1.47 1.49 1.43	3.9 4.25 0.903 Median 1.000 1.000 0.900 1.000 0.900 Median 1.41 1.41 1.25	0.0026 0.4700 0.1615 Min 0.900 0.800 0.900 1.000 0.800 Min 1.25 1.11 1.25	Max 1.000 1.000 1.000 1.000 1.000 1.41 1.41	Variances riances rian	4.56% 9.52% 5.83% 5.71% 0.00% 9.09% CV% 5.28% 10.44% 6.79%	0.00% 4.08% 4.08% 2.04% -2.04% 6.12% %Effect 0.00% 4.42%

Analyst: 32 QA: QA

Report Date: **Test Code:**

19 Nov-18 09:28 (p 2 of 3)

80640 | 08-1263-9556



Report Date: **Test Code:**

19 Nov-18 09:28 (p 3 of 3)

80640 | 08-1263-9556

Hyalella azteca 10-Day Water Toxicity Test Pacific EcoRisk

Analysis ID: 00-8065-8938 Endpoint: Survival Rate **CETIS Version:** CETISv1.9.2

Analyzed: 19 Nov-18 9:28 Analysis: Nonparametric-Two Sample Official Results: Yes

Data Transform Alt Hyp **Comparison Result PMSD** Angular (Corrected) C > T Culture Control passed survival rate 5.60%

Wilcoxon Rank Sum Two-Sample Test

Control	vs	Control II	Test Stat Critical		Ties	DF	P-Type	P-Value	Decision(α:5%)
Lab Water C	Contr	Culture Control	27.5	n/a	2	8	Exact	0.7778	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)	
Between	0	0	1	0	1.0000	Non-Significant Effect	-
Error	0.0424949	0.0053119	8			-	
Total	0.0424949		9				

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	1	23.2	1.0000	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.509	0.741	4.7E-06	Non-Normal Distribution

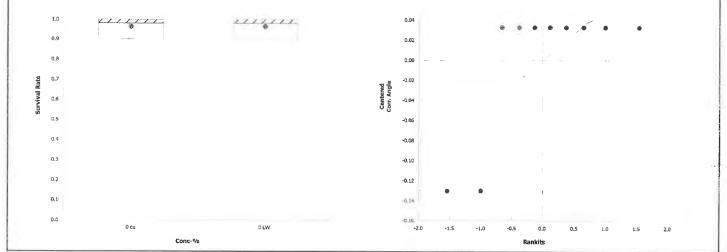
Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	cu	5	0.980	0.924	1.000	1.000	0.900	1.000	0.020	4.56%	0.00%
0	LW	5	0.980	0.924	1.000	1.000	0.900	1.000	0.020	4.56%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	cu	5	1.38	1.29	1.47	1.41	1.25	1.41	0.0326	5.28%	0.00%
0	LW	5	1.38	1.29	1.47	1.41	1.25	1.41	0.0326	5.28%	0.00%

Graphics



Client:	LWA-Calleguas C	reek	Organism Log#:	11270 Age:	12-13 days
Test Material:	Controls		Organism Supplier:	ABS	F
Test ID#:	- Project #:	29418	Control/Diluent:	SAM 5 (Conductivi	ty Adjusted)
Test Date:	11/8/18		Control Water Batch:	#362	

	Test Date:						Control Water	er Batch:					
	Treatment	Temp (°C)	p) new	H old	D.O. ((mg/L)	Conductivity (µS/cm)	A	# Liv	e Organ	isms D	Е	SIGN-OFF
	Lab Control (Cond. Adj.)	22.5	7.74		8.7		410	00	[0	10	(10	[0	Date: 11/8/18 Sample ID:
AP ultille	Culture Control		7.70		8-7		3878	10	10	[0	10	10	Test Solution Prep: SMC New WQ: "TA
nirel(8	Meter ID	160A	PH25		RDII		ECII						Initiation Time: 1635 Initiation Signoff: Age
	Lab Control (Cond. Adj.)	228				8.4		10	10	10	10	10	Date:
c)	Culture Control	22.6				8.4		10	10	10	10	10	Count Signoff:
EP 11/12/18	Meter ID	23				2013			/ /	70	10		
	Lab Control (Cond. Adj.)	22.5				86		10	10	Ю	10	10	Date: 11/16/18 Count Time: 0857
11/12/18	Culture Control	22.6				8.8		10	[D	10	10	10	Count Signoff: Auf
	Meter ID Lab Control	81A				Mio							Freed: APF Date: 11 11 18
	(Cond. Adj.)	22.q				8.5		(i)	10	10	10	10	Count Time. 0940
elis 18	Culture Control (Company) Meter ID	23.0 59A				8.5		10	[D	10	(0	الما	Old WQ:
	Lab Control	22.8				8.3		10	1.5	10	10	In	Date: 11 12 18 Count Time: 17 19
EP	Culture Control	228				82		10	9	10	10	10	Count Signoff:
11/12/18	Meter ID	100A				E WAYE					10	10	Feed: EP
	Lab Control (Cond. Adj.)	22.8	7.72	7.45	8.8	7.2	428	10	10	10	10	10	Sample II) 3/18
EP whele	Culture Control	23.0	7.71	7.36	8.9	7.0	3871	10	9	10	10	10	Test Solution Prep: SMC New WQ: DH
. "		MAN AND AND AND AND AND AND AND AND AND A									HKK B 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Renewal Time:
	Meter ID Lab Control	9317	H 15	PHUS	ROII	ROU	EC(I					2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Old WQ: Date: 11 14 12
:-TO	(Cond. Adj.)	72.7				3.7		10	10	10	10	10	Count Time: 1030 Count Signoff
11/12/18	Culture Control Cowo Adr.	22.7 BIA				4.0		10	9	10	lü	10	Old WQ: UC Feed: K(2
	Lab Control (Cond-Adj.)	26			P 1	7.4		10	9	10	10	10	Date: 11 15 18 Count Time: 1338
11/12/18	Culture Control	22.7				8.0		10	9	10	n	10	Count Signoff: \$6
11/12/18	Meter IIV	23				RDIO							
	Lab Control (Cond. Adj.)	22.1				8.5		10	9	10	10	10	Date: ///(6/18 Count Time: /5/5
11/12/18	Culture Control	22.5				8.6		10	9	10	10	10	Count Signoff: JO Old WQ: SP
	Meter ID Lab Control	991				PDII		7.5	0	10	10		Peed: 00
E.P	(Cond. Adj.)	22.2				8.1		10	9		10	10	Count Time: 110.3 Count Signoff: 12
11/12/18	Culture Coutrol (Outol Act;) Meter ID	27.5 107A				8.3 POB		10	/	10	10	10	Old WÇ:
	Lab Control (Cond. Adj.)	22.6		7.72		8.5	448	(0	9	61	10	10	Date 1 (/18/18 Termination Time: 1509
EP	Culture Control	22.3		7.73		8.5	3991	10	9	10	10	10	Termination Signoff 2
11/12/18	Meter ID	(05A		PH24		2013	EC13						

	Client Test Material			-Callegua		-	Organis Organism	m Log#: Supplier:		270	ABS	Age:	12-13 Days
	Test ID#)640	Project #:		418		/Diluent:		SA			in Adjusted
	Test Date			8/18			Control Wat			011	# 31		ny redustral
		Temp	1 7	Н	DO	(mg/L)	Conductivity	1	#1:	ve Organ	nieme		
	Treatment	(°C)	new	old	new	old	(μS/cm)	A	В	C	D	Е	SIGN-OFF
11/2/18	Lab Control (Cond Adj.)	22.5	7.74		8.7		410	10	[0	(७	(0	10	Date: 11/8/18 Sample ID: 51278
,	6.25%	22.5	7.98		8.8		686	10	/0	Jo	10	10	Test Solution Prep: SMC
	12.5%	22.5	8-06		8.9		957	Ю	10	10	10	10	Initiation Time: 1835
	25%	22.5	8.16		9.2		1390	10	10	10	lo	(0	
	50%	22.2	8.24		9.8		220	10	10	10	10	10	
	100% Meter ID	23.0	8.25		11.4 RD11		3900 ECI	10	(0	ι°	[0	ſŋ	
TP	Lab Control		FMZ7							***			Date:
11/12/18	(Cond. Adj.)	22.8	MAKANA MAKANA			8.4		0	10	10	10	10	Count Time.
	6.25%	22-7				8.5		10	10	10	10	10	Old WO SD
	12.5%	226				8.4		10	10	10	10	10	
	25%	226				8.4		10	10	10	10	10	
	50%	22.6				8.4		10	10	10	10	10	
	100% Meter ID	226				8.3 FD13		10	10	10	10	10	
EP	Lab Control	22.5				8.6		10	1/0	10	10	10	Date: 11/16/18 Count Time: 6 956
الماليا	6.25%	22.7				88		10	10	10	10	10	Count Time: 6 966 Count Signoff: ARE Old WQ: FD
	12.5%	22.7				89		10	10	10	10	10	Feed: And
	25%	22.5				9.0		10	10	10	10	10	
	50%	22.6				9.0		10	10	10	10	10	
	100%	22.5				9.1		ib	10	10	10	10	
	Meter ID	81 A				ANIO							
EP ulizli8	Lab Control (Cond. Adj.)	22.9				3		10	10	10	10	10	Date: 11 11 18 Count Tim : 5940
	6.25%	23,0				8.6		lo	lo	10	(0	(D	Count Signoff: By
	12.5%	22.9				8.7		10	10	lo	10	10	
	25%	22.9				8.6		10	10	lo		10	
	50%	22.9				8.6		10	D	Ю		10	
	100%	22.8				8.6		9	10	[0	(0	9	
Ī	Meter ID	59A				lall							

	Client: Test Material:			Callegua 'MP-69-		Organisı Organism S		ar: ABS					
	Test ID#: Test Date:	80	640	Project #:	294	118	Control/ Control Wate			SAI	M 5 (Co		y Adjusted)
Ī	Treatment	Temp	P	Н	D.O. (Conductivity			e Organ	isms		SIGN-OFF
EP	Lab Control	22.8	new	old	new	old 8.3	(µS/cm)	10	10	10	10	/O	Date: 12/13/13/15/Count Time: 12/13/15/15/15/15/15/15/15/15/15/15/15/15/15/
11/12/18	6.25%	23.0				8.4		10	10	10	10	10	Count Signoff: P
	12.5%	22.9				8.5		10	10	10	10	10	Feed:
	25%	22.9				83	HILL IN A SECOND STATE OF THE SECOND STATE OF	10	10	10	10	10	
	50%	22.9				8.3		10	10	10	10	10	
	100%	22.8				8.2		9	10	10	10	8	
EP	Meter ID Lab Control	100A	7,72		88	PDIO	428						Date: 11/13/18
11(12/18	(Cond. Adj.) 6.25%	J2.3 J3.0		7.45	9.0	7.2		10	[0]	10	10	10	Sample ID: 51278 Test Solution Prep: SMC
	12.5%		7,92	7.54	9.1	7.1	692 992	10	10	10	10	[0	New WQ: DH Renewal Time: 1410
	25%	J3.1	8.03	7.45	9.5	5.4	1459	9	10	10	10	10	Renewal Signoff: Old WQ: 3
	50%	13.1	8,12	7.55		5.1		10	10	10	10	10	
		13.1	8,15	7-71	10.1	5.3	2321	10	10	10	10		
	100% Meter ID	12,7 93A	8.16 PHIS	7.90	II. S	5.4 BOIN	3875 Ecii		10	lo	No.	8	
EP 11/12/18	Lab Control (Cond. Adj.)	22.7				3.7		10	10	10	10	10	Date: \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
11/12/13	6.25%	227	X X X X X X X X X X X X X X X X X X X			4.5		10	10	10	9	10	Count Signoff: 146
	12.5%	22.8				4.6		9	10	10	10	10	Feed: X
	25%	229				4.8		10	10	10	10	10	
	50%	22.8				4.8		10	10	ID	10	10	
		22.8				4.5		9	10	10	10	8	
EP.	Meter ID Lab Control	9/19				PO13			0	log Taley) 0		Date: 11 5 6
11/2/18	(Cond: Adj.) 6.25%	22.6				7,4		10	9	Toler 10	9	10	Count Time: 1338
	12,5%	22.4				7.7		10	10	ib	10	10	Old WO: TT
	25%	22.6			**************************************	7.5				- 13	9 39		
	50%	22.6		NEW AND	100 100	7.5		10	10	10	10	10	
	100%	22.7				7.3		89				10	
	Meter ID	12.6				8.J		S THINK	j0	I ()	10	8	

	Client:		_	Callegua				m Log#:	112	70	-	Age:	12-13 days
	Test Material:			MP-69-			Organism S		-	0.41		85	6.31 (1)
	Test ID#:	800	640	Project #:	29	418		Diluent:	-				y Adjusted)
	Test Date:		11	8 18			Control Water	er Batch:	-	-	4134	-	
- 1	Treatment	Temp	_	Н		(mg/L)	Conductivity			e Organ			SIGN-OFF
	Lab Control	(°C)	new	old	new	old	(μS/cm)	Α	В	С	D	Е	Date: ////6/18
11/12/18	(Cond. Adj.)	22,1				8.5		10	9	10	10	10	Count time:
aleter	6.25%	22.2				北北		10	19	9	9	10	Count Signoff: 10. Old WQ: 32
	12.5%	22.0				8.5		9	10	10	9	9	Feed: JO
	25%	22.1	XXX 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			8.4		9	10	10	ARM	10	
	50%	22.2	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		2	8.5		io	10	10	10	10	
	100%	22.3	PXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX			8.4		9	10	E88	69	B	
	Meter ID	99A	+ + + 1			BOIL							
11/12/18	Lab Control (Cond. Adj.)	22.2				8.1		10	9	10	10	10	Date: [1/17/18] Count Time: 1/03
11/12/10	6.25%	22.6				8.4		10	10	9	8	10	Count Signoff: 17
	12.5%	22.6	THE STATE OF THE S	200 E E E E E E E E E E E E E E E E E E	MANAGEMENT OF THE PROPERTY OF	8.2		9	10	10	Que No	9	
	25%	22.6	X X X X X X X X X X X X X X X X X X X	M. M		8.0		9	10	100	Zig.	10	
	50%	22.6	THE REPORT OF THE PROPERTY OF			8.1		10	lo	10	10	lo	
	100%	22.6	7 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			8,2		9	10	OF T	9	8	
	Meter ID	107/7				K013							
1/12/18	Lab Control (Cond. Adj.)	226		7.72		8.5	448	10	9	10	10	10	Date: (\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
11/10/11	6.25%	224	X X X X X X X X X X X X X X X X X X X	7.92		8.4	649	10	10	9	8	10	Termination Signoff: CR
	12.5%	22.3		7,94		8.6	1100	9	0)	10	9	9	
	25%	22.3	MANAGEMENT OF STREET	8.08		8.5	1569	9	10	(0	190	10	
-9	50%	123		8.28	200 00 00 00 00 00 00 00 00 00 00 00 00	8.4	2580	10	10	10	10	Oj	
	100%	223		8.25	MAN AND AND AND AND AND AND AND AND AND A	8.2	4420	9	10	(i)	9	8	
	Meter ID	105A		PHZY		RAIL	eur						

Appendix F

Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the *Hyalella azteca*

CETIS Summary Report

Report Date:

16 Nov-18 10:58 (p 1 of 1)

Test Code:

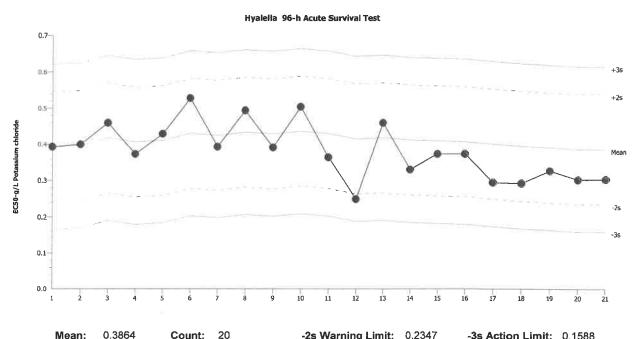
80637 | 20-3402-4533

	00007 20-										
EcoRis	Pacific								l Test	Acute Surviva	Hyalella 96-h
		ssica Okutsu	lyst: .	Ana			ırvival (96h)	st Type: S	Tes	20-2131-6975	Batch ID:
	er	boratory Wate	ent: I	Dilu		012 (2002)	PA-821-R-02-	otocol: E	10 Pr o	08 Nov-18 16:	Start Date:
		t Applicable	ne: l	Brin			alella azteca	ecies: H	40 Sp	12 Nov-18 14:	Ending Date:
			: 1	Age		ems, CO	uatic Biosyst	urce: A	So	94h	Duration:
	cant	ference Toxic	nt: F	Clie			CI C	de: K	Co	20-0108-1403	Sample ID:
		588	ect: 2	Proj		ride	tassium chlo	terial: P	10 M a	08 Nov-18 16:	Sample Date:
						cant	ference Toxi	urce: R	10 So	08 Nov-18 16:	Receipt Date:
							House	tion: Ir	Sta	n/a (22.1 °C)	Sample Age:
									ary	parison Summ	Multiple Com
PMSD	TU	TOEL	LOEL	NOEL			son Method	Compai		Endpoint	Analysis ID
1/a		0.2828	0.4	0.2	t	ni-Holm Tes	act/Bonferro	Fisher E	ate	96h Survival R	11-5847-6923
										e Summary	Point Estimate
Ü	95% UCL	95% LCL	g/L	Level		od	timate Metho	Point Es		Endpoint	Analysis ID
	0.377	0.243	0.303	EC50			n-Kärber	Spearm	ate	96h Survival R	15-9735-9663
										Rate Summary	96h Survival F
%Effect	CV%	Std Dev	Std Er	Max	Min	95% UCL	95% LCL	Mean	Count	Code	Conc-g/L
.00%	0.00%	0.000	0.000	1.000	1.000	1.000	1.000	1.000	10	LW	0
0.00%	0.00%	0.000	0.000	1.000	1.000	1.000	1.000	1.000	10		0.1
0.00%	35.14%	0.316	0.100	1.000	0.000	1.000	0.674	0.900	10		0.2
0.00%	210.82%	0.422	0.133	1.000	0.000	0.502	0.000	0.200	10		0.4
00.00%		0.000	0.000	0.000	0.000	0.000	0.000	0.000	10		0.8
00.00%		0.000	0.000	0.000	0.000	0.000	0.000	0.000	10		1.6
											96h Survival F
Rep 10	Rep 9	Rep 8	Rep 7	Rep 6	Rep 5	Rep 4	Rep 3	Rep 2	Rep 1	Code	Conc-g/L
.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	LW	0
.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		0.1
.000			1.000	1.000	1.000	1.000	1.000	1.000	1.000		0.2
.000			0.000	0.000	0.000	0.000	0.000	1.000	0,000		0.4
.000			0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.8
.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		1.6
										Rate Binomials	96h Survival R
ep 10		Rep 8	Rep 7	Rep 6	Rep 5	Rep 4	Rep 3	Rep 2	Rep 1	Code	Conc-g/L
/1			1/1	1/1	1/1	1/1	1/1	1/1	1/1	LW	0
/1			1/1	1/1	1/1	1/1	1/1	1/1	1/1		D.1
/1	0/1		1/1	1/1	1/1	1/1	1/1	1/1	1/1		0.2
/1	0/1		0/1	0/1	0/1	0/1	0/1	1/1	0/1		0.4
/1			0/1	0/1	0/1	0/1	0/1	0/1	0/1		0.8
/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1		1.6

Hyalella 96-h Acute Survival Test

Pacific EcoRisk

Test Type:Survival (96h)Organism:Hyalella azteca (Freshwater AmphipMaterial:Potassium chlorideProtocol:EPA-821-R-02-012 (2002)Endpoint:96h Survival RateSource:Reference Toxicant-REF



Sigma	0.07586	CV:	19.60%	+2s Warning Limit:	+3s Action Limit:	
Quality Control Data						

quality Control Data											
Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2017	Sep	24	16:23	0.3931	0.006728	0.08869			05-3672-3483	11-7202-5835
2		Oct	23	15:20	0.4	0.0136	0.1793			05-6411-1970	13-8116-2372
3		Nov	8	16:16	0.4595	0.07308	0.9633			19-7659-7997	01-3839-2915
4			17	16:00	0.3732	-0.01319	-0.1738			17-6978-3883	17-5467-8698
5			25	14:10	0.4287	0.04231	0.5577			11-3183-2495	08-9083-9227
6		Dec	4	16:30	0.5278	0.1414	1.864			09-9590-2070	18-7306-3573
7	2018	Jan	9	19:13	0.3931	0.006728	0.08869			05-2232-4768	00-9328-2087
8			17	15:40	0.4938	0.1074	1.416			17-7568-9822	12-5928-4930
9		Feb	8	15:57	0.391	0.004636	0.06111			13-6969-1958	02-2461-7172
10		Mar	2	17:52	0.5037	0.1173	1.546			10-1610-0738	05-9100-3645
11		Арг	8	13:38	0.3642	-0.02224	-0.2931			14-6470-8596	05-1973-4354
12		May	16	17:55	0.2486	-0.1378	-1.817			05-9866-1037	11-2195-3653
13		Jun	14	16:35	0.4595	0.07308	0.9633			18-1605-2758	14-8406-0239
14		Jul	18	16:20	0.3299	-0.05646	-0.7442			11-4094-7394	20-3811-7615
15		Aug	6	14:44	0.3732	-0.01319	-0.1738			16-9077-3352	08-2793-0151
16			9	17:00	0.3732	-0.01319	-0.1738			14-1761-7282	03-9488-5843
17			16	11:27	0.2941	-0.09228	-1.217			12-7542-2334	14-0979-7400
18			21	16:03	0.2922	-0.09422	-1.242			19-3911-4177	09-8363-6416
19		Sep	4	14:11	0.3265	-0.05994	-0.7902			00-7654-6742	11-6933-8211
20		Oct	22	15:45	0.3021	-0.08431	-1.111			08-4484-9174	20-9708-5657
21		Nov	8	16:10	0.3031	-0.08326	-1.098			20-3402-4533	15-9735-9663

96 Hour Hyalella azteca Reference Toxicant Test Data

Age: |2-13 days Organism Log #: 11270 Reference Toxicant Client: Test Material: Potassium Chloride Organism Supplier: ABS Control/Diluent: SAM-5 Test ID#: 80637 Project # 29588 367 Randomization: 10,7,6 Control Water Batch: Test Date: 11 8 18 Time: 0915 Initials: ARF Feeding T48 Feeding T-2 Time: 0840 Initials:

Treatment	Temp	,,	D.O.	Conductivity				# I	_ive A	Anim	als				Siam Off
(g/L)	(°C)	pН	(mg/L)	(μS/cm)	A	В	С	D	Е	F	G	Н	Ι	J	Sign-Off
Control	22.1	7.60	8.6	410	1	1	١	1	1	1		1	1	1	Test Solution Prep
0.1	22.0	7.60	8ile	607	1	1	1	1	1	1	1	1	1		New WQ: -14
0.2	22.0	7.58	8.7	804	1	1	I	1	1	1	1	1	1	1	Initiation Date: 11 8 5
0.4	22.1	7.63	8-8	1153	1	Œ	١	1	1	1	1	1	1	1	Initiation Time: し
0.8	22.0	7.62	9.4	1918	1	1	1	1	1		1	1	1	1	Initiation Signoff:
1.6	22.0	7.62	10.7	3396	1	1	1	1	1		1	1	1	1	RT Batch #: ZO
Meter ID	10001	P425	RDI	EUI											
Control	23.3				1	1	1	1	1	1	1	1	1	1	Count Date: 11/9/19
0.1	23.5				1	1	1	1	1	1	1	1		1	Count Time:/300
0.2	23-6				1	1	1	1	1	1	1	1	À.	1	Count Signoff:
0.4	23.6				1	1	1	1	1	1	-[1	1	1	
0.8	23.6				0	0	0	0	0	0	0	0	0	0	
1.6	23-6				0	0	0	0	0	0	0	0	0	0	
Meter ID	5														
Control	23.6				1	-6	1	1-	1	1	1	1	1	1	Count Date: 11(10/16) Count Time: 0913
0.1	23.6				1	1	1	1	V	1	1	I.	1	1	Count Time 0913
0.2	23.4				1	1	1	1	1	1	1	-1	1	1	Count Signoff ARF
0.4	23.5				1	1	1	1	O	0	0	1	0	1	
0.8	-				_	-	-	~	-	-	-	-	-	-	
1.6	-				_	-	+	-	-	-	-	-	-	•	
Meter ID	BIA														
Control	23.3				I	1	1	1	1	1	1	1	1	1	Count Date:
0.1	23.3					1	1	1	1	1	1	1	4	1	Count Time: 0907
0.2	23.5					1		1	1	1	1	(0	1	Count Signoff:
0.4	23.8				0	1	0	0	_	-	_	1		0	
0.8	-				_	_	_	-	_	-	-	-	-	-	
1.6	-				-	-	_	_	-	-	-	-	-	*	
Meter ID	81A														
Control	22.3	7.70	7.8	619	1		1	1	1	1	1	1	1	1	Termination Page 11
0.1	22.2	7.73	7.8	729	1		1	I	1	1	1	1	1	1	Termination Time
0.2	22.3	7.73	7.5	915		1		1	1	1	1		-	1	Termination Signoff.
0.4	22.2	7 108	7.5	1489	-	1		-		_	-	1	_	_	Old WQ: KO
0.8	-	7.76	7.4	2199	L	-	-	-	-		-	-	-	-	
1.6	-	778	7.5	3872	-	-	-	£	-		-	_	-	5	
Meter ID	100A	PH25	RDB	EU3											



Ms. Amy Storm Larry Walker Associates 2151 Alessandro Dr., Suite 100 Ventura, CA 93001

December 14, 2018

Dear Amy:

I have enclosed our report "A Toxicity Characterization Study of Ambient Waters Collected from the Calleguas Creek Watershed: Event 70" for samples collected November 29, 2018. The results of our evaluation are summarized below.

Effects of Calleguas Creek Ambient Waters on Ceriodaphnia dubia

There was a significant reduction in survival and reproduction in the 70-WOOD-097 Calleguas Creek ambient water sample.

There were no significant reductions in survival or reproduction in the remaining Calleguas Creek ambient waters.

Toxicity Summary for Calleguas Creek: Event 70 Ambient Waters.					
	Toxicity relative to the Lab Control treatment?				
Sample Station ID	Ceriodaphnia dubia				
	Survival	Reproduction			
70-UNIV-029	no	no			
70-ADOLF-045	no	no			
70-WOOD-097	YES	YES			
70-UPLAND-144	no	no			
70-HITCH-150	no	no			
70-GATE-202	no	no			
70-BELT-208	no	no			

If you have any questions regarding the performance and interpretation of these tests, feel free to contact my colleague Jeffrey Cotsifas or myself at (707) 207-7763.

Sincerely,

Michael McElroy Senior Project Manager



Pacific EcoRisk is accredited in accordance with NELAP (ORELAP ID 4043). Pacific EcoRisk certifies that the test results reported herein conform to the most current NELAP requirements for parameters for which accreditation is required and available. Any exceptions to NELAP requirements are noted, where applicable, in the body of the report. This report shall not be reproduced, except in full, without the written consent of Pacific EcoRisk. This testing was performed under Lab Order 29633.

A Toxicity Characterization Study of Ambient Waters Collected from the Calleguas Creek Watershed

(Water Samples Collected on November 29, 2018)

Event 70

Prepared For

Larry Walker Associates 720 Wilshire Blvd., Suite 207 Santa Monica, CA 90401

Prepared By

Pacific EcoRisk 2250 Cordelia Rd. Fairfield, CA 94534

December 2018



Table of Contents

	Page
1. INTRODUCTION	1
2. COLLECTION AND DELIVERY OF AMBIENT WATER SAMPLES	1
3. TOXICITY TEST PROCEDURES FOR AMBIENT WATERS	2
3.1 Survival and Reproduction Chronic Toxicity Testing with Ceriodaphnia dubia	2
3.1.1 Reference Toxicant Testing of the <i>Ceriodaphnia dubia</i>	
4. RESULTS OF THE AMBIENT WATER TOXICITY EVALUATIONS	4
4.1. Effects of Calleguas Creek Ambient Waters on Ceriodaphnia dubia	4
4.1.2 Reference Toxicant Toxicity to <i>Ceriodaphnia dubia</i>	
5. SUMMARY AND CONCLUSIONS	
5.1 QA/QC Summary	

Appendices

Appendix A Chain-of-Custody Record for the Collection and Delivery of the Calleguas Creek Ambient Water Samples

Appendix B Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of the Calleguas Creek Ambient Waters to Ceriodaphnia dubia: Data Analyses Excluding Statistical Outliers

Appendix C Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of the Calleguas Creek Ambient Waters to Ceriodaphnia dubia: Data Analyses Including Statistical Outliers

Appendix D Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the Ceriodaphnia dubia

1. INTRODUCTION

In support of the Calleguas Creek Watershed Monitoring Program, Larry Walker Associates (LWA) has contracted Pacific EcoRisk (PER) to evaluate the potential toxicity of surface waters and sediments collected from within the Calleguas Creek Watershed. The current evaluation, which comprises Event 70 of the overall study, consisted of performing the following U.S. EPA toxicity test:

• 3-brood (6-8 day) survival and reproduction chronic toxicity test with the crustacean *Ceriodaphnia dubia*.

In order to evaluate the magnitude of any observed toxicity, all water samples were tested using a series of sample dilutions (100%, 50%, 25%, 12.5%, and 6.25%). In order to document that the test organisms were responding to toxic stress in a typical fashion, reference toxicant tests were also performed. This report describes and summarizes the performance and results of the Event 70 surface water toxicity testing performed in support of the Calleguas Creek Watershed Monitoring Program.

2. COLLECTION AND DELIVERY OF AMBIENT WATER SAMPLES

On November 29, 2018, Kinnetic Laboratories, Inc. (KLI) collected ambient water samples from six locations within the Calleguas Creek watershed (Table 1). Each water sample was collected into two pre-cleaned 5-gallon fluorocarbon-lined polyethylene jerricans. The samples were transported on ice and under chain-of-custody to the PER laboratory facility in Fairfield, CA, arriving approximately 24 hrs after collection. Upon receipt at the testing laboratory, aliquots of each water sample were collected for analysis of initial water quality characteristics (Table 2). The remainder of the water samples were stored at 0-6°C. All initial surface water tests were initiated within 36 hrs of sample collection. The chain-of-custody record for the collection and delivery of these samples is presented in Appendix A.

Table 1. Collection of Calleguas Creek Watershed Ambient Water Samples.					
Station Code	Sample Collection Date (Time)	Test Initiation Date (Time)			
UNIV	11/29/18 (0845)	11/30/18 (1303)			
ADOLF	11/29/18 (1140)	11/30/18 (1337)			
WOOD	11/29/18 (0700)	11/30/18 (1349)			
UPLAND	11/29/18 (1125)	11/30/18 (1417)			
HITCH	11/29/18 (1010)	11/30/18 (1313)			
GATE	11/29/18 (1015)	11/30/18 (1400)			
BELT	11/29/18 (0915)	11/30/18 (1402)			

Table 2. Initial Water Quality Characteristics of Calleguas Creek Ambient Water Samples.								
Sample ID	Temp (°C)	рН	D.O. (mg/L)	Alkalinity (mg/L as CaCO ₃)	Hardness (mg/L as CaCO ₃)	Conductivity (µS/cm)	Salinity (ppt)	Total Ammonia (mg/L)
70-UNIV-029	0.4	7.78	8.8	100	196	801	0.4	<1.0
70-ADOLF-045	0.6	7.89	9.5	181	346	1102	0.6	<1.0
70-WOOD-097	1.2	7.70	7.2	143	765	2598	1.4	<1.0
70-UPLAND-144	1.0	7.79	8.6	99	278	717	0.4	<1.0
70-HITCH-150	0.3	7.77	11.4	92	200	730	0.4	<1.0
70-GATE-202	0.5	7.80	11.1	78	160	456	0.3	<1.0
70-BELT-208	0.8	7.89	10.9	77	119	333	0.2	<1.0

3. TOXICITY TEST PROCEDURES FOR AMBIENT WATERS

The Calleguas Creek ambient waters were tested for toxicity using the following chronic toxicity test:

• Water samples with a conductivity $<3000 \mu S/cm$ were tested using the 3-brood (6-8 day) survival and reproduction test with the freshwater crustacean *C. dubia*.

The methods used in conducting the chronic toxicity tests (and any follow-up TIEs) followed the guidance established by the following EPA manual:

• Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013).

3.1 Survival and Reproduction Chronic Toxicity Testing with Ceriodaphnia dubia

The chronic toxicity test with *C. dubia* consists of exposing individual females to the ambient water samples for the length of time it takes for the Lab Control treatment females to produce three broods (typically 6-8 days), after which effects on survival and reproduction are evaluated. The specific procedures used in these tests are described below.

The Lab Water Control medium for this test consisted of a modified EPA moderately-hard water. For each water sample, the Lab Control water and 100% water sample were used to prepare test solutions at additional interim test treatment concentrations of 6.25%, 12.5%, 25%, and 50% ambient water. For each treatment, 200 mL aliquots of test solution were amended with the alga *Selenastrum capricornutum* and Yeast-Cerophyll®-Trout Food (YCT) to provide food for the test organisms. "New" water quality characteristics (pH, D.O., and conductivity) were measured on these food-amended test solutions prior to use in these tests.

There were 10 replicates each for each test treatment, each replicate consisting of 15 mL of test solution in a 30-mL plastic cup. These "3-brood" tests were initiated by allocating one neonate

(<24 hrs old, and within 8 hours of age) *C. dubia*, obtained from in-house laboratory cultures, into each replicate cup. The replicate cups were placed into a temperature-controlled room at 25°C, under cool-white fluorescent lighting on a 16L:8D photoperiod.

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

After it was determined that \geq 60% of the *C. dubia* in a Lab Water Control treatment had produced their third brood of offspring, the corresponding ambient water test was terminated. The resulting survival and reproduction (number of offspring) data were analyzed to evaluate any impairment(s) caused by the effluent sample; all statistical analyses were made using CETIS® (TidePool Scientific Software, McKinleyville, CA).

3.1.1 Reference Toxicant Testing of the Ceriodaphnia dubia

In order to assess the sensitivity of the *C. dubia* test organisms to toxic stress, a concurrent reference toxicant test was performed. This reference toxicant test was performed similarly to the ambient water test except that test solutions consisted of Lab Water Control medium spiked with NaCl at test concentrations of 500, 1000, 1500, 2000, and 2500 mg/L. The resulting test response data were statistically analyzed to determine key concentration-response point estimates (e.g., EC50); all statistical analyses were made using CETIS®. These response endpoints were then compared to the typical response range established by the mean ± 2 SD of the point estimates generated by the most recent previous reference toxicant tests performed by this lab.

4. RESULTS OF THE AMBIENT WATER TOXICITY EVALUATIONS

4.1 Effects of Calleguas Creek Ambient Water on Ceriodaphnia dubia

The results of the ambient water tests with *C. dubia* are summarized below in Tables 3 through 9. There was a significant reduction in survival and reproduction in the 70-WOOD-097 Calleguas Creek ambient water sample.

The test data and summary of statistical analyses for these tests, excluding statistical outliers where appropriate, are presented in Appendix B; the summary of statistical analyses for these tests, including statistical outliers, is presented in Appendix C.

Table 3. Effects of Ambient Water 70-UNIV-029 on <i>Ceriodaphnia dubia</i> .					
Ambient Water Treatment	% Survival	Reproduction (# neonates /female)			
Lab Water Control	100	24.3			
6.25%	100	28.6			
12.5%	100	31.6 ^b			
25%	90	28.1			
50%	80	24.3			
100%	90	30.9 ^b			
Summary of	of Statistics				
No Observable Effect Concentration (NOEC) =	100% ambient water	100% ambient water			
TUc (where TUc = 100/NOEC) =	1	1			
Survival EC25 or Reproduction IC25 =	>100% ambient water ^a	>100% ambient water			
Survival EC50 or Reproduction IC50 =	>100% ambient water ^a	>100% ambient water			
TUc (where TUc = 100/EC50 or 100/IC50) =	<1	<1			

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% ambient water.

b - The reproduction response for one of the replicates at this test treatment was determined to be a statistical outlier, and the results reported above are for the analysis of the test data excluding this outlier. As per EPA guidelines, the test data were analyzed both with and without the outlier, and the results of both sets of analyses are reported in the appendices.

Table 4. Effects of Ambient Water 70-ADOLF-045 on <i>Ceriodaphnia dubia</i> .					
Ambient Water Treatment	% Survival	Reproduction (# neonates /female)			
Lab Water Control	100	30.5			
6.25%	100	35.1			
12.5%	90	34.2 ^b			
25%	100	34.1			
50%	100	32.1			
100%	90	28.2			
Summary of	Key Statistics				
No Observable Effect Concentration (NOEC) =	100% ambient water	100% ambient water			
TUc (where TUc = 100/NOEC) =	1	1			
Survival EC25 or Reproduction IC25 =	>100% ambient water ^a	>100% ambient water			
Survival EC50 or Reproduction IC50 =	>100% ambient water ^a	>100% ambient water			
TUc (where TUc = 100/EC50 or 100/IC50) =	<1	<1			

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% ambient water.

b - The reproduction response for one of the replicates at this test treatment was determined to be a statistical outlier, and the results reported above are for the analysis of the test data excluding this outlier. As per EPA guidelines, the test data were analyzed both with and without the outlier, and the results of both sets of analyses are reported in the appendices.

Table 5. Effects of Ambient Water 70-WOOD-097 on Ceriodaphnia dubia.					
Ambient Water Treatment	% Survival	Reproduction (# neonates /female)			
Lab Water Control	100	28.9			
6.25%	100	31.8			
12.5%	100	34.3			
25%	100	31			
50%	100	32.7 ^b			
100%	0*	-			
Summary of 1	Key Statistics				
No Observable Effect Concentration (NOEC) =	50% ambient water	50% ambient water			
TUc (where $TUc = 100/NOEC$) =	2	2			
Survival EC25 or Reproduction IC25 =	>50% ambient water ^a	62.5% ambient water			
Survival EC50 or Reproduction IC50 =	>50% ambient water ^a	75% ambient water			
TUc (where TUc = $100/EC50$ or $100/IC50$) =	<2	1.3			

^{* -} The test response at this treatment was significantly less than the Control treatment response (p < 0.05).

a - Due to the data distribution, the EC25 could not be calculated.

b - The reproduction response for one of the replicates at this test treatment was determined to be a statistical outlier, and the results reported above are for the analysis of the test data excluding this outlier. As per EPA guidelines, the test data were analyzed both with and without the outlier, and the results of both sets of analyses are reported in the appendices.

Table 6. Effects of Ambient Water 70-UPLAND-144 on Ceriodaphnia dubia.					
Ambient Water Treatment	% Survival	Reproduction (# neonates /female)			
Lab Water Control	100	31.8			
6.25%	100	34.7 ^b			
12.5%	100	32.1			
25%	100	32			
50%	100	30.4			
100%	100	34.2 ^b			
Summary of 2	Key Statistics				
No Observable Effect Concentration (NOEC) =	100% ambient water	100% ambient water			
TUc (where $TUc = 100/NOEC$) =	1	1			
Survival EC25 or Reproduction IC25 =	>100% ambient water ^a	>100% ambient water			
Survival EC50 or Reproduction IC50 =	>100% ambient water ^a	>100% ambient water			
TUc (where TUc = $100/EC50$ or $100/IC50$) =	<1	<1			

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% ambient water.

b - The reproduction response for one of the replicates at this test treatment was determined to be a statistical outlier, and the results reported above are for the analysis of the test data excluding this outlier. As per EPA guidelines, the test data were analyzed both with and without the outlier, and the results of both sets of analyses are reported in the appendices.

Table 7. Effects of Ambient Water 70-HITCH-150 on <i>Ceriodaphnia dubia</i> .					
Ambient Water Treatment	Mean % Survival	Mean Reproduction (# neonates/female)			
Lab Water Control	100	30.2			
6.25%	100	33.3			
12.5%	100	33.2 ^b			
25%	100	33.7			
50%	100	34			
100%	100	34.1			
Summary of	Key Statistics				
No Observable Effect Concentration (NOEC) =	100% ambient water	100% ambient water			
TUc (where TUc = 100/NOEC) =	1	1			
Survival EC25 or Reproduction IC25 =	>100% ambient water ^a	>100% ambient water			
Survival EC50 or Reproduction IC50 =	>100% ambient water ^a	>100% ambient water			
TUc (where TUc = 100/EC50 or 100/IC50) =	<1	<1			

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% ambient water.

.

b - The reproduction response for one of the replicates at this test treatment was determined to be a statistical outlier, and the results reported above are for the analysis of the test data excluding this outlier. As per EPA guidelines, the test data were analyzed both with and without the outlier, and the results of both sets of analyses are reported in the appendices.

Table 8. Effects of Ambient Water 70-GATE-202 on Ceriodaphnia dubia.					
Ambient Water Treatment	Mean % Survival	Mean Reproduction (# neonates/female)			
Lab Water Control	100	30.6			
6.25%	100	33.7			
12.5%	100	32.1			
25%	90	31.6			
50%	100	29.5			
100%	100	30.6			
Summary of 1	Key Statistics				
No Observable Effect Concentration (NOEC) =	100% ambient water	100% ambient water			
TUc (where TUc = 100/NOEC) =	1	1			
Survival EC25 or Reproduction IC25 =	>100% ambient water ^a	>100% ambient water			
Survival EC50 or Reproduction IC50 =	>100% ambient water ^a	>100% ambient water			
TUc (where TUc = 100/EC50 or 100/IC50) =	<1	<1			

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% ambient water.

Table 9. Effects of Ambient Water 70-BELT-208 on <i>Ceriodaphnia dubia</i> .					
Ambient Water Treatment	Mean % Survival	Mean Reproduction (# neonates/female)			
Lab Water Control	100	30.8			
6.25%	100	35			
12.5%	100	36.4 ^b			
25%	100	35.1			
50%	100	37.3			
100%	100	37.8			
Summary of 1	Key Statistics				
No Observable Effect Concentration (NOEC) =	100% ambient water	100% ambient water			
TUc (where TUc = 100/NOEC) =	1	1			
Survival EC25 or Reproduction IC25 =	>100% ambient water ^a	>100% ambient water			
Survival EC50 or Reproduction IC50 =	>100% ambient water ^a	>100% ambient water			
TUc (where TUc = 100/EC50 or 100/IC50) =	<1	<1			

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% ambient water.

b - The reproduction response for one of the replicates at this test treatment was determined to be a statistical outlier, and the results reported above are for the analysis of the test data excluding this outlier. As per EPA guidelines, the test data were analyzed both with and without the outlier, and the results of both sets of analyses are reported in the appendices.

4.1.2 Reference Toxicant Toxicity to Ceriodaphnia dubia

The results of this test are summarized below in Table 8. The EC50 and IC50 for these tests were both consistent with the typical response ranges established by the reference toxicant test database for this species, thus providing further evidence that the organisms used for ambient water testing were responding to toxic stress in a typical and consistent fashion. The test data and summary of statistical analyses for this test are presented in Appendix D.

Table 8. Reference toxicant testing	ng: effects of NaCl on Cer	iodaphnia dubia.
NaCl Treatment (mg/L)	Mean % Survival	Mean Reproduction (# neonates/female)
Lab Water Control	100	32.6
500	90	26.2
1000	100	27.5*
1500	90	17.9*
2000	30*	1.4
2500	0*	-
Summ	ary of Statistics	
Survival EC50 or Reproduction IC50 =	1860 mg/L NaCl	1550 mg/L NaCl
Typical Response Range (mean ± 2 SD)	1785 - 2227 mg/L NaCl	1354 - 1840 mg/L NaCl

^{*} The response at this test treatment was significantly less than the Lab Control treatment response at p<0.05

5. SUMMARY AND CONCLUSIONS

Effects of Calleguas Creek Ambient Waters on Ceriodaphnia dubia

There was a significant reduction in survival and reproduction in the 70-WOOD-097 Calleguas Creek ambient water sample.

There were no significant reductions in survival or reproduction in the remaining Calleguas Creek ambient waters.

Toxicity Summary	for Calleguas Creek: Event 70) Ambient Waters.								
Toxicity relative to the Lab Control treatment?										
Sample Station ID	Sample Station ID Ceriodaphnia dubia									
	Survival Reproduction									
70-UNIV-029	no	no								
70-ADOLF-045	no	no								
70-WOOD-097	YES	YES								
70-UPLAND-144	no	no								
70-HITCH-150	no	no								
70-GATE-202 no no										
70-BELT-208	no	no								

5.1 QA/QC Summary

Test Conditions – All test conditions (pH, D.O., temperature, etc.) were all within acceptable limits during testing. All test analyses were performed according to laboratory Standard Operating Procedures.

Negative Control – The biological responses for the test organisms in the Lab Control treatments were within acceptable limits.

Positive Control –All reference toxicant test results were consistent with the "typical response" ranges established by the reference toxicant test database, indicating that these test organisms were responding to toxic stress in a typical fashion.

Concentration Response Relationships – The concentration-response relationships for these tests were evaluated as per EPA guidelines (EPA-821-B-00-004), and were determined to be acceptable.

Appendix A

Chain-of-Custody Record for the Collection and Delivery of the Calleguas Creek Ambient Water Samples

Larry Walker Associates
2151 Alessandro Drive, Suite 100 Ventura, CA 93001 805-585-1835 805-585-1840 Fax

CHAIN-OF-CUSTODY RI	ECORD				D	ate:				L	ab ID:		
Destination Lab: Pacific Jeff Co Address: 2250 (Fairfie Phone: 707-20 Fax: 707-20	otsifas Cordelia Roa Id, CA 94534 07-7761				SO YEARS 1979		Chronic dilution	Chronic dilution test	Chronic dilution test				
Sampled By: K	Sampled By: // L \						test	1 .	1 1			1 11	
	LWA Contact: Amy Storm						Ce	Hyalella	meni			1111	
Project: Called Monit	guas Creek orina Proar				ASSOCIATES		Ceriodaphia - E	azteca -	Americamysis - EC	1 1 1 1 1 1 1			
011 0	Sample	Sample	Sample		Containe	r	EC<3000	EC>3000	EC>25000			1 1 1	
Client Sample Id	Date	Time	Matrix	#	Туре	Pres.	000	8	8				Notes
CCWTMP-70-UNIV-029	11-29-18	0845	Surface Water	2	20-L Jerrican	none	X	级			-		73.64s/c.
CCWTMP-70-ADOLF-045	1-1-	1140	Surface Water	2	20-L Jerrican	none	X						
CCWTMP-70-WOOD-097		0700	Surface Water	2	20-L Jerrican	none		X					3470
CCWTMP-70-UPLAND-144		1125	Surface Water	2	20-L Jerrican	none	X	1					663, 4
CCWTMP-70-HITCH-150		1010	Surface Water	2	20-L Jerrican	none	X						
CCWTMP-70-GATE-202		1015	Surface Water	2	20-L Jerrican	none	X						
CCWTMP-70-BELT-208	V	0915	Surface Water	2	20-L Jerrican	none	X		1				

Sender Comments: 1) Prior approval must be obtained if methods or RLs other than those	Signature: Relinquished By (1):	Relinquished By (2):
specified in the QAPP are used. 2) Please PDF a copy of the COCs to Michael Marson at michaelm@lwa.com. 3) Send final report to Michael Marson and edd@kinneticlabs.com.	Print: Greg Cotten Organization: KCS Date: 9=11-29-18 Time: 2-200	Lefv. i Nonge 112918 0903 Date: Time:
Laboratory Comments:	Received By (1):	Received By (2):
TCR#7	Signature: Print: Kelvin Novye	John Richard
3100	Organization: ER-MA EXPRESS Date: \$1 29 18 Time: 22:00	Date: 1(/30/18 Time: 0903

Crew: KLI

Appendix B

Test Data and Summary of Statistics for the
Evaluation of the Chronic Toxicity of the Calleguas Creek
Ambient Waters to Ceriodaphnia dubia:
Data Analyses Excluding Statistical Outliers

CETIS Summary Report

Report Date:

08 Dec-18 16:31 (p 1 of 2) 80713 | 09-4943-1982

Test Code: 80713 | 09-

												100.
Ceriodaphnia	Survival and R	eproducti	on Test							Pacifi	c EcoF	≀isk
Batch ID:	07-4716-3371	Те	st Type:	Reproduction-S	Survival (7d)		Ar	nalyst:	Kristin Robertso	on .		
Start Date:	30 Nov-18 13:03		otocol:	EPA-821-R-02				luent:	Laboratory Wat	er		
Ending Date:	06 Dec-18 15:00	0 S p	ecies:	Ceriodaphnia d	lubia		Br	ine:	Not Applicable			
-	6d 2h	-	ource:	In-House Cultu			Ag	je:	1			
Sample ID:	07-6720-5968	Co	ode:	70-UNIV-029			Cli	ient:	Larry Walker As	sociates		
	29 Nov-18 08:45		aterial:	Ambient Water				oject:	29633	Sociales		
	30 Nov-18 09:03		urce:	Calleguas Cree			• • •	0,001.	20000			
Sample Age:			ation:	UNIV	210							
Comments:												
Statistice exclu	iding reproductiv	e outliers	12.5G and	d 100D								
Multiple Comp	parison Summa	ıry										
	Endpoint			arison Method			NOEL	LOEL	. TOEL	TU	PMS	D 4
02-7164-6118	Reproduction		Wilco	xon/Bonferroni A	Adj Test		100	> 100	n/a	1	26.49	6
18-4465-5826	Survival		Fisher	r Exact/Bonferro	ni-Holm Tes	t	100	> 100	n/a	1	n/a	
Point Estimate	e Summary											
Analysis ID	Endpoint		Point	Estimate Meth	od		Level	%	95% LCL	95% UCL	TU	
18-3897-3189	Reproduction		Linear	Interpolation (I	CPIN)		IC5	>100	n/a	n/a	<1	
							IC10	>100	n/a	n/a	<1	
							IC15	>100	n/a	n/a	<1	
							IC20	>100	n/a	n/a	<1	
							IC25	>100	n/a	n/a	<1	
							IC40	>100	n/a	n/a	<1	
							IC50	>100	n/a	n/a	<1	
Reproduction	Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E	rr Std Dev	CV%	%Eff	ect
0	LW	10	24.3	21.7	26.9	17	30	1.14	3.59	14.78%	0.00%	6
6.25		10	28.6	25.8	31.4	23	36	1.25	3.95	13.81%	-17.7	о%
12.5		8	31.6	29.7	33.5	28	34	8.0	2.26	7.16%	-30.1	4%
25		10	28.1	23.9	32.3	16	34	1.84	5.82	20.71%	-15.6	4%
50		10	24.3	16.6	32	3	34	3.42	10.8	44.49%	0.00%	6
100		9	30.9	28.5	33.3	25	36	1.05	3.14	10.17%	-27.1	1%
100												
Survival Sumr	_				95% UCL	Min	Max	Std E	rr Std Dev	CV%	%Effe	ect
Survival Sumn	Code	Count	Mean	95% LCL								
Survival Sumn Conc-%	_	10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%	
Survival Sumr Conc-% 0 6.25	Code	10 10	1.000 1.000	1.000 1.000	1.000 1.000	1.000	1.000	0.000	0.000	0.00% 0.00%	0.00%	ó
Survival Summ Conc-% 0 6.25 12.5	Code	10 10 9	1.000 1.000 1.000	1.000 1.000 1.000	1.000 1.000 1.000	1.000 1.000	1.000 1.000	0.000 0.000	0.000 0.000	0.00% 0.00% 0.00%		ó
Survival Summ Conc-% 0 6.25 12.5 25	Code	10 10 9 10	1.000 1.000 1.000 0.900	1.000 1.000 1.000 0.674	1.000 1.000 1.000 1.000	1.000 1.000 0.000	1.000 1.000 1.000	0.000	0.000 0.000 0.316	0.00% 0.00%	0.00%	ó ó
Survival Summ Conc-% 0 6.25 12.5	Code	10 10 9	1.000 1.000 1.000	1.000 1.000 1.000	1.000 1.000 1.000	1.000 1.000	1.000 1.000	0.000 0.000	0.000 0.000	0.00% 0.00% 0.00%	0.00%	% %

Analyst: MQ QA: APF

Report Date: Test Code: 08 Dec-18 16:31 (p 2 of 2) 80713 | 09-4943-1982

							100	t oode.		0011010	3-4340-130
Ceriodaphnia	Survival and	Reproducti	on Test							Pacif	ic EcoRisk
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	22	21	30	17	27	25	26	25	24	26
6.25		27	23	28	30	33	24	29	30	26	36
12.5		34	30	34	31	32	34		28	30	
25		25	34	33	31	32	33	29	26	16	22
50		32	28	14	12	33	29	3	34	25	33
100		33	29	29		33	31	30	25	32	36
Survival Detail											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000	1.000
50		1.000	1.000	0.000	1.000	1.000	1.000	0.000	1.000	1.000	1.000
100		1.000	1.000	1.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000
Survival Binor	nials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	0/1	1/1
50		1/1	1/1	0/1	1/1	1/1	1/1	0/1	1/1	1/1	1/1
100		1/1	1/1	1/1	0/1	1/1	1/1	1/1	1/1	1/1	1/1

Analyst: M QA: AFF

Report Date:

08 Dec-18 16:31 (p 1 of 1) 80713 | 09-4943-1982

Test Code:

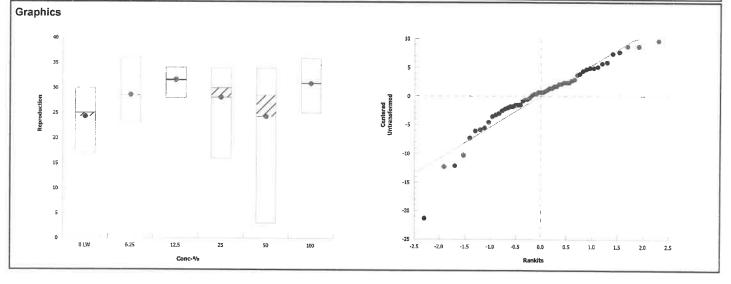
Ceriodaphnia	Survival and Repro	duction Test						Pacific EcoRisk
Analysis ID: Analyzed:	02-7164-6118 08 Dec-18 16:30		Reproduction Nonparametric-Multiple Comparison		TIS Version: ficial Results:	CETISv Yes	1.9.2	
Data Transfor	m Alt	Нур		NOEL	LOEL	TOEL	TU	PMSD
Untransformed	d C>	→ T		100	> 100	n/a	1	26.44%

Wilcoxon/Bonferre	oni Adj Test						
Control vs	Conc-%	Test Stat	Critical	Ties	DF P-Type	P-Value	Decision(a:5%)
Lab Water Contr	6.25	134	n/a	4	18 Exact	1.0000	Non-Significant Effect
	12.5	114	n/a	1	16 Exact	1.0000	Non-Significant Effect
	25	128	n/a	3	18 Exact	1.0000	Non-Significant Effect
	50	118	n/a	1	18 Exact	1.0000	Non-Significant Effect
	100	128	n/a	2	17 Exact	1.0000	Non-Significant Effect

ANOVA Table							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	455.21	91.042	5	2.69	0.0313	Significant Effect	
Error	1728.26	33.8875	51			-	
Total	2183.47		56				

Distributional Te	sts				
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	26.4	15.1	7.4E-05	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.925	0.943	0.0017	Non-Normal Distribution

Reproduction	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	10	24.3	21.7	26.9	25	17	30	1.14	14.78%	0.00%
6.25		10	28.6	25.8	31.4	28.5	23	36	1.25	13.81%	-17.70%
12.5		8	31.6	29.7	33.5	31.5	28	34	0.8	7.16%	-30.14%
25		10	28.1	23.9	32.3	30	16	34	1.84	20.71%	-15.64%
50		10	24.3	16.6	32	28.5	3	34	3.42	44.49%	0.00%
100		9	30.9	28.5	33.3	31	25	36	1.05	10.17%	-27.11%



Analyst: 14 QA: AFF

Report Date:

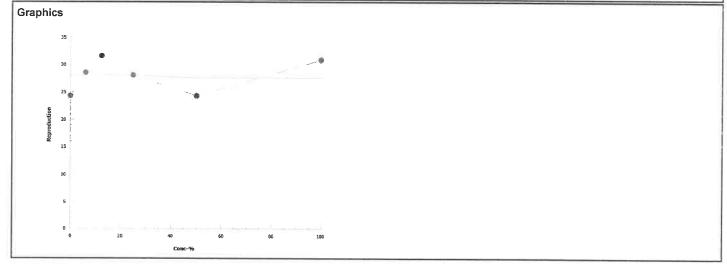
08 Dec-18 16:31 (p 1 of 1)

Test Code:

80713 | 09-4943-1982

Cerioda	aphnia	Survival and Re	eproduc	tion Test						Pacific EcoRisk	
Analysi	is ID:	18-3897-3189	E	Endpoint:	Reproduction			CETIS Version:	CETISv1.9.2		
Analyze	ed:	08 Dec-18 16:3	30 A	Analysis:	Linear Interpola	tion (ICPIN)		Official Results:	Yes		
Linear Interpolation Options											
X Transform Y Transform Seed Resamples Exp 95% CL Method											
Linear		Linear	3	349536	200	Yes	Two-Point	Interpolation			
Point Estimates											
Level	%	95% LCL	95% U	CL TU	95% LCL	95% UCL					
IC5	>100	n/a	n/a	<1	n/a	n/a				-	
IC10	>100	n/a	n/a	<1	n/a	n/a					
IC15	>100	n/a	n/a	<1	n/a	n/a					
IC20	>100	n/a	n/a	<1	n/a	n/a					
IC25	>100	n/a	n/a	<1	n/a	n/a					
IC40	>100	n/a	n/a	<1	n/a	n/a					
IC50	>100	n/a	n/a	<1	n/a	n/a					
Penrod	uction	Summanı				Colouloi	lad Variata				

Reproduction	Summary				C	alculated Va	riate		
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	10	24.3	17	30	1.14	3.59	14.80%	0.0%
6.25		10	28.6	23	36	1.25	3.95	13.80%	-17.7%
12.5		8	31.6	28	34	0.8	2.26	7.16%	-30.1%
25		10	28.1	16	34	1.84	5.82	20.70%	-15.6%
50		10	24.3	3	34	3.42	10.8	44.50%	0.0%
100		9	30.9	25	36	1.05	3.14	10.20%	-27.1%



Analyst: JAP QA: APF

Report Date:

08 Dec-18 16:31 (p 1 of 1)

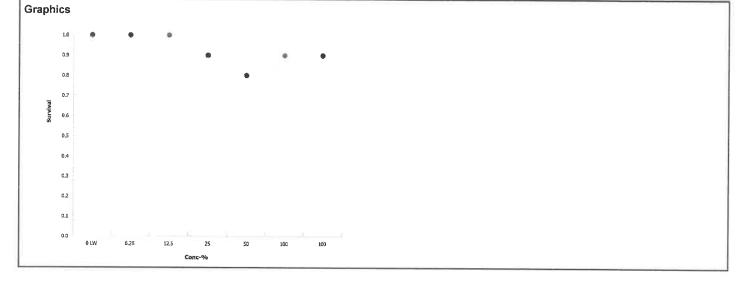
Test Code:

80713 | 09-4943-1982

Ceriodaphnia	Survival and Repro	duction Test						Pacific EcoRisk
Analysis ID: Analyzed:	18-4465-5826 08 Dec-18 16:18	Endpoint: Analysis:	Survival STP 2xK Contingency Tables		TIS Version: ficial Results		/1.9.2	
Data Transfor	m Alt	Нур		NOEL	LOEL	TOEL	TU	
Untransformed	i C>	·T		100	> 100	n/a	1	
Fisher Exact/	Bonferroni-Holm Tes	t						

Fisher Exact/Bonfe	erroni-Holm Test				
Control vs	Group	Test Stat	P-Type	P-Value	Decision(α:5%)
Lab Water Contr	6.25	1.000	Exact	1.0000	Non-Significant Effect
	12.5	1.000	Exact	1.0000	Non-Significant Effect
	25	0.500	Exact	1.0000	Non-Significant Effect
	50	0.237	Exact	1.0000	Non-Significant Effect
	100	0.500	Exact	1.0000	Non-Significant Effect

Data Summar	У						
Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	LW	10	0	10	1	0	0.0%
6.25		10	0	10	1	0	0.0%
12.5		9	0	9	1	0	0.0%
25		9	1	10	0.9	0.1	10.0%
50		8	2	10	0.8	0.2	20.0%
100		9	1	10	0.9	0.1	10.0%



Analyst: M QA: 4FF

C	lient:		LW	A - Call	eguas C	reek		Ma	terial:		7	0-UNI	V			Test	Date:	11/30/18
Proje	ect#:	296	533	٦	l'est ID:	807	13	Rar	ndomiz	ation:	10	· 7.			Co	ntrol '	Water:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp				Surv	_	eproduc	_				SIGN-OFF
		New	Old	New	Old	(µS/cm)	(°C)	A	В	С	D	Е	F	G	Н	I	J	Date: 30 8 New WQ: Test Init.: 7
1	0	8.32		7.3		356	25.0	0	0	0	0	0	0	0	0	0	0	Sol'n Prep: SVV TA Time:/303
	1	7.86	7.161	8.5	5.0	355	248	0	0	0	0	0	O	O	0	0	0	Date: 12/1/16/www.WQ: Myd. Counts: 38 Sol'n Prep: 6) Old WQ: 16 Time: 743
	2	790	7.68		7.4	351	25.5	0	0	B	0	0	0	0	0	0	0	Date: VIVISION WQ: Counts: VIVISION Prep: AC Old WQ: Time: 73
	3	-			73 - 34	-		5	5	5		5	4	4	-	H	-	Date: New WQ: myl Counts: K6
ontro	-	-	7.86			357	2514		כ		3		7	٦	4			Sol'n Prep: SY Old WQ: Time 7
ter C	4	790	7-13	8.8	7.8	362	25.6	Ö	10	10	0	9	0	0	O	9	8	Sol'n Prep: C Old WQ: C Time: [33]
Lab Water Control	5	7.90	7.73	8.7	7.3	360	24.3	8	0	0	5	0	9	9	8	0	1	Date: 12/5/18 New WQ: TA Counts: Sol'n Prep: CO Old WQ: Time: 1300
La	6	_	8.20	_	8.0	373	24.2	9	6	15	9	13	12	13	13	1/	12	Date:
	7																	Date: New WQ: Counts: Sol'n Prep: Old WQ: Time:
	8																	Date: Old WQ: Counts: Time:
							Total=	27_	21	30	17	27	75	26	25	24	76	Mean Neonates/Female = 74,5
	Day	р	Н	D	.O.	Cond.						-	duction			-	24	Sample ID
		New	Old	New	Old	(µS/cm)		Α	В	С	D	Е	F	G	Н	I	J	Sample 1D
	0	8-32		7-3		385	25.2	O	0	0	V	0	0	0	0	O	٥	51470
	1	7.85	7.72	8.5	5.4	384	25.	0	0	O	0	0	6	O	0	U	0	51470
	2	7.79	7.67	7.6	7.1	376	25.5	0	0	0	0	0	0	0	0	0	0	51470
	3	794	7.95	8.8	8.3	389	155	5	5	5	4	4	V	3	4	5	5	51470
6.25%	4	7.91	7-89	8.8	8.0	389	25.4	7	6	io	0	0	0	0	14	9	0	51476
6.2	5		7.71	-	7.2	389	244	2	0	0	11	11	5	9	0	1	13	51470
	6		7-89	_	7.8		24.1	13	12	13	15	18	13	17	12	1)	18	
	7						- 1-1	.)	, ,		, ,	10		+		17.	10	
	8										-							
	100				eCeDidadeSeSetic	************				-0/	-			_	7.0	- 1	21	
							Total≔	27	3	28	30	33	27	29	20	20	56	Mean Neonates/Female = 78

Cl	ient:		LW	A - Call	eguas C	reek		Ma	terial:		7	0-UNI	V			Test	Date:	11/30/18
Proje	ct #:	29	633	٦	rest ID:	807	13								Co	ntrol \	Vater:	Mod EPAMH
	Day	pН		D.O.		Cond. (µS/cm)	Temp (°C)					/ival / R			**			SIGN-OFF
	0	New	Old	New	Old			A	В <i>О</i>	C O	D	Е	F	G	Н	1	J	
	-	8-33		7.3			24.8		0	U	J	Q	d	0	0	0	0	
	1	7.84	7.75	8.5	5.7	411	25.7	0	0	6	0	0	D	0	0	0	0	
	2	7.81	7.67	7,6	7.6	413	25.7	0	0	0	0	0	0	0	0	0	0	
	3	7.90	8.01	8.8	8.3	417	25.4	U	4	5	5	V	5	3	70	5	4	
12.5%	4	7.90	7-88	87	8.0	415	258	13	12	13	0	10	0	0	_	lo	12	
12.	5	7.80		8.6	6.7	415	249	0	0	0	11	0	12	0	-	1	0	
	6		1.79	_	7.9		24.0	15	14	16	15	16	17	16	•	12	-14	
	7		A. 17			(1)	01.	-13	17	10	1)	10	' /	10			1.1	
	8								-						/		ad .	
	0						Total=	74	30	24	21	32	24	19	70	11-17	30	7- 1/1
	Day	Р	H H	D	.O.	Cond.	Total=	54	50	-		/ Repro		-	/0	25	20	Mean Neonates/Female = 5√√ 6
		New	Old	New	Old	(µS/cm)		Α	В	С	D	Е	F	G	Н	I	J	
	0	8-33	### ### ### ### ### ### ### ### ### ##	7.4		465	24.4	0	0	O	0	0	0	O	0	0	0	
	1	7.82	7.72	8.4	6.2	460	25.8	O	0	D	0	0	0	0	0	6	5	
	2	7.78	7.71		8.2	469	25.8	0	0	0	0	0	0	0	0	0	O	
11	3		8.05				15.5	4	5	4	5	5	4	5	4	5	4	
	4				8.2		25.8	a	11	10	0	10	0	0	0	11	0	
25%	5		7.91							0	a		-	C	7	11 ×/	0	
		7-83		8-6	7.2	468		0	S	-	8	0	11	7	1	%	-	
1	6	-	7.76	-	5.0	487	24.	12	18	19	18		18	15	15	_	18	
	7	100100000000000000000000000000000000000		101110101020														
	8											14				-	9	
							Total=	25	34	33	3	32	33	29	28	×/6	22	Mean Neonates/Female = 28.3

C	lient:		LWA	A - Call	eguas C	reek		Ma	terial:		7	0-UNI	V			Test	Date:	11/30/18
Proje	ect #:	296	533	-	Γest ID:	807	13								Co	ntrol \	Water:	Mod EPAMH
	Day	рН		D.O.		Cond.	Temp					ival / R						SIGN-OFF
		New	Old	New	Old	(µS/cm)	(°C)	Α	В	С	D	Е	F	G	H	I	J	
	0	8-31	A 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	7.6		575	24.3	0	0	0	0	0	0	ð	0	0	0	
	1	7.76	7.74	8.6	7.0	563	25,9	O	0	0	D	0	0	0	0	0	0	
	2	7.74	7.18	7.7	7.3	570	25.8	0	0	0	0	0	0	0	0	0	0	
	3	7.83	8.08	8.9	8.5	578	25.3	5	5	5	5	5	4	3	4	4	5	
20%	4	7.84	7.89	8.6	8.1	564	25.7	11	11	*/4	0	0	90	0	0	5	0	
	5	7-79	7.77	8-6	7,3	568	25.	Ō	0	_	7	12	X	5%	10	0	10	
	6	-	7.孔	_	7,9	593	245	16	12	-	0	16	15	-	20	16	18	
	7									-			-13°	-				
	8									-			+ 13	-				
							Total=	32	28	×/14	12	35	aX	4/2	34	25	33	Mean Neonates/Female = 74-5
	Day	p	Н	D	.0.	Cond.				S	Survival	/ Repro						
		New	Old	New	Old	(µS/cm)		Α	В	С	D	Е	F	G	Н	I	J	
	0	8-25		7.8		792	24.5	0	0	8	0	0	0	0	0	0	0	
	1	7.68	7.84	8.6	7.0	765	25,9	0	0	0	0	0	0	D	0	٥	0	
	2	7.66	7.72	7,6	7.7	790	25.7	0	0	0	0	0	0	0	0	0	0	
	3	7.73	8.13	8.9	8.4	794	25.4	5	5	4	×13	4	3	4	3	4	5	
100%	4	7.91	7.91	8.3	8.1		25.4	12	9	9	-	0	0	0	0	8	0	
2 2	5		7.79	8.4	74	767	248	0	0	0	-	11	10	10	8	1	11	
	6		7.86		8.0	798		16	15	16	-	18	18	110	111	,9	20	
	7		,00		37.0	1,0	1.0		.,	10	^	10	, 0	14	14	1-1-	00	
	8									1	-							
							Total=	33	79	291	W3	33	31	30	425	32	36	Mean Neonates/Female = 28 J
4										1					11/10			

CETIS Summary Report

Report Date: Test Code:

10 Dec-18 13:54 (p 1 of 2) 80714 | 13-4953-7412

cific

Ceriodaphnia	Survival and R	eproduction Test							Pacific	c EcoR	isk
Batch ID:	00-4779-8765	Test Type:	Reproduction-	Survival (7d)		An	alyst: \	Nesley Cram			_
Start Date:	30 Nov-18 13:3	7 Protocol:	EPA-821-R-02	2-013 (2002)		Dil	uent: L	_aboratory Wate	er		
Ending Date:	06 Dec-18 16:1	8 Species:	Ceriodaphnia	dubia		Bri	ine: N	Not Applicable			
Duration:	6d 3h	Source:	In-House Culti	ıre		Ag	e : 1	1			
Sample ID:	04-7189-8807	Code:	70-ADOLF-04	5		Cli	ent: L	arry Walker As	sociates		_
Sample Date:	29 Nov-18 11:4	0 Material:	Ambient Wate	r		Pro	oject: 2	29633			
Receipt Date:	30 Nov-18 09:0	3 Source:	Calleguas Cre	ek							
Sample Age:	26h (0.6 °C)	Station:	ADOLF								
Comments:											_
Stats excluding	g reproductive ou	ıtlier: 12.5-D									
Multiple Com	parison Summa	iry									
Analysis ID	Endpoint		parison Method			NOEL	LOEL	TOEL	TU	PMSC) ,
18-7367-5191	Reproduction	Wilco	xon/Bonferroni	Adj Test		100	> 100	n/a	1	20.7%	5
14-5175-5447	Survival	Fishe	r Exact/Bonferro	oni-Holm Tes	t	100	> 100	n/a	1	n/a	
Point Estimat	e Summary										
Analysis ID	Endpoint	Point	t Estimate Meth	ıod		Level	%	95% LCL	95% UCL	TU	v
10-3141-3121	Reproduction	Linea	r Interpolation (I	CPIN)		IC5	53.8	21.2	n/a	1.86	
						IC10	75.2	52.9	n/a	1.329	
						IC15	96.7	62.9	n/a	1.034	
						IC20	>100	n/a	n/a	<1	
						IC25	>100	n/a	n/a	<1	
						IC40	>100	n/a	n/a	<1	
						IC50	>100	n/a	n/a	<1	_
Reproduction	Summary										
Conc-%	Code	Count Mean			Min	Max	Std Er	r Std Dev	CV%	%Effe	ct
Λ	1 \\/	10 20.5	20	22	25	25	4 4 4	2.5	44 400/	0.000/	

Reproduction	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	10	30.5	28	33	25	35	1.11	3.5	11.49%	0.00%
6.25		10	35.1	33.7	36.5	32	38	0.605	1.91	5.45%	-15.08%
12.5		9	34.2	31.2	37.2	27	41	1.3	3.9	11.39%	-12.20%
25		10	34.1	30	38.2	22	43	1.82	5.74	16.84%	-11.80%
50		10	32.1	30.1	34.1	27	36	0.9	2.85	8.87%	-5.25%
100		10	28.2	19.9	36.5	0	39	3.65	11.5	40.94%	7.54%

Survival Sum	mary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
6.25		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
12.5		10	0.900	0.674	1.000	0.000	1.000	0.100	0.316	35.14%	10.00%
25		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
50		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
100		10	0.900	0.674	1.000	0.000	1.000	0.100	0.316	35.14%	10.00%

Analyst: W QA: APF

Report Date: Test Code: 10 Dec-18 13:54 (p 2 of 2) 80714 | 13-4953-7412

							res	t Code:		80714 1	3-4953-741.
Ceriodaphnia	Survival and	Reproducti	on Test							Paci	fic EcoRisk
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	33	29	35	30	34	26	31	34	25	28
6.25		37	32	34	35	38	37	35	33	34	36
12.5		37	27	31		33	35	34	41	34	36
25		33	34	30	35	38	36	39	43	31	22
50		32	29	31	33	36	31	32	27	34	36
100		17	29	35	39	29	31	32	35	35	0
Survival Detail											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000
Survival Binon	nials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	0/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	0/1

Analyst: W QA: APF

Report Date:

10 Dec-18 13:54 (p 1 of 1)

Test Code: 80714 | 13-4953-7412

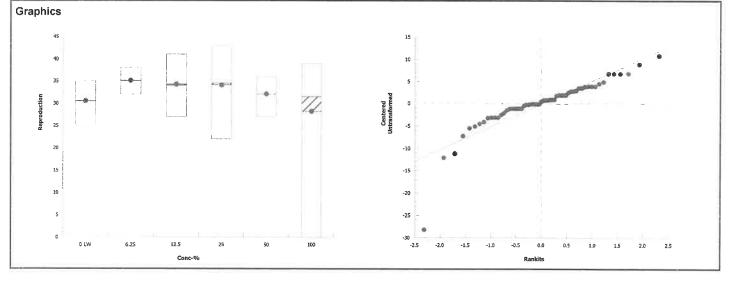
Ceriodaphnia	Survival and Repro	duction Test						Pacific EcoRisk
Analysis ID: Analyzed:	18-7367-5191 10 Dec-18 13:53	Endpoint: Analysis:	Reproduction Nonparametric-Multiple Comparison		TIS Version: ficial Results		/1.9.2	
Data Transfor	m Alt	Нур		NOEL	LOEL	TOEL	TU	PMSD
Untransformed	d C:	> T		100	> 100	n/a	1	20.69%

Nilcoxon/Bonferroni Adj Test													
Control vs	Conc-%	Test Stat	Critical	Ties	DF P-Type	P-Value	Decision(α:5%)						
Lab Water Contr	6.25	142	n/a	3	18 Exact	1.0000	Non-Significant Effect						
	12.5	114	n/a	4	17 Exact	1.0000	Non-Significant Effect						
	25	129	n/a	5	18 Exact	1.0000	Non-Significant Effect						
	50	118	n/a	4	18 Exact	1.0000	Non-Significant Effect						
	100	112	n/a	3	18 Exact	1.0000	Non-Significant Effect						

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	344.865	68.973	5	1.99	0.0947	Non-Significant Effect
Error	1834.36	34.6105	53			
Total	2179.22		58			

Distributional Tes	ts				
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	35.9	15.1	1.0E-06	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.826	0.945	7.5E-07	Non-Normal Distribution

Reproduction	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	10	30.5	28	33	30.5	25	35	1.11	11.49%	0.00%
6.25		10	35.1	33.7	36.5	35	32	38	0.605	5.45%	-15.08%
12.5		9	34.2	31.2	37.2	34	27	41	1.3	11.39%	-12.20%
25		10	34.1	30	38.2	34.5	22	43	1.82	16.84%	-11.80%
50		10	32.1	30.1	34.1	32	27	36	0.9	8.87%	-5.25%
100		10	28.2	19.9	36.5	31.5	0	39	3.65	40.94%	7.54%



Report Date:

10 Dec-18 13:54 (p 1 of 1) 80714 | 13-4953-7412

Test Code:

Pacific EcoRisk

Ceriodaphnia Survival and Reproduction Test

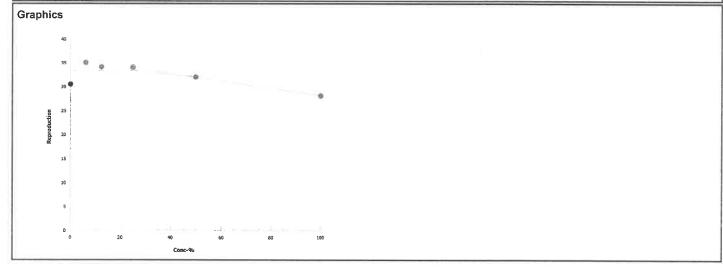
Analysis ID:10-3141-3121Endpoint:ReproductionCETIS Version:CETISv1.9.2Analyzed:10 Dec-18 13:54Analysis:Linear Interpolation (ICPIN)Official Results:Yes

Linear Interpolation Options

X Transform Y Transform Seed Resamples Exp 95% CL Method
Linear Linear 1576623 200 Yes Two-Point Interpolation

								- The transfer of the transfer
	Point E	stimates						
	Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL	
i	IC5	53.8	21.2	n/a	1.86	n/a	4.723	
	IC10	75.2	52.9	n/a	1.329	n/a	1.889	
	IC15	96.7	62.9	n/a	1.034	n/a	1.591	
	IC20	>100	n/a	n/a	<1	n/a	n/a	
	IC25	>100	n/a	n/a	<1	п/а	n/a	
	IC40	>100	n/a	n/a	<1	n/a	n/a	
	IC50	>100	n/a	n/a	<1	n/a	n/a	

Reproduction	Summary		Calculated Variate									
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect			
0	LW	10	30.5	25	35	1.11	3.5	11.50%	0.0%			
6.25		10	35.1	32	38	0.605	1.91	5.45%	-15.1%			
12.5		9	34.2	27	41	1.3	3.9	11.40%	-12.2%			
25		10	34.1	22	43	1.82	5.74	16.80%	-11.8%			
50		10	32.1	27	36	0.9	2.85	8.87%	-5.25%			
100		10	28.2	0	39	3.65	11.5	40.90%	7.54%			



Analyst: W QA: AR

Report Date:

10 Dec-18 13:54 (p 1 of 1)

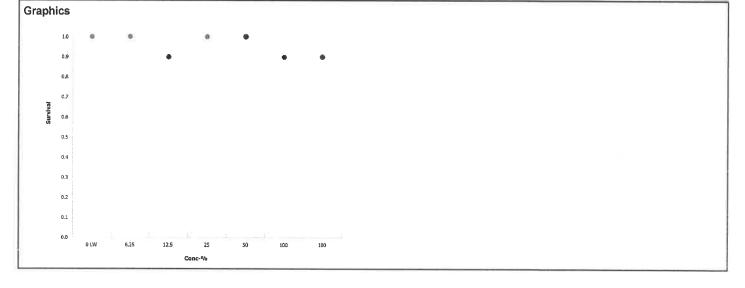
Test Code:

80714 | 13-4953-7412

Ceriodaphnia	Survival and Repro	duction Test					Pacific EcoRisi
Analysis ID: Analyzed:	14-5175-5447 10 Dec-18 13:53	Endpoint:	Survival STP 2xK Contingency Tables		TIS Version		/1.9.2
Data Transfor		Нур	The Exit Containgency Tubics	NOEL	LOEL	TOEL	TU
Untransformed	d C:	> T		100	> 100	n/a	1
Fisher Eyact/	Bonferroni-Holm Te	et					

Fisher Exact/Bonferroni-Holm Test													
Control vs	Group	Test Stat	P-Type	P-Value	Decision(α:5%)								
Lab Water Contr	6.25	1.000	Exact	1.0000	Non-Significant Effect								
	12.5	0.500	Exact	1.0000	Non-Significant Effect								
	25	1.000	Exact	1.0000	Non-Significant Effect								
	50	1.000	Exact	1.0000	Non-Significant Effect								
	100	0.500	Exact	1.0000	Non-Significant Effect								

Data Summar	у						
Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	LW	10	0	10	1	0	0.0%
6.25		10	0	10	1	0	0.0%
12.5		9	1	10	0.9	0.1	10.0%
25		10	0	10	1	0	0.0%
50		10	0	10	1	0	0.0%
100		9	1	10	0.9	0.1	10.0%



Analyst: W QA: APF

С	Client: LWA - Calleguas Creek							Ma	terial:		70	-ADO	LF			Test	Date:	11/30/18
Proje	ct #:	290	633		Γest ID:	807	14	Rai	ndomia	zation:		10-	7./		Co	ntrol '	Water:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp				Sur	-	Reprodu	ction				SIGN-OFF
	0	New	Old	New	Old	(μS/cm)		A	В	С	D	Е	F	G	Н	I	J	Date: 11/30//5New WOSAT Test Init.: AN
		7.84		7.7		552	24.0	0	0	0	10	0	0	0	0	0	0	Sol'n Prep: SVV Time; 357 Date: 121 18 New WQ: 5Q Counts: AFF
	1		7.72	1	4.7	344	24.0	0	0	0	0	0	0	0	0	0	D	Sol'n Prep: W Old WQ: MB Time: 750
	2	7.79	3105	8-1	8.2	354	24.5	0	0	0	0	0	0	0	0	0	0	Date: 1201 New WQ: TA Counts: 1300 Sol'n Prep: Apr Old WQ: 7 Time: 1300
ntrol	3	7.87	7,85	8.7	7.5	354	24.2	7	4	Ų	5	5	4	5	6	4	٢	Date: 1/3/13 New WQ: UG Counts: No. Sol'n Prep: Spe Old WQ: D Time: 213
Lab Water Control	4	7.87	777	8.9	7.6	363	250	0	0	0	0	0	6	0	0	0	10	Date: \UMBRE New WQ: YR Counts: LZ Sol'n Prep: GC Old WQ: TA Time: 133
ab Wa	5	7.92	7.73	6.5	7.9	357	24.0	10	10	13	ЙO	12	0	u	12	12	0	Date: WHIBNew WOLL Counts: ASSOI'N Prep: (A Old WQ: Time: 334
Ľ	6	_	7.73	_	7.8	349	24.0	16	15	145	15	17	16	15	16	9	12	Date: 12/6/18 iew WQ: Counts: ASSOI'n Prep: Old WQ: Time: 10/10
	7																	Date: New WQ: Counts: Sol'n Prep: Old WQ: Time:
	8	AND																Date: Old WQ: Counts: Time:
0.2.3.3.1							Total=	33	29				24		34	25	28	Mean Neonates/Female = 30,5
	Day	New	Old	D. New	.O.	Cond. (µS/cm)		Α	В	C	urvival D	/ Repro	duction	G	Н	I	J	Sample ID
	0	7,83		7.5		396	24.2	٥	0	0	0	0	0	0	0	0	0	51471
	1	1,7-7	7.70	8.4	5.0	395	24.9	0	0	0	0	0	0	Ð	0	0	0	51471
	2	7.79	7,96		8,0	405	24.5	0	0	0	0	0	0	0	Ó	0	0	51471
	3	7,92	7.89	8.7	8.0	409	24.2	6-	5	6	5	6	6	5	5	5	4	51471
6.25%	4	7.85	7.79	8.7	7.7	40	24.6	0	0	10	9	0	12	0	10	0	0	51471
9	5	7.95	7.68	7.0	7.5	411	242	11	12	0	0	12	0	10	0	1)	12	51471
	6	_	7.74	-	7.7	429	24.0	20	15	18	21	20	14	20	18	18	n	
	7																	
	8																	
							Total=	37	32	34	35	38	37	35	33	34	36	Mean Neonates/Female = 35 / \

C	ient:		8						Material: 70-ADOLF							Test	Date:	11/30/18
Proje			633	-	Γest ID:	807	714								Co	ontrol '	Water:	Mod EPAMH
	Day		011	D.O.	011	Cond. (µS/cm)	Temp (°C)				T	_	Reprodu	_				SIGN-OFF
	0	New	Old	New	Old			Α	В	С	D	E	F	G	Н	1	J	
		7,83	200 A C C C C C C C C C C C C C C C C C C	7.7		452	24.4	٥	0	හ	0	0	0	0	0	Ð	0	
	1	7.00	7.49	8.4	5.7	444	04- 4	0	0	0	0	0	0	Ð	0	0	0	
	2	7-83	7,88	8-1	78	457	24.5	0	0	0	0	0	0	0	0	0	0	
	3	7,91	7.92	8.4	84	460	24.2	6	4	6	6	5	5	5	6	0	4	
12.5%	4	7.86	7.83	8.6	7.9	463	253	0	0	8	11	9	10	9	13	5	10	
12.	5	7.93	774	7.1	73	458	24.1	10	9	0	×/0	0	0	0	0	13	0	
	6		1.76		7.4	484		-	N	17	_	19					22	
	7		1176			,	2 1.0	1	14	1/	-	11	20	20	VL	طا	00	
	8				3414141414141	2+2+2+2+2+2+2+2+					-					211		
	Day		H	D.	0		Total=	37	27	3]	3117 Survival		36		41	34	36	Mean Neonates/Female = 32.7
	Day	New	Old	New	Old	Cond. (µS/cm)		A	В	C	D	E E	F	G	Н	I	J	
	0	7.83		7.9		546	25.7	0	0	0	0	0	0	0	0	0	0	
	1	7.83	7.85	9	5.8	521	م بر	6	0	0	0	0	ð	0		0	0	
	2	7.84	-	8.2	7.2	1					^				0			
	3					535	24.6	0	0	0	0	0	0	0	0	0	0	
		7,88		8.4	8.5	550	24.1	5	5	4	5	10	5	V	6	5	5	
25%	4	784	7.87		7.7	556	250	0	0	6	12	10	9	0	0	0	0	
	5	7.89	7.69	71	64	555	24.0	13	13	0	D	0	0	12	15	D	12	
	6	_	7.84	حت	F.8	582	24,0	15	16	18	18	22	22	21	22	16	5	
	7											-						
	8			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1														
		20					Total=	33	34	30	35	38	36	39	43	31	22	Mean Neonates/Female = 3 Y

			LW.	A - Call	leguas C	Creek		Ma	aterial:		70	-ADO	LF			Tes	t Date:	11/30/18
Proje	ect#:	29	633	,	Test ID:	807	714								Co	ontrol	Water:	Mod EPAMH
	Day			D.O.		Cond.	Temp				Sur	vival / R	Reprodu	ction				SIGN-OFF
	_	New	Old	New	Old	(μS/cm)	(°C)	Α	В	С	D	Ē	F	G	Н	I	J	SIGN-OFF
	0	7,83		વ્છ.(721	25.8	0	Ð	0	0	0	0	0	0	0	0	
	1	7.81		8.3	4.9	(Ao	24.0	0	0	0	0	0	0	0	0	0	0	
	2	7.78	7,90	8-2	8.6	726	24.3	0	0	0	0	0	0	0	0	0	0	
	3	7.86	8.06	8.7			24.0	6	d	4	3	ч	4	4	4	0	5	
20%	4	7.80	7.89	P73	7.5	742	249	0	1	10	0	0	10	0	7	5	0	
N.	5	7.85	7.93			733	24.0	N	VO		11	12	0	10	0	12	15	
	6		7.91		1.7		2410		18	17	9	20	17	18	16	17		
	7						000		10	1/	-1	20	1	10	10	1	100	
	8										-							
							Total	22	24	01	22	21	21	2.0	-	711	.31	
	Day	p.	H	D.	O.	Cond.	Total=	54	29		33	36 / Repro			27	34	36	Mean Neonates/Female = 32.
		New	Old	New	Old	(µS/cm)		Α	В	C	D	E	F	G	Н	I	J	
	0	730		8.9		1069	25.9	0	0	0	O	B	0	0	Ð	0	0	
	1	7.81	7-99	8.4	4.7	1055	340	0	0	O	0	0	0	0	0	0	D	
	2	7.74	8,05	8-3	8,2	1089	24.4	0	^	0	0	0	0	0.	0	^	190	
	3	1	8.29		8.9	1103	24,0	5	4	6	6	5	(,	6	6	6	10	
%001	4	7.72	8.15	7.9	7.6		24.8	0	0	11	10	Ö	0	0	11	0	-	
o l	5		8.12			1088		12	10	0	0	9	12	N	0	14	_	
	6		3.00					0	15		13	15	13	16	18	3		
	7				1.0	, ,,	- 1.0		IJ	18	2	12	リ	100	שו	10		
	8											-						
	0						m. 4. 7	1-7	29	25	76	06	71	22	2/		V/	
							Total=		11	35	39	29	3(32	35	35	1/0	Mean Nconates/Female = 28.2

CETIS Summary Report

Report Date:

10 Dec-18 14:43 (p 1 of 2)

Test Code:

80719 | 03-4960-5947

							- 10	.31 OOG6.		007 19 100	-4300-3347
Ceriodaphni	a Survival and F	Reproduction	on Test							Pacifi	c EcoRisk
Batch iD: Start Date:	20-3918-7412 30 Nov-18 13:4			Reproduction-	. ,			nalyst:	Wesley Cram		
1	: 06 Dec-18 15:5		otocol:	EPA-821-R-02				luent:	Laboratory Water	er	
Duration:	6d 2h	•	ecies:	Ceriodaphnia				rine:	Not Applicable		
Duration.			urce:	In-House Cultu	ıre		Αξ	ge:	1 		
Sample ID:	06-7471-6060		de:	70-WOOD-097			CI	ient:	Larry Walker As	sociates	
	: 29 Nov-18 07:0		terial:	Ambient Water			Pr	oject:	29633		
I	: 30 Nov-18 09:0		urce:	Calleguas Cree	ek						
Sample Age:	31h (1.2 °C)	Sta	ation:	WOOD							
Comments:											
Stats exclude	reproductive out	lier: 50-G									
Multiple Com	parison Summa	ary									
Analysis ID	Endpoint			arison Method			NOEL	LOEL	L TOEL	TU	PMSD /
l	Reproduction			rroni Adj t Test			50	> 50	n/a	2	15.7%
05-8236-6215	Survival		Fisher	Exact/Bonferro	ni-Holm Tes	t	50	> 50	n/a	2	n/a
Point Estima	te Summary										
Analysis ID	Endpoint		Point	Estimate Meth	od		Level	%	95% LCL	95% UCL	TU 🗸
03-6251-7375	Reproduction		Linear	Interpolation (I	CPIN)		IC5	52.5	24.5	52.5	1.905
							IC10	55	52.5	55	1.818
							IC15	57.5	55.2	57.5	1.739
							IC20	60	57.8	60	1.667
							IC25	62.5	60.4	62.5	1.6
							IC40	70	68.3	70	1.429
							IC50	75 	73.6	75 ————	1.333
Reproduction	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E	rr Std Dev	CV%	%Effect
0	LW	10	28.9	25.2	32.6	19	36	1.62	5.11	17.68%	0.00%
6.25		10	31.8	29.3	34.3	25	36	1.1	3.49	10.97%	-10.03%
12.5		10	34.3	32.2	36.4	29	38	0.932		8.59%	-18.69%
25		10	31	26.6	35.4	20	38	1.96	6.2	20.00%	-7.27%
50		9	32.7	31.1	34.2	30	35	0.667	2	6.12%	-13.03%
100		10	0	0	0	0	0	0	0		100.00%
Survival Sum	-										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E		CV%	%Effect
0	LW	10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%
6.25		10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%
12.5		10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%
25		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
50 100		10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%
201103		10	0.000	0.000	0.000	0.000	0.000	0.000	0.000		100.00%

Analyst: W QA: ART

Report Date: Test Code: 10 Dec-18 14:43 (p 2 of 2) 80719 | 03-4960-5947

							les	t Code:		80/19 0	3-4960-594
Ceriodaphnia	Survival and	Reproducti	on Test							Pacif	ic EcoRis
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	26	31	36	19	27	33	32	31	23	31
6.25		31	35	36	30	29	35	32	25	30	35
12.5		34	35	38	33	33	37	29	31	35	38
25		36	36	30	22	38	28	30	20	34	36
50		32	35	32	30	32	33		30	35	35
100		0	0	0	0	0	0	0	0	0	0
Survival Detai	l										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Survival Binor	nials			1							
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Analyst: W QA: Ter

Report Date:

10 Dec-18 14:43 (p 1 of 1)

Test Code:

80719 | 03-4960-5947

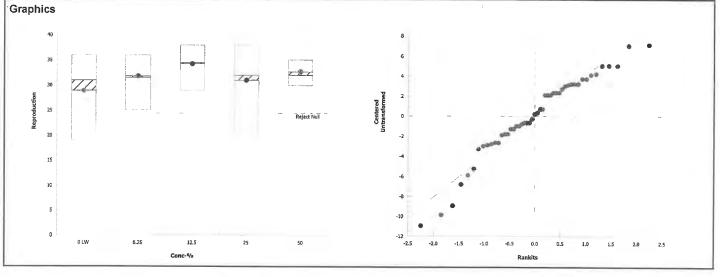
Ceriodaphnia	Survival and Repro	duction Test					Pac	cific EcoRisi	
Analysis ID:09-2076-1834Endpoint:ReproductionCETIS Version:CETISv1.9.2Analyzed:10 Dec-18 14:42Analysis:Parametric-Multiple ComparisonOfficial Results:Yes									
Data Transfor	rm Al	t Нур		NOEL	LOEL	TOEL	TU	PMSD	
Untransformed	d C	> T		50	> 50	n/a	2	15.74%	

Bonferroni Adj t Test												
Control vs	Conc-%	Test Stat	Critical	MSD	DF P-Type	P-Value	Decision(α:5%)					
Lab Water Contr	6.25	-1.52	2.32	4.43	18 CDF	1.0000	Non-Significant Effect					
	12.5	-2.83	2.32	4.43	18 CDF	1.0000	Non-Significant Effect					
	25	-1.1	2.32	4.43	18 CDF	1.0000	Non-Significant Effect					
	50	-1.92	2.32	4.55	17 CDF	1.0000	Non-Significant Effect					

ANOVA Table											
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)					
Between	159.4	39.85	4	2.19	0.0857	Non-Significant Effect					
Error	800.6	18.1955	44								
Total	960		48								

Distributional 1	Tests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variances	Bartlett Equality of Variance Test	11.9	13.3	0.0183	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.952	0.936	0.0450	Normal Distribution

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	10	28.9	25.2	32.6	31	19	36	1.62	17.68%	0.00%
6.25		10	31.8	29.3	34.3	31.5	25	36	1.1	10.97%	-10.03%
12.5		10	34.3	32.2	36.4	34.5	29	38	0.932	8.59%	-18.69%
25		10	31	26.6	35.4	32	20	38	1.96	20.00%	-7.27%
50		9	32.7	31.1	34.2	32	30	35	0.667	6.12%	-13.03%



Analyst: W QA: AVE

Report Date:

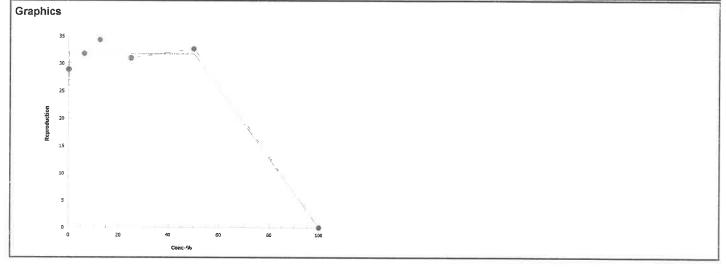
10 Dec-18 14:43 (p 1 of 1)

Test Code:

80719 | 03-4960-5947

Ceriod	aphnia	Survival and Re	productio	n Test					Pacific EcoRisk
Analys		03-6251-7375		point:	Reproduction		CETIS Version:	CETISv1.9.2	
Analyz	ed:	10 Dec-18 14:4	3 Ana	lysis:	Linear Interpola	tion (ICPIN)	Official Results:	Yes	
Linear	Linear Interpolation Options								
X Trans	sform	Y Transform	See	d	Resamples	Exp 95% CL	Method		
Linear		Linear	146	5203	200	Yes	Two-Point Interpolation		
Point E	Point Estimates								
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL			
IC5	52.5	24.5	52.5	1.905	1.905	4.081			
IC10	55	52.5	55	1.818	1.818	1.904			
IC15	57.5	55.2	57.5	1.739	1.739	1.813			
IC20	60	57.8	60	1.667	1.667	1.73			
IC25	62.5	60.4	62.5	1.6	1.6	1.655			
IC40	70	68.3	70	1.429	1.429	1.463			
IC50	75	73.6	75	1.333	1.333	1.358			

Reproduction	Summary			Calculated Variate							
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect		
0	LW	10	28.9	19	36	1.62	5.11	17.70%	0.0%		
6.25		10	31.8	25	36	1.1	3.49	11.00%	-10.0%		
12.5		10	34.3	29	38	0.932	2.95	8.59%	-18.7%		
25		10	31	20	38	1.96	6.2	20.00%	-7.27%		
50		9	32.7	30	35	0.667	2	6.12%	-13.0%		
100		10	0	0	0	0	0		100.0%		



Analyst: U QA: AFF

Report Date:

10 Dec-18 14:43 (p 1 of 1)

Test Code:

80719 | 03-4960-5947

Cerio	daph	nia S	urvival and F	Reprod	uction Test										Pacific EcoRisk
Analys			5-8236-6215		Endpoint:							S Version:	CETISv	1.9.2	
Analyz	zed:	1	0 Dec-18 14:	42	Analysis:	STP	2xK Cont	ingency Tabl	es		Offici	ial Results:	Yes		
Data T	rans	form		Alt	Нур					NOEI	L	LOEL	TOEL	TU	
Untran	sforn	ned		C > .	Т					50	;	> 50	n/a	2	
Fisher	Exa	ct/Bo	nferroni-Hol	m Test											
Contro	ol	vs	Group		Test S	tat	P-Type	P-Value	Decision((a:5%)					
Lab W	ater (Contr	6.25		1.000		Exact	1.0000	Non-Signi	ficant E	ffect				
			12.5		1.000		Exact	1.0000	Non-Signi	ficant E	ffect				
			25		1.000		Exact	1.0000	Non-Signi	ficant E	ffect				
			50		1.000		Exact	1.0000	Non-Signi	ficant E	ffect				
Data S	umn	nary													
Conc-	%		Code	NR	R		NR + R	Prop NR	Prop R	%Effe	ect				
0			LW	10	0		10	1	0	0.0%					
6.25				10	0		10	1	0	0.0%					
12.5				10	0		10	1	0	0.0%					
25				10	0		10	1	0	0.0%					
50				10	0		10	1	0	0.0%					
Graph	ics														
	1.0														
	0.9														
	8.0														
	0.7														
Iva	0.7														
Survival	0.6														

Analyst: W QA: JPK

0.5

0.2

С	lient:		LW	A - Call	eguas C	reek		Ma	iterial:		70	-woo)D			Tes	t Date:	11/30/18
Proje	ect#:	29	633	,	Γest ID:	807	19	Rar	ndomiz	zation:	10	.7.			Co	ntrol	Water:	Mod EPAMH
	Day	pН		D.O.		Cond. (µS/cm)	Temp					vival / R	-	_				SIGN-OFF
	0	New 9,16	Old	New 7:3	Old	353		A O	В	C	D O	е О	F	G	Н	1	J	Date
	1	7,85	794	8,6	79	336	24.6	0	0	0	0	0	0	0	0	0	0	Date: 12/1 Mew WQ: SAT Counts: TK Sol'n Prep: A Old WQ: SA Time: 1336
	2		7.62		6,1		24.3	O	0	0	0	0	0	0	0	0	0	Date: 1424 biew WQ: SAT Counts: KB Sol'n Prep: Told WQ: MSK Time SUB
ntrol	3			4.0	-	360	24.8	6	5	5	4	5	4	5	5	5	4	Date: 12/31 New WQ: my Counts: TK Sol'n Prep: \$\forall Old WQ: Time: 1200
Lab Water Control	4	7.89	7.92	8.6	7-9	356	2557	to	lo	12	0	12	11	10	9	8	0	Date: 144/toNew WQ: Counts: At Sol'n Prep: 64 Old WQ: Time: 23
ab Wai	5	7.97	7.73	6.8	84	372	247	10	i	O	6	10	U	0	0	10	11	Date: 12/5/18 New WQ: Counts: N3 Sol'n Prep: GL Old W. Time: 15 49
Ľ	6	-	7.91	-	7.6	378	25.1	0	15	19	9	0	16	17	17	0	16	Date: Hully New WQ: Counts: 46 Sol'n Prep: Old WQ: JR Time: 1553
	7	883881898		88386383														Date: New WQ: Counts: Sol'n Prep: Old WQ: Time:
	8																	Date: Old WQ: Counts: Time:
							Total=	20	31	34	19	27	23	32	31	23	31	Mean Neonates/Female = 22. 19.4 rep
	Day	New	Old	New	.O. Old	Cond. (µS/cm)		Α	В	C	urvival D	/ Repro	F	G	Н	l	J	Sample ID
	0	8,17		7.3		514	24,5	0	ට	C	0	0	0	0	Ð	O	0	51472
	1		7.86	8.4	7.8	501	24.7	0	0	0	0	0	0	0	0	0	0	51472
	2	7.78	7.70	7.6	6.8	514	24.7	0	0	0	Ó	0	0	0	0	0	0	51472
	3	7.82	7.79	8.8	7.6	526	24.9	6	6	7	5	6	5	5	5	5	6	51472
6,25%	4	7.84	7.91	8.5	8.0	519	25,9	10	10	14	0	9	12	10	8	11	0	51472
19	5	7.91	7.73	7.0	7.6	521	25,1	15	0	0	10	14	6	0	12	0	11	51472
	6	1	7.90	-	7.5	546	252	0	19	15	15	0	13	17	0	14	3	
	7																	
	8																	
							Total≔	31	35	34	30	29	35	32	25	30	35	Mean Neonates/Female = 31.5

C	ient:		LW	A - Call	eguas C	reek		Ma	terial:		70	-WOO)D			Test	Date:	11/30/18
Proje	ect #:	290	633	1	Γest ID:	807	19								Co	ntrol '	Water:	Mod EPAMH
	Day	pН	011	D.O.	011	Cond. (µS/cm)	Temp (°C)			0	_	vival / R	_		**			SIGN-OFF
	0	New O 1/	Old	New	Old		24.3	A	В	0	D	E 0	F	G	Н	0	0	
	1	816	7.83	7.3	7.9	651		0	0	0	0	0	0	0		_	^	
	2	1-	1				24.7	0				0			0	0	0	
	3		7.74	7.5			24.6	0	0	0	0	0	0	0	U	0	0	
		7.80	+.+7	8.7	78	685		6	5	5	6	5	6	5	4	6	6	
12.5%	4		7.90	-	8.1	675	259	10	12	12	0	11	12	10	11	12	12	
	5		7.75			669	25.1	18	0	1	10	17	0	0	O	O	0	
þ	6		7.86	_	7.5	707	251	0	13	20	17	0	19	14	16	17	20	
	7																	
	8																	
							Total=	34	35						31	35	38	Mean Neonates/Female = 34.3
	Day	New	Old	D. New	O. Old	Cond. (µS/cm)		A	В	C	Survival D	/ Repro	duction F	G	Н	I	J	
	0	8,12				964		(7)	0	0	0	ć	0	0	0	0	0	
	1		7.82		79	897		0	0	0	0	Ò	0	0	0	0	0	
	2	7:75	7.75				249	0	0	0	0	0	0	0	0	0	0	
	3		7.88	8.5	40 . 1	959	14		6	6	4	6	6	6	5	5	5	
%	4		7-92	8.1	8-1	965			q	11	0	12	10	10	1	11	0	
25%	5	7.81	11.5			952			3	0	9	20	0	14	14	18	12	
	6	7.01	1,85		1 -		253	0	12	13	9	0	12	0	0	0	19	
	7		4.00		1.	1005	120 W	U	10	10	-1		16	V	0	U	1 1	
								/ - /										
	8					× 1 × 2 × 1 × 1 × 1 × 1 × 1 × 1	Total=	21.	2	215	77	20	20-	at).	20	211	710	23.0
							10tai=	34	SV	30	22	38	28	50	20	34	5W	Mean Neonates/Female = 31.0

C	ient:		LW	A - Call	eguas C	reek		Ma	terial:		70	-woo	D			Test	Date:	11/30/18
Proje	ect#:	296	533	7	Γest ID:	807	19								Со	ntrol V	Water:	Mod EPAMH
	Day	pН		D.O.		Cond. (µS/cm)	Temp				-	_	eprodu					SIGN-OFF
	0	New	Old	New	Old		(°C)	A	В	С	D	Е	F	G	H	I	J_	
	_	806		7.0		1510	24.5	0	0	0	0	0	0	0	හ	0	0	
	1	7,63	7.90	80	7.9	1441	24.6	೦	٥	0	0	0	0	0	٥	0	0	
	2	7.71	7.80	7,2	7.2	1492	25.3	0	0	0	0	0	0	0	0	0	0	
	3		7.98		8.4	1538	25.0	6	6	6	5	6	7	5	5	5	7	
20%	4		7.97			1501	25.7	10	10	9	8	8	8	5	9	12	0	
,0	5	7.72	7.82	6.5	7.2	1497	25.2	16	0	0	26 12141 13	18	ί	0	16	(2	10	
	6		1 ,85			1576	247	0	19	17	15	0	17	14	0	18	13	
	7		17								,							
	8			F X 7 0 0 0 F X R R R R R R R R R R R R R R R R R R														
							Total=	32	35	37	30	32	33	24	30	35	35	Mean Neonates/Female = 31-77
	Day		Н		.O.	Cond.					Survival							
	0	New	Old	New	Old	(µS/cm)			В	C	D	E	F	G	Н	I	0	
		7.92		6.3		2558	24.6	0	0	0	0	0	V/	0	0	U		
	1	7.35	1.97	7,1	7.8	2399	24.7	0	0	0	X/0	0	1/0	0	0	0	0	
	2	7,63	7.95	6.5	7.5	2539	25.4	XIO	X/0	×/0	-	%	-	*/ ₆	Y0 -	×/0	1/0	
	3	7.51	-	7.2	_	2545	-	(•	-	-	-	_	-	_	_	-	
100%	4		-	_	_	-	_	-	-	-	-	-	-	-	-	-	-	
1 2	5	1	-	1	-	-	_	-	-	-	_	-	_	_	_	_	_	
	6)	1)	-	-	-	-	-	-	_	-	_	_	_	_	_	
	7	-	-	_	-	-	-	-	-	,	_	_	-	-	-	-	-	
	8		1		-	-	-	1	-	-	-	-	-	_	_	_	1	
							Total=	Yo	4 0	×/0	*/o	Yo	*/0	40	*/0	×/6	×/6	Mean Neonates/Female =

CETIS Summary Report

Report Date:

10 Dec-18 12:01 (p 1 of 2)

Test Code: 80718 | 07-0531-0198

Batch ID: 01-8699-7664
Start Date: 30 Nov-18 14:17
Start Date: 30 Nov-18 14:17
Ending Date: 06 Dec-18 15:52 Species: Ceriodaphnia dubia Brine: Not Applicable Age: 1
Duration: 6d 2h Source: In-House Culture Age: 1
Sample ID:
Sample Date: 29 Nov-18 11:25 Material: Ambient Water Project: 29633
Receipt Date: 30 Nov-18 09:03 Source: Calleguas Creek Sample Age: 27h (1 °C) Station: UPLAND
Sample Age: 27h (1 °C) Station: UPLAND
Comments: Stats excluding reproducive outliers: 6.25-I, 100-D
State excluding reproducive outliers: 6.25-I, 100-D
Multiple Comparison Summary
Analysis ID
17-1851-2199 Survival Fisher Exact/Bonferroni-Holm Test 100 > 100 n/a 1
Point Estimate Summary Analysis ID Endpoint Point Estimate Method Level % 95% LCL 95% UC 12-1521-0266 Reproduction Linear Interpolation (ICPIN) IC5 >100 n/a n/a
Analysis ID Endpoint Point Estimate Method Level % 95% LCL 95% UC
12-1521-0266 Reproduction Linear Interpolation (ICPIN) IC5 >100 n/a n/a
IC10
C15 >100 n/a n/a
IC20
IC25 >100 n/a n/a
IC40
Reproduction Summary Conc-% Code Count Mean 95% LCL 95% UCL Min Max Std Err Std Dev CV%
Reproduction Summary Conc-% Code Count Mean 95% LCL 95% UCL Min Max Std Err Std Dev CV%
Conc-% Code Count Mean 95% LCL 95% UCL Min Max Std Err Std Dev CV%
0 1W 10 210 201 215 27 22 22
200 1.10 0.71 11.0470
6.25 9 34.7 32.2 37.2 30 40 1.08 3.24 9.35%
12.5 10 32.1 28.1 36.1 21 41 1.79 5.65 17.59%
25 10 32 29.1 34.9 23 38 1.3 4.11 12.84%
50 10 30.4 27 33.8 22 36 1.5 4.74 15.60%
100 9 34.2 31.5 37 28 40 1.19 3.56 10.41%
Survival Summary
Conc-% Code Count Mean 95% LCL 95% UCL Min Max Std Err Std Dev CV%
0 LW 10 1.000 1.000 1.000 1.000 0.000 0.000 0.00%
6.25 10 1.000 1.000 1.000 1.000 1.000 0.000 0.000 0.00%
12.5 10 1.000 1.000 1.000 1.000 1.000 0.000 0.000 0.00%
25 10 1.000 1.000 1.000 1.000 1.000 0.000 0.000 0.00%
50 10 1.000 1.000 1.000 1.000 1.000 0.000 0.000 0.00%
100 10 1.000 1.000 1.000 1.000 1.000 0.000 0.000 0.00%

Analyst: W QA: ARF

Report Date: 10 Dec-18 12:01 (p 2 of 2)

Department of Patril		
Ceriodaphnia Survival and Reproduction Test		Pacific EcoRisk
	Test Code:	80718 07-0531-0198

Ceriodaphnia	Survival and	Reproducti	on Test							Pacif	fic EcoRis
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	38	27	30	30	33	28	30	30	35	37
6.25		34	33	38	33	33	30	33	38		40
12.5		34	32	34	21	38	32	26	41	33	30
25		34	30	34	23	38	36	30	31	31	33
50		22	24	33	31	36	30	32	33	27	36
100		37	28	40		30	34	34	36	34	35
Survival Detail											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Survival Binon	nials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Analyst: W QA: AR

Report Date: Test Code: 10 Dec-18 12:01 (p 1 of 1)

80718 | 07-0531-0198

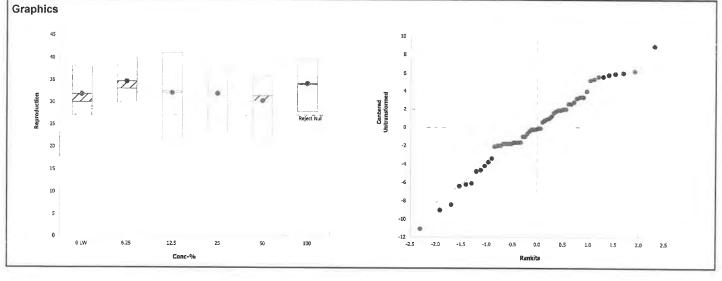
Ceriodaphnia	Survival and Repro	duction Test					P	acific EcoRisk
Analysis ID: Analyzed:	04-5689-8914 10 Dec-18 11:58	Endpoint: Analysis:	Reproduction Parametric-Multiple Comparison		TIS Versior		/1.9.2	
Data Transfor	m Alt	Нур		NOEL	LOEL	TOEL	TU	PMSD
Untransformed	d C:	> T		100	> 100	n/a	1	14.86%
Ponforroni A	di t Toot							

Control vs	Conc-%	Test Stat	Critical	MSD	DF P-	Type P-Value	Decision(α:5%)
Lab Water Contr	6.25	-1.46	2.4	4.72	17 CE	F 1.0000	Non-Significant Effect
	12.5	-0.157	2.4	4.6	18 CE	F 1.0000	Non-Significant Effect
	25	-0.104	2.4	4.6	18 CI	F 1.0000	Non-Significant Effect
	50	0.731	2.4	4.6	18 CE	F 1.0000	Non-Significant Effect
	100	-1.23	2.4	4.72	17 ÇE	F 1.0000	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	121.975	24.3951	5	1.33	0.2666	Non-Significant Effect
Error	954.456	18.3549	52			•
Total	1076.43		57			

Distributional T	ests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	3.54	15.1	0.6180	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.979	0.944	0.4242	Normal Distribution

Reproduction	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	10	31.8	29.1	34.5	30	27	38	1.19	11.84%	0.00%
6.25		9	34.7	32.2	37.2	33	30	40	1.08	9.35%	-9.01%
12.5		10	32.1	28.1	36.1	32.5	21	41	1.79	17.59%	-0.94%
25		10	32	29.1	34.9	32	23	38	1.3	12.84%	-0.63%
50		10	30.4	27	33.8	31.5	22	36	1.5	15.60%	4.40%
100		9	34.2	31.5	37	34	28	40	1.19	10.41%	-7.62%



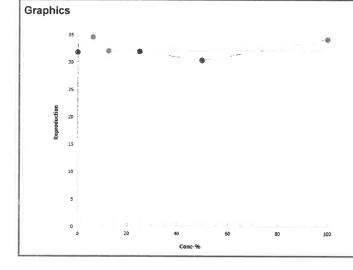
Report Date:

10 Dec-18 12:01 (p 1 of 1) 80718 | 07-0531-0198

Test Code:

							1000 00001	007	10 01-0001-0190
Ceriod	aphnia	Survival and Re	eproductio	n Test					Pacific EcoRisk
Analys	is ID:	12-1521-0266	En	dpoint:	Reproduction		CETIS Version	n: CETISv1.9.2	
Analyz	ed:	10 Dec-18 11:5	8 An	alysis:	Linear Interpola	tion (ICPIN)	Official Result	s: Yes	
Linear	Interpo	lation Options							
X Tran	sform	Y Transform	See	ed	Resamples	Exp 95% CL	Method		
Linear		Linear	530	408	200	Yes	Two-Point Interpolation		
Point E	stimate	es							
Level	%	95% LCL	95% UCL	. TU	95% LCL	95% UCL			
IC5	>100	n/a	n/a	<1	n/a	n/a			
IC10	>100	n/a	n/a	<1	n/a	n/a			
IC15	>100	n/a	n/a	<1	n/a	n/a			
IC20	>100	n/a	n/a	<1	n/a	n/a			
IC25	>100	n/a	n/a	<1	n/a	n/a			
IC40	>100	n/a	n/a	<1	n/a	n/a			
1040									

Reproduction	eproduction Summary				C	Calculated Va	riate		
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	10	31.8	27	38	1.19	3.77	11.80%	0.0%
6.25		9	34.7	30	40	1.08	3.24	9.35%	-9.01%
12.5		10	32.1	21	41	1.79	5.65	17.60%	-0.94%
25		10	32	23	38	1.3	4.11	12.80%	-0.63%
50		10	30.4	22	36	1.5	4.74	15.60%	4.4%
100		9	34.2	28	40	1.19	3.56	10.40%	-7.62%



Report Date:

10 Dec-18 12:01 (p 1 of 1)

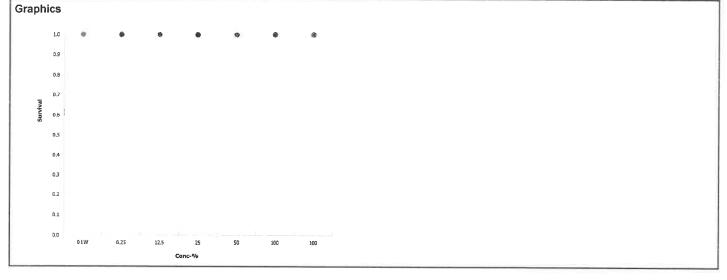
Test Code:

80718 | 07-0531-0198

Ceriodaphnia	Survival and Repro	duction Test					Pacific EcoRisi
Analysis ID:	17-1851-2199	Endpoint:	Survival	CE	TIS Version	: CETIS	/1.9.2
Analyzed:	10 Dec-18 12:00	Analysis:	STP 2xK Contingency Tables	Of	ficial Results	s: Yes	
Data Transfor	m Alt	Нур		NOEL	LOEL	TOEL	TU
Untransformed	d C>	·T		100	> 100	n/a	1
Figher Evect/	Ronferroni-Holm Tes	·+					

Fisher Exact/Bonferroni-Holm Test Control vs Group Test Stat P-Type P-Value Decision(α:5%)										
Control vs	s Group	Test Stat	P-Type	P-Value	Decision(α:5%)					
Lab Water Cont	r 6.25	1.000	Exact	1.0000	Non-Significant Effect					
	12.5	1.000	Exact	1.0000	Non-Significant Effect					
	25	1.000	Exact	1.0000	Non-Significant Effect					
	50	1.000	Exact	1.0000	Non-Significant Effect					
	100	1.000	Exact	1.0000	Non-Significant Effect					

Code	NR	R	NR + R	Prop NR	Prop R	%Effect
LW	10	0	10	1	0	0.0%
	10	0	10	1	0	0.0%
	10	0	10	1	0	0.0%
	10	0	10	1	0	0.0%
	10	0	10	1	0	0.0%
	10	0	10	1	0	0.0%
		LW 10 10 10 10 10	LW 10 0 10 0 10 0 10 0 10 0	LW 10 0 10 10 0 10 10 0 10 10 0 10 10 0 10	LW 10 0 10 1 10 0 10 1 10 0 10 1 10 0 10 1 10 0 10 1	LW 10 0 10 1 0 1 1 0 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 1 0 1 1 1 0 1 1 1 1 0 1



Analyst: W QA: APK

Cl	ient:	LWA - Calleguas Creek 29633 Test ID: 80718						Ma	terial:		70-1	UPLA	ND		Test Date			11/30/18
Proje	ct #:	296	533	1	Test ID:	807	18	Ran	domiz	ation:	10	.7.2	_		Co	ntrol V	Vater:	Mod EPAMH
	Day	рН	Old	D.O.	Old	Cond. (µS/cm)	Temp (°C)	A	В	С	Surv	ival / R	eproduc F	ction	Н	I	J	SIGN-OFF
	0	New 7,78		New 717		350	25.4	0	0	0	0	0	0	0	0	0		Datch 30/18 iew WO: Art Test Init.: Art Sol'n Prop: WV Time: 1417
	1	8.63			5.6	336	T243	0	0	D	0	0	0	0	0	0	0	Date: 12] 16 New WQ: 9 AT Counts: NL Sol'n Prep: Old WQ: Time: 1856 Date: 14 Weew WQ: - 1 Counts: Date: 14 Weew WQ: - 1 Counts:
	2	7.71	7.91	7.9	8.2	354	245	0	0	0	0	0	0	0	0	0	0	Sol'n Prep: A Old WQ: TA Time 420
trol	3	7.82	177	8.7	8.0	355	245	6	5	5	5	0	4	5	5	6	7	Date: 12/31/3New WQ: UP Counts: BV Sol'n Prep: W Old WQ: Time/3: 2
er Control	4	7-85			8.1		245	0	0	9	9	4	9	10	10	0	^	Date: 14418 New WQ: A Counts: 10 Sol'n Prep: C Old WQ: The Time: 1340
Lab Water	5	7.75	764	7.4	7-9	355	24.7	13	7	0	0	12	0	0	Ô	12	11	Date: VIII New WQ: A Counts: Rb Sol'n Prep: & Old WQ: Time: 125)
Lat	6		7.57		7-4		24.1	19	15	16	16	17	15	IS	15	17	19	Date: New WQ: Counts: WC Sol'n Prep: Old WQ: TO Time: 1552
	7																	Date: New WQ: Counts: Sol'n Prep: Old WQ: Time:
	8																	Date: Old WQ: Counts: Time:
							Tota⊫	38	27	36	36	33	28	30	30	35	37	Mean Neonates/Female = 31.8
4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Day	New	H Old	D. New	.O.	Cond. (µS/cm)		Α	В	C	urvival D	/ Repro	duction F	G	Н	I	J	Sample ID
	0	7.78		7.9		376		0	0	0	0	0	0	0	0	0	O	51473
	1	7,95	7.88	8.2	2,6	358	A THE RESERVE OF THE PROPERTY	0	0	0	0	0	0	0	0	0	0	51473
	2	7-75	7.89	9.0	7-8	378		0	0	0	0	0	0	0	0	0	0	51473
	3	7.84	1.77	8.8	8.0	385		5	5	6	5	5	5	5	5	0	6	51473
6.25%	4	7-86	7.86	8-8	8.2	383		10	0	0	9	0	8	0	0	Dun	0	51473
6.2	5	7.76	MV	7.9	MM	377	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	0	10	12	0	12	0	12	13	13	11	51473
	6		7.61	_	7.7	403		19	18	20	19	16	17	16	20	0	23	Columnia (columnia)
	7																	
	8					D-000-32-52-52												
							Total=	34	33	38	33	33	30	33	38	14	40	Mean Neonates/Female = 32.6

C	lient:		LWA - Calleguas Creek						Material: 70-UPLAND						Test Date:			11/30/18
Proje	ect#:	29	633		Γest ID:	807	18								Co	ntrol \	Water:	Mod EPAMH
	Day	рН		D.O.	,	Cond.	Temp						leprodu					SIGN-OFF
		New	Old	New	Old	(µS/cm)	(°C)	A	В	С	D	Е	F	G	Н	I	J	
	0	7.85		8,1		461		0	D	0	0	0	0	ð	O	Ð	9	
	1	7.97	7.85	84	5.7	394		O	0	0	0	U	0	0	0	0	0	
	2	7-76	7.89	8-1	7.7	404		0	0	0	0	0	0	0	0	0	0	
	3	7,85	7.77	8.8	8.1	404		4	4	5	4	5	3	4	6	0	4	
12.5%	4	7.87	7.85	8-7	8-1	408		0	0	0	0	12	0	7	0	6	6	
12	5	7.79	7,65	7.8	7.9	410		II	10	9	0	0	9	0	12	9	0	
	6	-	7-64		7-4	447		19	18	20	17	21	20	is	23	18	20	
	7																	
	8																	
				X X X X X X X X X X X X X X X X X X X			Total=	34	32	34	21	38	32	26	41	33	30	Mean Neonates/Female = 37.1
	Day		Н	- 10	.0.	Cond. (µS/cm)			-	_	_		duction					
	0	New	Old	New	Old			Α	В	С	D	E	F	G	Н	I	J O	
	U	7.83		80		446		5	0	0	0	0	0	0	9	0		
	1	7.84	7.81	8.5	51	434		0	0	0	0	0	0	0	0	0	0	
	2	7-76	7.90	8-1	8.0	447		0	0	0	0	0	0	0	0	0	0	
	3	7,82	7.78	8,6	8.2	450		5	0	3	4	Ц	3	2	4	4	3	
25%	4	7-83	7-84	8.7	8.1	452		0	4	12	0	0	0	0	6	0	0	
2	5	7.77	7,69	8.0	7.8	458	A COLOR MANAGEMENT OF THE PROPERTY OF THE PROP	12	11	0	0	14	12	11	0	10	11	
	6	n gandi	7.67			475	X 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	17	15	19	19	20	21	17	21	17	19	
	7															l j		
	8																	
							Total=	34	30	34	23	38	36	30	31	31	33	Mean Neonates/Female = 37.6

C	ient:		LW	A - Call		Material: 70-UPLAND						Test Date:			11/30/18			
Proje	ect#:	296	533	[]	est ID:	807	18								Со	ntrol \	Water:	Mod EPAMH
	Day	pН		D.O.		Cond. (µS/cm)	Temp (°C)				-	ival / R	_				Ţ	SIGN-OFF
	0	New	Old	New	Old			A	В	С	D	Е	F	G	Н	I	J	
		1,77		8.0	44 94 94 94 94 94 94 94 94 94 94 94 94 9	535		0	0	D	0	0	0	0	0	0	6	
	1	7,77	7,79	8.5	6.2	518		0	0	0	0	0	0	0	0	0	0	
	2	7.72	7-91	8-1	8.0	533		0	0	0	0	0	0	0	0	0	0	
	3	7.74	7.78	8,4	8.3	540		6	4	3	4	5	5	4	4	0	3	
20%	4	7.77	7.81	87	7.9	542	44 044 MM consecond MM consecond MM republication of MM republicat	0	1	0	10	12	8	0	0	2	0	
5	5	7.74	7.51	7.9	7.1	543	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	11	0	11	0	0	0	9	10	9	12	
	6		7-73			560	M M M M M M M M M M M M M M M M M M M	5	19	19	17	19	17	19	19	16	21	
	7						X X X X X X X X X X X X X X X X X X X											
	8																	
							Total=	22	24	33	31	36	30	32	33	27	36	Mean Neonates/Female = 30.4
	Day		Н		.0.	Cond.	.121.121.12				Survival	_			**	Y		
N X X X	_	New	Old	New	Old	(µS/cm)		A	В	С	D	E	F	G	Н	I	J	
	0	7.68		8.2	N X X X X X X X X X X X X X X X X X X X	709		0	0	0	0	0	0	0	0	D	0	
	1	7,66	7.76	8,6	6.2	688		0	0	0	0	0	Ô	0	0	0	0	
	2	7-66	7.91	8.1	8.0	708	X 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0	0	0	0	0	0	0	0	0	0	
	3	7,64	7.78	8.4	8.4	717		4	4	6	ч	3	5	4	5	5	4	
100%	4		7.74		7.7	714		0	0	13	6	100	O	0	0	0	0	
1 2	5	-	765		7.3	709	X X X X X X X X X X X X X X X X X X X	13	11	0	0	13	11	12	il	12	11	
	6	-	7.76		7.8	785	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	20	13	21	8	15	Bì	18	20	17	20	
	7						X X X X X X X X X X X X X X X X X X X											
	8			**************************************			0 + 10 + 10 + 10 + 10 + 10 + 10 + 10 +											
							Total=	37	28	40	18	30	34	34	36	34	35	Mean Neonates/Female = 32.6

CETIS Summary Report

Report Date: Test Code:

12 Dec-18 16:08 (p 1 of 2) 80715 | 21-0030-3040

Pacific EcoRisk

Ceriodaphnia	Survival and Repro	duction Test			
Batch ID:	04-9221-4438	Test Type:	Reproduction-Survival (7d)	Analyst:	Wesley Cram
Start Date:	30 Nov-18 13:13	Protocol:	EPA-821-R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	06 Dec-18 15:36	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Duration:	6d 2h	Source:	In-House Culture	Age:	1

Larry Walker Associates Client: 11-3555-8654 Code: 70-HITCH-150 Sample ID:

29633 Ambient Water Project: Sample Date: 29 Nov-18 10:10 Material: Source: Calleguas Creek

Receipt Date: 30 Nov-18 09:03 Station: HITCH Sample Age: 27h (0.3 °C)

Comments:

Stats exclude outlier 12.5D

Multiple Com	parison Summary						
Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD 🗸
03-4817-5831	Reproduction	Bonferroni Adj t Test	100	> 100	n/a	1	9.8%
13-7136-1480	Survival	Fisher Exact/Bonferroni-Holm Test	100	> 100	n/a	1	n/a

Point Estimat	e Summary							
Analysis ID	Endpoint	Point Estimate Method	Level	%	95% LCL	95% UCL	TU	1
06-4670-7508	Reproduction	Linear Interpolation (ICPIN)	IC5	>100	n/a	n/a	<1	
	•		IC10	>100	n/a	n/a	<1	
			IC15	>100	n/a	n/a	<1	
			IC20	>100	n/a	n/a	<1	
			IC25	>100	n/a	n/a	<1	
			IC40	>100	n/a	n/a	<1	
			IC50	>100	n/a	n/a	<1	

Reproduction S	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	9	30.2	28.4	32.1	28	35	0.795	2.39	7.90%	0.00%
6.25		9	33.3	31.2	35.4	29	38	0.913	2.74	8.22%	-10.29%
12.5		8	33.2	31.2	35.3	29	37	0.881	2.49	7.50%	-10.02%
25		10	33.7	31.6	35.8	29	38	0.943	2.98	8.85%	-11.51%
50		10	34	31.9	36.1	30	39	0.907	2.87	8.43%	-12.50%
100		10	34.1	32.3	35.9	29	37	0.795	2.51	7.37%	-12.83%

Survival Sum	Survival Summary													
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect			
0	LW	9	0.889	0.633	1.000	0.000	1.000	0.111	0.333	37.50%	0.00%			
6.25		9	0.889	0.633	1.000	0.000	1.000	0.111	0.333	37.50%	0.00%			
12.5		9	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	-12.50%			
25		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	-12.50%			
50		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	-12.50%			
100		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	-12.50%			

Report Date: 12 Dec-18 16:08 (p 2 of 2)

Test Code:	80715 21-0030-304

Ceriodaphnia Sı	rvival and	Reproduction	on Test							Pacif	ic EcoRis
Reproduction D	etail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	29	29	31	29	30	35	33	28	28	
6.25		32	35	32	31	34	36	29	33	38	
12.5		32	29	34		34	37	31	34	35	
25		34	36	29	33	34	38	37	33	34	29
50		33	39	32	34	32	36	34	30	38	32
100		34	35	37	36	36	31	34	36	29	33
Survival Detail											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000	1.000	
6.25		1.000	1.000	1.000	1.000	1.000	1.000	0.000	1.000	1.000	
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Survival Binomi	als										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	0/1	1/1	
6.25		1/1	1/1	1/1	1/1	1/1	1/1	0/1	1/1	1/1	
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Report Date:

12 Dec-18 16:08 (p 1 of 1)

Test Code:

80715 | 21-0030-3040

Ceriodaphnia	Survival and Repro	duction Test					Pacific EcoRist
Analysis ID: Analyzed:	13-7136-1480 12 Dec-18 16:07	Endpoint: Analysis:	Survival STP 2xK Contingency Tables		TIS Version: ficial Results		1.9.2
Data Transfor	m Ali	: Нур		NOEL	LOEL	TOEL	TU
Untransformed	d C:	> T		100	> 100	n/a	1

erroni-Holm Test				
Group	Test Stat	P-Type	P-Value	Decision(α:5%)
6.25	0.765	Exact	1.0000	Non-Significant Effect
12.5	1.000	Exact	1.0000	Non-Significant Effect
25	1.000	Exact	1.0000	Non-Significant Effect
50	1.000	Exact	1.0000	Non-Significant Effect
100	1.000	Exact	1.0000	Non-Significant Effect
	6.25 12.5 25 50	Group Test Stat 6.25 0.765 12.5 1.000 25 1.000 50 1.000	Group Test Stat P-Type 6.25 0.765 Exact 12.5 1.000 Exact 25 1.000 Exact 50 1.000 Exact	Group Test Stat P-Type P-Value 6.25 0.765 Exact 1.0000 12.5 1.000 Exact 1.0000 25 1.000 Exact 1.0000 50 1.000 Exact 1.0000

Data Summary							
Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	LW	8	1	9	0.889	0.111	0.0%
6.25		8	1	9	0.889	0.111	0.0%
12.5		9	0	9	1	0	-12.5%
25		10	0	10	1	0	-12.5%
50		10	0	10	1	0	-12.5%
100		10	0	10	1	0	-12.5%



Analyst: U QA: APF

Report Date:

12 Dec-18 16:08 (p 1 of 1)

Test Code: 80715 | 21-0030-3040

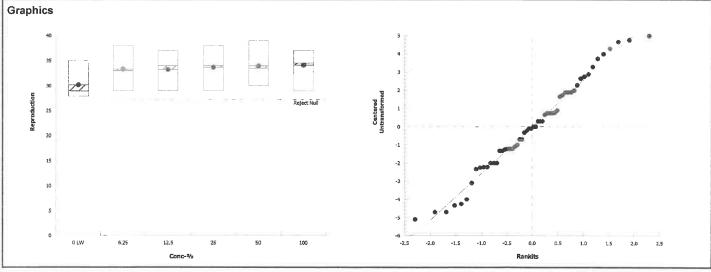
Ceriodaphnia	Survival and Repro	duction Test					Pa	cific EcoRisk
Analysis ID: Analyzed:	03-4817-5831 12 Dec-18 16:07	•	Reproduction Parametric-Multiple Comparison		TIS Version		1.9.2	
Data Transfor	m Alt	Нур		NOEL	LOEL	TOEL	TU	PMSD
Untransformed	d C:	• T		100	> 100	n/a	1	9.80%

Bonferroni Adj t Test													
Control vs	Conc-%	Test Stat	Critical	MSD	DF I	P-Type	P-Value	Decision(α:5%)					
Lab Water Contr	6.25	-2.46	2.4	3.04	16 (CDF	1.0000	Non-Significant Effect					
	12.5	-2.32	2.4	3.13	15 (CDF	1.0000	Non-Significant Effect					
	25	-2.82	2.4	2.96	17 (CDF	1.0000	Non-Significant Effect					
	50	-3.06	2.4	2.96	17 (CDF	1.0000	Non-Significant Effect					
	100	-3.15	2.4	2.96	17 (CDF	1.0000	Non-Significant Effect					

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	96.8016	19.3603	5	2.69	0.0315	Significant Effect
Error	360.056	7.20111	50			
Total	456.857		55			

Distributional Te	ests					
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)	
Variances	Bartlett Equality of Variance Test	0.627	15.1	0.9868	Equal Variances	
Distribution	Shapiro-Wilk W Normality Test	0.979	0.943	0.4422	Normal Distribution	

Reproduction	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	9	30.2	28.4	32.1	29	28	35	0.795	7.90%	0.00%
6.25		9	33.3	31.2	35.4	33	29	38	0.913	8.22%	-10.29%
12.5		8	33.2	31.2	35.3	34	29	37	0.881	7.50%	-10.02%
25		10	33.7	31.6	35.8	34	29	38	0.943	8.85%	-11.51%
50		10	34	31.9	36.1	33.5	30	39	0.907	8.43%	-12.50%
100		10	34.1	32.3	35.9	34.5	29	37	0.795	7.37%	-12.83%



Analyst: Lu QA: Analyst

IC50

>100

n/a

n/a

<1

n/a

Report Date:

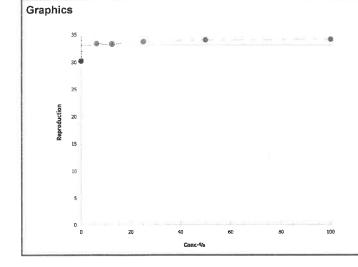
12 Dec-18 16:08 (p 1 of 1)

80715 | 21-0030-3040

Test Code: Pacific EcoRisk Ceriodaphnia Survival and Reproduction Test CETISv1.9.2 **CETIS Version:** Analysis ID: 06-4670-7508 Endpoint: Reproduction 12 Dec-18 16:07 Analysis: Linear Interpolation (ICPIN) Official Results: Analyzed: **Linear Interpolation Options** Exp 95% CL Method X Transform Y Transform Seed Resamples 1088883 200 Two-Point Interpolation Linear Linear Yes **Point Estimates** 95% UCL TU 95% LCL 95% UCL Level 95% LCL IC5 >100 <1 n/a n/a n/a n/a n/a n/a IC10 >100 n/a n/a <1 IC15 >100 n/a n/a <1 n/a n/a IC20 >100 n/a n/a <1 n/a n/a n/a <1 n/a n/a IC25 >100 n/a n/a n/a IC40 >100 n/a <1 n/a

Reproduction	Summary				C	alculated Va	riate			
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	
0	LW	9	30.2	28	35	0.795	2.39	7.90%	0.0%	
6.25		9	33.3	29	38	0.913	2.74	8.22%	-10.3%	
12.5		8	33.2	29	37	0.881	2.49	7.50%	-10.0%	
25		10	33.7	29	38	0.943	2.98	8.85%	-11.5%	
50		10	34	30	39	0.907	2.87	8.43%	-12.5%	
100		10	34.1	29	37	0.795	2.51	7.37%	-12.8%	

n/a



CI	ient:		LWA	A - Calle	eguas C	reek		Mat	terial:		70-	нітс	н			Test	Date:	11/30/18
Proje	ct #:	296	533	Т	Γest ID:	807	15	Ran	domiz	ation:	11).7	V		Co	ntrol V	Vater:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp						eproduc	-				SIGN-OFF
	0	New 7-74	Old	New 7.6	Old	(μS/cm)	(°C) 24.7	Ď	В 0	C 0	0	E ()	F 0	G ()	Н	1)	0	Date: 11/30/18New WQ: Test Init.: NL Sol'n Prep: 8/y TA Time: [3] [3]
			770		- 1						n	0			40	(1)	2	Date: 1211 18 New WQ; JR Counts: T
	1	1.87	7.70	8.5	7.1	355	25,5	0	0	Q	U	0	0	Q	O	O	U	Sol'n Prep: A Old WQ: 52 Time: 1005 Date: 12/211 New WQ: - Counts: 8V
	2	7.76	7.62	8.0	7.9	355	26.0	0	0	0	0	0	0	0	0	9	9	Sol'n Prep: Old WQ: TP Time:/330
trol	3	7.91	8.12	8.8	8.0	355	244	5	5	6	6	5	6	4	5	5	4	Date: 17131f:New WQ: MY Counts: 1/4 Sol'n Prep: SF Old WQ: AR Time: 1600
Lab Water Control	4	787	1.79	8,8	8,0	360	240	10	11	0	0	10	11	12	0	0	0	Date: 144 (8) New WQ: Counts: 144 Sol'n Prep: 44 Old WQ: Time: 144
Wate	5	7-69	771	8.4	7.6	360	242	0	0	9	8	0	0	0	9	8	10	Date: Who New WQ: The Counts: 17. Sol'n Prep: Q Old WQ: Time: 14.
Lat	6	-	7.83	A STATE OF THE STA	8.1	390	25.0	14	13	16	15	15	18	17	1/0	15	14	Date: 1/1/1 New WQ: — Counts: 26 Sol'n Prep: — Old WQ: Time: (53)
	7										nh th	10/18			-	7	T	Date: New WQ: Counts: Sol'n Prep: Old WQ: Time:
	8										29	30	2112		4			Date: Old WQ: Counts: Time:
							Total=	29	29	31	28	33	35	33	1/14	28	28	Mean Neonates/Female = 30、ユ
	Day	New	H Old	D New	.O.	Cond. (µS/cm)		A	В	C	Survival D	l / Repro	duction F	G	Н	I	J	Sample ID
	0	7.80		7.7		380	24.2	0	0	0	0	0	0	0	0	0	0	51474
	1	-	7.67	8.7	7.4	381	250	ð	Ð	9	J	0	0 4	O OFF	0	0	ව	51474
	2	7-78	7.73	8-1	8.1	380	25.9	0	0	0	0	0	0	10	0	0	0	51474
	3	7.89	7.99	8.9	8.3	385	24.4	5	6	5	0	6	6	~	5	6	6	51474
6.25%	4	789	7.77	87	8.1	387	24,0	12	12	0	4	12	11	-	0	11	0	51474
6.2	5	7-74	77	85	77	387	24.	0	0	11	8	0	19	-	9	0	12	51474
	6	_	7.80	_	4.4	407	25.5	15	17	16	19	16	0	-	15	16	20	_
	7			1										-				
	8			**************************************		-								_				
							Total=	32	35	32	31	34	36	70	29	33	38	Mean Neonates/Female = 30.0

CI	ient:		LWA	A - Call	eguas C	reek		Ma	terial:		70-	HITC	Н			Test	Date:	11/30/18
Proje	ct #:	296	533	Т	est ID:	807	15								Со	ntrol V	Vater:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp						eproduc	_				SIGN-OFF
	0	New	Old	New	Old	(µS/cm)	(°C)	A	В	С	D	E	F	G	Н	I	J	
		7.80		7.9		403		0	0	0	0	0	0	0	0	0	0	
	1	7.87	7.72	8.8	15	404	25.5	0	0	Ø	0	0	0	0	0	0	10	
	2	7.81	7.81	8-2	8.4	406	25.9	0	0	0	0	0	0	0	0	0	0	
	3	7.88	7.98	9.0	8.3	409	24.3	5	5	5	6	5	6	4	5	5	6	
12.5%	4	7.89	1.79	8.7	8,0	410	241	10	12	0	0	12	10	11	0	0	0	
12	5	7.77	7,72	8-6	7.6	412	23.8	0	0	10	Ó	0	0	1	10	11	3	
	6	_	7.81	_	7.8	432			12	19	15	17	21	15	19	9	14	
	7																	
	8	**************************************																
							Total=	32	29	34	21	34	37	31	34	35	73	Mean Neonates/Female = 31.0
	Day		Н		.O.	Cond.							duction					
		New	Old	New	Old	(µS/cm)			В	C	D	Е	F	G	Н	I	J	
	0	7.80		8.2		450	25.2	_	0	0	0	0	0	0	0	0	U	
	i	7.82	7.69	9.1	7.6	451	25.4	O	0	0	0	O	0.	0	0	0	0	
	2	7.79	7.83	8.3	8.5	450	259	0	0	0	0	0	0	0	0	0	0	
	3	7.84	7.96	9.1	8.3	452	243	6	5	5	6	4	6	7	5	5	5	
25%	4	F180	7.78	9.3	7,8	447			13	0	0	13	12	14	1	0	0	
25	5	7.74	101		7.3	457	23.7	0	0	9	11	0	0	0	8	11	1/	
	6		7.79		7.60	494	25.3	17	18	15	16	17	20	16	19	18	13	
1	7			1 - 7			-						3,0			1 13		
	8																	
		566666					Total=	34	36	29	33	34	38	37	33	34	29	Mean Neonates/Female = 33.7

CI	ient:		LWA	A - Calle	eguas C	reek		Ma	terial:		70-	HITC	Н			Test	Date:	11/30/18
Proje	ct #:	296	633	Т	est ID:	807	15								Со	ntrol \	Vater:	Mod EPAMH
	Day	pН	011	D.O.	011	Cond. (µS/cm)	Temp (°C)		-	0		ival / R			**	,		SIGN-OFF
	0	New	Old	New	Old			A	В	С	D	E 40	F	G	Н	I	J	
	_	7-75		9-0		539	25.3	~	0	0	0	0	0	0	0	0	0	
	1	7.77	1.76	9.6	7.6	540	25.6	0	0	0	٥	0	A	9	0	0	0	
	2	7-75	7.84	8.7	8.5	540	25.8	O	0	0	0	0	0	0	0	0	0	
	3	785	7.97	9.4	8.3	542	24.2	6	7	5	6	5	6	7	6	6	6	
20%	4	7:77	1,75	9.3	7.8	531	24.2	11	12	0	0	10	11	/1	0	0	0	
N.	5	7.70	- 61	8.9		550	23.8	0	0	13	10	0	0	0	9	12	11	
	6		7.83	-	_	572					18	17	19	16	15	20	15	
	7						T T	10		•					1			
	8																	
							Total=	33	39	32	24	37	36	34	30	38	37	Mean Neonates/Female = 3 4 , 0
	Day	р	Н	D.	O.	Cond.		3)	.3			/ Repro			00	90	,,,	Wealt Neonates/Female = 3 " "
		New	Old	New	Old	(µS/cm)		Α	В	С	D	Е	F	G	Н	I	J	
	0	7.67		10.8		717	249	0	0	0	0	0	0	0	0	0	0	
	1	7.64	7.70	11.0	7.6	719	25.6	ð	٥	0	0	0	0	O	ð	O	0	
	2	7.69	7.81	9.5	8.4	719	259	0	0	0	0	0	0	0	0	0	0	
	3			10.3	8.4	726	24.4	5	6	5	S	6	6	6	5	5	4	
%	4		7.76	9.5	7.6	713	241	10	12	0	O	10	11	10	0	0	0	
100%	5	762	1	9.4	7.1	775	238	-	0	13	10	0	0	0	il.	10	10	
	6	162	7.84	124	8.2	759	25.2	19	17	19	,	20	14			21.4	1	
			1.0-1	_	Oa V	109	LJ.L	11	1/	11	21	20	17	18	20	1-1	19	
	7							_					-					
	8				: 1:1:1:1:1:1:1:1:1:1:1:1:1:1:1:1:1:1:1			211	יים ני	0.5	21	9 4	2.	011	24	A G	22	
							Total=	34	35	37	36	36	11	34	36	29	33	Mean Neonates/Female = 34.1

CETIS Summary Report

Report Date:

08 Dec-18 15:23 (p 1 of 2)

Test Code:

80716 | 06-9020-8991

Ceriodaphnia	a Survival and Re	eproduction Test							Pacific	c EcoRisk
Batch ID:	15-1675-4982	Test Type:	Reproduction-S	Survival (7d)		Ar	nalyst:	Kristin Robertso	n	
Start Date:	30 Nov-18 14:00	Protocol:	EPA-821-R-02	-013 (2002)		Di	luent:	Laboratory Water	er	
Ending Date:	06 Dec-18 14:33	Species:	Ceriodaphnia d	dubia		Bı	rine:	Not Applicable		
Duration:	6d 1h	Source:	In-House Cultu	ire		Ą	ge:	1		
Sample ID:	05-1221-5871	Code:	70-GATE-202			CI	ient:	Larry Walker As	sociates	
Sample Date:	: 29 Nov-18 10:15	Material:	Ambient Water	r		Pr	oject:	29633		
Receipt Date	: 30 Nov-18 09:03	Source:	Calleguas Cree	ek						
Sample Age:	28h (0.5 °C)	Station:	GATE							
Multiple Com	parison Summa	ry								
Analysis ID	Endpoint	Com	parison Method	l		NOEL	LOE	TOEL	TU	PMSD /
	Reproduction	Steel	Many-One Rank	Sum Test		100	> 100	n/a	1	19.8%
03-4793-7003	Survival	Fishe	r Exact/Bonferro	ni-Holm Tes	st	100	> 100	n/a	1	n/a
Point Estimat	te Summary									
Analysis ID	Endpoint	Point	Estimate Meth	od		Level	%	95% LCL	95% UCL	TU 🗸
16-1327-5075	Reproduction	Linea	r Interpolation (I	CPIN)		IC5	42.1	9.51	n/a	2.378
						IC10	>100	n/a	n/a	<1
						IC15	>100	n/a	n/a	<1
						IC20	>100	n/a	n/a	<1
						IC25	>100	n/a	n/a	<1
						IC40	>100	n/a	n/a	<1
						IC50	>100	n/a	n/a	<1
Reproduction	Summary									
Conc-%	Code	Count Mean		95% UCL	Min	Max	Std E	rr Std Dev	CV%	%Effect
0	LW	10 30.6	27.7	33.5	25	36	1.28	4.03	13.18%	0.00%
6.25		10 33.7	31.4	36	29	39	1.02	3.23	9.59%	-10.13%
12.5		10 32.1	26.8	37.4	19	40	2.34	7.39	23.01%	-4.90%
25		10 31.6	25.8	37.4	13	40	2.57	8.14	25.76%	-3.27%
50		10 29.5	24.7	34.3	19	37	2.12	6.7	22.73%	3.59%
100		10 30.6	27.5	33.7	24	36	1.37	4.33	14.14%	0.00%
Survival Sum	•									
Conc-%	Code	Count Mean		95% UCL	Min	Max	Std E		CV%	%Effect
0	LW	10 1.000		1.000	1.000	1.000	0.000		0.00%	0.00%
6.25		10 1.000		1.000	1.000	1.000	0.000		0.00%	0.00%
12.5 25		10 1.000		1.000	1.000	1.000	0.000		0.00%	0.00%
25 50		10 0.900		1.000	0.000	1.000	0.100		35.14%	10.00%
100		10 1.000 10 1.000		1.000	1.000	1.000	0.000		0.00%	0.00%
100		10 1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%

Analyst: MA QA: W

Report Date: Test Code:

08 Dec-18 15:23 (p 2 of 2)

80716 | 06-9020-8991

										0011010	0-3020-033
Ceriodaphnia	Survival and	Reproducti	on Test							Pacif	ic EcoRisk
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	35	25	28	31	33	35	30	27	36	26
6.25		32	31	33	30	39	29	35	35	36	37
12.5		31	19	40	39	39	29	34	21	37	32
25		38	29	38	30	40	34	24	34	36	13
50		30	23	20	32	37	35	33	37	19	29
100		28	35	29	35	35	26	36	30	28	24
Survival Detai	I										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Survival Binor	nials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	0/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Report Date: Test Code: 08 Dec-18 15:24 (p 1 of 1)

80716 | 06-9020-8991

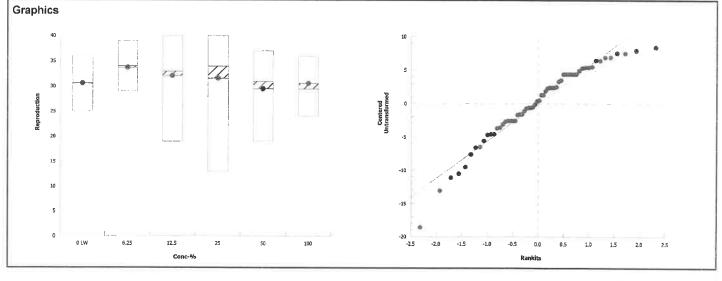
Ceriodaphnia	Survival and Repro	duction Test						Pacific EcoRisk
Analysis ID: Analyzed:	01-9044-5201 08 Dec-18 15:21	•	Reproduction Nonparametric-Control vs Treatments		TIS Version: ficial Results:		.9.2	
Data Transfor	m Alt	Нур		NOEL	LOEL	TOEL	TU	PMSD
Untransformed	d C:	> T		100	> 100	n/a	1	19.85%

Steel Many-One R	ank Sum Test						
Control vs	Conc-%	Test Stat	Critical	Ties	DF P-Type	P-Value	Decision(a:5%)
Lab Water Contr	6.25	127	75	5	18 Asymp	0.9986	Non-Significant Effect
	12.5	118	75	1	18 Asymp	0.9824	Non-Significant Effect
	25	117	75	2	18 Asymp	0.9803	Non-Significant Effect
	50	104	75	3	18 Asymp	0.8098	Non-Significant Effect
	100	106	75	5	18 Asymp	0.8444	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	106.95	21.39	5	0.608	0.6943	Non-Significant Effect
Error	1900.7	35.1981	54			
Total	2007.65		59			

Distributional *	Tests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	11.2	15.1	0.0469	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.945	0.946	0.0095	Non-Normal Distribution

Reproduction	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	10	30.6	27.7	33.5	30.5	25	36	1.28	13.18%	0.00%
6.25		10	33.7	31.4	36	34	29	39	1.02	9.59%	-10.13%
12.5		10	32.1	26.8	37.4	33	19	40	2.34	23.01%	-4.90%
25		10	31.6	25.8	37.4	34	13	40	2.57	25.76%	-3.27%
50		10	29.5	24.7	34.3	31	19	37	2.12	22.73%	3.59%
100		10	30.6	27.5	33.7	29.5	24	36	1.37	14.14%	0.00%



Analyst: M QA: W

Report Date:

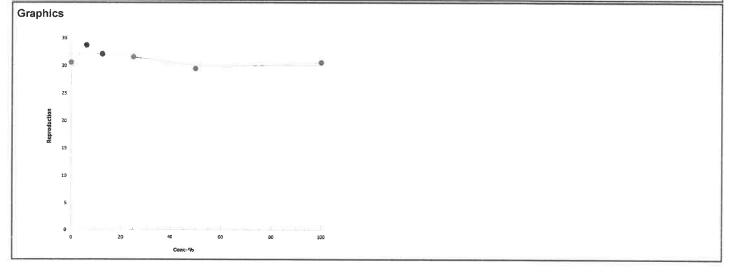
08 Dec-18 15:24 (p 1 of 1) 80716 | 06-9020-8991

Test Code:

Ceriodaphnia	Survival and Repro	duction Test					Pacific EcoRisk
Analysis ID: Analyzed:	16-1327-5075 08 Dec-18 15:22	Endpoint: Analysis:	Reproduction Linear Interpola	ation (ICPIN)	CETIS Version: Official Results:	CETISv1.9.2 Yes	
Linear Interpo	Plation Options						
V T	Y Transform	Seed	Resamples	Exp 95% CL	Method		
X Transform	TITALISTOLLI	Seeu	resumples	EXP 00 % OF	Menion		

Point E	Estimates					
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC5	42.1	9.51	n/a	2.378	n/a	10.51
IC10	>100	n/a	n/a	<1	n/a	n/a
IC15	>100	n/a	n/a	<1	n/a	n/a
IC20	>100	n/a	n/a	<1	n/a	n/a
IC25	>100	n/a	n/a	<1	n/a	n/a
IC40	>100	n/a	n/a	<1	n/a	n/a
IC50	>100	n/a	n/a	<1	n/a	n/a

Reproduction	Summary				C	Calculated Va	riate			
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	
0	LW	10	30.6	25	36	1.28	4.03	13.20%	0.0%	
6.25		10	33.7	29	39	1.02	3.23	9.59%	-10.1%	
12.5		10	32.1	19	40	2.34	7.39	23.00%	-4.9%	
25		10	31.6	13	40	2.57	8.14	25.80%	-3.27%	
50		10	29.5	19	37	2.12	6.7	22.70%	3.59%	
100		10	30.6	24	36	1.37	4.33	14.10%	0.0%	



Analyst: M QA: W

25

50

100

Report Date:

08 Dec-18 15:24 (p 1 of 1)

Test Code:

80716 | 06-9020-8991

Ceriodaphi	nia Si	urvival and Re	eproductio	n Test									Pacific EcoRisk
Analysis ID Analyzed:		3-4793-7003 8 Dec-18 14:5		•	ırvival P 2xK Cont	ingency Tabl	es			S Version: al Results:	CETIS: Yes	/1.9.2	
Data Trans	form		Alt Hyp					NOEL		LOEL	TOEL	TU	
Untransform	ned		C > T					100	>	100	n/a	1	
Fisher Exac	ct/Bo	nferroni-Holm	Test										
Control	vs	Group		Test Stat	P-Type	P-Value	Decision(α:5%)					
Lab Water (Contr	6.25		1.000	Exact	1.0000	Non-Signif	icant E	ffect				
		12.5		1.000	Exact	1.0000	Non-Signif	ficant E	ffect				
		25		0.500	Exact	1.0000	Non-Signif	ficant E	ffect				
		50		1.000	Exact	1.0000	Non-Signif	icant E	ffect				
		100		1.000	Exact	1.0000	Non-Signif	icant E	ffect				
Data Summ	ary												
Conc-%		Code	NR	R	NR + R	Prop NR	Prop R	%Effe	ct				
0		LW	10	0	10	1	0	0.0%					
6.25			10	0	10	1	0	0.0%					
12.5			10	0	10	1	0	0.0%					

1

1

0.9

0.1

0

0.0%

10.0%

10

10

10

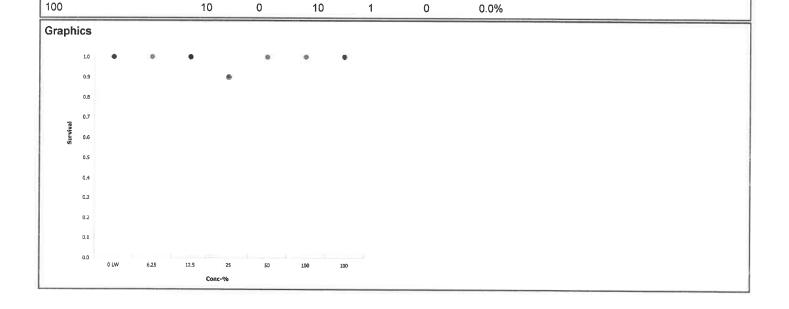
9

10

10

1

0



CI	Client: LWA - Calleguas Creek roject #: 29633 Test ID: 80716						Ma	terial:		70	-GAT	E		61	Test	Date:	11/30/18	
Proje	ct #:	290	533	Т	est ID:	807	16	Ran	domiz	ation:	11	0.7	.3		Со	ntrol \	Vater:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp				-	-	eproduc					SIGN-OFF
	0	New	Old	New	Old	(μS/cm)	(°C) 24-S	A	В	С	D	E	F	G	Н	0	0	Dald 30 I Svew WO. Test Init.: M. Sol'n PrepSet V Time: 140
	-	8118		7.4		298	64.5	U	U	0	0	V	- M	0	U.	U	0	Sol'n PrepSol V ATT Time: 140 Dategur 16 New WQ: MyUCounts:
	1	7.88	7.76	86	64	<i>3</i> 55	24.3	0	0	0	0	0	0	0	0	0	0	Sol'n Prep: SV Old WQ: Timen253
	2	7.75	7.88	7.9	8.5	357	245	0	0	0	0	0	0	٥	0	0	0	Date: 1921 New WQ: The Counts: Sol'n Prep: My Old WQ: The Time: 1485
itrol	3	7.73	7.73	8.8	6.1	358	25.0	5	4	V	5	5	Le	5	6	V	4	Date: 1751 New WQ: Counts: 1657 Sol'n Prep: 516 Old WQ: Time: 1557
er Con	4	7.87	7.64	8.5	7.9	358	24.6	0	0	0	0	10	0	10	0	0	0	Date: 1/4/gNew WQ: The Counts: CO Sol'n Prep: CA Old WQ: The Time: 1/50
Lab Water Control	5	7.81	7.67	8.4	7.0	361	24.0	12	9	10	10	0	10	0	9	12	3	Date: 14/4/18 New WQ: TA Counts: K6 Sol'n Prep: GC Old WQ: TA Time: 1/3
Lal	6	_	7,75	-	7,9	391	24.4	10	12	12	16	18	19	15	12	13	14	Date: 14619 New WQ: — Counts: 146 Sol'n Prep: Old WQ: US Time: 1434
	7																	Date: New WQ: Counts: Sol'n Prep: Old WQ: Time:
	8																	Date: Old WQ: Counts: Time:
							Total=	35	25	28	31	33	35	30	27	311	26	Mean Neonates/Female = 30.1/
	Day	New	H	D. New	O.	Cond. (µS/cm)		Α	В	C	urvival D	/ Repro	duction	G	н	I	J	Sample ID
2512212	0	8.17	Old	7.4	Olu	359	24.8	V _a	0	0	0	0	()	0	0	0	0	1112016 51475 51470
	1	7.87	7.83		6.4	365	24.6	0	0	0	0	0	0	O	0	0	0	51475
	2	7.78	7.52	8-1		364	25,2	0	0	0	0	0	0	0	0	0	0	51475
	3	- 1	7.76	11	8,0	373	251	4	4	5	5	le	4	6	6	5	5	51475
6.25%	4	7.88					240	0	0	0	11	0	0	0	0	0	0	51475
6.2	5	7.83	7.69	84	7.2		245	12	11	13	0	13	10	11	13	11	11	51475
	6	-	7.68	_	7.8	413	249	16	16	15	14	20	15	18	16	20	21	
	7		V I															
	8																	
							Total=	32	31	33	30	39	29	35	35	34	37	Mean Neonates/Female = 33-7

Cl	ient:		LWA	A - Call	eguas C	reek		Ma	terial:		70	-GAT	E			Test	Date:	1/130/18
Proje	ct #:	296	533	Т	est ID:	807	16								Со	ntrol V	Vater:	Mod EPAMH
	Day	pН		D.O.		Cond.	Temp					_	eproduc	-				SIGN-OFF
		New	Old	New	Old	(μS/cm)	(°C)	A	В	C	D	E	F	G	Н	I	J	
	0	8118		7.5		369	24.6	0_	0	0	0	0	0	0	0	0	0	
	1	7.84	7.81	8.6	6.3	370	25.2	0	0	0	0	0	0	0	0	0	0	
	2	7.79	7.79	8-1	7.7	370	24.7	0	0	0	0	0	0	0	0	0	0	
	3	7.78	7.80	8.7	8.1	372	249	4	5	0	5	4	4	V	6	V	5	
12.5%	4	787		8-8	8.2	37.2		0	0	7	0	0	0	12	0	0	0	
12.	5	782		8.5	72	375		10	1	13	14	13	11	0	0	14	13	
	6	_	146	-	7.7	419	247	77.77	13	20	20	7.0	14	111	15	17	14	
	7											- VU						
	8																	
							Total=	31	19	40	39	39	27	34	21	37	32	Mean Neonates/Female = 32.1
	Day		Н		0.	Cond.	2024-034-03			_	_		duction		73	I		
		New	Old	New	Old	(μS/cm)		Α	В	C	D	E	F	G	Н		1	
	0	8'18		7.7		382	24B	0	0	0_	0	0	0	0	0	0	0	
	1	7.82	7.78	8.8	6.5	382	25.0	B	0	0	0	0	0	0	0	0	0	
	2	7.78	7.75	8.1	7.6	380	24.8	0	0	0	0	0	0	0	0	0	0	
	3	7.77	7.83	8.8	8.2	383	24.4	Le	5	6	0	U	0	5	5	U	4	
25%	4	7.82	7.73	8.9	7.9	384	24.4	0	0	0	5	11	6	0	0	0	0	
2	5	7-79	7.70	8.6	7.2	388	249	12	10	13	9	0	9	0	11	14	×/9	
	6	_	1,45	~	7,7	425	25.1	20	14	19	16	23	19	17	19	16	-	
	7																-	
	8																~	
							Total=	3%	29	30	30	40	34	24	34	34	X/13	Mean Neonates/Female := 31.1/

CI	ient:		LW	A - Call	eguas C	reek		Ma	iterial:		7	0-GAT	ſΈ			Test	Date:	11/30/18
Proje	ect#:	296	533	-	Γest ID:	807	16								Co	ntrol \	Water:	Mod EPAMH
	Day	_		D.O.		Cond.	Temp				_	_	eprodu					SIGN-OFF
	-	New	Old	New	Old	(µS/cm)	(°C)	A	В	С	D	Е	F	G	Н	I	J	
	0	8,10	40	9.2		406	24.9	0	0	0	0	0	0	0	0	0	0	
	1	7.76	17	9.2	315 1111	407	250	0	0	0	0	0	0	0	0	0	0	
	2	774	771	8-3	8.2	403	25.2	0	0	0	0	0	0	0	0	0	0	
	3	7.74	7.84	8.9	3.2	409	24.7	6	5	5	4	6	5	5	5	6	S	
20%	4	7.72		9.1	8.1	406	24.0	0	0	0	0	11	0	0	0	0	0	
Ω.	5	7.73	7.67	8-6	7.1	409	25.0	10	3	0	13	0	13	12	13	0	10	
	6	~	7.64		7.7	436	240		15	15	15	20	17	110	19	13	14	
	7						-	-				70		10			-1	
	8										^							
							Total=	30	73	21	49	37	35	12	27	19	29	Mean Neonates/Female = 30-2-27
	Day	p	Н	D.	О.	Cond.			IV J	-1/		Repro	duction	,,,	J 1	1	V	Mean reconates/remaie = 3000
		New	Old	New	Old	(µS/cm)		Α	В	С	D	Е	F	G	Н	I	J	
	0	7.97		8.9		454	25.0	0	0	0	0	0	0	0	0	0	0	
	1	7.67	7.78	10.1	7.2	453	24.9	0	0	0	0	0	0	0	0	0	0	
	2	7.70	7.77	8-6	8.0	454	25.0	0	0	0	0	0	0	0	0	0	0	
	3					458		5	6	le	10	6	5	le	5	4	5	
100%	4			9.6				0	0	0	0	11	0	15	0	0	0	
1 1 1	5		7.64		67	455			13	10	13	0	10	0	il	9	9	
	6	_	1.70				245		16	13	16	19	11	15	14	15	10	
	7						7 13	1 1	10	1)	10	U	•	10	11	10	10	
	8																	
							Tatal	20	25	20	25	20		21.1			0.11	Mean Neonates/Female = 30.4

CETIS Summary Report

Report Date:

10 Dec-18 15:10 (p 1 of 2)

Test Code:

80717 | 19-0843-0078

							16	st Code.		00/1/ 19	-0045-	007
Ceriodaphnia	a Survival and R	eproduction	Test							Pacifi	c EcoF	Risk
Batch ID:	06-1789-8083	Test	Tvpe:	Reproduction-S	Survival (7d)		ıA.	nalyst:	Wesley Cram			
Start Date:	30 Nov-18 14:0			EPA-821-R-02-				luent:	Laboratory Wat	er		
Ending Date:	: 06 Dec-18 14:0			Ceriodaphnia d				ine:	Not Applicable	0.		
Duration:	6d Oh	Sour		In-House Cultu				ge:	1			
Sample ID:	15-8235-7761	Code	9:	70-BELT-208				ient:	Larry Walker As	ssociates		
	: 29 Nov-18 09:1			Ambient Water			Pr	oject:	29633			
	: 30 Nov-18 09:0			Calleguas Cree	ek							
Sample Age:	29h (0.8 °C)	Stati	on:	BELT								
Comments:												
Stats exclude	reproductive outl	ier: 12.5-H		-								
Multiple Com	parison Summa	ıry										
Analysis ID	Endpoint			arison Method			NOEL	LOE	L TOEL	TU	PMS	D.
	Reproduction		Bonfer	roni Adj t Test			100	> 100	n/a	1	14.09	%
07-9285-6628	Survival		Fisher	Exact/Bonferro	ni-Holm Tes	t	100	> 100	n/a	1	n/a	
Point Estimat	te Summary											
Analysis ID	Endpoint		Point I	Estimate Metho	od		Level	%	95% LCL	95% UCL	TU	J
11-6333-2203	Reproduction		Linear	Interpolation (IC	CPIN)		IC5	>100	n/a	n/a	<1	
							IC10	>100	n/a	n/a	<1	
							IC15	>100	n/a	n/a	<1	
							IC20	>100	n/a	n/a	<1	
							IC25	>100	n/a	n/a	<1	
							IC40	>100	n/a	n/a	<1	
							IC50	>100	n/a	n/a	<1	
Reproduction	n Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E	rr Std Dev	CV%	%Effe	ect
0	LW	10	30.8	27.8	33.8	22	36	1.31	4.13	13.41%	0.00%	%
6.25		10	35	33.2	36.8	31	38	0.789	2.49	7.13%	-13.6	4%
12.5		9	36.4	34.3	38.6	32	40	0.915	2.74	7.53%	-18.3	3%
25		10	35.1	31.2	39	23	42	1.71	5.4	15.40%	-13.9	6%
50		10	37.3	35.6	39	33	41	0.761	2.41	6.45%	-21.10	0%
100		10	37.8	33.9	41.7	29	45	1.74	5.49	14.53%	-22.73	3%
Survival Sum	mary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E	rr Std Dev	CV%	%Effe	ect
0	LW	10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%	6
6.25			1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%	6
		40	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%	
6.25 12.5				1.000							,	
12.5 25		10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%	
12.5		10							0.000			%

CETIS Summary Report

Report Date: Test Code: 10 Dec-18 15:10 (p 2 of 2) 80717 | 19-0843-0078

								t Code:		80717 1	9-0843-007
Ceriodaphnia	Survival and	Reproducti	on Test							Paci	fic EcoRisk
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	22	26	33	30	31	36	33	34	30	33
6.25		37	38	37	33	38	34	33	33	36	31
12.5		37	40	39	33	35	37	36		39	32
25		33	37	36	33	39	23	31	38	39	42
50		38	39	39	33	38	37	38	34	41	36
100		31	45	40	36	29	45	37	37	43	35
Survival Detai	1										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Survival Binor	mials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Analyst: W QA: APF

100

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

Report Date:

10 Dec-18 15:10 (p 1 of 1)

Test Code:

80717 | 19-0843-0078

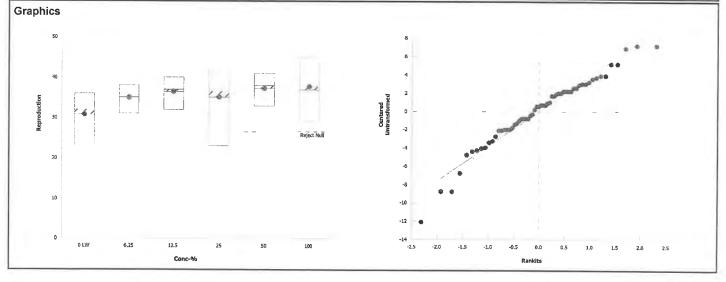
•	t: Reproduction : Parametric-Multiple Comparison		TIS Version		1.9.2	
Alt Hyp		NOEL	LOEL	TOEL	TU	PMSD
C > T		100	> 100	n/a	1	14.00%
	c-18 15:10 Analysis:	c-18 15:10 Analysis: Parametric-Multiple Comparison Alt Hyp	c-18 15:10 Analysis: Parametric-Multiple Comparison Off Alt Hyp NOEL	c-18 15:10 Analysis: Parametric-Multiple Comparison Official Results Alt Hyp NOEL LOEL	c-18 15:10 Analysis: Parametric-Multiple Comparison Official Results: Yes Alt Hyp NOEL LOEL TOEL	c-18 15:10 Analysis: Parametric-Multiple Comparison Official Results: Yes Alt Hyp NOEL LOEL TOEL TU

Bonferroni Adj t T	est						
Control vs	Conc-%	Test Stat	Critical	MSD	DF P-Type	P-Value	Decision(a:5%)
Lab Water Contr	6.25	-2.34	2.4	4.31	18 CDF	1.0000	Non-Significant Effect
	12.5	-3.06	2.4	4.43	17 CDF	1.0000	Non-Significant Effect
	25	-2.39	2.4	4.31	18 CDF	1.0000	Non-Significant Effect
	50	-3.62	2.4	4.31	18 CDF	1.0000	Non-Significant Effect
<u> </u>	100	-3.89	2.4	4.31	18 CDF	1.0000	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	317.612	63.5223	5	3.93	0.0042	Significant Effect
Error	856.422	16.1589	53			
Total	1174.03	#	58	<u>-</u>		

Distributional 1	Tests					
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Bartlett Equality of Variance Test	12	15.1	0.0352	Equal Variances	
Distribution	Shapiro-Wilk W Normality Test	0.963	0.945	0.0734	Normal Distribution	

Reproduction Summary														
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect			
0	LW	10	30.8	27.8	33.8	32	22	36	1.31	13.41%	0.00%			
6.25		10	35	33.2	36.8	35	31	38	0.789	7.13%	-13.64%			
12.5		9	36.4	34.3	38.6	37	32	40	0.915	7.53%	-18.33%			
25		10	35.1	31.2	39	36.5	23	42	1.71	15.40%	-13.96%			
50		10	37.3	35.6	39	38	33	41	0.761	6.45%	-21.10%			
100		10	37.8	33.9	41.7	37	29	45	1.74	14.53%	-22.73%			



Report Date:

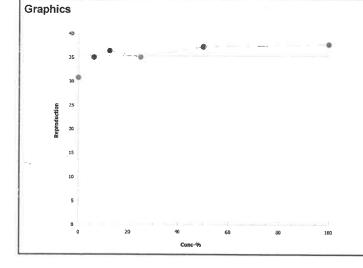
10 Dec-18 15:10 (p 1 of 1)

Test Code:

80717 | 19-0843-0078

Ceriod	aphnia	Survival and Re	eproductio	n Test					Pacific EcoRisk					
Analys	is ID:	11-6333-2203	End	point:	Reproduction		CETIS Version:	CETISv1.9.2						
Analyz	ed:	10 Dec-18 15:1	0 Ana	lysis:	Linear Interpola	tion (ICPIN)	Official Results:	Official Results: Yes						
Linear	Interpo	lation Options												
X Trans	sform	Y Transform	See	d	Resamples	Exp 95% CL	Method							
Linear Linear			195	508	200	Yes	Two-Point Interpolation							
Point E	stimate	es												
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL								
IC5	>100	n/a	n/a	<1	n/a	n/a								
IC10	>100	n/a	n/a	<1	n/a	n/a								
IC15	>100	n/a	n/a	<1	n/a	n/a								
IC20	>100	n/a	n/a	<1	n/a	n/a								
IC25	>100	n/a	n/a	<1	n/a	n/a								
IC40	>100	n/a	n/a	<1	n/a	n/a								
IC50	>100	n/a	n/a	<1	n/a	n/a								

Reproduction		Calculated Variate										
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect			
0	LW	10	30.8	22	36	1.31	4.13	13.40%	0.0%			
6.25		10	35	31	38	0.789	2.49	7.13%	-13.6%			
12.5		9	36.4	32	40	0.915	2.74	7.53%	-18.3%			
25		10	35.1	23	42	1.71	5.4	15.40%	-14.0%			
50		10	37.3	33	41	0.761	2.41	6.45%	-21.1%			
100		10	37.8	29	45	1.74	5.49	14.50%	-22.7%			



Analyst: W QA: ARF

Report Date:

10 Dec-18 15:10 (p 1 of 1)

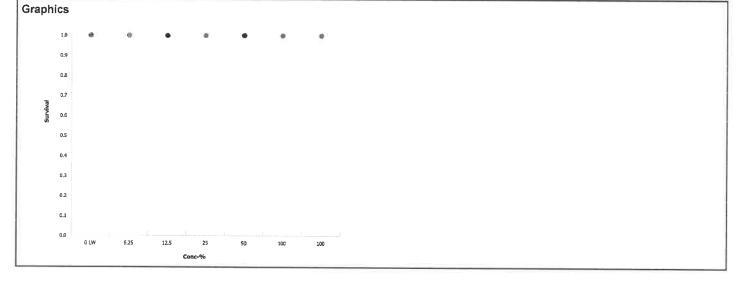
Test Code:

80717 | 19-0843-0078

Ceriodaphnia	Survival and Repro-	duction Test					Pacific EcoRisk
Analysis ID: Analyzed:	07-9285-6628 10 Dec-18 15:10	Endpoint: Analysis:	Survival STP 2xK Contingency Tables		TIS Version: ficial Results:		1.9.2
Data Transfor	m Alt	Нур		NOEL	LOEL	TOEL	TU
Untransformed	C >	Т		100	> 100	n/a	1

Control vs	Group	Test Stat	P-Type	P-Value	Decision(a:5%)	
Lab Water Contr	6.25	1.000	Exact	1.0000	Non-Significant Effect	
	12.5	1.000	Exact	1.0000	Non-Significant Effect	
	25	1.000	Exact	1.0000	Non-Significant Effect	
	50	1.000	Exact	1.0000	Non-Significant Effect	
	100	1.000	Exact	1.0000	Non-Significant Effect	

Data Summary							
Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	LW	10	0	10	1	0	0.0%
6.25		10	0	10	1	0	0.0%
12.5		10	0	10	1	0	0.0%
25		10	0	10	1	0	0.0%
50		10	0	10	1	0	0.0%
100		10	0	10	1	0	0.0%



Analyst: W QA: APF

C	lient:	nt: LWA - Calleguas Creek							terial:		70	0-BEI	Т			Test	Date:	11/30/18
Proje	ect #:	290	533		Γest ID:	807	17	Rai	ndomiz	zation:		7	15		Co	ntrol \	Water:	Mod EPAMH
	Day	рН		D.O.		Cond.	Temp					_	Reprodu					SIGN-OFF
	0	New 7.91	Old	New 7,9	Old	(μS/cm)	(°C)	A O	В	C	D	E O	F	G	Н	O	0	Date: W/30/18New WQ:347 Test Init.:7/
	1	7.90	7.88	8.0	83	350	24.3	ð	0	0	Ø	0	0	0	0	0	1	Sol'n Prepgy V Time: 140 Date: 141 New WQ: Sol Counts: 7 Sol'n Prep: Old WQ: AT Time 15
	2	7.81	7:73	7.5	7.6	346	24.0	0	U	0	0	0	0	0	0	0		Date: WWW W. A. Counts: 32 Sol'n Prep: A.F. Old WQ: A.F. Time: 1425
ntrol	3	7.89	7.97	85	8.2	355	24.0	6	5	6	5	5	5	4	6	6	6	Date: 12 34 New WQ: PS Counts: 1/6/ Sol'n Prep: St. Old WQ: Time: 1705
ter Coi	4	7.88	7-87	8.6	8.0	357	24.7	0	0	0	O	0	0	0	0	0	0	Date: 17411 New WQ: TA Counts: KL Sol'n Prep: GR Old WQ: GR Time: 1330
Lab Water Control	5	7-80	-	8-6	75	259	242	0	6	12	9	11	13	11	11	11	12	Date: 14/5/18 New WQ: The Counts: KL Sol'n Prep: 6 Old WQ: Time: 14/00
Ľ	6	-	7,95	-	7,6	382	24.9	16	15	15	16	15	18	18	17	13	16	Sol'n Prep: Old WQ: Time: 1408
	7	- इंटर इंटर में इंटर के		505 (616 (645)														Date: New WQ: Counts: Sol'n Prep: Old WQ: Time:
	8																	Date: Old WQ: Counts: Time:
		X X X X X X X X X X X X X X X X X X X		2			Total=	22	26	33	30	31	36	33	34	30	33	Mean Neonates/Female = 30,8
	Day	P New	H	D New	O.O.	Cond. (µS/cm)		A	В	C	Survival D	/ Repro	duction F	G	Н	I	j	Sample ID
21 24 14	0	7.89		7,9		397	24.7	0	0	0	0	0	0	0	0	0	0	51476
	1	7.89	7.89	8.1	8,3	3,57	24,5	0	6	0	0	0	0	Ð	0	0	0	51476
	2	7.77	7.76	7,7	7.3	352	24.0	Ö	0	0	0	0	0	0	0	0	0	51476
	3	7,89	8,00	8,7	8.2	362	24.0	5	5	5	6	5	5	5	6	6	6	51476
6.25%	4	7.89	785	8-8	8.0	358	24.7	0	0	0	0	0	0	Q	Q	0	0)	51476
9	5	7-80	7.73	8.5	7.4	362	21	12	11	11	11	17	10	11	14	12	13	51476
	6	4	784		7.1	393	251	20	22	21	16	20	19	17	13	18	12	-
	7		4.547.828.4															
							Total≃	37	38	37	33	38	34	33	33	360	31	Mean Neonates/Female = 35(0)

C	Client: LWA - Calleguas Creek							Ma	terial:		70	-BEL	T			Test	Date:	11130 18		
Proje	ect#:	290	533	1	Test ID:	807	17	Control Water								Water:	Mod EPAMH			
	Day	рН	011	D.O.	011	Cond. (µS/cm)	Temp (°C)			~			eprodu					SIGN-OFF		
	0	New	Old	New	Old			Α	В	С	D	E	F	G	Н	I	1			
		7.88		80	8,0	363		0	0	0		0	0	O	0	0	0			
	1	7.90	7.84	7.9	83W	356	24.4	0	0	6	ව	0	Ø	0	Ø	0	0			
	2	7.82	7.77	7.7	7.5	357	24,0	0	0	0	0	0	0	0	0	0	0			
	3	7.89	8.01	8.8	ු.ම	303	243	5	6	6	5	6	4	5	6	6	4			
12.5%	4	788	7-86	8-8	8.0	358	24.5	0	0	0	0	0	G	0	0	0	Ò			
12	5			8.5	7.5		25.1	17	12	12	12	11	10	10	1	11	11			
	6	_	7.80		7.4		25.3	21	22	21	16	18	23	21	18	22	17			
	7													Ì						
	8																			
							Total=	37	40	39	33	35	37	36	25	39	32	Mean Neonates/Female = 35.3		
	Day	p	Н	D.	O.	Cond.					urvival					7 1				
		New	Old	New	Old	(µS/cm)			В	С	D	Е	F	G	Н	I	J			
	0	7.86		8.1		351	24,7	0	0	0	0	0	0	0	0	0	0			
	1	7.88	7.82	7.9	7.7	354	24.3	0	0	Ø	6	0	9	0	0	0	0			
	2	7.82	7.76	7.8	7,3	355	24.1	0	0	0	0	0	0	0	O	0	0			
	3	7,85	903	8,4	8.4	360	242	5	5	5	5	6	4	5	6	6	6			
25%	4		7-85		8.0		24.7	0	0	0	0	0	O	0	0	0	O			
12	5	7.75		8-6			25.1	/O	12	12	10	11	0	6	10	13	15			
	6	_	74	ر			25.2	18	20	19	18	22	19	20	22	20	21			
	7		1.00		()	314				-	. 0			20	44					
	8			A CANANA A C																
							Total=	33	37	360	33	39	23	31	38	39	42	Mean Neonates/Female = 35.\		

C	Client: LWA - Calleguas Creek							Ma	terial:		70	0-BEL	T			Test	Date:	11/30/18
Proje	ect #:	290	533	7	Γest ID:	807	17								Со	ntrol \	Water:	Mod EPAMH
	Day	pН	OU	D.O.	OU	Cond. (µS/cm)	Temp (°C)		D	С		vival / R			11	T	J	SIGN-OFF
	0	New	Old	New	Old		24.6	A 0	В	0	D	E	F	G	Н	I	0	
	1	7,84		8.7	- (349		0	0	0	0		0		0	0	<u>ි</u>	
	2	7.83	-	9.1	7,6							0		O				
		7.77	-	-	7,4	349	24.1	0	0	0	0	0	0	0	5	0	0	
	3	7.79			8,3	361	243	5	6	6	6	5	5	6		6	5	
20%	4	7-77	7-84	9.1	8.1	347	24,5	0	0	0	0	0	0	0	0	0	0	
	5	7.68	7.74	8.6	7.5	351	25.2	12	12	11	10	13	11	10	12	14	13	
	6	_	779	_	7.6	369	24,9	21	21	22	17	20	21	22	17	21	18	
	7																	
	8																	
							Total=	38	39	39	33	38	37	38	34	41	36	Mean Neonates/Female = 37.3
	Day	p New	H Old	D. New	.O.	Cond. (µS/cm)		A	В	C	urvival D	/ Repro	oduction F	G	Н	1	J	
	0						247	6	Α.	Ó	0	O	0	0	0	0	0	
	1	7.78				-	-	0	^						-	-5	-	
	2	7.75		8.7		341			0	0	9	0	0	0	0	0	0	
		7.65		8.7		340		0	0	0	0	0	0	0	0	0	0	
	3			9.3	(4)	362		7	6	7	5	6	7	6	6	7	6	
100%	4	7-61	7-84	9.1	8-1	332	24.4	0	0	0	0	0	0	0	9	0	0	
-	5	7.53	7.72	8-8	7.4	339	14.4	0	13	11	12	0	14	12	13	13	10	
	6	_	7.77	-	7.8	364	245	24	26	22	19	23	24	19	18	23	19	
	7							1										
	8																	
							Total=	31	45	40	36	29	45	37	37	43	35	Mean Neonates/Female = 37.8

Appendix C

Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of the Calleguas Creek Ambient Waters to *Ceriodaphnia dubia*:

Data Analyses Including Statistical Outliers

Report Date:

08 Dec-18 16:28 (p 1 of 2)

Test Code:

80713 | 09-4943-1982

· ·	Survival and F	Reproducti	on Test							Pacifi	c EcoRisk
Start Date: Ending Date:	07-4716-3371 30 Nov-18 13:0 06 Dec-18 15:0 6d 2h	3 Pr 0 Sp	est Type: rotocol: pecies: purce:	Reproduction-S EPA-821-R-02- Ceriodaphnia d In-House Cultu	-013 (2002) Iubia		Dil	alyst: luent: ine: e:	Kristin Robertso Laboratory Wate Not Applicable 1		
Sample Date:	07-6720-5968 29 Nov-18 08:4 30 Nov-18 09:0 28h (0.4°C)	5 M a	ode: aterial: ource: ation:	70-UNIV-029 Ambient Water Calleguas Cree UNIV				ent: oject:	Larry Walker As 29633	sociates	
Comments: Statistice include	ding reproductiv	e outliers 1	2.5G and	100D							
Multiple Comp	parison Summa	ary									
Analysis ID	Endpoint		Comp	arison Method			NOEL	LOEL	TOEL	TU	PMSD /
17-8905-8656	Reproduction		Wilco	con/Bonferroni A	\dj Test		100	> 100	n/a	1	30.7%
18-4465-5826	Survival		Fisher	Exact/Bonferro	ni-Holm Tes	t	100	> 100	n/a	1	n/a
Point Estimate	Summary										
	Endpoint		Point	Estimate Metho	nd		Level	%	95% LCL	95% UCL	TU ✓
03-7683-5715				Interpolation (IC			IC5	46.6	19.5	n/a	TU ✓ 2.144
			Linoui	into polation (it	31 111)		IC10	>100	n/a	n/a	<1 <1
							IC15	>100	n/a	n/a	<1
							IC20	>100	n/a	n/a	<1
							IC25	>100	n/a	n/a	<1
							IC40	>100	n/a		•
							IC50	>100	n/a	n/a n/a	<1 <1
Reproduction	Summary			91							
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	May	Std E	rr Std Dev	CV%	0.0
			TO COLL	00 /0 EOE	00 /0 OOL				ii Stu Dev		
0	LW	10	24.3	21 7	26.9		Max 30	1 14	3.50		%Effect
0 6.25	LW	10 10	24.3 28.6	21.7 25.8	26.9 31.4	17	30	1.14	3.59	14.78%	0.00%
6.25	ŁW	10	28.6	25.8	31.4	17 23	30 36	1.25	3.95	14.78% 13.81%	0.00% -17.70%
6.25 12.5	LW	10 9	28.6 30.2	25.8 26.6	31.4 33.8	17 23 19	30 36 34	1.25 1.57	3.95 4.71	14.78% 13.81% 15.59%	0.00% -17.70% -24.37%
6.25 12.5 25	LW	10 9 10	28.6 30.2 28.1	25.8 26.6 23.9	31.4 33.8 32.3	17 23 19 16	30 36 34 34	1.25 1.57 1.84	3.95 4.71 5.82	14.78% 13.81% 15.59% 20.71%	0.00% -17.70% -24.37% -15.64%
6.25 12.5	LW	10 9	28.6 30.2 28.1 24.3	25.8 26.6 23.9 16.6	31.4 33.8 32.3 32	17 23 19 16 3	30 36 34 34 34	1.25 1.57 1.84 3.42	3.95 4.71 5.82 10.8	14.78% 13.81% 15.59% 20.71% 44.49%	0.00% -17.70% -24.37% -15.64% 0.00%
6.25 12.5 25 50 100		10 9 10 10	28.6 30.2 28.1	25.8 26.6 23.9	31.4 33.8 32.3	17 23 19 16	30 36 34 34	1.25 1.57 1.84	3.95 4.71 5.82	14.78% 13.81% 15.59% 20.71%	0.00% -17.70% -24.37% -15.64%
6.25 12.5 25 50 100 Survival Summ	nary	10 9 10 10	28.6 30.2 28.1 24.3 28.1	25.8 26.6 23.9 16.6 21.4	31.4 33.8 32.3 32 34.8	17 23 19 16 3	30 36 34 34 34 36	1.25 1.57 1.84 3.42 2.94	3.95 4.71 5.82 10.8 9.3	14.78% 13.81% 15.59% 20.71% 44.49% 33.11%	0.00% -17.70% -24.37% -15.64% 0.00% -15.64%
6.25 12.5 25 50 100	nary Code	10 9 10 10 10	28.6 30.2 28.1 24.3 28.1	25.8 26.6 23.9 16.6 21.4	31.4 33.8 32.3 32 34.8	17 23 19 16 3 3	30 36 34 34 34 36	1.25 1.57 1.84 3.42 2.94	3.95 4.71 5.82 10.8 9.3	14.78% 13.81% 15.59% 20.71% 44.49% 33.11%	0.00% -17.70% -24.37% -15.64% 0.00% -15.64%
6.25 12.5 25 50 100 Survival Summ Conc-%	nary	10 9 10 10 10 10	28.6 30.2 28.1 24.3 28.1 Mean	25.8 26.6 23.9 16.6 21.4 95% LCL	31.4 33.8 32.3 32 34.8 95% UCL 1.000	17 23 19 16 3 3 Min	30 36 34 34 34 36 Max	1.25 1.57 1.84 3.42 2.94 Std E	3.95 4.71 5.82 10.8 9.3 rr Std Dev 0.000	14.78% 13.81% 15.59% 20.71% 44.49% 33.11% CV% 0.00%	0.00% -17.70% -24.37% -15.64% 0.00% -15.64% %Effect 0.00%
6.25 12.5 25 50 100 Survival Summ Conc-% 0 6.25	nary Code	10 9 10 10 10 10 Count 10	28.6 30.2 28.1 24.3 28.1 Mean 1.000 1.000	25.8 26.6 23.9 16.6 21.4 95% LCL 1.000 1.000	31.4 33.8 32.3 32 34.8 95% UCL 1.000 1.000	17 23 19 16 3 3 3 Min 1.000 1.000	30 36 34 34 34 36 Max 1.000 1.000	1.25 1.57 1.84 3.42 2.94 Std E 0.000 0.000	3.95 4.71 5.82 10.8 9.3 rr Std Dev 0.000 0.000	14.78% 13.81% 15.59% 20.71% 44.49% 33.11% CV% 0.00% 0.00%	0.00% -17.70% -24.37% -15.64% 0.00% -15.64% %Effect 0.00% 0.00%
6.25 12.5 25 50 100 Survival Summ Conc-% 0 6.25 12.5	nary Code	10 9 10 10 10 10 Count 10 10 9	28.6 30.2 28.1 24.3 28.1 Mean 1.000 1.000	25.8 26.6 23.9 16.6 21.4 95% LCL 1.000 1.000 1.000	31.4 33.8 32.3 32 34.8 95% UCL 1.000 1.000	17 23 19 16 3 3 Min 1.000 1.000	30 36 34 34 34 36 Max 1.000 1.000	1.25 1.57 1.84 3.42 2.94 Std E 0.000 0.000 0.000	3.95 4.71 5.82 10.8 9.3 rr Std Dev 0.000 0.000 0.000	14.78% 13.81% 15.59% 20.71% 44.49% 33.11% CV% 0.00% 0.00% 0.00%	0.00% -17.70% -24.37% -15.64% 0.00% -15.64% %Effect 0.00% 0.00% 0.00%
6.25 12.5 25 50 100 Survival Summ Conc-% 0 6.25	nary Code	10 9 10 10 10 10 Count 10	28.6 30.2 28.1 24.3 28.1 Mean 1.000 1.000	25.8 26.6 23.9 16.6 21.4 95% LCL 1.000 1.000	31.4 33.8 32.3 32 34.8 95% UCL 1.000 1.000	17 23 19 16 3 3 3 Min 1.000 1.000	30 36 34 34 34 36 Max 1.000 1.000	1.25 1.57 1.84 3.42 2.94 Std E 0.000 0.000	3.95 4.71 5.82 10.8 9.3 rr Std Dev 0.000 0.000	14.78% 13.81% 15.59% 20.71% 44.49% 33.11% CV% 0.00% 0.00%	0.00% -17.70% -24.37% -15.64% 0.00% -15.64% %Effect 0.00% 0.00%

Analyst: AR QA: AR

Report Date: Test Code: 08 Dec-18 16:28 (p 2 of 2) 80713 | 09-4943-1982

							100	t oout.		007 10 10	0-7070-100
Ceriodaphnia	Survival and	Reproducti	on Test							Paci	fic EcoRisi
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	22	21	30	17	27	25	26	25	24	26
6.25		27	23	28	30	33	24	29	30	26	36
12.5		34	30	34	31	32	34	19	28	30	
25		25	34	33	31	32	33	29	26	16	22
50		32	28	14	12	33	29	3	34	25	33
100		33	29	29	3	33	31	30	25	32	36
Survival Detai	l										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000	1.000
50		1.000	1.000	0.000	1.000	1.000	1.000	0.000	1.000	1.000	1.000
100		1.000	1.000	1.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000
Survival Binor	nials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	0/1	1/1
50		1/1	1/1	0/1	1/1	1/1	1/1	0/1	1/1	1/1	1/1
100		1/1	1/1	1/1	0/1	1/1	1/1	1/1	1/1	1/1	1/1

Analyst: Ana

Report Date: Test Code: 08 Dec-18 16:25 (p 1 of 1)

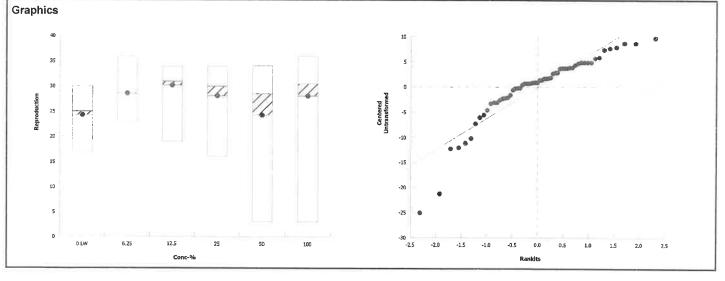
80713 | 09-4943-1982

Ceriodaphnia	Survival and Repro	duction Test								F	Pacific EcoRisk
Analysis ID: Analyzed:	17-8905-8656 08 Dec-18 16:24		oroduction nparametric	c-Multiple	e Con	nparison		'IS Versior cial Result		1.9.2	
Data Transform	n Alt	Нур					NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C >	Т					100	> 100	n/a	1	30.74%
Wilcoxon/Bon	ferroni Adj Test										
Control v	s Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decisio	n(α:5%)		
Lab Water Cont	tr 6.25	134	n/a	4	18	Exact	1.0000	Non-Sign	nificant Effec	t	
	12.5	124	n/a	1	17	Exact	1.0000	Non-Sign	nificant Effec	t	
	25	128	n/a	3	18	Exact	1.0000	Non-Sigi	nificant Effec	t	
	50	118	n/a	1	18	Exact	1.0000	Non-Sigi	nificant Effec	t	
	100	138	n/a	2	18	Exact	1.0000	Non-Sign	nificant Effec	t	
ANOVA Table									10		
Source	Sum Squares	Mean Squ	are	DF		F Stat	P-Value	Decisio	n(α:5%)		
D /	202.42										

AITOTA TUDIC						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	286.18	57.236	5	1.18	0.3312	Non-Significant Effect
Error	2569.96	48.4897	53			-
Total	2856.14		58			

Distributional Tes	ts				
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	17.7	15.1	0.0034	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.866	0.945	1.1E-05	Non-Normal Distribution

Reproduction	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	10	24.3	21.7	26.9	25	17	30	1.14	14.78%	0.00%
6.25		10	28.6	25.8	31.4	28.5	23	36	1.25	13.81%	-17.70%
12.5		9	30.2	26.6	33.8	31	19	34	1.57	15.59%	-24.37%
25		10	28.1	23.9	32.3	30	16	34	1.84	20.71%	-15.64%
50		10	24.3	16.6	32	28.5	3	34	3.42	44.49%	0.00%
100		10	28.1	21.4	34.8	30.5	3	36	2.94	33.11%	-15.64%



Analyst: 19 QA: AVE

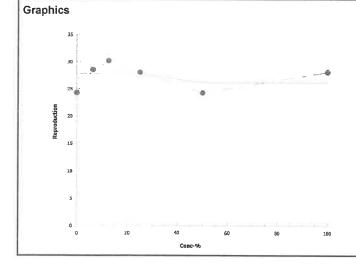
Report Date:

08 Dec-18 16:25 (p 1 of 1)

Test Code: 80713 | 09-4943-1982

										10 100 1010 1002
Cerioda	aphnia	Survival and Re	eproductio	n Test						Pacific EcoRisk
Analysi	Analysis ID: 03-7683-5715 Endpoint				Reproduction	1		CETIS Version:	CETISv1.9.2	
Analyz	ed:	08 Dec-18 16:2	24 An	alysis:	Linear Interp	olation (ICPIN)		Official Results:	Yes	
Linear	Interpo	lation Options								
X Trans	sform	Y Transform	Se	ed	Resamples	Exp 95% CL	Method			
Linear			200	Yes	Two-Point	Interpolation				
Point E	stimate	es								
Level	%	95% LCL	95% UCI	. TU	95% LC	L 95% UCL				
IC5	46.6	19.5	n/a	2.144	n/a	5.138				
IC10	>100	n/a	n/a	<1	n/a	n/a				
IC15	>100	n/a	n/a	<1	n/a	n/a				
IC20	>100	n/a	n/a	<1	n/a	n/a				
IC25	>100	n/a	n/a	<1	n/a	n/a				
IC40	>100	n/a	n/a	<1	n/a	n/a				
IC50	>100	n/a	n/a	<1	n/a	n/a				

Reproduction	Summary		Calculated Variate							
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	
0	LW	10	24.3	17	30	1.14	3.59	14.80%	0.0%	
6.25		10	28.6	23	36	1.25	3.95	13.80%	-17.7%	
12.5		9	30.2	19	34	1.57	4.71	15.60%	-24.4%	
25		10	28.1	16	34	1.84	5.82	20.70%	-15.6%	
50		10	24.3	3	34	3.42	10.8	44.50%	0.0%	
100		10	28.1	3	36	2.94	9.3	33.10%	-15.6%	



Analyst: M QA: AFF

Fisher Exact/Bonferroni-Holm Test

9

8

9

1

2

1

10

10

10

25

50

100

Report Date:

08 Dec-18 16:25 (p 1 of 1)

Test Code:

80713 | 09-4943-1982

Ceriodaphnia	Survival and Reprod	duction Test					1	Pacific EcoRisk
Analysis ID: Analyzed:	18-4465-5826 08 Dec-18 16:18	Endpoint: Analysis:	Survival STP 2xK Contingency Tables		TIS Version: icial Results:		1.9.2	
Data Transfor	m Alt	Нур		NOEL	LOEL	TOEL	TU	
Untransformed	l C>	Т		100	> 100	n/a	1	

Control	vs	Group		Test Stat	P-Type	P-Value	Decision	(α:5%)
Lab Water C	ontr	6.25		1.000	Exact	1.0000	Non-Sign	ificant Effect
		12.5		1.000	Exact	1.0000	Non-Signi	ificant Effect
		25		0.500	Exact	1.0000	Non-Signi	ificant Effect
		50		0.237	Exact	1.0000	Non-Signi	ificant Effect
		100		0.500	Exact	1.0000	Non-Signi	ificant Effect
Data Summ	агу							
Conc-%		Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0		LW	10	0	10	1	0 .	0.0%
6.25			10	0	10	1	0	0.0%
			. •				_	0.0.0

0.1

0.2

0.1

10.0%

20.0%

10.0%

0.9

0.8

0.9

phics										
1.0	•	•								
0.9							•			
8.0					•					
0.7										
O.6										
0.5										
0.4										
0.3										
0.2										
0.1										
0.0	0 LW	6.25	12.5	25	50	100	100			
				onc-%						

Analyst: M QA: AV

Report Date:

10 Dec-18 13:53 (p 1 of 2)

Test Code:

80714 | 13-4953-7412

Ceriodaphnia	a Survival and F	eproduct	on Test							Pacific	c EcoR	isk
Batch ID: Start Date: Ending Date: Duration:	00-4779-8765 30 Nov-18 13:3 06 Dec-18 16:1 6d 3h	7 Pı 8 Sı	est Type: rotocol: pecies: purce:	Reproduction-S EPA-821-R-02- Ceriodaphnia d In-House Cultu	013 (2002) ubia		Dil	alyst: uent: ine: e:	Wesley Cram Laboratory Water Not Applicable 1			
	04-7189-8807 : 29 Nov-18 11:4 : 30 Nov-18 09:0 26h (0.6°C)	0 M 3 So	ode: aterial: ource: ation:	70-ADOLF-045 Ambient Water Calleguas Cree ADOLF				ent: oject:	Larry Walker As 29633	sociates		
Comments: Stats including	g reproductive ou	tlier: 12.5-	D									
Multiple Com	parison Summa	агу										
Analysis ID	Endpoint		Comp	arison Method			NOEL	LOEL	. TOEL	TU	PMSE	/
00-6722-0007	Reproduction		Steel	Many-One Rank	Sum Test		100	> 100	n/a	1	20.9%	5
04-7607-6331	Survival		Fisher	Exact/Bonferro	ni-Holm Tes	t	100	> 100	n/a	1	n/a	
Point Estimat	te Summary											
Analysis ID	Endpoint		Point	Estimate Metho	od		Level	%	95% LCL	95% UCL	TU	1
11-3306-1759	Reproduction		Linear	Interpolation (IC	CPIN)		IC5	59	12.4	n/a	1.695	
							IC10	80.2	51.2	n/a	1.247	
							IC15	>100	n/a	n/a	<1	
							IC20	>100	n/a	n/a	<1	
							IC25	>100	n/a	n/a	<1	
							IC40	>100	n/a	n/a	<1	
							IC50	>100	n/a	n/a	<1	
Reproduction	n Summary											T
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E	rr Std Dev	CV%	%Effe	ct
0	LW	10	30.5	28	33	25	35	1.11	3.5	11.49%	0.00%	
6.25		10	35.1	33.7	36.5	32	38	0.605	1.91	5.45%	-15.08	%
12.5		10	32.5	27.8	37.2	17	41	2.08	6.57	20.22%	-6.56%	6
25		10	34.1	30	38.2	22	43	1.82	5.74	16.84%	-11.80	%
50		10	32.1	30.1	34.1	27	36	0.9	2.85	8.87%	-5.25%	6
100		10	28.2	19.9	36.5	0	39	3.65	11.5	40.94%	7.54%	
Survival Sum	mary											
	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E	rr Std Dev	CV%	%Effe	ct
				4 000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%	
0	LW	10	1.000	1.000						0.0070		
0 6.25		10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%	
0 6.25 12.5		10 10	1.000 0.900						0.000			
0 6.25 12.5 25		10 10 10	1.000 0.900 1.000	1.000 0.674 1.000	1.000 1.000 1.000	1.000 0.000 1.000	1.000	0.000	0.000 0.316	0.00%	0.00%	%
Conc-% 0 6.25 12.5 25 50 100		10 10	1.000 0.900	1.000 0.674	1.000 1.000	1.000 0.000	1.000 1.000	0.000 0.100	0.000 0.316 0.000	0.00% 35.14%	0.00%	%

Analyst: Le QA: AFF

Report Date: Test Code: 10 Dec-18 13:53 (p 2 of 2) 80714 | 13-4953-7412

							103	t Coue.		007 14 1	3-4855-741
Ceriodaphnia	Survival and	Reproduction	on Test							Pacif	fic EcoRisk
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	33	29	35	30	34	26	31	34	25	28
6.25		37	32	34	35	38	37	35	33	34	36
12.5		37	27	31	17	33	35	34	41	34	36
25		33	34	30	35	38	36	39	43	31	22
50		32	29	31	33	36	31	32	27	34	36
100		17	29	35	39	29	31	32	35	35	0
Survival Detail	l										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000
Survival Binor	nials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	0/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	0/1

Analyst: Le QA: APF

Report Date:

10 Dec-18 13:52 (p 1 of 1)

Test Code: 80714 | 13-4953-7412

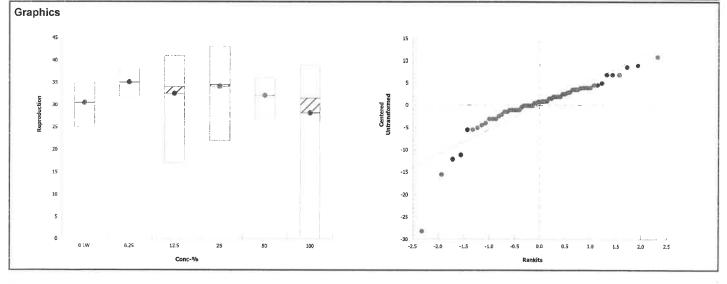
Ceriodaphnia	Survival and Repro	duction Test						Pacific EcoR
Analysis ID: Analyzed:	00-6722-0007 10 Dec-18 13:52		Reproduction Nonparametric-Control vs Treatments		TIS Version: ficial Results:		1.9.2	
Data Transfor	rm Alt	Нур		NOEL	LOEL	TOEL	TU	J PMSI
Untransformed	d C:	> T		100	> 100	n/a	1	20.94

Steel Many-One	Steel Many-One Rank Sum Test											
Control vs	Conc-%	Test Stat	Critical	Ties	DF P-Type	P-Value	Decision(α:5%)					
Lab Water Contr	6.25	142	75	3	18 Asymp	1.0000	Non-Significant Effect					
	12.5	124	75	4	18 Asymp	0.9970	Non-Significant Effect					
	25	129	75	5	18 Asymp	0.9992	Non-Significant Effect					
	50	118	75	4	18 Asymp	0.9843	Non-Significant Effect					
	100	112	75	3	18 Asymp	0.9455	Non-Significant Effect					

ANOVA Table							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	309.283	61.8567	5	1.59	0.1787	Non-Significant Effect	
Error	2101.3	38.913	54				
Total	2410.58		59	/ LINEAL			

Distributional 1	Tests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variances	Bartlett Equality of Variance Test	33.8	15.1	2.7E-06	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.834	0.946	1.1E-06	Non-Normal Distribution

Reproduction	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	10	30.5	28	33	30.5	25	35	1.11	11.49%	0.00%
6.25		10	35.1	33.7	36.5	35	32	38	0.605	5.45%	-15.08%
12.5		10	32.5	27.8	37.2	34	17	41	2.08	20.22%	-6.56%
25		10	34.1	30	38.2	34.5	22	43	1.82	16.84%	-11.80%
50		10	32.1	30.1	34.1	32	27	36	0.9	8.87%	-5.25%
100		10	28.2	19.9	36.5	31.5	0	39	3.65	40.94%	7.54%



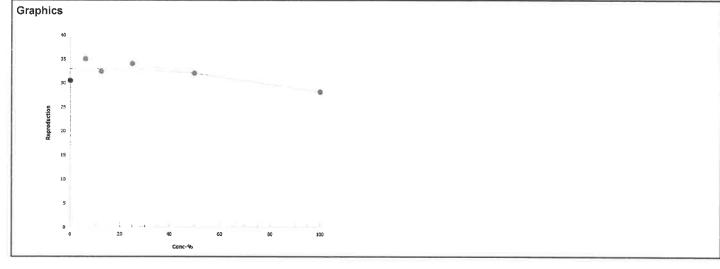
Report Date:

10 Dec-18 13:52 (p 1 of 1)

Test Code: 80714 | 13-4953-7412

Ceriod	aphnia	Survival and Re	eproducti	on Test					Pacific EcoRisk
Analys		11-3306-1759		dpoint:	Reproduction	-1' /IODIN	CETIS Version:	CETISv1.9.2	
Analyz	ed:	10 Dec-18 13:5	2 Ar	nalysis:	Linear Interpola	ation (ICPIN)	Official Results	: Yes	
Linear	Interpo	lation Options							
X Trans	sform	Y Transform	se Se	ed	Resamples	Exp 95% CL	Method		
Linear		Linear	93	5142	200	Yes	Two-Point Interpolation		
Point E	stimate	es							
Level	%	95% LCL	95% UC	L TU	95% LCL	95% UCL			
IC5	59	12.4	n/a	1.695	n/a	8.059			
IC10	80.2	51.2	n/a	1.247	n/a	1.951			
IC15	>100	n/a	n/a	<1	n/a	n/a			
IC20	>100	n/a	n/a	<1	n/a	n/a			
IC25	>100	n/a	n/a	<1	n/a	n/a			
IC40	>100	n/a	n/a	<1	n/a	n/a			
IC50	>100	n/a	n/a	<1	n/a	n/a			

Reproduction	Reproduction Summary			Calculated Variate						
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	
0	LW	10	30.5	25	35	1.11	3.5	11.50%	0.0%	
6.25		10	35.1	32	38	0.605	1.91	5.45%	-15.1%	
12.5		10	32.5	17	41	2.08	6.57	20.20%	-6.56%	
25		10	34.1	22	43	1.82	5.74	16.80%	-11.8%	
50		10	32.1	27	36	0.9	2.85	8.87%	-5.25%	
100		10	28.2	0	39	3.65	11.5	40.90%	7.54%	



Analyst: W QA: AFF

Report Date:

10 Dec-18 13:53 (p 1 of 1)

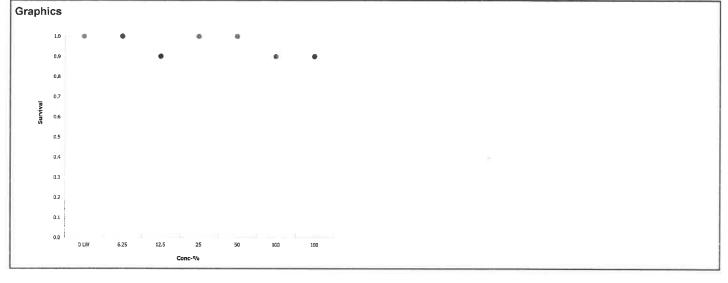
Test Code:

Code:	80714 13-4953-7412
	Pacific EcoRisk

Ceriodaphnia	Survival and Repro	duction lest					Pacific EcoRis
Analysis ID: Analyzed:	04-7607-6331 10 Dec-18 13:52	Endpoint: Analysis:	Survival STP 2xK Contingency Tables		TIS Version		1.9.2
Data Transfor	rm Alt	: Нур		NOEL	LOEL	TOEL	TU
Untransformed	d C	> T		100	> 100	n/a	1

Fisher Exact/Bonf	erroni-Holm Test					
Control vs	Group	Test Stat	P-Type	P-Value	Decision(α:5%)	
Lab Water Contr	6.25	1.000	Exact	1.0000	Non-Significant Effect	
	12.5	0.500	Exact	1.0000	Non-Significant Effect	
	25	1.000	Exact	1.0000	Non-Significant Effect	
	50	1.000	Exact	1.0000	Non-Significant Effect	
	100	0.500	Exact	1.0000	Non-Significant Effect	

Data Summary	y						
Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	LW	10	0	10	1	0	0.0%
6.25		10	0	10	1	0	0.0%
12.5		9	1	10	0.9	0.1	10.0%
25		10	0	10	1	0	0.0%
50		10	0	10	1	0	0.0%
100		9	1	10	0.9	0.1	10.0%



Analyst: W QA: AVF

Report Date: Test Code: 10 Dec-18 14:40 (p 1 of 2) 80719 | 03-4960-5947

	''
st Code:	80719 03-49

							Te	st Code:		80719 03	-4960-	594
Ceriodaphnia	Survival and f	Reproducti	on Test							Pacifi	c Ecol	Risk
Batch ID:	20-3918-7412	Te	st Type:	Reproduction-S	Survival (7d)		An	alyst:	Wesley Cram			
Start Date:	30 Nov-18 13:4	19 P r	otocol:	EPA-821-R-02	-013 (2002)			uent:	Laboratory Wat	er		
Ending Date:	06 Dec-18 15:5	53 S į	ecies:	Ceriodaphnia d	lubia		Br	ine:	Not Applicable			
Duration:	6d 2h	Sc	ource:	In-House Cultu	ire		Ag	e:	1			
Sample ID:	06-7471-6060	Co	ode:	70-WOOD-097	•		Cli	ent:	Larry Walker As	sociates		
Sample Date:	29 Nov-18 07:0	00 M :	aterial:	Ambient Water	•		Pre	oject:	29633			
Receipt Date:	30 Nov-18 09:0)3 S c	ource:	Calleguas Cree	ek							
Sample Age:	31h (1.2 °C)	St	ation:	WOOD								
Comments: Stats include r	eproductive out	ier: 50-G										
	parison Summ											-
Analysis ID	Endpoint		Comp	arison Method			NOEL	LOEI	_ TOEL	TU	PMS	D .
03-5513-0953	Reproduction		Dunne	ett Multiple Com	parison Tes	t	50	> 50	n/a	2	15.1	
08-8803-5696	Survival		Fisher	Exact/Bonferro	ni-Holm Tes	t	50	> 50	n/a	2	n/a	
Point Estimat	e Summary											
Analysis ID	Endpoint		Point	Estimate Meth	od		Level	%	95% LCL	95% UCL	TU	,
07-8559-2208	Reproduction		Linear	Interpolation (I	CPIN)		IC5	52.1	21.1	52.5	1.92	
							IC10	54.6	51.1	55	1.83	1
							IC15	57.1	53.8	57.5	1.75	
							IC20	59.7	56.5	60	1.676	3
							IC25	62.2	59.2	62.5	1.608	3
							IC40	69.7	67.4	70	1.434	1
							IC50	74.8	72.8	75	1.337	_
Reproduction	Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E		CV%	%Eff	
0	LW	10	28.9	25.2	32.6	19	36	1.62	5.11	17.68%	0.009	
6.25		10	31.8	29.3	34.3	25	36	1.1	3.49	10.97%	-10.0	
12.5		10	34.3	32.2	36.4	29	38	0.932		8.59%	-18.6	
25		10	31	26.6	35.4	20	38	1.96	6.2	20.00%	-7.27	
50		10	31.8	29.4	34.2	24	35	1.05	3.33	10.46%	-10.0	
100		10	0	0	0	0	0	0	0		100.0	00%
Survival Sumi Conc-%	•	Count	Maaa	059/ 1.01	05% 1101	B.C.		01.15	0.15			
0	Code LW	Count 10	1.000	95% LCL 1.000	95% UCL 1.000	Min 1.000	1.000	0.000		CV% 0.00%	%Eff	
6.25		10	1.000	1.000	1.000	1.000	1.000	0.000			0.009	
12.5		10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%	
25		10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.009	
50		10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%	
										0.00%	0.00%	
100		10	0.000	0.000	0.000	0.000	0.000	0.000			100.0	

Analyst: W QA: W

Report Date: Test Code: 10 Dec-18 14:40 (p 2 of 2) 80719 | 03-4960-5947

							105	t Code:		80/19 0	3-4960-594
Ceriodaphnia	Survival and	Reproducti	on Test							Pacif	fic EcoRisk
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	26	31	36	19	27	33	32	31	23	31
6.25		31	35	36	30	29	35	32	25	30	35
12.5		34	35	38	33	33	37	29	31	35	38
25		36	36	30	22	38	28	30	20	34	36
50		32	35	32	30	32	33	24	30	35	35
100		0	0	0	0	0	0	0	0	0	0
Survival Detai	I										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Survival Binor	nials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Report Date: Test Code: 10 Dec-18 14:40 (p 1 of 1)

80719 | 03-4960-5947

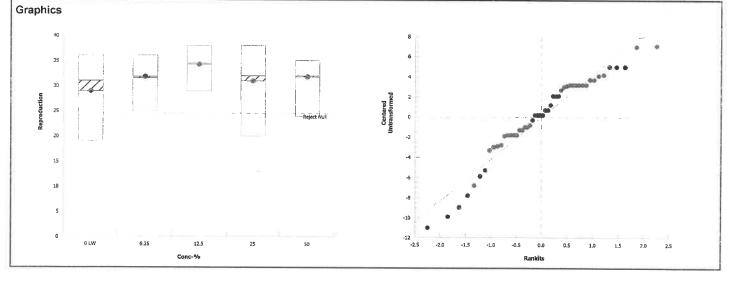
Ceriodaphnia	Survival and Repro	duction Test					1	Pacific EcoRisk
Analysis ID: Analyzed:	03-5513-0953 10 Dec-18 14:40	•	Reproduction Parametric-Control vs Treatments		TIS Version: ficial Results		/1.9.2	
Data Transfor	m Alt	Нур		NOEL	LOEL	TOEL	ΤU	PMSD
Untransformed	l C>	· T		50	> 50	n/a	2	15.11%

Dunnett M	ultiple (Comparison Test						
Control	vs	Conc-%	Test Stat	Critical	MSD	DF P-Type	P-Value	Decision(α:5%)
Lab Water	Contr	6.25	-1.48	2.22	4.37	18 CDF	0.9945	Non-Significant Effect
		12.5	-2.75	2.22	4.37	18 CDF	0.9999	Non-Significant Effect
		25	-1.07	2.22	4.37	18 ÇDF	0.9813	Non-Significant Effect
		50	-1.48	2.22	4.37	18 CDF	0.9945	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	150.12	37.53	4	1.95	0.1193	Non-Significant Effect
Error	868.2	19.2933	45			•
Total	1018.32		49			

Distributional Te	sts				
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	7.09	13.3	0.1310	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.945	0.937	0.0210	Normal Distribution

Reproduction	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	10	28.9	25.2	32.6	31	19	36	1.62	17.68%	0.00%
6.25		10	31.8	29.3	34.3	31.5	25	36	1.1	10.97%	-10.03%
12.5		10	34.3	32.2	36.4	34.5	29	38	0.932	8.59%	-18.69%
25		10	31	26.6	35.4	32	20	38	1.96	20.00%	-7.27%
50		10	31.8	29.4	34.2	32	24	35	1.05	10.46%	-10.03%



Report Date:

10 Dec-18 14:40 (p 1 of 1) 80719 | 03-4960-5947

Test Code:

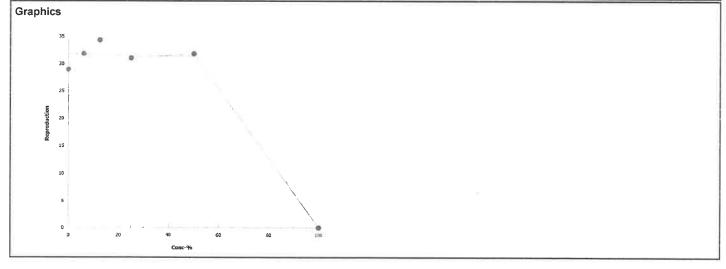
Ceriodaphnia	Survival and Repro	duction Test			Pacific EcoRisk
Analysis ID:	07-8559-2208	Endpoint:	Reproduction	CETIS Version:	CETISv1.9.2
Analyzed:	10 Dec-18 14:40	Analysis:	Linear Interpolation (ICPIN)	Official Results:	Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method	
Linear	Linear	129064	200	Yes	Two-Point Interpolation	

						The Foundation
Point E	stimates					
Level	%	95% LCL	95% UCL	TÜ	95% LCL	95% UCL
IC5	52.1	21.1	52.5	1.92	1.905	4.735
IC10	54.6	51.1	55	1.831	1.818	1.958
IC15	57.1	53.8	57.5	1.75	1.739	1.859
IC20	59.7	56.5	60	1.676	1.667	1.77
IC25	62.2	59.2	62.5	1.608	1.6	1.688
IC40	69.7	67.4	70	1.434	1.429	1.484
IC50	74.8	72.8	75	1.337	1.333	1.373

Reproduction	Summary								
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	10	28.9	19	36	1.62	5.11	17.70%	0.0%
6.25		10	31.8	25	36	1.1	3.49	11.00%	-10.0%
12.5		10	34.3	29	38	0.932	2.95	8.59%	-18.7%
25		10	31	20	38	1.96	6.2	20.00%	-7.27%
50		10	31.8	24	35	1.05	3.33	10.50%	-10.0%
100		10	0	0	0	0	0		100.0%



Report Date:

10 Dec-18 14:40 (p 1 of 1)

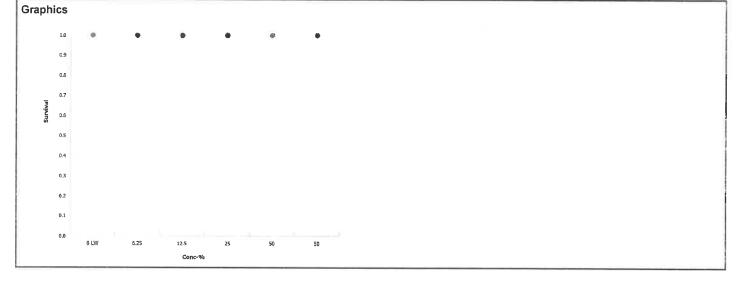
Test Code:

80719 | 03-4960-5947

Ceriodaphnia	Survival and Repro	duction Test					Pacific EcoRisk
Analysis ID: Analyzed:	08-8803-5696 10 Dec-18 14:40	Endpoint: Analysis:	Survival STP 2xK Contingency Tables		TIS Version		1.9.2
Data Transfor	m Alt	Нур		NOEL	LOEL	TOEL	TU
Untransformed	d C:	> T		50	> 50	n/a	2

Fisher Exact/Bonferroni-Holm Test											
Control vs	Group	Test Stat	P-Type	P-Value	Decision(α:5%)						
Lab Water Contr	6.25	1.000	Exact	1.0000	Non-Significant Effect						
	12.5	1.000	Exact	1.0000	Non-Significant Effect						
	25	1.000	Exact	1.0000	Non-Significant Effect						
	50	1.000	Exact	1.0000	Non-Significant Effect						

Data Summar	у						
Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	LW	10	0	10	1	0	0.0%
6.25		10	0	10	1	0	0.0%
12.5		10	0	10	1	0	0.0%
25		10	0	10	1	0	0.0%
50		10	0	10	1	0	0.0%



Report Date:

10 Dec-18 11:57 (p 1 of 2)

Test Code:

80718 | 07-0531-0198

Ceriodaphnia	Survival and F	Reproducti	on Test							Pacific	c EcoR	isk
Batch ID:	01-8699-7664	Te	st Type:	Reproduction-S	Survival (7d)		An	alyst:	Wesley Cram			
Start Date:	30 Nov-18 14:1	7 Pr	otocol:	EPA-821-R-02-	-013 (2002)		Dil	uent:	Laboratory Water	er		
Ending Date:	06 Dec-18 15:5	52 S p	ecies:	Ceriodaphnia d			Bri	ne:	Not Applicable			
Duration:	6d 2h	_	urce:	In-House Cultu	ге		Ag	e:	1			
Sample ID:	02-0723-3626		de:	70-UPLAND-14	14		Cli	ent:	Larry Walker As			-
_	29 Nov-18 11:2		iterial:	Ambient Water					29633	Sociales		
•	30 Nov-18 09:0		urce:	Calleguas Cree			FIC	oject:	29033			
Sample Age:			ation:	UPLAND	žK.							
Sample Age.	2711 (1 0)		auon.	UFLAND								
Comments:												
Stats including	reproducive ou	tliers: 6.25-	I, 100-D									
Multiple Com	parison Summ	ary										
Analysis ID	Endpoint			arison Method			NOEL	LOEL	TOEL	TU	PMS	
08-2826-5996				Many-One Rank			100	> 100	n/a	1	17.49	6
05-6568-0017	Survival		Fisher	Exact/Bonferro	ni-Holm Tes	st	100	> 100	n/a	1	n/a	
Point Estimat	e Summary											
Analysis ID	Endpoint		Point	Estimate Meth	od		Level	%	95% LCL	95% UCL	TU	,
20-5690-8123	Reproduction		Linear	Interpolation (I	CPIN)		IC5	>100	n/a	n/a	<1	
							IC10	>100	n/a	n/a	<1	
							IC15	>100	n/a	n/a	<1	
							IC20	>100	n/a	n/a	<1	
							IC25	>100	n/a	n/a	<1	
							IC40	>100	n/a	n/a	<1	
							IC50	>100	n/a	n/a	<1	
Reproduction	Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E		CV%	%Effe	ect
0	LW	10	31.8	29.1	34.5	27	38	1.19	3.77	11.84%	0.00%	
6.25		10	32.6	27.4	37.8	14	40	2.28	7.21	22.13%	-2.52°	
12.5		10	32.1	28.1	36.1	21	41	1.79	5.65	17.59%	-0.94°	
25		10	32	29.1	34.9	23	38	1.3	4.11	12.84%	-0.639	
50 100		10	30.4	27	33.8	22	36	1.5	4.74	15.60%	4.40%	
		10	32.6	28.2	37	18	40	1.94	6.13	18.81%	-2.529	% —
Survival Sum	mary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E		CV%	%Effe	_
0	LW	10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%	
6.25		10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%	
12.5		10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%	
25		10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%	
50		10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%	
100		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%	ó

Analyst: W QA: Aff

Report Date:

10 Dec-18 11:57 (p 2 of 2)

							Tes	t Code:		80718 0	7-0531-0198
Ceriodaphnia	Survival and	Reproducti	on Test							Paci	fic EcoRisk
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	38	27	30	30	33	28	30	30	35	37
6.25		34	33	38	33	33	30	33	38	14	40
12.5		34	32	34	21	38	32	26	41	33	30
25		34	30	34	23	38	36	30	31	31	33
50		22	24	33	31	36	30	32	33	27	36
100		37	28	40	18	30	34	34	36	34	35
Survival Detail											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Survival Binon	nials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Analyst: W QA: A

Report Date:

10 Dec-18 11:57 (p 1 of 1)

Test Code:

80718 | 07-0531-0198

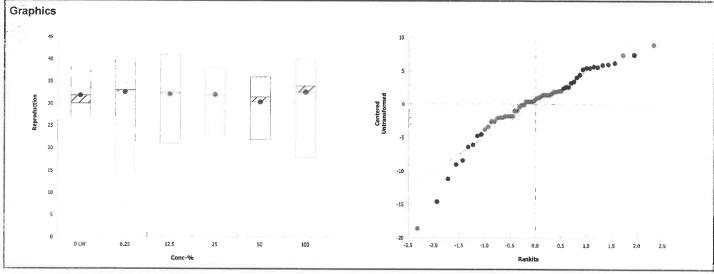
Ceriodaphnia	Survival and Repro	duction Test					Pac	ific EcoRisk
Analysis ID:	08-2826-5996	Endpoint:	Reproduction	CE	TIS Version:	CETIS	1.9.2	
Analyzed:	10 Dec-18 11:56	Analysis:	Nonparametric-Control vs Treatments	Of	ficial Results	: Yes		
Data Transfor	rm Alt	Нур		NOEL	LOEL	TOEL	TU	PMSD
Untransformed	d C:	• T		100	> 100	n/a	1	17.39%
Steel Many-O	ne Rank Sum Test							

Steel Many-One Rank Sum Test											
Control vs	Conc-%	Test Stat	Critical	Ties	DF P-Type	P-Value	Decision(α:5%)				
Lab Water Contr	6.25	121	75	3	18 Asymp	0.9924	Non-Significant Effect				
	12.5	111	75	3	18 Asymp	0.9347	Non-Significant Effect				
	25	113	75	3	18 Asymp	0.9548	Non-Significant Effect				
	50	100	75	3	18 Asymp	0.7129	Non-Significant Effect				
	100	116	75	4	18 Asymp	0.9727	Non-Significant Effect				

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	32.8833	6.57667	5	0.225	0.9500	Non-Significant Effect
Error	1575.7	29.1796	54			-
Total	1608.58		59			

Distributional Te	Distributional Tests										
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)						
Variances	Bartlett Equality of Variance Test	5.25	15.1	0.3862	Equal Variances						
Distribution	Shapiro-Wilk W Normality Test	0.919	0.946	7.2E-04	Non-Normal Distribution						

Reproduction	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	10	31.8	29.1	34.5	30	27	38	1.19	11.84%	0.00%
6.25		10	32.6	27.4	37.8	33	14	40	2.28	22.13%	-2.52%
12.5		10	32.1	28.1	36.1	32.5	21	41	1.79	17.59%	-0.94%
25		10	32	29.1	34.9	32	23	38	1.3	12.84%	-0.63%
50		10	30.4	27	33.8	31.5	22	36	1.5	15.60%	4.40%
100		10	32.6	28.2	37	34	18	40	1.94	18.81%	-2.52%



Report Date:

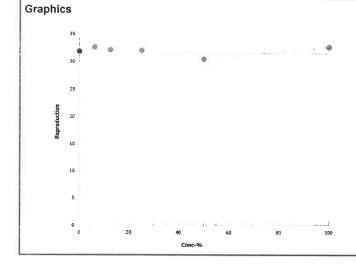
10 Dec-18 11:57 (p 1 of 1).

Test Code:

80718 | 07-0531-0198

Ceriodaphn	a Survival and f	Reproduc	tion Test						Pacific EcoRisi
Analysis ID:	20-5690-8123	Е	Endpoint:	Reproduction			CETIS Version:	CETISv1.9.2	
Analyzed:	10 Dec-18 11	:56 A	Analysis:	Linear Interpola	tion (ICPIN)		Official Results:	Yes	
Linear Inter	olation Options								
X Transform	Y Transfor	m S	Seed	Resamples	Exp 95% CL	Method			
Linear	Linear	1	494945	200	Yes	Two-Point	Interpolation		
Point Estim	ites								
Level %	95% LCL	. 95% U	CL TU	95% LCL	95% UCL				
IC5 >10	0 n/a	n/a	<1	n/a	n/a				
IC10 >10	0 n/a	n/a	<1	n/a	n/a				
IC15 >10	0 n/a	n/a	<1	n/a	n/a				
IC20 >10	0 n/a	n/a	<1	n/a	n/a				
IC25 >10	0 n/a	n/a	<1	n/a	n/a				
1020 -10		2/2	<1	n/a	n/a				
IC40 >10	0 n/a	n/a	~ 1	117 64					

Reproduction Summary									
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	10	31.8	27	38	1.19	3.77	11.80%	0.0%
6.25		10	32.6	14	40	2.28	7.21	22.10%	-2.52%
12.5		10	32.1	21	41	1.79	5.65	17.60%	-0.94%
25		10	32	23	38	1.3	4.11	12.80%	-0.63%
50		10	30.4	22	36	1.5	4.74	15.60%	4.4%
100		10	32.6	18	40	1.94	6.13	18.80%	-2.52%



Analyst: W QA: All

Report Date: Test Code: 10 Dec-18 11:57 (p 1 of 1)

80718 | 07-0531-0198

									rest	Code:		80718	07-0531-018
Ceriodapl	hnia Su	rvival and	d Repro	ductio	n Test							Pa	acific EcoRis
Analysis I	D: 05	5-6568-00	17	End	Ipoint: Su	vival			CET	IS Version:	CETISV	192	
Analyzed:		Dec-18					ntingency Tab	les		cial Results:			
Data Tran	sform		Alt	Нур					NOEL	LOEL	TOEL	TU	
Untransfor			C:						100	> 100	n/a	1	
Fisher Ex	act/Bon	ferroni-H	iolm Tes	st									
Control	vs	Group	р		Test Stat	P-Type	P-Value	Decision((α:5%)				
Lab Water	Contr	6.25			1.000	Exact	1.0000	Non-Signi	ficant Effec	t			
		12.5			1.000	Exact	1.0000	Non-Signi	ficant Effec	t			
		25			1.000	Exact	1.0000	Non-Signi	ficant Effec	t			
		50			1.000	Exact	1.0000	Non-Signi	ficant Effec	t			
		100			1.000	Exact	1.0000	Non-Signi	ficant Effec	t			
Data Sum	mary												
Conc-%		Code	NR	l	R	NR + R	Prop NR	Prop R	%Effect				
0		LW	10		0	10	1	0	0.0%				
6.25			10		0	10	1	0	0.0%				
12.5			10		0	10	1	0	0.0%				
25			10		0	10	1	0	0.0%				
50			10		0	10	1	0	0.0%				
100			10		0	10	1	0	0.0%				
Graphics													
1.0	•			•									
0.9													
0.8													
0.7													
9.0													
0.5													
0.4													
0.3													
0.2													
0.1													
0.0	D LW	6.25	12.5	25	50 1	00 100	1						

Analyst: W QA: AFF

Conc-%

Report Date:

12 Dec-18 16:06 (p 1 of 2)

Test Code:

80715 | 21-0030-3040

Ceriodaphnia	a Survival and Re	eproduction T	est							Pacific	EcoR	isk ===
Batch ID:	04-9221-4438	Test T	ype: R	Reproduction-S	urvival (7d)		An	alyst:	Wesley Cram			
Start Date:	30 Nov-18 13:13	Protoc	ol: E	PA-821-R-02-	013 (2002)		Dil	uent:	Laboratory Water	er		
Ending Date:	: 06 Dec-18 15:36	Specie	es: C	eriodaphnia d	ubia		Bri	ine:	Not Applicable			
Duration:	6d 2h	Source	e: Ir	n-House Cultur	re		Ag	Age: 1				
Sample ID:	11-3555-8654	Code:	7	0-HITCH-150			Cli	Client: Larry Walker Associat				
	: 29 Nov-18 10:10) Materia	al: A	mbient Water			Pro	oject:	29633			
Receipt Date	: 30 Nov-18 09:03	Source	e: C	alleguas Cree	k			•				
Sample Age:	27h (0.3 °C)	Station	n: H	ІІТСН								
Comments:												
Stats include	outlier 12.5D											
Multiple Con	nparison Summa	ry										
Analysis ID	Endpoint			rison Method			NOEL	LOE	L TOEL	TU	PMS) /
10-1881-9883	Reproduction	E	Bonferro	oni Adj t Test			100	> 100	n/a	1	11.4%	6
12-9283-5853	Survival	F	isher E	xact/Bonferror	ni-Holm Tes	t	100	> 100	n/a	1	n/a	
Point Estima	te Summary											
Analysis ID	Endpoint	P	oint E	stimate Metho	od		Level	%	95% LCL	95% UCL	TU	1
05-1157-6390	Reproduction	L	inear Ir	nterpolation (IC	PIN)		IC5	>100	n/a	n/a	<1	
							IC10	>100	n/a	n/a	<1	
							IC15	>100	n/a	n/a	<1	
							IC20	>100	n/a	n/a	<1	
							IC25	>100		n/a	<1	
							IC40	>100		n/a	<1	
							IC50	>100	n/a	n/a 	<1	
Reproduction	n Summary											
Conc-%	Code		/lean	95% LCL	95% UCL	Min	Max	Std E		CV%	%Effe	ect
0	LW		0.2	28.4	32.1	28	35	0.79		7.90%	0.00%	
6.25			3.3	31.2	35.4	29	38	0.913		8.22%	-10.29	
12.5			31.9	28.3	35.5	21	37	1.57	4.7	14.75%	-5.519	%
25			3.7	31.6	35.8	29	38	0.943		8.85%	-11.51	
50			4	31.9	36.1	30	39	0.907		8.43%	-12.50	
100		10 3	4.1	32.3	35.9	29	37	0.79	5 2.51	7.37%	-12.83	3%
Survival Sum	nmary											
Conc-%	Code		/lean	95% LCL	95% UCL	Min	Max	Std E		CV%	%Effe	
0	LW		.889	0.633	1.000	0.000	1.000	0.11		37.50%	0.00%	
6.25			.889	0.633	1.000	0.000	1.000	0.111		37.50%	0.00%	
12.5			.000	1.000	1.000	1.000	1.000	0.000		0.00%	-12.50	
25			.000	1.000	1.000	1.000	1.000	0.000		0.00%	-12.50	
50			.000	1.000	1.000	1.000	1.000	0.000		0.00%	-12.50	
100		10 1	.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	-12.50	۱%

Analyst: W QA: AFF

Report Date: Test Code: 12 Dec-18 16:06 (p 2 of 2) 80715 L21-0030-3040

							Tes	t Code:		80715 2	1-0030-304
Ceriodaphnia	Survival and	Reproducti	on Test							Paci	ic EcoRisk
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	29	29	31	29	30	35	33	28	28	
6.25		32	35	32	31	34	36	29	33	38	
12.5		32	29	34	21	34	37	31	34	35	
25		34	36	29	33	34	38	37	33	34	29
50		33	39	32	34	32	36	34	30	38	32
100		34	35	37	36	36	31	34	36	29	33
Survival Detai	l										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000	1.000	
6.25		1.000	1.000	1.000	1.000	1.000	1.000	0.000	1.000	1.000	
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Survival Binor	nials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	0/1	1/1	
6.25		1/1	1/1	1/1	1/1	1/1	1/1	0/1	1/1	1/1	
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Analyst: W QA:

VS

Control

25

50

100

Group

10

10

10

0

0

0

Report Date:

12 Dec-18 16:06 (p 1 of 1)

Test Code:

80715 | 21-0030-3040

Ceriodaphnia Survival and Reproduction Test Pacific EcoRisk												
Analysis ID: Analyzed:	12-9283-5853 12 Dec-18 16:01	Endpoint: Analysis:	Survival STP 2xK Contingency Tables		TIS Version: ficial Results:		1.9.2					
Data Transfor	m Alt	Нур		NOEL	LOEL	TOEL	TU					
Untransformed	d C	• T		100	> 100	n/a	1					
Fisher Exact/Bonferroni-Holm Test												

P-Value

Decision(a:5%)

Test Stat P-Type

10

10

10

Lab Water Contr	6.25		0.765	Exact	1.0000	Non-Signi	ficant Effect	
	12.5		1.000	Exact	1.0000	Non-Signi	ficant Effect	
	25		1.000	Exact	1.0000	Non-Signi	ficant Effect	
	50		1.000	Exact	1.0000	Non-Signi	ficant Effect	
	100		1.000	Exact	1.0000	Non-Signi	ficant Effect	
-								
•	Code	NR	R	NR + R	Prop NR	Prop R	%Effect	
Conc-%	Code LW	NR 8	R	NR + R	Prop NR 0.889	Prop R 0.111	%Effect	
Data Summary Conc-% 0 6.25			R 1 1					

0

0

0

-12.5%

-12.5%

-12.5%

1

1

1

aphi	ics							
	1.0			•	•		•	•
	0.9		•					
	8.0							
va	0.7							
Survival	0,6							
	0.5							
	0.4							
	0.3							
	0.2							
	0.1							
	0.0	0 LW	6.25	12.5	25	50	100	100
					Conc-%			

Analyst: W QA: HF

Report Date:

12 Dec-18 16:06 (p 1 of 1)

Test Code:

80715 | 21-0030-3040

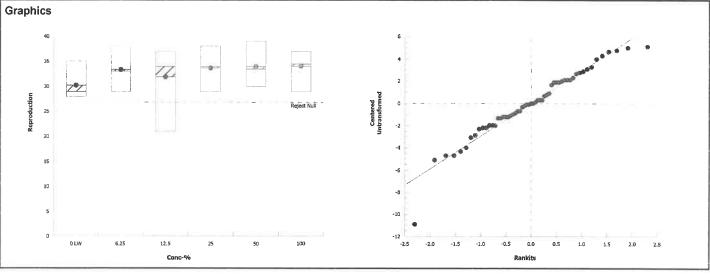
Ceriodaphnia Survival and Reproduction Test Pacific EcoRisk											
Analysis ID: Analyzed:	10-1881-9883 12 Dec-18 16:02	Endpoint: Analysis:	Reproduction Parametric-Multiple Comparison		TIS Version		1.9.2				
Data Transfor	m Alt	Нур		NOEL	LOEL	TOEL	TU	PMSD			
Untransformed	l C>	·T		100	> 100	n/a	1	11.36%			

Bonferroni Adj t Test												
Control vs	Conc-%	Test Stat	Critical	MSD	DF P-Ty	pe P-Value	Decision(α:5%)					
Lab Water Contr	6.25	-2.12	2.4	3.52	16 CDF	1.0000	Non-Significant Effect					
	12.5	-1.14	2.4	3.52	16 CDF	1.0000	Non-Significant Effect					
	25	-2.43	2.4	3.43	17 CDF	1.0000	Non-Significant Effect					
	50	-2.64	2.4	3.43	17 CDF	1.0000	Non-Significant Effect					
	100	-2.71	2.4	3.43	17 CDF	1.0000	Non-Significant Effect					

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	108.275	21.655	5	2.24	0.0645	Non-Significant Effect
Error	493.444	9.67538	51			
Total	601.719		56			

Distributional Tes	sts				
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	5.46	15.1	0.3622	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.955	0.943	0.0332	Normal Distribution

Reproduction Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	9	30.2	28.4	32.1	29	28	35	0.795	7.90%	0.00%
6.25		9	33.3	31.2	35.4	33	29	38	0.913	8.22%	-10.29%
12.5		9	31.9	28.3	35.5	34	21	37	1.57	14.75%	-5.51%
25		10	33.7	31.6	35.8	34	29	38	0.943	8.85%	-11.51%
50		10	34	31.9	36.1	33.5	30	39	0.907	8.43%	-12.50%
100		10	34.1	32.3	35.9	34.5	29	37	0.795	7.37%	-12.83%



Analyst: u QA:

Report Date: Test Code:

Official Results: Yes

12 Dec-18 16:06 (p 1 of 1)

80715 | 21-0030-3040

Ceriodaphnia	a Survival and Rep	roduction Test	Pacific EcoRisk
Analysis ID:	05-1157-6390	Endpoint: Reproduction	CETIS Version: CETISv1.9.2

Linear Interpolation (ICPIN)

Linear Interpolation Options

12 Dec-18 16:02

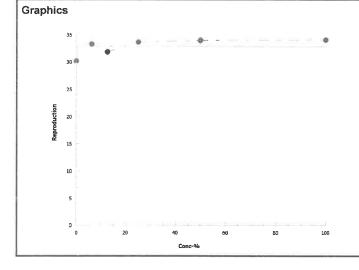
Analysis:

Analyzed:

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method	
Linear	Linear	222227	200	Yes	Two-Point Interpolation	

Point E	Estimates					
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC5	>100	n/a	n/a	<1	n/a	n/a
IC10	>100	n/a	n/a	<1	n/a	n/a
IC15	>100	n/a	n/a	<1	n/a	n/a
IC20	>100	n/a	n/a	<1	n/a	n/a
IC25	>100	n/a	n/a	<1	n/a	n/a
IC40	>100	n/a	n/a	<1	n/a	n/a
IC50	>100	n/a	n/a	<1	n/a	n/a

Reproduction	Summary				C	alculated Va	riate		
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	9	30.2	28	35	0.795	2.39	7.90%	0.0%
6.25		9	33.3	29	38	0.913	2.74	8.22%	-10.3%
12.5		9	31.9	21	37	1.57	4.7	14.70%	-5.51%
25		10	33.7	29	38	0.943	2.98	8.85%	-11.5%
50		10	34	30	39	0.907	2.87	8.43%	-12.5%
100		10	34.1	29	37	0.795	2.51	7.37%	-12.8%



Analyst: QA QA

Report Date: Test Code: 10 Dec-18 15:09 (p 1 of 2) 80717 | 19-0843-0078

							16	st Code:		80717 19	-0843-0	J07
Ceriodaphnia	Survival and I	Reproduction	Test							Pacifi	c EcoR	lisk
Batch ID:	06-1789-8083	Test	Type:	Reproduction-S	Survival (7d)		An	alyst:	Wesley Cram			
Start Date:	30 Nov-18 14:0)2 Prot	ocol:	EPA-821-R-02	-013 (2002)			uent:	Laboratory Wat	er		
Ending Date:	06 Dec-18 14:0)8 Spe	cies:	Ceriodaphnia d	lubia		Br	ine:	Not Applicable			
Duration:	6d 0h	Soul	rce:	In-House Cultu	re		Ag	e:	1			
Sample ID:	15-8235-7761	Code	e:	70-BELT-208			Cli	ent:	Larry Walker As	sociates		_
Sample Date:	29 Nov-18 09:1	5 Mate	erial:	Ambient Water			Pre	oject:	29633			
Receipt Date:	30 Nov-18 09:0	3 Soui	rce:	Calleguas Cree	ek							
Sample Age:	29h (0.8 °C)	Stati	on:	BELT								
Comments: Stats include re	eproductive out	ier: 12.5-H										
	parison Summ											=
Analysis ID	Endpoint		Compa	arison Method			NOEL	LOE	TOEL	TU	PMS	٥,
19-9899-9342	Reproduction		Dunnet	tt Multiple Com	parison Tes	l	100	> 100	n/a	1	14.19	
13-5580-8251	Survival		Fisher	Exact/Bonferro	ni-Holm Tes	t	100	> 100	n/a	1	n/a	
Point Estimat	e Summary											
Analysis ID	Endpoint		Point B	Estimate Meth	od		Level	%	95% LCL	95% UCL	TU	,
13-0370-7173	Reproduction		Linear	Interpolation (IC	CPIN)		IC5	>100	n/a	n/a	<1	_
							IC10	>100	n/a	n/a	<1	
							IC15	>100	n/a	n/a	<1	
							IC20	>100	n/a	n/a	<1	
							IC25	>100	n/a	n/a	<1	
							IC40	>100	n/a	n/a	<1	
							IC50	>100	n/a	n/a	<1	
Reproduction	Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E	rr Std Dev	CV%	%Effe	et
0	LW	10	30.8	27.8	33.8	22	36	1.31	4.13	13.41%	0.00%	ó
6.25		10	35	33.2	36.8	31	38	0.789	2.49	7.13%	-13.64	1%
12.5		10	35.3	32.1	38.5	25	40	1.41	4.45	12.60%	-14.61	۱%
25		10	35.1	31.2	39	23	42	1.71	5.4	15.40%	-13.96	3%
50		10	37.3	35.6	39	33	41	0.761		6.45%	-21.10)%
100		10	37.8	33.9	41.7	29	45	1.74	5.49	14.53%	-22.73	3%
Survival Sumr	mary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E		CV%	%Effe	
)	LW	10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%	
5.25		10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%)
12.5		10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%	>
25		10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%	
50		10	1.000	1.000	1.000	1.000	1.000	0.000		0.00%	0.00%	
100		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%	,

Analyst: U QA: APF

Report Date:

10 Dec-18 15:09 (p 2 of 2)

Test Code:

80717 | 19-0843-0078

								L OOGC.		00	3-0043-001
Ceriodaphnia	Survival and	Reproducti	on Test							Paci	fic EcoRisi
Reproduction	Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	22	26	33	30	31	36	33	34	30	33
6.25		37	38	37	33	38	34	33	33	36	31
12.5		37	40	39	33	35	37	36	25	39	32
25		33	37	36	33	39	23	31	38	39	42
50		38	39	39	33	38	37	38	34	41	36
100		31	45	40	36	29	45	37	37	43	35
Survival Detail	1										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12.5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
50		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Survival Binon	nials										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Analyst: W QA: APF

Report Date:

10 Dec-18 15:09 (p 1 of 1) 80717 | 19-0843-0078

Test Code:

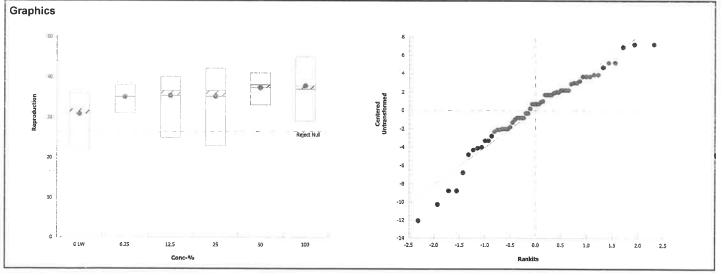
Ceriodaphnia Survival and Reproduction Test Pacific EcoRisk 19-9899-9342 Analysis ID: Endpoint: Reproduction CETIS Version: CETISv1.9.2 Analyzed: 10 Dec-18 15:09 Analysis: Parametric-Control vs Treatments Official Results: Yes **Data Transform** Alt Hyp NOEL LOEL **TOEL** TU **PMSD** Untransformed C > T 100 > 100 1 n/a 14.12%

Dunnett Multiple (Comparison Test							
Control vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Lab Water Contr	6.25	-2.21	2.29	4.35	18	CDF	0.9998	Non-Significant Effect
	12.5	-2.37	2.29	4.35	18	CDF	0.9999	Non-Significant Effect
	25	-2.26	2.29	4.35	18	CDF	0.9998	Non-Significant Effect
	50	-3.42	2.29	4.35	18	CDF	1.0000	Non-Significant Effect
	100	-3.68	2.29	4.35	18	CDF	1.0000	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	305.883	61.1767	5	3.39	0.0098	Significant Effect
Error	974.3	18.0426	54			
Total	1280.18		59			

Distributional Te	ests					
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Bartlett Equality of Variance Test	10.1	15.1	0.0730	Equal Variances	
Distribution	Shapiro-Wilk W Normality Test	0.953	0.946	0.0208	Normal Distribution	

Reproduction	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	10	30.8	27.8	33.8	32	22	36	1.31	13.41%	0.00%
6.25		10	35	33.2	36.8	35	31	38	0.789	7.13%	-13.64%
12.5		10	35.3	32.1	38.5	36.5	25	40	1.41	12.60%	-14.61%
25		10	35.1	31.2	39	36.5	23	42	1.71	15.40%	-13.96%
50		10	37.3	35.6	39	38	33	41	0.761	6.45%	-21.10%
100		10	37.8	33.9	41.7	37	29	45	1.74	14.53%	-22.73%



Report Date:

10 Dec-18 15:09 (p 1 of 1)

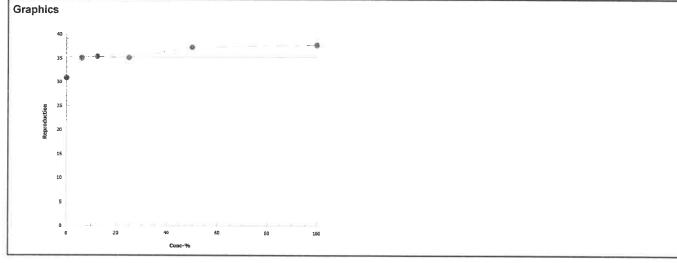
80717 | 19-0843-0078

Test Code:	80717 19

Analysis ID: 13-0370						
	-7173 Endpoint: 18 15:09 Analysis:	Reproduction Linear Interpolation (I		ETIS Version: fficial Results:	CETISv1.9.2 Yes	
Linear Interpolation Op	otions					
X Transform Y Trai	nsform Seed	Resamples Exp	95% CL Method			
Linear Linear	488055	200 Yes	Two-Point Inte	erpolation		

Point E	stimates					
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC5	>100	n/a	n/a	<1	n/a	n/a
IC10	>100	n/a	n/a	<1	n/a	n/a
IC15	>100	n/a	n/a	<1	n/a	n/a
IC20	>100	n/a	n/a	<1	n/a	n/a
IC25	>100	n/a	n/a	<1	n/a	n/a
IC40	>100	n/a	n/a	<1	n/a	n/a
IC50	>100	n/a	n/a	<1	n/a	n/a
1000	- 100	11/a	11/a	`'	11/4	11/4

Reproduction	Summary								
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	10	30.8	22	36	1.31	4.13	13.40%	0.0%
6.25		10	35	31	38	0.789	2.49	7.13%	-13.6%
12.5		10	35.3	25	40	1.41	4.45	12.60%	-14.6%
25		10	35.1	23	42	1.71	5.4	15.40%	-14.0%
50		10	37.3	33	41	0.761	2.41	6.45%	-21.1%
100		10	37.8	29	45	1.74	5.49	14.50%	-22.7%



Analyst: U QA: ARE

Report Date:

10 Dec-18 15:09 (p 1 of 1)

Test Code:

80717 | 19-0843-0078

Ceriodaphnia Survival and Reproduction Test Pacific EcoRisl													
Analysis ID: Analyzed:	13-5580-8251 10 Dec-18 15:09	Endpoint: Analysis:	Survival STP 2xK Contingency Tables		TIS Version:		/1.9.2						
Data Transfor	m Alt	Нур		NOEL	LOEL	TOEL	TU						
Untransformed	C >	T		100	> 100	n/a	1						
Fielder Freed/	Donformani Halm Tar	4											

Fisher Exact/Bonf	Fisher Exact/Bonferroni-Holm Test														
Control vs	Group	Test Stat	P-Type	P-Value	Decision(a:5%)										
Lab Water Contr	6.25	1.000	Exact	1.0000	Non-Significant Effect										
	12.5	1.000	Exact	1.0000	Non-Significant Effect										
	25	1.000	Exact	1.0000	Non-Significant Effect										
	50	1.000	Exact	1.0000	Non-Significant Effect										
	100	1.000	Exact	1.0000	Non-Significant Effect										

ſ							
Code	NR	R	NR+R	Prop NR	Prop R	%Effect	
LW	10	0	10	1	0	0.0%	
	10	0	10	1	0	0.0%	
	10	0	10	1	0	0.0%	
	10	0	10	1	0	0.0%	
	10	0	10	1	0	0.0%	
	10	0	10	1	0	0.0%	
	Code	Code NR LW 10 10 10 10 10 10	Code NR R LW 10 0 10 0 10 0 10 0 10 0 10 0	Code NR R NR + R LW 10 0 10 10 0 10 10 0 10 10 0 10 10 0 10 10 0 10	Code NR R NR + R Prop NR LW 10 0 10 1 10 0 10 1 10 0 10 1 10 0 10 1 10 0 10 1 10 0 10 1	Code NR R NR + R Prop NR Prop R LW 10 0 10 1 0 10 0 10 1 0 10 0 10 1 0 10 0 10 1 0 10 0 10 1 0	Code NR R NR + R Prop NR Prop R %Effect LW 10 0 10 1 0 0.0% 10 0 10 1 0 0.0% 10 0 10 1 0 0.0% 10 0 10 1 0 0.0% 10 0 10 1 0 0.0%



Analyst: W QA: HK

Appendix D

Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the *Ceriodaphnia dubia*

Report Date: Test Code: 07 Dec-18 11:46 (p 1 of 2) 80993 | 06-8813-8043

								Test Code:		80993 0	6-8813-804		
Ceriodaphn	ia Survival and	Reproduc	tion Test							Pacif	ic EcoRisi		
Batch ID:	04-4012-8022	-	Test Type:	Reproduction-	Survival (7d)		Analyst:	Ashleigh Findle	ev			
Start Date:	30 Nov-18 14:	32	Protocol:	EPA-821-R-02	2-013 (2002)	•		Diluent:	Laboratory Wa	•			
Ending Date	: 06 Dec-18 14:	45 \$	Species:	Ceriodaphnia	, ,			Brine:	Not Applicable				
Duration:	6d 0h		Source:	In-House Culti				Age:	1				
Sample ID:	19-1961-4729		Code:	NaCl				Client:	icont				
	: 30 Nov-18 14:		Viaterial:	Sodium chlorid			Project:	Reference Tox 29671	ICan				
	e: 30 Nov-18 14:		Source:	Reference Tox	-			roject.	23071				
Sample Age			Station:	In House									
Multiple Con	nparison Summ	ary											
Analysis ID	Endpoint	,	Comp	arison Method	i		NOEL	LOEI	TOEL	TU	PMSD .		
17-2119-1845	5 Reproduction			Viany-One Ran			500	1000		10	17.4%		
03-7152-5320	Survival			Exact/Bonferro		st	1500	2000			n/a		
Point Estima	Point Estimate Summary												
Analysis ID	Endpoint		Point		Level	mg/L	95% LCL	95% UCL	TU v				
05-8989-8676	Reproduction		Linear	Interpolation (I	CPIN)		IC5	142	93	563			
							IC10	283	186	768			
							IC15	425	279	1050			
							IC20	1040	372	1130			
							IC25	1130	465	1230			
							IC40	1410	1300	1520			
					IC50	1550	1470	1610					
14-0037-6886	Survival		Regres	ssion: Log-Norr	nal (Probit)		EC5	1500	767	1710			
							EC10	1570	897	1770			
							EC15	1620	996	1810			
							EC20	1660	1080	1850			
							EC25	1700	1160	1880			
							EC40	1800	1370	1980			
							EC50	1860	1510	2050			
Reproduction	n Summary												
Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E	rr Std Dev	CV%	%Effect		
0	LW	10	32.6	31.2	34	30	36	0.6	1.9	5.82%	0.00%		
500		10	26.2	18.6	33.8	6	35	3.37	10.7	40.66%	19.63%		
1000		10	27.5	25.5	29.5	21	31	0.898	2.84	10.32%	15.64%		
1500		10	17.9	15	20.8	12	24	1.3	4.12	23.03%	45.09%		
2000 2500		10	1.4	-0.543 0	3.34 0	0	7	0.859	2.72	194.01%	95.71%		
		10	0	0	0	0	0		100.00%				
Survival Sum Conc-mg/L	•	Count	Maar	050/ 1.01	059/ 1101	Miles	10	<u> </u>	• • • •				
Onc-mg/L	Code LW	Count 10	Mean	95% LCL	95% UCL	Min	Max	Std E		CV%	%Effect		
500	LVV	10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%		
1000		10	0.900	0.674	1.000	0.000	1.000	0.100	0.316	35.14%	10.00%		
1500		10	1.000 0.900	1.000 0.674	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%		
2000							1.000	0.100	0.316	35.14%	10.00%		
2500		10	0.000	0.000		0.000	1.000	0.153	0.483	161.02%	70.00%		
		10	0.000	0.000	0.000	0.000	0.000	0.000	0.000		100.00%		

Analyst: ACP QA: M

004-996-743-9

CETIS™ v1.9.2.6

Report Date:

07 Dec-18 11:46 (p 2 of 2)

0/1

Test Code: 80993 | 06-8813-8043 Ceriodaphnia Survival and Reproduction Test Pacific EcoRisk Reproduction Detail Conc-mg/L Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 Rep 6 Rep 7 Rep 8 Rep 9 Rep 10 LW 30 32 36 33 33 30 34 31 33 34 500 27 7 33 30 32 33 6 31 35 28 1000 21 28 30 26 30 28 27 26 31 28 1500 12 14 12 18 18 20 24 21 22 18 2000 0 1 0 0 7 0 6 0 0 0 2500 0 0 0 0 0 0 0 0 0 0 Survival Detail Conc-mg/L Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 Rep 6 Rep 7 Rep 8 Rep 9 Rep 10 LW 0 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 500 1.000 0.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1500 1.000 1.000 0.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 2000 0.000 1.000 0.000 0.000 1.000 0.000 1.000 0.000 0.000 0.000 2500 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 Survival Binomials Conc-mg/L Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 Rep 6 Rep 7 Rep 8 Rep 9 Rep 10 0 LW 1/1 1/1 1/1 1/1 1/1 1/1 1/1 1/1 1/1 1/1 500 1/1 0/1 1/1 1/1 1/1 1/1 1/1 1/1 1/1 1/1 1000 1/1 1/1 1/1 1/1 1/1 1/1 1/1 1/1 1/1 1/1 1500 1/1 1/1 0/1 1/1 1/1 1/1 1/1 1/1 1/1 1/1 2000 0/1 1/1 0/1 0/1 1/1 0/1 1/1 0/1 0/1 0/1 2500 0/1 0/1 0/1 0/1 0/1 0/1 0/1 0/1 0/1

Analyst: AF QA: UR

004-996-743-9

CETIS™ v1.9.2.6

Ceriodaphnia Survival and Reproduction Test

Pacific EcoRisk

Test Type: Reproduction-Survival (7d)

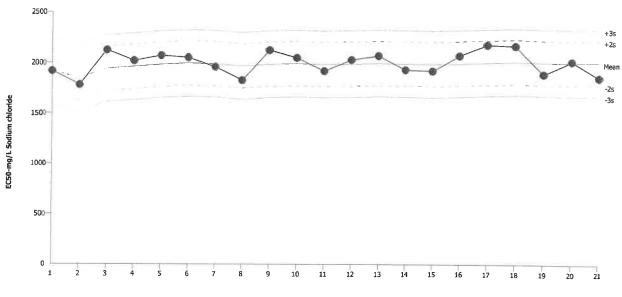
Organism: Ceriodaphnia dubia (Water Flea)

Protocol: EPA-821-R-02-013 (2002) Endpoint: Survival

Material: Sodium chloride

Source: Reference Toxicant-REF

Ceriodaphnia Survival and Reproduction Test



 Mean:
 2006
 Count:
 20
 -2s Warning Limit:
 1785
 -3s Action Limit:
 1675

 Sigma:
 110.3
 CV:
 5.50%
 +2s Warning Limit:
 2227
 +3s Action Limit:
 2337

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2018	Aug	28	14:48	1918	-87.64	-0.7945			06-2614-3668	06-1377-5657
2			29	14:50	1780	-225.7	-2.046	(-)		03-9264-7933	02-8153-7063
3		Sep	11	14:40	2125	118.7	1.076			17-7763-6788	12-2919-7286
4			12	14:04	2019	12.9	0.117			17-4569-5270	18-9812-2558
5			18	12:26	2071	65.13	0.5905			20-2968-4066	17-1744-5971
6			19	11:34	2050	43.88	0.3979			16-4284-4765	03-9142-8586
7			25	17:25	1957	-48.58	-0.4404			14-3900-9954	21-1313-3142
8		Oct	3	15:35	1825	-181	-1.641			07-6007-9059	16-4049-1493
9			9	16:46	2125	118.7	1.076			04-5469-0891	20-3055-9291
10			11	14:50	2050	43.88	0.3979			20-2439-9413	10-4540-0750
11			16	13:11	1918	-87.64	-0.7945			03-5850-8111	20-6659-7771
12			18	15:16	2032	25.64	0.2324			05-8033-5759	02-3631-3458
13			19	15:05	2071	65.13	0.5905			02-1441-2791	17-1340-7957
14			23	15:40	1930	-75.54	-0.6848			10-7048-8617	14-7553-0745
15			30	10:35	1918	-87.64	-0.7945			05-8645-6876	01-6608-5367
16			31	14:47	2071	65.13	0.5905			15-6701-8818	10-0650-6684
17		Nov	6	15:55	2180	173.7	1.575			06-4622-5066	07-3608-9199
18			8	16:11	2170	163.8	1.485			07-3988-3316	08-3419-0126
19			13	16:18	1890	-115.9	-1.051			10-7032-1533	04-1396-8369
20			27	13:39	2019	12.9	0.117			01-2067-8558	07-2924-3826
21			30	14:32	1855	-150.9	-1.368			06-8813-8043	14-0037-6886

Analyst: AW QA: M

CETIS QC Plot Report Date: 07 Dec-18 11:49 (1 of 1)

Ceriodaphnia Survival and Reproduction Test

Pacific EcoRisk

Test Type: Reproduction-Survival (7d) Protocol: EPA-821-R-02-013 (2002)

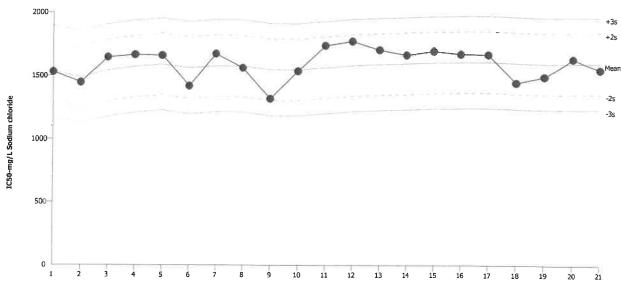
Organism: Ceriodaphnia dubia (Water Flea)

Endpoint: Reproduction

Material: Sodium chloride

Source: Reference Toxicant-REF

Ceriodaphnia Survival and Reproduction Test



1597 Mean: Count: 20 -2s Warning Limit: 1354 -3s Action Limit: 1232 Sigma: 121.6 CV: 7.61% +2s Warning Limit: 1840 +3s Action Limit: 1962

Quality C	ontrol	Data
-----------	--------	------

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2018	Aug	28	14:48	1531	-66.18	-0.5442			06-2614-3668	05-2952-0377
2			29	14:50	1447	-150.1	-1.234			03-9264-7933	16-8090-8266
3		Sep	11	14:40	1646	49.43	0.4065			17-7763-6788	12-3840-6964
4			12	14:04	1666	68.78	0.5656			17-4569-5270	09-7553-7941
5			18	12:26	1660	63.12	0.5191			20-2968-4066	11-3715-5377
6			19	11:34	1418	-178.9	-1.471			16-4284-4765	11-9866-6961
7			25	17:25	1673	76.42	0.6284			14-3900-9954	18-5535-4978
8		Oct	3	15:35	1561	-36.21	-0.2978			07-6007-9059	08-5057-3824
9			9	16:46	1317	-280.2	-2.305	(-)		04-5469-0891	07-2283-5254
10			11	14:50	1535	-61.65	-0.507			20-2439-9413	04-4179-5524
11			16	13:11	1738	141.1	1.16			03-5850-8111	05-4684-8364
12			18	15:16	1772	174.7	1.437			05-8033-5759	10-5626-5735
13			19	15:05	1704	106.9	0.8795			02-1441-2791	18-9658-3991
14			23	15:40	1663	66.4	0.546			10-7048-8617	19-2272-0008
15			30	10:35	1694	96.9	0.7969			05-8645-6876	20-8136-4320
16			31	14:47	1670	73.45	0.6041			15-6701-8818	09-4862-8045
17		Nov	6	15:55	1669	71.63	0.5891			06-4622-5066	01-6239-3016
18			8	16:11	1445	-152.4	-1.253			07-3988-3316	04-7517-9392
19			13	16:18	1493	-104.4	-0.8587			10-7032-1533	07-8371-8990
20			27	13:39	1633	35.89	0.2952			01-2067-8558	17-6140-1063
21			30	14:32	1548	-48.52	-0.399			06-8813-8043	05-8989-8676

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

Cl Proje	ient: ct #:		671		rence To:			aterial: ndomiz		Sodii	um Ch	loride		- Co	Test ontrol	Date:	///30//8 Mod EPAMH		
	Day	р	H	D	.O.	Cond.	(µS/cm)	Temp					ival / F		uction	_			
	- 49	New	Old	New	Old	New	Old	(°C)	A	В	С	D	E	F	G	Н	I	J	SIGN-OFF
	0	7.82		8.2		359		24.0	Ü	O	Ð	D	0	0	0	0	0	0	Date: 1/30/18 New WQ: Test Init.: TF Sol'n Prep: KL Le Time: 1/432
	1	7.92	7.69	8.6	7.9	364	365	24.8	0	0	0	0	0	0	0	0	0	0	Date: New WQ: WYC Counts: TC Sol'n Prep: Old WQ: TP Time: 12.15
	2	7.89	7.65	8.6	7.9	4365	382	24.3	0	0	0	0	0	0	0	0	0	0	Date: 12/2/19 New WQ: TP Counts: K6 Sol'n Prep: K1 Old WQ: TP Time 13:37
ntrol	3	7.96	7.85	8,9	7.9	358	389	75.1	5	5	5	6	6	5	5	5	6	6	Date: 12/3/19 New WQ: YVY Counts: 14 Sol'n Prep: No Old WO: Time: 14/40
Lab Water Control	4	8.70	7-87	8.8	7.8	373	381	26.0	10	0	0	0	0	0	10	0	0	11	Date 12/4/6 New WQ: R Counts: 20- Sol'n Prep: N 3 Old WQ: TA Time: 1417
Wat	5	7.89	7.82	7.2	7:7	359	38	24.4	0	12	13	10	10	8	0	11	10	0	Date:12/5/18New WQ: Counts Counts Sol'n Prep: KL Old WQ: Time: 1520
Lat	6	-	7.70	-	7.4	-	388	24,0	15	₁ 5	18	17	17	17	19	15	17	17	Date:12/W6New WQ: — Counts: 1573 Sol'n Prep: Old WQ: ICA Time: 1445
	7																		Date: New WQ: Counts: Sol'n Prep: Old WQ: Time:
	8															2.3			Date: Counts: Old WQ: Time:
								Total=	30	32	34	33	33	30	34	31	33	34	Mean Neonates/Female = 32-6
	Day	p	Н	D	O.	Cond. (μS/cm)	Temp				Survi	ival / R	eprod	uction				Day of the state o
		New	Old	New	Old	New	Old	(°C)	Α	В	С	D	Е	F	G	Н	I	J	RT BATCH NUMBER
	0	7.79		8.1		1365		24.3	0	Ð	0	0	0	c	Ø	0	0	0	287/288
	1	7.83	7.69	8.7	7.8	1343	1387	24.9	0	0	0	0	0	0	0	0	0	0	288
	2	7.87	7.68	8.7	7.9	1341	1445	24.7	0	0	0	0	0	0	0	0	0	0	286
	3	7.92	7-84	9.0	7-8	1371	1432	25.3	5	6	6	6	5	4	6	5	5	5	288
500 mg/L	4	8.11	7.85	89	79	1369	1478	25.8	9	0	0	8	0	0	Ð	0	0	٩	Z8 8
200	5	7.85	7.52	7-3	706	1327	1466	24.6	0	x/1	10	0	12	12	0	11	12	0	288
	6		7.70)	7.5	-	1416	24.0	13	-	17	(6	16	16	0	15	18	14	mark the barr
	7									-									
	8							1	-1							- n 1216	14		
								Total=	27	1/4	33	30	33	32	6	777	35	28	Mean Neonates/Female = 243

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

Cl Proje	ient: ct#:								Ma Rar	aterial:	zation:	Sodiu	m Ch	loride		Co	Test ontrol	Date: Water:	11/36/19 Mod EPAMH
	Day	p	Н	D.	.0.	Cond. ((μS/cm)	Temp				Survi	val / R	eprodi	uction				alon obe
		New	Old	New	Old	New	Old	(°C)	Α	В	C	D	Е	F	G	Н	I	J	SIGN-OFF
	0	7.77		8.2		2335		24.3	0	0	0	d	0	10	0	0	0	O	
	1	7.80	7.67	8.7	7.7	2319	2325	24.7	0	0	D	0	0	0	0	0	0	0	
-	2	7.79	7.71		8.1	2320	2461		0	0	0	0	0	0	0	0	0	0	
L	3	7.86	785	9.1	7.7		2483		4	4	5	4	5	5	6	5	5	5	
1000 mg/L	4	8,06	7.83	9.1	7-7	2267	2509	25.8	7	0	0	0	0	0	0	0	0	0	
100	5	7,84	7.57	7.5	7.6	2285	2420	24.8	0	9	12	12	10	10	9	11	12	10	
	6	_	7:12		7.6	_	2455	24.6	10	15	13	10	15	13	12	10	14	13	
	7	AMARINAMA		ESABERAN		un maratane		,											
	8							244											
		1111				-		Total=	21	28	30	_	_			24	31	28	Mean Neonates/Female = フテック
	Day		Н		.0.		μS/cm)					_	val / R		_				SAMPLE ID
	-	New	Old	New	Old	New	Old	(°C)	Α	В	C	D	E	F	G	H	I	J	
	0	7.68				3258	- Address - Control	2U.Z	0	D	0	Q	e)	0	U	Ø	0	0	
	1	7.84	7.66	8.9	7.5	3257	3381	24.7	0	0	0	0	0	0	0	0	0	0	
	2	7.74	7.71	9.1	8.1	3281	3491	24.4	0	0	0	0	0	0	0	0	0	0	
رر	3	7.80	7.89	9.2	7.9	3283	3512	25.3	0	0	0	4	0	0	3	0	3	4	
1500 mg/L	4	8.01	7.84	9.1	8.0	3732	3539	25.9	0	2	3	0	1	1	1	٨	3	0	
1500	5	7.83	157	7.6	7.7	3191	3460	25-0	4	6	9	6	7	8	6	8	6	5	
	6		7.73		7-5	_	3452	24,5	8	Le	1/0	В	10	1)	14	12	10	9	
	7					7					^				17)				
	8										_							0	
								Total=	12	14	×/12	13	18	20	24	21	22	18	Mean Neonates/Female = 17.9

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

Cl Proje	ient: ct #:	Reference Toxicant 29671 Test ID: 80993								Material: Sodium Chloride Randomization: 10.7 4							Test ontrol V	Date: Water:	11/30/18 Mod EPAMH
Day		pl	I I	D.	0.	Cond. (µS/cm) Temp			Survival / Reproduction							71			SIGN-OFF
		New	Old	New	Old	New	Old	(°C)	Α	В	С	D	Е	F	G	Н	I	J	SIGN-OFF
2000 mg/L	0	7.72		8.2		4213		24.1	0	Ó	0	0	O	d	0	O	O	0	
	1	7.76	7.67	9.0	7.9	4217	4396	24.7	0	0	0	0	0	0	0	0	0	0	
	2	7.1	7.71	9.3	8.4	4209	4516	24.7	Yo	0	X/0	*/0	0	7/0	0	*/o	7/0	*/0	
	3	7.78	7.87	9.5	8.0	4208	4492	25.0	-	0	,	-	0	-	0	-	-		
	4	7.87	7-83	9,4	8-0	4116	4441	25.7	-	O	-	-	O	-	0	-	1	-	
	5	7,76	7.56	8-0	8.1	4148	4703	24.3	-	1	-		2	-	O			-	
	6	-	770	_	7.9	1	4346	24.0		0	-	1	5	1	6	-	-	-	
	7				-				^		-	,		1		ſ	-	1	
	8							100	-		-	,		1		-	1	1	
								Total=	*/0	I	×/0	1/0	7	7/0	4	7/0	40	Yb	Mean Neonates/Female = 1, 4
	Day			D.O.		1 -		Temp	Survival / Reproduc										SAMPLE ID
		New	Old	New	Old	New	Old	(°C)	A	В	С	D	Е	F	G	И	7	J	
2500 mg/L	0	7.68		8.3		5131		25.1	0	0	Q	ಲ	0	C			Q.	0	
	1	7.71	7.69	9.2	8.1	-	5385		0	0	0	0	0	0	0	0	4/0	0	
	2	7.73	7.41	9.6	8.3	5146	5364	24.0	7/0	X/0	X/0	*/o	×/6	X/0	Ho	Ŋο	-	X/0	
	3	/m-		-	-	-		_	-	-	-	-	-	-	-	-	_	-	
	4								-	-	_	-	-	-	-	-	-	1	
	5								-	-		1	-	-	-	-	-	-	
	6								-	-	-	-	_	-		_	-	-	
	7	1 1							_	-			/	/	-	-	-	-	
	8								-	-	-		-	-	-	,	_	1	
								Total=	1/0	1/6	x/o	¥/0	40	* /0	1/6	4/0	40	x/0	Mean Neonates/Female = 0