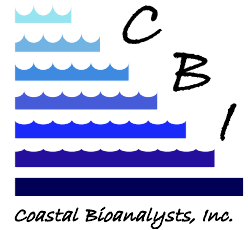


Client: Warren Environmental, Inc.  
 Project ID: WARR1501  
 Sample I.D.: Cured Epoxy #1



**Report of Analysis: Acute Elutriate Test (10:1 volume:mass Saltwater:product)**

<b>Submitted To:</b> Ms. Jane Warren Warren Environmental, Inc. A & W Maintenance Inc. P.O. Box 1206 Carver, MA 02330	<b>Prepared By:</b> Coastal Bioanalysts, Inc. 6400 Enterprise Court Gloucester, VA 23061 (804) 694-8285 www.coastalbio.com Contact: Peter F. De Lisle, Technical Director
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Acute Test Results*				
Species-Test Method	48-h LC50	95% C.L.	T.U. <sub>Ac</sub>	NOAEC
<i>M. bahia</i> EPA 2007.0	>100%	N/A	<b>1.00</b>	100%

\*Note: Although the name of *Mysidopsis bahia* has officially been changed to *Americamysis bahia*, the former name is referenced because of its use in the EPA method manuals and most NPDES permits. Details regarding test conduct and data analysis provided in attached bench sheets and printouts as applicable.

Acute Test QA/QC	Reference Toxicant: KCl		Units: mg/l	Test Organism Source: CBI Stock Cultures	
Species-Method (Ref. Test Date)	Data Source	% Control Survival	48-h LC50	95% C.L./A.L. for LC50	RTT in Control?
<i>M. bahia</i> 2007.0 (6/19/15-6/21/15)	RTT	100	514	459-575	Yes
	CC	100	509	407-611	

Note: RTT = Reference Toxicant Test, CC = Control Chart.

The results of analysis contained within this report relate only to the sample as received in the laboratory. This report shall not be reproduced except in full without written approval from the laboratory. Unless noted below, these test results meet all requirements of NELAP.

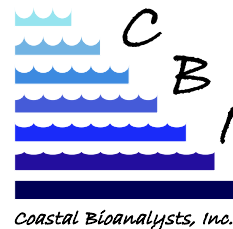
APPROVED:

Peter F. De Lisle, Ph.D.  
 Technical Director

6/23/15  
 Date

Deviations from, additions to, or exclusions from the test method, non-standard conditions or data qualifiers and, as appropriate, a statement of compliance/non-compliance: **NONE**





## GLOSSARY OF TERMS AND ABBREVIATIONS

**A.L. (Acceptance Limits):** The results of a given reference toxicant test are compared to the control chart mean value  $\pm 2$  standard deviations. These limits approximate the 95% probability limits for the "true" reference toxicant value.

**Chronic Value (ChrV):** The geometric mean of the NOEC and LOEC. Units are same as test concentration units.

**C.L. (Confidence Limits):** These are the probability limits, based on the data set and statistical model employed, that the "true value" lies within the limits specified. Typically limits are based on 95% or 99% probabilities.

**Control chart:** A cumulative summary chart of results from QC tests with reference toxicants. The results of a given reference toxicant test are compared to the control chart mean value and 95% Acceptance Limits (A.L.) (mean  $\pm 2$  standard deviations).

**IC25:** The concentration of sample or chemical, calculated from the data set using statistical models, causing a 25% reduction in test organism growth, reproduction, etc. The lower the IC25, the more toxic the chemical or sample. Units are same as test concentration units.

**LC50:** The concentration of sample or chemical, calculated from the data set using statistical models, causing a 50% reduction in test organism survival. The lower the LC50, the more toxic the chemical or sample. Units are same as test concentration units. Note: The LC50 value must always be associated with the duration of exposure. Thus 48-h LC50, 96-h LC50, etc. are calculated.

**LOEC:** Lowest-observable-effect-concentration. The lowest concentration of sample or chemical in a chronic test dilution series in which the test organisms exhibit a statistically significant reduction in any of the test end points (e.g. growth, survival, reproduction) compared to control organisms. Units are same as test concentration units.

**PMSD:** Percent Minimum Significant Difference: The minimum difference which can exist between a test treatment and the controls in a particular test and be statistically significant; a measure of test sensitivity. The lower the PMSD the more sensitive the test.

**N/A:** Not applicable.

**N/D:** Not determined or measured.

**NOAEC:** No-observable-acute-effect-concentration. The highest concentration of sample or chemical in an acute test dilution series in which the test organisms exhibit no statistically significant reduction in the test end point (e.g. survival) compared to control organisms. Units are same as test concentration units.

**NOEC:** No-observable-effect-concentration. The highest concentration of sample or chemical in a chronic test dilution series in which the test organisms exhibit no statistically significant reduction in any of the test end points (e.g. growth, survival, reproduction) compared to control organisms. Some regulatory definitions also require that the NOEC be less than the LOEC. Units are same as test concentration units.

**Q.L.:** Quantitation Limit. Level, concentration, or quantity of a target variable (analyte) that can be reported at a specified degree of confidence.

**T.U.:** Toxic units. Expresses the relative toxicity of an effluent or elutriate in such a manner that the larger the toxic unit value the more toxic the effluent.  $T.U._{Ac} = 100/LC50$ .  $T.U._{Chr} = 100/NOEC$ . A dimensionless unit.



M. bahia daily biological measurements (EPA 2007.0) Template version AMB-STAT-48h-NOAEC5-061313

TRTMNT. (% Elutriate)	Rep	#Live Day 0	#Live Day 1	#Live Day 2	Final Mean % Live		
	A	10	10	10	100.0		
C	B	10	10	10			
Lab Control	C	10	10	10			
	D	10	10	10			
	A	10	10	10	100.0		
#1	B	10	10	10			
6.25	C	10	10	10			
	D	10	10	10			
	A	10	10	10	100.0		
# 2	B	10	10	10			
12.5	C	10	10	10			
	D	10	10	10			
	A	10	10	10	100.0		
# 3	B	10	10	10			
25.0	C	10	10	10			
	D	10	10	10			
	A	10	10	10	100.0		
# 4	B	10	10	10			
50.0	C	10	10	10			
	D	10	10	10			
	A	10	10	10	100.0		
# 5	B	10	10	10			
100	C	10	10	10		Test Duration: 47h 49m	
	D	10	10	10		TAC 48+/-0.5h	
INITIALS:		GB	GB	PB	% CONTROL SURVIVAL:	100.0	
DATE & TIME:		6/16/15 16:15	6/17/15 8:58	6/18/15 16:04		TAC = 90%	
CHANGES & NOTES (INITIALS, DATE, SPECIFIC CHANGE MADE)	Elutriate prepared using 200g/2L ASW mixed on orbital shaker 1.5 hrs at 100 rpm						
SPECIES:	Mysidopsis (Americamysis) Bahia						
ACCLIMATION WATER:	ASW						
FEEDING PRIOR TO TEST:	Artemia nauplii ad libitum						
FEEDING DURING TEST:	Artemia nauplii (ca. 100/mysid/day)						
SOURCE:	CBI Stock cultures						
ACCLIMATION TEMP (o C):	25						
HARVEST START DATE & TIME:	6/10/15 14:55						
HARVEST END DATE & TIME:	6/11/15 10:50						
DATE/TIME WATER ADDED:	6/16/15 16:00						
DATE/TIME ANIMALS ADDED:	6/16/15 16:15						
ANIMAL AGE WINDOW:						19h 55m	TAC Max. 24 h
MAX AGE AT TEST START:						5d	TAC Max. 5 d
TEST SET UP BY:						GB	
ELUTRIATE PREP DATE AND TIME	6/16/15 14:30					SAMPLE USED	A
TEST ID:	ELUTRIATE AGE AT TEST START:					1h 46m	TAC Max 36 h
WARR1501AMB	PEER REVIEW BY (INITIALS/DATE):					PB. GB	6/18/15 16:11

M. bahia daily water quality bench sheet (EPA METHOD 2007.0) Template version AMB-STAT-NOAEC5-061313

	TRTMNT	Day 0 Initial	Day 1	Day 2 Final	SUMMARY WATER QUALITY DATA			
					MEAN	S.D.	MIN.	MAX.
pH (S.U.)	C	8.10	7.87	7.91	7.96	0.12	7.87	8.10
	1	8.10	7.97	7.91	7.99	0.10	7.91	8.10
	2	8.12	8.00	7.95	8.02	0.09	7.95	8.12
	3	8.12	8.00	7.97	8.03	0.08	7.97	8.12
	4	8.12	8.00	7.97	8.03	0.08	7.97	8.12
	5	8.14	7.98	7.95	8.02	0.10	7.95	8.14
Temp. (o C)	C	26	26	26	26	0.0	26	26
	1	26	26	26	26	0.0	26	26
	2	26	26	26	26	0.0	26	26
	3	26	26	26	26	0.0	26	26
	4	26	26	26	26	0.0	26	26
	5	26	26	26	26	0.0	26	26
Diss. Oxygen (mg/l)	C	7.2	6.8	5.6	6.5	0.8	5.6	7.2
	1	7.2	6.8	5.6	6.5	0.8	5.6	7.2
	2	7.2	6.7	5.7	6.5	0.8	5.7	7.2
	3	7.2	6.6	5.9	6.6	0.7	5.9	7.2
	4	7.2	6.5	6.0	6.6	0.6	6.0	7.2
	5	7.2	6.5	5.7	6.5	0.8	5.7	7.2
Salinity (g/kg)	C	20		20	20	0.0	20	20
	1						0	0
	2						0	0
	3						0	0
	4						0	0
	5	20		20	20	0.0	20	20
Replicate measured		C	D	B				
Initials		GB	GB	AG				
		TRC (mg/l) in highest conc. at end of test:		N/A				
<b>Changes &amp; Notes (Initials, date, specific change or notes)</b>								
		Test chamber:	400 ml Tri-pour bkr:	<input checked="" type="checkbox"/>				
			Other:					
		Test solution vol. (200 ml min):	200 ml:	<input checked="" type="checkbox"/>				
			Other (ml):					
		Illumination & photoperiod:	50-100 ft-c 16L:8D					
		Number of replicates/treatment:	4					
		Initial number animals/replicate:	10					
		Test Aerated?	No	Date & Time Air Start:				
TEST ID	TRT ID:	1	2	3	4	5	D.O. Highest conc. @ aeration:	
WARR1501AMB	CONC (%):	6.25	12.5	25.0	50.0	100	Total live highest conc.@ aeration	