

September 29, 2009

Michele Woods
AECOM Environment
3995 Via Oro Avenue
Long Beach, CA 90810-1869

Subject: **Calscience Work Order No.: 09-09-0199**
Client Reference: Sediment Sampling

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 9/2/2009 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in black ink that reads 'Vikas Patel'.

Calscience Environmental
Laboratories, Inc.
Vikas Patel
Project Manager



DATE: 9/2/2009
PAGE: 1 OF 1

[illegible]

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AECOM

DATE: 9/2/09

TEMPERATURE: (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 2.9 °C - 0.2 °C (CF) = 2.7 °C ☒ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter ☐ Metals Only ☐ PCBs Only

Initial: WS

CUSTODY SEALS INTACT:

☐ Cooler ☐ _____ ☐ No (Not Intact) ☒ Not Present ☐ N/A

Initial: WS

☐ Sample ☐ _____ ☐ No (Not Intact) ☒ Not Present

Initial: PS

SAMPLE CONDITION:

Yes No N/A

Chain-Of-Custody (COC) document(s) received with samples..... ☒

☐

☐

COC document(s) received complete..... ☒

☐

☐

☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.

☐ COC not relinquished. ☐ No date relinquished. ☐ No time relinquished.

Sampler's name indicated on COC..... ☒

☐

☐

Sample container label(s) consistent with COC..... ☒

☐

☐

Sample container(s) intact and good condition..... ☒

☐

☐

Correct containers and volume for analyses requested..... ☒

☐

☐

Analyses received within holding time..... ☒

☐

☐

Proper preservation noted on COC or sample container..... ☐

☐

☒

☐ Unpreserved vials received for Volatiles analysis

Volatile analysis container(s) free of headspace..... ☐

☐

☒

Tedlar bag(s) free of condensation..... ☐

☐

☒

CONTAINER TYPE:

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☒ 16ozCGJ ☐ Sleeve ☐ EnCores® ☐ TerraCores® ☐ _____

Water: ☐ VOA ☐ VOA_h ☐ VOAn₂ ☐ 125AGB ☐ 125AGB_h ☐ 125AGB_p ☐ 1AGB ☐ 1AGBn₂ ☐ 1AGBs

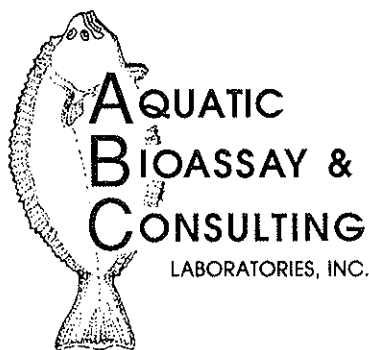
☐ 500AGB ☐ 500AGJ ☐ 500AGJs ☐ 250AGB ☐ 250CGB ☐ 250CGBs ☐ 1PB ☐ 500PB ☐ 500PBn₂

☐ 250PB ☐ 250PBn ☐ 125PB ☐ 125PBz_{na} ☐ 100PJ ☐ 100PJn₂ ☐ _____ ☐ _____ ☐ _____

Air: ☐ Tedlar® ☐ Summa® ☐ _____ Other: ☐ _____ Checked/Labeled by: PS

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelop Reviewed by: WS

Preservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ Na: NaOH p: H₃PO₄ s: H₂SO₄ z_{na}: ZnAc₂+NaOH f: Field-filtered Scanned by: PS



TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

September 25th, 2009

Mr. Vik Patel
Calscience Environmental Laboratories, Inc.
7440 Lincoln Way
Garden Grove, CA 92841-1432

Dear Mr. Stearns:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods*, EPA/600/R-94/025. Results were as follows:

CLIENT:	Calscience Environmental Laboratories, Inc.
SAMPLE I.D.:	R7-090109
DATE RECEIVED:	September 3 rd , 2009
ABC LAB. NO.:	CSE0909.025

***Eohaustorius estuarius* 10 Day Survival Sediment Bioassay**

Percent Survival = 71.0% Survival

Yours very truly,

A handwritten signature in black ink, appearing to read "Tim Mikel", followed by a horizontal line.

Thomas (Tim) Mikel
Laboratory Director

CETIS Summary Report

Report Date: 25 Sep-09 15:31 (p 1 of 1)
 Test Code: 14-6370-4402/CSE0909025

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 14-6577-2317	Test Type: Survival-Reburial	Analyst:
Start Date: 15 Sep-09 13:00	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 25 Sep-09 13:10	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:

Sample ID: 10-7502-7854	Code: CSE0909025	Client: Calscience Environmental Laboratorie
Sample Date: 01 Sep-09 11:29	Material: Sediment	Project: 09-09-0199
Receive Date: 03 Sep-09 11:35	Source: Bioassay Report	
Sample Age: 14d 2h (4 °C)	Station: R7-090109	

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
05-4862-2789	Survival Rate	<100	100	N/A	4.28%	>1	Equal Variance t Two-Sample Test

Point Estimate Summary

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
09-2190-9002	Survival Rate	EC5	23.68	17.83	32.16	4.222	Linear Interpolation (ICPIN)
		EC10	47.37	35.66	64.32	2.111	
		EC15	71.05	53.5	96.47	1.407	
		EC20	94.74	71.33	N/A	1.056	
		EC25	>100	N/A	N/A	<1	
		EC40	>100	N/A	N/A	<1	
		EC50	>100	N/A	N/A	<1	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
05-4862-2789	Survival Rate	Control Resp	0.9	0.9 - NL	Yes	Result Within Limits
09-2190-9002	Survival Rate	Control Resp	0.9	0.9 - NL	Yes	Result Within Limits

Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Negative Control	5	0.9	0.8868	0.9132	0.85	0.95	0.006455	0.03536	3.93%	0.0%
100		5	0.71	0.6944	0.7256	0.65	0.75	0.007638	0.04183	5.89%	21.11%

Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	0.9	0.9	0.85	0.9	0.95
100		0.75	0.75	0.65	0.7	0.7

CETIS Measurement Report

Report Date: 25 Sep-09 15:31 (p 1 of 2)

Test Code: 14-6370-4402/CSE0909025

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	14-6577-2317	Test Type:	Survival-Reburial	Analyst:	
Start Date:	15 Sep-09 13:00	Protocol:	EPA/600/R-94/025 (1994)	Diluent:	Laboratory Seawater
Ending Date:	25 Sep-09 13:10	Species:	Eohaustorius estuarius	Brine:	Not Applicable
Duration:	10d 0h	Source:	Northwestern Aquatic Science, OR	Age:	
Sample ID:	10-7502-7854	Code:	CSE0909025	Client:	Calscience Environmental Laboratorie
Sample Date:	01 Sep-09 11:29	Material:	Sediment	Project:	09-09-0199
Receive Date:	03 Sep-09 11:35	Source:	Bioassay Report		
Sample Age:	14d 2h (4 °C)	Station:	R7-090109		

Dissolved Oxygen-mg/L

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	10	9.952	10.05	9.9	10.1	0.02357	0.1414	1.41%	0
100		2	10	9.952	10.05	9.9	10.1	0.02357	0.1414	1.41%	0
Overall		4	10			9.9	10.1				0 (0%)

Total Ammonia (N)-mg/L

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	1	0			0	0	0	0		0
100		1	0			0	0	0	0		0
Overall		2	0			0	0				0 (0%)

pH-Units

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	7.9	7.899	7.901	7.9	7.9	0	0	0.0%	0
100		2	8.2	8.152	8.248	8.1	8.3	0.02357	0.1414	1.73%	0
Overall		4	8.05			7.9	8.3				0 (0%)

Salinity-ppt

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	20	20	20	20	20	0	0	0.0%	0
100		2	20	20	20	20	20	0	0	0.0%	0
Overall		4	20			20	20				0 (0%)

Temperature-°C

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	15.25	15.18	15.32	15.1	15.4	0.03535	0.2121	1.39%	0
100		2	15.3	15.3	15.3	15.3	15.3	0	0	0.0%	0
Overall		4	15.28			15.1	15.4				0 (0%)

CETIS Measurement Report

Report Date: 25 Sep-09 15:31 (p 2 of 2)
 Test Code: 14-6370-4402/CSE0909025

Eohaustorius 10-d Survival and Reburial Sediment Test**Aquatic Bioassay & Consulting Labs, Inc.****Dissolved Oxygen-mg/L**

Conc-%	Control Type	1	2
0	Negative Contr	10.1	9.9
100		10.1	9.9

Total Ammonia (N)-mg/L

Conc-%	Control Type	1	2
0	Negative Contr	0	
100		0	

pH-Units

Conc-%	Control Type	1	2
0	Negative Contr	7.9	7.9
100		8.3	8.1

Salinity-ppt

Conc-%	Control Type	1	2
0	Negative Contr	20	20
100		20	20

Temperature-°C

Conc-%	Control Type	1	2
0	Negative Contr	15.1	15.4
100		15.3	15.3



TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

September 25th, 2009

Mr. Vik Patel
Calscience Environmental Laboratories, Inc.
7440 Lincoln Way
Garden Grove, CA 92841-1432

Dear Mr. Stearns:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods*, EPA/600/R-94/025. Results were as follows:

CLIENT:	Calscience Environmental Laboratories, Inc.
SAMPLE I.D.:	R6-090109
DATE RECEIVED:	September 3 rd , 2009
ABC LAB. NO.:	CSE0909.026

***Eohaustorius estuarius* 10 Day Survival Sediment Bioassay**

Percent Survival = 19.0% Survival

Yours very truly,

Thomas (Tim) Mikel
Laboratory Director

CETIS Summary Report

Report Date: 25 Sep-09 15:37 (p 1 of 1)
 Test Code: 17-5577-8623/CSE0909026

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 18-5311-3283	Test Type: Survival-Reburial	Analyst:
Start Date: 15 Sep-09 13:01	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 25 Sep-09 13:20	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:

Sample ID: 02-7307-4228	Code: CSE0909026	Client: Calscience Environmental Laboratorie
Sample Date: 01 Sep-09 14:54	Material: Sediment	Project: 09-09-0199
Receive Date: 03 Sep-09 11:35	Source: Bioassay Report	
Sample Age: 13d 22h (4 °C)	Station: R6-090109	

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
01-8289-4430	Survival Rate	<100	100	N/A	7.25%	>1	Equal Variance t Two-Sample Test

Point Estimate Summary

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
04-2893-5107	Survival Rate	EC5	6.338	5.66	7.261	15.78	Linear Interpolation (ICPIN)
		EC10	12.68	11.32	14.52	7.889	
		EC15	19.01	16.98	21.78	5.259	
		EC20	25.35	22.64	29.04	3.944	
		EC25	31.69	28.3	36.3	3.156	
		EC40	50.7	45.28	58.09	1.972	
		EC50	63.38	56.6	72.61	1.578	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
01-8289-4430	Survival Rate	Control Resp	0.9	0.9 - NL	Yes	Result Within Limits
04-2893-5107	Survival Rate	Control Resp	0.9	0.9 - NL	Yes	Result Within Limits

Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Negative Control	5	0.9	0.8868	0.9132	0.85	0.95	0.006455	0.03536	3.93%	0.0%
100		5	0.19	0.1593	0.2207	0.1	0.3	0.015	0.08216	43.24%	78.89%

Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	0.9	0.9	0.85	0.9	0.95
100		0.15	0.3	0.1	0.25	0.15

CETIS Measurement Report

Report Date: 25 Sep-09 15:37 (p 1 of 2)
 Test Code: 17-5577-8623/CSE0909026

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 18-5311-3283	Test Type: Survival-Reburial	Analyst:
Start Date: 15 Sep-09 13:01	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 25 Sep-09 13:20	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:

Sample ID: 02-7307-4228	Code: CSE0909026	Client: CalScience Environmental Laboratorie
Sample Date: 01 Sep-09 14:54	Material: Sediment	Project: 09-09-0199
Receive Date: 03 Sep-09 11:35	Source: Bioassay Report	
Sample Age: 13d 22h (4 °C)	Station: R6-090109	

Dissolved Oxygen-mg/L

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	10	9.952	10.05	9.9	10.1	0.02357	0.1414	1.41%	0
100		2	10.1	10.05	10.15	10	10.2	0.02357	0.1414	1.4%	0
Overall		4	10.05			9.9	10.2				0 (0%)

Total Ammonia (N)-mg/L

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	1	0			0	0	0	0		0
100		1	0			0	0	0	0		0
Overall		2	0			0	0				0 (0%)

pH-Units

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	7.9	7.899	7.901	7.9	7.9	0	0	0.0%	0
100		2	8	8	8	8	8	0	0	0.0%	0
Overall		4	7.95			7.9	8				0 (0%)

Salinity-ppt

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	20	20	20	20	20	0	0	0.0%	0
100		2	20	20	20	20	20	0	0	0.0%	0
Overall		4	20			20	20				0 (0%)

Temperature-°C

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	15.25	15.18	15.32	15.1	15.4	0.03535	0.2121	1.39%	0
100		2	15.4	15.35	15.45	15.3	15.5	0.02357	0.1414	0.92%	0
Overall		4	15.33			15.1	15.5				0 (0%)

CETIS Measurement Report

Report Date: 25 Sep-09 15:37 (p 2 of 2)
 Test Code: 17-5577-8623/CSE0909026

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Dissolved Oxygen-mg/L

Conc-%	Control Type	1	2
0	Negative Contr	10.1	9.9
100		10.2	10

Total Ammonia (N)-mg/L

Conc-%	Control Type	1	2
0	Negative Contr	0	
100		0	

pH-Units

Conc-%	Control Type	1	2
0	Negative Contr	7.9	7.9
100		8	8

Salinity-ppt

Conc-%	Control Type	1	2
0	Negative Contr	20	20
100		20	20

Temperature-°C

Conc-%	Control Type	1	2
0	Negative Contr	15.1	15.4
100		15.3	15.5



TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

96 Hour *Eohaustorius estuarius* Survival Bioassay - Standard Toxicant

DATE: 17 September 2009

STANDARD TOXICANT: Ammonium Chloride

ENDPOINT: SURVIVAL

UNIONIZED AMMONIA

NOEC = 0.234 mg/L

IC25 = 0.512 mg/L

IC50 = 1.110 mg/L

Yours very truly,



Thomas (Tim) Mikel
Laboratory Director

CETIS Summary Report

Report Date: 25 Sep-09 15:12 (p 1 of 1)
 Test Code: 04-8672-6908/EOH091709

Reference Toxicant 96-h Acute Survival Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 07-1755-0772	Test Type: Survival	Analyst:
Start Date: 17 Sep-09 12:00	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 21 Sep-09 12:00	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 96h	Source: Northwestern Aquatic Science, OR	Age:

Sample ID: 13-5431-2631	Code: EOH091709	Client: Internal Lab
Sample Date: 17 Sep-09 12:00	Material: Ammonia (Unionized)	Project:
Receive Date: 17 Sep-09 12:00	Source: Reference Toxicant	
Sample Age: N/A	Station:	

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
04-9817-6041	Survival Rate	0.234	0.47	0.3316	13.4%		Dunnett's Multiple Comparison Test

Point Estimate Summary

Analysis ID	Endpoint	Level	mg/L	95% LCL	95% UCL	TU	Method
05-9413-1050	Survival Rate	EC5	0.2851	0.194	0.3648		Linear Interpolation (ICPIN)
		EC10	0.3363	0.2508	0.4957		
		EC15	0.3874	0.2872	0.5962		
		EC20	0.4385	0.3211	0.6757		
		EC25	0.5123	0.3417	0.7421		
		EC40	0.8482	0.6014	1.086		
		EC50	1.11	0.7855	1.411		

Survival Rate Summary

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Negative Control	4	0.975	0.9563	0.9937	0.9	1	0.009129	0.05	5.13%	0.0%
0.234		4	0.975	0.9563	0.9937	0.9	1	0.009129	0.05	5.13%	0.0%
0.47		4	0.75	0.7018	0.7982	0.6	0.9	0.02357	0.1291	17.21%	23.08%
0.808		4	0.6	0.5695	0.6305	0.5	0.7	0.01491	0.08165	13.61%	38.46%
1.679		4	0.275	0.219	0.331	0.1	0.4	0.02739	0.15	54.55%	71.79%
3.524		4	0	0	0	0	0	0	0		100.0%

Survival Rate Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	0.9	1	1
0.234		1	0.9	1	1
0.47		0.9	0.8	0.6	0.7
0.808		0.6	0.7	0.6	0.5
1.679		0.4	0.2	0.4	0.1
3.524		0	0	0	0

pass

CETIS Measurement Report

Report Date: 25 Sep-09 15:12 (p 1 of 2)

Test Code: 04-8672-6908/EOH091709

Reference Toxicant 96-h Acute Survival Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 07-1755-0772 Test Type: Survival Analyst:
 Start Date: 17 Sep-09 12:00 Protocol: EPA/600/R-94/025 (1994) Diluent: Laboratory Seawater
 Ending Date: 21 Sep-09 12:00 Species: Eohaustorius estuarius Brine: Not Applicable
 Duration: 96h Source: Northwestern Aquatic Science, OR Age:

Sample ID: 13-5431-2631 Code: EOH091709 Client: Internal Lab
 Sample Date: 17 Sep-09 12:00 Material: Ammonia (Unionized) Project:
 Receive Date: 17 Sep-09 12:00 Source: Reference Toxicant
 Sample Age: N/A Station:

Dissolved Oxygen-mg/L

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	6.45	6.235	6.665	6	6.9	0.1061	0.6364	9.87%	0
0.234		2	6.35	6.135	6.565	5.9	6.8	0.1061	0.6364	10.02%	0
0.47		2	6.25	6.035	6.465	5.8	6.7	0.1061	0.6364	10.18%	0
0.808		2	6.1	5.861	6.339	5.6	6.6	0.1179	0.7071	11.59%	0
1.679		2	6.05	5.835	6.265	5.6	6.5	0.1061	0.6364	10.52%	0
3.524		2	6.05	5.787	6.313	5.5	6.6	0.1296	0.7778	12.86%	0
Overall		12	6.208			5.5	6.9				0 (0%)

Total Ammonia (N)-mg/L

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	0	0	0	0	0	0	0	0.0%	0
0.234		1	12.5			12.5	12.5	0	0	0.0%	0
0.47		1	25.1			25.1	25.1	0	0	0.0%	0
0.808		1	43.1			43.1	43.1	0	0	0.0%	0
1.679		1	89.6			89.6	89.6	0	0	0.0%	0
3.524		1	188			188	188	0	0	0.0%	0
Overall		7	59.72			0	188				0 (0%)

pH-Units

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	7.85	7.826	7.874	7.8	7.9	0.01178	0.07071	0.9%	0
0.234		2	7.9	7.899	7.901	7.9	7.9	0	0	0.0%	0
0.47		2	7.85	7.826	7.874	7.8	7.9	0.01178	0.07071	0.9%	0
0.808		2	7.85	7.826	7.874	7.8	7.9	0.01178	0.07071	0.9%	0
1.679		2	7.85	7.826	7.874	7.8	7.9	0.01178	0.07071	0.9%	0
3.524		2	7.85	7.826	7.874	7.8	7.9	0.01178	0.07071	0.9%	0
Overall		12	7.858			7.8	7.9				0 (0%)

Salinity-ppt

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	20	20	20	20	20	0	0	0.0%	0
0.234		2	20	20	20	20	20	0	0	0.0%	0
0.47		2	20	20	20	20	20	0	0	0.0%	0
0.808		2	20	20	20	20	20	0	0	0.0%	0
1.679		2	20	20	20	20	20	0	0	0.0%	0
3.524		2	20	20	20	20	20	0	0	0.0%	0
Overall		12	20			20	20				0 (0%)

Temperature-°C

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	15	15	15	15	15	0	0	0.0%	0
0.234		2	15	15	15	15	15	0	0	0.0%	0
0.47		2	15	15	15	15	15	0	0	0.0%	0
0.808		2	15	15	15	15	15	0	0	0.0%	0
1.679		2	15	15	15	15	15	0	0	0.0%	0
3.524		2	15	15	15	15	15	0	0	0.0%	0
Overall		12	15			15	15				0 (0%)

CETIS Measurement Report

Report Date: 25 Sep-09 15:12 (p 2 of 2)
 Test Code: 04-8672-6908/EOH091709

Reference Toxicant 96-h Acute Survival Test

Aquatic Bioassay & Consulting Labs, Inc.

Dissolved Oxygen-mg/L

Conc-mg/L	Control Type	1	2
0	Negative Contr	6.9	6
0.234		6.8	5.9
0.47		6.7	5.8
0.808		6.6	5.6
1.679		6.5	5.6
3.524		6.6	5.5

Total Ammonia (N)-mg/L

Conc-mg/L	Control Type	1	2
0	Negative Contr	0	0
0.234		12.5	
0.47		25.1	
0.808		43.1	
1.679		89.6	
3.524		188	

pH-Units

Conc-mg/L	Control Type	1	2
0	Negative Contr	7.9	7.8
0.234		7.9	7.9
0.47		7.9	7.8
0.808		7.9	7.8
1.679		7.9	7.8
3.524		7.9	7.8

Salinity-ppt

Conc-mg/L	Control Type	1	2
0	Negative Contr	20	20
0.234		20	20
0.47		20	20
0.808		20	20
1.679		20	20
3.524		20	20

Temperature-°C

Conc-mg/L	Control Type	1	2
0	Negative Contr	15	15
0.234		15	15
0.47		15	15
0.808		15	15
1.679		15	15
3.524		15	15

Amphipod Species: *E. estuarinus*
Amphipod Source: N.W. Aquatic Sciences
Sample Source: CSF

[illegible]

Test Start Date: 9/15/09
 Test End Date: 9/25/09
 Reference Toxicant: Ammonium chloride
 Sample Source: C00
 Experiment #: County of Orange

Amphipod Species: *E. estuarius*
 Collection/Arrival Date: 6.9.09 / 9.10.09
 Amphipod Source: N.W. Aquatic Sciences
 Laboratory: CAABC

Test Cont. #	Station Code	Total Number Alive	Number at Start	Percent Survival	Notes (Possible predators?)
H0ME 1		18	20		
H0ME 2		18	20		
H0ME 3		17	20		
H0ME 4		16	20		
H0ME 5		14	20		
C001 1		0	20		
C001 2		0	20		
C001 3		0	20		
C001 4		0	20		
C001 5		0	20		
C002 1		0	20		
C002 2		0	20		
C002 3		0	20		
C002 4		0	20		
C002 5		0	20		
C003 1		0	20		
C003 2		0	20		
C003 3		0	20		
C003 4		0	20		
C003 5		0	20		

Test Start Date: 9/15/04

Test End Date: 9/25/04

Reference Toxicant: Ammonium Chloride

Sample Source: C00

Experiment #: C004 of Orange

Amphipod Species: E. estuarius

Collection/Arrival Date: 6/8/04 / 11/9/04

Amphipod Source: N.W. Aquatic Sciences

Laboratory: CAAPC

Test Cont. #	Station Code	Total Number Alive	Number at Start	Percent Survival	Notes (Possible predators?)
C004					
1		6	20		
C004					
2		8	20		
C004					
3		5	20		
C004					
4		4	20		
C004					
5		5	20		
C005					
1		14	20		
C005					
2		18	20		
C005					
3		18	20		
C005					
4		14	20		
C005					
5		19	20		
C006					
1		18	20		
C006					
2		17	20		
C006					
3		18	20		
C006					
4		17	20		
C006					
5		19	20		
C007					
1		18	20		
C007					
2		14	20		
C007					
3		14	20		
C007					
4		18	20		
C007					
5		17	20		

Test Start Date: 9/5/01
Test End Date: 9/25/01
Reference Toxicant: Ammonium Chloride
Sample Source: CSE
Experiment #: CSE/100

Amphipod Species : *E. csharovi*
Collection/Arrival Date: 9/8/02 9/1/02 A
Amphipod Source: N.W. Aquatic Sciences
Laboratory CAABC

[illegible]

Experiment: COO
Species: E. escherichiae

Initial:

AMPHIPOD BIOASSAY STANDARD REFERENCE TOXICANT TEST

COMPANY: Aquatic Bioassay

I.D.: Ammonium Chloride

START: 9/17/09

END: 9/21/09

CHEMICAL ANALYSIS

CONC.	9/17/09					9/21/09				
	INITIAL					96 HRS.				
	D.O.	TEMP	pH	SAL	Ammonia	D.O.	TEMP	pH	SAL	Ammonia
CON	6.9	15.0	7.9	20	0	6.0	15.0	7.8	20	0
15.6 mg/L	6.8	15.0	7.9	20	12.5	5.9	15.0	7.8	20	0.234
31.2 mg/L	6.7	15.0	7.9	20	25.1	5.8	15.0	7.8	20	0.470
62.5 mg/L	6.6	15.0	7.9	20	43.1	5.6	15.0	7.8	20	0.808
125 mg/L	6.5	15.0	7.9	20	89.6	5.6	15.0	7.8	20	1.679
250 mg/L	6.6	15.0	7.9	20	188.0	5.5	15.0	7.8	20	3.524

BIOLOGICAL MEASUREMENTS

CONC. (mg/L)	0 HRS.	96 HRS.	MEAN SURVIVAL
CONTROL	10	10	
CONTROL	10	9	
CONTROL	10	10	
CONTROL	10	10	
15.6	10	10	
15.6	10	9	
15.6	10	10	
15.6	10	10	
31.2	10	9	
31.2	10	8	
31.2	10	6	
31.2	10	7	
62.5	10	6	
62.5	10	7	
62.5	10	6	
62.5	10	5	
125	10	4	
125	10	2	
125	10	4	
125	10	1	
250	10	0	
250	10	0	
250	10	0	
250	10	0	

DATE: 9/21/09

Northwestern Aquatic Sciences

3814 Yaquina Bay Rd., P.O. Box 1437, Newport, OR 97365

Tel: 541-265-7225, Fax: 541-265-2799, E-mail: www.nwaquatic.com

SUBJECT: Animal Collection Data Sheet (shipping)			
SOLD TO: Aquatic Bioassay & Consulting Laboratory, Inc. 29 North Olive St. Ventura, CA 93001		Joe Freas 805.573.2392	
FedEx # NONE			
DATE OF SHIPMENT: 9-9-09			
ANIMAL HISTORY			
Species	Age/Size	Number Shipped	
<i>Eohaustorius estuarius</i>	3-5 mm	1500 + 10%	
WATER QUALITY AT TIME OF SHIPMENT			
Temperature (°C): 14.7	pH: 8.1	Salinity (ppt): 19.5	D.O. (mg/L): 9.1
Other:			
PACKAGED BY: Yves Nakahama yr DATE: 9-9-09			
FIELD COLLECTION/CULTURE NOTES Collected 9-8-09 from Yaquina Bay, OR. Interstitial WQ: Temp: 16.0 °C, Salinity 25.0 ppt. Adjusted down ~5 ppt Held at 15°C in aerated water.			
ADDITIONAL COMMENTS 2-liters of 0.5 mm sieved home sediment included.			

PLEASE RETURN ALL SHIPPING MATERIALS

Please call Gary Buhler or Gerald Irissarri at (541) 265-7225 if there are any questions. Thank You.

Recd. 9.10.09
 H Acceptable

QA/QC CHECKLIST FOR SEDIMENT TOXICITY

Eohaustorius estuarius 10 Day Survival

Project: COO
 QA Batch: 9/17/09 - ECH091709
 Test Date: 9/15/09
 Reviewed By: [Signature]

Sample Storage Yes No (Explain/Sample #)

4°C in Dark
 ≤ 14 Days

✓
✓

Test Conditions Yes No (Explain/Sample #)

5 Replicates per Station
 20 Amphipods per Replicate
 Water Quality Measurement at Start & End
 Daily Checks of Beakers
 Organism Acclimation >96hrs & <2 Weeks

✓
✓
✓
✓
✓

Test Acceptability Yes No (Explain/Sample #)

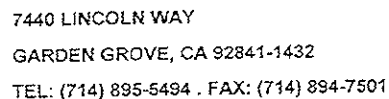
Control Mean Survival ≥90%
 Control Survival Each Replicate ≥80%
 Reference Toxicant Test within Limits
 Temperature 14-16°C
 Salinity 17-23ppt.
 Unionized Ammonia <0.8mg/L
 Dissolved Oxygen >5.0mg/L

✓
✓
✓
✓
✓
✓
✓

Data Validation Yes No (Explain/Sample #)

Test Data Entry
 Water Quality Data Entry
 Statistical Verification
 Reference Toxicant Data Entry

✓
✓
✓
✓

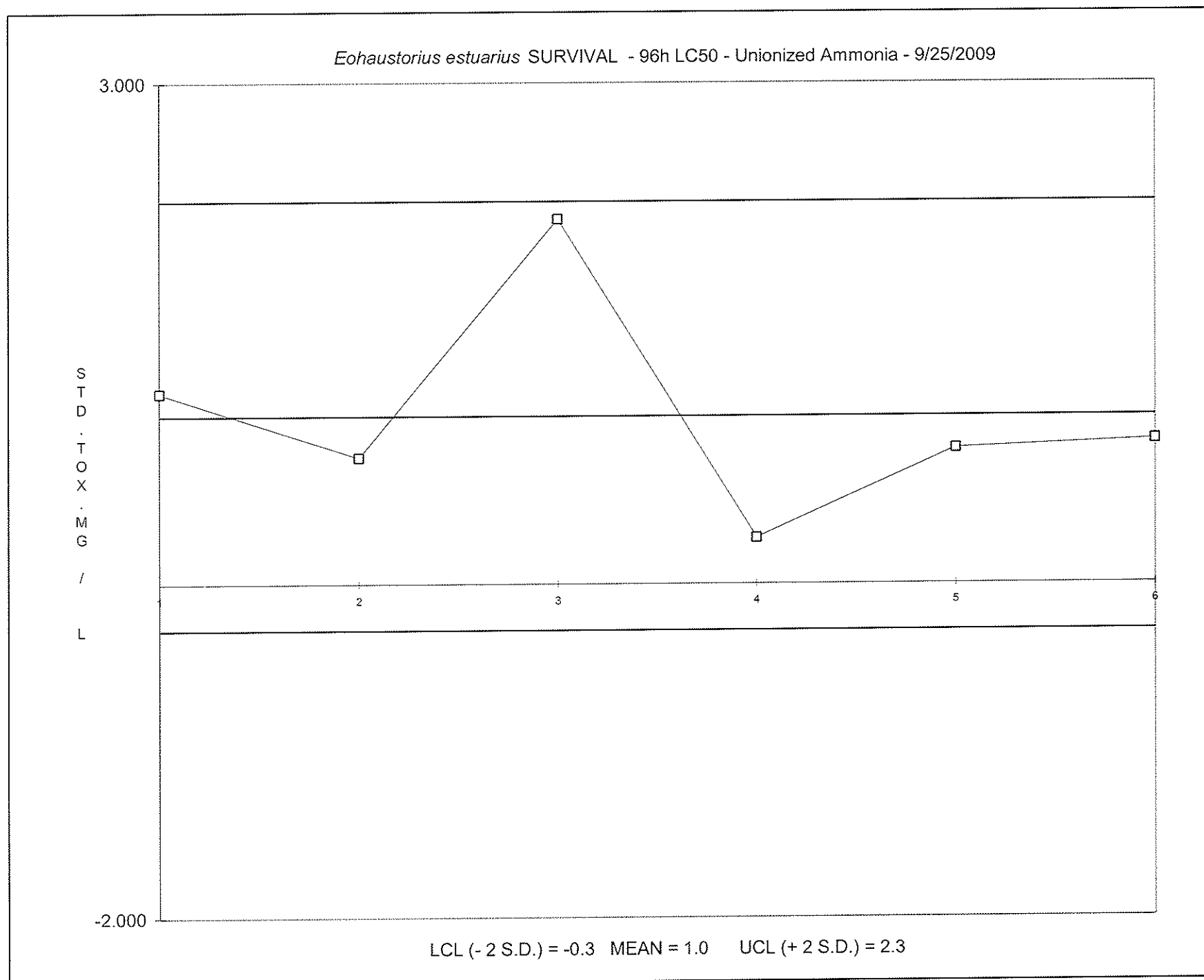


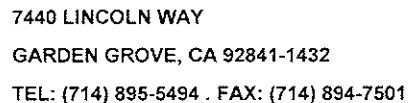
CHAIN OF CUSTODY RECORD

PAGE: 1 OF 1

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FIGURE 2-1. (CONTINUED).





CHAIN OF CUSTODY RECORD

PAGE: 1 OF 1

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