



Georgia-Pacific Crossett LLC
Consumer Products

Crossett Paper Operations
100 Mill Supply Road
P.O. Box 3333
Crossett, AR 71635
(870) 567-8000
(870) 364-9076 (fax)
www.gp.com

November 17, 2015

Mr. Richard Healey
NPDES Enforcement Section
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

Reference: Georgia-Pacific Crossett LLC: Crossett Paper Operations
NPDES Permit # **AR0001210**

Dear Mr. Healey:

Attached are the Discharge Monitoring Reports (DMRs) for the Georgia-Pacific Crossett Paper Operations' - NPDES Permit # **AR0001210** - for October 2015. As required by Part III, Section 4 paragraph a, of our NPDES Permit, a full report of the chronic toxicity testing has also been included with this submittal.

If you have any questions or need additional information, please feel free to contact Rachel Johnson at (870) 567-8170 or by email at rachel.johnson2@gapac.com.

Sincerely,

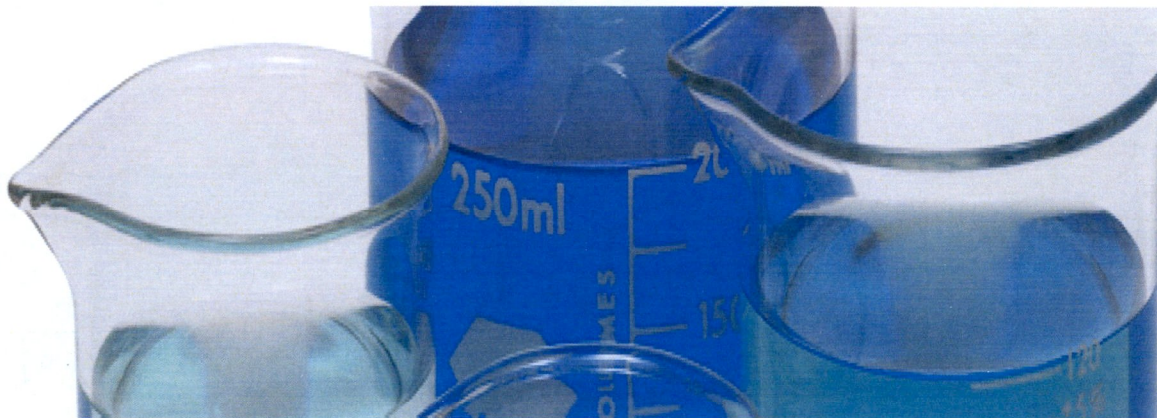
A handwritten signature in cursive script that reads 'Sarah M. Ross'.

Sarah M. Ross
Environmental Manager
Crossett Paper Operations

Prepared for
Georgia-Pacific Crossett Mill
Crossett, AR

Date
September 2015

CHRONIC TOXICITY TEST RESULTS – OUTFALL 001 EFFLUENT PROJECT NUMBER: 20-19675I



Ms. Rachel Johnson
 Georgia-Pacific Crossett Mill
 100 Mill Supply Road
 Crossett, Arkansas 71635

**CHRONIC TOXICITY TEST RESULTS- OUTFALL 001 EFFLUENT
 RAMBOLL ENVIRON PROJECT NO. 20-19675I**

Dear Ms. Johnson:

October 20, 2015

Ramboll Environ conducted chronic (7-day) whole effluent toxicity (WET) tests for Georgia-Pacific in Crossett, AR. The tests were conducted according to requirements in Arkansas NPDES permit AR0001210. Composite samples of Outfall 001 effluent were collected on September 14, 16, and 18, 2015. The samples were received at Ramboll Environ on September 15, 17, and 19, 2015, within the USEPA-required receipt temperature range of 0-6.0 °C. The grab samples of river water were received in good condition on the same days as the effluent samples. Test organisms utilized for the chronic toxicity tests were the fathead minnow (*Pimephales promelas*) and *Ceriodaphnia dubia* (*C. dubia*). The tests were initiated upon receipt of the first sample. Test concentrations consisted of 25, 34, 45, 60, and 80 percent effluent and a river water control. A secondary control of moderately hard water was also initiated.

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Tests were conducted in accordance with *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition (EPA-821-R-02-013). All controls met test acceptability criteria (TAC). The results of the chronic toxicity tests are as follows:

TEST RESULTS FOR OUTFALL 001 EFFLUENT		
Permit Limits	Fathead Minnow	<i>C. dubia</i>
NOEC Value 80% (lethality)	80%	80%
NOEC Value 80% (sub-lethality)	80%	80%

NELAP Accredited and Laboratory Certification in the following United States: AR (02-008-0), AZ (0751), CA (2465), FL (E87896), IA (386), KS (E-10391), LA (02061), MN, NC (003), OK (9973), SC (84015), TX (T104704410-11-2), VA (460171), WI (399050850), WV (351). Test Results contained in this report meet NELAP requirements.

The results of the chronic test with the fathead minnow indicated a No Observable Effect Concentration (NOEC) value for lethality and sub-lethality of 80 percent effluent. The results of the chronic test with *C. dubia* indicated NOEC values for lethality and sub-lethality of 80 percent effluent. These test results indicate no significant toxicity at the critical dilution (80 percent effluent) for either fathead minnow or *C. dubia*.

The Coefficient of Variation (CV) values for the fathead minnow survival in the river water control and critical dilution are 19.2 and 0.0 percent, respectively. The CV values for growth in the control and critical dilution are 24.4 and 5.9 percent, respectively, and meet the CV limit of 40 percent for findings of no toxicity. Test precision for growth results (as Percent Minimum Significant Difference, PMSD) value was 31.4 which is just above the USEPA PMSD bounds of 12 to 30 percent when alpha 0.05 was used for hypothesis testing. The effluent concentration-response can be described as a Type 10 or inverse response in EPA 821-B-00-004 *Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing*. A Type 10 concentration-response curve is indicative of a lack of toxicity, providing a normal control response. In this case the control response was within normal performance criteria. Furthermore, a Type 10 response will cause a reduction in test precision. This test is considered valid for assessment of permit compliance. The monthly reference toxicant test also met all the test acceptability criteria.

The *C. dubia* reproduction CV values (for surviving adults) for the laboratory river water control and critical dilution are 22.9 and 17.2 percent respectively, which meets the TAC limit of 40 percent for a finding of no toxicity. The PMSD value was 37.0 percent, which is within the USEPA PMSD bounds of 13 to 47 percent for *C. dubia* reproduction. The effluent concentration-response is flat and cannot be described in EPA 821-B-00-004. A flat concentration-response curve is indicative of a lack of toxicity. This test is considered valid for assessment of permit compliance. The monthly reference toxicant test also met all the test acceptability criteria.

Copies of the laboratory bench sheets with statistical data are presented in Attachment 1. Chain-of-custody documentation and reference toxicant data are presented in Attachment 2. In order to meet the NELAP requirement for listing the total number of report pages; this report consists of 39 pages, including this cover letter, attachment pages and separator pages.

If you have any questions please contact Rick Lockwood at (615) 277-7523. Ramboll Environ appreciates the opportunity to assist Georgia-Pacific with their testing needs.

Yours sincerely,



Richard Lockwood
Project Manager
Water Quality and Ecotoxicology

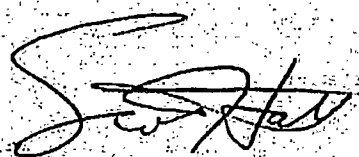
D 615-277-7523
RLOCKWOOD@RAMBOLL.COM



Robin L. Richards, REM
Department Head
Water Management and Planning

Data Review Form
Acute and Chronic WET Tests
Ramboll Environ

The raw data (i.e., laboratory bench sheets) and data in the applicable summary sheets have been checked and found to be complete. Additionally, test conditions and control performance meet test acceptability criteria specified by the US Environmental Protection Agency and the certifying state authority for the tests conducted¹.



Scott Hall, Department Manager
Water Quality and Ecotoxicology

¹ Any data limitations regarding their applicability for determining NPDES permit compliance are discussed in the report cover letter.

ATTACHMENT 1

**LABORATORY BENCH SHEETS WITH
STATISTICAL DATA**

CETIS Analytical Report

Report Date: 02 Oct-15 17:08 (p 1 of 4)
 Test Code: 17808fm | 11-7450-8763

Fathead Minnow 7-d Larval Survival and Growth Test

ENVIRON International Corp

Analysis ID: 20-8070-5812	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.8.4
Analyzed: 02 Oct-15 17:06	Analysis: Nonparametric-Control vs Treatments	Official Results: Yes
Batch ID: 05-2047-8998	Test Type: Growth-Survival (7d)	Analyst:
Start Date: 15 Sep-15	Protocol: EPA/821/R-02-013 (2002)	Diluent: Receiving Water
Ending Date: 22 Sep-15	Species: Pimephales promelas	Brine: Not Applicable
Duration: 7d 0h	Source: Environmental Consult & Test	Age:
Sample ID: 20-8599-1446	Code: 7C55B416	Client: GPAC Crossett
Sample Date: 14 Sep-15	Material: Industrial Effluent	Project: WET Quarterly Compliance Test (3Q)
Receive Date: 15 Sep-15	Source: Discharge Monitoring Report	
Sample Age: 24h	Station: 001	

Data Transform	Zeta	Alt Hyp	Trials	Seed	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	NA	C > T	NA	NA	80	>80	NA	1.25	11.3%

Steel Many-One Rank Sum Test

Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Receiving Water		25	33.5	16	3	8	0.9934	Asymp	Non-Significant Effect
		34	35	16	2	8	0.9979	Asymp	Non-Significant Effect
		45	35	16	2	8	0.9979	Asymp	Non-Significant Effect
		60	35	16	2	8	0.9979	Asymp	Non-Significant Effect
		80	35	16	2	8	0.9979	Asymp	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.85	0.8 - NL	Yes	Passes Acceptability Criteria

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value	Grubbs Extreme Value	3.299	2.908	0.0071	Outlier Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.1635616	0.03271233	5	3.781	0.0115	Significant Effect
Error	0.2076669	0.008652788	24			
Total	0.3712285		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	464.6	15.09	<0.0001	Unequal Variances
Distribution	Shapiro-Wilk W Normality	0.6742	0.9031	<0.0001	Non-normal Distribution

7d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Receiving Water	5	0.85	0.6476	1	0.875	0.625	1	0.07289	19.17%	0.0%
25		5	0.975	0.9056	1	1	0.875	1	0.025	5.73%	-14.71%
34		5	1	1	1	1	1	1	0	0.0%	-17.65%
45		5	1	1	1	1	1	1	0	0.0%	-17.65%
60		5	1	1	1	1	1	1	0	0.0%	-17.65%
80		5	1	1	1	1	1	1	0	0.0%	-17.65%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Receiving Water	5	1.191	0.927	1.455	1.209	0.9117	1.393	0.09505	17.85%	0.0%
25		5	1.356	1.254	1.458	1.393	1.209	1.393	0.03673	6.06%	-13.89%
34		5	1.393	1.393	1.393	1.393	1.393	1.393	0	0.0%	-16.98%
45		5	1.393	1.393	1.393	1.393	1.393	1.393	0	0.0%	-16.98%
60		5	1.393	1.393	1.393	1.393	1.393	1.393	0	0.0%	-16.98%
80		5	1.393	1.393	1.393	1.393	1.393	1.393	0	0.0%	-16.98%

CETIS Analytical Report

Report Date: 02 Oct-15 17:08 (p 2 of 4)
 Test Code: 17808fm | 11-7450-8763

Fathead Minnow 7-d Larval Survival and Growth Test ENVIRON International Corp

Analysis ID: 20-8070-5812 Endpoint: 7d Survival Rate CETIS Version: CETISv1.8.4
 Analyzed: 02 Oct-15 17:06 Analysis: Nonparametric-Control vs Treatments Official Results: Yes

7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Receiving Water	0.875	0.75	0.625	1	1
25		1	1	0.875	1	1
34		1	1	1	1	1
45		1	1	1	1	1
60		1	1	1	1	1
80		1	1	1	1	1

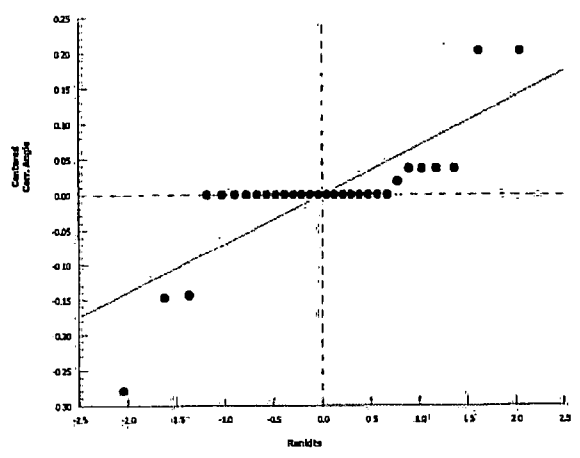
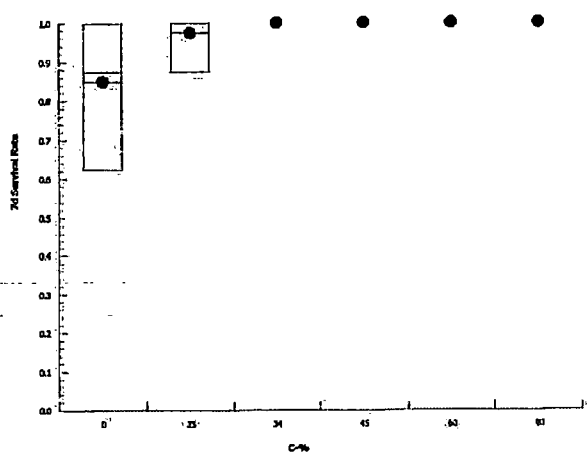
Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Receiving Water	1.209	1.047	0.9117	1.393	1.393
25		1.393	1.393	1.209	1.393	1.393
34		1.393	1.393	1.393	1.393	1.393
45		1.393	1.393	1.393	1.393	1.393
60		1.393	1.393	1.393	1.393	1.393
80		1.393	1.393	1.393	1.393	1.393

7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Receiving Water	7/8	6/8	5/8	8/8	8/8
25		8/8	8/8	7/8	8/8	8/8
34		8/8	8/8	8/8	8/8	8/8
45		8/8	8/8	8/8	8/8	8/8
60		8/8	8/8	8/8	8/8	8/8
80		8/8	8/8	8/8	8/8	8/8

Graphics



CETIS Analytical Report

Report Date: 02 Oct-15 17:08 (p 3 of 4)
 Test Code: 17808fm | 11-7450-8763

Fathead Minnow 7-d Larval Survival and Growth Test

ENVIRON International Corp

Analysis ID: 02-8250-0070	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.8.4
Analyzed: 02 Oct-15 17:07	Analysis: Parametric-Control vs Treatments	Official Results: Yes
Batch ID: 05-2047-8998	Test Type: Growth-Survival (7d)	Analyst:
Start Date: 15 Sep-15	Protocol: EPA/821/R-02-013 (2002)	Diluent: Receiving Water
Ending Date: 22 Sep-15	Species: Pimephales promelas	Brine: Not Applicable
Duration: 7d 0h	Source: Environmental Consult & Test	Age:
Sample ID: 20-8599-1446	Code: 7C55B416	Client: GPAC Crossett
Sample Date: 14 Sep-15	Material: Industrial Effluent	Project: WET Quarterly Compliance Test (3Q)
Receive Date: 15 Sep-15	Source: Discharge Monitoring Report	
Sample Age: 24h	Station: 001	

Data Transform	Zeta	Alt Hyp	Trials	Seed	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	NA	C > T	NA	NA	80	>80	NA	1.25	31.4%

Dunnett Multiple Comparison Test

Control	vs C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Receiving Water	25	-6.572	2.362	0.116	8	1.0000	CDF	Non-Significant Effect
	34	-11.58	2.362	0.116	8	1.0000	CDF	Non-Significant Effect
	45	-10.21	2.362	0.116	8	1.0000	CDF	Non-Significant Effect
	60	-9.772	2.362	0.116	8	1.0000	CDF	Non-Significant Effect
	80	-11.13	2.362	0.116	8	1.0000	CDF	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.3687	0.25 - NL	Yes	Passes Acceptability Criteria
PMSD	0.3143	0.12 - 0.3	Yes	Above Acceptability Criteria

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value	Grubbs Extreme Value	1.983	2.908	1.0000	No Outliers Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1.160644	0.2321289	5	38.56	<0.0001	Significant Effect
Error	0.1444683	0.006019514	24			
Total	1.305113		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	2.59	15.09	0.7629	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9663	0.9031	0.4423	Normal Distribution

Mean Dry Biomass-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Receiving Water	5	0.3687	0.2571	0.4804	0.3687	0.2525	0.4613	0.04021	24.38%	0.0%
25		5	0.6913	0.5812	0.8013	0.6913	0.5513	0.7725	0.03964	12.82%	-87.46%
34		5	0.937	0.8706	1.003	0.93	0.8813	1.02	0.02392	5.71%	-154.1%
45		5	0.8695	0.7867	0.9523	0.8675	0.775	0.9613	0.02982	7.67%	-135.8%
60		5	0.8483	0.7243	0.9722	0.8212	0.7263	0.9775	0.04465	11.77%	-130.0%
80		5	0.915	0.8481	0.9819	0.9075	0.8488	0.9738	0.0241	5.89%	-148.1%

CETIS Analytical Report

Report Date: 02 Oct-15 17:08 (p 4 of 4)
 Test Code: 17808fm | 11-7450-8763

Fathead Minnow 7-d Larval Survival and Growth Test

ENVIRON International Corp

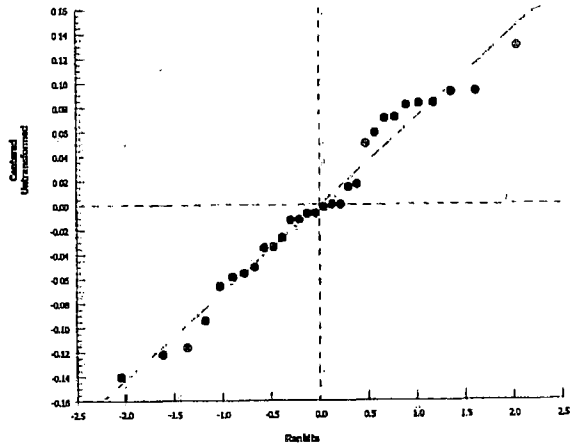
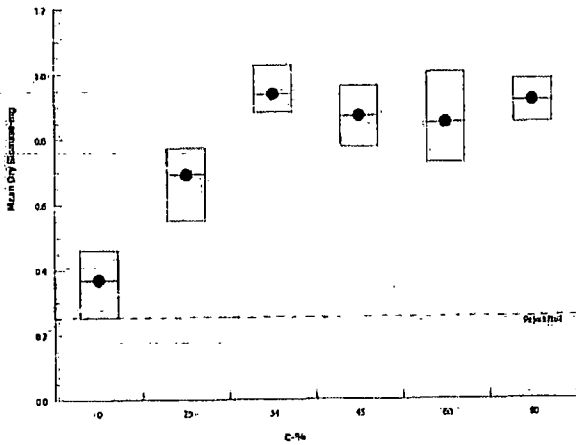
Analysis ID: 02-8250-0070 Endpoint: Mean Dry Biomass-mg
 Analyzed: 02 Oct-15 17:07 Analysis: Parametric-Control vs Treatments

CETIS Version: CETISv1.8.4
 Official Results: Yes

Mean Dry Biomass-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Receiving Water	0.4512	0.3687	0.2525	0.4613	0.31
25		0.7625	0.6788	0.5513	0.7725	0.6913
34		0.9025	1.02	0.9512	0.8813	0.93
45		0.8575	0.775	0.8862	0.8675	0.9613
60		0.9775	0.8212	0.7975	0.7263	0.9187
80		0.9075	0.9738	0.8488	0.965	0.88

Graphics



CETIS Analytical Report

*MW
Control*

Report Date: 02 Oct-15 17:11 (p 1 of 2)
Test Code: 17808fm | 11-7450-8763

Fathead Minnow 7-d Larval Survival and Growth Test

ENVIRON International Corp

Analysis ID: 03-3790-5195	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.8.4
Analyzed: 02 Oct-15 17:11	Analysis: Parametric-Control vs Treatments	Official Results: Yes
Batch ID: 05-2047-8998	Test Type: Growth-Survival (7d)	Analyst:
Start Date: 15 Sep-15	Protocol: EPA/821/R-02-013 (2002)	Diluent: Receiving Water
Ending Date: 22 Sep-15	Species: Pimephales promelas	Brine: Not Applicable
Duration: 7d 0h	Source: Environmental Consult & Test	Age:
Sample ID: 20-8599-1446	Code: 7C55B416	Client: GPAC Crossett
Sample Date: 14 Sep-15	Material: Industrial Effluent	Project: WET Quarterly Compliance Test (3Q)
Receive Date: 15 Sep-15	Source: Discharge Monitoring Report	
Sample Age: 24h	Station: 001	

Data Transform	Zeta	Alt Hyp	Trials	Seed	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	NA	C > T	NA	NA	80	>80	NA	1.25	16.2%

Dunnnett Multiple Comparison Test

Control	vs C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Lab Water	25	-0.9998	2.362	0.105	8	0.9833	CDF	Non-Significant Effect
	34	-6.553	2.362	0.105	8	1.0000	CDF	Non-Significant Effect
	45	-5.027	2.362	0.105	8	1.0000	CDF	Non-Significant Effect
	60	-4.547	2.362	0.105	8	1.0000	CDF	Non-Significant Effect
	80	-6.056	2.362	0.105	8	1.0000	CDF	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.647	0.25 - NL	Yes	Passes Acceptability Criteria
PMSD	0.1616	0.12 - 0.3	Yes	Passes Acceptability Criteria

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value	Grubbs Extreme Value	2.199	2.908	0.6737	No Outliers Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.3622246	0.07244492	5	14.79	<0.0001	Significant Effect
Error	0.1175226	0.004896777	24			
Total	0.4797472		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	4.608	15.09	0.4655	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9847	0.9031	0.9327	Normal Distribution

Mean Dry Biomass-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Lab Water	5	0.647	0.6014	0.6926	0.6587	0.59	0.6838	0.01641	5.67%	0.0%
25		5	0.6913	0.5812	0.8013	0.6913	0.5513	0.7725	0.03964	12.82%	-6.84%
34		5	0.937	0.8706	1.003	0.93	0.8813	1.02	0.02392	5.71%	-44.82%
45		5	0.8695	0.7867	0.9523	0.8675	0.775	0.9613	0.02982	7.67%	-34.39%
60		5	0.8483	0.7243	0.9722	0.8212	0.7263	0.9775	0.04465	11.77%	-31.11%
80		5	0.915	0.8481	0.9819	0.9075	0.8488	0.9738	0.0241	5.89%	-41.42%

CETIS Analytical Report

Report Date: 02 Oct-15 17:11 (p 2 of 2)
 Test Code: 17808fm | 11-7450-8763

Fathead Minnow 7-d Larval Survival and Growth Test

ENVIRON International Corp

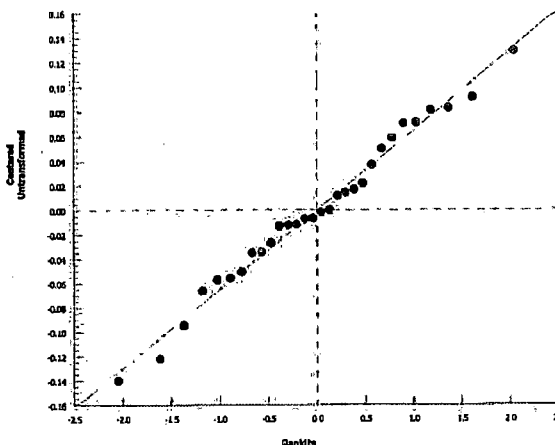
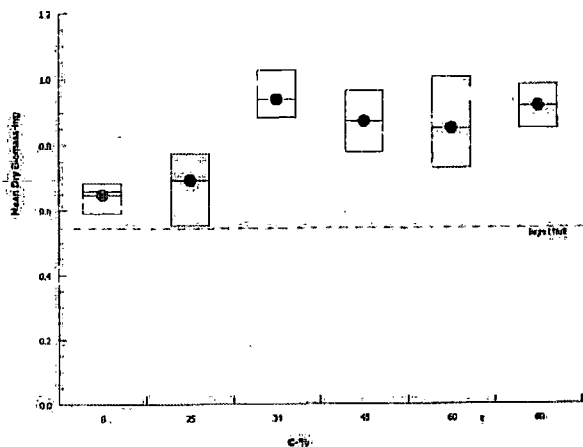
Analysis ID: 03-3790-5195 Endpoint: Mean Dry Biomass-mg
 Analyzed: 02 Oct-15 17:11 Analysis: Parametric-Control vs Treatments

CETIS Version: CETISv1.8.4
 Official Results: Yes

Mean Dry Biomass-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Lab Water	0.6838	0.59	0.6687	0.6587	0.6338
25		0.7625	0.6788	0.5513	0.7725	0.6913
34		0.9025	1.02	0.9512	0.8813	0.93
45		0.8575	0.775	0.8862	0.8675	0.9613
60		0.9775	0.8212	0.7975	0.7263	0.9187
80		0.9075	0.9738	0.8488	0.965	0.88

Graphics



CETIS Analytical Report

Report Date: 02 Oct-15 17:08 (p 1 of 2)
 Test Code: 17808fm | 11-7450-8763

Fathead Minnow 7-d Larval Survival and Growth Test			ENVIRON International Corp		
Analysis ID: 18-6162-4699	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.8.4		Official Results: Yes	
Analyzed: 02 Oct-15 17:07	Analysis: Linear Interpolation (ICPIN)				
Batch ID: 05-2047-8998	Test Type: Growth-Survival (7d)	Analyst:			
Start Date: 15 Sep-15	Protocol: EPA/821/R-02-013 (2002)	Diluent: Receiving Water			
Ending Date: 22 Sep-15	Species: Pimephales promelas	Brine: Not Applicable			
Duration: 7d 0h	Source: Environmental Consult & Test	Age:			
Sample ID: 20-8599-1446	Code: 7C55B416	Client: GPAC Crossett			
Sample Date: 14 Sep-15	Material: Industrial Effluent	Project: WET Quarterly Compliance Test (3Q)			
Receive Date: 15 Sep-15	Source: Discharge Monitoring Report				
Sample Age: 24h	Station: 001				

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	2019550	1000	Yes	Two-Point Interpolation

Test Acceptability Criteria				
Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.3687	0.25 - NL	Yes	Passes Acceptability Criteria

Residual Analysis					
Attribute	Method	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value	Grubbs Extreme Value	1.983	2.908	1.0000	No Outliers Detected

Point Estimates						
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>80	N/A	N/A	<1.25	NA	NA

Mean Dry Biomass-mg Summary				Calculated Variate					
C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Receiving Water	5	0.3687	0.2525	0.4613	0.04021	0.08991	24.38%	0.0%
25		5	0.6913	0.5513	0.7725	0.03964	0.08864	12.82%	-87.46%
34		5	0.937	0.8813	1.02	0.02392	0.05348	5.71%	-154.1%
45		5	0.8695	0.775	0.9613	0.02982	0.06667	7.67%	-135.8%
60		5	0.8483	0.7263	0.9775	0.04465	0.09983	11.77%	-130.0%
80		5	0.915	0.8488	0.9738	0.0241	0.0539	5.89%	-148.1%

Mean Dry Biomass-mg Detail						
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Receiving Water	0.4512	0.3687	0.2525	0.4613	0.31
25		0.7625	0.6788	0.5513	0.7725	0.6913
34		0.9025	1.02	0.9512	0.8813	0.93
45		0.8575	0.775	0.8862	0.8675	0.9613
60		0.9775	0.8212	0.7975	0.7263	0.9187
80		0.9075	0.9738	0.8488	0.965	0.88

CETIS Analytical Report

Report Date: 02 Oct-15 17:08 (p 2 of 2)
Test Code: 17808fm | 11-7450-8763

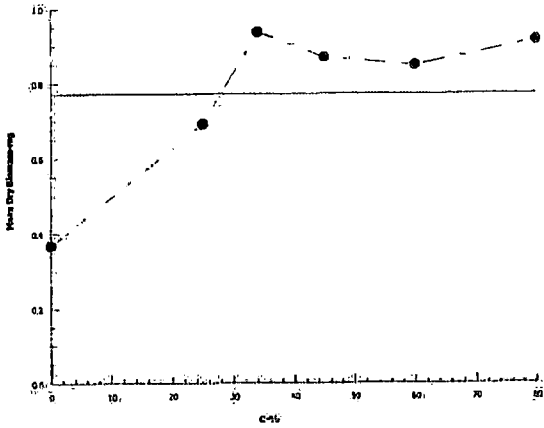
Fathead Minnow 7-d Larval Survival and Growth Test

ENVIRON International Corp

Analysis ID: 18-6162-4699 Endpoint: Mean Dry Biomass-mg
Analyzed: 02 Oct-15 17:07 Analysis: Linear Interpolation (ICPIN)

CETIS Version: CETISv1.8.4
Official Results: Yes

Graphics



RAMBOLL ENVIRON FATHEAD MINNOW SURVIVAL AND GROWTH 7-DAY CHRONIC TOXICITY TEST
EPA-821-R-02-013 Method 1000.0

TEST LOG NO.: 17808
 JOB NUMBER.: 20-196751
 INDUSTRY: Georgia Pacific Crossett
 EFFLUENT: Outfall 001
 DILUTION WATER: River Water
 NPDES: Yes No
 FOOD BATCH: 5237

BEGINNING: HRS: 1232 DATE: 9/15/15
 ENDING: HRS: 1052 DATE: 9/22/15
 TEST DILUTIONS: 25, 34, 45, 60, 80%
 ORGANISM AGE (date): 9/14/15
 ORGANISM SOURCE: ECT # 5253
 SOURCE TEMP @ TEST START: 24.0
 RANDOMIZED BY: LM

PHOTOPERIOD: 16 hr light/8 hr dark
 FEEDING REGIME:
 0.15 mL Artemia @ 2 times/day
 TEST VESSEL CAPACITY: 450 mL
 TEST SOLUTION VOLUME: 250 - 300 mL
 NO. ORGANISMS/TREATMENT: 8
 NO. REPLICATES: 5

CONC (%)	REP ID	SURVIVAL (#)								Growth on fish
		START	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7	
RW	A	8	8	8	8	8	8	7	7	7
	B	8	8	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8	8	8
	Temp(°C):old/new		24.6	24.1/24.1	24.0/24.1	24.3/24.2	24.1/24.1	24.6/24.4	24.1/24.4	24.8
25	A	8	8	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8	8	8
	Temp(°C):old/new		24.7	24.3/24.1	24.1/24.4	24.5/24.2	24.7/24.3	24.6/24.5	24.7/24.5	24.4
34	A	8	8	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8	8	8
	Temp(°C):old/new		25.0	24.1/24.1	24.0/24.1	24.3/24.3	24.1/24.0	24.3/24.6	24.0/24.0	24.4
45	A	8	8	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8	8	8
	Temp(°C):old/new		25.0	24.2/24.1	24.0/24.1	24.1/24.5	24.1/24.5	24.4/24.3	24.1/24.0	24.4
60	A	8	8	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8	8	8
	Temp(°C):old/new		24.1	24.0/24.1	24.3/24.1	24.1/24.1	24.0/24.2	24.1/24.3	24.1/24.2	24.3
80	A	8	8	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8	8	8
	Temp(°C):old/new		24.1	24.0/24.1	24.1/24.1	24.3/24.4	24.2/24.4	24.4/24.4	24.0/24.4	24.4
Test Renewal	Time	1232	1040	1148	1133	1106	1044	0939	1050	
	Date	9/15/15	9/16/15	9/17/15	9/18/15	9/19/15	9/20/15	9/21/15	9/22/15	
	Initials	LM	LM	LM	HM	HM	AM	AM	LM	
morning feeding	Int/Time		LM0700	LM0700	HM0700	AM0740	AM0741	LM0700		
afternoon feeding	Int/Time		AM1505	AM1505	AM1505	HM1300	AM1500	AM1505		

6

+ dead fish had totally disintegrated

RAMBOLL ENVIRON FATHEAD MINNOW SURVIVAL AND GROWTH 7-DAY CHRONIC TOXICITY TEST
EPA-821-R-02-013 Method 1000.0

TEST LOG NO.: 17808
 JOB NUMBER: 20-196751
 INDUSTRY: Georgia Pacific Crossett
 EFFLUENT: 001
 DILUTION WATER: River Water
 NPDES: Yes No
 FOOD BATCH: 5237

BEGINNING: HRS: 1232 DATE: 9/15/15
 ENDING: HRS: 100 DATE: 9/22/15

PHOTOPERIOD: 16 hr light/8 hr dark
 FEEDING REGIME:
 0.15 mL Artemia @ 2 times/day
 TEST VESSEL CAPACITY: 450 mL
 TEST SOLUTION VOLUME: 250 - 300 mL
 NO. ORGANISMS/TREATMENT: 8
 NO. REPLICATES: 5

CONC (%)	REP ID	SURVIVAL (#)							
		START	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
MH	A	8	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8	8
	Temp(°c):old/new	24.0	24.3/24.1	24.0/24.0	23.8/24.0	23.8/24.2	24.2/24.4	24.1/24.3	24.2
	A								
	B								
	C								
	D								
	E								
	Temp(°c):old/new								
	A								
	B								
	C								
	D								
	E								
	Temp(°c):old/new								
	A								
	B								
	C								
	D								
	E								
	Temp(°c):old/new								
	A								
	B								
	C								
	D								
	E								
	Temp(°c):old/new								
Test Renewal	Time								
	Date								
	Initials								
morning feeding	Int/Time								
afternoon feeding	Int/Time								

RAMBOLL ENVIRON FATHEAD MINNOW SURVIVAL AND GROWTH 7-DAY CHRONIC TOXICITY TEST
EPA-821-R-02-013 Method 1000.0

TEST LOG NO.: 17808 BEGINNING: HRS: 0232 DATE: 9/15/15
 JOB NO.: 20-19675I ENDING: HRS: 0500 DATE: 9/22/15
 INDUSTRY: Georgia Pacific-Crossett
 EFFLUENT: Outfall 001 NO. ORGANISMS/TREATMENT: 8
 NPDES: Yes No NO. REPLICATES: 5

PHOTOPERIOD: 16 hr light
 FEEDING REGIME:
 0.15 mL Artemia @ 2 times/day
 TEST VESSEL CAPACITY: 450 mL
 TEST SOLUTION VOLUME: 250 mL

GROWTH RESULTS							
CONC (%)	REP ID	Boat ID	Tare wt (g)	Combined wt (g)	Tot Fish wt (g)	# of Fish	Fish Wt (mg) Per Final # of Fish
RW	A	1	1.101014	1.10975	0.003101	7	0.524
	B	2	1.087240	1.08521	0.00295	6	0.492
	C	3	1.10505	1.10707	0.00207	5	0.409
	D	4	1.05472	1.05841	0.003109	8	0.4101
	E	5	1.09999	1.10247	0.00248	8	0.310
25	A	6	1.07738	1.08348	0.00610	8	
	B	7	1.09313	1.09856	0.00543	8	
	C	8	1.08544	1.08985	0.00441	7	
	D	9	1.09903	1.10521	0.00618	8	
	E	10	1.07207	1.07840	0.00553	8	
34	A	11	1.07207	1.08019	0.00722	8	
	B	12	1.05107	1.05778	0.00816	8	
	C	13	1.07588	1.08349	0.00761	8	
	D	14	1.05107	1.06725	0.00705	8	
	E	15	1.06710	1.07454	0.00744	8	
45	A	16	1.08108	1.09374	0.00686	8	
	B	17	1.06387	1.07007	0.00620	8	
	C	18	1.06100	1.07733	0.00709	8	
	D	19	1.05747	1.06441	0.00694	8	
	E	20	1.04845	1.05614	0.00769	8	
60	A	21	1.05709	1.06491	0.00782	8	
	B	22	1.08816	1.09473	0.00657	8	
	C	23	1.09523	1.10161	0.00638	8	
	D	24	1.097102	1.10343	0.00581	8	
	E	25	1.05110	1.05845	0.00735	8	
80	A	26	1.05310	1.06036	0.00726	8	
	B	27	1.07588	1.08367	0.00779	8	
	C	28	1.05850	1.05929	0.00679	8	
	D	29	1.07923	1.08695	0.00777	8	
	E	30	1.09514	1.10218	0.00704	8	
MH	A	31	1.091084	1.10231	0.00549	8	
	B	32	1.09412	1.09884	0.00472	8	
	C	33	1.10250	1.10785	0.00525	8	
	D	34	1.04706	1.05239	0.00527	8	
	E	35	1.08857	1.09364	0.00507	8	
Initials / Date:		LM 9/22/15					

AVG Control Fish wt: 0.498 (using final #)

Oven ID: 2
 Tins In: 9/22/15
 Date: 9/22/15
 Time: 1123
 Temp (°C): 101
 Initials: LM
 Tins Out: 9/23/15
 Date: 9/23/15
 Time: 1245
 Temp (°C): 100
 Initials: LM

FINAL WEIGHTS
 DATE: 9/23/15
 INITIALS: LM

① Hmicallu

TEST LOG NO. 17808

CLIENT/SAMPLE ID: Georgia Pacific Crossett

JOB NO. 20-195751

TEST ORGANISM: Fm

DATE: 9/15/15

Ramboll Environ Test Log No. 17808

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D.O. (mg/L)														
Concentration (%)	Start	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7
		Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	
RW	8.3	7.9	8.6	7.9	8.6	7.4	8.3	7.1	8.2	8.1	7.9	7.6	8.3	7.1
25	8.1	7.9	8.6	7.7	8.6	7.3	8.3	6.8	8.3	8.2	8.3	7.7	8.3	7.1
34	8.1	7.7	8.6	7.3	8.7	7.4	8.4	6.7	8.0	7.5	8.2	7.6	8.2	7.4
45	8.1	7.6	8.4	7.1	8.7	6.2	8.2	6.7	8.2	7.0	8.4	7.4	8.4	7.3
60	8.1	7.9	8.6	6.9	8.7	6.6	8.5	6.7	8.5	6.6	8.4	7.5	8.3	7.6
80	8.1	7.0	8.6	6.9	8.6	6.5	8.4	6.7	8.5	6.6	8.4	7.6	8.3	7.4
MH	8.2	8.2	8.4	8.5	8.6	7.8	8.3	6.9	8.5	7.9	8.5	7.6	8.1	7.4

pH (s.u.)														
Concentration (%)	Start	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7
		Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	
RW	7.16	7.33	7.30	7.63	7.29	7.50	7.30	7.18	7.09	7.22	7.15	7.19	7.15	7.20
25	7.16	7.61	7.59	7.49	7.66	7.52	7.63	7.45	7.61	7.15	7.71	7.69	7.67	7.18
34	7.16	7.81	7.78	7.78	7.71	7.62	7.65	7.62	7.66	7.67	7.80	7.68	7.80	7.52
45	7.16	7.90	7.81	7.80	7.76	7.76	7.68	7.69	7.69	7.72	7.83	7.72	7.68	7.66
60	7.16	8.08	7.96	7.93	7.81	7.81	7.74	7.79	7.73	7.96	7.84	7.74	7.73	7.69
80	7.16	8.11	7.96	7.97	7.83	7.82	7.74	7.89	7.74	7.99	7.84	7.86	7.73	7.74
MH	7.16	7.77	7.69	7.57	7.84	7.67	7.85	7.64	8.00	7.72	8.02	7.70	8.02	7.63

Conductivity (µmhos/cm)														
Concentration (%)	Start	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7
		Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	
RW	463	70	80	94	72	81	76	73	83	80	76	76	73	77
25	463	458	470	476	473	474	450	425	511	465	485	477	474	479
34	463	595	605	556	578	577	608	586	621	637	635	629	626	621
45	463	718	757	709	786	731	750	755	831	766	801	786	791	787
60	463	917	957	928	993	936	1019	1002	1093	1002	1039	1019	1020	1020
80	463	1209	1267	1183	1274	1204	1280	1280	1402	1296	1393	1320	1330	1319
MH	463	220	206	201	200	200	205	244	227	226	231	209	213	207

Params Int/Time:	AW1030	AW0416	AW0333	AW0650	AW1104	AW0650	AW1948	AW0805	AW1038	AW0755	AW0926	AW1102	AW0908	AW1105
Dilutions Int/Time:	AW1620	AW1620	AW1620	AW1620	AW1620	AW1620	AW1620	AW1620	AW1620	AW1620	AW1620	AW1620	AW1620	AW1620
Control Water Batch#:	RW1620	AW5997	AW1950	AW1620	AW1915	AW1620	AW1915	AW1915	AW1620	AW1915	AW1620	AW1915	AW1620	AW1915
Food Batch	5237	5237	5237	5237	5237	5237	5237	5237	5237	5237	5237	5237	5237	5237

TEST LOG NO. 17808
 JOB NO. 20-198751

CLIENT: Georgia Pacific Crossett
 TEST TYPE(S) PERFORMED: Fm & Cd Chronic

DATE OF TEST SEP 9 11 2015
HMIS
9/14

Ramboll Environ Test Log No. 17808

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100% EFFLUENT

Batch #	Sample ID	Sample Date	1st Use Date	Hardness mg/L CaCO3	Alkalinity mg/L	TRC mg/L	NH ₃ N mg/L
19151	Outfall 001	9/13-14/15	9/15/15	268	270	10.02	1.85
19156	Outfall 001	9/15-16/15	9/17/15	240	300	0.12	1.91
19165	Outfall 001	9/17-18/15	9/19/15	248	285	10.02	2.02

CONTROL / DILUTION WATER

Batch #	Sample ID	Sample Date	1st Use Date	Hardness mg/L CaCO3	Alkalinity mg/L	TRC mg/L	NH ₃ N mg/L
19150	River Water	9/14/15	9/15/15	17.6	27	0.08	0.179
19155	River Water	9/14/15	9/17/15	20.8	24	10.02	0.305
19164	River Water	9/14/15	9/19/15	18.4	19	0.05	0.304
5997	NH	9/5/15	9/7/15	84	54	10.02	
6000	NH	9/9/15	9/16/15	84	46	10.02	
6004	NH	9/15/15	9/19/15	83.2	43	10.02	

CETIS Analytical Report

Report Date: 02 Oct-15 17:24 (p 1 of 2)
 Test Code: 17808cd | 02-9099-1683

Ceriodaphnia 7-d Survival and Reproduction Test

Ramboll Environ

Analysis ID: 11-8978-6097	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.8.4
Analyzed: 02 Oct-15 17:22	Analysis: STP 2x2 Contingency Tables	Official Results: Yes
Batch ID: 21-0057-7724	Test Type: Reproduction-Survival (7d)	Analyst:
Start Date: 15 Sep-15	Protocol: EPA/821/R-02-013 (2002)	Diluent: Receiving Water
Ending Date: 23 Sep-15	Species: Ceriodaphnia dubia	Brine: Not Applicable
Duration: 8d 0h	Source: In-House Culture	Age:
Sample ID: 09-4008-2195	Code: 38088413	Client: GPAC Crossett
Sample Date: 14 Sep-15	Material: Industrial Effluent	Project: WET Quarterly Compliance Test (3Q)
Receive Date: 15 Sep-15	Source: Discharge Monitoring Report	
Sample Age: 24h	Station: 001	

Data Transform	Zeta	Alt Hyp	Trials	Seed	NOEL	LOEL	TOEL	TU
Untransformed		C > T	NA	NA	80	>80	NA	1.25

Fisher Exact/Bonferroni-Holm Test

Control	vs	C-%	Test Stat	P-Value	P-Type	Decision(α:5%)
Receiving Water		25	1	1.0000	Exact	Non-Significant Effect
		34	1	1.0000	Exact	Non-Significant Effect
		45	0.5	1.0000	Exact	Non-Significant Effect
		60	0.5	1.0000	Exact	Non-Significant Effect
		80	1	1.0000	Exact	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria

Data Summary

C-%	Control Type	NR	R	NR + R	Prop NR	Prop R	%Effect
0	Receiving Water	10	0	10	1	0	0.0%
25		10	0	10	1	0	0.0%
34		10	0	10	1	0	0.0%
45		9	1	10	0.9	0.1	10.0%
60		9	1	10	0.9	0.1	10.0%
80		10	0	10	1	0	0.0%

7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Receiving Water	1	1	1	1	1	1	1	1	1	1
25		1	1	1	1	1	1	1	1	1	1
34		1	1	1	1	1	1	1	1	1	1
45		0	1	1	1	1	1	1	1	1	1
60		0	1	1	1	1	1	1	1	1	1
80		1	1	1	1	1	1	1	1	1	1

7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Receiving Water	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
34		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
45		0/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
60		0/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
80		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

CETIS Analytical Report

Report Date: 02 Oct-15 17:24 (p 2 of 2)
Test Code: 17808cd | 02-9099-1683

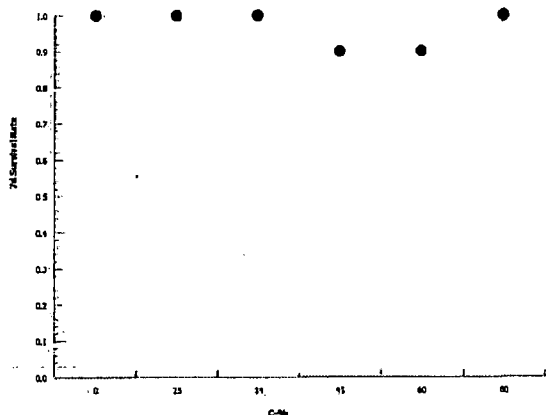
Ceriodaphnia 7-d Survival and Reproduction Test

Ramboll Environ

Analysis ID: 11-8978-6097 Endpoint: 7d Survival Rate
Analyzed: 02 Oct-15 17:22 Analysis: STP 2x2 Contingency Tables

CETIS Version: CETISv1.8.4
Official Results: Yes

Graphics



CETIS Analytical Report

Report Date: 02 Oct-15 17:24 (p 1 of 2)
 Test Code: 17808cd | 02-9099-1683

Ceriodaphnia 7-d Survival and Reproduction Test

Ramboll Environ

Analysis ID: 05-9389-6523	Endpoint: Reproduction	CETIS Version: CETISv1.8.4
Analyzed: 02 Oct-15 17:22	Analysis: Nonparametric-Control vs Treatments	Official Results: Yes
Batch ID: 21-0057-7724	Test Type: Reproduction-Survival (7d)	Analyst:
Start Date: 15 Sep-15	Protocol: EPA/821/R-02-013 (2002)	Diluent: Receiving Water
Ending Date: 23 Sep-15	Species: Ceriodaphnia dubia	Brine: Not Applicable
Duration: 8d 0h	Source: In-House Culture	Age:
Sample ID: 09-4008-2195	Code: 38088413	Client: GPAC Crossett
Sample Date: 14 Sep-15	Material: Industrial Effluent	Project: WET Quarterly Compliance Test (3Q)
Receive Date: 15 Sep-15	Source: Discharge Monitoring Report	
Sample Age: 24h	Station: 001	

Data Transform	Zeta	Alt Hyp	Trials	Seed	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	NA	C > T	NA	NA	80	>80	NA	1.25	37.0%

Steel Many-One Rank Sum Test

Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Receiving Water		25	134.5	75	4	18	0.9999	Asymp	Non-Significant Effect
		34	147.5	75	2	18	1.0000	Asymp	Non-Significant Effect
		45	135	75	2	18	0.9999	Asymp	Non-Significant Effect
		60	133.5	75	1	18	0.9998	Asymp	Non-Significant Effect
		80	146	75	1	18	1.0000	Asymp	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	21.1	15 - NL	Yes	Passes Acceptability Criteria
PMSD	0.37	0.13 - 0.47	Yes	Passes Acceptability Criteria

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value	Grubbs Extreme Value	3.879	3.2	0.0019	Outlier Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	544.4833	108.8967	5	1.872	0.1145	Non-Significant Effect
Error	3140.5	58.15741	54			
Total	3684.983		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	24.42	15.09	0.0002	Unequal Variances
Distribution	Shapiro-Wilk W Normality	0.8625	0.9459	<0.0001	Non-normal Distribution

Reproduction Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Receiving Water	10	21.1	17.64	24.56	20	15	31	1.531	22.94%	0.0%
25		10	26.3	23.36	29.24	26.5	19	31	1.3	15.63%	-24.64%
34		10	30	27.52	32.48	30.5	24	35	1.095	11.55%	-42.18%
45		10	28.3	19.86	36.74	30.5	0	43	3.73	41.68%	-34.12%
60		10	27.5	19.31	35.69	29	0	40	3.622	41.65%	-30.33%
80		10	29.9	26.23	33.57	30	20	39	1.622	17.16%	-41.71%

CETIS Analytical Report

Report Date: 02 Oct-15 17:24 (p 2 of 2)
 Test Code: 17808cd | 02-9099-1683

Ceriodaphnia 7-d Survival and Reproduction Test

Ramboll Environ

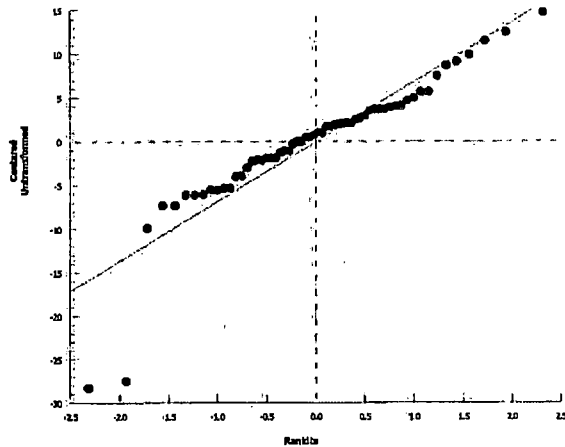
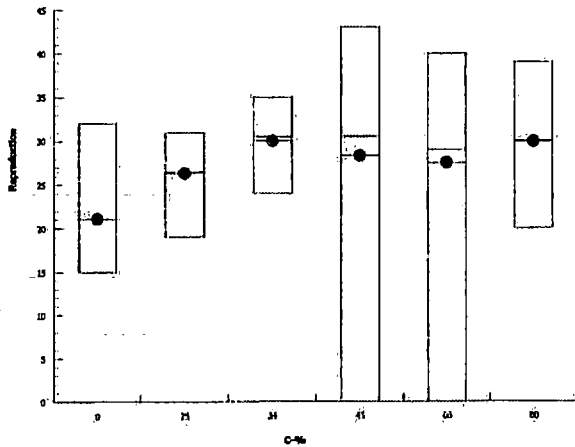
Analysis ID: 05-9389-6523 Endpoint: Reproduction
 Analyzed: 02 Oct-15 17:22 Analysis: Nonparametric-Control vs Treatments

CETIS Version: CETISv1.8.4
 Official Results: Yes

Reproduction Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Receiving Water	31	19	24	20	23	15	19	20	15	25
25		19	24	31	25	27	26	30	21	30	30
34		24	30	34	32	31	30	26	31	27	35
45		0	37	43	23	21	30	34	31	30	34
60		0	28	22	22	39	35	30	31	28	40
80		26	20	32	28	32	28	32	28	39	34

Graphics



CETIS Analytical Report

Report Date: 02 Oct-15 17:24 (p 1 of 1)
 Test Code: 17808cd | 02-9099-1683

Ceriodaphnia 7-d Survival and Reproduction Test

Ramboll Environ

Analysis ID: 03-6178-3542	Endpoint: Reproduction	CETIS Version: CETISv1.8.4
Analyzed: 02 Oct-15 17:23	Analysis: Linear Interpolation (ICPIN)	Official Results: Yes
Batch ID: 21-0057-7724	Test Type: Reproduction-Survival (7d)	Analyst:
Start Date: 15 Sep-15	Protocol: EPA/821/R-02-013 (2002)	Diluent: Receiving Water
Ending Date: 23 Sep-15	Species: Ceriodaphnia dubia	Brine: Not Applicable
Duration: 8d 0h	Source: In-House Culture	Age:
Sample ID: 09-4008-2195	Code: 38088413	Client: GPAC Crossett
Sample Date: 14 Sep-15	Material: Industrial Effluent	Project: WET Quarterly Compliance Test (3Q)
Receive Date: 15 Sep-15	Source: Discharge Monitoring Report	
Sample Age: 24h	Station: 001	

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1585197	1000	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	21.1	15 - NL	Yes	Passes Acceptability Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>80	N/A	N/A	<1.25	NA	NA

Reproduction Summary

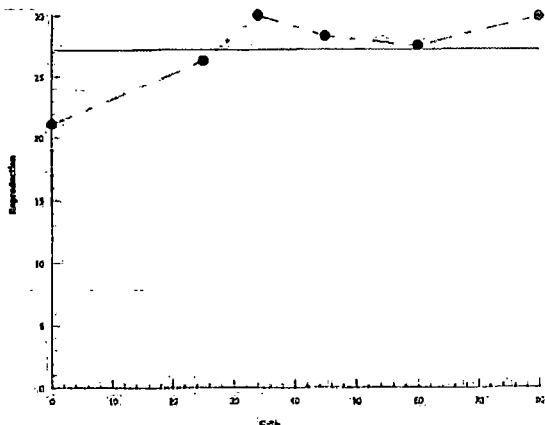
Calculated Variate

C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Receiving Water	10	21.1	15	31	1.531	4.841	22.94%	0.0%
25		10	26.3	19	31	1.3	4.111	15.63%	-24.64%
34		10	30	24	35	1.095	3.464	11.55%	-42.18%
45		10	28.3	0	43	3.73	11.8	41.68%	-34.12%
60		10	27.5	0	40	3.622	11.45	41.65%	-30.33%
80		10	29.9	20	39	1.622	5.131	17.16%	-41.71%

Reproduction Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Receiving Water	31	19	24	20	23	15	19	20	15	25
25		19	24	31	25	27	26	30	21	30	30
34		24	30	34	32	31	30	26	31	27	35
45		0	37	43	23	21	30	34	31	30	34
60		0	28	22	22	39	35	30	31	28	40
80		26	20	32	28	32	28	32	28	39	34

Graphics



RAMBOLL ENVIRON CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION 3-BROOD CHRONIC TOXICITY TEST
EPA-821-R-02-013 Method 1002.0

TEST LOG NO.: 17808 PHOTOPERIOD: 16 hr light/8 hr dark
 JOB NUMBER: 20-196751 FEEDING REGIME: 0.1 mL YCT / 0.1 mL P. subcapitata per 15 mL
 INDUSTRY: Georgia Pacific-Crossett TEST VESSEL CAPACITY: 30 mL
 EFFLUENT: Outfall 001 TEST SOLUTION VOLUME: 15 mL
 DILUTION WATER: River Water NO. ORGANISMS/REPLICATE: 1
 NPDES (Y/N): Yes NO. REPLICATES: 10

ORGANISM SOURCE INFORMATION:

AGE (date): 9/14/15
 TEMP @ TEST START: 24.6
 RANDOMIZED BY: LM
 TEST START: _____
 HOURS: 1106 DATE: 9/15/15
 TEST END: _____
 HOURS: 1106 DATE: 9/23/15

SOURCE ID:	AGE (time):
11108	1204-1509
11110	1205-1512
11113	1208-1515

SURVIVAL AND REPRODUCTION DATA														Notes		
Test Start & Feeding/End Initials/Time	Daily Renewal & Feeding Initials/Time	Date	Control		REPLICATES											
			River Water		08		10		13							
			Temp (°C)		1	2	3	4	5	6	7	8	9		10	
					Adult	3	9	7	8	1	3	6	10	14	18	
LM 1106		9/15	24.9		Day 0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	LM 0940	9/16	24.0	24.0	Day 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	1121	9/17	24.0	24.0	Day 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	LM 1112	9/18	24.0	24.0	Day 3	✓	3	2	✓	4	✓	4	6	5	4	
	AW 1024	9/19	24.7	24.3	Day 4	3	✓	✓	2	✓	3	✓	✓	✓	✓	
	AW 1019	9/20	24.0	24.2	Day 5	✓	✓	✓	✓	✓	3	4	✓	2	✓	
	AW 1010	9/21	24.1	24.0	Day 6	4	4	10	8	7	✓	11	6	✓	4	
	AW 1027	9/22	24.3	24.4	Day 7	7	✓	✓	✓	12	✓	16	8	✓	✓	small 306
LM 1106		9/23		24.6	Day 8	17	12	12	10	✓	9	✓	✓	8	17	
			Total			31	19	24	20	23	15	19	20	5	25	211

✓ = Test Organism Alive 0 = Live neonates Miss = Lost or Missing
 D = Test Organism Dead (-) = Dead neonates M = Male

TEST LOG # 17808

JOB # 20-19675I

CLIENT/SAMPLE ID: Georgia Pacific - Crossett

LAB/STATE: RAMBOLL ENVIRON / TN

SURVIVAL AND REPRODUCTION DATA																		
Test Start & Feeding / End Initials / Time	Daily Renewal & Feeding Initials / Time	Date	Concentration		Temp (°C)	REPLICATES										Notes		
			25%			1	2	3	4	5	6	7	8	9	10			
						Adult												
LM 1106		9/15	24.6			Day 0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	LM 0940	9/16	24.1	24.2		Day 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	LM 1121	9/17	24.6	24.3		Day 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	LM 1112	9/18	24.1	24.8		Day 3	✓	✓	3	✓	5	4	6	✓	4	4		
	AW 1041	9/19	24.8	24.3		Day 4	2	4	✓	5	5	✓	7	7	11	✓		
	AW 1019	9/20	24.1	24.4		Day 5	4	7	13	7	✓	7	✓	✓	✓	9		
	AW 1016	9/21	24.3	24.4		Day 6	13	✓	15	13	17	15	17	7	15	17		
	AW 1027	9/22	24.6	24.5		Day 7	✓	13	18	✓	23	19	4	✓	16	✓	20	
LM 1106		9/23		24.9		Day 8	14	✓	✓	16	✓	✓	✓	7	✓	16	100%	
			Total				19	24	31	25	27	26	30	20	30	30	283	

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SURVIVAL AND REPRODUCTION DATA																		
Test Start & Feeding / End Initials / Time	Daily Renewal & Feeding Initials / Time	Date	Concentration		Temp (°C)	REPLICATES										Notes		
			34%			1	2	3	4	5	6	7	8	9	10			
						Adult												
LM 1106		9/15	24.4			Day 0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	LM 0940	9/16	24.1	24.0		Day 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	LM 1121	9/17	24.1	24.3		Day 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	LM 1112	9/18	24.0	24.1		Day 3	✓	6	5	✓	✓	5	5	3	✓	6		
	AW 1041	9/19	24.4	24.3		Day 4	3	✓	✓	4	3	✓	✓	6	7	✓		
	AW 1019	9/20	24.1	24.4		Day 5	5	9	11	11	✓	9	9	3	2	13		
	AW 1016	9/21	24.4	24.2		Day 6	2	15	18	17	11	16	12	19	9	16		
	AW 1027	9/22	24.4	24.6		Day 7	11	16	15	✓	17	21	24	26	9	✓	90%	
LM 1106		9/23		24.8		Day 8	3	✓	✓	18	✓	✓	✓	✓	✓	14		
			Total				24	30	34	32	31	30	26	31	27	35	300	

✓ = Test Organism Alive 0 = Live neonates Miss = Lost or Missing
 D = Test Organism Dead (-) = Dead neonates M = Male

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TEST LOG # 17808

JOB # 20-19675

CLIENT/SAMPLE ID: Georgia Pacific - Crossett

LAB/STATE: RAMBOLL ENVIRON / TN

SURVIVAL AND REPRODUCTION DATA														Notes			
Test Start & Feeding / End Initials / Time	Daily Renewal & Feeding Initials / Time	Date	Concentration		REPLICATES												
			45%	Temp (°C)	1	2	3	4	5	6	7	8	9		10		
					Adult												
LM 1106		9/15	24.7		Day 0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	LM 0940	9/16	24.1	24.1	Day 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	LM 1121	9/17	24.0	24.3	Day 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	LM 1122	9/18	24.1	24.1	Day 3	✓	6	5	✓	3	✓	4	3	1	✓	✓	✓
	AW 1044	9/19	24.5	24.2	Day 4	✓	✓	✓	2	✓	6	11	✓	✓	✓	✓	✓
	AW 1019	9/20	24.3	24.3	Day 5	✓	9	✓	7	4	✓	✓	11	12	10	✓	✓
	AW 1016	9/21	24.0	24.2	Day 6	✓	5	16	✓	14	9	✓	17	4	2	✓	✓
	AW 1027	9/22	24.3	24.0	Day 7	2/0	✓	22	14	17	15	19	✓	13	18	✓	✓
LM 1106		9/23		24.6	Day 8	1	12	✓	16	✓	✓	18	✓	✓	✓	✓	✓
					Total	0/0	37	43	23	21	38	34	31	30	34	28	31/0

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SURVIVAL AND REPRODUCTION DATA														Notes			
Test Start & Feeding / End Initials / Time	Daily Renewal & Feeding Initials / Time	Date	Concentration		REPLICATES												
			60%	Temp (°C)	1	2	3	4	5	6	7	8	9		10		
					Day 0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LM 1106		9/15	24.9		Day 0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	LM 0940	9/16	24.1	24.1	Day 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	LM 1121	9/17	24.1	24.1	Day 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	LM 1122	9/18	24.0	24.0	Day 3	✓	5	3	✓	5	4	✓	✓	6	4	✓	✓
	AW 1044	9/19	24.6	24.4	Day 4	✓	✓	✓	3	2	✓	3	4	12	✓	✓	✓
	AW 1019	9/20	24.3	24.1	Day 5	1/2	9	8	7	✓	10	8	9	✓	14	✓	✓
	AW 1016	9/21	24.1	24.1	Day 6	✓	14	11	12	15	21	19	18	7	22	✓	✓
	AW 1027	9/22	24.4	24.3	Day 7	2/0	✓	22	17	24	✓	19	3	✓	✓	✓	✓
LM 1106		9/23		24.8	Day 8	✓	18	16	✓	18	✓	18	✓	✓	17	✓	✓
					Total	0/0	28	22	22	39	35	30	31	28	40	27	35/0

✓ = Test Organism Alive 0 = Live neonates Miss = Lost or Missing
 D = Test Organism Dead (-0) = Dead neonates M = Male

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1) up 9/20/15
 2) up 9/22/15
 3) up 9/22/15

TEST LOG # 17808

JOB # 20-196751

CLIENT/SAMPLE ID: Georgia Pacific - Crossett

LAB/STATE: RAMBOLL ENVIRON / TN

SURVIVAL AND REPRODUCTION DATA																	
Test Start & Feeding / End Initials/ Time	Daily Renewal & Feeding Initials/ Time	Date	Concentration		Adult	REPLICATES										Notes	
			80%	Temp (°C)		1	2	3	4	5	6	7	8	9	10		
LM 1106		9/15	25.0		Day 0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	LM 0940	9/16	24.1	24.0	Day 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	LM 1121	9/17	24.3	24.4	Day 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	LM 1112	9/18	24.0	24.0	Day 3	✓	✓	4	3	4	4	4	✓	6	5		
	AW 1041	9/19	24.6	24.2	Day 4	4	4	✓	✓	✓	✓	11	7	✓	✓		
	AW 1019	9/20	24.0	24.4	Day 5	6	5	11	7	6	9	✓	8	15	13		
	AW 1016	9/21	24.1	24.5	Day 6	16	11	17	18	8	15	17	13	✓	16		
	AW 1027	9/22	24.4	24.6	Day 7	✓	✓	23	20	✓	✓	✓	✓	18	✓		908
LM 1106		9/23	24.6		Day 8	16	18	✓	✓	14	19	14	16	✓	✓		
			Total			26	20	32	28	32	28	32	28	39	34	299	

SURVIVAL AND REPRODUCTION DATA																	
Test Start & Feeding / End Initials/ Time	Daily Renewal & Feeding Initials/ Time	Date	Concentration		Adult	REPLICATES										Notes	
			MH	Temp (°C)		1	2	3	4	5	6	7	8	9	10		
LM 1106		9/15	24.0		Day 0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	LM 0940	9/16	24.2	24.1	Day 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	LM 1121	9/17	24.8	24.6	Day 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	LM 1112	9/18	24.4	24.4	Day 3	✓	4	✓	✓	4	4	✓	✓	4	2		
	AW 1041	9/19	24.0	24.6	Day 4	5	✓	2	5	✓	✓	3	2	6	✓		
	AW 1019	9/20	24.3	24.6	Day 5	✓	✓	✓	✓	7	9	✓	9	✓	3		
	AW 1016	9/21	24.1	24.3	Day 6	9	14	4	(4)	5	✓	6	3	11	7		
	AW 1027	9/22	24.1	24.4	Day 7	✓	18	✓	✓	8	16	13	6	✓	✓		608
LM 1106		9/23	24.6		Day 8	4	✓	✓	14	9	✓	14	✓	✓	✓		
			Total			28	36	6	(19)	24	29	22	20	21	12	217	

✓ = Test Organism Alive 0 = Live neonates Miss = Lost or Missing
 D = Test Organism Dead (-) = Dead neonates M = Male

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17808

TEST LOG NO.

CLIENT/SAMPLE ID: Georgia Pacific Crossett

JOB NO. 20-196751

TEST ORGANISM: Cd

DATE: 9/15/11

Ranboll Environ Test Log No. 17808

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Concentration (%)	D.O. (mg/L)										New Day 7		
	Start	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6	
		Old	New	Old	New	Old	New	Old	New	Old	New	Old	New
RW	8.3	8.4	8.6	8.6	8.4	8.3	8.1	8.2	8.7	7.9	8.5	8.3	8.0
25	7.8	8.2	8.4	8.6	8.4	8.4	8.7	8.3	8.5	8.3	8.4	8.4	8.3
34	7.7	8.3	8.6	8.5	8.4	8.3	8.7	8.0	8.7	8.2	8.2	8.5	8.2
45	7.8	8.3	8.6	8.4	8.7	8.3	8.7	8.3	8.4	8.4	8.5	8.4	8.1
60	7.8	8.3	8.6	8.4	8.6	8.2	8.4	8.5	8.7	8.1	8.2	8.5	8.3
80	7.8	8.3	8.6	8.4	8.6	8.2	8.4	8.5	8.7	8.1	8.2	8.5	8.3
MH	7.8	8.3	8.6	8.4	8.6	8.2	8.4	8.5	8.7	8.1	8.2	8.5	8.3

Concentration (%)	pH (s.u.)										New Day 7		
	Start	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6	
		Old	New	Old	New	Old	New	Old	New	Old	New	Old	New
RW	7.20	7.19	7.20	7.29	7.29	7.16	7.20	7.53	7.09	7.15	7.56	7.15	7.27
25	7.31	8.03	7.59	7.90	7.66	7.81	7.63	7.61	7.61	7.71	8.09	7.67	7.65
34	7.7	8.15	7.77	8.07	7.71	8.07	7.65	8.14	7.61	7.80	8.26	7.65	7.71
45	7.8	8.26	7.81	8.16	7.76	8.18	7.68	8.30	7.66	7.83	8.37	7.68	7.88
60	7.95	8.35	7.96	8.29	7.81	8.30	7.74	8.41	7.73	7.89	8.41	7.73	7.88
80	7.95	8.46	7.97	8.41	7.85	8.45	7.74	8.49	7.77	7.86	8.49	7.76	7.88
MH	7.95	7.99	7.69	7.80	7.74	7.80	7.85	7.78	8.00	8.02	7.95	8.02	7.92

Concentration (%)	Conductivity (µmhos/cm)										New Day 7		
	Start	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6	
		Old	New	Old	New	Old	New	Old	New	Old	New	Old	New
RW	65	83	80	79	77	79	75	82	83	78	78	73	73
25	463	363	470	407	413	446	450	484	511	486	485	489	474
34	502	535	605	573	482	626	608	617	691	624	625	659	626
45	740	714	921	720	756	788	750	769	831	767	821	810	791
60	961	938	1127	938	998	1045	1019	1052	1098	1074	1039	1078	1026
80	1192	1146	1407	1206	1271	1762	1350	1505	1402	1500	1393	1600	1330
MH	225	220	200	202	203	204	203	209	227	207	231	212	213

Params Intl/Time:	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7
Dilutions Intl/Time:	1:10		1:10		1:10		1:10		1:10		1:10		1:10
Control Water Batch:	1915		1915		1915		1915		1915		1915		1915
Food Batch:	52474		1915		1915		1915		1915		1915		1915

Old
7.9
7.8
7.8
7.8
7.8
7.8
7.5


7.60
8.06
8.16
8.27
8.38
8.48
7.92

7.8
4.62
6.35
7.85
10.24
13.53
9.21

Day 8 Old
RW
25
34
45
60
80
MH
pH
D.O.
Conductivity

ATTACHMENT 2

**CHAIN OF CUSTODY DOCUMENTATION AND
REFERENCE TOXICANT DATA**

Project Name:						Project Number:						CHAIN-OF-CUSTODY  201 Summit View Drive, Suite 300 Brentwood, TN 37027 PHONE: (615) 277-7570 FAX: (615) 377-4976											
Industry: GEORGIA PACIFIC PAPER						Phone: 870-507-9170 FAX: 870-264-9076																	
County: ASALEY City: CROWN State: AR.						Sample Collected by (print): DANNY BOBBIE						NPDES Permit No.: AR0001210											
Sample Collected by (signature): <i>[Signature]</i>						NPDES Test: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes						No. of Cntrs											
Sample Location/ID	Comp/Grab	Container Type	Chilled During Collection (Y/N)	Start Date/Time	End Date/Time	Total Volume in liters	Acute Fathead minnow	Acute Bannerfin shiner	Acute Ceriodaphnia dubia	Acute Daphnia pulex	Chronic Fathead minnow	Chronic Ceriodaphnia dubia	Continuous Batch Tests	Discrete Batch Tests	Other	Description Definitive or Screen	Sample B# (lab only)	Receipt Temp °C					
RIVER	G	PLASTIC	NA	9-14-15 11:10am													19150	1.6					
CH FALL 001	C	PLASTIC	YES	9-13-15 3:47AM	9-14-15 6:15am								<input checked="" type="checkbox"/>				19151	1.5					
* Matrix: SS - Soil GW - Groundwater WW - Wastewater AW - Ambient Water ML - Mixed Liquor SL - Sludge SD - Sediment OT - Other _____ Remarks: Measured TRC (if applicable): 0.00 mg/L																							
Relinquished by: (Signature) <i>[Signature]</i>						Date: 9-14-15 Time: 3:00pm						Received by: (Signature) _____						Samples shipped via: <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Other Courier <input type="checkbox"/> UPS Hand Delivered <input type="checkbox"/> UPS Delivered Condition: (lab use only)					
Relinquished by: (Signature) _____						Date: _____ Time: _____						Received by: (Signature) _____						Containers/Volume Received: 20 L of each					
Relinquished by: (Signature) _____						Date: _____ Time: _____						Received for lab by: (Signature) <i>[Signature]</i>						Date: 9/15/15 Time: _____ pH upon arrival: 7.55, 7.82 DO upon arrival: 8.1, 8.3					

Sample Receipt Checklist:


Client: GP Crossett

Date/Time received 9/15/15 0 259 by AW

- 1. Cooler sealed and intact upon arrival? Yes No
- 2. Custody seals present? Yes No
- 3. Samples received below 6 degrees Celsius? Yes No
- 4. Was ice present? Yes No
- 5. Is the COC filled out correctly including the sample date/time and signed? Yes No
- 6. Was the sample received within 36 hours of collection? Yes No
- 7. Did the sample(s) arrive in good condition? Yes No
- 8. Was pH and DO measured and in range? Yes No
- 9. Was residual chlorine present? Yes No
 > 1.0 mg/L? (did dechlor occur) Yes No *in River water*

Comments:

Batch #	Sample ID	Temp (C°)	pH	DO	TRC
19150	River	1.6	7.55	8.1	0.08
19151	(outfall 100)	1.5	7.82	8.3	<0.02

Project Name:				Project Number:				Analysis Requested										CHAIN-OF-CUSTODY												
Industry: GEORGIA PAPER								<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Total Volume in liters</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Acute Fathead minnow</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Acute Bannerfin shiner</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Acute Ceriodaphnia dubia</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Acute Daphnia pulex</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Chronic Fathead minnow</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Chronic Ceriodaphnia dubia</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Continuous Batch Tests</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Discrete Batch Tests</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Other</td> </tr> </table>										Total Volume in liters	Acute Fathead minnow	Acute Bannerfin shiner	Acute Ceriodaphnia dubia	Acute Daphnia pulex	Chronic Fathead minnow	Chronic Ceriodaphnia dubia	Continuous Batch Tests	Discrete Batch Tests	Other	 201 Summit View Drive, Suite 300 Brentwood, TN 37027 PHONE: (615) 277-7570 FAX: (615) 377-4976		
Total Volume in liters	Acute Fathead minnow	Acute Bannerfin shiner	Acute Ceriodaphnia dubia	Acute Daphnia pulex	Chronic Fathead minnow	Chronic Ceriodaphnia dubia	Continuous Batch Tests											Discrete Batch Tests	Other											
Phone: 870-567-8170 FAX: 870-344-9076																		Description			Sample B# (lab only)			Receipt Temp °C						
County: ASHELT City: CROCKETT State: AR																		Definitive or Screen												
Sample Collected by (print): DANNY / TOLLE				NPDES Permit No.: AR0001210																										
Sample Collected by (signature):				NPDES Test: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes																										
Sample Location / ID		Comp/Grab	Container Type	Chilled During Collection (Y/N)	Start Date/Time	End Date/Time	No. of Cntrs																							
RIVER		A	PLASTIC	9/14/15	11:00am													55												
OUTFALL 001		C	PLASTIC	9/15/15	9:16:15	6:15am		✓										3.7												
* Matrix: SS - Soil GW - Groundwater WW - Wastewater AW - Ambient Water ML - Mixed Liquor SL - Sludge SD - Sediment OT - Other _____																														
Remarks:																														
Measured TRC (if applicable): 0.00 mg/L																														
Relinquished by: (Signature) Bobby Sheddley				Date: 9/16/15		Time: 1:00 PM		Received by: (Signature)				Samples shipped via: <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Other Courier <input type="checkbox"/> UPS Hand Delivered				Condition: GOOD (lab use only)														
Relinquished by: (Signature) Danny Tolle				Date: 9/16/15		Time: 3:20 PM		Received by: (Signature)				Containers/Volume Received: 20L 20L																		
Relinquished by: (Signature)				Date:		Time:		Received for lab by: (Signature)				Date: 9/14/15		Time: 5:40		pH upon arrival: 7.74		DO upon arrival: 7.4												

Sample Receipt Checklist:


Client: COR Crosssett

Date/Time received 9/17/15 0840 by HM

- 1. Cooler sealed and intact upon arrival? Yes No
- 2. Custody seals present? Yes No
- 3. Samples received below 6 degrees Celsius? Yes No
- 4. Was ice present? Yes No
- 5. Is the COC filled out correctly including the sample date/time and signed? Yes No
- 6. Was the sample received within 36 hours of collection? Yes No
- 7. Did the sample(s) arrive in good condition? Yes No
- 8. Was pH and DO measured and in range? Yes No
- 9. Was residual chlorine present?
 > 1.0 mg/L? (did dechlor occur) Yes No

Comments:

Batch #	Sample ID	Temp (C°)	pH	DO	TRC
19155	River	5.8	6.99	9.0	20.02
19156	outfall	3.7	7.74	7.4	0.12

Project Name:				Project Number:				Analysis Requested										CHAIN-OF-CUSTODY																						
Industry: GEORGIA PACIFIC PAPER				Phone: 810-567-8170 FAX: 810-364-9076 810-364-9076				<table border="1" style="width:100%; height: 100%; text-align: center;"> <tr> <td>Total Volume in liters</td> <td>Acute Fathead minnow</td> <td>Acute Bannerfin shiner</td> <td>Acute Ceriodaphnia dubia</td> <td>Acute Daphnia pulex</td> <td>Chronic Fathead minnow</td> <td>Chronic Ceriodaphnia dubia</td> <td>Continuous Batch Tests</td> <td>Discrete Batch Tests</td> <td>Other</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>										Total Volume in liters	Acute Fathead minnow	Acute Bannerfin shiner	Acute Ceriodaphnia dubia	Acute Daphnia pulex	Chronic Fathead minnow	Chronic Ceriodaphnia dubia	Continuous Batch Tests	Discrete Batch Tests	Other											 201 Summit View Drive, Suite 300 Brentwood, TN 37027 PHONE: (615) 277-7570 FAX: (615) 377-4976		
Total Volume in liters	Acute Fathead minnow	Acute Bannerfin shiner	Acute Ceriodaphnia dubia	Acute Daphnia pulex	Chronic Fathead minnow	Chronic Ceriodaphnia dubia	Continuous Batch Tests											Discrete Batch Tests	Other																					
County: Asheby City: Cross State: AR.				Sample Collected by (print): Danny W. Rice / Bbb				NPDES Permit No.: AR0001210				<table border="1" style="width:100%; height: 100%;"> <tr> <th>Description</th> <th>Sample B# (lab only)</th> <th>Receipt Temp °C</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>			Description	Sample B# (lab only)	Receipt Temp °C																							
Description	Sample B# (lab only)	Receipt Temp °C																																						
Sample Collected by (signature): <i>[Signature]</i>				NPDES Test: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes				No. of Cntrs				<table border="1" style="width:100%; height: 100%;"> <tr> <th>Description</th> <th>Sample B# (lab only)</th> <th>Receipt Temp °C</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>			Description	Sample B# (lab only)	Receipt Temp °C																							
Description	Sample B# (lab only)	Receipt Temp °C																																						
Sample Location / ID	Comp/Grab	Container Type	Chilled During Collection (Y/N)	Start Date/Time	End Date/Time																																			
RIVER	G	PLASTIC	NA	9-14-15	11:00am																																			
OUTFALL 001	C	PLASTIC	YES	9-17-15	9-18-15																																			
* Matrix: SS - Soil GW - Groundwater WW - Wastewater AW - Ambient Water ML - Mixed Liquor SL - Sludge SD - Sediment OT - Other _____ Remarks:																																								
Measured TRC (if applicable): 200 mg/L																																								
Relinquished by: (Signature) <i>[Signature]</i>				Date: 9-18-15		Time: 3:00pm		Received by: (Signature) <i>[Signature]</i>				Samples shipped via: <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Other <input type="checkbox"/> Courier <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Delivered				Condition: (lab use only)																								
Relinquished by: (Signature)				Date:		Time:		Received by: (Signature)				Containers/Volume Received: 20L of each																												
Relinquished by: (Signature)				Date:		Time:		Received for lab by: (Signature) <i>[Signature]</i>				Date: 9/19/15		Time: 10:10		pH upon arrival: 7.30, 7.7, 9.0, 9.2		DO upon arrival:																						

Sample Receipt Checklist:

Client: GPC Crossett

Date/Time received 9/15/15 1010 by AW

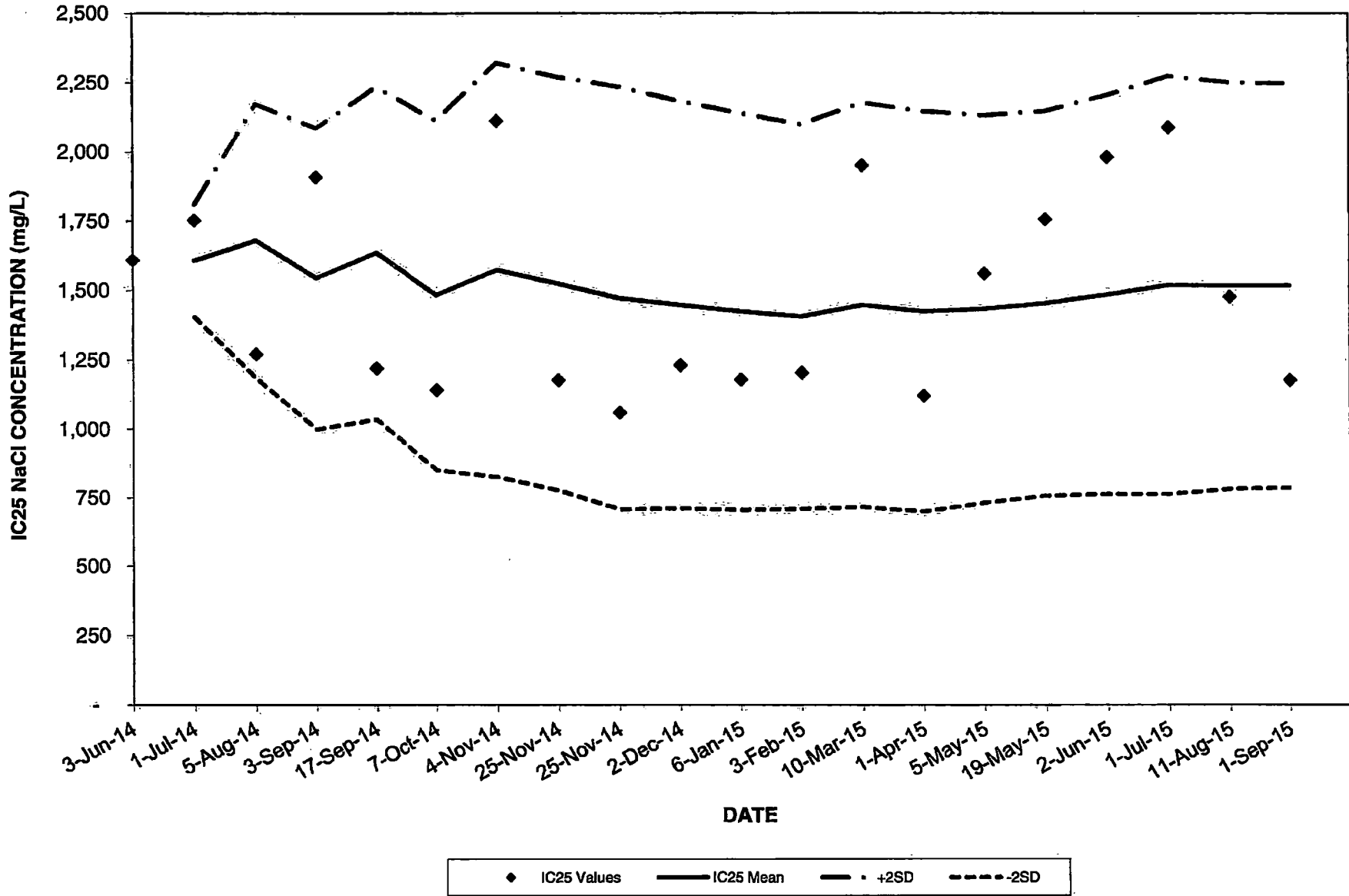
- 1. Cooler sealed and intact upon arrival? Yes No
- 2. Custody seals present? Yes No
- 3. Samples received below 6 degrees Celsius? Yes No
- 4. Was ice present? Yes No
- 5. Is the COC filled out correctly including the sample date/time and signed? Yes No
- 6. Was the sample received within 36 hours of collection? Yes No
- 7. Did the sample(s) arrive in good condition? Yes No
- 8. Was pH and DO measured and in range? Yes No
- 9. Was residual chlorine present?
 > 1.0 mg/L? (did dechlor occur) Yes No *in river water*

Comments:

Batch #	Sample ID	Temp (C°)	pH	DO	TRC
19164	River	4.6	7.30	9.0	0.05
19165	Outfall col	5.5	7.75	9.2	20.02

L:\Ecotox Lab\FORMS

CHRONIC REFERENCE TOXICANT TEST (NaCl) 2014 - 2015 FATHEAD MINNOWS



Fathead Minnow CHRONIC REFERENCE TOXICANT TESTING-SODIUM CHLORIDE (NaCl) 2014 - 2015

Ramboll Environ Test Log No. 17808

37 of 39

Test Number	Log Number	Test Initiation Date	Control Survival (%) (*)	Control Mean Dry Weight (mg/fish) (*)	SURVIVAL		GROWTH		PMSD (%)	IC25 VALUE (mg/L)	IC25 CUMULATIVE MEAN (mg/L)	IC25 ST. DEV. (mg/L)	IC25 2+ STD. DEV.	IC25 2- STD. DEV.	Coefficient of Variation (%)
					NOEC (mg/L)	LOEC (mg/L)	NOEC (mg/L)	LOEC (mg/L)							
1	16835	03-Jun-14	100	0.467	750	1,500	1,500	3,000	24.9	1,607					4
2	16907	01-Jul-14	100	0.447	1,500	3,000	1,500	3,000	22.3	1,751	1,607	102	1,811	1,403	13
3	16989	05-Aug-14	97.5	0.511	750	1,500	750	1,500	25.8	1,270	1,679	247	2,173	1,185	14
4	17054	03-Sep-14	100	0.519	750	1,500	1,500	3,000	34.4	1,907	1,543	272	2,086	999	17
5	17095	17-Sep-14	100	0.458	750	1,500	750	1,500	17.3	1,218	1,634	300	2,234	1,034	19
6	17125	07-Oct-14	100	0.280	750	1,500	750	1,500	32.7	1,141	1,482	316	2,114	850	22
7	17193	04-Nov-14	100	0.400	750	1,500	1,500	3,000	31.3	2,111	1,572	374	2,320	825	23
8	17242	25-Nov-14	100	0.433	750	1,500	750	1,500	17.4	1,175	1,523	373	2,269	776	25
9	17243	25-Nov-14	97.5	0.483	750	1,500	750	1,500	22.1	1,057	1,471	382	2,235	706	24
10	17258	02-Dec-14	100	0.317	750	1,500	750	1,500	27.7	1,228	1,447	368	2,183	710	24
11	17317	06-Jan-15	97.5	0.476	1,500	3,000	1,500	3,000	42.2	1,176	1,422	359	2,140	704	24
12	17379	03-Feb-15	100	0.515	750	1,500	750	1,500	25.3	1,200	1,403	348	2,100	707	24
13	17427	10-Mar-15	97.5	0.519	1,500	3,000	1,500	3,000	34.3	1,948	1,445	366	2,177	713	25
14	17504	01-Apr-15	90	0.316	750	1,500	750	1,500	39.1	1,117	1,422	362	2,147	697	24
15	17570	05-May-15	95	0.346	750	1,500	1,500	3,000	32.6	1,556	1,431	351	2,133	729	23
16	17604*	19-May-15	97.5	0.284	1,500	3,000	1,500	3,000	24.3	1,753	1,451	348	2,148	754	24
17	17621*	02-Jun-15	95	0.335	1,500	3,000	1,500	3,000	24.8	1,978	1,482	361	2,204	760	24
18	17676	01-Jul-15	95	0.452	1,500	3,000	1,500	3,000	23.4	2,087	1,516	378	2,272	760	24
19	17740	11-Aug-15	97.5	0.402	1,500	3,000	1,500	3,000	32.8	1,473	1,513	367	2,248	778	24
20	17790	01-Sep-15	100	0.524	750	1,500	750	1,500	18.4	1,171	1,513	366	2,245	782	24
Avg			98	0.424	1013	2025	1163	2325	28	1496	1503	334	2170	835	

Notes:

Dilution series - 0.375 g/L - 6.0 g/L

NOEC - No Observable Effect Concentration (survival or growth)

LOEC - Lowest Observable Effect Concentration (survival or growth)

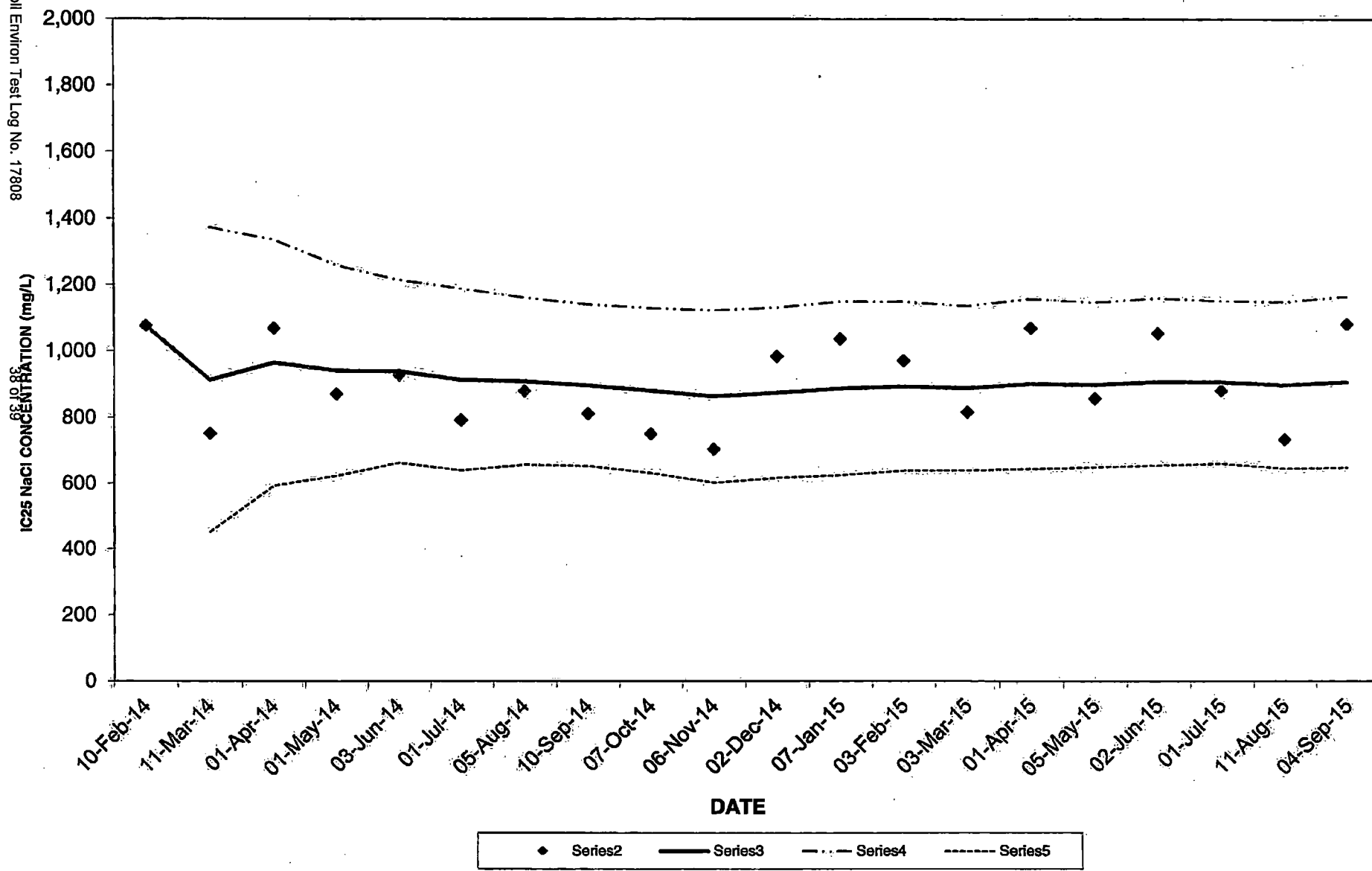
ACCEPTABLE TEST RESULTS - A growth NOEC ranging from 750 mg/L to 3,000 mg/L.

(*) used ABS fish

Minimum USEPA CONTROL CRITERIA - 80 percent survival and average dry weight of 0.25 mg (weight based on surviving number of fish).

CHRONIC REFERENCE TOXICANT (NaCl) 2014-2015
Ceriodaphnia dubia

Ramboll Environ Test Log No. 17808



Ceriodaphnia dubia CHRONIC REFERENCE TOXICANT TESTING - SODIUM CHLORIDE (NaCl) 2014-2015

Ramboll Environ Test Log No. 17808

39 of 39

Test Number	Log Number	Test Initiation Date	Control Survival (%) (*)	3 Brood Production (%) (*)	Control Average Repro (*)	Survival		Reproduction			IC25 VALUE (mg/L)	IC25 CUMULATIVE MEAN (mg/L)	IC25 ST. DEV. (mg/L)	IC25 2+ STD. DEV.	IC25 2- STD. DEV.	Coefficient of Variation (%)
						NOEC (mg/L)	LOEC (mg/L)	NOEC (mg/L)	LOEC (mg/L)	PMSD						
1	16630	10-Feb-14	100	100	31.1	1,000	2,000	500	1,000	13.4	1,076	1,076				
2	16682	11-Mar-14	100	90	23.0	1,000	2,000	500	1,000	24.3	750	913	231	1,374	452	18
3	16730	01-Apr-14	100	100	28.8	2,000	>2,000	500	1,000	12.3	1,067	964	186	1,336	593	16
4	16782	01-May-14	100	100	33.6	2,000	>2,000	500	1,000	13.5	868	940	159	1,258	622	15
5	16834	03-Jun-14	100	80	26.1	1,000	2,000	1,000	2,000	22.9	926	937	138	1,213	662	13
6	16909	01-Jul-14	100	100	31.3	1,000	2,000	500	1,000	21.7	789	913	137	1,188	638	14
7	16989	05-Aug-14	100	90	28.7	2,000	>2000	500	1,000	17.4	877	908	126	1,160	655	13
8	17077	10-Sep-14	100	90	28.4	1,000	2,000	500	1,000	17.3	808	895	122	1,139	651	13
9	17124	07-Oct-14	100	100	29.7	1,000	2,000	500	1,000	26.8	747	879	124	1,127	630	13
10	17201	06-Nov-14	100	80	23.8	1,000	2,000	500	1,000	21.5	700	861	130	1,121	601	14
11	17248	02-Dec-14	100	80	26.1	2,000	>2000	500	1,000	14.1	980	872	129	1,129	614	14
12	17316	07-Jan-15	100	90	28.2	2,000	>2000	500	1,000	17.8	1,032	885	131	1,147	623	14
13	17380	03-Feb-15	100	90	33.2	2,000	>2000	500	1,000	18.7	966	891	127	1,146	636	14
14	17427	03-Mar-15	100	90	26.7	1,000	2,000	500	1,000	21.4	811	886	124	1,134	637	14
15	17504	01-Apr-15	100	90	24.5	1,000	2,000	1,000	2,000	24.9	1,064	897	128	1,154	641	14
16	17571	05-May-15	100	80	22.9	2,000	>2000	500	1,000	22.0	851	895	125	1,144	645	13
17	17622	02-Jun-15	100	80	27.4	1,000	2,000	1,000	2,000	22.3	1,048	904	126	1,156	651	14
18	17675	01-Jul-15	100	100	26.4	2,000	>2000	500	1,000	16.0	875	902	123	1,147	657	13
19	17746	11-Aug-15	100	80	20.6	2,000	>2000	500	1,000	33.1	728	893	126	1,144	641	14
20	17798	04-Sep-15	100	100	27.7	2,000	>2000	500	1,000	13.4	1,075	902	129	1,160	644	14

Avg	100	91	28	1444	1111	583	1167	19	893	912	139	1181	624
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Notes:

NOEC - No Observable Effect Concentration (survival or reproduction)

LOEC - Lowest Observable Effect Concentration (survival or reproduction)

(*) Minimum USEPA CONTROL CRITERIA - 80 percent survival, 80 percent with 3 broods, and average reproduction of 15 neonates/adult.

ORIGIN ID: ELDA (870) 567-8812
REBECCA BLANKENSHIP
GEORGIA-PACIFIC
100 SUPPLY ROAD
DROP POINT 33
CROSSETT, AR 71635
UNITED STATES US

SHIP DATE: 18NOV15
ACTWGT: 0.50 LB
CAD: 102787395/NET3670

BILL SENDER

TO RICHARD HEALEY
ADEQ
5301 NORTHSHORE DR

539.028F5681D0

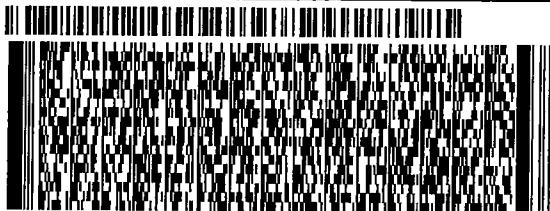
NORTH LITTLE ROCK AR 72118

(501) 682-0718

REF: DMR-PAPER ONLY

INV:
PO:

DEPT:



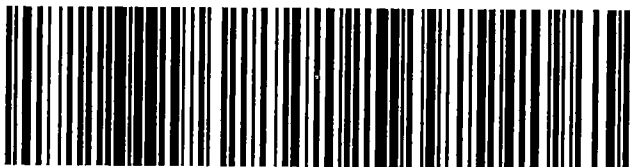
01501181161101ur

THU - 19 NOV 10:30A
PRIORITY OVERNIGHT

TRK# 7750 0416 1556
0201

X2 LITA

72118
AR-US LIT



After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number. Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.