



Georgia-Pacific LLC
Consumer Products

Crossett Paper Operations
100 Mill Supply Rd.
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November 21, 2013

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

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

Dear Mr. Uyeda:

Attached are the Discharge Monitoring Reports (DMRs) for the Georgia-Pacific Crossett Paper Operations' - NPDES Permit # **AR0001210** - for October 2013. 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 me at (870) 567-8144 or by email at james.cutbirth@gapac.com.

Sincerely,

A handwritten signature in cursive script that reads 'James W. Cutbirth'.

James W. Cutbirth
Environmental Manager



**Chronic Toxicity Test Results
Outfall 001 Effluent**

Prepared for:
**Georgia Pacific Crossett Mill
Crossett, Arkansas**

Prepared by:
**ENVIRON International Corporation
Nashville, Tennessee**

Date:
October 2013

Project Number:
20-19675E



October 28, 2013

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

**Re: Chronic Toxicity Test Results - October 2013
 ENVIRON Project No. 20-19675E**

Dear Ms. Johnson:

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 30, October 2, and 4, 2013. The samples were received at ENVIRON on October 1, 3, and 5, 2013, 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. All control organisms met USEPA test acceptability criteria. 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% | 60% |

The fathead minnow chronic test results indicate no significant mortality at the critical dilution (80 percent effluent). The results indicated a No Observable Effect Concentration (NOEC) value for lethality of 80 percent effluent. The sub-lethal NOEC value for fathead minnow growth was 80 percent effluent, which demonstrates no sub-lethal toxicity to the fathead minnow. The results of the chronic test with *C. dubia* indicated a NOEC value for lethality of 80 percent effluent; and a sub-lethality NOEC value of 60 percent effluent. The *C. dubia* test results indicate significant toxicity at the critical dilution for sub-lethal effects.

The river water control for the fathead minnow test met USEPA criteria for test acceptability. The Coefficient of Variation (CV) values for survival in the control and critical dilution are zero and eight percent, respectively. The CV values for growth in the control and critical dilution are eight

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NELAP Accredited and Laboratory Certification in the following 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

and sixteen percent, respectively, and are below the CV limit of 40 percent for findings of no toxicity. The Percent Minimum Significant Difference (PMSD) value was 17 percent, which is within the USEPA PMSD bounds of 12 to 30 percent for fathead minnow growth. The effluent concentration-response curve can be described as a flat dose response, and is not described in EPA 821-B-00-004 *Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing*. A flat response 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.

All *C. dubia* test controls met USEPA criteria for test acceptability. The reproduction CV values for the control and critical dilution are 27 and 23 percent respectively, which are below the CV limit of 40 percent for a finding of no toxicity. The PMSD value was 29 percent, which is within the USEPA PMSD bounds of 13 to 47 percent for *C. dubia* reproduction. The effluent concentration-response can be described as a Type 7 response in EPA 821-B-00-004. A Type 7 concentration-response curve is indicative of toxicity at the highest concentration only, provided test sensitivity is normal. 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 40 pages including this cover letter, attachment pages and separator pages.

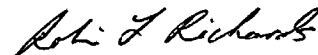
If you have any questions please contact Rick Lockwood at (615) 277-7523. ENVIRON appreciates the opportunity to assist Georgia-Pacific with their testing needs.

Sincerely,

ENVIRON International Corporation



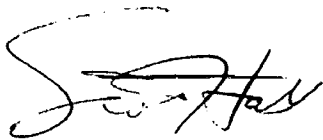
Richard E. Lockwood
Project Manager



Robin L. Richards, REM
Principal

DATA REVIEW FORM
ACUTE AND CHRONIC WET TESTS
ENVIRON International Corporation

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 conducted.¹



Scott Hall, Manager
Ecotoxicology Group

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

**Attachment 1:
Statistical Analysis and
Raw Data Sheets**

CETIS Analytical Report

Report Date: 14 Oct-13 12:21 (p 1 of 4)
 Test Code: 16352fm | 00-9071-5027

Fathead Minnow 7-d Larval Survival and Growth Test

ENVIRON International Corp

| | | |
|----------------------------------|--|---|
| Analysis ID: 13-0173-5276 | Endpoint: 7d Survival Rate | CETIS Version: CETISv1.8.4 |
| Analyzed: 14 Oct-13 12:20 | Analysis: Nonparametric-Control vs Treatments | Official Results: Yes |
| Batch ID: 07-4991-7837 | Test Type: Growth-Survival (7d) | Analyst: |
| Start Date: 01 Oct-13 | Protocol: EPA/821/R-02-013 (2002) | Diluent: Receiving Water |
| Ending Date: 08 Oct-13 | Species: Pimephales promelas | Brine: Not Applicable |
| Duration: 7d 0h | Source: Environmental Consult & Test | Age: |
| Sample ID: 14-2680-2352 | Code: 550B46B0 | Client: GPAC Crossett |
| Sample Date: 30 Sep-13 | Material: Industrial Effluent | Project: WET Monthly Compliance Test (OCT) |
| Receive Date: 01 Oct-13 | Source: Discharge Monitoring Report | |
| Sample Age: 24h | Station: Outfall 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 | 11.6% |

Steel Many-One Rank Sum Test

| Control | vs | C-% | Test Stat | Critical | Ties | DF | P-Value | P-Type | Decision(α:5%) |
|-----------------|----|-----|-----------|----------|------|----|---------|--------|------------------------|
| Receiving Water | | 25 | 28.5 | 16 | 3 | 8 | 0.8883 | Asymp | Non-Significant Effect |
| | | 34 | 32.5 | 16 | 3 | 8 | 0.9870 | Asymp | Non-Significant Effect |
| | | 45 | 35 | 16 | 2 | 8 | 0.9979 | Asymp | Non-Significant Effect |
| | | 60 | 23.5 | 16 | 3 | 8 | 0.4903 | Asymp | Non-Significant Effect |
| | | 80 | 25 | 16 | 3 | 8 | 0.6353 | Asymp | Non-Significant Effect |

Test Acceptability Criteria

| Attribute | Test Stat | TAC Limits | Overlap | Decision |
|--------------|-----------|------------|---------|-------------------------------|
| Control Resp | 0.925 | 0.8 - NL | Yes | Passes Acceptability Criteria |

Auxiliary Tests

| Attribute | Test | Test Stat | Critical | P-Value | Decision(α:5%) |
|---------------|----------------------|-----------|----------|---------|----------------------|
| Extreme Value | Grubbs Extreme Value | 2.576 | 2.908 | 0.1922 | No Outliers Detected |

ANOVA Table

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(α:5%) |
|---------|-------------|-------------|----|--------|---------|------------------------|
| Between | 0.112855 | 0.02257099 | 5 | 2.152 | 0.0935 | Non-Significant Effect |
| Error | 0.2516851 | 0.01048688 | 24 | | | |
| Total | 0.36454 | | 29 | | | |

Distributional Tests

| Attribute | Test | Test Stat | Critical | P-Value | Decision(α:1%) |
|--------------|-------------------------------|-----------|----------|---------|---------------------|
| Variances | Bartlett Equality of Variance | 117.1 | 15.09 | <0.0001 | Unequal Variances |
| Distribution | Shapiro-Wilk W Normality | 0.9605 | 0.9031 | 0.3187 | 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 | 0.925 | 0.84 | 1 | 0.875 | 0.875 | 1 | 0.03062 | 7.4% | 0.0% |
| 25 | | 5 | 0.925 | 0.7862 | 1 | 1 | 0.75 | 1 | 0.05 | 12.09% | 0.0% |
| 34 | | 5 | 0.975 | 0.9056 | 1 | 1 | 0.875 | 1 | 0.025 | 5.73% | -5.41% |
| 45 | | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0.0% | -8.11% |
| 60 | | 5 | 0.875 | 0.7653 | 0.9847 | 0.875 | 0.75 | 1 | 0.03953 | 10.1% | 5.41% |
| 80 | | 5 | 0.9 | 0.8306 | 0.9694 | 0.875 | 0.875 | 1 | 0.025 | 6.21% | 2.7% |

Angular (Corrected) Transformed Summary

| C-% | Control Type | Count | Mean | 95% LCL | 95% UCL | Median | Min | Max | Std Err | CV% | %Effect |
|-----|----------------|-------|-------|---------|---------|--------|-------|-------|---------|--------|---------|
| 0 | Receiving Wate | 5 | 1.283 | 1.158 | 1.408 | 1.209 | 1.209 | 1.393 | 0.04499 | 7.84% | 0.0% |
| 25 | | 5 | 1.287 | 1.094 | 1.481 | 1.393 | 1.047 | 1.393 | 0.06974 | 12.12% | -0.33% |
| 34 | | 5 | 1.356 | 1.254 | 1.458 | 1.393 | 1.209 | 1.393 | 0.03673 | 6.06% | -5.73% |
| 45 | | 5 | 1.393 | 1.393 | 1.393 | 1.393 | 1.393 | 1.393 | 0 | 0.0% | -8.59% |
| 60 | | 5 | 1.214 | 1.062 | 1.366 | 1.209 | 1.047 | 1.393 | 0.05475 | 10.09% | 5.39% |
| 80 | | 5 | 1.246 | 1.144 | 1.348 | 1.209 | 1.209 | 1.393 | 0.03673 | 6.59% | 2.86% |

CETIS Analytical Report

Report Date: 14 Oct-13 12:21 (p 2 of 4)
 Test Code: 16352fm | 00-9071-5027

Fathead Minnow 7-d Larval Survival and Growth Test

ENVIRON International Corp

Analysis ID: 13-0173-5276 Endpoint: 7d Survival Rate
 Analyzed: 14 Oct-13 12:20 Analysis: Nonparametric-Control vs Treatments

CETIS Version: CETISv1.8.4
 Official Results: Yes

7d Survival Rate Detail

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

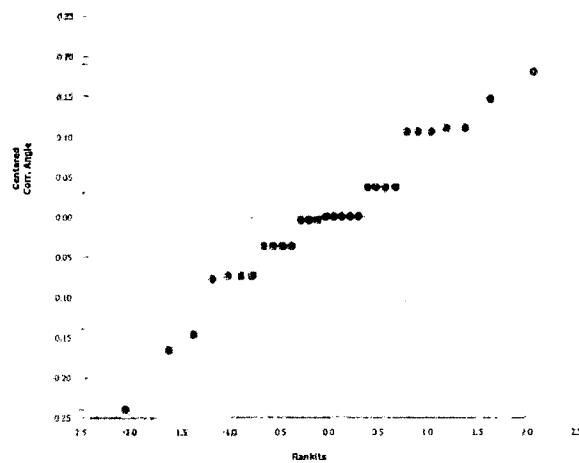
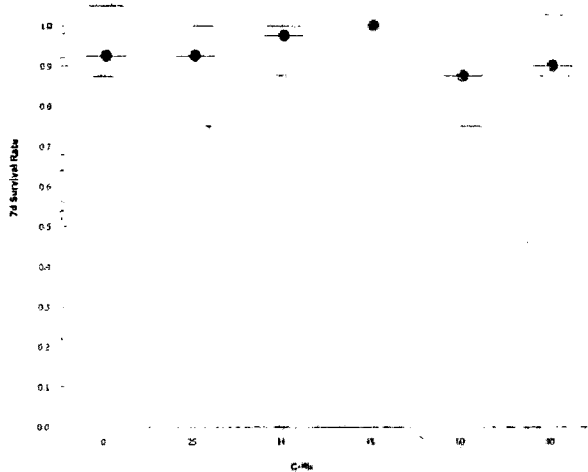
Angular (Corrected) Transformed Detail

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

7d Survival Rate Binomials

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

Graphics



CETIS Analytical Report

Report Date: 14 Oct-13 12:21 (p 3 of 4)
 Test Code: 16352fm | 00-9071-5027

Fathead Minnow 7-d Larval Survival and Growth Test

ENVIRON International Corp

| | | |
|----------------------------------|---|---|
| Analysis ID: 10-9458-0826 | Endpoint: Mean Dry Biomass-mg | CETIS Version: CETISv1.8.4 |
| Analyzed: 14 Oct-13 12:20 | Analysis: Parametric-Control vs Treatments | Official Results: Yes |
| Batch ID: 07-4991-7837 | Test Type: Growth-Survival (7d) | Analyst: |
| Start Date: 01 Oct-13 | Protocol: EPA/821/R-02-013 (2002) | Diluent: Receiving Water |
| Ending Date: 08 Oct-13 | Species: Pimephales promelas | Brine: Not Applicable |
| Duration: 7d 0h | Source: Environmental Consult & Test | Age: |
| Sample ID: 14-2680-2352 | Code: 550B46B0 | Client: GPAC Crossett |
| Sample Date: 30 Sep-13 | Material: Industrial Effluent | Project: WET Monthly Compliance Test (OCT) |
| Receive Date: 01 Oct-13 | Source: Discharge Monitoring Report | |
| Sample Age: 24h | Station: Outfall 001 | |

| Data Transform | Zeta | Alt Hyp | Trials | Seed | NOEL | LOEL | TOEL | TU | PMSD |
|----------------|------|---------|--------|------|------|------|------|------|-------|
| Untransformed | NA | C > T | NA | NA | 80 | >80 | NA | 1.25 | 17.1% |

Dunnett Multiple Comparison Test

| Control | vs | C-% | Test Stat | Critical | MSD | DF | P-Value | P-Type | Decision(α:5%) |
|-----------------|----|-----|-----------|----------|-------|----|---------|--------|------------------------|
| Receiving Water | | 25 | -1.277 | 2.362 | 0.086 | 8 | 0.9925 | CDF | Non-Significant Effect |
| | | 34 | -3.237 | 2.362 | 0.086 | 8 | 1.0000 | CDF | Non-Significant Effect |
| | | 45 | -0.0139 | 2.362 | 0.086 | 8 | 0.8374 | CDF | Non-Significant Effect |
| | | 60 | -1.87 | 2.362 | 0.086 | 8 | 0.9989 | CDF | Non-Significant Effect |
| | | 80 | -1.311 | 2.362 | 0.086 | 8 | 0.9933 | CDF | Non-Significant Effect |

Test Acceptability Criteria

| Attribute | Test Stat | TAC Limits | Overlap | Decision |
|--------------|-----------|------------|---------|-------------------------------|
| Control Resp | 0.5012 | 0.25 - NL | Yes | Passes Acceptability Criteria |
| PMSD | 0.1707 | 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 | 2.471 | 2.908 | 0.2799 | No Outliers Detected |

ANOVA Table

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(α:5%) |
|---------|-------------|-------------|----|--------|---------|--------------------|
| Between | 0.04868206 | 0.009736411 | 5 | 2.968 | 0.0318 | Significant Effect |
| Error | 0.07873697 | 0.003280707 | 24 | | | |
| Total | 0.127419 | | 29 | | | |

Distributional Tests

| Attribute | Test | Test Stat | Critical | P-Value | Decision(α:1%) |
|--------------|-------------------------------|-----------|----------|---------|---------------------|
| Variances | Bartlett Equality of Variance | 4.808 | 15.09 | 0.4398 | Equal Variances |
| Distribution | Shapiro-Wilk W Normality | 0.9827 | 0.9031 | 0.8926 | 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 | 0.5012 | 0.4484 | 0.5541 | 0.505 | 0.4388 | 0.5562 | 0.01902 | 8.48% | 0.0% |
| 25 | | 5 | 0.5475 | 0.5006 | 0.5944 | 0.5575 | 0.4913 | 0.5925 | 0.01689 | 6.9% | -9.23% |
| 34 | | 5 | 0.6185 | 0.5755 | 0.6615 | 0.6062 | 0.5838 | 0.6738 | 0.01547 | 5.59% | -23.39% |
| 45 | | 5 | 0.5018 | 0.4277 | 0.5758 | 0.51 | 0.41 | 0.57 | 0.02666 | 11.88% | -0.1% |
| 60 | | 5 | 0.569 | 0.4915 | 0.6465 | 0.5462 | 0.5088 | 0.6662 | 0.02791 | 10.97% | -13.52% |
| 80 | | 5 | 0.5487 | 0.4391 | 0.6584 | 0.5362 | 0.42 | 0.66 | 0.03951 | 16.1% | -9.48% |

CETIS Analytical Report

Report Date: 14 Oct-13 12:21 (p 4 of 4)
 Test Code: 16352fm | 00-9071-5027

Fathead Minnow 7-d Larval Survival and Growth Test

ENVIRON International Corp

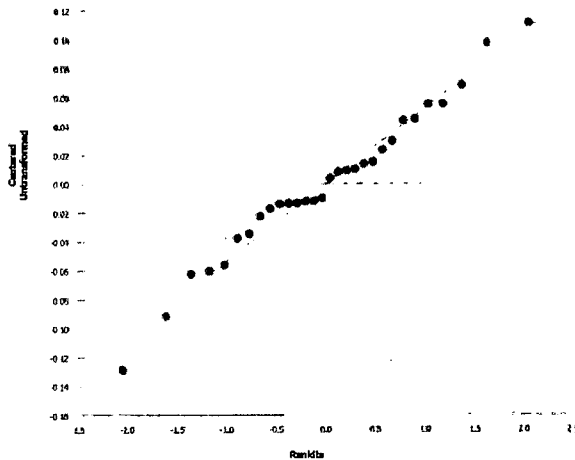
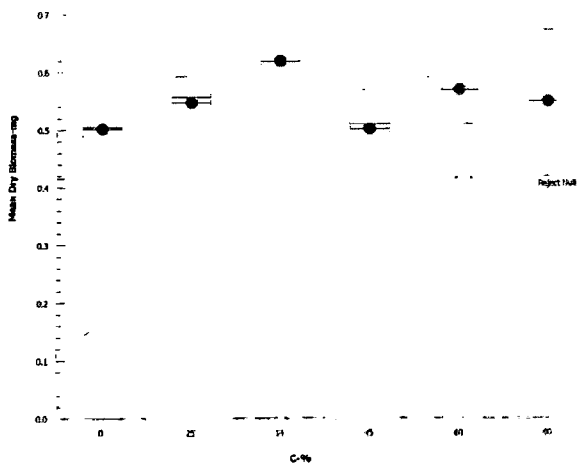
Analysis ID: 10-9458-0826 Endpoint: Mean Dry Biomass-mg
 Analyzed: 14 Oct-13 12:20 Analysis: Parametric-Control vs Treatments

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 | 0.505 | 0.4912 | 0.4388 | 0.5562 | 0.515 |
| 25 | | 0.5575 | 0.5925 | 0.5338 | 0.4913 | 0.5625 |
| 34 | | 0.6012 | 0.5838 | 0.6738 | 0.6062 | 0.6275 |
| 45 | | 0.5313 | 0.51 | 0.41 | 0.57 | 0.4875 |
| 60 | | 0.6662 | 0.5313 | 0.5925 | 0.5088 | 0.5462 |
| 80 | | 0.66 | 0.42 | 0.535 | 0.5925 | 0.5362 |

Graphics



CETIS Analytical Report

Report Date: 14 Oct-13 12:21 (p 1 of 2)
 Test Code: 16352fm | 00-9071-5027

Fathead Minnow 7-d Larval Survival and Growth Test

ENVIRON International Corp

| | | |
|----------------------------------|---|---|
| Analysis ID: 00-7398-1591 | Endpoint: Mean Dry Biomass-mg | CETIS Version: CETISv1.8.4 |
| Analyzed: 14 Oct-13 12:21 | Analysis: Linear Interpolation (ICPIN) | Official Results: Yes |
| Batch ID: 07-4991-7837 | Test Type: Growth-Survival (7d) | Analyst: |
| Start Date: 01 Oct-13 | Protocol: EPA/821/R-02-013 (2002) | Diluent: Receiving Water |
| Ending Date: 08 Oct-13 | Species: Pimephales promelas | Brine: Not Applicable |
| Duration: 7d 0h | Source: Environmental Consult & Test | Age: |
| Sample ID: 14-2680-2352 | Code: 550B46B0 | Client: GPAC Crossett |
| Sample Date: 30 Sep-13 | Material: Industrial Effluent | Project: WET Monthly Compliance Test (OCT) |
| Receive Date: 01 Oct-13 | Source: Discharge Monitoring Report | |
| Sample Age: 24h | Station: Outfall 001 | |

Linear Interpolation Options

| X Transform | Y Transform | Seed | Resamples | Exp 95% CL | Method |
|-------------|-------------|--------|-----------|------------|-------------------------|
| Linear | Linear | 181707 | 1000 | Yes | Two-Point Interpolation |

Test Acceptability Criteria

| Attribute | Test Stat | TAC Limits | Overlap | Decision |
|--------------|-----------|------------|---------|-------------------------------|
| Control Resp | 0.5012 | 0.25 - NL | Yes | Passes Acceptability Criteria |

Residual Analysis

| Attribute | Method | Test Stat | Critical | P-Value | Decision(α:5%) |
|---------------|----------------------|-----------|----------|---------|----------------------|
| Extreme Value | Grubbs Extreme Value | 2.471 | 2.908 | 0.2799 | 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 | 0.5012 | 0.4388 | 0.5562 | 0.01902 | 0.04253 | 8.48% | 0.0% |
| 25 | | 5 | 0.5475 | 0.4913 | 0.5925 | 0.01689 | 0.03776 | 6.9% | -9.23% |
| 34 | | 5 | 0.6185 | 0.5838 | 0.6738 | 0.01547 | 0.0346 | 5.59% | -23.39% |
| 45 | | 5 | 0.5018 | 0.41 | 0.57 | 0.02666 | 0.05962 | 11.88% | -0.1% |
| 60 | | 5 | 0.569 | 0.5088 | 0.6662 | 0.02791 | 0.06241 | 10.97% | -13.52% |
| 80 | | 5 | 0.5487 | 0.42 | 0.66 | 0.03951 | 0.08834 | 16.1% | -9.48% |

Mean Dry Biomass-mg Detail

| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 |
|-----|-----------------|--------|--------|--------|--------|--------|
| 0 | Receiving Water | 0.505 | 0.4912 | 0.4388 | 0.5562 | 0.515 |
| 25 | | 0.5575 | 0.5925 | 0.5338 | 0.4913 | 0.5625 |
| 34 | | 0.6012 | 0.5838 | 0.6738 | 0.6062 | 0.6275 |
| 45 | | 0.5313 | 0.51 | 0.41 | 0.57 | 0.4875 |
| 60 | | 0.6662 | 0.5313 | 0.5925 | 0.5088 | 0.5462 |
| 80 | | 0.66 | 0.42 | 0.535 | 0.5925 | 0.5362 |

CETIS Analytical Report

Report Date: 14 Oct-13 12:21 (p 2 of 2)
Test Code: 16352fm | 00-9071-5027

Fathead Minnow 7-d Larval Survival and Growth Test

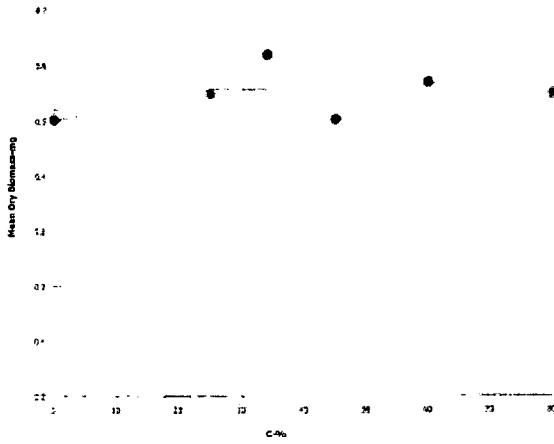
ENVIRON International Corp

Analysis ID: 00-7398-1591
Analyzed: 14 Oct-13 12:21

Endpoint: Mean Dry Biomass-mg
Analysis: Linear Interpolation (ICPIN)

CETIS Version: CETISv1.8.4
Official Results: Yes

Graphics



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

TEST LOG NO.: 16352 BEGINNING: HRS: 1223 DATE: 10/1/13 PHOTOPERIOD: 16 hr light/8 hr dark
 JOB NUMBER: 20-19675G ENDING: HRS: 1341 DATE: 10/8/13 FEEDING REGIME:
 INDUSTRY: Georgia Pacific Crossett TEST DILUTIONS: 25, 34, 45, 60, 80% 0.15 mL Artemia @ 2 times/day
 EFFLUENT: Outfall 001 ORGANISM AGE (date): 9/30/13 TEST VESSEL CAPACITY: 450 mL
 DILUTION WATER: River Water ORGANISM SOURCE: ECT # 4461 TEST SOLUTION VOLUME: 250 - 300 mL
 NPDES: Yes No SOURCE TEMP @ TEST START: 24.4 NO. ORGANISMS/TREATMENT: 8
 FOOD BATCH: 4378 RANDOMIZED BY: AH NO. REPLICATES: 5

| CONC (%) | REP ID | SURVIVAL (#) | | | | | | | |
|-------------------|------------------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|---------|
| | | START | DAY 1 | DAY 2 | DAY 3 | DAY 4 | DAY 5 | DAY 6 | DAY 7 |
| RW | A | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| | B | 8 | 8 | 8 | 7 | 7 | 7 | 7 | 7 |
| | C | 8 | 8 | 8 | 8 | 7 | 7 | 7 | 7 |
| | D | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| | E | 8 | 8 | 8 | 7 | 7 | 7 | 7 | 7 |
| | Temp(°C):old/new | 24.4 | 24.4/24.4 | 24.5/24.3 | 24.0/24.1 | 24.2/24.1 | 24.5/24.1 | 24.3/24.3 | 24.5 |
| 25 | A | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| | B | 8 | 8 | 8 | 7 | 6 | 6 | 6 | 7 |
| | C | 8 | 8 | 8 | 7 | 6 | 6 | 6 | 6 |
| | D | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| | E | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| | Temp(°C):old/new | 24.3 | 24.4/24.2 | 24.2/24.4 | 24.1/24.1 | 24.3/24.2 | 24.1/24.3 | 24.1/24.1 | 24.6 |
| 34 | A | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| | B | 8 | 8 | 8 | 8 | 8 | 7 | 7 | 7 |
| | 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 | 24.6 | 24.4/24.3 | 24.2/24.2 | 24.4/24.1 | 24.1/24.3 | 24.1/24.4 | 24.4/24.4 | 24.3 |
| 45 | 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 | 24.5 | 24.2/24.3 | 24.5/24.1 | 24.1/24.2 | 24.3/24.0 | 24.2/24.3 | 24.3/24.3 | 24.3 |
| 60 | A | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 7 |
| | B | 8 | 8 | 8 | 7 | 7 | 7 | 7 | 7 |
| | C | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| | D | 8 | 8 | 8 | 8 | 7 | 7 | 6 | 6 |
| | E | 8 | 8 | 8 | 8 | 7 | 7 | 7 | 7 |
| | Temp(°C):old/new | 24.1 | 24.4/24.2 | 24.4/24.3 | 24.2/24.3 | 24.5/24.0 | 24.1/24.1 | 24.6/24.1 | 24.0 |
| 80 | A | 8 | 8 | 8 | 8 | 7 | 7 | 7 | 7 |
| | B | 8 | 8 | 8 | 8 | 7 | 7 | 7 | 7 |
| | C | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| | D | 8 | 8 | 8 | 7 | 7 | 7 | 7 | 7 |
| | E | 8 | 8 | 8 | 8 | 7 | 7 | 7 | 7 |
| | Temp(°C):old/new | 24.3 | 24.4/24.1 | 24.4/24.5 | 24.7/24.1 | 24.3/24.3 | 24.2/24.2 | 24.2/24.3 | 24.1 |
| Test Renewal | Time | 1223 | 10/1/13 | 1250 | 1349 | 1153 | 1212 | 1113 | 1341 |
| | Date | 10/1/13 | 10/1/13 | 10/3/13 | 10/4/13 | 10/5/13 | 10/6/13 | 10/7/13 | 10/8/13 |
| | Initials | AH | AH | AH | LM | HM | AW | AH | AW |
| morning feeding | Int/Time | 12:00 | 12:00 | 12:00 | 12:00 | 12:00 | 12:00 | 12:00 | 12:00 |
| afternoon feeding | Int/Time | 1:15 | 1:15 | 1:15 | 1:15 | 1:15 | 1:15 | 1:15 | 1:15 |

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

TEST LOG NO.: 16352
 JOB NUMBER.: 20-19675G
 INDUSTRY: Georgia Pacific Crossett
 EFFLUENT: 001
 DILUTION WATER: River Water
 NPDES: Yes 7 No 1
 FOOD BATCH: U378

BEGINNING: HRS: 1323 DATE: 10/1/15
 ENDING: HRS: 1347 DATE: 10/8/15

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 | 24.5 | 24.1/24.2 | 25.2/24.4 | 24.1/24.9 | 24.1/24.4 | 24.3/24.1 | 24.5/24.3 | 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 | | | | | | | | |
| | A | | | | | | | | |
| | B | | | | | | | | |
| | C | | | | | | | | |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | Temp(°c):old/new | | | | | | | | |
| Test Renewal | Time | | | | | | | | |
| | Date | | | | | | | | |
| | Initials | | | | | | | | |
| morning feeding | Int/Time | | | | | | | | |
| afternoon feeding | Int/Time | | | | | | | | |

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

TEST LOG NO.: 16352 BEGINNING: HRS: 1323 DATE: 10/11/13
 JOB NO.: 20-19675G ENDING: HRS: 1341 DATE: 10/8/13
 INDUSTRY: Georgia Pacific-Crosssett
 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 | 1.05297 | 1.05701 | 0.00404 | 8 | 0.505 |
| | B | 2 | 1.09404 | 1.09797 | 0.00393 | 7 | 0.562 |
| | C | 3 | 1.08111 | 1.08462 | 0.00351 | 7 | 0.501 |
| | D | 4 | 1.08437 | 1.08882 | 0.00445 | 8 | 0.556 |
| | E | 5 | 1.08981 | 1.09393 | 0.00418 | 7 | 0.589 |
| 25 | A | 6 | 1.14883 | 1.15324 | 0.00446 | 8 | 0.556 |
| | B | 7 | 1.06768 | 1.07242 | 0.00474 | 7 | 0.681 |
| | C | 8 | 1.12928 | 1.13355 | 0.00427 | 6 | 0.717 |
| | D | 9 | 1.14034 | 1.14427 | 0.00393 | 8 | 0.681 |
| | E | 10 | 1.13897 | 1.14347 | 0.00450 | 8 | 0.717 |
| 34 | A | 11 | 1.12976 | 1.13457 | 0.00481 | 8 | 0.681 |
| | B | 12 | 1.07716 | 1.08203 | 0.00467 | 7 | 0.717 |
| | C | 13 | 1.05426 | 1.05915 | 0.00539 | 8 | 0.681 |
| | D | 14 | 1.1299 | 1.13474 | 0.00485 | 8 | 0.681 |
| | E | 15 | 1.12971 | 1.13473 | 0.00502 | 8 | 0.681 |
| 45 | A | 16 | 1.08561 | 1.08986 | 0.00425 | 8 | 0.681 |
| | B | 17 | 1.14690 | 1.15098 | 0.00408 | 8 | 0.681 |
| | C | 18 | 1.08858 | 1.09186 | 0.00328 | 8 | 0.681 |
| | D | 19 | 1.10171 | 1.10627 | 0.00456 | 8 | 0.681 |
| | E | 20 | 1.08234 | 1.08624 | 0.00390 | 8 | 0.681 |
| 60 | A | 21 | 1.06480 | 1.07013 | 0.00533 | 7 | 0.681 |
| | B | 22 | 1.1215 | 1.11640 | 0.00425 | 7 | 0.681 |
| | C | 23 | 1.10155 | 1.10629 | 0.00474 | 8 | 0.681 |
| | D | 24 | 1.06344 | 1.06751 | 0.00407 | 6 | 0.681 |
| | E | 25 | 1.08180 | 1.08617 | 0.00437 | 7 | 0.681 |
| 80 | A | 26 | 1.10550 | 1.11078 | 0.00528 | 7 | 0.681 |
| | B | 27 | 1.12022 | 1.12358 | 0.00336 | 7 | 0.681 |
| | C | 28 | 1.09683 | 1.10111 | 0.00428 | 8 | 0.681 |
| | D | 29 | 1.07214 | 1.08188 | 0.00474 | 7 | 0.681 |
| | E | 30 | 1.10491 | 1.0920 | 0.00424 | 7 | 0.681 |
| MH | A | 31 | 1.09722 | 1.10071 | 0.00349 | 8 | 0.681 |
| | B | 32 | 1.08529 | 1.08982 | 0.00453 | 8 | 0.681 |
| | C | 33 | 1.07581 | 1.08041 | 0.00460 | 8 | 0.681 |
| | D | 34 | 1.1501 | 1.15387 | 0.00386 | 8 | 0.681 |
| | E | 35 | 1.07593 | 1.07981 | 0.00388 | 8 | 0.681 |
| Initials / Date: | | AH 10/13 | | | | | |

AVG Control Fish wt. 0.543 (using final #)

Oven ID: 1
 Tins In: 10/8/13
 Date: 10/8/13
 Time: 1445
 Temp (°C): 10.1
 Initials: AW
 Tins Out: 10/9/13
 Date: 10/9/13
 Time: 1005 AM
 Temp (°C): 14.56
 Initials: LM

FINAL WEIGHTS
 DATE: 10/11/13
 INITIALS: LM

TEST LOG NO. 16352
 JOB NO. 20-19675G

CLIENT/SAMPLE ID: Georgia Pacific Crossett
 TEST ORGANISM: Fm

DATE: 10/1/13

ENVIRON Test Log No. 16352

15 of 40

| 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 | Old | New |
| RW | 8.1 | 8.6 | 8.2 | 8.6 | 7.5 | 8.3 | 7.9 | 8.2 | 8.0 | 8.1 | 8.4 | 8.4 | 8.5 | 8.6 | 8.6 |
| 25 | 8.2 | 8.6 | 8.3 | 8.6 | 8.1 | 8.3 | 8.3 | 8.1 | 8.2 | 8.3 | 8.4 | 8.4 | 8.5 | 8.5 | 8.5 |
| 34 | 8.2 | 8.7 | 8.2 | 8.4 | 8.1 | 8.2 | 8.2 | 8.2 | 8.2 | 8.3 | 8.3 | 8.3 | 8.4 | 8.4 | 8.4 |
| 45 | 8.3 | 8.6 | 8.4 | 8.5 | 8.2 | 8.1 | 8.2 | 8.3 | 8.1 | 8.2 | 8.2 | 8.3 | 8.4 | 8.4 | 8.4 |
| 60 | 8.4 | 8.6 | 8.3 | 8.0 | 8.2 | 8.0 | 8.4 | 8.3 | 8.1 | 8.2 | 8.1 | 8.2 | 8.3 | 8.3 | 8.3 |
| 80 | 8.4 | 8.4 | 8.3 | 8.0 | 8.3 | 8.0 | 8.2 | 8.2 | 8.1 | 8.2 | 8.1 | 8.2 | 8.3 | 8.3 | 8.3 |
| MH | 8.4 | 8.6 | 8.5 | 8.6 | 8.2 | 8.1 | 8.4 | 8.1 | 8.0 | 7.9 | 8.0 | 8.6 | 8.6 | 8.6 | 8.6 |

| 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 | Old | New |
| RW | 7.52 | 7.93 | 7.50 | 7.90 | 7.71 | 7.80 | 7.71 | 7.64 | 7.65 | 7.83 | 7.63 | 7.88 | 7.85 | 7.85 | 7.85 |
| 25 | 7.83 | 7.86 | 7.85 | 7.77 | 7.82 | 7.80 | 7.79 | 7.54 | 7.61 | 7.65 | 7.71 | 7.69 | 7.96 | 7.96 | 7.96 |
| 34 | 7.83 | 8.06 | 7.91 | 7.83 | 7.89 | 7.86 | 7.90 | 7.81 | 7.82 | 7.89 | 7.84 | 7.90 | 7.96 | 7.96 | 7.96 |
| 45 | 7.83 | 8.15 | 7.93 | 7.99 | 7.91 | 7.94 | 8.06 | 7.87 | 7.90 | 7.90 | 8.01 | 8.05 | 7.90 | 7.90 | 7.90 |
| 60 | 8.01 | 8.33 | 7.99 | 8.17 | 7.93 | 8.10 | 8.01 | 7.98 | 7.95 | 8.04 | 8.04 | 8.09 | 7.90 | 7.90 | 7.90 |
| 80 | 8.00 | 8.38 | 8.00 | 8.12 | 7.96 | 8.14 | 8.00 | 8.10 | 8.03 | 8.10 | 8.10 | 8.20 | 7.94 | 7.94 | 7.94 |
| MH | 7.80 | 7.78 | 7.85 | 7.74 | 7.82 | 7.81 | 7.90 | 7.94 | 7.96 | 7.98 | 8.02 | 8.28 | 7.87 | 7.87 | 7.87 |

| 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 | Old | New |
| RW | 119 | 73 | 115 | 68 | 60 | 111 | 66 | 166 | 77 | 113 | 120 | 122 | 127 | 127 | 127 |
| 25 | 640 | 502 | 641 | 578 | 605 | 1058 | 1052 | 1612 | 579 | 573 | 623 | 649 | 647 | 647 | 647 |
| 34 | 800 | 719 | 857 | 781 | 770 | 769 | 843 | 777 | 782 | 780 | 786 | 789 | 826 | 826 | 826 |
| 45 | 1080 | 944 | 1058 | 912 | 1047 | 1036 | 1080 | 1013 | 1005 | 1049 | 1075 | 1082 | 1089 | 1089 | 1089 |
| 60 | 1350 | 1254 | 1329 | 1278 | 1311 | 1304 | 1363 | 1267 | 1301 | 1308 | 1370 | 1422 | 1349 | 1349 | 1349 |
| 80 | 1737 | 1623 | 1726 | 1664 | 1712 | 1698 | 1753 | 1667 | 1721 | 1855 | 1758 | 1773 | 1693 | 1693 | 1693 |
| MH | 253 | 195 | 226 | 200 | 216 | 211 | 219 | 232 | 213 | 245 | 227 | 254 | 260 | 260 | 260 |

| Params Int/Time: | AW1024 | AW0708 | AW0930 | AW1117 | AW1013 | AW1060 | AW0900 | AW1652 | AW1049 | AW0509 | AW1029 | AW1051 | AW | AW | AW0602 |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|----|--------|
| Dilutions Int/Time: | M21029 | AW0920 | AW0920 | AW0926 | AW0926 | AW0926 | AW0926 | AW1030 | AW1030 | AW1019 | AW1019 | AW1019 | AW | AW | AW0550 |

| Control Water Batch: | 5623 | 5324 | 5330 | 5331 | 5331 | 5332 | 5332 | 5335 |
|----------------------|------|------|------|------|------|------|------|------|
| Food Batch | 4378 | 4378 | 4378 | 4378 | 4378 | 4378 | 4378 | 4378 |

8.3
8.4
8.5
8.6
8.7
8.8
8.9
9.0
9.1
9.2
9.3
9.4
9.5
9.6
9.7
9.8
9.9
10.0

123
597
781
1024
1690
285

TEST LOG NO. 10352
 JOB NO. 20-19675G

CLIENT: Georgia Pacific Crossett

DATE OF TEST: 10/1/13

TEST TYPE(S) PERFORMED: Fm & Cd Chronic

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 |
|---------|-------------|-------------------------------|--------------|---------------------|-----------------|----------|------------------------|
| 10698 | Outfall 001 | 9/29-30/13 10/1/13 | 10/1/13 | 268 | 410 | 0.02 | 0.1 |
| 10708 | Outfall 001 | 10/12/13 | 10/13/13 | 296 | 445 | 0.07 | 0.637 |
| 10720 | Outfall 001 | 10/13-14/13 | 10/15/13 | 276 | 405 | 0.08 | 0.357 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

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 |
|---------|------------------------|-------------|--------------|---------------------|-----------------|----------|------------------------|
| 10699 | River Water | 9/30/13 | 10/1/13 | 24.8 | 23 | 0.02 | 0.1 |
| 10709 | RW | 9/30/13 | 10/13/13 | 28.8 | 33 | 0.03 | 0.1 |
| 10719 | Outfall 001 | 10/4/13 | 10/15/13 | 20.8 | 22 | 0.03 | 0.1 |
| 5326 | MH | 9/16/13 | 10/1/13 | 23.2 | 44 | 0.02 | - |
| 5330 | MH | 9/30/13 | 10/2/13 | 32.4 | 49 | 0.02 | - |
| 5331 | MH | 10/2/13 | 10/4/13 | 34.8 | 41 | 0.02 | - |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

CETIS Analytical Report

Report Date: 10 Oct-13 14:57 (p 1 of 2)
 Test Code: 16352cd | 04-3517-2808

Ceriodaphnia 7-d Survival and Reproduction Test ENVIRON International Corp

| | | |
|----------------------------------|--|---|
| Analysis ID: 06-0181-8662 | Endpoint: 7d Survival Rate | CETIS Version: CETISv1.8.4 |
| Analyzed: 10 Oct-13 14:55 | Analysis: STP 2x2 Contingency Tables | Official Results: Yes |
| Batch ID: 15-2949-3657 | Test Type: Reproduction-Survival (7d) | Analyst: |
| Start Date: 01 Oct-13 | Protocol: EPA/821/R-02-013 (2002) | Diluent: Mod-Hard Synthetic Water |
| Ending Date: 07 Oct-13 | Species: Ceriodaphnia dubia | Brine: Not Applicable |
| Duration: 6d 0h | Source: In-House Culture | Age: |
| Sample ID: 17-6700-6772 | Code: 69526234 | Client: GPAC Crossett |
| Sample Date: 30 Sep-13 | Material: Industrial Effluent | Project: WET Monthly Compliance Test (OCT) |
| Receive Date: 01 Oct-13 | 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 | 0.2368 | 1.0000 | Exact | Non-Significant Effect |
| | | 45 | 0.5 | 1.0000 | Exact | Non-Significant Effect |
| | | 60 | 1 | 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 Wate | 10 | 0 | 10 | 1 | 0 | 0.0% |
| 25 | | 10 | 0 | 10 | 1 | 0 | 0.0% |
| 34 | | 8 | 2 | 10 | 0.8 | 0.2 | 20.0% |
| 45 | | 9 | 1 | 10 | 0.9 | 0.1 | 10.0% |
| 60 | | 10 | 0 | 10 | 1 | 0 | 0.0% |
| 80 | | 9 | 0 | 9 | 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 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| 45 | | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| 60 | | 1 | 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 | 0/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 0/1 |
| 45 | | 1/1 | 1/1 | 1/1 | 0/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 60 | | 1/1 | 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: 10 Oct-13 14:57 (p 2 of 2)
Test Code: 16352cd | 04-3517-2808

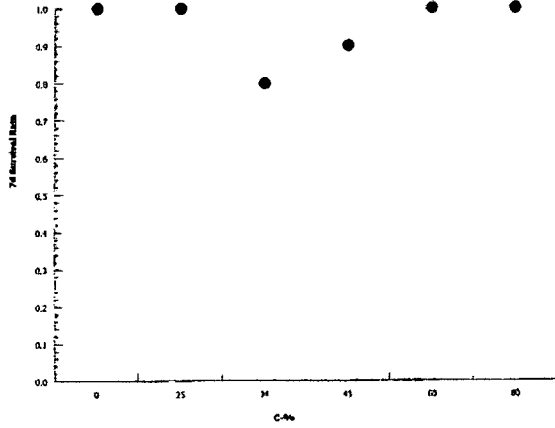
Ceriodaphnia 7-d Survival and Reproduction Test

ENVIRON International Corp

Analysis ID: 06-0181-8662 Endpoint: 7d Survival Rate
Analyzed: 10 Oct-13 14:55 Analysis: STP 2x2 Contingency Tables

CETIS Version: CETISv1.8.4
Official Results: Yes

Graphics



CETIS Analytical Report

Report Date: 10 Oct-13 14:57 (p 1 of 2)
 Test Code: 16352cd | 04-3517-2808

Ceriodaphnia 7-d Survival and Reproduction Test

ENVIRON International Corp

| | | |
|----------------------------------|--|---|
| Analysis ID: 15-6602-2320 | Endpoint: Reproduction | CETIS Version: CETISv1.8.4 |
| Analyzed: 10 Oct-13 14:55 | Analysis: Nonparametric-Multiple Comparison | Official Results: Yes |
| Batch ID: 15-2949-3657 | Test Type: Reproduction-Survival (7d) | Analyst: |
| Start Date: 01 Oct-13 | Protocol: EPA/821/R-02-013 (2002) | Diluent: Mod-Hard Synthetic Water |
| Ending Date: 07 Oct-13 | Species: Ceriodaphnia dubia | Brine: Not Applicable |
| Duration: 6d 0h | Source: In-House Culture | Age: |
| Sample ID: 17-6700-6772 | Code: 69526234 | Client: GPAC Crossett |
| Sample Date: 30 Sep-13 | Material: Industrial Effluent | Project: WET Monthly Compliance Test (OCT) |
| Receive Date: 01 Oct-13 | 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 | 60 | 80 | 69.28 | 1.667 | 28.7% |

Wilcoxon/Bonferroni Adj Test

| Control | vs | C-% | Test Stat | Critical | Ties | DF | P-Value | P-Type | Decision(α:5%) |
|-----------------|----|-----|-----------|----------|------|----|---------|--------|------------------------|
| Receiving Water | | 25 | 106 | NA | 1 | 18 | 1.0000 | Exact | Non-Significant Effect |
| | | 34 | 88.5 | NA | 3 | 18 | 0.5498 | Exact | Non-Significant Effect |
| | | 45 | 102 | NA | 2 | 18 | 1.0000 | Exact | Non-Significant Effect |
| | | 60 | 104.5 | NA | 4 | 18 | 1.0000 | Exact | Non-Significant Effect |
| | | 80* | 60 | NA | 2 | 17 | 0.0300 | Exact | Significant Effect |

Test Acceptability Criteria

| Attribute | Test Stat | TAC Limits | Overlap | Decision |
|--------------|-----------|-------------|---------|-------------------------------|
| Control Resp | 25.6 | 15 - NL | Yes | Passes Acceptability Criteria |
| PMSD | 0.2867 | 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 | 3.755 | 3.193 | 0.0036 | Outlier Detected |

ANOVA Table

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(α:5%) |
|---------|-------------|-------------|----|--------|---------|------------------------|
| Between | 361.0925 | 72.21849 | 5 | 1.629 | 0.1684 | Non-Significant Effect |
| Error | 2349.789 | 44.33564 | 53 | | | |
| Total | 2710.881 | | 58 | | | |

Distributional Tests

| Attribute | Test | Test Stat | Critical | P-Value | Decision(α:1%) |
|--------------|-------------------------------|-----------|----------|---------|-------------------------|
| Variances | Bartlett Equality of Variance | 3.709 | 15.09 | 0.5920 | Equal Variances |
| Distribution | Shapiro-Wilk W Normality | 0.8002 | 0.9451 | <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 | 25.6 | 20.66 | 30.54 | 26 | 9 | 33 | 2.182 | 26.95% | 0.0% |
| 25 | | 10 | 25.8 | 21.06 | 30.54 | 29 | 10 | 31 | 2.097 | 25.7% | -0.78% |
| 34 | | 10 | 21.8 | 16.89 | 26.71 | 25 | 9 | 29 | 2.169 | 31.47% | 14.84% |
| 45 | | 10 | 23.9 | 17.84 | 29.96 | 26.5 | 0 | 29 | 2.681 | 35.47% | 6.64% |
| 60 | | 10 | 25.6 | 21.43 | 29.77 | 28 | 11 | 31 | 1.845 | 22.79% | 0.0% |
| 80 | | 9 | 18.89 | 15.57 | 22.2 | 17 | 13 | 24 | 1.438 | 22.84% | 26.22% |

CETIS Analytical Report

Report Date: 10 Oct-13 14:57 (p 2 of 2)
 Test Code: 16352cd | 04-3517-2808

Ceriodaphnia 7-d Survival and Reproduction Test

ENVIRON International Corp

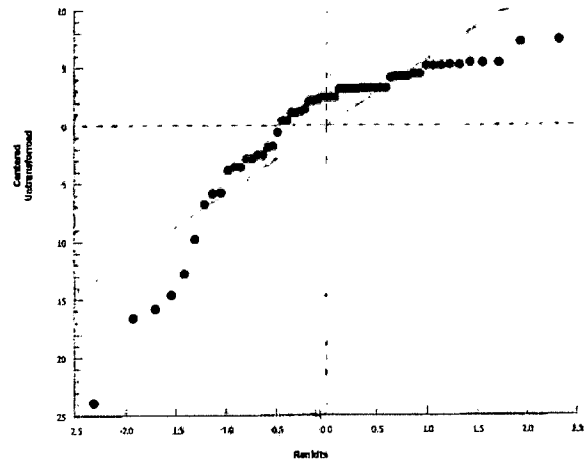
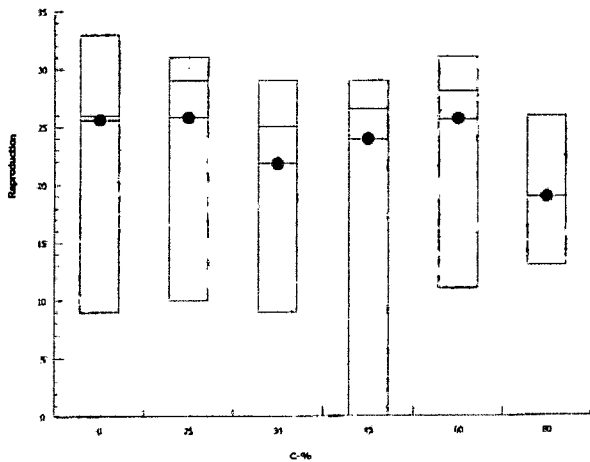
Analysis ID: 15-6602-2320 Endpoint: Reproduction
 Analyzed: 10 Oct-13 14:55 Analysis: Nonparametric-Multiple Comparison

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 | 26 | 26 | 31 | 31 | 33 | 25 | 23 | 9 | 22 | 30 |
| 25 | | 19 | 24 | 29 | 31 | 27 | 29 | 31 | 29 | 10 | 29 |
| 34 | | 16 | 25 | 29 | 25 | 26 | 9 | 26 | 24 | 26 | 12 |
| 45 | | 27 | 27 | 26 | 0 | 26 | 29 | 27 | 25 | 27 | 25 |
| 60 | | 31 | 28 | 28 | 22 | 27 | 28 | 30 | 28 | 23 | 11 |
| 80 | | 24 | 15 | 23 | 16 | 24 | 17 | 13 | 22 | 16 | |

Graphics



CETIS Analytical Report

Report Date: 10 Oct-13 14:57 (p 1 of 1)

Test Code: 16352cd | 04-3517-2808

Ceriodaphnia 7-d Survival and Reproduction Test

ENVIRON International Corp

Analysis ID: 02-5187-2133 Endpoint: Reproduction CETIS Version: CETISv1.8.4
 Analyzed: 10 Oct-13 14:56 Analysis: Linear Interpolation (ICPIN) Official Results: Yes

Batch ID: 15-2949-3657 Test Type: Reproduction-Survival (7d) Analyst:
 Start Date: 01 Oct-13 Protocol: EPA/821/R-02-013 (2002) Diluent: Mod-Hard Synthetic Water
 Ending Date: 07 Oct-13 Species: Ceriodaphnia dubia Brine: Not Applicable
 Duration: 6d 0h Source: In-House Culture Age:

Sample ID: 17-6700-6772 Code: 69526234 Client: GPAC Crossett
 Sample Date: 30 Sep-13 Material: Industrial Effluent Project: WET Monthly Compliance Test (OCT)
 Receive Date: 01 Oct-13 Source: Discharge Monitoring Report
 Sample Age: 24h Station: 001

Linear Interpolation Options

| X Transform | Y Transform | Seed | Resamples | Exp 95% CL | Method |
|-------------|-------------|-------|-----------|------------|-------------------------|
| Linear | Linear | 16569 | 1000 | Yes | Two-Point Interpolation |

Test Acceptability Criteria

| Attribute | Test Stat | TAC Limits | Overlap | Decision |
|--------------|-----------|------------|---------|-------------------------------|
| Control Resp | 25.6 | 15 - NL | Yes | Passes Acceptability Criteria |

Point Estimates

| Level | % | 95% LCL | 95% UCL | TU | 95% LCL | 95% UCL |
|-------|-------|---------|---------|-------|---------|---------|
| IC25 | 78.42 | 64.01 | N/A | 1.275 | NA | 1.562 |

Reproduction Summary

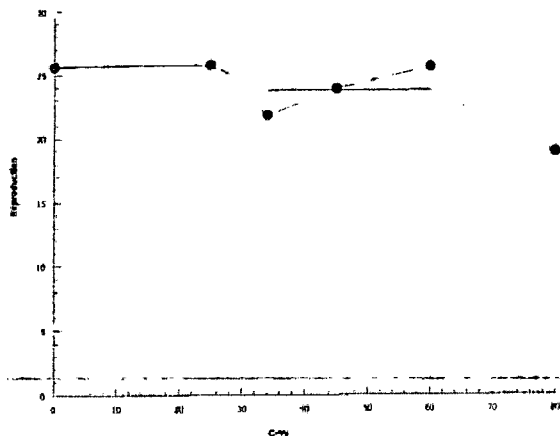
Calculated Variate

| C-% | Control Type | Count | Mean | Min | Max | Std Err | Std Dev | CV% | %Effect |
|-----|-----------------|-------|-------|-----|-----|---------|---------|--------|---------|
| 0 | Receiving Water | 10 | 25.6 | 9 | 33 | 2.182 | 6.899 | 26.95% | 0.0% |
| 25 | | 10 | 25.8 | 10 | 31 | 2.097 | 6.63 | 25.7% | -0.78% |
| 34 | | 10 | 21.8 | 9 | 29 | 2.169 | 6.861 | 31.47% | 14.84% |
| 45 | | 10 | 23.9 | 0 | 29 | 2.681 | 8.478 | 35.47% | 6.64% |
| 60 | | 10 | 25.6 | 11 | 31 | 1.845 | 5.835 | 22.79% | 0.0% |
| 80 | | 9 | 18.89 | 13 | 24 | 1.438 | 4.314 | 22.84% | 26.22% |

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 | 26 | 26 | 31 | 31 | 33 | 25 | 23 | 9 | 22 | 30 |
| 25 | | 19 | 24 | 29 | 31 | 27 | 29 | 31 | 29 | 10 | 29 |
| 34 | | 16 | 25 | 29 | 25 | 26 | 9 | 26 | 24 | 26 | 12 |
| 45 | | 27 | 27 | 26 | 0 | 26 | 29 | 27 | 25 | 27 | 25 |
| 60 | | 31 | 28 | 28 | 22 | 27 | 28 | 30 | 28 | 23 | 11 |
| 80 | | 24 | 15 | 23 | 16 | 24 | 17 | 13 | 22 | 16 | |

Graphics



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

TEST LOG NO.: 16352
 JOB NUMBER.: 20-19675G
 INDUSTRY: Georgia Pacific-Crosssett
 EFFLUENT: Outfall 001
 DILUTION WATER: River Water
 NPDES (Y/N): Yes

PHOTOPERIOD: 16 hr light/8 hr dark
 FEEDING REGIME: 0.1 mL YCT / 0.1 mL P. subcapitata per 15 mL
 TEST VESSEL CAPACITY: 30 mL
 TEST SOLUTION VOLUME: 15 mL
 NO. ORGANISMS/REPLICATE: 1
 NO. REPLICATES: 10

ORGANISM SOURCE INFORMATION:

AGE (date): 9/30/12 ^{pub w/2}
 TEMP @ TEST START: 24.4
 RANDOMIZED BY: AB
 TEST START: 1108 DATE: 10/1/13
 TEST END: 1308 DATE: 10/7/13

| SOURCE ID: | AGE (time): |
|------------|-------------|
| 10387 | 1206-1518 |
| 10388 | 1206-1524 |
| 10390 | 1208-1527 |
| | |
| | |

| SURVIVAL AND REPRODUCTION DATA | | | | | | | | | | | | | | | | |
|--|---------------------------------------|------|-----------|------|-------------|------------|----|-----|-----|-----|-------|----|---|----|----|-------|
| Test Start & Feeding/End Initials/Time | Daily Renewal & Feeding Initials/Time | Date | Control | | River Water | REPLICATES | | | | | | | | | | Notes |
| | | | Temp (°C) | | | 87 | | | | | 88 90 | | | | | |
| | | | | | Adult | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| AB 1108 | | 10/1 | 24.3 | | Adult | 2 | 14 | 20 | 12 | 5 | 8 | 11 | 6 | 5 | 3 | |
| | AB 1058 | 10/2 | 24.3 | 24.8 | Day 0 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | CR 1030 | 10/3 | 24.5 | 24.3 | Day 1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | LTH 1251 | 10/4 | 24.8 | 25.1 | Day 2 | ✓ | 4 | 4 | 5 | 5 | 5 | 5 | 3 | 5 | 5 | |
| | AW 1155 | 10/5 | 24.0 | 24.1 | Day 3 | 2 | 8 | 4 | 5 | 9 | 7 | 4 | 6 | 6 | ✓ | |
| | AW 1102 | 10/6 | 24.4 | 25.3 | Day 4 | 9 | ✓ | (7) | (4) | (2) | ✓ | ✓ | ✓ | ✓ | 9 | |
| AW 1308 | | 10/7 | 24.3 | | Day 5 | 15 | 14 | 16 | 14 | 17 | 13 | 14 | ✓ | 11 | 16 | 90% |
| | | | | | Day 6 | | | | | | | | | | | |
| | | | | | Day 7 | | | | | | | | | | | |
| | | | | | Day 8 | | | | | | | | | | | |
| | | | Total | | | 26 | 26 | 31 | 31 | 33 | 25 | 23 | 9 | 22 | 30 | 256 |

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

TEST LOG # 16352

JOB # 20-19675G

CLIENT/SAMPLE ID: Georgia Pacific - Crossett

LAB/STATE: ENVIRON / TN

| SURVIVAL AND REPRODUCTION DATA | | | | | | | | | | | | | | | | | |
|--|---|------|---------------|-----------|-------|------------|----|----|----|----|----|----|----|----|----|-------|---|
| Test Start & Feeding / End Initials / Time | Daily Renewal & Feeding Initials / Time | Date | Concentration | | | REPLICATES | | | | | | | | | | Notes | |
| | | | 25% | Temp (°C) | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| | | | | | Adult | | | | | | | | | | | | |
| AW 1108 | | 10/1 | 24.6 | | Day 0 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | AW 1658 | 10/2 | 24.3 | 24.4 | Day 1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | AW 1030 | 10/3 | 24.4 | 24.4 | Day 2 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | LTH 1251 | 10/4 | 24.4 | 24.5 | Day 3 | 3 | 2 | 5 | 5 | 6 | 6 | 4 | 5 | ✓ | 4 | | |
| | AW 1155 | 10/5 | 24.1 | 24.5 | Day 4 | 5 | 6 | 7 | 8 | 7 | 28 | 7 | 9 | 7 | 8 | | |
| | AW 1102 | 10/6 | 24.1 | 24.5 | Day 5 | ✓ | ✓ | ✓ | ✓ | 14 | ✓ | ✓ | 15 | ✓ | ✓ | | |
| AW 1308 | | 10/7 | | 25.1 | Day 6 | 11 | 16 | 17 | 18 | ✓ | 15 | 18 | ✓ | ✓ | 17 | | |
| | | | | | Day 7 | | | | | | | | | | | | |
| | | | | | Day 8 | | | | | | | | | | | | |
| | | | | | Total | 19 | 24 | 29 | 31 | 27 | 29 | 31 | 29 | 10 | 29 | 28 | |

| SURVIVAL AND REPRODUCTION DATA | | | | | | | | | | | | | | | | | |
|--|---|------|---------------|-----------|-------|------------|----|----|----|----|---|----|----|----|----|-------|----|
| Test Start & Feeding / End Initials / Time | Daily Renewal & Feeding Initials / Time | Date | Concentration | | | REPLICATES | | | | | | | | | | Notes | |
| | | | 34% | Temp (°C) | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| AW 1108 | | 10/1 | 24.5 | | Day 0 | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | AW 1050 | 10/2 | 24.5 | 24.6 | Day 1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | AW 1030 | 10/3 | 24.7 | 24.5 | Day 2 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | LTH 1251 | 10/4 | 24.3 | 24.3 | Day 3 | 5 | 5 | 4 | 4 | 3 | ✓ | 4 | 4 | 4 | 4 | | |
| | AW 1155 | 10/5 | 24.5 | 24.8 | Day 4 | 2 | 7 | 9 | 7 | 8 | 2 | 6 | 6 | 7 | 8 | | |
| | AW 1102 | 10/6 | 24.0 | 24.2 | Day 5 | ✓ | 13 | ✓ | 14 | ✓ | 3 | ✓ | 14 | 15 | 16 | | |
| AW 1308 | | 10/7 | | 24.4 | Day 6 | 9 | ✓ | 16 | 10 | 15 | 4 | 16 | ✓ | ✓ | | | |
| | | | | | Day 7 | | | | | | | | | | | | |
| | | | | | Day 8 | | | | | | | | | | | | |
| | | | | | Total | 16 | 25 | 29 | 29 | 26 | 9 | 26 | 24 | 26 | 12 | 21 | 26 |

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

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TEST LOG # 16352

JOB # 20-19675G

CLIENT/SAMPLE ID: Georgia Pacific - Crossett

LAB/STATE: ENVIRON / TN

| SURVIVAL AND REPRODUCTION DATA | | | | | | | | | | | | | | | | |
|---|--|------|---------------|-----------|-------|------------|----|----|-----|----|----|----|----|----|----|-------|
| Test Start & Feeding / End Initials/ Time | Daily Renewal & Feeding Initials/ Time | Date | Concentration | | Adult | REPLICATES | | | | | | | | | | Notes |
| | | | 45% | Temp (°C) | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| AW 1108 | | 10/1 | 24.5 | | Day 0 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| | AW 1058 | 10/2 | 24.4 | 24.3 | Day 1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| | AW 1030 | 10/3 | 24.5 | 24.6 | Day 2 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| | LTH 1251 | 10/4 | 24.4 | 24.1 | Day 3 | 5 | 5 | 4 | ✓ | 4 | 5 | 4 | 3 | 3 | 2 | |
| | AW 1155 | 10/5 | 24.1 | 24.6 | Day 4 | 7 | 8 | 7 | D/O | 8 | 8 | 9 | 7 | 7 | 9 | |
| | AW 1102 | 10/6 | 24.1 | 24.9 | Day 5 | ✓ | 14 | 15 | ✓ | 14 | ✓ | 14 | ✓ | ✓ | ✓ | |
| AW 1308 | | 10/7 | | 25.4 | Day 6 | 15 | ✓ | ✓ | ✓ | ✓ | 16 | ✓ | 15 | 17 | 14 | |
| | | | | | Day 7 | | | | | | | | | | | |
| | | | | | Day 8 | | | | | | | | | | | |
| | | | Total | | | 27 | 27 | 26 | 0 | 26 | 29 | 27 | 25 | 27 | 25 | 23 |

| SURVIVAL AND REPRODUCTION DATA | | | | | | | | | | | | | | | | |
|---|--|------|---------------|-----------|-------|------------|----|----|-----|----|----|----|----|----|----|-------|
| Test Start & Feeding / End Initials/ Time | Daily Renewal & Feeding Initials/ Time | Date | Concentration | | Adult | REPLICATES | | | | | | | | | | Notes |
| | | | 60% | Temp (°C) | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| AW 1108 | | 10/1 | 24.3 | | Day 0 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| | AW 1058 | 10/2 | 24.4 | 24.2 | Day 1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| | AW 1030 | 10/3 | 24.4 | 24.6 | Day 2 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| | LTH 1251 | 10/4 | 24.6 | 24.2 | Day 3 | 4 | 3 | 3 | 3 | 4 | 3 | 4 | 4 | 4 | ✓ | |
| | AW 1155 | 10/5 | 24.4 | 25.3 | Day 4 | 7 | 8 | 7 | D/O | 8 | 9 | ✓ | 7 | 6 | 3 | |
| | AW 1102 | 10/6 | 24.0 | 25.0 | Day 5 | 11 | ✓ | ✓ | 13 | 15 | ✓ | 11 | ✓ | 13 | 8 | |
| AW 1308 | | 10/7 | | 25.3 | Day 6 | 16 | 17 | 15 | ✓ | ✓ | 16 | 15 | 17 | ✓ | ✓ | |
| | | | | | Day 7 | | | | | | | | | | | |
| | | | | | Day 8 | | | | 22 | | | | | | | |
| | | | Total | | | 31 | 28 | 28 | 13 | 27 | 28 | 30 | 28 | 23 | 11 | |

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

TEST LOG #

16352

JOB # 20-19675G

CLIENT/SAMPLE ID: Georgia Pacific - Crossett

LAB/STATE: ENVIRON / TN

| SURVIVAL AND REPRODUCTION DATA | | | | | | | | | | | | | | | | |
|---|--|------|---------------|------|---------------|------------|----|------|----|-----|----|----|-----|----|----|--------|
| Test Start & Feeding / End Initials/ Time | Daily Renewal & Feeding Initials/ Time | Date | Concentration | | 80% Temp (°C) | REPLICATES | | | | | | | | | | Notes |
| | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| | | | | | | Adult | | | | | | | | | | |
| AW 1108 | | 10/1 | 24.1 | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | AW 1058 | 10/2 | 24.3 | 24.2 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | AW 1030 | 10/3 | 24.5 | 24.5 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | LTH 1251 | 10/4 | 24.6 | 24.6 | | 3 | 4 | 4 | 3 | 4 | 3 | 3 | 3 | 4 | 4 | |
| | AW 1155 | 10/5 | 24.4 | 24.9 | | 5 | ✓ | 8 | 7 | 8 | ✓ | 5 | 5 | 4 | 5 | * pale |
| | AW 1102 | 10/6 | 24.1 | 24.6 | | ✓ | ✓ | MISS | 13 | (4) | 7 | ✓ | (5) | ✓ | ✓ | |
| AW 1305 | | 10/7 | | 25.0 | | 16 | 11 | | ✓ | ✓ | 14 | 9 | ✓ | 14 | 7 | 60% |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | Total | 21 | 15 | 15 | 23 | 16 | 24 | 17 | 13 | 22 | 16 | 170% |

98% survival
= 189

| SURVIVAL AND REPRODUCTION DATA | | | | | | | | | | | | | | | | |
|---|--|------|---------------|------|--------------|------------|----|----|----|----|----|----|----|----|----|-------|
| Test Start & Feeding / End Initials/ Time | Daily Renewal & Feeding Initials/ Time | Date | Concentration | | MH Temp (°C) | REPLICATES | | | | | | | | | | Notes |
| | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| AW 1108 | | 10/1 | 24.3 | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | AW 1051 | 10/2 | 24.4 | 25.3 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | AW 1030 | 10/3 | 24.3 | 24.5 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | LTH 1251 | 10/4 | 24.7 | 24.4 | | 6 | 5 | 6 | 5 | 6 | 6 | 5 | 5 | 6 | 2 | |
| | AW 1155 | 10/5 | 24.7 | 24.6 | | 11 | 10 | 9 | 11 | 9 | 8 | 11 | 10 | 9 | ✓ | |
| | AW 1102 | 10/6 | 24.3 | 24.8 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 14 | ✓ | 8 | |
| AW 1305 | | 10/7 | | 24.6 | | 15 | 15 | 17 | 16 | 14 | 16 | 13 | ✓ | 14 | 13 | |
| | | | | | | | | | | | | | | | | |
| | | | | | Total | 32 | 30 | 37 | 32 | 27 | 30 | 29 | 29 | 29 | 23 | 295% |

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

TEST LOG NO. 16352

CLIENT/SAMPLE ID: Georgia Pacific Crossett

JOB NO. 20-19875G

TEST ORGANISM: Cd

DATE: 10/1/13

ENVIRON TEST LOG NO. 16352

26 of 40

| | | D.O. (mg/L) <u>10/5/13</u> → write on wrong part | | | | | | | | | | | | | |
|-------------------|-----|---|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| 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 | 91 | | 8.2 | 8.2 | 8.3 | 8.1 | 8.0 | 7.9 | 8.0 | 8.0 | 7.9 | 8.4 | | | |
| 25 | 8.2 | | 8.2 | 8.2 | 8.3 | 8.1 | 8.0 | 7.9 | 8.0 | 8.0 | 7.9 | 8.4 | | | |
| 34 | 8.2 | | 8.2 | 8.2 | 8.3 | 8.1 | 8.0 | 7.9 | 8.0 | 8.0 | 7.9 | 8.4 | | | |
| 45 | 8.3 | | 8.3 | 8.4 | 8.4 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 7.9 | 8.2 | | | |
| 60 | 8.4 | | 8.4 | 8.3 | 8.4 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 7.8 | 8.1 | | | |
| 80 | 8.4 | | 8.4 | 8.4 | 8.4 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 7.8 | 8.1 | | | |
| MH | 8.4 | | 8.4 | 8.5 | 8.4 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 7.9 | 8.0 | | | |

| | | 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 | 7.2 | | 7.85 | 7.50 | 7.65 | 7.42 | 7.70 | 7.71 | 7.64 | 7.65 | 7.82 | 7.63 | | | |
| 25 | 7.2 | | 7.85 | 7.50 | 7.65 | 7.42 | 7.70 | 7.71 | 7.64 | 7.65 | 7.82 | 7.63 | | | |
| 34 | 7.2 | | 7.85 | 7.50 | 7.65 | 7.42 | 7.70 | 7.71 | 7.64 | 7.65 | 7.82 | 7.63 | | | |
| 45 | 7.2 | | 7.85 | 7.93 | 7.91 | 7.89 | 7.92 | 7.90 | 7.81 | 7.82 | 8.35 | 7.84 | | | |
| 60 | 7.2 | | 7.85 | 7.99 | 7.91 | 7.91 | 8.00 | 8.00 | 7.95 | 7.95 | 8.52 | 8.01 | | | |
| 80 | 7.2 | | 7.85 | 8.00 | 7.91 | 7.91 | 8.43 | 8.01 | 7.95 | 7.95 | 8.60 | 8.04 | | | |
| MH | 7.2 | | 7.85 | 7.85 | 7.82 | 7.82 | 8.30 | 8.00 | 8.03 | 8.03 | 8.10 | 8.10 | | | |

| | | 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 | 119 | | 284 | 115 | 372 | 69 | 92 | 92 | 116 | 77 | 88 | 120 | | | |
| 25 | 640 | | 124 | 641 | 603 | 668 | 1012 | 1052 | 643 | 579 | 578 | 620 | | | |
| 34 | 800 | | 644 | 857 | 613 | 770 | 820 | 843 | 601 | 782 | 795 | 780 | | | |
| 45 | 100 | | 211 | 1058 | 1013 | 1047 | 1103 | 1050 | 1011 | 1065 | 1069 | 1075 | | | |
| 60 | 1250 | | 1014 | 1329 | 1314 | 1311 | 1412 | 1303 | 1301 | 1301 | 1320 | 1370 | | | |
| 80 | 1737 | | 1240 | 1726 | 1711 | 1712 | 1720 | 1753 | 1720 | 1721 | 1720 | 1754 | | | |
| MH | 253 | | 182 | 220 | 213 | 210 | 220 | 219 | 229 | 210 | 226 | 222 | | | |

| Params In/Time: | | AP 1024 | AW 1128 | AW 0930 | AW 0557 | AW 0911 | AW 1405 | AW 0900 | AW 1305 | AW 1025 | AW 1025 | AW 1025 | AW 1025 | AW 1025 | AW 1025 |
|----------------------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Dilutions In/Time: | | AW 1019 | AW 0920 | AW 0920 | AW 0924 | AW 0924 | AW 0924 | AW 0924 | AW 0924 | AW 0924 | AW 0924 | AW 0924 | AW 0924 | AW 0924 | AW 0924 |
| Control Water Batch: | | 5326 | 5326 | 5330 | 5331 | 5331 | 5331 | 5331 | 5331 | 5331 | 5331 | 5331 | 5331 | 5331 | 5331 |
| Food Batch | | 4460,52 | 60,52 | 60,52 | 60,52 | 60,52 | 60,52 | 60,52 | 60,52 | 60,52 | 60,52 | 60,52 | 60,52 | 60,52 | 60,52 |

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

TEST LOG NO.: 103107 PHOTOPERIOD: 16 hr light/8 hr dark
 JOB NUMBER: 20-19675F FEEDING REGIME: 0.1 mL YCT / 0.1 mL P, subcapitata per 15 mL
 INDUSTRY: Georgia Pacific-Crossett, filtered TEST VESSEL CAPACITY: 30 mL
 EFFLUENT: Outfall 001 TEST SOLUTION VOLUME: 15 mL
 DILUTION WATER: River Water NO. ORGANISMS/REPLICATE: 1
 NPDES (Y/N): NO NO. REPLICATES: 10

ORGANISM SOURCE INFORMATION:

AGE (date): 10/5/13
 TEMP @ TEST START: 24.4
 RANDOMIZED BY: HM
 TEST START:
 HOURS: 1030 DATE: 10/12/13
 TEST END:
 HOURS: 1150 DATE: 10/12/13

| SOURCE ID: | AGE (time): |
|---------------|--------------------|
| <u>103107</u> | <u>(1400-0831)</u> |
| | |
| | |
| | |
| | |
| | |

| SURVIVAL AND REPRODUCTION DATA | | | | | | | | | | | | | | Notes | | |
|--|--|--------------|-------------|-------------|------------|----|----|----|----|----|----|----|----|-------|----|-------------|
| Test Start & Feeding/ End Initials/ Time | Daily Renewal & Feeding Initials/ Time | Date | Control | | REPLICATES | | | | | | | | | | | |
| | | | River Water | Temp (°C) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | 10 | |
| | | | | | Adult | 4 | 12 | 2 | 15 | 3 | 13 | 1 | 17 | 13 | 9 | |
| <u>HM 1030</u> | | <u>10/6</u> | <u>24.4</u> | | Day 0 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | <u>AM 1031</u> | <u>10/7</u> | <u>24.0</u> | <u>24.1</u> | Day 1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | <u>AM 1033</u> | <u>10/8</u> | <u>24.3</u> | <u>24.3</u> | Day 2 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | <u>AM 1041</u> | <u>10/9</u> | <u>24.4</u> | <u>24.1</u> | Day 3 | ✓ | 4 | 3 | 4 | 3 | ✓ | ✓ | ✓ | ✓ | ✓ | 147 |
| | <u>HM 1043</u> | <u>10/10</u> | <u>24.2</u> | <u>24.3</u> | Day 4 | 5 | ✓ | ✓ | ✓ | ✓ | 6 | 4 | 6 | 3 | 4 | 1st 2 brood |
| | <u>HM 1133</u> | <u>10/11</u> | <u>24.5</u> | <u>24.2</u> | Day 5 | 13 | 12 | 11 | 9 | 10 | 11 | 8 | 12 | 8 | 11 | |
| <u>HM 1150</u> | | <u>10/12</u> | | <u>24.3</u> | Day 6 | 11 | 10 | 12 | 13 | 13 | 15 | 12 | 15 | 11 | 13 | |
| | | | | | Day 7 | | | | | | | | | | | |
| | | | | | Day 8 | | | | | | | | | | | |
| | | | | | Total | 29 | 32 | 26 | 26 | 26 | 32 | 24 | 33 | 22 | 28 | 278 |

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

TEST LOG # 16317

JOB # 20-19675F

CLIENT/SAMPLE ID: Georgia Pacific - Crossett

LAB/STATE: ENVIRON / TN

| SURVIVAL AND REPRODUCTION DATA | | | | | | | | | | | | | | Notes | | | |
|---|--|-------|----------------------------|-----|------------|----|----|----|---|----|---|----|----|-------|----|---|------|
| Test Start & Feeding / End Initials/ Time | Daily Renewal & Feeding Initials/ Time | Date | Concentration 80% Filtered | | REPLICATES | | | | | | | | | | | | |
| | | | Temp (°C) | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | 10 | | |
| | | | | | Adult | | | | | | | | | | | | |
| HM 10/20 | | 10/20 | 243 | | Day 0 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | HM 10/21 | 10/21 | 245 | 244 | Day 1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | AM 10/22 | 10/22 | 243 | 244 | Day 2 | 3 | ✓ | ✓ | ✓ | - | - | - | - | - | - | - | |
| | AM 10/23 | 10/23 | 244 | 245 | Day 3 | 3 | 3 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | HM 10/23 | 10/23 | 247 | 241 | Day 4 | ✓ | ✓ | 6 | ✓ | 4 | 6 | 6 | 5 | 3 | ✓ | | |
| | HM 10/23 | 10/23 | 247 | 243 | Day 5 | 7 | 11 | 11 | 8 | 9 | ✓ | 12 | 8 | 6 | 11 | | 882 |
| HM 10/30 | | 10/12 | | 244 | Day 6 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10 | ✓ | ✓ | 10 | | 0322 |
| | | | | | Day 7 | | | | | | | | | | | | |
| | | | | | Day 8 | | | | | | | | | | | | |
| | | | Total | | | 10 | 14 | 17 | 8 | 13 | 6 | 18 | 13 | 9 | 15 | | 13 |

2 boxes total

| SURVIVAL AND REPRODUCTION DATA | | | | | | | | | | | | | | Notes | | | |
|---|--|-------|-----------------------------|-----|------------|---|---|---|----|---|---|---|----|-------|----|----|--|
| Test Start & Feeding / End Initials/ Time | Daily Renewal & Feeding Initials/ Time | Date | Concentration 100% Filtered | | REPLICATES | | | | | | | | | | | | |
| | | | Temp (°C) | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | 10 | | |
| HM 10/20 | | 10/20 | 243 | | Day 0 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | AM 10/21 | 10/21 | 243 | 247 | Day 1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | AM 10/22 | 10/22 | 242 | 245 | Day 2 | ✓ | ✓ | - | - | - | - | - | - | - | - | - | |
| | AM 10/23 | 10/23 | 244 | 243 | Day 3 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | HM 10/23 | 10/23 | 240 | 241 | Day 4 | 5 | 6 | 5 | 4 | ✓ | 6 | ✓ | 5 | 4 | 3 | | |
| | HM 10/23 | 10/23 | 241 | 244 | Day 5 | ✓ | ✓ | ✓ | 7 | 3 | ✓ | 4 | 6 | ✓ | 8 | | |
| HM 10/30 | | 10/12 | | 243 | Day 6 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| | | | | | Day 7 | | | | | | | | | | | | |
| | | | | | Day 8 | | | | | | | | | | | | |
| | | | Total | | | 5 | 6 | 5 | 11 | 3 | 6 | 4 | 11 | 4 | 11 | 66 | |

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

TEST LOG NO.

10367

CLIENT/SAMPLE ID: Georgia Pacific Crossett TIE

JOB NO.

20-19875G

TEST ORGANISM: CD

DATE: 10/6/13

ENVIRON TEST LOG No. 16352

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| Concentration | Start | D.O. (mg/L) | | | | | | | | | | | | | |
|---------------|-------|-------------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|
| | | 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 | Old | New |
| RW | 8.3 | 8.1 | 8.0 | 8.2 | 8.6 | 8.3 | 8.4 | 8.2 | 8.5 | 8.4 | 8.4 | 8.3 | | | |
| 80% Filtered | 8.1 | 8.0 | 8.6 | 8.1 | 8.5 | 8.3 | 8.5 | 8.3 | 8.5 | 8.7 | 8.6 | 8.2 | | | |
| 100% Filtered | 8.1 | 8.2 | 8.5 | 8.2 | 8.5 | 8.1 | 8.6 | 8.3 | 8.5 | 8.7 | 8.7 | 8.5 | | | |

| Concentration | Start | pH (s.u.) | | | | | | | | | | | | | |
|---------------|-------|-----------|------|-------|-------|-------|------|-------|------|-------|------|-------|-----|-------|-----|
| | | 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 | Old | New |
| RW | 7.52 | 7.99 | 7.83 | 6.97 | 7.47 | 7.15 | 7.75 | 7.78 | 7.67 | 7.81 | 7.66 | 7.73 | | | |
| 80% Filtered | 8.07 | 8.59 | 8.15 | 8.52 | 8.75 | 8.65 | 8.30 | 8.52 | 8.64 | 8.54 | 8.25 | 8.71 | | | |
| 100% Filtered | 8.17 | 8.81 | 8.16 | 8.75 | 8.130 | 8.67 | 8.32 | 8.74 | 8.32 | 8.70 | 8.31 | 8.76 | | | |

| Concentration | Start | Conductivity (µmhos/cm) | | | | | | | | | | | | | |
|---------------|-------|-------------------------|------|-------|------|-------|------|-------|------|-------|-------|-------|-----|-------|-----|
| | | 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 | Old | New |
| RW | 916 | 145 | 716 | 910 | 111 | 82 | 118 | 121 | 121 | 78 | 71 | 97 | | | |
| 80% Filtered | 1743 | 1809 | 1839 | 1740 | 1815 | 1700 | 1740 | 1712 | 1713 | 11034 | 10603 | 1387 | | | |
| 100% Filtered | 2135 | 2410 | 2380 | 2200 | 2260 | 2141 | 2140 | 2210 | 2510 | 2130 | 2090 | 2200 | | | |

| Params Int/Time: | 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 | Old | New |
| Dilutions Int/Time: | AW 1050 | AW 0910 | AW 1120 | AW 1120 | AW 1130 | AW 1130 | AW 1131 | AW 1131 | AW 1131 | AW 1131 | AW 1131 | AW 1131 | AW 1131 | AW 1131 |

| Control Water Batch#: | 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 | Old | New |
| Food Batch | 5332 | 5332 | 5332 | 5332 | 5332 | 5332 | 5332 | 5332 | 5332 | 5332 | 5332 | 5332 | 5332 | 5332 |

**Attachment 2:
Chain-Of-Custody Documentation and
Reference Toxicant Data**

ENVIRON TEST LOG No. 16352

Project Name: _____ Project Number: _____

Industry: **GEORGIA PACIFIC PAPER**

Phone: **870-567-8170** FAX: **870-314-9076**

County: **LEWIS** City: **CROSSETT** State: **AR**

Sample Collected by (print): **DANNY / SAM** NPDES Permit No.: **AR0051210**


Sample Collected by (signature): *Danny W. Rice* NPDES Test:

No Yes No. of Cntrs

| Sample Location / ID | Comp/Gfab | Container Type | Chilled During Collection (Y/N) | Start Date/Time | End Date/Time | No. of Cntrs |
|----------------------|-----------|----------------|---------------------------------|-----------------|----------------|--------------|
| FAVER | GF | PLASTIC | NA | 9-30B | 11:55am | 2 20 |
| OUTFALL 001 | C | PLASTIC | YES | 9-29-13 | 9:30-13 | 2 20 |
| | | | | 4:58am | 6:11am | |

| Analysis Requested | | | | | | | |
|------------------------|----------------------|------------------------|--------------------------|---------------------|------------------------|-------------------------------------|-------|
| Total Volume in liters | Acute Fathead minnow | Acute Bannerfin shiner | Acute Ceriodaphnia dubia | Acute Daphnia pulex | Chronic Fathead minnow | Chronic Ceriodaphnia dubia | Other |
| | | | | | | <input checked="" type="checkbox"/> | |

CHAIN-OF-CUSTODY



201 Summit View Drive, Suite 300
Brentwood, TN 37027
PHONE: (615) 277-7570
FAX: (615) 377-4976

| Sample Location / ID | Comp/Gfab | Container Type | Chilled During Collection (Y/N) | Start Date/Time | End Date/Time | No. of Cntrs | 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 | Sample B# (lab only) |
|----------------------|-----------|----------------|---------------------------------|-----------------|---------------|--------------|------------------------|----------------------|------------------------|--------------------------|---------------------|------------------------|----------------------------|------------------------|----------------------|-------|-----------------------|----------------------|
| | | | | | | | | | | | | | | | | | Definitive or Screen | |
| | | | | | | | | | | | | | | | | | DILUTION WATER | 1669.9 |
| | | | | | | | | | | | | | | | | | | 166.98 |

* 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>Danny W. Rice</i> | Date: 9-30-13 | Time: 3:30pm | Received by: (Signature) | Samples shipped via: <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Other Courier | <input type="checkbox"/> UPS <input type="checkbox"/> Hand Delivered | Condition: (lab use only) |
| Relinquished by: (Signature) | Date: | Time: | Received by: (Signature) | Receipt Temp: 2.1, 1.4 | Containers/Volume Received: 20 L of each | |
| Relinquished by: (Signature) | Date: | Time: | Received for lab by: (Signature) <i>Anita Bryant-Winter</i> | Date: 10/1/13 | Time: 0835 | pH upon arrival: 8.8, 8.0 DO upon arrival: 1.7, 0.6, 7.84 |

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Sample Receipt Checklist:

Client: Georgia Pacific Crossett

Date/Time received 10/1/13 0835 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


Comments:

| Batch # | Sample ID | Temp (C°) | pH | DO | TRC |
|---------|-------------|-----------|------|-----|-------|
| 16698 | Outfall 001 | 1.4 | 7.84 | S.O | 20.02 |
| 16699 | River | 2.1 | 7.36 | S.8 | 20.02 |
| | | | | | |
| | | | | | |
| | | | | | |

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ENVIRON Test Log No. 16352

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| | | | | | | | | | | | | | | | | | | | | |
|--|--|-------------|----------------------|---|---|----------------|----------|---|----------------------|------------------------|--|---------------------|------------------------|---------------------------------------|------------------------|----------------------------------|----------------------|---|----------------|--------------|
| Project Name: | | | | Project Number: | | | | Analysis Requested | | | | | | | | | | CHAIN-OF-CUSTODY  201 Summit View Drive, Suite 300 Brentwood, TN 37027 PHONE: (615) 277-7570 FAX: (615) 377-4976 | | |
| Industry: <u>GEORGIA PACIFIC PAPER</u> | | | | | | | | 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: <u>810-567-3170</u> FAX: <u>810-361-9376</u> | | | | | | | | | | | | | | | | | | | | |
| County: <u>Ashtott</u> City: <u>Crossett</u> State: | | | | | | | | | | | | | | | | | | | | |
| Sample Collected by (print): <u>DANNY/RODIE</u> | | | | NPDES Permit No.: <u>AR0001210</u> | | | | | | | | | | | | | | | | |
| Sample Collected by (signature): <u>[Signature]</u> | | | | NPDES Test: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes | | | | No. of Cntrs | | | | | | | | | | | Description | |
| Sample Location / ID | | Comp/Grab | Container Type | Chilled During Collection (Y/N) | Start Date/Time | End Date/Time | | | | | | | | | | | Definitive or Screen | Sample B# (lab only) | | |
| <u>RIVER</u> | | <u>CF</u> | <u>1L</u> | <u>NA</u> | <u>9-30-13</u> | <u>11:50am</u> | <u>2</u> | <u>30</u> | | | | | | | | | | | | |
| <u>CUTTALL CREEK</u> | | <u>Comp</u> | <u>5L</u> | <u>Y</u> | <u>10-1-13</u> | <u>10-2-13</u> | <u>2</u> | <u>30</u> | | | | | | | | | | | <u>11/1/13</u> | <u>10708</u> |
| | | | | | <u>10/1/13</u> | <u>6:00am</u> | | | | | | | | | | | | | | |
| * Matrix: SS - Soil GW - Groundwater WW - Wastewater AW - Ambient Water ML - Mixed Liquor SL - Sludge SD - Sediment OT - Other | | | | | | | | | | | | | | | | | | | | |
| Remarks: Measured TRC (if applicable): <u>0.100</u> mg/L | | | | | | | | | | | | | | | | | | | | |
| Relinquished by: (Signature) <u>[Signature]</u> | | | Date: <u>10-3-13</u> | Time: <u>3:00PM</u> | Received by: (Signature) | | | Samples shipped via: <input type="checkbox"/> FedEx <input checked="" type="checkbox"/> Other Courier | | | <input type="checkbox"/> UPS Hand Delivered <input type="checkbox"/> | | | Condition: (lab use only) <u>good</u> | | | | | | |
| Relinquished by: (Signature) | | | Date: | Time: | Received by: (Signature) | | | Receipt Temp: <u>10.042, 10.6</u> | | | Containers/Volume Received: <u>10L</u> | | | | | | | | | |
| Relinquished by: (Signature) | | | Date: | Time: | Received for lab by: (Signature) <u>[Signature]</u> | | | Date: <u>10/3/13</u> | | | Time: <u>0830</u> | | | pH upon arrival: <u>7.5, 7.92</u> | | DO upon arrival: <u>8.6, 7.9</u> | | | | |

Sample Receipt Checklist:

Client: GP Craslett

Date/Time received 10/3/13 0830 by CR


- 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

Comments:

| Batch # | Sample ID | Temp (C°) | pH | DO | TRC |
|---------|-----------|-----------|------|-----|------|
| 110708 | EFF. | 20.6 | 7.92 | 7.9 | 0.07 |
| 110709 | RW | 10.4 | 7.51 | 8.6 | 0.03 |
| | | | | | |
| | | | | | |

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ENVIRON Test Log No. 16352

| Project Name: | | | | Project Number: | | | | Analysis Requested | | | | | | | | | | CHAIN-OF-CUSTODY  201 Summit View Drive, Suite 300 Brentwood, TN 37027 PHONE: (615) 277-7570 FAX: (615) 377-4976 | |
|---|-----------|----------------|---------------------------------|--|------------------------|--------------|------------------------|---|------------------------|--------------------------|--------------------------|--|----------------------------|--|--|------------------------------|---------------------------------------|---|--|
| Industry: <u>CORONA PACIFIC PAPER</u> | | | | Phone: <u>870-567-8170</u> FAX: <u>870-567 314-5076</u> | | | | 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: <u>ASHLEY</u> City: <u>CROCKETT</u> State: <u>AR.</u> | | | | Sample Collected by (print): <u>DANNY/ROBIE</u> NPDES Permit No.: <u>ARD000210</u> | | | | | | | | | | | | | | | |
| Sample Collected by (signature): <u>[Signature]</u> | | | | <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 | 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 | Sample B# (lab only) | |
| <u>TRUCK</u> | <u>S</u> | <u>PLASTIC</u> | <u>NA</u> | <u>11-4-13 10:30am</u> | <u>11-4-13 11:30am</u> | <u>2</u> | <u>2.00</u> | | | | | | | | | | <u>DILUTION</u> | <u>WATER 16719</u> | |
| <u>SMALL OIL</u> | <u>L</u> | <u>PLASTIC</u> | <u>YES</u> | <u>11-4-13 10:30am</u> | <u>11-4-13 11:30am</u> | <u>2</u> | <u>2.00</u> | | | | | | <u>✓</u> | | | | | <u>16720</u> | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| * Matrix: SS - Soil GW - Groundwater WW - Wastewater AW - Ambient Water ML - Mixed Liquor SL - Sludge SD - Sediment OT - Other _____ Remarks: Measured TRC (if applicable): <u>0.00</u> mg/L | | | | | | | | | | | | | | | | | | | |
| Relinquished by: (Signature) <u>[Signature]</u> | | | | Date: <u>11/4/13</u> | | Time: | | Received by: (Signature) _____ | | | | Samples shipped via: <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Other <input type="checkbox"/> Courier | | | <input type="checkbox"/> UPS <input type="checkbox"/> Hand Delivered | | Condition: (lab use only) <u>good</u> | | |
| Relinquished by: (Signature) _____ | | | | Date: | | Time: | | Received by: (Signature) _____ | | | | Receipt Temp: <u>2.9/4.3°C</u> | | Containers/Volume Received: <u>2 20L of each</u> | | | | | |
| Relinquished by: (Signature) _____ | | | | Date: | | Time: | | Received for lab by: (Signature) <u>Christa Bryant-Winter</u> | | | | Date: <u>10/5/13</u> | | Time: <u>0948</u> | | pH upon arrival: <u>8.20</u> | | DO upon arrival: <u>5.8 9.0</u> | |

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Sample Receipt Checklist:

Client: Georgia Pacific Crossett

Date/Time received 10/5/13 0948 by AW

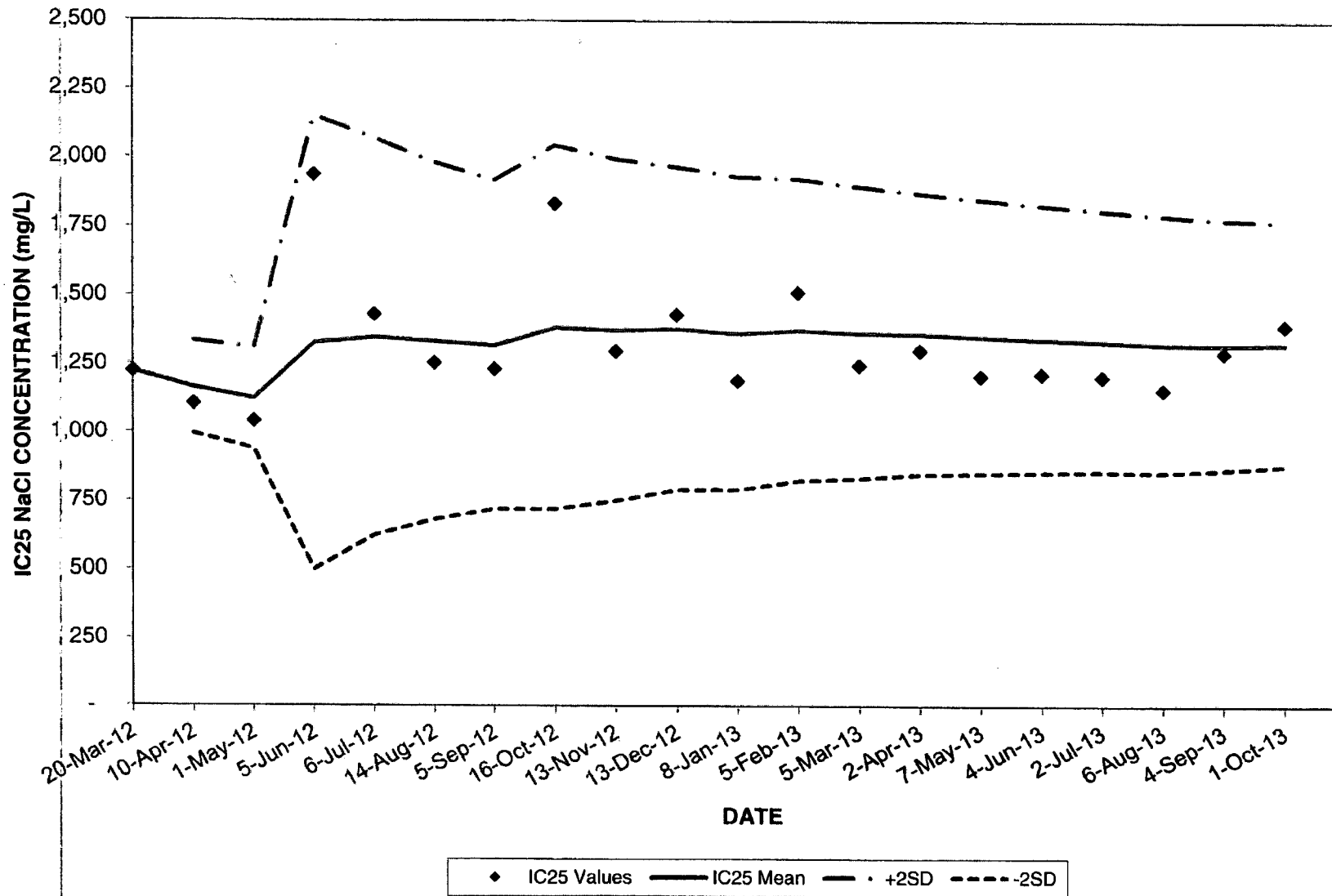
- 1. Cooler sealed and intact upon arrival? Yes No
- 2. Custody seals present? Yes No
- 3. Samples received below 6 degrees Celsius? Yes No
- 4. Was ice present? Yes No
- 5. Is the COC filled out correctly including the sample date/time and signed? Yes No
- 6. Was the sample received within 36 hours 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

Comments:

| Batch # | Sample ID | Temp (C°) | pH | DO | TRC |
|---------|---------------|-----------|------|-----|------|
| 16719 | RW | 2.9 | 8.20 | 8.8 | 0.03 |
| 16720 | Outfall 11001 | 4.3 | 7.88 | 9.0 | 0.08 |
| | | | | | |
| | | | | | |
| | | | | | |

L:\Ecotox Lab\FORMS

CHRONIC REFERENCE TOXICANT TEST (NaCl) 2012 - 2013 FATHEAD MINNOWS



Fathead Minnow CHRONIC REFERENCE TOXICANT TESTING-SODIUM CHLORIDE (NaCl) 2012 - 2013

ENVIRON Test Log No. 16352

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| 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 | 15248 | 20-Mar-12 | 100 | 0.383 | 750 | 1,500 | 750 | 1,500 | 28.1 | 1,225 | 1,225 | | | | |
| 2 | 15299 | 10-Apr-12 | 100 | 0.716 | 750 | 1,500 | 750 | 1,500 | 17.0 | 1,105 | 1,165 | 85 | 1,335 | 995 | 5 |
| 3 | 15343 | 01-May-12 | 100 | 0.562 | 750 | 1,500 | 750 | 1,500 | 25.0 | 1,042 | 1,124 | 93 | 1,310 | 938 | 7 |
| 4 | 15115 | 05-Jun-12 | 100 | 0.499 | 750 | 1,500 | 1,500 | 3,000 | 24.0 | 1,937 | 1,327 | 414 | 2,154 | 500 | 27 |
| 5 | 15463 | 06-Jul-12 | 100 | 0.397 | 750 | 1,500 | 1,500 | 3,000 | 26.5 | 1,431 | 1,348 | 361 | 2,070 | 626 | 24 |
| 6 | 15548 | 14-Aug-12 | 100 | 0.406 | 750 | 1,500 | 750 | 1,500 | 24.6 | 1,254 | 1,332 | 325 | 1,983 | 682 | 22 |
| 7 | 15603 | 05-Sep-12 | 100 | 0.429 | 750 | 1,500 | 750 | 1,500 | 16.7 | 1,232 | 1,318 | 299 | 1,917 | 719 | 21 |
| 8 | 15683 | 16-Oct-12 | 97.5 | 0.447 | 1,500 | 3,000 | 1,500 | 3,000 | 19.0 | 1,832 | 1,382 | 331 | 2,045 | 719 | 22 |
| 9 | 15743 | 13-Nov-12 | 100 | 0.514 | 750 | 1,500 | 750 | 1,500 | 15.9 | 1,297 | 1,373 | 311 | 1,995 | 750 | 21 |
| 10 | 15807 | 13-Dec-12 | 100 | 0.362 | 750 | 1,500 | 750 | 1,500 | 17.1 | 1,430 | 1,379 | 294 | 1,967 | 790 | 20 |
| 11 | 15863 | 08-Jan-13 | 100 | 0.431 | 750 | 1,500 | 750 | 1,500 | 15.5 | 1,190 | 1,361 | 285 | 1,931 | 792 | 20 |
| 12 | 15911 | 05-Feb-13 | 95 | 0.417 | 750 | 1,500 | 750 | 1,500 | 20.9 | 1,512 | 1,374 | 275 | 1,924 | 824 | 19 |
| 13 | 15965 | 05-Mar-13 | 100 | 0.538 | 750 | 1,500 | 750 | 1,500 | 28.1 | 1,246 | 1,364 | 266 | 1,895 | 833 | 19 |
| 14 | 16017 | 02-Apr-13 | 100 | 0.504 | 750 | 1,500 | 750 | 1,500 | 25.8 | 1,300 | 1,360 | 256 | 1,871 | 848 | 18 |
| 15 | 16088 | 07-May-13 | 100 | 0.390 | 750 | 1,500 | 750 | 1,500 | 29.3 | 1,207 | 1,349 | 250 | 1,848 | 850 | 18 |
| 16 | 16137 | 04-Jun-13 | 100 | 0.402 | 750 | 1,500 | 750 | 1,500 | 21.5 | 1,215 | 1,341 | 243 | 1,828 | 854 | 18 |
| 17 | 16189 | 02-Jul-13 | 100 | 0.444 | 750 | 1,500 | 750 | 1,500 | 26.7 | 1,205 | 1,333 | 238 | 1,809 | 857 | 17 |
| 18 | 16256 | 06-Aug-13 | 100 | 0.382 | 750 | 1,500 | 750 | 1,500 | 19.3 | 1,157 | 1,323 | 235 | 1,792 | 854 | 17 |
| 19 | 16309 | 04-Sep-13 | 97.5 | 0.369 | 750 | 1,500 | 750 | 1,500 | 27.1 | 1,293 | 1,322 | 228 | 1,778 | 865 | 17 |
| 20 | 16348 | 01-Oct-13 | 97.5 | 0.310 | 1,500 | 3,000 | 750 | 1,500 | 23.4 | 1,391 | 1,325 | 223 | 1,770 | 880 | 16 |

| | | | | | | | | | | | | |
|-----|----|-------|-----|------|-----|------|----|------|------|-----|------|-----|
| Avg | 99 | 0.445 | 825 | 1650 | 863 | 1725 | 23 | 1325 | 1321 | 264 | 1854 | 799 |
|-----|----|-------|-----|------|-----|------|----|------|------|-----|------|-----|

Notes:

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

NOEC - No Observable Effect Concentration (survival or growth)

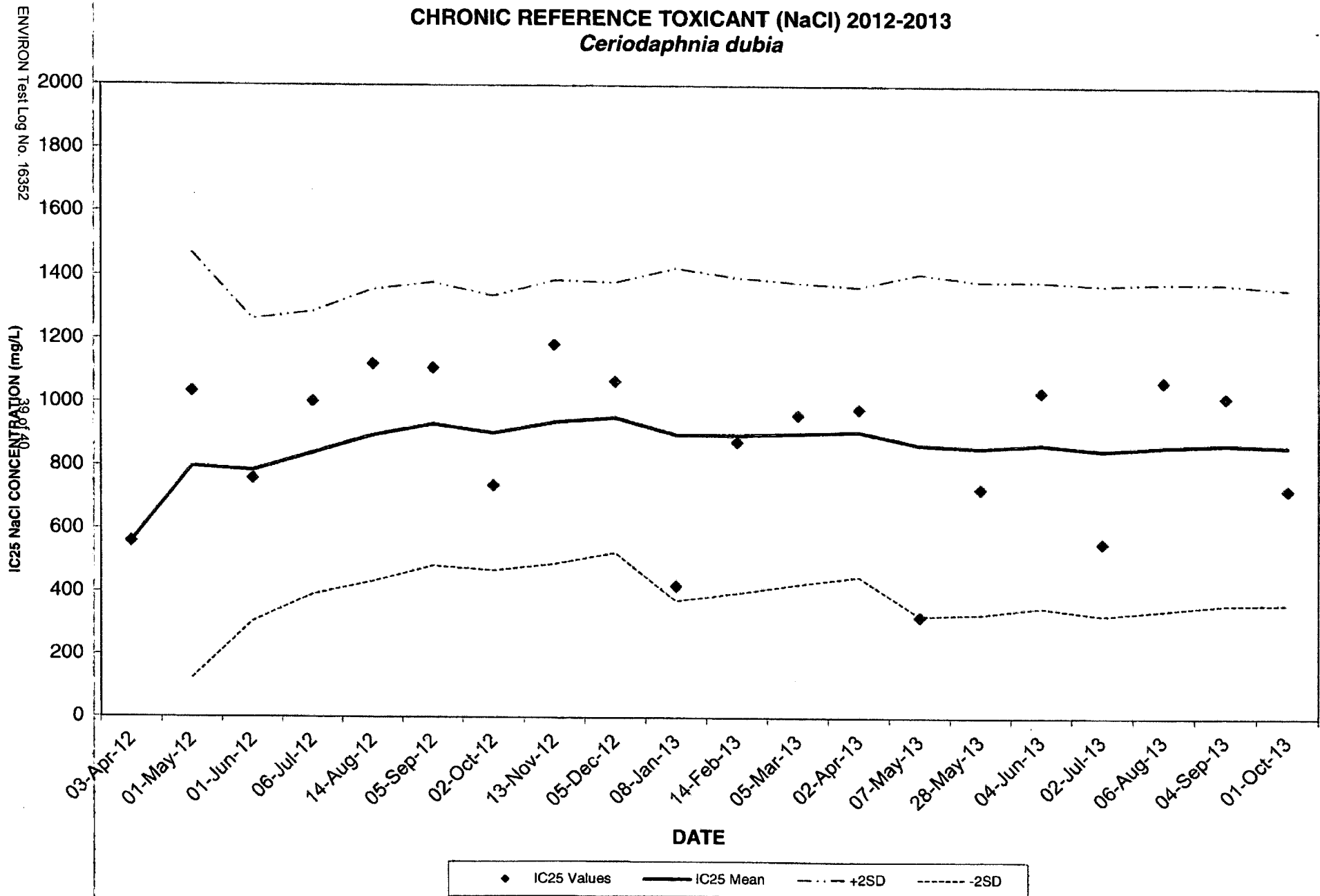
LOEC - Lowest Observable Effect Concentration (survival or growth)

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

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

Test Log 15132 initiated Feb 7, 2012 was invalidated due to standard deviation over 2x

CHRONIC REFERENCE TOXICANT (NaCl) 2012-2013
Ceriodaphnia dubia



Ceriodaphnia dubia CHRONIC REFERENCE TOXICANT TESTING - SODIUM CHLORIDE (NaCl) 2012-2013

ENVIRON Test Log No. 16352

40 of 40

| 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 | 15283 | 03-Apr-12 | 100 | 100 | 33.4 | 500 | 1,000 | 500 | 1,000 | 27.3 | 560 | 560 | | | | |
| 2 | 15344 | 01-May-12 | 100 | 90 | 32.9 | 2,000 | >2,000 | 500 | 1,000 | 22.4 | 1036 | 798 | 337 | 1,471 | 125 | 30 |
| 3 | 15100 | 01-Jun-12 | 80 | 100 | 28.8 | 2,000 | >2,000 | 500 | 1,000 | 14.6 | 759 | 785 | 239 | 1,263 | 307 | 25 |
| 4 | 15402 | 06-Jul-12 | 100 | 100 | 27.8 | 1,000 | 2,000 | 500 | 1,000 | 9.9 | 1003 | 840 | 224 | 1,287 | 392 | 23 |
| 5 | 15549 | 14-Aug-12 | 100 | 100 | 32.7 | 2,000 | >2,000 | 500 | 1,000 | 10.3 | 1121 | 896 | 231 | 1,358 | 434 | 23 |
| 6 | 15604 | 05-Sep-12 | 100 | 100 | 26.3 | 1,000 | 2,000 | 500 | 1,000 | 12.5 | 1109 | 931 | 224 | 1,380 | 483 | 22 |
| 7 | 15653 | 02-Oct-12 | 100 | 100 | 34.8 | 2,000 | >2,000 | 500 | 1,000 | 22.0 | 737 | 904 | 217 | 1,338 | 469 | 22 |
| 8 | 15742 | 13-Nov-12 | 100 | 100 | 31.6 | 2,000 | >2,000 | 1,000 | 2,000 | 10.4 | 1183 | 939 | 224 | 1,387 | 490 | 22 |
| 9 | 15784 | 05-Dec-12 | 100 | 100 | 36.6 | 2,000 | >2,000 | 500 | 1,000 | 12.8 | 1067 | 953 | 214 | 1,381 | 525 | 21 |
| 10 | 15864 | 08-Jan-13 | 100 | 80 | 30.5 | 2,000 | >2,000 | 250 | 500 | 24.3 | 420 | 900 | 263 | 1,425 | 374 | 28 |
| 11 | 15937 | 14-Feb-13 | 100 | 100 | 32.2 | 2,000 | >2,000 | 500 | 1,000 | 18.1 | 875 | 897 | 250 | 1,396 | 398 | 27 |
| 12 | 15966 | 05-Mar-13 | 100 | 100 | 33.7 | 2,000 | >2,000 | 500 | 1,000 | 21.8 | 960 | 903 | 239 | 1,380 | 425 | 25 |
| 13 | 16018 | 02-Apr-13 | 90 | 100 | 29.3 | 2,000 | >2,000 | 500 | 1,000 | 16.8 | 979 | 908 | 229 | 1,367 | 450 | 24 |
| 14 | 16087 | 07-May-13 | 100 | 80 | 34.4 | 1,000 | 2,000 | <125 | 125 | 27.3 | 321 | 866 | 271 | 1,408 | 325 | 30 |
| 15 | 16124 | 28-May-13 | 100 | 90 | 28.9 | 2,000 | >2,000 | 500 | 1,000 | 20.5 | 727 | 857 | 263 | 1,384 | 331 | 30 |
| 16 | 16137 | 04-Jun-13 | 90 | 90 | 30.0 | 1,000 | 2,000 | 500 | 1,000 | 16.2 | 1034 | 868 | 258 | 1,384 | 352 | 29 |
| 17 | 16188 | 02-Jul-13 | 100 | 80 | 21.5 | 2,000 | >2,000 | 500 | 1,000 | 35.7 | 556 | 850 | 261 | 1,372 | 328 | 30 |
| 18 | 16257 | 06-Aug-13 | 100 | 90 | 29.1 | 1,000 | 2,000 | 500 | 1,000 | 24.9 | 1068 | 862 | 259 | 1,379 | 345 | 29 |
| 19 | 16308 | 04-Sep-13 | 100 | 90 | 27.1 | 2,000 | >2,000 | 500 | 1,000 | 14.6 | 1018 | 870 | 254 | 1,378 | 363 | 28 |
| 20 | 16347 | 01-Oct-13 | 100 | 90 | 28.0 | 2,000 | >2,000 | 1,000 | 2,000 | 26.0 | 726 | 863 | 249 | 1,361 | 365 | 28 |

| | | | | | | | | | | | | | |
|------------|----|----|----|------|-----|-----|-----|----|-----|-----|-----|------|-----|
| Avg | 98 | 94 | 31 | 1658 | 579 | 487 | 980 | 19 | 870 | 862 | 248 | 1374 | 384 |
|------------|----|----|----|------|-----|-----|-----|----|-----|-----|-----|------|-----|

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.

