

Michael Higuchi
MWH Global
19800 MacArthur Blvd., Suite 500
Irvine, CA 92612

February 8, 2018

Dear Michael:

I have enclosed a copy of our report “A Toxicity Evaluation of an Ambient Water Sample Collected for the East San Gabriel Valley CIMP” for the sample collected January 9, 2018. The results of this evaluation are summarized below.

Chronic Effects of East San Gabriel Valley CIMP Ambient Water on *Ceriodaphnia dubia*

There was 100% survival in the ambient water sample. The TST analysis of the 100% sample reproduction data shows that the reproduction response in the ambient water sample was *not* statistically less than the response at the Control treatment; in this scenario, the 2010 EPA TST document states, “the test result is Pass and the sample is declared not toxic”.

If you have any questions regarding the performance and interpretation of this test, please feel free to contact my colleague Stephen Clark or myself at (707) 207-7760.

Sincerely,

Stevi Vasquez
Project Manager

Cc: Mitch Mysliwec, Larry Walker Associates
Jonathan Abelson, MWH



Pacific EcoRisk is accredited in accordance with NELAP (ORELAP ID 4043). Pacific EcoRisk certifies that the test results reported herein conform to the most current NELAP requirements for parameters for which accreditation is required and available. Any exceptions to NELAP requirements are noted, where applicable, in the body of the report. This report shall not be reproduced, except in full, without the written consent of Pacific EcoRisk. This testing was performed under Lab Order 27965.

A Toxicity Evaluation of an Ambient Water Sample Collected for the East San Gabriel Valley CIMP

Sample collected January 9, 2018

Submitted To:

MWH Global
19800 MacArthur Blvd., Suite 500
Irvine, CA 92612

Prepared By:

Pacific EcoRisk
2250 Cordelia Rd.
Fairfield, CA 94534

February 2018



A Toxicity Evaluation of an Ambient Water Sample Collected for the East San Gabriel Valley CIMP

Sample collected January 9, 2018

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1. INTRODUCTION

Under contract to MWH Global (MWH), Pacific EcoRisk (PER) performed a chronic toxicity evaluation of an ambient water sample collected from the East San Gabriel Valley (ESGV) watershed. The sample was collected to address compliance requirements in the ESGV CIMP. The chronic toxicity evaluation consists of performing the US EPA short-term chronic 3-brood (6-8 day) survival and reproduction test with the crustacean *Ceriodaphnia dubia*.

This chronic toxicity test was performed on an ambient water sample collected by a MWH field team on January 9, 2018. This report describes the performance and results of this toxicity test.

2. SAMPLE COLLECTION AND HANDLING

On January 9, MWH staff collected an ambient water sample from one ESGV monitoring station (Table 1). The ambient water sample was collected into appropriately cleaned 20-L jerricans. The ambient water sample was transported, on ice and under chain-of-custody, to the PER laboratory facility in Fairfield, CA within 24 hours of collection. Upon receipt at the testing laboratory, an aliquot of the sample was analyzed to determine initial water quality characteristics (Table 2). The remainder of the sample was stored at $\leq 6^{\circ}\text{C}$, and used to initiate testing within 36 hours of collection.

The chain-of-custody record for the collection and delivery of the sample is presented in Appendix A.

| Table 1. Collection of the ESGV ambient water sample. | | |
|---|------------------------|---------------------|
| Sample ID Code | Sample Collection Date | Sample Receipt Date |
| ESGV-13-LOW-005 | 1/9/18 (0913) | 1/10/18 (1130) |

| Table 2. Initial water quality characteristics of ESGV ambient water sample. | | | | | | | |
|--|------------|------|-------------|-------------------|-----------------|----------------------|------------------------|
| Sample ID | Temp. (°C) | pH | D.O. (mg/L) | Alkalinity (mg/L) | Hardness (mg/L) | Conductivity (µS/cm) | Total Ammonia (mg/L N) |
| ESGV-13-LOW-005 | 1.5 | 7.47 | 9.8 | 40 | 63 | 199 | <1.0 |

3. TOXICITY TESTING PROCEDURES

The ESGV ambient water sample for this event was tested for toxicity using the following US EPA short-term chronic toxicity test:

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

The method used in conducting the chronic toxicity test followed the “Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition” (EPA-821-R-02-013).

3.1 Survival and Reproduction Toxicity Testing with *Ceriodaphnia dubia*

The short-term chronic *Ceriodaphnia* test consists of exposing individual females to the ambient water sample for the length of time it takes for the Lab Control treatment females to produce 3 broods (typically 6-8 days), after which effects on survival and reproduction are evaluated. The specific procedures used in this test are described below.

The Lab Water Control medium for this test consisted of modified EPA synthetic moderately hard water, prepared by addition of reagent grade chemicals to Type 1 lab water. The ambient water sample was tested at the 100% concentration only. Each treatment consisted of 200 mL of test solution to which the alga *Selenastrum capricornutum* and Yeast-Cerophyll®-Trout Food (YCT) had been added as food for the test organisms. “New” water quality characteristics (pH, dissolved oxygen [D.O.], and conductivity) were measured on these food-amended test solutions prior to use in the test.

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

Each day of the test, fresh test solutions were prepared and characterized as before, and a new set of replicate cups was prepared. The original test replicate cups were examined, with surviving original individual organisms being transferred to the corresponding new cup. The contents of each of the remaining old replicate cups was carefully examined and the number of neonate offspring produced by each original organism was determined, after which the “old” water quality characteristics (pH, D.O., and conductivity) were measured for the old media from one randomly-selected replicate at each treatment.

After it was determined that ≥60% of the *C. dubia* in the Control had produced their third brood of offspring, the test was terminated. The resulting survival and reproduction data were analyzed

to evaluate any impairment caused by the ambient water. All statistical analyses were performed using the CETIS® statistical software (TidePool Scientific, McKinleyville, CA).

3.1.1 Reference Toxicant Testing of the *Ceriodaphnia dubia*

The reference toxicant test was performed similarly to the ambient water test, except that test solutions comprised of Lab Water Control medium spiked with NaCl at test concentrations of 500, 1000, 1500, 2000, and 2500 mg/L were used. The resulting test response data were statistically analyzed to determine key concentration-response point estimates. All statistical analyses were performed using the CETIS® software. These response endpoints were then compared to the typical response ranges established by the mean \pm 2 SD of the point estimates generated by the most recent previous reference toxicant tests performed by this lab.

4. RESULTS

4.1 Effects of ESGV Ambient Water on *Ceriodaphnia dubia*

The results of this test are summarized below in Table 3. There was 100% survival in the ambient water sample. The reproduction data were analyzed using the TST analytical method. The reproduction response in the 100% ambient water sample was **not** statistically less than the response at the Control treatment; in this scenario, the 2010 EPA TST document states, “the test result is Pass and the sample is declared not toxic”.

The test data and summary of statistical analyses for this test are presented in Appendix B.

| Table 3. Effects of ESGV ambient water on <i>Ceriodaphnia dubia</i> . | | |
|---|-----------------|---|
| Treatment | Mean % Survival | Mean Reproduction (# neonates /female) |
| Lab Water Control | 100 | 36.3 |
| 100% | 100 | 31.6 |
| Summary of Statistics | | |
| TST Analysis = | | Pass: Sample is not toxic |

5. AQUATIC TOXICITY DATA QUALITY CONTROL

Three QC measures were assessed during the toxicity testing:

- Maintenance of acceptable test conditions;
- Negative control testing; and
- Positive control (reference toxicant) testing.

5.1 Maintenance of Acceptable Test Conditions

Test conditions (pH, D.O., temperature, etc.) were all within acceptable limits for these tests. All analyses were performed according to laboratory Standard Operating Procedures.

5.2 Negative Control Testing

The response at the Lab Control treatment was within acceptable limits.

5.3 Positive Control Testing

5.3.1 Reference Toxicant Toxicity to *Ceriodaphnia dubia*

The results of this test are summarized below in Table 4. The survival EC₅₀ and reproduction IC₅₀ were both consistent with the typical response ranges established by the reference toxicant test database for this species, indicating that these organisms were responding to toxic stress in a typical and consistent fashion. The test data and summary of statistical analyses for this test are presented in Appendix C.

| Table 4. Reference toxicant testing: Effects of NaCl on <i>Ceriodaphnia dubia</i> . | | |
|---|-----------------------|---------------------------------------|
| NaCl Treatment (mg/L) | Mean % Survival | Mean Reproduction (# neonates/female) |
| Lab Water Control | 100 | 28.8 |
| 500 | 100 | 26.7 |
| 1000 | 100 | 27.5 |
| 1500 | 90 | 13.0* |
| 2000 | 70 | 4.6* |
| 2500 | 0* | - |
| Summary of Statistics | | |
| Survival EC ₅₀ or Reproduction IC ₅₀ = | 2000 mg/L NaCl | 1450 mg/L NaCl |
| Typical Response Range (mean \pm 2 SD) | 1742 - 2350 mg/L NaCl | 1330 - 1810 mg/L NaCl |

* The response at this test treatment was significantly less than the Lab Control treatment response at $p < 0.05$.

6. SUMMARY AND CONCLUSIONS

The results for the toxicity evaluation of the ambient water sample collected for the East San Gabriel Valley CIMP are summarized below.

Chronic Effects of East San Gabriel Valley CIMP Ambient Water on *Ceriodaphnia dubia*

There was 100% survival in the ambient water sample. The TST analysis of the 100% sample reproduction data shows that the reproduction response in the ambient water sample was ***not*** statistically less than the response at the Control treatment; in this scenario, the 2010 EPA TST document states, “the test result is Pass and the sample is declared not toxic”.

Appendix A

Chain-of-Custody Record for the Collection and Delivery of the East San Gabriel Valley CIMP Ambient Water Sample

1480 Drew Avenue, Suite 100 Davis, CA 95618 530-753-6400 530-753-7030 Fax

Date:

[illegible]

| | | |
|--|--|---|
| <p>Sender Comments:</p> <p>Please PDF signed COCs upon completion of sample login to Mitch Mysliwiec at MitchM@iwa.com</p> <p>PLEASE CALL IF THERE ARE ANY QUESTIONS</p> | <p>Relinquished By (1):</p> <p>Signature: <i>[Signature]</i></p> <p>Print: <i>Jonathan Aselson</i></p> <p>Organization: <i>MWH</i></p> <p>Date: <i>1/9/18</i> Time: <i>12:00</i></p> | <p>Relinquished By (2):</p> <p>Signature: <i>Trevor Fischer</i></p> <p>Print: <i>Trevor Fischer</i></p> <p>PER <i>PER</i></p> <p>Date: <i>1/10/18</i> Time: <i>1130</i></p> |
| <p>Laboratory Comments:</p> | <p>Received By (1):</p> <p>Signature:</p> <p>Print:</p> <p>Organization:</p> <p>Date: Time:</p> | <p>Received By (2):</p> <p>Signature:</p> <p>Print:</p> <p>Organization:</p> <p>Date: Time:</p> |

Appendix B

Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of the East San Gabriel Valley CIMP Ambient Water Sample to *Ceriodaphnia dubia*

CETIS Summary Report

Report Date: 24 Jan-18 14:10 (p 1 of 1)
 Test Code: MWH_13CD_C1 | 02-0265-5670

| Ceriodaphnia Survival and Reproduction Test | | | | | | Pacific EcoRisk | | | | | |
|---|-----------------|-----------------|------------------------------|----------------------------|------------------|-----------------|--------------------------------|---------|---------|--------|---------|
| Batch ID: | 07-0236-5714 | | Test Type: | Reproduction-Survival (7d) | | Analyst: | Stevi Vasquez | | | | |
| Start Date: | 10 Jan-18 18:50 | | Protocol: | EPA-821-R-02-013 (2002) | | Diluent: | Not Applicable | | | | |
| Ending Date: | 16 Jan-18 16:19 | | Species: | Ceriodaphnia dubia | | Brine: | Not Applicable | | | | |
| Duration: | 5d 21h | | Source: | In-House Culture | | Age: | 1 | | | | |
| Sample Code | Sample ID | Sample Date | Receipt Date | Sample Age | Client Name | Project | | | | | |
| MWH_13CD_C1 | 13-9527-3911 | 10 Jan-18 18:50 | 10 Jan-18 18:50 | n/a (24.9 °C) | MWH | 27965 | | | | | |
| 13-LOW-005 | 14-7884-4569 | 09 Jan-18 09:13 | 10 Jan-18 11:30 | 34h (1.5 °C) | | | | | | | |
| Sample Code | Material Type | | Sample Source | | Station Location | | Lat/Long | | | | |
| MWH_13CD_C1 | Lab Control | | East San Gabriel Valley CIMP | | LABQA | | | | | | |
| 13-LOW-005 | Ambient Water | | East San Gabriel Valley CIMP | | LOW-005 | | | | | | |
| Single Comparison Summary | | | | | | | | | | | |
| Analysis ID | Endpoint | | Comparison Method | | | P-Value | Comparison Result | | | | |
| 17-8044-1960 | Reproduction | | TST-Welch's t Test | | | 0.0186 | 13-LOW-005 passed reproduction | | | | |
| Reproduction Summary | | | | | | | | | | | |
| Sample | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | %Effect |
| MWH_13CD_C1 | LW | 10 | 36.3 | 33.2 | 39.4 | 31 | 44 | 1.36 | 4.3 | 11.83% | 0.00% |
| 13-LOW-005 | | 10 | 31.6 | 27.9 | 35.3 | 24 | 39 | 1.62 | 5.13 | 16.22% | 12.95% |
| Reproduction Detail | | | | | | | | | | | |
| Sample | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| MWH_13CD_C1 | LW | 36 | 32 | 40 | 37 | 44 | 34 | 31 | 41 | 36 | 32 |
| 13-LOW-005 | | 36 | 30 | 39 | 36 | 36 | 30 | 24 | 30 | 31 | 24 |

CETIS Analytical Report

Report Date: 24 Jan-18 14:10 (p 1 of 1)
Test Code: MWH_13CD_C1 | 02-0265-5670

Ceriodaphnia Survival and Reproduction Test Pacific EcoRisk

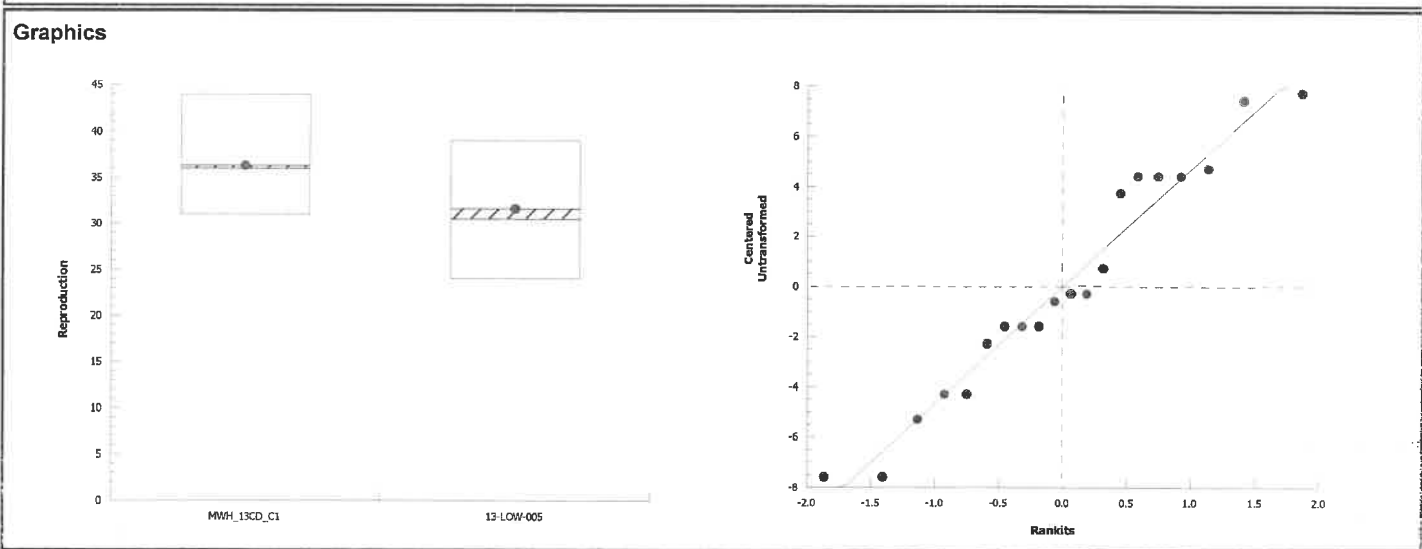
| | | |
|---------------------------|--|----------------------------|
| Analysis ID: 17-8044-1960 | Endpoint: Reproduction | CETIS Version: CETISv1.9.2 |
| Analyzed: 24 Jan-18 14:10 | Analysis: Parametric Bioequivalence-Two Sample | Official Results: Yes |

| TST-Welch's t Test | | | | | | | | |
|--------------------|----|-------------|-----------|----------|----|--------|---------|--------------------------|
| Sample I | vs | Sample II | Test Stat | Critical | DF | P-Type | P-Value | Decision(α :20%) |
| Lab Water Control | | 13-LOW-005* | 2.29 | 0.866 | 15 | CDF | 0.0186 | Non-Significant Effect |

| ANOVA Table | | | | | | |
|-------------|-------------|-------------|----|--------|---------|-------------------------|
| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(α :5%) |
| Between | 110.45 | 110.45 | 1 | 4.94 | 0.0393 | Significant Effect |
| Error | 402.5 | 22.3611 | 18 | | | |
| Total | 512.95 | | 19 | | | |

| Distributional Tests | | | | | |
|----------------------|-------------------------------|-----------|----------|---------|-------------------------|
| Attribute | Test | Test Stat | Critical | P-Value | Decision(α :1%) |
| Variances | Variance Ratio F Test | 1.42 | 6.54 | 0.6075 | Equal Variances |
| Distribution | Shapiro-Wilk W Normality Test | 0.951 | 0.866 | 0.3764 | Normal Distribution |

| Reproduction Summary | | | | | | | | | | | |
|----------------------|------|-------|------|---------|---------|--------|-----|-----|---------|--------|---------|
| Sample | Code | Count | Mean | 95% LCL | 95% UCL | Median | Min | Max | Std Err | CV% | %Effect |
| MWH_13CD_C1 | LW | 10 | 36.3 | 33.2 | 39.4 | 36 | 31 | 44 | 1.36 | 11.83% | 0.00% |
| 13-LOW-005 | | 10 | 31.6 | 27.9 | 35.3 | 30.5 | 24 | 39 | 1.62 | 16.22% | 12.95% |



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

Client: **MWH/Stantec: East San Gabriel Valley CIMP**
 Project #: **27965** Test ID: **76370**

Material: **ESGV-13-LOW-001**
 Randomization: **10.6.4**

Test Date: **1/10/18**
 Control Water: **Mod EPAMH**

| | Day | pH | | D.O. | | Cond. (µS/cm) | Temp (°C) | Survival / Reproduction | | | | | | | | | | SIGN-OFF | | |
|-------------------|-----|------|------|------|-----|------------------|--------------|-------------------------|----|----|----|----|----|----|----|----|----|-----------------------------|---------------|---------------|
| | | New | Old | New | Old | | | A | B | C | D | E | F | G | H | I | J | Date: | New WQ: | Test Init.: |
| Lab Water Control | 0 | 7.98 | | 8.3 | | 318 | 24.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Date: 1/10/18 | New WQ: 01/MS | Test Init. MS |
| | 1 | 7.74 | 7.90 | 10.7 | 8.1 | 350 | 25.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Sol'n Prep: SMC | New WQ: LZ | Counts: MS |
| | 2 | 7.99 | 8.00 | 8.9 | 7.8 | 357 | 24.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Sol'n Prep: SMC | Old WQ: LZ | Time: 1850 |
| | 3 | 7.81 | 7.73 | 9.4 | 7.6 | 329 | 25.6 | 0 | 4 | 6 | 6 | 8 | 5 | 5 | 0 | 6 | 0 | Date: 1/12/18 | New WQ: TA | Counts: EP |
| | 4 | 7.60 | 7.65 | 9.3 | 7.2 | 324 | 25.1 | 0 | 0 | 7 | 0 | 0 | 6 | 0 | 6 | 0 | 6 | Sol'n Prep: SMC | Old WQ: TA | Time: 1748 |
| | 5 | 7.77 | 7.84 | 8.1 | 7.2 | 324 | 25.0 | 0 | 10 | 15 | 12 | 14 | 11 | 10 | 13 | 11 | 11 | Date: 1/13/18 | New WQ: TA | Counts: MS |
| | 6 | — | 7.77 | — | 6.6 | 339 | 25.1 | 19 | 18 | 18 | 19 | 22 | 17 | 16 | 22 | 19 | 15 | Sol'n Prep: SMC | Old WQ: TA | Time: 1725 |
| | 7 | | | | | | | | | | | | | | | | | Date: 1/14/18 | New WQ: KL | Counts: SV |
| | 8 | | | | | | | | | | | | | | | | | Sol'n Prep: SMC | Old WQ: KL | Time: 1640 |
| Total= | | | | | | | | 36 | 32 | 40 | 37 | 44 | 34 | 31 | 41 | 36 | 32 | Mean Neonates/Female = 36.3 | | |
| | Day | pH | | D.O. | | Cond. (µS/cm) | | Survival / Reproduction | | | | | | | | | | SAMPLE ID | | |
| | | New | Old | New | Old | | | A | B | C | D | E | F | G | H | I | J | | | |
| 100% | 0 | 7.73 | | 9.5 | | 193 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48493 | | |
| | 1 | 7.75 | 7.60 | 10.0 | 8.0 | 193 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48493 | | |
| | 2 | 7.61 | 7.77 | 8.7 | 8.0 | 194 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48493 | | |
| | 3 | 7.43 | 7.55 | 8.6 | 8.0 | 201 | | 0 | 0 | 0 | 4 | 5 | 0 | 0 | 0 | 4 | 0 | 48493 | | |
| | 4 | 7.26 | 7.57 | 8.0 | 7.3 | 200 | | 7 | 5 | 8 | 0 | 0 | 0 | 5 | 0 | 0 | 4 | 48493 | | |
| | 5 | 7.32 | 7.70 | 7.5 | 7.0 | 201 | | 10 | 10 | 12 | 12 | 11 | 10 | 6 | 10 | 8 | 10 | 48493 | | |
| | 6 | — | 7.60 | — | 6.7 | 200 | | 19 | 15 | 19 | 20 | 20 | 20 | 13 | 20 | 19 | 10 | — | | |
| | 7 | | | | | | | | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | | | | | | | | |
| Total= | | | | | | | | 36 | 30 | 39 | 36 | 36 | 30 | 24 | 30 | 31 | 24 | Mean Neonates/Female = 31.6 | | |

Appendix C

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

CETIS Summary Report

Report Date: 22 Jan-18 11:04 (p 1 of 2)
Test Code: 75871 | 03-6203-2409

| Ceriodaphnia Survival and Reproduction Test | | | | | | | Pacific EcoRisk | | | | |
|---|-----------------|-------|-----------------------------------|----------------------------|---------|-------|-----------------|--------------------|---------|---------|---------|
| Batch ID: | 14-6906-2776 | | Test Type: | Reproduction-Survival (7d) | | | Analyst: | Bella Volpatti | | | |
| Start Date: | 03 Jan-18 14:35 | | Protocol: | EPA-821-R-02-013 (2002) | | | Diluent: | Laboratory Water | | | |
| Ending Date: | 09 Jan-18 16:42 | | Species: | Ceriodaphnia dubia | | | Brine: | Not Applicable | | | |
| Duration: | 6d 2h | | Source: | In-House Culture | | | Age: | 1 | | | |
| Sample ID: | 00-8520-2750 | | Code: | NaCl | | | Client: | Reference Toxicant | | | |
| Sample Date: | 03 Jan-18 14:35 | | Material: | Sodium chloride | | | Project: | 28281 | | | |
| Receipt Date: | 03 Jan-18 14:35 | | Source: | Reference Toxicant | | | | | | | |
| Sample Age: | n/a (24.6 °C) | | Station: | In House | | | | | | | |
| Multiple Comparison Summary | | | | | | | | | | | |
| Analysis ID | Endpoint | | Comparison Method | | | NOEL | LOEL | TOEL | TU | PMSD ✓ | |
| 15-5795-3520 | Reproduction | | Dunnett Multiple Comparison Test | | | 1000 | 1500 | 1225 | | 23.0% | |
| 10-9954-2224 | Survival | | Fisher Exact/Bonferroni-Holm Test | | | 2000 | 2500 | 2236 | | n/a | |
| Point Estimate Summary | | | | | | | | | | | |
| Analysis ID | Endpoint | | Point Estimate Method | | | Level | mg/L | 95% LCL | 95% UCL | TU | ✓ |
| 02-9621-7676 | Reproduction | | Linear Interpolation (ICPIN) | IC5 | | 424 | 144 | 1060 | | | |
| | | | | IC10 | | 1040 | 289 | 1130 | | | |
| | | | | IC15 | | 1090 | 433 | 1190 | | | |
| | | | | IC20 | | 1140 | 1010 | 1260 | | | |
| | | | | IC25 | | 1200 | 1070 | 1330 | | | |
| | | | | IC40 | | 1350 | 1230 | 1530 | | | |
| | | | | IC50 | | 1450 | 1320 | 1630 | | | |
| 19-2711-6543 | Survival | | Regression: Log-Normal (Probit) | EC5 | | 1530 | 1020 | 1740 | | | |
| | | | | EC10 | | 1620 | 1160 | 1820 | | | |
| | | | | EC15 | | 1690 | 1270 | 1880 | | | |
| | | | | EC20 | | 1740 | 1360 | 1930 | | | |
| | | | | EC25 | | 1790 | 1440 | 1970 | | | |
| | | | | EC40 | | 1920 | 1650 | 2120 | | | |
| | | | | EC50 | | 2000 | 1770 | 2240 | | | |
| Reproduction Summary | | | | | | | | | | | |
| Conc-mg/L | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | %Effect |
| 0 | LW | 10 | 28.8 | 23.8 | 33.8 | 14 | 34 | 2.2 | 6.96 | 24.16% | 0.00% |
| 500 | | 10 | 26.7 | 21.6 | 31.8 | 17 | 36 | 2.25 | 7.1 | 26.60% | 7.29% |
| 1000 | | 10 | 27.5 | 24.1 | 30.9 | 15 | 31 | 1.5 | 4.74 | 17.25% | 4.51% |
| 1500 | | 10 | 13 | 6.77 | 19.2 | 0 | 26 | 2.75 | 8.71 | 66.96% | 54.86% |
| 2000 | | 10 | 4.6 | 1.03 | 8.17 | 0 | 14 | 1.58 | 4.99 | 108.55% | 84.03% |
| 2500 | | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 100.00% |
| Survival Summary | | | | | | | | | | | |
| Conc-mg/L | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | %Effect |
| 0 | LW | 10 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 0.000 | 0.000 | 0.00% | 0.00% |
| 500 | | 10 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 0.000 | 0.000 | 0.00% | 0.00% |
| 1000 | | 10 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 0.000 | 0.000 | 0.00% | 0.00% |
| 1500 | | 10 | 0.900 | 0.674 | 1.000 | 0.000 | 1.000 | 0.100 | 0.316 | 35.14% | 10.00% |
| 2000 | | 10 | 0.700 | 0.354 | 1.000 | 0.000 | 1.000 | 0.153 | 0.483 | 69.01% | 30.00% |
| 2500 | | 10 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | 100.00% |

CETIS Summary Report

Report Date: 22 Jan-18 11:04 (p 2 of 2)
 Test Code: 75871 | 03-6203-2409

| Ceriodaphnia Survival and Reproduction Test | | | | | | | | | | | Pacific EcoRisk |
|---|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------------|
| Reproduction Detail | | | | | | | | | | | |
| Conc-mg/L | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | LW | 14 | 30 | 34 | 34 | 32 | 31 | 33 | 32 | 30 | 18 |
| 500 | | 33 | 31 | 17 | 17 | 28 | 28 | 17 | 36 | 29 | 31 |
| 1000 | | 31 | 31 | 30 | 28 | 25 | 28 | 30 | 29 | 15 | 28 |
| 1500 | | 7 | 0 | 22 | 5 | 18 | 23 | 26 | 11 | 10 | 8 |
| 2000 | | 14 | 11 | 0 | 3 | 0 | 0 | 6 | 3 | 1 | 8 |
| 2500 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Survival Detail | | | | | | | | | | | |
| Conc-mg/L | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | LW | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| 500 | | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| 1000 | | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| 1500 | | 1.000 | 0.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| 2000 | | 1.000 | 1.000 | 0.000 | 1.000 | 0.000 | 0.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| 2500 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Survival Binomials | | | | | | | | | | | |
| Conc-mg/L | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | LW | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 500 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 1000 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 1500 | | 1/1 | 0/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 2000 | | 1/1 | 1/1 | 0/1 | 1/1 | 0/1 | 0/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 2500 | | 0/1 | 0/1 | 0/1 | 0/1 | 0/1 | 0/1 | 0/1 | 0/1 | 0/1 | 0/1 |

Ceriodaphnia Survival and Reproduction Test

Pacific EcoRisk

Test Type: Reproduction-Survival (7d)

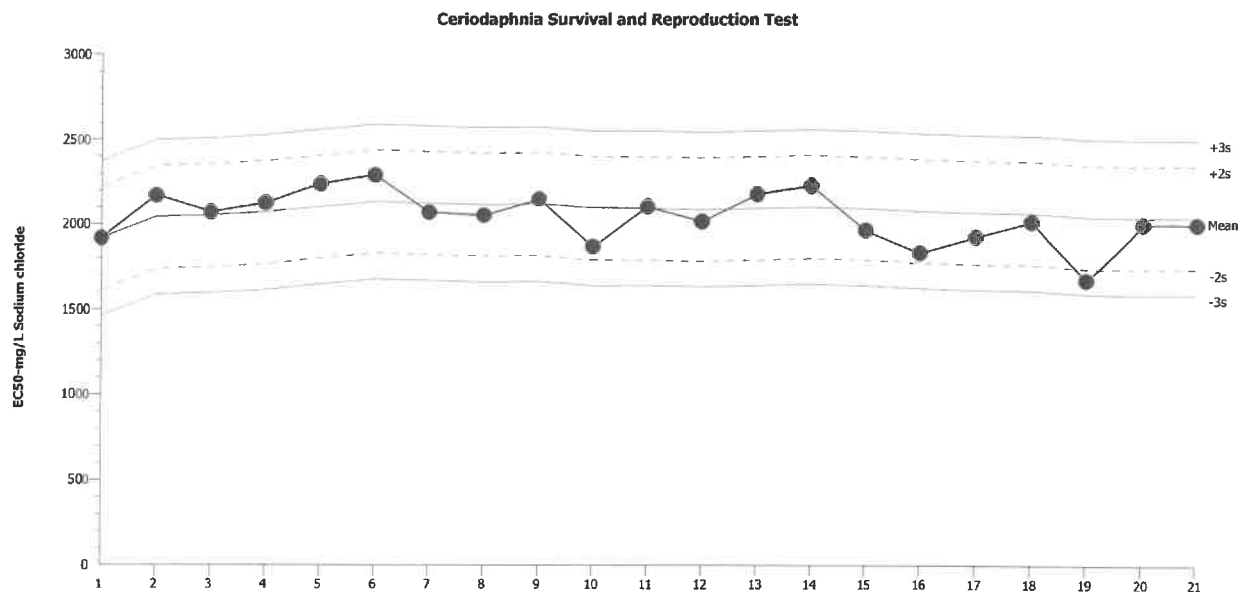
Organism: Ceriodaphnia dubia (Water Flea)

Material: Sodium chloride

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

Endpoint: Survival

Source: Reference Toxicant-REF



Mean: 2046

Count: 20

-2s Warning Limit: 1742

-3s Action Limit: 1590

Sigma: 152

CV: 7.43%

+2s Warning Limit: 2350

+3s Action Limit: 2502

Quality Control Data

| Point | Year | Month | Day | Time | QC Data | Delta | Sigma | Warning | Action | Test ID | Analysis ID |
|-------|------|-------|-----|-------|---------|--------|---------|---------|--------|--------------|--------------|
| 1 | 2017 | Oct | 4 | 16:30 | 1918 | -127.6 | -0.8397 | | | 07-5103-0771 | 09-2385-8804 |
| 2 | | | 5 | 17:15 | 2170 | 123.8 | 0.8143 | | | 20-0447-1878 | 06-1896-3633 |
| 3 | | | 10 | 13:50 | 2071 | 25.13 | 0.1653 | | | 17-1028-4634 | 10-2748-2816 |
| 4 | | | 17 | 11:00 | 2125 | 78.71 | 0.5178 | | | 11-0118-5330 | 00-5012-0747 |
| 5 | | | 24 | 14:43 | 2236 | 190.1 | 1.25 | | | 11-2106-7840 | 14-2252-3497 |
| 6 | | | 31 | 11:00 | 2291 | 245 | 1.612 | | | 00-5515-9165 | 14-1319-8199 |
| 7 | | Nov | 2 | 14:05 | 2071 | 25.13 | 0.1653 | | | 06-1976-2304 | 04-5385-5905 |
| 8 | | | 7 | 12:30 | 2054 | 7.573 | 0.04982 | | | 00-4825-2510 | 11-0491-7063 |
| 9 | | | 8 | 14:18 | 2150 | 103.9 | 0.6836 | | | 10-4553-4693 | 08-7664-8485 |
| 10 | | | 14 | 13:40 | 1869 | -177.3 | -1.166 | | | 17-7601-5451 | 00-5299-5274 |
| 11 | | | 16 | 13:30 | 2105 | 59.43 | 0.391 | | | 06-7144-8937 | 01-3405-0789 |
| 12 | | | 21 | 13:00 | 2019 | -27.1 | -0.1783 | | | 11-8236-8470 | 14-7372-2033 |
| 13 | | | 28 | 14:20 | 2180 | 133.7 | 0.8795 | | | 05-3441-7795 | 00-6153-9570 |
| 14 | | | 30 | 13:05 | 2230 | 183.7 | 1.208 | | | 20-6249-6441 | 15-6703-8590 |
| 15 | | Dec | 5 | 13:56 | 1968 | -78.01 | -0.5132 | | | 11-8649-6607 | 08-4285-1285 |
| 16 | | | 12 | 12:30 | 1835 | -211.4 | -1.391 | | | 15-7963-7323 | 19-6062-3616 |
| 17 | | | 14 | 11:50 | 1930 | -116 | -0.7632 | | | 17-3091-8548 | 04-9037-5543 |
| 18 | | | 16 | 14:25 | 2019 | -27.1 | -0.1783 | | | 06-3787-6107 | 10-7874-4004 |
| 19 | | | 20 | 14:00 | 1673 | -372.9 | -2.454 | (-) | | 13-8212-8029 | 20-8482-0658 |
| 20 | | | 28 | 12:02 | 2006 | -40.16 | -0.2642 | | | 03-2773-5176 | 05-2725-7968 |
| 21 | 2018 | Jan | 3 | 14:35 | 2003 | -42.9 | -0.2822 | | | 03-6203-2409 | 19-2711-6543 |

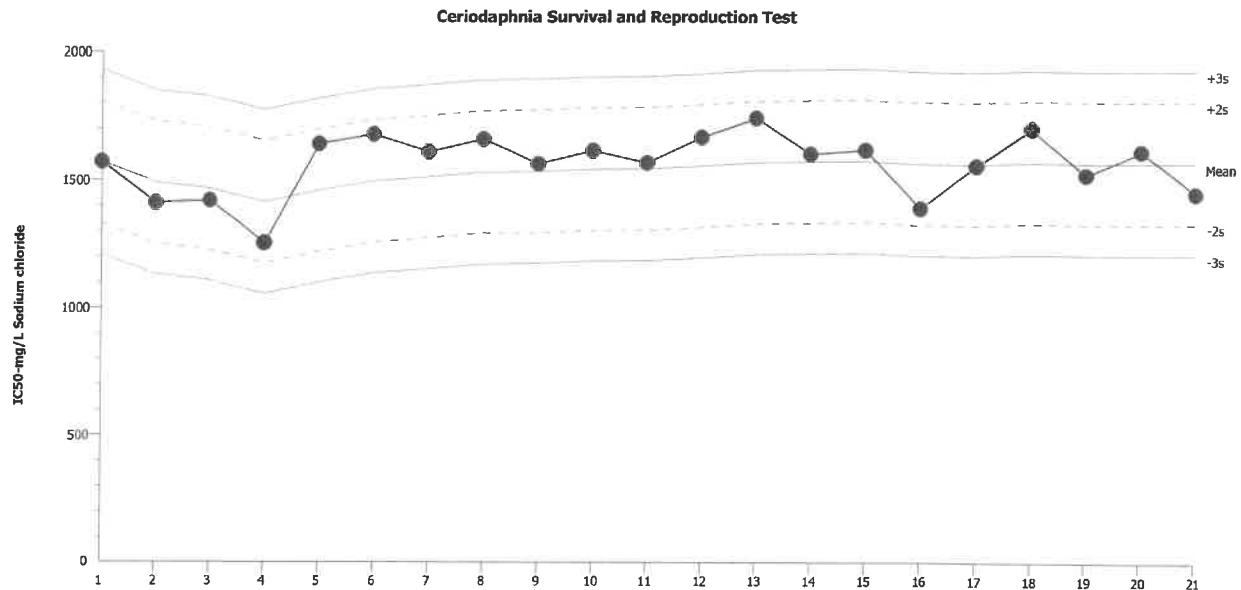
Ceriodaphnia Survival and Reproduction Test

Pacific EcoRisk

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

Organism: Ceriodaphnia dubia (Water Flea)
Endpoint: Reproduction

Material: Sodium chloride
Source: Reference Toxicant-REF



Mean: 1570
Sigma: 120

Count: 20
CV: 7.64%

-2s Warning Limit: 1330
+2s Warning Limit: 1810

-3s Action Limit: 1210
+3s Action Limit: 1930

Quality Control Data

| Point | Year | Month | Day | Time | QC Data | Delta | Sigma | Warning | Action | Test ID | Analysis ID |
|-------|------|-------|-----|-------|---------|--------|----------|---------|--------|--------------|--------------|
| 1 | 2017 | Oct | 4 | 16:30 | 1571 | 0.8763 | 0.007303 | | | 07-5103-0771 | 16-5085-0666 |
| 2 | | | 5 | 17:15 | 1410 | -159.6 | -1.33 | | | 20-0447-1878 | 20-2996-0895 |
| 3 | | | 10 | 13:50 | 1420 | -149.7 | -1.247 | | | 17-1028-4634 | 19-6123-0962 |
| 4 | | | 17 | 11:00 | 1253 | -317.2 | -2.644 | (-) | | 11-0118-5330 | 11-7677-9983 |
| 5 | | | 24 | 14:43 | 1641 | 70.74 | 0.5895 | | | 11-2106-7840 | 03-4385-7154 |
| 6 | | | 31 | 11:00 | 1679 | 108.9 | 0.9077 | | | 00-5515-9165 | 08-0105-0137 |
| 7 | | Nov | 2 | 14:05 | 1610 | 39.69 | 0.3308 | | | 06-1976-2304 | 14-8531-4788 |
| 8 | | | 7 | 12:30 | 1660 | 89.6 | 0.7467 | | | 00-4825-2510 | 00-2712-5003 |
| 9 | | | 8 | 14:18 | 1563 | -6.538 | -0.05449 | | | 10-4553-4693 | 09-2289-4357 |
| 10 | | | 14 | 13:40 | 1615 | 44.88 | 0.374 | | | 17-7601-5451 | 06-5094-2297 |
| 11 | | | 16 | 13:30 | 1567 | -3.099 | -0.02582 | | | 06-7144-8937 | 09-0322-9799 |
| 12 | | | 21 | 13:00 | 1667 | 96.67 | 0.8056 | | | 11-8236-8470 | 18-2982-2711 |
| 13 | | | 28 | 14:20 | 1742 | 172 | 1.433 | | | 05-3441-7795 | 19-1447-2851 |
| 14 | | | 30 | 13:05 | 1602 | 32.11 | 0.2676 | | | 20-6249-6441 | 13-6974-3476 |
| 15 | | Dec | 5 | 13:56 | 1618 | 47.51 | 0.3959 | | | 11-8649-6607 | 09-3269-6612 |
| 16 | | | 12 | 12:30 | 1389 | -180.9 | -1.508 | | | 15-7963-7323 | 20-0353-3205 |
| 17 | | | 14 | 11:50 | 1557 | -12.69 | -0.1057 | | | 17-3091-8548 | 18-2139-8674 |
| 18 | | | 16 | 14:25 | 1700 | 130.3 | 1.086 | | | 06-3787-6107 | 13-0231-3989 |
| 19 | | | 20 | 14:00 | 1522 | -47.78 | -0.3981 | | | 13-8212-8029 | 18-9002-4497 |
| 20 | | | 28 | 12:02 | 1616 | 46.02 | 0.3835 | | | 03-2773-5176 | 21-3209-6304 |
| 21 | 2018 | Jan | 3 | 14:35 | 1450 | -119.6 | -0.997 | | | 03-6203-2409 | 02-9621-7676 |

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

Client: _____ Reference Toxicant: _____ Material: Sodium Chloride Test Date: 1/31/18
 Project #: 28281 Test ID: 75871 Randomization: 10.7.8 Control Water: Mod EPAMH

| | Day | pH | | D.O. | | Conductivity (µS/cm) | | Temp (°C) | Survival / Reproduction | | | | | | | | | | SIGN-OFF | | |
|-------------------|-----|------|------|------|-----|----------------------|------|-----------|-------------------------|----|----|----|----|----|----|----|----|----|-----------------------------|-------------|-----------------|
| | | New | Old | New | Old | New | Old | | A | B | C | D | E | F | G | H | I | J | Date: | New WQ: | Test Init: |
| Lab Water Control | 0 | 7.88 | | 7.6 | | 357 | | 24.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Date: 1/31/18 | New WQ: TA | Test Init: 1450 |
| | 1 | 7.71 | 7.70 | 7.7 | 5.4 | 351 | 458 | 24.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Date: 1/4/18 | New WQ: 3AC | Counts: TK |
| | 2 | 7.76 | 7.76 | 8.4 | 6.5 | 321 | 391 | 25.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Date: 1/5/18 | New WQ: FT | Counts: EP |
| | 3 | 7.98 | 8.01 | 8.6 | 6.7 | 330 | 375 | 25.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Date: 1/6/18 | New WQ: FT | Counts: TK |
| | 4 | 7.91 | 7.97 | 8.6 | 8.1 | 334 | 354 | 25.5 | 4 | 6 | 7 | 6 | 6 | 6 | 6 | 6 | 5 | 6 | Date: 1/7/18 | New WQ: FT | Counts: EP |
| | 5 | 7.84 | 7.89 | 7.5 | 7.1 | 328 | 395 | 25.2 | 10 | 9 | 12 | 11 | 10 | 10 | 9 | 11 | 10 | 0 | Date: 1/8/18 | New WQ: FT | Counts: TK |
| | 6 | 7.89 | 7.84 | 7.4 | 6.0 | 333 | 377 | 25.8 | 0 | 15 | 15 | 17 | 16 | 15 | 18 | 15 | 15 | 12 | Date: 1/9/18 | New WQ: TA | Counts: SD |
| | 7 | | | | | | | | | | | | | | | | | | Date: | New WQ: | Counts: |
| | 8 | | | | | | | | | | | | | | | | | | Date: | Old WQ: | Time: |
| Total= | | | | | | | | | 14 | 30 | 34 | 34 | 32 | 31 | 33 | 32 | 30 | 18 | Mean Neonates/Female = 28.8 | | |
| | Day | pH | | D.O. | | Conductivity (µS/cm) | | | Survival / Reproduction | | | | | | | | | | RT BATCH NUMBER | | |
| | | New | Old | New | Old | New | Old | | A | B | C | D | E | F | G | H | I | J | | | |
| 500 mg/L | 0 | 7.85 | | 7.6 | | 1271 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 265 | | |
| | 1 | 7.73 | 7.65 | 7.9 | 5.5 | 1295 | 1360 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 265 | | |
| | 2 | 7.75 | 7.70 | 8.3 | 6.6 | 1219 | 1386 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 266 | | |
| | 3 | 7.96 | 7.88 | 8.6 | 6.6 | 1259 | 1329 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 266 | | |
| | 4 | 7.91 | 7.90 | 8.8 | 8.1 | 1239 | 1330 | | 6 | 7 | 6 | 6 | 6 | 6 | 5 | 5 | 5 | 6 | 266 | | |
| | 5 | 7.86 | 7.85 | 7.6 | 7.4 | 1245 | 1402 | | 11 | 10 | 11 | 0 | 9 | 10 | 12 | 13 | 10 | 9 | 266 | | |
| | 6 | 7.87 | 7.74 | 8.0 | 6.4 | 1279 | 1481 | | 16 | 14 | 0 | 11 | 13 | 12 | 18 | 18 | 14 | 16 | 266 | | |
| | 7 | | | | | | | | | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | | | | | | | | | |
| Total= | | | | | | | | | 33 | 31 | 17 | 17 | 28 | 28 | 17 | 36 | 29 | 31 | Mean Neonates/Female = 26.7 | | |

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

| | | | | | | | | | | | | | | | | | | | | | | | |
|------------|-----|--------------------|------|----------|-----|----------------------|--------------|----------------|-------------------------|-----------------|----|----------------|----|-----------|----|------------|----|-----------------------------|-----------------------------|--|--|--|--|
| Client: | | Reference Toxicant | | | | | | Material: | | Sodium Chloride | | | | | | Test Date: | | 1/3/18 | | | | | |
| Project #: | | 28281 | | Test ID: | | 75871 | | Randomization: | | 10 7.8 | | Control Water: | | Mod EPAMH | | | | | | | | | |
| 1000 mg/L | Day | pH | | D.O. | | Conductivity (µS/cm) | | Temp (°C) | Survival / Reproduction | | | | | | | | | | | | | | |
| | | New | Old | New | Old | New | Old | | A | B | C | D | E | F | G | H | I | J | | | | | |
| | 0 | 7.83 | | 7.6 | | 2264 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| | 1 | 7.68 | 7.69 | 8.3 | 5.6 | 2131 | 2420 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| | 2 | 7.72 | 7.69 | 8.6 | 6.7 | 2115 | 2299 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| | 3 | 7.85 | 7.77 | 9.0 | 6.1 | 2240 | 2236 2310 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| | 4 | 7.88 | 7.97 | 8.9 | 8.2 | 2166 | 2358 | | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 5 | 6 | | | | | |
| | 5 | 7.81 | 7.82 | 7.9 | 7.1 | 2206 | 2346 | | 9 | 10 | 10 | 7 | 7 | 8 | 8 | 7 | 10 | 9 | | | | | |
| | 6 | 7.86 | 7.78 | 8.4 | 7.2 | 2247 | 2391 | | 16 | 15 | 14 | 15 | 12 | 14 | 16 | 15 | 0 | 13 | | | | | |
| | 7 | | | | | | | | | | | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | | | | | | | | | | | |
| Total= | | | | | | | | 31 | 31 | 30 | 28 | 25 | 28 | 30 | 29 | 15 | 28 | Mean Neonates/Female = 27.5 | | | | | |
| 1500 mg/L | Day | pH | | D.O. | | Conductivity (µS/cm) | | | Survival / Reproduction | | | | | | | | | | | | | | |
| | | New | Old | New | Old | New | Old | | A | B | C | D | E | F | G | H | I | J | | | | | |
| | 0 | 7.79 | | 7.8 | | 3160 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| | 1 | 7.70 | 7.68 | 8.4 | 5.8 | 3040 | 3364 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| | 2 | 7.69 | 7.64 | 8.8 | 6.7 | 3086 | 3340 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| | 3 | 7.82 | 7.71 | 9.1 | 6.3 | 3210 | 3251 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| | 4 | 7.84 | 7.91 | 9.4 | 8.1 | 3150 | 3473 | | 2 | 4 | 6 | 3 | 3 | 3 | 5 | 4 | 4 | 6 | | | | | |
| | 5 | 7.86 | 7.86 | 8.1 | 7.0 | 3170 | 3438 | | 5 | - | 5 | 2 | 7 | 7 | 8 | 7 | 6 | 0 | | | | | |
| | 6 | 7.84 | 7.78 | 8.6 | 7.5 | 3163 | 3440 | | 0 | - | 11 | 0 | 8 | 13 | 13 | 0 | 0 | 2 | | | | | |
| | 7 | | | | | | | | | - | | | | | | | | | | | | | |
| | 8 | | | | | | | | | - | | | | | | | | | | | | | |
| Total= | | | | | | | | 7 | 4 | 0 | 22 | 5 | 18 | 23 | 26 | 11 | 10 | 8 | Mean Neonates/Female = 14.4 | | | | |

31/1/18

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

| Client: | | Reference Toxicant | | Material: | | Sodium Chloride | | Test Date: | | | | | | | | | | | |
|------------|-----|--------------------|------|----------------|-----|----------------------|------|------------|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|----------------------------|--|
| Project #: | | Test ID: | | Randomization: | | Control Water: | | Mod EPAMH | | | | | | | | | | | |
| 28281 | | 75871 | | 107.8 | | | | 1/3/18 | | | | | | | | | | | |
| 2000 mg/L | Day | pH | | D.O. | | Conductivity (µS/cm) | | Temp (°C) | Survival / Reproduction | | | | | | | | | | |
| | | New | Old | New | Old | New | Old | | A | B | C | D | E | F | G | H | I | J | |
| | 0 | 7.79 | | 8.4 | | 4111 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 1 | 7.67 | 7.70 | 9.0 | 6.8 | 4070 | 4416 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 2 | 7.70 | 7.62 | 9.0 | 6.3 | 4043 | 4460 | | 0 | 0 | 0 | 0 | 4/0 | 4/0 | 0 | 0 | 0 | 0 | |
| | 3 | 7.77 | 7.68 | 9.4 | 6.4 | 4090 | 4378 | | 0 | 0 | 4/0 | 0 | - | - | 0 | 0 | 0 | 0 | |
| | 4 | 7.82 | 7.90 | 9.4 | 8.1 | 4079 | 4479 | | 0 | 2 | - | 3 | - | - | 0 | 1 | 0 | 0 | |
| | 5 | 7.77 | 7.75 | 8.5 | 6.8 | 4060 | 4360 | | 2 | 1 | - | 0 | - | - | 1 | 0 | 0 | 1 | |
| | 6 | 7.82 | 7.75 | 9.1 | 7.6 | 4045 | 4400 | | 12 | 8 | - | 0 | - | - | 5 | 0 | 1 | 7 | |
| | 7 | | | | | | | | | | - | | - | - | | | | | |
| 8 | | | | | | | | | | - | | - | - | | | | | | |
| Total= | | | | | | | | 14 | 11 | 4/0 | 3 | 4/0 | 4/0 | 6 | 3 | 1 | 8 | Mean Neonates/Female = 4.6 | |
| 2500 mg/L | Day | pH | | D.O. | | Conductivity (µS/cm) | | Temp (°C) | Survival / Reproduction | | | | | | | | | | |
| | | New | Old | New | Old | New | Old | | A | B | C | D | E | F | G | H | I | J | |
| | 0 | 7.77 | | 8.5 | | 5057 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 1 | 7.66 | 7.75 | 9.3 | 6.3 | 5000 | 5620 | | 4/0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 2 | 7.65 | 7.64 | 8.9 | 6.0 | 4932 | 5570 | | - | 4/0 | 4/0 | 4/0 | 4/0 | 4/0 | 4/0 | 4/0 | 4/0 | 4/0 | |
| | 3 | - | - | - | - | - | - | | - | - | - | - | - | - | - | - | - | - | |
| | 4 | - | - | - | - | - | - | | - | - | - | - | - | - | - | - | - | - | |
| | 5 | - | - | - | - | - | - | | - | - | - | - | - | - | - | - | - | - | |
| | 6 | - | - | - | - | - | - | | - | - | - | - | - | - | - | - | - | - | |
| | 7 | - | - | - | - | - | - | | - | - | - | - | - | - | - | - | - | - | |
| 8 | | | | | | | | - | | | | | | | | | | | |
| Total= | | | | | | | | 4/0 | 4/0 | 4/0 | 4/0 | 4/0 | 4/0 | 4/0 | 4/0 | 4/0 | 4/0 | Mean Neonates/Female = 0.0 | |