

4500 NORTH WEST AVE. • P. O. BOX 231 • EL DORADO, AR 71731 • (870) 863-1400



CHEMICAL COMPANY

October 26, 2012

Arkansas Department of Environmental Quality
Water Enforcement Branch
5301 Northshore Drive
North Little Rock, AR 72118-5317

RE: NPDES Permit AR0000752 Discharge Monitoring Report for period ending July 31, 2012.

Enclosed you will find the corrected copy of the Discharge Monitoring Report, Discharge Number TX7-B for period ending July 31, 2012. Our analytical laboratory originally reported the results incorrectly.

If you have any questions regarding this report, please contact Larken Pennington at (870) 863-1125.

Sincerely,

A handwritten signature in cursive script that reads "Greg Withrow".

Greg Withrow
General Manager

Enclosures

Bio-Analytical Laboratories (BAL)
ADEQ#88-0630
Project X4801

Bio-Analytical Laboratories' Executive Summary

Permittee: El Dorado Chemical Company
P.O. Box 231
El Dorado, AR 71731

Project #: X4801

Outfall: Outfall 007

Permit #: AR0000752/ AFIN #70-00040

Contact: Ms. Larken Pennington

Test Dates: July 11 - 13, 2012

Test Type: 48-hour acute toxicity test using *Pimephales promelas* (EPA 2000.0).
48-hour acute toxicity test using *Daphnia pulex* (EPA 2021.0)

Results:

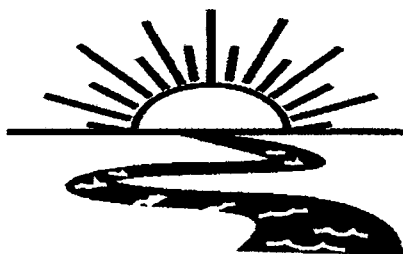
For *Pimephales promelas*:

1. If the NOEC for survival is less than the critical dilution (100%), enter a "1"; otherwise, enter a "0" for Parameter No. TEM6C- 1.
2. Report the NOEC for survival, Parameter TOM6C - 0%.
3. Report the highest (critical dilution or control) Coefficient of Variation, Parameter TQM6C - 0.00%.

For *Daphnia pulex*:

1. If the NOEC for survival is less than the critical dilution (100%), enter a "1"; otherwise, enter a "0" for Parameter No. TEM3D- 1.
2. Report the NOEC for survival, Parameter TOM3D - 0%.
3. Report the highest (critical dilution or control) Coefficient of Variation, Parameter TQM3D - 0.00%.

This report contains a total of 35 pages, including this page. The results pertain only to the samples listed in the chain of custody documents in Appendix A. The information contained within meets the requirements set forth by ADEQ. The chemical data in this report is for monitoring purposes only and should not be reported on discharge monitoring reports.



Bio-Analytical Laboratories

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**THE RESULTS OF TWO 48-HOUR ACUTE
TOXICITY TESTS
FOR OUTFALL 007
AT**

**EL DORADO CHEMICAL COMPANY
El Dorado, Arkansas**

**NPDES #AR0000752
AFIN #70-00040**

EPA Methods 2000.0 and 2021.0

Project X4801

**Test Dates: July 11 - 13, 2012
Report Date: August 7, 2012**

Prepared for:
Ms. Larken Pennington
El Dorado Chemical Company
P.O. Box 231
El Dorado, AR 71731

Prepared by:
Ginger Briggs
Bio-Analytical Laboratories
P.O. Box 527
Doyline, LA 71023
ADEQ #88-0630

BAL
ADEQ #88-0630
Project X4801

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BAL
ADEQ #88-0630
Project X4801

1.0 Introduction

Bio-Analytical Laboratories (BAL), Doyline, Louisiana conducted two 48-hour acute toxicity tests for Outfall 007 at El Dorado Chemical Company, El Dorado, Arkansas. The test organisms used were the fathead minnow, *Pimephales promelas* and the cladoceran, *Daphnia pulex*. The purpose of this study is to determine if an appropriately dilute effluent sample adversely affects the survival of the test organism. Toxicity is defined as a statistically significant difference at the 95 percent confidence level between the survival of the test organisms in the critical dilution (the effluent concentration representative of the proportion of effluent in the receiving water during critical low flow or critical mixing conditions) compared to the survival of the test organisms in the control. The test endpoints are the No-Observed-Effect-Concentration (NOEC), which is defined as the highest effluent concentration that is not statistically different from the control, and the 48-hour LC_{50} , the concentration in which 50 percent of the test organisms died.

2.0 Methods and Materials

2.1 Test Methods

All methods followed were according to the latest edition of "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA-821-R-02-012).

2.2 Test Organisms

The fathead minnows were raised in-house and were approximately nine days old at test initiation. The *Daphnia pulex* test organisms were raised in-house and were less than 24 hours old at test initiation. Forty-eight hour reference toxicant tests, using sodium chloride (NaCl), were conducted monthly in order to document organism sensitivity and demonstration of capability.

BAL
ADEQ #88-0630
Project X4801

2.3 Dilution Water

Soft reconstituted water made per EPA guidelines was used as the dilution water and the control for the acute tests.

2.4 Test Concentrations

The test concentrations used in the tests were 100, 75.0, 56.0, 50.0, 42.0 and 32.0 percent effluent and a reconstituted water control. The critical dilution was defined as 100 percent effluent. The tests were conducted using five replicates of eight animals each for a total of 40 animals per concentration.

2.5 Sample Collection

One sample of Outfall 007 was collected by El Dorado Chemical personnel on July 10, 2012. Upon completion of collection, the sample was chilled to 4° Celsius and personally delivered to Bio-Analytical Laboratories.

2.6 Sample Preparation

Upon arrival, the sample was logged in, given an identification number and refrigerated unless needed. Prior to use, the sample was warmed to 25±1° Celsius. The total residual chlorine level was measured with a Capital Controls^R amperometric titrator and recorded if present. The total ammonia level was measured using a HACH^R test strip. Dissolved oxygen, pH and conductivity measurements were taken on the control and each test concentration at test initiation, at each renewal and at test termination. Alkalinity and hardness levels were measured on the control and the highest effluent concentration.

2.7 Monitoring of the Tests

The tests were run in a Precision^R dual controlled illuminated incubator at a temperature of 25±1° Celsius. An AEMC^R data logger was used to monitor diurnal temperature throughout the testing period. Light cycle and intensity were recorded twice a month.

2.8 Data Analysis

The NOEC and LC₃₀ values were obtained by approved EPA methods of analysis, using the ToxCalc statistical program.

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ADEQ #88-0630
Project X4801

3.0 Results and Discussion

The results of the tests can be found in Table 1. Significant differences in survival were noted in the critical dilutions in both tests ($p=.05$). The NOEC value for both tests was zero percent effluent ($p=.05$). The 48-hour LC_{50} value for both tests was 5.6 percent.

Table 1: Results of the 48-hour Acute Definitive Toxicity Tests

| Percent Effluent | Percent Survival | |
|------------------|----------------------------|----------------------|
| | <i>Pimephales promelas</i> | <i>Daphnia pulex</i> |
| Control | 100.0 | 100.0 |
| 32.0 | 0.0 | 0.0 |
| 42.0 | 0.0 | 0.0 |
| 50.0 | 0.0 | 0.0 |
| 56.0 | 0.0 | 0.0 |
| 75.0 | 0.0 | 0.0 |
| 100.0 | 0.0 | 0.0 |

The 48-hour reference toxicant test results indicate that the test organisms were within the respective sensitivity range. The graphs of the acute reference toxicant tests can be found in Appendix D.

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4.0 Conclusions

The sample of Outfall 007 collected from El Dorado Chemical Company, El Dorado, Arkansas, on July 10, 2012, was found to be lethally toxic to the *Daphnia pulex* test organisms and the fathead minnow test organisms in the 100 percent critical dilution after 24 hours of exposure ($p=.05$). The 48-hour LC_{50} value for both tests was 5.6 percent effluent.

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Project X4801

5.0 Reference

EPA, 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. EPA-821-R-02-012, Office of Water.

APPENDIX A
CHAIN-OF-CUSTODY DOCUMENTS



Erin G Briggs <bioanalytical@wildblue.net>

Fwd: RE: storm water samples

1 message

Erin G Briggs <gingerbriggs@wildblue.net>
To: bioanalytical@wildblue.net

Thu, Aug 2, 2012 at 1:43 PM

----- Forwarded message -----

From: "Larken Pennington" <LPennington@edc-ark.com>
Date: Aug 1, 2012 2:14 PM
Subject: RE: storm water samples
To: "Erin G Briggs" <gingerbriggs@wildblue.net>

Ginger,

I found this exact email. Samples were collected on the afternoon (4:10pm and 4:20pm) of July 10. Sorry for the confusion.

Thanks,

Larken

From: Erin G Briggs [mailto:gingerbriggs@wildblue.net]
Sent: Wednesday, August 01, 2012 2:07 PM
To: Larken Pennington
Subject: Fwd: storm water samples

Found your email dated July 10. The COCs say the 9th. Please send me an email confirming date ...



Bio-Analytical Laboratories

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NELAP/LELAP 01975, ADEQ 88-0630, TCEQ T104704278

Laboratory Use Only:

| | | | | | | | | | | | | |
|--|-------------------------------|---------------------------------|----------------------------|---|------------------------------|--|--|-------------------------|----------------------|-------------------------------------|----------------------------|------------------------------|
| Company: El Dorado Chemical Company | | Phone: (870) 863-1484 | | Analysis: | | | | | | Project Number: X4801 | | |
| Address: 4500 Norwest Ave., El Dorado, AR 71731 | | Fax: (870) 863-7499 | | Chronic Ceriodaphnia Chronic minnow Acute minnow (fresh/marine) Acute Daphnia species Acute Mysid Acute Ceriodaphnia Fecal Coliform | | | | | | Temp. upon arrival: | | |
| Permit #: AR0000752/AFIN 70-00040 | | Purchase Order: | | | | | | | | | Lab Control Number: | Preservative: (below) |
| Sampler's Signature/Printed Name/Affiliation: Larken Pennington Larken Pennington EDEC | | | | | | | | | | | | |
| Date Start Date End | Time Start Time End | <input type="checkbox"/> C | <input type="checkbox"/> G | # and type of container | Sample Identification | | | | | | | |
| 7/9/12 | 4:20pm | | X | 6 half gallon | outfall 007 | | | | | CS821 | ice | |
| Relinquished by/Affiliation: Larken Pennington | | | | Date: 7/10/12 | Time: 1100 | Received by/Affiliation: Erin S. Burgo | | Date: 7/10/12 | Time: 1100 | | | |
| Relinquished by/Affiliation: | | | | Date: | Time: | Received by/Affiliation: | | Date: | Time: | | | |
| Relinquished by/Affiliation: | | | | Date: | Time: | Received by/Affiliation: | | Date: | Time: | | | |
| Method of Shipment: <input type="checkbox"/> Lab <input type="checkbox"/> Bus <input type="checkbox"/> Fed Ex <input type="checkbox"/> DHL <input type="checkbox"/> UPS <input checked="" type="checkbox"/> Client <input type="checkbox"/> Other Tracking # _____ | | | | | | | | | | | | |
| Comments: Temperature upon arrival: 1.9 Thermometer #: 29 Tech: RC Date: 7/11/12 | | | | | | | | | | | | |

APPENDIX B
RAW DATA SHEETS

BIO-ANALYTICAL LABORATORIES
ACUTE TOXICITY TEST WATER QUALITY DATA

Project# X4801

Client: EDCC/El Dorado Chemical Company

Address: 4500 Northwest Ave El Dorado AR 71731

NPDES#AR0000752 Outfall 007

Technicians: EGB/AH/LGZ/RC

Test initiated: Date 7/11/12 Time 1430

Test terminated: Date 7/13/12 Time 1240

Dissolved Oxygen Meter: Model # YSI 55D Serial #06E2089 AU

pH Meter: Model #Orion 230A+ Serial #105253

Conductivity Meter: Model # Control Co. Serial #80277924

Amperometric Titrator: Model #Fischer-Porter Serial #92W445766

Sample Information

| Sample ID# | Initial D.O. (mg/L and %) | Aerate? Minutes/Final D.O.(mg/L & %) | Total Residual Chlorine (mg/L) | Dechlorinated? Amount? | Ammonia (NH3) mg/L | Salinity | Hardness | Alkalinity | Tech |
|------------|---------------------------|--------------------------------------|--------------------------------|------------------------|--------------------|----------|------------------------|--------------|------|
| C5821 | 8.9/101.8% | 1/10 8.5/98.5% | 20.01 | NO | 6.0 | N/A | 100% 940.0 330.0 | 100% 24.0 | ahg |
| ↓ | | | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | |
| C5821 | 8.4/100.8% | No | <0.01 | | 6.0 | | | | RC |

Dilution Water Information

| Dilution Water | ID# | Initial D.O. (mg/L & %) | Aerate? Minutes/D.O. (mg/L & %) | Total Residual Chlorine (mg/L) | Ammonia (NH3) mg/L | pH | Hardness | Alkalinity | Tech |
|----------------|------|-------------------------|---------------------------------|--------------------------------|--------------------|-----|----------|------------|------|
| | | N/A | N/A | N/A | N/A | | | | |
| Soft H2O | 335D | | | | | 7.6 | 68.0 | 40.0 | AH |
| | | | | | | | | 68.0 | |

Test Species Information

| Test Species Info. | Species: <u>Daphnia</u> ID# <u>011 X3-23</u> | Species: <u>Pimephales</u> ID# <u>011 7212</u> | Species: ID#: | Species: ID#: |
|------------------------|---|---|------------------|------------------|
| Age | 24h | 9 days | | |
| Test Container Size | 30ml | 250ml | | |
| Test volume | 25ml | 200ml | | |
| Feeding: Type | VCT: Algae | Artemia | | |
| Amount | Fed 2hr prior to test initiation | | | |
| Aeration? | NA | NA | | |
| Amount | | | | |
| Condition of survivors | Good AH | Good ahg | | |

Comments: 7/13/12 7/13/12

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X4801

Test started: Date 7/11/12

Time 1440

client El Dorado Chemical

Test ended: Date 7/13/12

Time 1240

Sample Description DD7

Test Species D. PULEX

ID# BAL X3-23

Technician: 0hour AH 24hour RC 48hour AH 72hour 96hour

Time: 0hour 1440 24hour 1440 48hour 1240 72hour 96hour

Temperature (°C): 0hour 24.3 24hour 24.2 48hour 24.4 72hour 96hour

| Test Dilution | Replicate | Test Salinity | # Live Organisms | | | | | Dissolved Oxygen | | | | | pH | | | | | Conductivity | | | | | | |
|--|-----------|---------------|------------------|----|----|----|----|------------------|-----|-----|----|----|-------|-----|-----|----|----|--------------|------|------|-----|----|--|--|
| | | | 0 hr | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 | | |
| 0 | A | NA | 8 | 8 | 8 | | | 8.0 | 8.1 | 8.2 | | | 7.7 | 8.6 | 7.8 | | | 1834 | 259 | 1866 | 224 | | | |
| | B | | 8 | 8 | 8 | | | | | | | | | | | | | | | | | | | |
| | C | | 8 | 8 | 8 | | | | | | | | | | | | | | | | | | | |
| | D | | 8 | 8 | 8 | | | | | | | | | | | | | | | | | | | |
| | E | | 8 | 8 | 8 | | | | | | | | | | | | | | | | | | | |
| 32 | A | | 8 | 0 | | | | 8.1 | 8.1 | 8.2 | | | 7.0 | 6.6 | 7.0 | | | 3700 | 3480 | 3700 | | | | |
| | B | | 8 | 0 | | | | | | | | | | | | | | | | | | | | |
| | C | | 8 | 0 | | | | | | | | | | | | | | | | | | | | |
| | D | | 8 | 0 | | | | | | | | | | | | | | | | | | | | |
| | E | | 8 | 0 | | | | | | | | | | | | | | | | | | | | |
| Chemistry Tech prerenewal/postrenewal | | | | | | | | AH/RC | | | | | AH/RC | | | | | AH/RC | | | | | | |

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X4801

Test started: Date 7/11/12 Time 1440

Client El Dorado Chemical

Test ended: Date 7/13/12 Time 1240

Sample Description 007

Test Species D. PULEX ID# BAL X3-23

Technician: Ohour PH 24hour RC 48hour PH 72hour 96hour

Time: Ohour 1440 24hour 1440 48hour 1240 72hour 96hour

Temperature (°C): Ohour 24.3 24hour 24.2 48hour 24.4 72hour 96hour

| Test Dilution | Replicate | Test Salinity | # Live Organisms | | | | | Dissolved Oxygen | | | | | pH | | | | | Conductivity | | | | | | | | | | | | |
|--|-----------|---------------|------------------|----|----|----|----|---------------------|-----------------------|---------------------|----|----|----|----|---------------------|-----------------------|---------------------|--------------|----|----|----|----|---------------------|-------------------------|---------------------|--|--|--|--|--|
| | | | 0 hr | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 | | | | | | | | |
| 42 | A | NA | 8 | 0 | | | | 8.2 | 8.0 8.3 | — | | | | | 7.0 | 6.5 7.0 | — | | | | | | 4810 | 4560 4800 | — | | | | | |
| | B | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | C | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | D | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | E | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | A | | 8 | 0 | | | | 8.2 | 8.0 8.4 | — | | | | | 6.9 | 6.5 6.9 | — | | | | | | 5570 | 5290 5600 | — | | | | | |
| | B | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | C | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | D | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | E | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chemistry Tech prerenewal/postrenewal | | | | | | | | PH RC | | PH RC | | | | | PH RC | | PH RC | | | | | | PH RC | | PH RC | | | | | |

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X4801

Test started: Date 7/11/12

Time 1440

Client El Dorado Chemical

Test ended: Date 7/13/12

Time 240

Sample Description 007

Test Species D. PULEX

ID# BALX3-23

Technician: 0hour AH 24hour RC 48hour AH 72hour 96hour

Time: 0hour 1440 24hour 1440 48hour 1240 72hour 96hour

Temperature (°C): 0hour 24.3 24hour 24.2 48hour 24.4 72hour 96hour

| Test Dilution | Replicate | Test Salinity | # Live Organisms | | | | | Dissolved Oxygen | | | | | pH | | | | | Conductivity | | | | | | | |
|--|-----------|---------------|------------------|----|----|----|----|------------------|-----------------------|------------|----|----|----|----|-----|-----------------------|-----------|--------------|----|----|----|----|-----------|-----------------------|---|
| | | | 0 hr | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 | | | |
| 56 | A | NA | 8 | 0 | | | | 8.2 | 7.9 8.4 | — | | | | | 6.9 | 6.5 6.7 | — | | | | | | 6.2 | 5.9 6.2 | — |
| | B | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | |
| | C | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | |
| | D | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | |
| | E | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | |
| 75 | A | | 8 | 0 | | | | 8.3 | 7.9 8.3 | — | | | | | 6.8 | 6.4 6.8 | — | | | | | | 7.0 | 6.5 6.8 | — |
| | B | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | |
| | C | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | |
| | D | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | |
| | E | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | |
| Chemistry Tech prerenewal/postrenewal | | | | | | | | | <u>RC</u> | <u>PTA</u> | | | | | | <u>RC</u> | <u>AA</u> | | | | | | <u>RC</u> | <u>AA</u> | |

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X4801

Test started: Date 7/11/12 Time 1440

Client El Dorado Chemical

Test ended: Date 7/13/12 Time 1240

Sample Description 007

Test Species D. PULEX ID# BAL X3-23

Technician: Ohour AH 24hour RC 48hour AH 72hour _____ 96hour _____

Time: Ohour 1440 24hour 1440 48hour 1240 72hour _____ 96hour _____

Temperature (°C): Ohour 24.3 24hour 24.2 48hour 24.4 72hour _____ 96hour _____

| Test Dilution | Replicate | Test Salinity | # Live Organisms | | | | | Dissolved Oxygen | | | | | pH | | | | | Conductivity | | | | | | | |
|--|--------------|---------------|------------------|----|----|----|----|------------------|-----------------------|----|----|----|----|----|-----|-----------------------|----|--------------|----|----|----|----|-------|---------------------------|---|
| | | | 0 hr | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 | | | |
| 100 | A | NA | 8 | 0 | | | | 8.4 | 1.9 8.3 | - | | | | | 6.8 | 6.2 6.7 | - | | | | | | 10310 | 10056 10632 | - |
| | B | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | |
| | C | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | |
| | D | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | |
| | E | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | |
| | A | | 8 | | | | | | | | | | | | | | | | | | | | | | |
| | B | | 8 | | | | | | | | | | | | | | | | | | | | | | |
| | C | | 8 | | | | | | | | | | | | | | | | | | | | | | |
| | D | | 8 | | | | | | | | | | | | | | | | | | | | | | |
| | E | | 8 | | | | | | | | | | | | | | | | | | | | | | |
| Chemistry Tech prerenewal/postrenewal | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |

ACUTE2 020809 Rev.

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X4801

Test started: Date 7/11/12 Time 1430

Client El Dorado Chemical

Test ended: Date 7/13/12 Time 1830

Sample Description 007

Test Species P. promelas ID# BA1/7212

Technician: 0hour SLM 24hour SLM 48hour SLM 72hour SLM 96hour SLM

Time: 0hour 1430 24hour 1335 48hour 1030 72hour SLM 96hour SLM

Temperature (°C): 0hour 24.6 24hour 24.4 48hour 24.3 72hour SLM 96hour SLM

| Test Dilution | Replicate | Test Salinity | # Live Organisms | | | | | Dissolved Oxygen | | | | | pH | | | | | Conductivity | | | | |
|--|-----------|---------------|------------------|----|----|----|----|------------------|-----|-----|----|----|-----|-----|-----|----|----|--------------|------|------|------|----|
| | | | 0 hr | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 |
| 0 | A | NA | 8 | 8 | 8 | | | 8.0 | 7.8 | 7.9 | | | 7.7 | 7.8 | 7.7 | | | 1834 | 1840 | 1840 | 1805 | |
| | B | | 8 | 8 | 8 | | | | | | | | | | | | | | | | | |
| | C | | 8 | 8 | 8 | | | | | | | | | | | | | | | | | |
| | D | | 8 | 8 | 8 | | | | | | | | | | | | | | | | | |
| | E | | 8 | 8 | 8 | | | | | | | | | | | | | | | | | |
| 32 | A | | 8 | 0 | | | | 8.1 | 7.5 | 7.0 | | | 7.0 | 6.9 | 7.0 | | | 3700 | 3700 | 3700 | 3700 | |
| | B | | 8 | 0 | | | | | | | | | | | | | | | | | | |
| | C | | 8 | 0 | | | | | | | | | | | | | | | | | | |
| | D | | 8 | 0 | | | | | | | | | | | | | | | | | | |
| | E | | 8 | 0 | | | | | | | | | | | | | | | | | | |
| Chemistry Tech prerenewal/postrenewal | | | | | | | | | | | | | | | | | | | | | | |

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X4801

Test started: Date 7/11/12 Time 1430

Client El Dorado Chemical

Test ended: Date 7/13/12 Time 1230

Sample Description 007

Test Species P. promelas ID# SA1/1212

Technician: 0hour SLM 24hour SLM 48hour SLM 72hour SLM 96hour SLM
 Time: 0hour 1430 24hour 1325 48hour 1230 72hour SLM 96hour SLM
 Temperature (°C): 0hour 24.6 24hour 24.4 48hour 24.2 72hour SLM 96hour SLM

| Test Dilution | Replicate | Test Salinity | # Live Organisms | | | | | Dissolved Oxygen | | | | | pH | | | | | Conductivity | | | | | | | |
|--|-----------|---------------|------------------|----|----|----|----|------------------|-----------------------|----|----|----|----|-----|-----------------------|----|----|--------------|----|----|----|----|--|------|-------------------------|
| | | | 0 hr | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 | | | |
| 42 | A | NA | 8 | 0 | | | | 8.2 | 7.3 8.3 | | | | | 7.0 | 6.8 7.0 | | | | | | | | | 4810 | 4800 4860 |
| | B | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | |
| | C | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | |
| | D | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | |
| | E | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | |
| 50 | A | | 8 | 0 | | | | 8.2 | 7.2 8.4 | | | | | 6.9 | 6.7 6.9 | | | | | | | | | 5570 | 5650 5600 |
| | B | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | |
| | C | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | |
| | D | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | |
| | E | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | |
| Chemistry Tech prerenewal/postrenewal | | | | | | | | | | | | | | | | | | | | | | | | | |

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X4801

Test started: Date 7/11/12 Time 1430

Client El Dorado Chemical

Test ended: Date 7/13/12 Time 1230

Sample Description 007

Test Species P. promelas ID# BA1/7a12

Technician: 0hour 24.6 24hour 24.4 48hour 24.3 72hour 24.3 96hour 24.3

Time: 0hour 1430 24hour 1235 48hour 1230 72hour 1230 96hour 1230

Temperature (°C): 0hour 24.6 24hour 24.4 48hour 24.3 72hour 24.3 96hour 24.3

| Test Dilution | Replicate | Test Salinity | # Live Organisms | | | | | Dissolved Oxygen | | | | | pH | | | | | Conductivity | | | | |
|--|-----------|---------------|------------------|----|----|----|----|------------------|----------------|----|----|----|-----|----------------|----|----|------|-----------------|----|----|----|----|
| | | | 0 hr | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 |
| | | NA | | | | | | | | | | | | | | | | | | | | |
| 56 | A | | 8 | 0 | | | | 8.2 | 7.2 | | | | 6.9 | 6.7 | | | 6280 | 6280 | | | | |
| | B | | 8 | 0 | | | | | | | | | | | | | | | | | | |
| | C | | 8 | 0 | | | | | | | | | | | | | | | | | | |
| | D | | 8 | 0 | | | | | | | | | | | | | | | | | | |
| | E | | 8 | 0 | | | | | | | | | | | | | | | | | | |
| 75 | A | | 8 | 0 | | | | 8.3 | 7.2 | | | | 6.8 | 6.5 | | | 7910 | 8000 | | | | |
| | B | | 8 | 0 | | | | | | | | | | | | | | | | | | |
| | C | | 8 | 0 | | | | | | | | | | | | | | | | | | |
| | D | | 8 | 0 | | | | | | | | | | | | | | | | | | |
| | E | | 8 | 0 | | | | | | | | | | | | | | | | | | |
| Chemistry Tech prerenewal/postrenewal | | | | | | | | | | | | | | | | | | | | | | |

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X4801

Test started: Date 7/11/12 Time 1430

Client El Dorado Chemical

Test ended: Date 7/13/12 Time 1230

Sample Description 007

Test Species P. promelas ID# BL/7212

Technician: 0hour SLM 24hour SLM 48hour SLM 72hour _____ 96hour _____

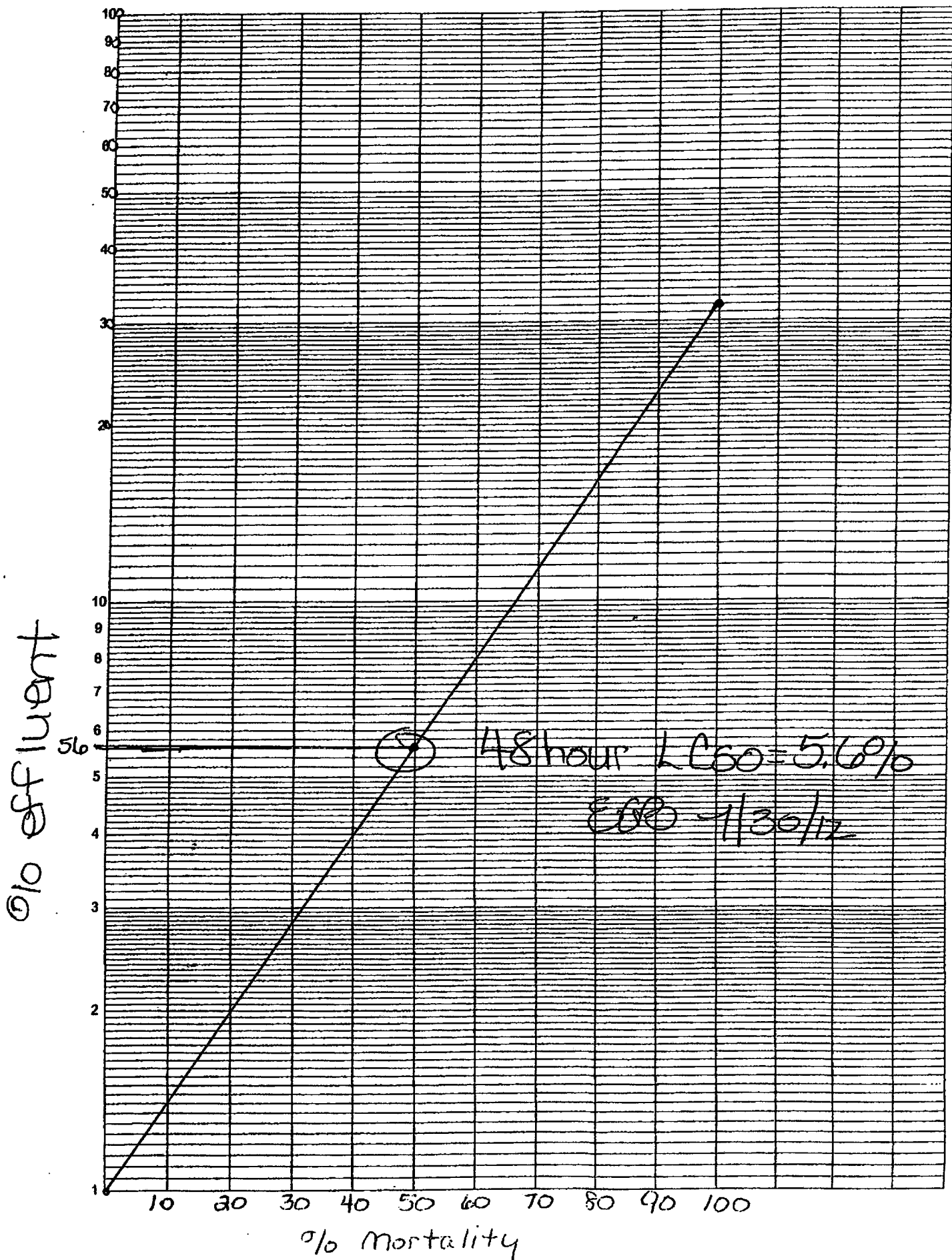
Time: 0hour 1630 24hour 1325 48hour 1230 72hour _____ 96hour _____

Temperature (°C): 0hour 24.6 24hour 24.4 48hour 24.3 72hour _____ 96hour _____

| Test Dilution | Replicate | Test Salinity | # Live Organisms | | | | | Dissolved Oxygen | | | | | pH | | | | | Conductivity | | | | | | | | | | | | | | | |
|--|--------------|---------------|------------------|----|----|----|----|------------------|-----|----|----|----|----|----|----|----|-----|--------------|----|----|----|----|--|--|-------|-------|--|--|--|--|--|--|--|
| | | | 0 hr | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 | 0 | 24 | 48 | 72 | 96 | | | | | | | | | | | |
| 100 | A | NA | 8 | 0 | | | | 84 | 7.2 | | | | | | | | 6.8 | 6.3 | | | | | | | 10310 | 10530 | | | | | | | |
| | B | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | C | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | D | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | E | | 8 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | A | | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | B | | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | C | | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | D | | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | E | | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chemistry Tech prerenewal/postrenewal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

APPENDIX C
STATISTICAL ANALYSIS

VS. 007



Daphnid Acute Test-48 Hr Survival

Start Date: 7/11/2012 Test ID: ~~X4800BP~~ X4801DP Sample ID: AR0000752 NPDES 007
 End Date: 7/13/2012 Lab ID: ADEQ880630 26 7/30 Sample Type: EFF2-Industrial
 Sample Date: 7/11/2012 Protocol: EPAAW02-EPA/821/R-02-01 Test Species: DP-Daphnia pulex

Comments:

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|--------|--------|--------|--------|--------|
| D-Control | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 32 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 42 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 50 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 56 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 75 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 100 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| Conc-% | Transform: Arcsin Square Root | | | | | | | Rank Sum | 1-Tailed Critical |
|-----------|-------------------------------|--------|--------|--------|--------|-------|---|----------|-------------------|
| | Mean | N-Mean | Mean | Min | Max | CV% | N | | |
| D-Control | 1.0000 | 1.0000 | 1.3931 | 1.3931 | 1.3931 | 0.000 | 5 | | |
| *32 | 0.0000 | 0.0000 | 0.1777 | 0.1777 | 0.1777 | 0.000 | 5 | 15.00 | 16.00 |
| *42 | 0.0000 | 0.0000 | 0.1777 | 0.1777 | 0.1777 | 0.000 | 5 | 15.00 | 16.00 |
| *50 | 0.0000 | 0.0000 | 0.1777 | 0.1777 | 0.1777 | 0.000 | 5 | 15.00 | 16.00 |
| *56 | 0.0000 | 0.0000 | 0.1777 | 0.1777 | 0.1777 | 0.000 | 5 | 15.00 | 16.00 |
| *75 | 0.0000 | 0.0000 | 0.1777 | 0.1777 | 0.1777 | 0.000 | 5 | 15.00 | 16.00 |
| *100 | 0.0000 | 0.0000 | 0.1777 | 0.1777 | 0.1777 | 0.000 | 5 | 15.00 | 16.00 |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt |
|--|-------------|-------------|------------|-----------|
| Shapiro-Wilk's Test indicates normal distribution (p > 0.05) | 1 | 0.934 | | |
| Equality of variance cannot be confirmed | | | | |
| Hypothesis Test (1-tail, 0.05) | NOEC | LOEC | ChV | TU |
| Steel's Many-One Rank Test | <32 | 32 | | |
| Treatments vs D-Control | | | | |

Acute Fish Test-48 Hr Survival

Start Date: 7/11/2012 Test ID: ~~X4800DP~~ X4801PP Sample ID: AR0000752 NPDES 007
 End Date: 7/13/2012 Lab ID: ADEQ880630 ~~208~~ 7/30 Sample Type: EFF2-Industrial
 Sample Date: 7/11/2012 Protocol: EPAAW02-EPA/821/R-02-01 Test Species: PP-Pimephales promelas
 Comments:

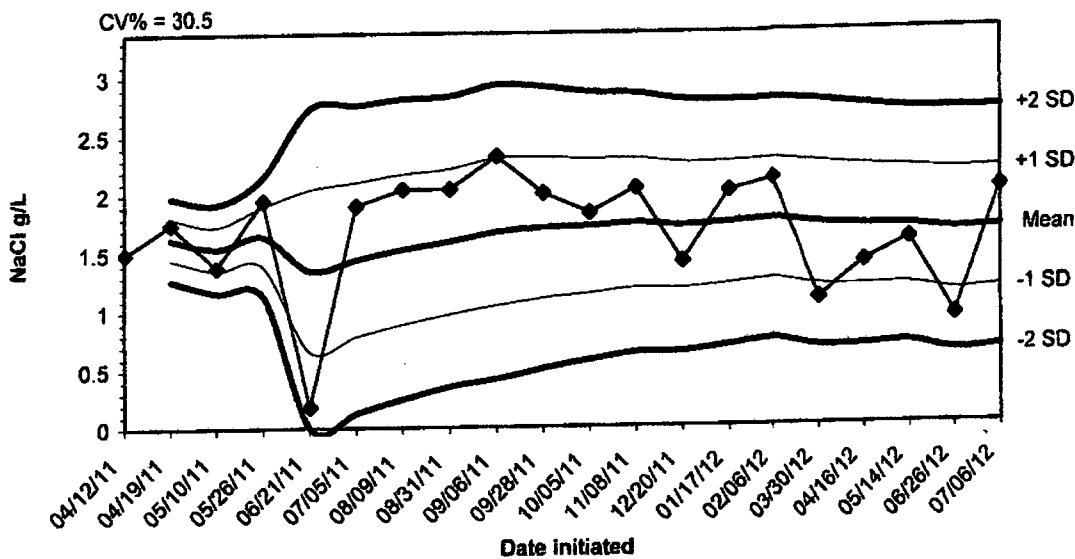
| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|--------|--------|--------|--------|--------|
| D-Control | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 32 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 42 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 50 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 56 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 75 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 100 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | | Rank Sum | 1-Tailed Critical |
|-----------|--------|--------|-------------------------------|--------|--------|-------|---|----------|-------------------|
| | | | Mean | Min | Max | CV% | N | | |
| D-Control | 1.0000 | 1.0000 | 1.3931 | 1.3931 | 1.3931 | 0.000 | 5 | | |
| *32 | 0.0000 | 0.0000 | 0.1777 | 0.1777 | 0.1777 | 0.000 | 5 | 15.00 | 16.00 |
| *42 | 0.0000 | 0.0000 | 0.1777 | 0.1777 | 0.1777 | 0.000 | 5 | 15.00 | 16.00 |
| *50 | 0.0000 | 0.0000 | 0.1777 | 0.1777 | 0.1777 | 0.000 | 5 | 15.00 | 16.00 |
| *56 | 0.0000 | 0.0000 | 0.1777 | 0.1777 | 0.1777 | 0.000 | 5 | 15.00 | 16.00 |
| *75 | 0.0000 | 0.0000 | 0.1777 | 0.1777 | 0.1777 | 0.000 | 5 | 15.00 | 16.00 |
| *100 | 0.0000 | 0.0000 | 0.1777 | 0.1777 | 0.1777 | 0.000 | 5 | 15.00 | 16.00 |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt |
|--|-------------|-------------|------------|-----------|
| Shapiro-Wilk's Test indicates normal distribution (p > 0.05) | 1 | 0.934 | | |
| Equality of variance cannot be confirmed | | | | |
| Hypothesis Test (1-tail, 0.05) | NOEC | LOEC | ChV | TU |
| Steel's Many-One Rank Test | <32 | 32 | | |
| Treatments vs D-Control | | | | |

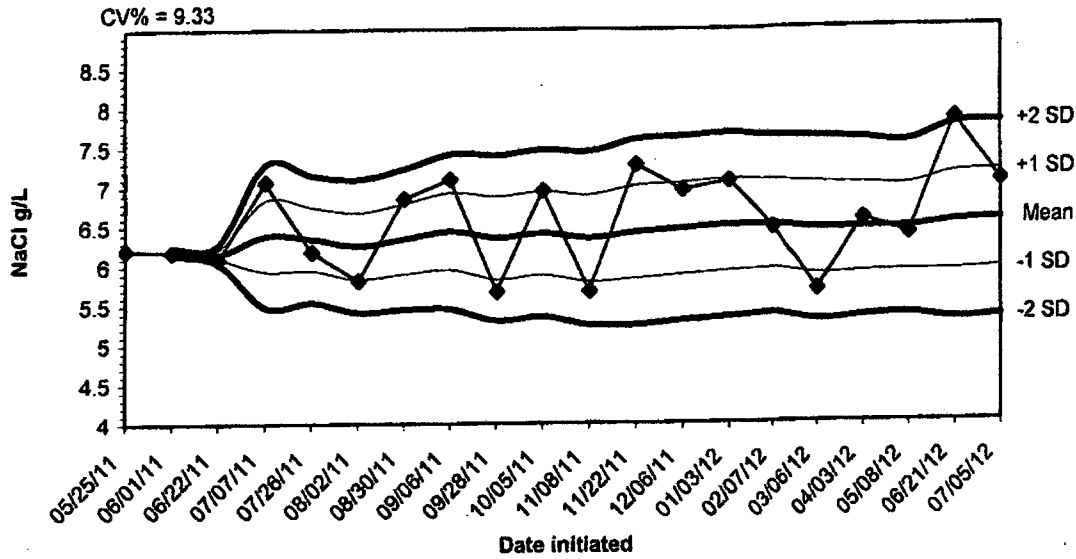
APPENDIX D
QUALITY ASSURANCE CHARTS

2012 48-hour Reference Toxicant Test Results for *Daphnia pulex*



| Dates | Values | Mean | -1 SD | -2 SD | +1 SD | +2 SD |
|----------|--------|--------|--------|--------|--------|--------|
| 04/12/11 | 1.5000 | | | | | |
| 04/19/11 | 1.7500 | 1.6250 | 1.4482 | 1.2714 | 1.8018 | 1.9786 |
| 05/10/11 | 1.3800 | 1.5433 | 1.3546 | 1.1658 | 1.7321 | 1.9209 |
| 05/26/11 | 1.9500 | 1.6450 | 1.3899 | 1.1347 | 1.9001 | 2.1553 |
| 06/21/11 | 0.1800 | 1.3520 | 0.6606 | 0.0000 | 2.0434 | 2.7349 |
| 07/05/11 | 1.9000 | 1.4433 | 0.7857 | 0.1280 | 2.1010 | 2.7586 |
| 08/09/11 | 2.0400 | 1.5286 | 0.8873 | 0.2459 | 2.1699 | 2.8112 |
| 08/31/11 | 2.0400 | 1.5925 | 0.9718 | 0.3512 | 2.2132 | 2.8338 |
| 09/06/11 | 2.3200 | 1.6733 | 1.0441 | 0.4150 | 2.3025 | 2.9317 |
| 09/28/11 | 2.0000 | 1.7060 | 1.1039 | 0.5017 | 2.3081 | 2.9103 |
| 10/05/11 | 1.8300 | 1.7173 | 1.1448 | 0.5724 | 2.2897 | 2.8622 |
| 11/08/11 | 2.0400 | 1.7442 | 1.1905 | 0.6368 | 2.2979 | 2.8516 |
| 12/20/11 | 1.4100 | 1.7185 | 1.1803 | 0.6421 | 2.2566 | 2.7948 |
| 01/17/12 | 2.0100 | 1.7393 | 1.2164 | 0.6935 | 2.2622 | 2.7851 |
| 02/06/12 | 2.1100 | 1.7640 | 1.2511 | 0.7382 | 2.2769 | 2.7898 |
| 03/30/12 | 1.0800 | 1.7213 | 1.1971 | 0.6729 | 2.2454 | 2.7696 |
| 04/16/12 | 1.3900 | 1.7018 | 1.1879 | 0.6741 | 2.2156 | 2.7295 |
| 05/14/12 | 1.5800 | 1.6950 | 1.1957 | 0.6963 | 2.1943 | 2.6937 |
| 06/26/12 | 0.9200 | 1.6542 | 1.1374 | 0.6208 | 2.1710 | 2.6878 |
| 07/06/12 | 2.0100 | 1.6720 | 1.1627 | 0.6534 | 2.1813 | 2.6906 |

2012 48-hour Reference Toxicant Test Results for *Pimephales promelas*



| Dates | Values | Mean | -1 SD | -2 SD | +1 SD | +2 SD |
|----------|--------|--------|--------|--------|--------|--------|
| 05/25/11 | 6.2100 | | | | | |
| 06/01/11 | 6.1800 | 6.1950 | 6.1738 | 6.1526 | 6.2162 | 6.2374 |
| 06/22/11 | 6.0900 | 6.1600 | 6.0976 | 6.0351 | 6.2224 | 6.2849 |
| 07/07/11 | 7.0600 | 6.3850 | 5.9321 | 5.4792 | 6.8379 | 7.2908 |
| 07/26/11 | 6.1800 | 6.3440 | 5.9412 | 5.5384 | 6.7468 | 7.1496 |
| 08/02/11 | 5.8100 | 6.2550 | 5.8339 | 5.4128 | 6.6761 | 7.0972 |
| 08/30/11 | 6.8500 | 6.3400 | 5.8947 | 5.4493 | 6.7853 | 7.2307 |
| 09/06/11 | 7.0900 | 6.4338 | 5.9435 | 5.4533 | 6.9240 | 7.4142 |
| 09/28/11 | 5.6700 | 6.3489 | 5.8244 | 5.2999 | 6.8734 | 7.3979 |
| 10/05/11 | 6.9500 | 6.4090 | 5.8792 | 5.3495 | 6.9388 | 7.4685 |
| 11/08/11 | 5.6700 | 6.3418 | 5.7921 | 5.2423 | 6.8916 | 7.4413 |
| 11/22/11 | 7.2700 | 6.4192 | 5.8305 | 5.2418 | 7.0079 | 7.5965 |
| 12/06/11 | 6.9500 | 6.4600 | 5.8775 | 5.2949 | 7.0425 | 7.6251 |
| 01/03/12 | 7.0600 | 6.5029 | 5.9207 | 5.3385 | 7.0851 | 7.6673 |
| 02/07/12 | 6.4600 | 6.5000 | 5.9389 | 5.3777 | 7.0611 | 7.6223 |
| 03/06/12 | 5.6700 | 6.4481 | 5.8677 | 5.2872 | 7.0286 | 7.6090 |
| 04/03/12 | 6.5600 | 6.4547 | 5.8920 | 5.3293 | 7.0174 | 7.5801 |
| 05/08/12 | 6.3700 | 6.4500 | 5.9038 | 5.3575 | 6.9962 | 7.5425 |
| 06/21/12 | 7.8200 | 6.5221 | 5.9052 | 5.2883 | 7.1390 | 7.7560 |
| 07/05/12 | 7.0300 | 6.5475 | 5.9364 | 5.3253 | 7.1586 | 7.7697 |

APPENDIX E
AGENCY FORMS

Acute Forms
Daphnia pulex Survival

Permittee: El Dorado Chemical - Outfall 007

NPDES Permit Number: AR0000752

Composite Collected From: 7/10/12

To: 7/10/12
To:

Test Initiated: 7/11/12

Dilution Water Used: Receiving Water X Reconstituted Water

Dilution Series Results - Percent Survival

| TIME OF READING | REP | 0 | 32 | 42 | 50 | 56 | 75 | 100 |
|-----------------|------|-----|----|----|----|----|----|-----|
| 24-hour | A | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| | B | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| | C | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| | D | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| | E | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| 48-hour | A | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| | B | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| | C | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| | D | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| | E | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Mean | 100 | 0 | 0 | 0 | 0 | 0 | 0 |

1. Dunnett's Procedure or Steel's Many-One Rank Test as appropriate: Is the mean survival at 48 hours significantly different (p=.05) than the control survival for the % effluent corresponding to:

- a.) LOW FLOW OR CRITICAL DILUTION (100%) YES X NO
 b.) 1/2 LOW FLOW OR 2X CRITICAL DILUTION (N/A%) YES NO

2. Enter percent effluent corresponding to the LC₅₀ below:

LC₅₀ = 5.6% effluent

95 % confidence limits: N/A

Method of LC₅₀ calculation: Graphical

3. If you answered NO to 1.a) enter (P) otherwise enter (F): F

4. Enter response to item 3 on DMR Form, parameter TEM3D

5. If you answered NO to 1.b) enter (P) otherwise enter (F): N/A

6. Enter response to item 5 on DMR Form, parameter TFM3D

**Biomonitoring
Daphnia 48 hour Acute Static Renewal
Chemical Parameters Chart***

Permittee: El Dorado Chemical - Outfall 007

NPDES Number: AR0000752

Contact: Larken Pennington

Analyst: Haughton, Callahan

Sample Collected

From:

Date 7/10/12

Time 1620

To:

Date 7/10/12

Time 1620

Test Begin

Date 7/11/12

Time 1440

Test End

Date 7/13/12

Time 1240

| Parameter | D.O | | | Temperature | | | Alkalinity | | | Hardness | | | pH | | | |
|-----------|-------------|------|-------|-------------|------|-------|------------|------|-------|----------|-------|-------|-------|------|-------|-------|
| | Dilut./Time | 0hrs | 24hrs | 48hrs | 0hrs | 24hrs | 48hrs | 0hrs | 24hrs | 48hrs | 0hrs | 24hrs | 48hrs | 0hrs | 24hrs | 48hrs |
| 0 | | 8.0 | 8.2 | 8.2 | 24.3 | 24.2 | 24.4 | 40.0 | | | 68.0 | | | 7.7 | 7.6 | 7.8 |
| 32 | | 8.1 | 8.1 | | 24.3 | 24.2 | | | | | | | | 7.0 | 6.6 | |
| 42 | | 8.2 | 8.0 | | 24.3 | 24.2 | | | | | | | | 6.9 | 6.5 | |
| 50 | | 8.2 | 8.0 | | 24.3 | 24.2 | | | | | | | | 6.9 | 6.5 | |
| 56 | | 8.2 | 7.9 | | 24.3 | 24.2 | | | | | | | | 6.9 | 6.5 | |
| 75 | | 8.3 | 7.9 | | 24.3 | 24.2 | | | | | | | | 6.8 | 6.4 | |
| 100 | | 8.4 | 7.8 | | 24.3 | 24.2 | | 24.0 | | | 940.0 | | | 6.8 | 6.2 | |

*This Form is to be submitted with each DMR.

Alkalinity and hardness to be reported as mg/l CaCO₃

**Acute Forms
Fathead Minnow Survival**

Permittee: El Dorado Chemical - Outfall 007

NPDES Permit Number: AR0000752

Composite Collected

From: 7/10/12

To: 7/10/12

From:

To:

Test Initiated: 7/11/12

Dilution Water Used:

Receiving Water

X

Reconstituted Water

Dilution Series Results - Percent Survival

| TIME OF READING | REP | 0 | 32 | 42 | 50 | 56 | 75 | 100 |
|------------------------|-------------|----------|-----------|-----------|-----------|-----------|-----------|------------|
| 24-hour | A | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| | B | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| | C | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| | D | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| | E | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| 48-hour | A | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| | B | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| | C | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| | D | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| | E | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Mean | 100 | 0 | 0 | 0 | 0 | 0 | 0 |

1. Dunnett's Procedure or Steel's Many-One Rank Test as appropriate: Is the mean survival at 48 hours significantly different (p=.05) than the control survival for the % effluent corresponding to:

a.) **LOW FLOW OR CRITICAL DILUTION (100%)** YES X NO

b.) **½ LOW FLOW OR 2X CRITICAL DILUTION (N/A%)** YES NO

2. Enter percent effluent corresponding to the LC₅₀ below:

LC₅₀ = 5.6% effluent

95 % confidence limits: N/A

Method of LC₅₀ calculation: Graphical

3. If you answered NO to 1.a) enter (P) otherwise enter (F): F

4. Enter response to item 3 on DMR Form, parameter TEM3D

5. If you answered NO to 1.b) enter (P) otherwise enter (F): N/A

6. Enter response to item 5 on DMR Form, parameter TFM3D

**Biomonitoring
 Fathead Minnow 48 hour Acute Static Renewal
 Chemical Parameters Chart***

Permittee: El Dorado Chemical - Outfall 007

NPDES Number: AR0000752

Contact: Larken Pennington

Analyst: Haughton, Callahan

Sample Collected From: Date 7/10/12 Time 1620

To: Date 7/10/12 Time 1620

Test Begin Date 7/11/12 Time 1440

Test End Date 7/13/12 Time 1240

| Parameter | D.O | | | Temperature | | | Alkalinity | | | Hardness | | | pH | | | |
|-----------|------------|------|-------|-------------|------|-------|------------|------|-------|----------|-------|-------|-------|------|-------|-------|
| | Dilut/Time | 0hrs | 24hrs | 48hrs | 0hrs | 24hrs | 48hrs | 0hrs | 24hrs | 48hrs | 0hrs | 24hrs | 48hrs | 0hrs | 24hrs | 48hrs |
| 0 | | 8.0 | 8.2 | 7.9 | 24.6 | 24.4 | 24.3 | 40.0 | | | 68.0 | | | 7.7 | 7.6 | 7.7 |
| 32 | | 8.1 | 7.3 | | 24.6 | 24.4 | | | | | | | | 7.0 | 6.9 | |
| 42 | | 8.2 | 7.3 | | 24.6 | 24.4 | | | | | | | | 7.0 | 6.8 | |
| 50 | | 8.2 | 7.2 | | 24.6 | 24.4 | | | | | | | | 6.9 | 6.7 | |
| 56 | | 8.2 | 7.2 | | 24.6 | 24.4 | | | | | | | | 6.9 | 6.7 | |
| 75 | | 8.3 | 7.2 | | 24.6 | 24.4 | | | | | | | | 6.5 | 6.5 | |
| 100 | | 8.4 | 7.2 | | 24.6 | 24.4 | | 24.0 | | | 940.0 | | | 6.8 | 6.3 | |

*This Form is to be submitted with each DMR.

Alkalinity and hardness to be reported as mg/l CaCO₃

APPENDIX F
REPORT QUALITY ASSURANCE FORM



Bio-Analytical Laboratories

3240 Spurgin Road
Post Office Box 527
Doyline, LA 71023

(318) 745-2772
1-800-259-1246
Fax: (318) 745-2773

REPORT QUALITY ASSURANCE FORM (v. 31612)

Client: El Dorado Chemical-007

Project#: X4801

Chain of Custody Documents Checked by: AH 7/18/12
Technician/Date

Raw Data Documents Checked by: AH 7/18/12
Technician/Date

Statistical Analysis Package Checked by: EGB 4/30/12
Quality Manager/Date

Quality Control Data Checked by: EGB 8/1/12
Quality Manager/Date

Report Checked by: EGB 8/7/12
Quality Manager/Date

I certify that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. The information contained in this document, to the best of my knowledge, is true, accurate and complete.

Erin L. Baupp, BS
Quality Manager

8/7/12
Date

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Page 1 of 2

From: (870) 863-1125
Larken Pennington
EL DORADO CHEMICAL COMPANY
4500 Northwest Ave.
El Dorado, AR 71730

Origin ID: ELDA



J12201210150325

Ship Date: 26OCT12
ActWgt: 1.0 LB
CAD: 5887030/INET3300

Delivery Address Bar Code



Ref #
Invoice #
PO #
Dept #

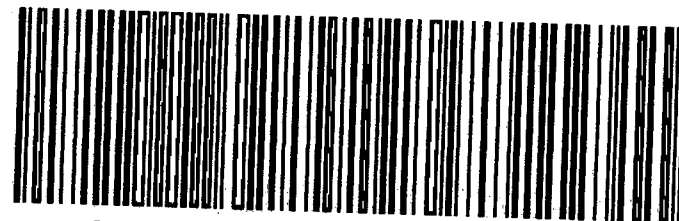
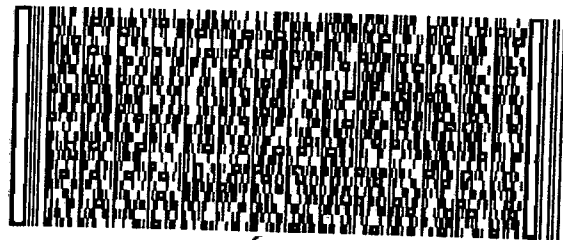
SHIP TO: (501) 682-0655
BILL SENDER
ADEQ - Water Division Enforcement
ADEQ - Water Division Enforcement
5301 NORTSHORE DR
NORTH LITTLE ROCK, AR 72118

MON - 29 OCT A4
PRIORITY OVERNIGHT

TRK# 7939 4102 3241
0201

X2 LITA

72118
AR-US
LIT



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Sender: You must seal flap before shipping.

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FZ 179 3241 10.29

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