

El Dorado Water Utilities

500 NORTH WASHINGTON □ P.O. BOX 1587 □ EL DORADO, AR 71731 (870) 862-6451

October 24, 2013

ADEQ Permits Branch, Water Division
5301 Northshore Drive
North Little Rock, AR 72118

Certified Mail
7011 0110 0000 5339 0111

Re: Permit No's AR0033723, AR0033936, and AR0049743

Dear Mrs. Bolenbaugh:

Attached are the completed Discharge Monitoring Reports for the above referenced permits covering the periods July 1, 2013 through September 30, 2013 and September 1, 2013 through September 30, 2013 and SSO Reports for the above referenced permits covering the period September 1, 2013 through September 30, 2013.

If you have any questions or comments, you can contact me at 870 862-6451.

Sincerely,



T. Harold Baker
Treatment Superintendant
El Dorado Water Utilities

Enclosures



August 5, 2013
Control No. 169134-1
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August 5, 2013

Test Results of
Third Quarter
Chronic 7-Day Renewal
Biomonitoring Testing
for
South Effluent
El Dorado, AR

Control No. 169134-1

Prepared for:

Mr. Harold Baker
El Dorado Water Utilities
Post Office Box 1587
El Dorado, AR 71731

Prepared by:

AMERICAN INTERPLEX CORPORATION
8600 Kanis Road
Little Rock, AR 72204-2322



El Dorado Water Utilities
ATTN: Mr. Harold Baker
Post Office Box 1587
El Dorado, AR 71731

Re: Chronic 7-Day Renewal utilizing *Pimephales promelas* (Fathead minnow) and *Ceriodaphnia dubia*
South Effluent - El Dorado, AR
NPDES Permit No. AR0033723 AFIN No. 70-00341

Dear Mr. Harold Baker:

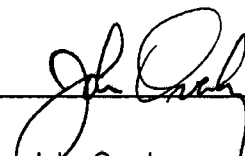
This report is the analytical results and supporting information for the samples submitted to American Interplex Corporation (AIC). The following results are applicable only to the sample identified by the control number referenced above. Accurate assessment of the data requires access to the entire document. Each section of the report has been reviewed and approved by the laboratory director or qualified designee.

Testing procedures and Quality Assurance were in accordance with "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" EPA-821-R-02-013, Fourth Edition, October 2002. Test results are summarized below:

Method 1000.0 Chronic *Pimephales promelas* (Fathead minnow) Survival and Growth Test: The No Observable Effects Concentration (NOEC) for survival occurred at 100 % effluent, which is equal to the critical dilution of 100 %. The NOEC for growth occurred at 100 % effluent, which is equal to the critical dilution of 100 %. **The sample, therefore, PASSED both lethal and sub-lethal effects for the Fathead minnow test.**

Method 1002.0 Chronic *Ceriodaphnia dubia* Survival and Reproduction Test: The No Observable Effects Concentration (NOEC) for survival occurred at 100 % effluent, which is equal to the critical dilution of 100 %. The NOEC for reproduction occurred at 100 % effluent, which is equal to the critical dilution of 100 %. **The sample, therefore, PASSED both lethal and sub-lethal effects for the *Ceriodaphnia dubia* test.**

AMERICAN INTERPLEX CORPORATION



John Overbey
Laboratory Director

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I. Control Acceptance Criteria

Pimephales promelas (Fathead minnow) Method 1000.0

CRITERIA	RESULTS	PASS/FAIL
Control Survival > or = 80%	100	PASS
Control Growth > or = 0.25 mg per Surviving minnow	0.364	PASS
Control Growth CV < or = 40%	8.40	PASS
Growth Minimum Significant Difference 12 to 30%	15.6	PASS
Critical Dilution CV < or = 40%	10.3	PASS

Ceriodaphnia dubia Method 1002.0

CRITERIA	RESULTS	PASS/FAIL
Control Survival > or = 80%	100	PASS
Control Reproduction > or = 15 per Surviving Female	24.9	PASS
Control CV < or = 40% per Surviving Female	20.4	PASS
Reproduction Minimum Significant Difference 13 to 47%	24.8	PASS
Critical Dilution CV < or = 40%	28.2	PASS

II. Outlined Report

A. Introduction

1. Permit Number: AR0033723 AFIN No. 70-00341
2. Test Requirements: Chronic Biomonitoring, Quarterly Test Methods 1000.0 and 1002.0
3. Receiving Stream: Bayou de Loutre

B. Source of Effluent/Dilution Water

1. Effluent Samples:

- a. Sampling Point: South Effluent
- b. Chemical Data:

Analysis	Sample 1	Sample 2	Sample 3
Dissolved oxygen (mg/l)	7.3	8.8	7.8
pH (standard units)	7.2	7.1	7.1
Alkalinity (mg/l as CaCO ₃)	40	37	40
Hardness (mg/l as CaCO ₃)	9.8	9.0	9.5
Conductivity (umhos/cm)	760	780	780
Residual Chlorine (mg/l)	<0.05	0.10	0.12
Ammonia as N (mg/l)	0.19	0.37	0.25

2. Dilution Water Samples: Synthetic Soft Water #4007

- a. Dates Prepared: July 11 through July 25, 2013
- b. Chemical Data:

Analysis	Sample 1	Sample 2	Sample 3
Dissolved oxygen (mg/l)	7.7	7.8	7.8
pH (standard units)	7.6	7.6	7.7
Alkalinity (mg/l as CaCO ₃)	32	32	32
Hardness (mg/l as CaCO ₃)	43	44	45
Conductivity (umhos/cm)	170	170	180
Residual Chlorine (mg/l)	<0.05	<0.05	<0.05

C. Test Methods

1. Test methods used:

Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA-821-R-02-013; test Methods 1000.0 and 1002.0, Fathead Minnow Survival and Growth and *Ceriodaphnia dubia* Survival and Reproduction.

2. Endpoint: No Observable Effects Concentration (NOEC)

3. Test Conditions:

Pimephales promelas (Fathead minnow) Survival and Growth Method 1000.0

Date & Time Test Initiated: July 23, 2013 at 1142
Date & Time Test Terminated: July 30, 2013 at 1010
Type & Volume of Test Chamber: 500 ml disposable beaker
Volume of Sample: 250 ml
Number of Organisms per replicate: 8
Number of Replicates per dilution: 5

Ceriodaphnia dubia Survival and Growth Method 1002.0

Date & Time Test Initiated: July 23, 2013 at 1410
Date & Time Test Terminated: July 31, 2013 at 1440
Type & Volume of Test Chamber: 30 ml disposable beaker
Volume of Sample: 15 ml
Number of Organisms per replicate: 1
Number of Replicates per dilution: 10

4. Acclimation of test organisms: Obtained from in-house cultures

5. Test Temperature: 25 +/- 1 degree Celsius

D. Test Organisms

1. Scientific Name

- a. Test 1000.0 *Pimephales promelas*
- b. Test 1002.0 *Ceriodaphnia dubia*

III. Data Analysis

The data was analyzed using American Interplex Corporation's Laboratory Information Management Software based on Toxstat.

Pimephales promelas (Fathead minnow) survival data was transformed using the Arc Sine transformation. Normality and homogeneity of variance were checked using Shapiro-Wilk's. The survival data was then analyzed using Steel's Many-One Rank Test to determine the No Observable Effects Concentration (NOEC).

Fathead minnow growth data was analyzed for normality and homogeneity of variance using Shapiro-Wilk's and Bartlett's test. Dunnett's Test was used to determine the No Observable Effects Concentration (NOEC) for growth.

Ceriodaphnia dubia survival data was analyzed with Fisher's Exact Test. Reproduction data was analyzed using Kolmogorov's Test for Normality and Bartlett's test and analyzed with Dunnett's Test to determine the No Observable Effects Concentration (NOEC) for Reproduction.

IV. Standard Reference Toxicants

American Interplex Corporation has an ongoing test organism culturing program. The sensitivity of the offspring is determined by performing a standard reference toxicant test with each effluent test. Sodium chloride in synthetic moderately hard water is used as prescribed in EPA-821-R-02-013.

Pimephales promelas (Fathead minnow)

Chronic reference tests are performed monthly.

A chronic reference test was performed on July 9, 2013 at 0920 to July 16, 2013 at 1045

The results were as follows: (Control No. 168661-1.)

Survival LC-50: 1505 mg/l

Growth IC-25: 2509 mg/l

Growth PMSD: 11.9

Ceriodaphnia dubia

Chronic reference tests are performed monthly.

A chronic reference test was performed on July 9, 2013 at 1340 to July 16, 2013 at 1530

The results were as follows: (Control No. 168661-2.)

Survival LC-50: 2019 mg/l

Growth IC-25: 1164 mg/l

Growth PMSD: 13

V. Chemical Analysis/Quality Control

Parameter	Method	% Recovery	Relative % Difference
Alkalinity	SM 2320 B	NA	2.86
Hardness	EPA 200.7	100	0.300
pH	SM 4500-H+ B	101	0.534
Conductivity	EPA 120.1	101	6.49

VI. Organism History

Pimephales promelas (Fathead minnow)

Date: July 23, 2013

Age: <24 hours

Source: In-house culture

Water Chemistry Record:

Alkalinity: 57-64 mg/l

Hardness: 80-100 mg/l

Temperature: 25 deg.C

Ceriodaphnia dubia

Date: July 23, 2013

Age: <24 hours

Source: In-house culture

Water Chemistry Record:

Alkalinity: 57-64 mg/l

Hardness: 80-100 mg/l

Temperature: 25 deg.C

VII. Results Summary *Pimephales promelas*, Fathead minnow Larval Survival and Growth Test -- Method 1000.0

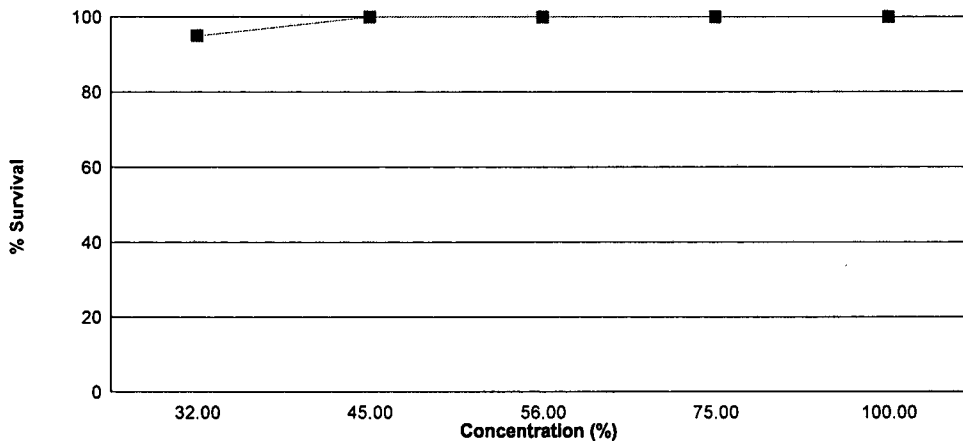
Larvae are exposed in a static renewal system for seven days to different concentrations of effluent with dilution water. Test results are based on the survival and growth (increase in weight) of the larvae.

Effluent dilutions for this test were 32 %, 45 %, 56 %, 75 %, 100 % in accordance with the NPDES permit.

The low flow or 'critical' dilution is specified in the NPDES permit as 100 % effluent.

The test was initiated on July 23, 2013 at 1142 and continued through July 30, 2013 at 1010. Statistical analyses were performed on the observed data and the no observable effects concentrations (NOECs) were as follows:

- a.) NOEC survival = 100 % effluent
- b.) NOEC growth = 100 % effluent



Summary of the 7-day Fathead Minnow Survival and Growth		
Concentration	Percent Survival	Mean Growth (mg)
Control	100	0.364
32 %	95.0	0.342
45 %	100	0.374
56 %	100	0.350
75 %	100	0.340
100 %	100	0.310

VII. Results Summary *Ceriodaphnia dubia*, Cladoceran Survival and Reproduction Test -- Method 1002.0

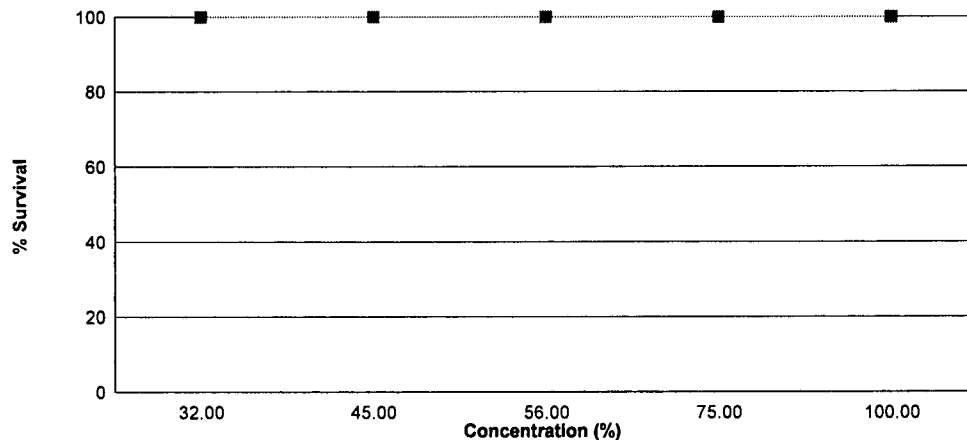
Neonates are exposed in a static renewal system to different concentrations of effluent with dilution water until 60% of surviving control organisms have three broods of offspring with an average of at least 15 young per female.

Effluent dilutions for this test were 32 %, 45 %, 56 %, 75 %, 100 % in accordance with the NPDES permit.

The low flow or 'critical' dilution is specified in the NPDES permit as 100 % effluent.

The test was initiated on July 23, 2013 at 1410 and continued through July 31, 2013 at 1440. Statistical analyses were performed on the observed data and the no observable effects concentrations (NOECs) were as follows:

- a.) NOEC survival = 100 % effluent
- b.) NOEC reproduction = 100 % effluent



Summary of the 8-day <i>Ceriodaphnia dubia</i> Survival and Reproduction Data		
Concentration	Percent Survival	Mean Reproduction
Control	100	24.9
32 %	100	29.3
45 %	100	26.9
56 %	100	26.2
75 %	100	23.9
100 %	100	22.3

Appendix A1: Test 1000.0

Pimephales promelas (Fathead Minnow) 7-Day Survival

Date and Time Test Initiated: July 23, 2013 at 1142

Date and Time Test Terminated: July 30, 2013 at 1010

Concentration Replicate		Number of Survivors						
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Control	A	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8
32 %	A	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8
	C	7	7	6	6	6	6	6
	D	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8
45 %	A	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8
56 %	A	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8
75 %	A	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8
100 %	A	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8

Appendix A1: Test 1000.0

Pimephales promelas (Fathead Minnow) 7-Day Growth

Test Initiated: July 23, 2013 at 1142
Test Terminated: July 30, 2013 at 1010

Drying Started: July 29, 2013 at 1300
Drying Ended: July 31, 2013 at 1435

Concentration	Replicate	Weight of pan	Weight of pan + fish	Total weight of fish (g)	Original # of fish	Mean dry weight (mg)
Control	A	.92127	.92379	0.00252	8	0.315
	B	.92388	.92675	0.00287	8	0.359
	C	.92501	.92795	0.00294	8	0.368
	D	.92348	.92660	0.00312	8	0.390
	E	.92272	.92583	0.00311	8	0.389
32 %	A	.92385	.92612	0.00227	8	0.284
	B	.92505	.92763	0.00258	8	0.322
	C	.92499	.92756	0.00257	8	0.321
	D	.92550	.92865	0.00315	8	0.394
	E	.92334	.92647	0.00313	8	0.391
45 %	A	.92364	.92652	0.00288	8	0.360
	B	.92436	.92736	0.00300	8	0.375
	C	.92385	.92698	0.00313	8	0.391
	D	.92333	.92610	0.00277	8	0.346
	E	.92570	.92889	0.00319	8	0.399
56 %	A	.91559	.91904	0.00345	8	0.431
	B	.91767	.92019	0.00252	8	0.315
	C	.92365	.92675	0.00310	8	0.388
	D	.92247	.92483	0.00236	8	0.295
	E	.92082	.92339	0.00257	8	0.321
75 %	A	.91966	.92207	0.00241	8	0.301
	B	.91960	.92219	0.00259	8	0.324
	C	.91872	.92158	0.00286	8	0.358
	D	.91922	.92210	0.00288	8	0.360
	E	.92021	.92306	0.00285	8	0.356
100 %	A	.91894	.92113	0.00219	8	0.274
	B	.92246	.92479	0.00233	8	0.291
	C	.92525	.92778	0.00253	8	0.316
	D	.92725	.92975	0.00250	8	0.312
	E	.93191	.93478	0.00287	8	0.359

Appendix A1: Test 1002.0

Ceriodaphnia dubia Survival and Reproduction

Date and Time Test Initiated: July 23, 2013 at 1410

Date and Time Test Terminated: July 31, 2013 at 1440

Concentration: Control														
Day	Replicate										No. of Young	No. of Adults	Young per Adult	
	1	2	3	4	5	6	7	8	9	10				
1	0	0	0	0	0	0	0	0	0	0	0	0	10	0.00
2	0	0	0	0	0	0	0	0	0	0	0	0	10	0.00
3	0	0	0	0	0	0	0	0	0	0	0	0	10	0.00
4	4	0	4	4	0	4	0	2	2	4	24	10	2.40	
5	0	3	0	0	8	0	7	0	0	0	18	10	1.80	
6	10	0	10	12	0	11	1	10	10	8	72	10	7.20	
7	10	12	0	14	14	0	11	0	0	0	61	10	6.10	
8	0	0	15	0	0	14	0	15	18	12	74	10	7.40	
TOTAL	24	15	29	30	22	29	19	27	30	24	249	10	24.9	

Concentration: 32 %													
Day	Replicate										No. of Young	No. of Adults	Young per Adult
	1	2	3	4	5	6	7	8	9	10			
1	0	0	0	0	0	0	0	0	0	0	0	10	0.00
2	0	0	0	0	0	0	0	0	0	0	0	10	0.00
3	0	0	0	0	0	0	0	0	0	0	0	10	0.00
4	2	0	3	2	0	4	0	4	3	3	21	10	2.10
5	0	7	0	0	8	0	7	0	0	0	22	10	2.20
6	10	9	10	8	8	11	12	8	11	9	96	10	9.60
7	10	1	0	0	0	0	1	0	0	2	14	10	1.40
8	0	16	14	15	16	14	21	15	15	14	140	10	14.0
TOTAL	22	33	27	25	32	29	41	27	29	28	293	10	29.3

Concentration: 45 %													
Day	Replicate										No. of Young	No. of Adults	Young per Adult
	1	2	3	4	5	6	7	8	9	10			
1	0	0	0	0	0	0	0	0	0	0	0	10	0.00
2	0	0	0	0	0	0	0	0	0	0	0	10	0.00
3	0	0	0	0	0	0	0	0	0	0	0	10	0.00
4	4	0	5	2	0	4	0	4	0	2	21	10	2.10
5	0	6	0	0	8	0	8	0	9	0	31	10	3.10
6	12	0	8	8	12	10	10	9	0	9	78	10	7.80
7	10	8	0	0	1	0	2	0	14	2	37	10	3.70
8	0	0	13	13	22	15	13	13	0	13	102	10	10.2
TOTAL	26	14	26	23	43	29	33	26	23	26	269	10	26.9

Appendix A1: Test 1002.0

Ceriodaphnia dubia Survival and Reproduction

Date and Time Test Initiated: July 23, 2013 at 1410

Date and Time Test Terminated: July 31, 2013 at 1440

Concentration: 56 %														
Day	Replicate										No. of Young	No. of Adults	Young per Adult	
	1	2	3	4	5	6	7	8	9	10				
1	0	0	0	0	0	0	0	0	0	0	0	0	10	0.00
2	0	0	0	0	0	0	0	0	0	0	0	0	10	0.00
3	0	0	0	0	0	0	0	0	0	0	0	0	10	0.00
4	4	0	4	3	0	4	0	3	3	4	25	10	2.50	
5	0	4	0	0	6	0	6	0	0	0	16	10	1.60	
6	10	10	10	10	12	8	12	7	10	7	96	10	9.60	
7	12	0	0	0	0	0	1	6	1	2	22	10	2.20	
8	0	18	14	14	12	12	12	0	10	11	103	10	10.3	
TOTAL	26	32	28	27	30	24	31	16	24	24	262	10	26.2	

Concentration: 75 %													
Day	Replicate										No. of Young	No. of Adults	Young per Adult
	1	2	3	4	5	6	7	8	9	10			
1	0	0	0	0	0	0	0	0	0	0	0	10	0.00
2	0	0	0	0	0	0	0	0	0	0	0	10	0.00
3	0	0	0	0	0	0	0	0	0	0	0	10	0.00
4	4	0	4	4	0	4	0	3	4	0	23	10	2.30
5	0	2	0	0	8	0	6	0	0	4	20	10	2.00
6	8	0	10	1	0	8	7	10	9	9	62	10	6.20
7	3	11	0	13	1	2	0	1	0	1	32	10	3.20
8	9	0	15	0	24	0	14	12	15	13	102	10	10.2
TOTAL	24	13	29	18	33	14	27	26	28	27	239	10	23.9

Concentration: 100 %													
Day	Replicate										No. of Young	No. of Adults	Young per Adult
	1	2	3	4	5	6	7	8	9	10			
1	0	0	0	0	0	0	0	0	0	0	0	10	0.00
2	0	0	0	0	0	0	0	0	0	0	0	10	0.00
3	0	0	0	0	0	0	0	0	0	0	0	10	0.00
4	4	0	0	4	0	0	0	4	0	0	12	10	1.20
5	0	6	7	0	7	0	8	0	0	6	34	10	3.40
6	9	11	0	8	0	10	0	10	4	0	52	10	5.20
7	0	0	14	0	12	2	11	2	0	9	50	10	5.00
8	13	18	0	10	0	12	0	12	10	0	75	10	7.50
TOTAL	26	35	21	22	19	24	19	28	14	15	223	10	22.3

Appendix A2: Statistics

Pimephales promelas (Fathead minnow) Survival

Transformation of Data				Transform: Arc Sin(Square Root(Y))
Group	Identification	Rep	Value	Transformed
1	Control	1	1.00000	1.39310
1	Control	2	1.00000	1.39310
1	Control	3	1.00000	1.39310
1	Control	4	1.00000	1.39310
1	Control	5	1.00000	1.39310
2	32 %	1	1.00000	1.39310
2	32 %	2	1.00000	1.39310
2	32 %	3	0.75000	1.04720
2	32 %	4	1.00000	1.39310
2	32 %	5	1.00000	1.39310
3	45 %	1	1.00000	1.39310
3	45 %	2	1.00000	1.39310
3	45 %	3	1.00000	1.39310
3	45 %	4	1.00000	1.39310
3	45 %	5	1.00000	1.39310
4	56 %	1	1.00000	1.39310
4	56 %	2	1.00000	1.39310
4	56 %	3	1.00000	1.39310
4	56 %	4	1.00000	1.39310
4	56 %	5	1.00000	1.39310
5	75 %	1	1.00000	1.39310
5	75 %	2	1.00000	1.39310
5	75 %	3	1.00000	1.39310
5	75 %	4	1.00000	1.39310
5	75 %	5	1.00000	1.39310
6	100 %	1	1.00000	1.39310
6	100 %	2	1.00000	1.39310
6	100 %	3	1.00000	1.39310
6	100 %	4	1.00000	1.39310
6	100 %	5	1.00000	1.39310

Appendix A2: Statistics

Pimephales promelas (Fathead minnow) Survival

Shapiro - Wilk's Test for Normality		Transform: Arc Sin(Square Root(Y))
D = 0.09572		
W = 0.4161		
Critical W = 0.9	(alpha = 0.01, N = 30)	
Critical W = 0.927	(alpha = 0.05, N = 30)	
Data FAIL normality test (alpha = 0.01).		

Steel's Many-One Rank Test				Transform: Arc Sin(Square Root(Y))	
Ho: Control < Treatment					
Group	Identification	Rank Sum	Critical Value	DF	Sig 0.05
1	Control				
2	32 %	25.00	16.00	5.00	
3	45 %	27.50	16.00	5.00	
4	56 %	27.50	16.00	5.00	
5	75 %	27.50	16.00	5.00	
6	100 %	27.50	16.00	5.00	
Critical values are 1 tailed (k=5)					

Appendix A2: Statistics

Pimephales promelas (Fathead minnow) Growth

Shapiro - Wilk's Test for Normality	No Transformation
<p>D = 0.0349 W = 0.9757 Critical W = 0.9 (alpha = 0.01, N = 30) Critical W = 0.927 (alpha = 0.05, N = 30)</p> <p>Data PASS normality test (alpha = 0.01).</p>	

Bartlett's Test for Homogeneity of Variance	No Transformation
<p>Calculated B1 statistic = 5.021 Critical B = 15.086 (alpha = 0.01, df = 5)</p> <p>Data PASS B1 homogeneity test at 0.01 level.</p>	

Appendix A2: Statistics

Pimephales promelas (Fathead minnow) Growth

ANOVA Table				No Transformation
SOURCE	DF	SS	MS	F
Between	5	0.01229	0.002458	1.691
Within (Error)	24	0.03489	0.001454	
Total	29	0.04718		
Critical F = 3.9 (alpha = 0.01, df = 5,24) 2.62 (alpha = 0.05, df = 5,24)				
Since F < Critical F FAIL TO REJECT Ho: All equal (alpha = 0.05)				

Dunnett's Test - Table 1 of 2					No Transformation
Ho:Control<Treatment					
Group	Identification	Transformed Mean	Mean In Original Units	T Stat	Sig 0.05
1	Control	0.3642	0.3642		
2	32 %	0.3424	0.3424	0.9039	
3	45 %	0.3742	0.3742	-0.4147	
4	56 %	0.35	0.35	0.5888	
5	75 %	0.3398	0.3398	1.012	
6	100 %	0.3104	0.3104	2.231	
Dunnett's critical value = 2.36 (1 Tailed, alpha = 0.05, df = 5,24)					

Dunnett's Test - Table 2 of 2						No Transformation
Ho:Control<Treatment						
Group	Identification	Num of Reps	Min Sig Diff (In Orig. Units)	% of Control	Difference From Control	
1	Control	5				
2	32 %	5	0.05691	15.6	0.0218	
3	45 %	5	0.05691	15.6	-0.01	
4	56 %	5	0.05691	15.6	0.0142	
5	75 %	5	0.05691	15.6	0.0244	
6	100 %	5	0.05691	15.6	0.0538	

Appendix A2: Statistics

Ceriodaphnia dubia Survival

Fisher's Exact Test			
Identification	Alive	Dead	Total Animals
Control	10	0	10
32 %	10	0	10
Total	20	0	20

Critical Fisher's value (10,10,10) ($\alpha=0.05$) is 6. b value is 10. Since b is greater than 6 there is NO SIGNIFICANT DIFFERENCE between CONTROL and TREATMENT at the 0.05 level.

Fisher's Exact Test			
Identification	Alive	Dead	Total Animals
Control	10	0	10
45 %	10	0	10
Total	20	0	20

Critical Fisher's value (10,10,10) ($\alpha=0.05$) is 6. b value is 10. Since b is greater than 6 there is NO SIGNIFICANT DIFFERENCE between CONTROL and TREATMENT at the 0.05 level.

Fisher's Exact Test			
Identification	Alive	Dead	Total Animals
Control	10	0	10
56 %	10	0	10
Total	20	0	20

Critical Fisher's value (10,10,10) ($\alpha=0.05$) is 6. b value is 10. Since b is greater than 6 there is NO SIGNIFICANT DIFFERENCE between CONTROL and TREATMENT at the 0.05 level.

Fisher's Exact Test			
Identification	Alive	Dead	Total Animals
Control	10	0	10
75 %	10	0	10
Total	20	0	20

Critical Fisher's value (10,10,10) ($\alpha=0.05$) is 6. b value is 10. Since b is greater than 6 there is NO SIGNIFICANT DIFFERENCE between CONTROL and TREATMENT at the 0.05 level.

Appendix A2: Statistics

Ceriodaphnia dubia Survival

Fisher's Exact Test			
Identification	Alive	Dead	Total Animals
Control	10	0	10
100 %	10	0	10
Total	20	0	20

Critical Fisher's value (10,10,10) (alpha=0.05) is 6. b value is 10. Since b is greater than 6 there is NO SIGNIFICANT DIFFERENCE between CONTROL and TREATMENT at the 0.05 level.

Summary of Fisher's Exact Test				
Group	Identification	Exposed	Dead	Sig 0.05
0	Control	10	0	
1	32 %	10	0	
2	45 %	10	0	
3	56 %	10	0	
4	75 %	10	0	
5	100 %	10	0	

Appendix A2: Statistics

Ceriodaphnia dubia Reproduction

Kolmogorov Test for Normality	No Transformation
<p>D = 0.0779 D* = 0.6112 Critical D* = 1.035 (alpha = 0.01, N = 60)</p> <p>Data PASS normality test (alpha = 0.01).</p>	

Bartlett's Test for Homogeneity of Variance	No Transformation
<p>Calculated B1 statistic = 2.926 Critical B = 15.086 (alpha = 0.01, df = 5)</p> <p>Data PASS B1 homogeneity test at 0.01 level.</p>	

Appendix A2: Statistics

Ceriodaphnia dubia Reproduction

ANOVA Table				No Transformation
SOURCE	DF	SS	MS	F
Between	5	300.1	60.02	1.682
Within (Error)	54	1927	35.69	
Total	59	2227		
Critical F = 3.38 (alpha = 0.01, df = 5,54) 2.38 (alpha = 0.05, df = 5,54)				
Since F < Critical F FAIL TO REJECT Ho: All equal (alpha = 0.05)				

Dunnett's Test - Table 1 of 2					No Transformation
Ho:Control<Treatment					
Group	Identification	Transformed Mean	Mean In Original Units	T Stat	Sig 0.05
1	Control	24.9	24.9		
2	32 %	29.3	29.3	-1.647	
3	45 %	26.9	26.9	-0.7486	
4	56 %	26.2	26.2	-0.4866	
5	75 %	23.9	23.9	0.3743	
6	100 %	22.3	22.3	0.9732	
Dunnett's critical value = 2.31 (1 Tailed, alpha = 0.05, df [used] = 5,40) (Actual df = 5,54)					

Dunnett's Test - Table 2 of 2					No Transformation
Ho:Control<Treatment					
Group	Identification	Num of Reps	Min Sig Diff (In Orig. Units)	% of Control	Difference From Control
1	Control	10			
2	32 %	10	6.172	24.8	-4.4
3	45 %	10	6.172	24.8	-2
4	56 %	10	6.172	24.8	-1.3
5	75 %	10	6.172	24.8	1
6	100 %	10	6.172	24.8	2.6

Appendix A3: Water Chemistry

Routine Chemical and Physical Data

Date and Time Test Initiated: July 23, 2013 at 0914

Date and Time Test Terminated: July 31, 2013 at 1440

Effluent Conc.: Control	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	
DO, mg/l	Initial	7.7	7.7	7.8	7.4	7.8	8.0	8.0
	Final *1	7.0	7.0	7.4	7.2	7.8	7.6	7.2
	Final *2	7.8	8.2	8.1	8.1	8.1	7.6	7.7
pH, units	Initial	7.6	7.7	7.6	7.6	7.7	7.6	7.7
	Final *1	7.6	7.5	7.6	7.4	8.0	7.6	7.5
	Final *2	8.0	8.1	7.9	8.0	8.0	7.8	7.8
Alkalinity, mg CaCO ₃ /l	32	NA	32	NA	32	NA	NA	
Hardness, mg CaCO ₃ /l	43	NA	44	NA	45	NA	NA	
Conductivity, umhos/cm	170	170	170	170	180	170	180	
Res. Chlorine, mg/l	<0.05	NA	<0.05	NA	<0.05	NA	NA	

Effluent Conc.: 32 %	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	
DO, mg/l	Initial	7.5	7.7	8.1	7.6	7.6	7.8	7.8
	Final *1	7.1	7.0	7.5	7.2	7.7	7.7	7.3
	Final *2	7.6	8.2	7.9	8.1	8.3	7.6	7.6
pH, units	Initial	7.4	7.7	7.2	7.4	7.4	7.7	7.7
	Final *1	7.7	7.5	7.6	7.4	8.1	7.7	7.6
	Final *2	8.0	8.0	8.0	8.0	8.0	7.8	7.6

Effluent Conc.: 45 %	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	
DO, mg/l	Initial	7.7	7.7	8.1	7.7	7.7	7.7	7.8
	Final *1	7.2	7.2	7.4	7.0	7.7	7.4	7.2
	Final *2	7.7	7.9	8.0	8.3	8.4	7.6	7.8
pH, units	Initial	7.3	7.6	7.2	7.3	7.3	7.7	7.7
	Final *1	7.7	7.5	7.6	7.4	8.1	7.7	7.6
	Final *2	8.0	8.0	8.0	8.0	8.0	7.8	7.6

Appendix A3: Water Chemistry

Routine Chemical and Physical Data

Date and Time Test Initiated: July 23, 2013 at 0914

Date and Time Test Terminated: July 31, 2013 at 1440

Effluent Conc.: 56 %		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	7.6	7.7	8.1	7.7	7.7	7.7	7.7
	Final *1	7.5	7.2	7.3	6.9	7.5	7.7	7.5
	Final *2	7.5	7.9	8.1	8.2	8.3	7.8	7.6
pH, units	Initial	7.2	7.6	7.2	7.3	7.2	7.7	7.7
	Final *1	7.8	7.4	7.6	7.4	8.1	7.8	7.6
	Final *2	8.0	8.1	8.0	8.0	8.0	7.8	7.5

Effluent Conc.: 75 %		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	8.0	7.8	8.0	7.6	7.9	7.6	7.7
	Final *1	7.3	7.3	7.1	7.3	7.8	7.6	7.2
	Final *2	7.7	8.1	8.0	8.1	8.4	7.9	7.4
pH, units	Initial	7.1	7.6	7.1	7.2	7.0	7.7	7.7
	Final *1	7.8	7.7	7.6	7.5	8.2	7.8	7.6
	Final *2	8.1	8.0	8.0	8.0	8.1	7.9	7.4

Effluent Conc.: 100 %		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	7.3	7.7	8.8	8.1	7.8	7.8	7.5
	Final *1	7.6	7.2	7.3	7.1	7.8	7.5	7.4
	Final *2	7.5	8.2	7.9	8.1	8.3		8.8
pH, units	Initial	7.2	7.4	7.1	7.0	7.1	7.8	7.8
	Final *1	7.8	7.7	7.6	7.4	8.2	7.7	7.7
	Final *2	8.1	8.2	8.1	8.1	8.1		7.2
Alkalinity, mg CaCO ₃ /l	40	NA	37	NA	40	NA	NA	NA
Hardness, mg CaCO ₃ /l	9.8	NA	9.0	NA	9.5	NA	NA	NA
Conductivity, umhos/cm	760	780	780	780	780	800	830	
Res. Chlorine, mg/l	<0.05	NA	0.10	NA	0.12	NA	NA	NA

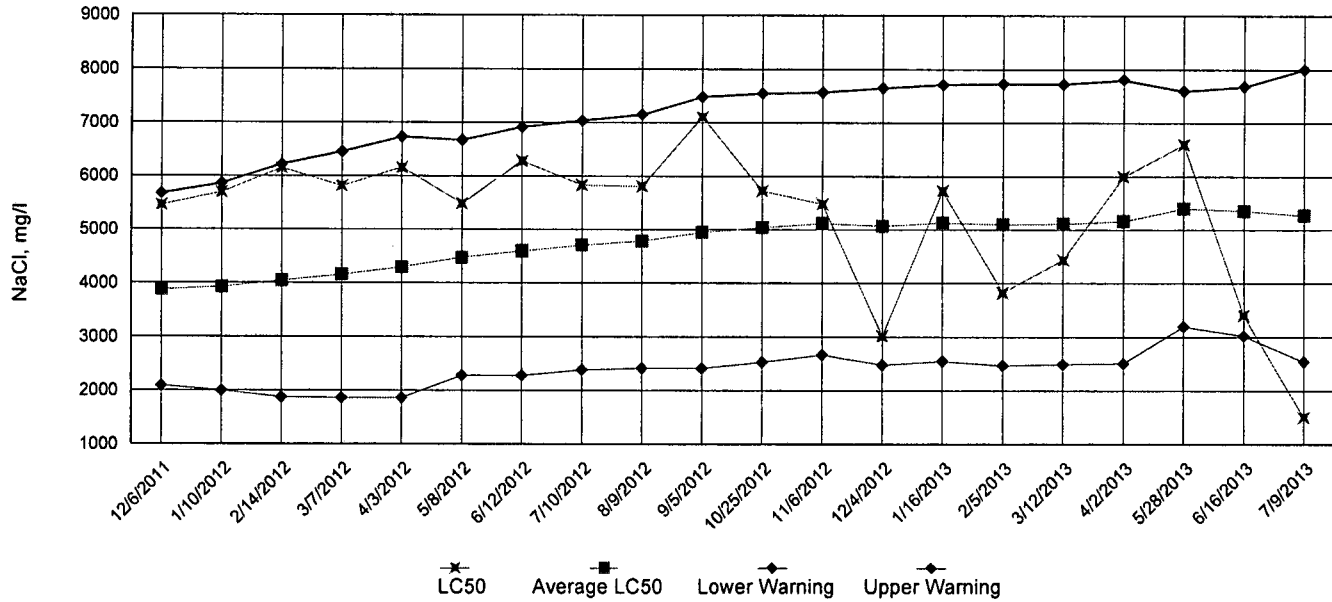
*1 = data from the *Pimephales promelas* (Fathead Minnow) test

*2 = data from the *Ceriodaphnia dubia* test

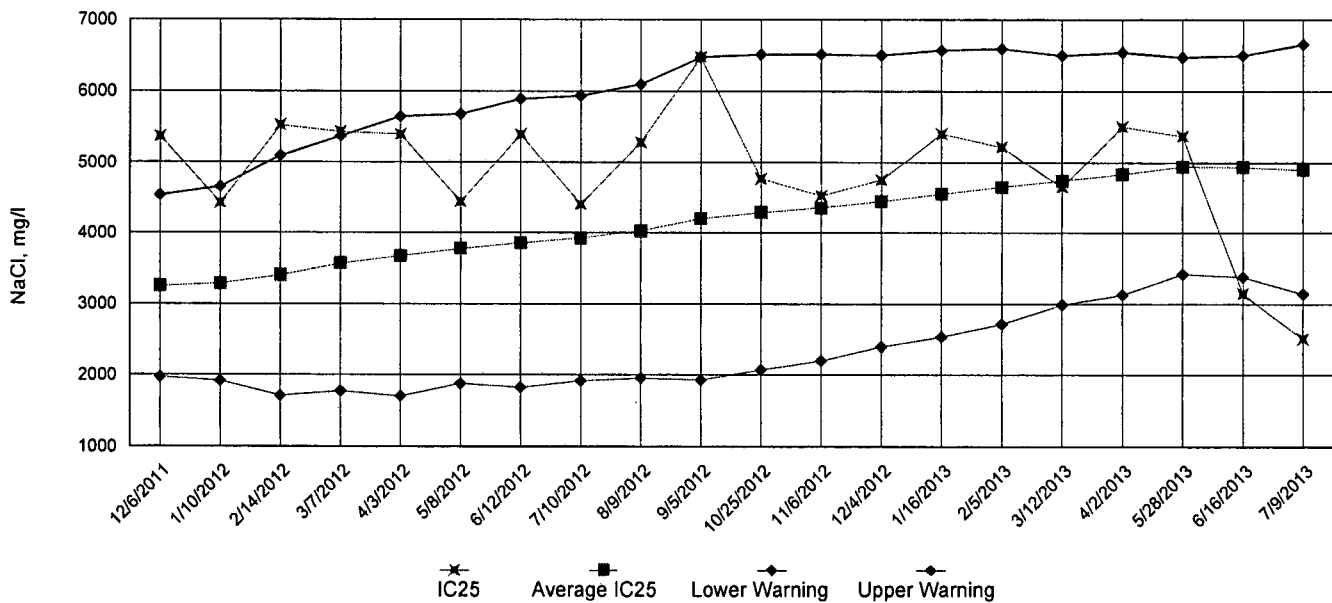
Appendix A4: Test 1000.0

Chronic Reference Toxicant, *Pimephales promelas* (Fathead Minnow)

LC50 Survival Data

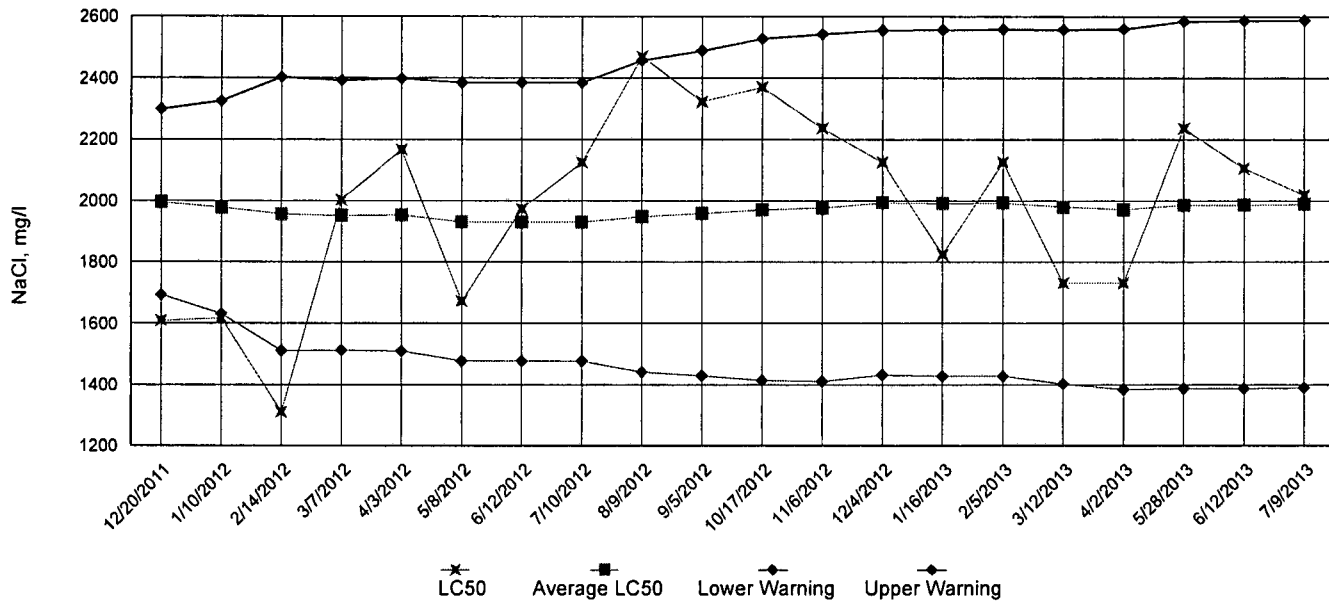


IC25 Growth Data

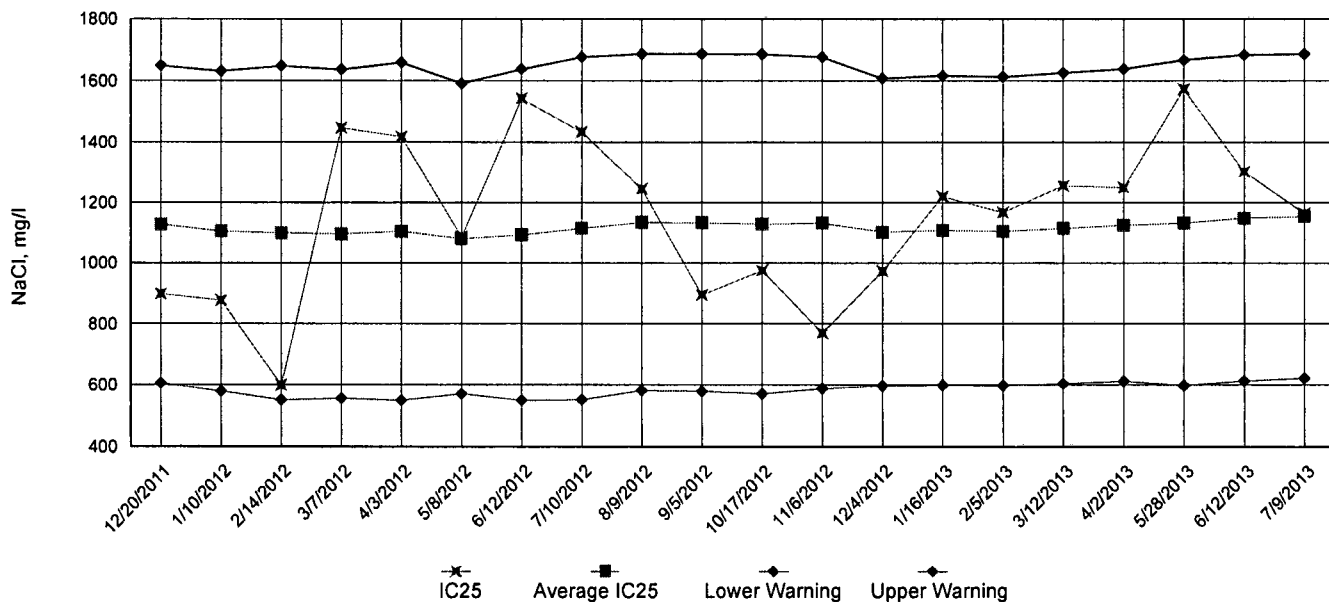


Appendix A4: Test 1002.0
Chronic Reference Toxicant, *Ceriodaphnia dubia*

LC50 Survival Data



IC25 Reproduction Data



Appendix B: Test 1000.0
SUMMARY REPORTING FORMS
CHRONIC BIOMONITORING
Pimephales promelas (Fathead Minnow)
SURVIVAL AND GROWTH

Permittee: El Dorado Water Utilities

NPDES No.: AR0033723 AFIN No. 70-00341

Date and Time Test Initiated: July 23, 2013 at 1142

Date and Time Test Terminated: July 30, 2013 at 1010

Dilution water used: Synthetic Soft Water #4007

DATA TABLE FOR SURVIVAL

Effluent Conc. %	Percent Survival in replicate chambers					Mean percent survival			CV%
	A	B	C	D	E	24 hr	48 hr	7 days	
Control	100	100	100	100	100	100	100	100	0.00
32 %	100	100	75.0	100	100	97.5	97.5	95.0	11.8
45 %	100	100	100	100	100	100	100	100	0.00
56 %	100	100	100	100	100	100	100	100	0.00
75 %	100	100	100	100	100	100	100	100	0.00
100 %	100	100	100	100	100	100	100	100	0.00

DATA TABLE FOR GROWTH

Effluent Conc. %	Average dry weight, mg replicate chambers					Mean dry weight, mg	CV%
	A	B	C	D	E		
Control	0.315	0.359	0.368	0.390	0.389	0.364	8.40
32 %	0.284	0.322	0.321	0.394	0.391	0.342	14.1
45 %	0.360	0.375	0.391	0.346	0.399	0.374	5.82
56 %	0.431	0.315	0.388	0.295	0.321	0.35	16.3
75 %	0.301	0.324	0.358	0.360	0.356	0.34	7.73
100 %	0.274	0.291	0.316	0.312	0.359	0.31	10.3

CV = Coefficient of variation = standard deviation * 100 / mean

Appendix B: Test 1000.0
SUMMARY REPORTING FORMS
CHRONIC BIOMONITORING
Pimephales promelas (Fathead Minnow)
SURVIVAL AND GROWTH

1. Steel's Many-One Rank Test:

Is the mean survival significantly different ($p=0.05$) than the control survival for the % effluent corresponding to (lethality):

a.) LOW FLOW OR CRITICAL DILUTION	(100 %)	_____ YES	<u> X </u> NO
b.) 1/2 LOW FLOW DILUTION	(NA)	_____ YES	_____ NO

2. Dunnett's Test:

Is the mean dry weight (growth) significantly different ($p=0.05$) than the control's dry weight (growth) for the % effluent corresponding to (significant non-lethal effects):

a.) LOW FLOW OR CRITICAL DILUTION	(100 %)	_____ YES	<u> X </u> NO
b.) 1/2 LOW FLOW DILUTION	(NA)	_____ YES	_____ NO

- 3. If you answered NO to 1.a) enter [0] otherwise enter [1]: 0 (TLP6C)
- 4. If you answered NO to 2.a) enter [0] otherwise enter [1]: 0 (TGP6C)
- 5. NOEC Pimephales Lethality: 100 % (TOP6C)
- 6. LOEC Pimephales Lethality: 100 % (TXP6C)
- 7. NOEC Pimephales Sublethality: 100 % (TPP6C)
- 8. LOEC Pimephales Sublethality: 100 % (TYP6C)
- 9. Coefficient of variation for Pimephales growth: 10.3 (TQP6C)

Appendix B: Test 1000.0

CHRONIC TOXICITY SUMMARY FORM
Pimephales promelas (Fathead minnow)
CHEMICAL PARAMETERS CHART

PERMITTEE: El Dorado Water Utilities
NPDES NO.: AR0033723 AFIN No. 70-00341
CONTACT: Mr. Harold Baker
ANALYST: 280, 298, 304, 307

Test Initiated: DATE: July 23, 2013 TIME: 1142
Test Terminated: DATE: July 30, 2013 TIME: 1010

DILUTION	DAY						
	1	2	3	4	5	6	7
Control							
D.O. Initial	7.7	7.7	7.8	7.4	7.8	8.0	8.0
Final	7.0	7.0	7.4	7.2	7.8	7.6	7.2
pH Initial	7.6	7.7	7.6	7.6	7.7	7.6	7.7
Final	7.6	7.5	7.6	7.4	8.0	7.6	7.5
Alkalinity	32	NA	32	NA	32	NA	NA
Hardness	43	NA	44	NA	45	NA	NA
Conductivity	170	170	170	170	180	170	180
Chlorine	<0.05	NA	<0.05	NA	<0.05	NA	NA

DILUTION	DAY						
	1	2	3	4	5	6	7
32 %							
D.O. Initial	7.5	7.7	8.1	7.6	7.6	7.8	7.8
Final	7.1	7.0	7.5	7.2	7.7	7.7	7.3
pH Initial	7.4	7.7	7.2	7.4	7.4	7.7	7.7
Final	7.7	7.5	7.6	7.4	8.1	7.7	7.6
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	360	370	370	370	380	370	390
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION	DAY						
	1	2	3	4	5	6	7
45 %							
D.O. Initial	7.7	7.7	8.1	7.7	7.7	7.7	7.8
Final	7.2	7.2	7.4	7.0	7.7	7.4	7.2
pH Initial	7.3	7.6	7.2	7.3	7.3	7.7	7.7
Final	7.7	7.5	7.6	7.4	8.1	7.7	7.6
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	440	440	450	440	460	470	490
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION	DAY						
	1	2	3	4	5	6	7
56 %							
D.O. Initial	7.6	7.7	8.1	7.7	7.7	7.7	7.7
Final	7.5	7.2	7.3	6.9	7.5	7.7	7.5
pH Initial	7.2	7.6	7.2	7.3	7.2	7.7	7.7
Final	7.8	7.4	7.6	7.4	8.1	7.8	7.6
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	500	520	520	510	520	530	550
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION	DAY						
	1	2	3	4	5	6	7
75 %							
D.O. Initial	8.0	7.8	8.0	7.6	7.9	7.6	7.7
Final	7.3	7.3	7.1	7.3	7.8	7.6	7.2
pH Initial	7.1	7.6	7.1	7.2	7.0	7.7	7.7
Final	7.8	7.7	7.6	7.5	8.2	7.8	7.6
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	620	630	640	630	630	640	660
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION	DAY						
	1	2	3	4	5	6	7
100 %							
D.O. Initial	7.3	7.7	8.8	8.1	7.8	7.8	7.5
Final	7.6	7.2	7.3	7.1	7.8	7.5	7.4
pH Initial	7.2	7.4	7.1	7.0	7.1	7.8	7.8
Final	7.8	7.7	7.6	7.4	8.2	7.7	7.7
Alkalinity	40	NA	37	NA	40	NA	NA
Hardness	9.8	NA	9.0	NA	9.5	NA	NA
Conductivity	760	780	780	780	780	800	830
Chlorine	<0.05	NA	0.10	NA	0.12	NA	NA

Appendix B: Test 1002.0
SUMMARY REPORTING FORMS
CHRONIC BIOMONITORING
Ceriodaphnia dubia
SURVIVAL AND REPRODUCTION

Permittee: El Dorado Water Utilities

NPDES No.: AR0033723 AFIN No. 70-00341

Date and Time Test Initiated: July 23, 2013 at 1410

Date and Time Test Terminated: July 31, 2013 at 1440

Dilution water used: Synthetic Soft Water #4007

PERCENT SURVIVAL

Time of Reading	Control	Percent Effluent				
		32 %	45 %	56 %	75 %	100 %
24 hour	100	100	100	100	100	100
48 hour	100	100	100	100	100	100
8 day	100	100	100	100	100	100

NUMBER OF YOUNG PRODUCED PER FEMALE @ 8 DAYS

Replicates	Control	Percent Effluent				
		32 %	45 %	56 %	75 %	100 %
A	24	22	26	26	24	26
B	15	33	14	32	13	35
C	29	27	26	28	29	21
D	30	25	23	27	18	22
E	22	32	43	30	33	19
F	29	29	29	24	14	24
G	19	41	33	31	27	19
H	27	27	26	16	26	28
I	30	29	23	24	28	14
J	24	28	26	24	27	15
Mean per Adult	24.9	29.3	26.9	26.2	23.9	22.3
Mean per Surviving Adult	24.9	29.3	26.9	26.2	23.9	22.3
CV %	20.4	17.7	27.7	17.7	27.9	28.2

CV = Coefficient of variation = standard deviation * 100 / mean
(calculated based on young produced by surviving females)

Appendix B: Test 1002.0
SUMMARY REPORTING FORMS
CHRONIC BIOMONITORING
Ceriodaphnia dubia
SURVIVAL AND REPRODUCTION

1. Fisher's Exact Test:

Is the mean survival significantly different ($p=0.05$) than the control survival for the % effluent corresponding to (lethality):

a.) LOW FLOW OR CRITICAL DILUTION	(100 %)	<u> </u> YES	<u> X </u> NO
b.) 1/2 LOW FLOW DILUTION	(NA)	<u> </u> YES	<u> </u> NO

2. Dunnett's Test:

Is the mean number of young produced per female significantly different ($p=0.05$) than the control's number of young per female for the % effluent corresponding to (significant non-lethal effects):

a.) LOW FLOW OR CRITICAL DILUTION	(100 %)	<u> </u> YES	<u> X </u> NO
b.) 1/2 LOW FLOW DILUTION	(NA)	<u> </u> YES	<u> </u> NO

- 3. If you answered NO to 1.a) enter [0] otherwise enter [1]: 0 (TLP3B)
- 4. If you answered NO to 2.a) enter [0] otherwise enter [1]: 0 (TGP3B)
- 5. NOEC Ceriodaphnia Lethality: 100 % (TOP3B)
- 6. LOEC Ceriodaphnia Lethality: 100 % (TXP3B)
- 7. NOEC Ceriodaphnia Sublethality: 100 % (TPP3B)
- 8. LOEC Ceriodaphnia Sublethality: 100 % (TYP3B)
- 9. Coefficient of variation for Ceriodaphnia Reproduction: 28.2 (TQP3B)

Appendix B: Test 1002.0
CHRONIC TOXICITY SUMMARY FORM
Ceriodaphnia dubia
CHEMICAL PARAMETERS CHART

PERMITTEE: El Dorado Water Utilities
NPDES NO.: AR0033723 AFIN No. 70-00341
CONTACT: Mr. Harold Baker
ANALYST: 280, 298, 304, 307

Test Initiated: DATE: July 23, 2013 TIME: 1410
Test Terminated: DATE: July 31, 2013 TIME: 1440

DILUTION	DAY						
	1	2	3	4	5	6	7
Control							
D.O. Initial	7.7	7.7	7.8	7.4	7.8	8.0	8.0
Final	7.8	8.2	8.1	8.1	8.1	7.6	7.7
pH Initial	7.6	7.7	7.6	7.6	7.7	7.6	7.7
Final	8.0	8.1	7.9	8.0	8.0	7.8	7.8
Alkalinity	32	NA	32	NA	32	NA	NA
Hardness	43	NA	44	NA	45	NA	NA
Conductivity	170	170	170	170	180	170	180
Chlorine	<0.05	NA	<0.05	NA	<0.05	NA	NA

DILUTION	DAY						
	1	2	3	4	5	6	7
32 %							
D.O. Initial	7.5	7.7	8.1	7.6	7.6	7.8	7.8
Final	7.6	8.2	7.9	8.1	8.3	7.6	7.6
pH Initial	7.4	7.7	7.2	7.4	7.4	7.7	7.7
Final	8.0	8.0	8.0	8.0	8.0	7.8	7.6
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	360	370	370	370	380	370	390
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION	DAY						
	1	2	3	4	5	6	7
45 %							
D.O. Initial	7.7	7.7	8.1	7.7	7.7	7.7	7.8
Final	7.7	7.9	8.0	8.3	8.4	7.6	7.8
pH Initial	7.3	7.6	7.2	7.3	7.3	7.7	7.7
Final	8.0	8.0	8.0	8.0	8.0	7.8	7.6
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	440	440	450	440	460	470	490
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION	DAY						
	1	2	3	4	5	6	7
56 %							
D.O. Initial	7.6	7.7	8.1	7.7	7.7	7.7	7.7
Final	7.5	7.9	8.1	8.2	8.3	7.8	7.6
pH Initial	7.2	7.6	7.2	7.3	7.2	7.7	7.7
Final	8.0	8.1	8.0	8.0	8.0	7.8	7.5
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	500	520	520	510	520	530	550
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION	DAY						
	1	2	3	4	5	6	7
75 %							
D.O. Initial	8.0	7.8	8.0	7.6	7.9	7.6	7.7
Final	7.7	8.1	8.0	8.1	8.4	7.9	7.4
pH Initial	7.1	7.6	7.1	7.2	7.0	7.7	7.7
Final	8.1	8.0	8.0	8.0	8.1	7.9	7.4
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	620	630	640	630	630	640	660
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION	DAY						
	1	2	3	4	5	6	7
100 %							
D.O. Initial	7.3	7.7	8.8	8.1	7.8	7.8	7.5
Final	7.5	8.2	7.9	8.1	8.3	--	8.8
pH Initial	7.2	7.4	7.1	7.0	7.1	7.8	7.8
Final	8.1	8.2	8.1	8.1	8.1	--	7.2
Alkalinity	40	NA	37	NA	40	NA	NA
Hardness	9.8	NA	9.0	NA	9.5	NA	NA
Conductivity	760	780	780	780	780	800	830
Chlorine	<0.05	NA	0.10	NA	0.12	NA	NA



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 FAX (501) 224-5072

CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

Client: <u>EL DORADO WATER UTILITIES</u>			PO No.		NO OF BOTTLES	ANALYSES REQUESTED												AIC CONTROL NO: <u>169134</u>				
Project Reference: <u>SOUTH EFFLUENT</u>			SAMPLE MATRIX			Bio Monitoring													AIC PROPOSAL NO:			
Project Manager: <u>HAROLD BAKER</u>			WATER	SOIL															Carrier: <u>Lo-y</u>			
Sampled By: <u>JOHN M. PEPPERS</u>																			Received Temperature C <u>4.2</u>			
AIC No.	Sample Identification	Date/Time Collected	G R A M P	C O M P	W A T E R		S O I L	NO OF BOTTLES													Remarks	
(1)	SE 1665	7-22-13 ⁰⁹³⁰		24 HR	✓		3															
		Container Type					P														Field pH calibration on _____ @ _____	
		Preservative					NO														Buffer:	
G = Glass NO = none			P = Plastic S = Sulfuric acid pH2		V = VOA vials N = Nitric acid pH2		H = HCl to pH2 B = NaOH to pH12				T = Sodium Thiosulfate Z = Zinc acetate											
Turnaround Time Requested: (Please circle) (NORMAL) or EXPEDITED IN _____ DAYS					Relinquished By: <u>JAY HONEYCUTT</u>				Date/Time <u>1630</u>				Received By: <u>FED EX</u>				Date/Time <u>1645</u>					
Expedited results requested by: _____					Relinquished By: <u>Jay Honeycutt</u>				Date/Time <u>7-22-13</u>				Received in Lab By: <u>Jay Honeycutt</u>				Date/Time <u>7-22-13</u>					
Who should AIC contact with questions: <u>JOHN M. PEPPERS</u>					Relinquished By: <u>Fed-y</u>				Date/Time <u>7-23-13</u>				Received in Lab By: <u>John Peppers</u>				Date/Time <u>7-23-13</u>					
Phone: <u>870-814-1764</u> LAB # <u>870-862-0421</u>					Comments:				Date/Time <u>8:30A</u>								Date/Time <u>8:30A</u>					
Report Attention to: <u>HAROLD BAKER</u>																						
Report Address to: <u>P.O. Box 1587</u> <u>EL DORADO, AR 71731</u>																						

8017 1179 94 00

