March 12, 2015

Test Results of
First Quarter
Chronic 7-Day Renewal
Biomonitoring Testing
for
Outfall 001
Siloam Springs, AR

Control No. 188052-1

Prepared for:

Mr. Tom Myers
City of Siloam Springs
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Siloam Springs, AR 72761

Prepared by:

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City of Siloam Springs
ATTN: Mr. Tom Myers
Post Office Box 80
Siloam Springs, AR 72761

Re: Chronic 7-Day Renewal utilizing *Pimephales promelas* (Fathead minnow) and *Ceriodaphnia dubia*
Outfall 001 - Siloam Springs, AR
NPDES Permit No. AR0020273 AFIN# 04-00106

Dear Mr. Tom Myers:

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:

The second renewal sample was not received. The first sample was used for three days of testing. Due to limited water, tests were unable to be renewed on the fourth day. The sample received on the fifth day of testing was utilized until completion of the test. .

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 %. Any statistical difference with sublethal effects cannot be considered toxic due to the minimum significant difference (PMSD) calculated result being below the lower PMSD bounds. **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%	97.5	PASS
Control Growth > or = 0.25 mg per Surviving minnow	0.291	PASS
Control Growth CV < or = 40%	7.16	PASS
Growth Minimum Significant Difference 12 to 30%	11.1	BELOW
Critical Dilution CV < or = 40%	5.26	PASS

Ceriodaphnia dubia Method 1002.0

CRITERIA	RESULTS	PASS/FAIL
Control Survival > or = 80%	100	PASS
Control Reproduction > or = 15 per Surviving Female	22.7	PASS
Control CV < or = 40% per Surviving Female	16.9	PASS
Reproduction Minimum Significant Difference 13 to 47%	21.2	PASS
Critical Dilution CV < or = 40%	26.8	PASS

II. Outlined Report

A. Introduction

1. Permit Number: AR0020273 AFIN# 04-00106
2. Test Requirements: Chronic Biomonitoring, Quarterly
   Test Methods 1000.0 and 1002.0
3. Receiving Stream: Illinois River

B. Source of Effluent/Dilution Water

1. Effluent Samples:
   a. Sampling Point: Outfall 001
   b. Chemical Data:

Analysis	Sample 1	Sample 2	Sample 3
Dissolved oxygen (mg/l)	8.6	8.3	7.4
pH (standard units)	7.4	7.8	8.4
Alkalinity (mg/l as CaCO3)	150	NA	150
Hardness (mg/l as CaCO3)	240	NA	210
Conductivity (umhos/cm)	1200	1200	1200
Residual Chlorine (mg/l)	<0.05	NA	<0.05
Ammonia as N (mg/l)	<0.1	NA	0.22

2. Dilution Water Samples: Synthetic Moderately Hard Water #4189
   a. Dates Prepared: February 24 through March 10, 2015
   b. Chemical Data:

Analysis	Sample 1	Sample 2	Sample 3
Dissolved oxygen (mg/l)	8.3	8.5	7.3
pH (standard units)	7.6	7.9	7.6
Alkalinity (mg/l as CaCO3)	82	NA	82
Hardness (mg/l as CaCO3)	60	NA	58
Conductivity (umhos/cm)	280	320	280
Residual Chlorine (mg/l)	<0.05	NA	<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:	March 3, 2015 at 1205
Date & Time Test Terminated:	March 10, 2015 at 1030
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:	March 3, 2015 at 1410
Date & Time Test Terminated:	March 9, 2015 at 1330
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. Steel's Many-One Rank test was used to determine the No Observable Effects Concentration (NOEC) for growth. Dunnett's Test was used to calculate the PMSD.

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 February 4, 2015 at 1425 to February 11, 2015 at 1310
The results were as follows: (Control No. 187315-1.)
Survival LC-50: 4540 mg/l
Growth IC-25: 3331 mg/l
Growth PMSD: 16.3

Ceriodaphnia dubia

Chronic reference tests are performed monthly.
A chronic reference test was performed on February 4, 2015 at 1530 to February 10, 2015 at 1530
The results were as follows: (Control No. 187315-2.)
Survival LC-50: 2180 mg/l
Growth IC-25: 1316 mg/l
Growth PMSD: 23.4

V. Chemical Analysis/Quality Control

Parameter	Method	% Recovery	Relative % Difference
Alkalinity	SM 2320 B	NA	3.32
Hardness	EPA 200.7	98.9	1.52
pH	SM 4500-H+ B	100	0.805
Conductivity	EPA 120.1	101	1.99

VI. Organism History

Pimephales promelas (Fathead minnow)

Date: March 3, 2015
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: March 3, 2015
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

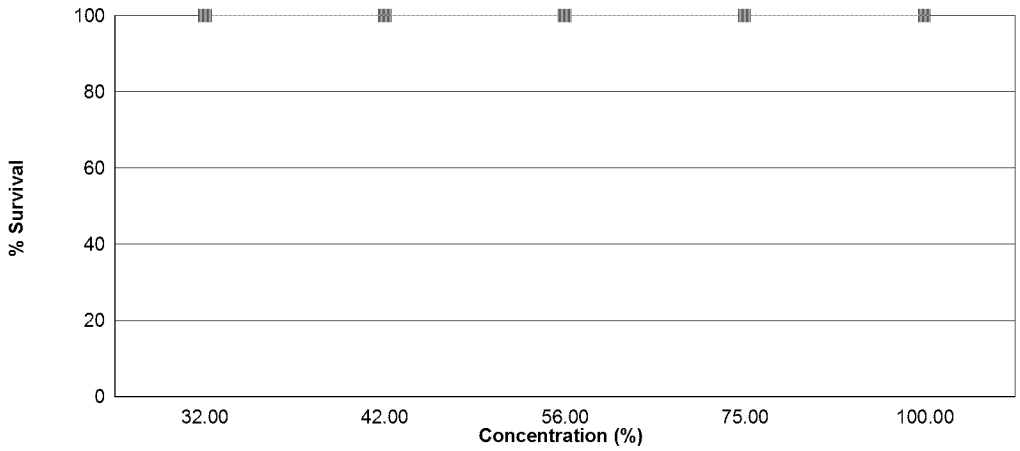
Larvae are exposed in a static renewal system for seven days to different concentrations of effluent with dilution water. Test results are based on the survival and growth (increase in weight) of the larvae.

Effluent dilutions for this test were 32 %, 42 %, 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 March 3, 2015 at 1205 and continued through March 10, 2015 at 1030. 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	97.5	0.284
32 %	100	0.265
42 %	100	0.273
56 %	100	0.275
75 %	100	0.266
100 %	100	0.277

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

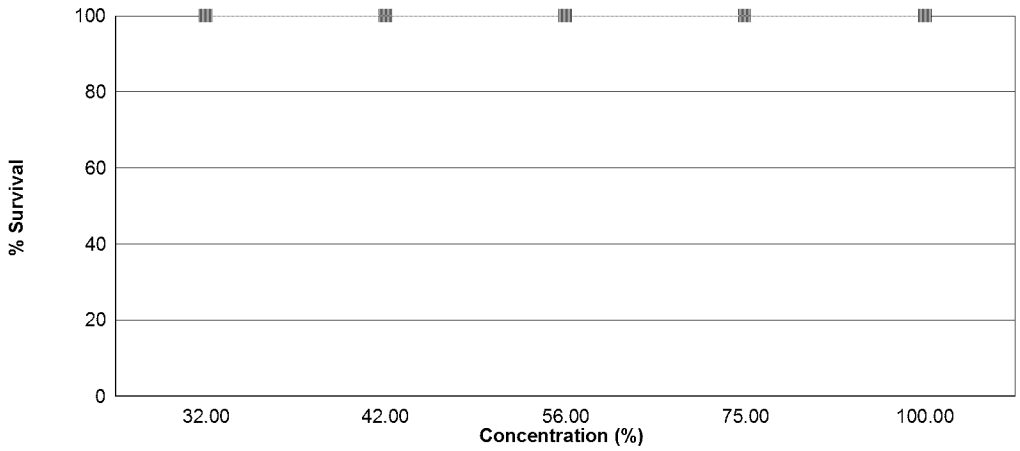
Neonates are exposed in a static renewal system to different concentrations of effluent with dilution water until 60% of surviving control organisms have three broods of offspring with an average of at least 15 young per female.

Effluent dilutions for this test were 32 %, 42 %, 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 March 3, 2015 at 1410 and continued through March 9, 2015 at 1330. 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 6-day *Ceriodaphnia dubia* Survival and Reproduction Data		
Concentration	Percent Survival	Mean Reproduction
Control	100	22.7
32 %	100	21.4
42 %	100	23.3
56 %	100	23.8
75 %	100	22.9
100 %	100	21.2

Appendix A1: Test 1000.0

Pimephales promelas (Fathead Minnow) 7-Day Survival

Date and Time Test Initiated: March 3, 2015 at 1205
Date and Time Test Terminated: March 10, 2015 at 1030

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	7	7	7	7	7
	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	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8
42 %	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: March 3, 2015 at 1205
Test Terminated: March 10, 2015 at 1030
Drying Started: March 5, 2015 1046
Drying Ended: March 11, 2015 at 1400

Concentration	Replicate	Weight of pan	Weight of pan + fish	Total weight of fish (g)	Original # of fish	Mean dry weight (mg)
Control	A	.93274	.93527	0.00253	8	0.316
	B	.93497	.93705	0.00208	8	0.260
	C	.93285	.93507	0.00222	8	0.278
	D	.93982	.94211	0.00229	8	0.286
	E	.93786	.94010	0.00224	8	0.280
32 %	A	.94561	.94787	0.00226	8	0.282
	B	.93269	.93480	0.00211	8	0.264
	C	.93231	.93453	0.00222	8	0.278
	D	.93195	.93406	0.00211	8	0.264
	E	.93407	.93595	0.00188	8	0.235
42 %	A	.93613	.93855	0.00242	8	0.302
	B	.93242	.93446	0.00204	8	0.255
	C	.93488	.93706	0.00218	8	0.272
	D	.93402	.93631	0.00229	8	0.286
	E	.93676	.93877	0.00201	8	0.251
56 %	A	.93541	.93726	0.00185	8	0.231
	B	.93662	.93890	0.00228	8	0.285
	C	.94649	.94851	0.00202	8	0.252
	D	.94554	.94780	0.00226	8	0.282
	E	.93843	.94102	0.00259	8	0.324
75 %	A	.93803	.94013	0.00210	8	0.262
	B	.94127	.94340	0.00213	8	0.266
	C	.93780	.93992	0.00212	8	0.265
	D	.93222	.93436	0.00214	8	0.268
	E	.93361	.93575	0.00214	8	0.268
100 %	A	.93103	.93310	0.00207	8	0.259
	B	.92988	.93209	0.00221	8	0.276
	C	.93135	.93365	0.00230	8	0.288
	D	.93578	.93792	0.00214	8	0.268
	E	.93369	.93605	0.00236	8	0.295

Appendix A1: Test 1002.0

Ceriodaphnia dubia Survival and Reproduction

Date and Time Test Initiated: March 3, 2015 at 1410
Date and Time Test Terminated: March 9, 2015 at 1330

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	10	0.00
2	0	0	0	0	0	0	0	0	0	0	0	10	0.00
3	3	0	0	4	3	3	0	3	3	0	19	10	1.90
4	0	3	4	0	0	1	4	1	0	4	17	10	1.70
5	11	9	8	12	12	11	0	10	10	9	92	10	9.20
6	9	9	9	10	13	7	12	14	10	6	99	10	9.90
7													
8													
TOTAL	23	21	21	26	28	22	16	28	23	19	227	10	22.7

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	4	3	3	0	3	0	0	3	16	10	1.60
4	4	4	0	0	1	4	0	4	5	1	23	10	2.30
5	0	12	5	9	10	9	10	8	0	8	71	10	7.10
6	13	13	9	9	13	2	10	11	14	10	104	10	10.4
7													
8													
TOTAL	17	29	18	21	27	15	23	23	19	22	214	10	21.4

Concentration: 42 %													
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	1	3	0	3	4	3	0	2	3	3	22	10	2.20
4	3	1	4	0	0	1	5	1	1	0	16	10	1.60
5	0	10	9	12	14	8	0	9	7	10	79	10	7.90
6	14	14	12	12	13	9	15	11	7	9	116	10	11.6
7													
8													
TOTAL	18	28	25	27	31	21	20	23	18	22	233	10	23.3

Appendix A1: Test 1002.0

Ceriodaphnia dubia Survival and Reproduction

Date and Time Test Initiated: March 3, 2015 at 1410
Date and Time Test Terminated: March 9, 2015 at 1330

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	10	0.00
2	0	0	0	0	0	0	0	0	0	0	0	10	0.00
3	0	0	2	3	4	3	0	3	0	3	18	10	1.80
4	4	4	1	0	0	0	4	1	5	0	19	10	1.90
5	0	9	9	9	11	11	12	11	0	10	82	10	8.20
6	15	13	13	10	12	11	8	14	14	9	119	10	11.9
7													
8													
TOTAL	19	26	25	22	27	25	24	29	19	22	238	10	23.8

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	4	0	0	3	4	4	3	3	0	0	21	10	2.10
4	0	4	4	1	0	0	0	1	4	4	18	10	1.80
5	12	0	12	10	11	9	10	10	1	0	75	10	7.50
6	12	11	13	11	16	10	9	11	11	11	115	10	11.5
7													
8													
TOTAL	28	15	29	25	31	23	22	25	16	15	229	10	22.9

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	2	0	3	4	4	4	0	0	0	17	10	1.70
4	4	1	5	1	0	0	0	5	4	4	24	10	2.40
5	7	0	9	0	10	12	11	10	11	7	77	10	7.70
6	0	9	10	13	10	9	10	10	11	12	94	10	9.40
7													
8													
TOTAL	11	12	24	17	24	25	25	25	26	23	212	10	21.2

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	0.87500	1.20940
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	1.00000	1.39310
2	32 %	4	1.00000	1.39310
2	32 %	5	1.00000	1.39310
3	42 %	1	1.00000	1.39310
3	42 %	2	1.00000	1.39310
3	42 %	3	1.00000	1.39310
3	42 %	4	1.00000	1.39310
3	42 %	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 = 0.027		
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 %	30.00	16.00	5.00	
3	42 %	30.00	16.00	5.00	
4	56 %	30.00	16.00	5.00	
5	75 %	30.00	16.00	5.00	
6	100 %	30.00	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
D = 0.01072		
W = 0.9762		
Critical W = 0.9	(alpha = 0.01, N = 30)	
Critical W = 0.927	(alpha = 0.05, N = 30)	
Data PASS normality test (alpha = 0.01).		

Bartlett's Test for Homogeneity of Variance		No Transformation
Calculated B1 statistic = 15.75		
Critical B = 15.086	(alpha = 0.01, df = 5)	
Data FAIL B1 homogeneity test at 0.01 level.		

Steel's Many-One Rank Test — No Transformation

Ho:Control<Treatment

Group	Identification	Rank Sum	Critical Value	DF	Sig 0.05
1	Control				
2	32 %	21.50	16.00	5.00	
3	42 %	23.50	16.00	5.00	
4	56 %	26.00	16.00	5.00	
5	75 %	20.00	16.00	5.00	
6	100 %	25.00	16.00	5.00	

Critical values are 1 tailed (k=5)

Appendix A2: Statistics

Pimephales promelas (Fathead minnow) Growth

Dunnett's Test for PMSD Calculation (excluding deaths if applicable)

ANOVA Table — No Transformation

SOURCE	DF	SS	MS	F
Between	5	0.001319	0.0002638	0.5906
Within (Error)	24	0.01072	0.0004467	
Total	29	0.01204		

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	0.284	0.284		
2	32 %	0.2646	0.2646	1.451	
3	42 %	0.2732	0.2732	0.808	
4	56 %	0.2748	0.2748	0.6883	
5	75 %	0.2658	0.2658	1.362	
6	100 %	0.2772	0.2772	0.5087	

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	0.03155	11.1	0.0194
3	42 %	5	0.03155	11.1	0.0108
4	56 %	5	0.03155	11.1	0.0092
5	75 %	5	0.03155	11.1	0.0182
6	100 %	5	0.03155	11.1	0.0068

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
42 %	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	42 %	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
D = 0.0739 D* = 0.5798 Critical D* = 1.035 (alpha = 0.01, N = 60) Data PASS normality test (alpha = 0.01).	

Bartlett's Test for Homogeneity of Variance	No Transformation
Calculated B1 statistic = 4.271 Critical B = 15.086 (alpha = 0.01, df = 5) Data PASS B1 homogeneity test at 0.01 level.	

Appendix A2: Statistics

Ceriodaphnia dubia Reproduction

ANOVA Table — No Transformation

SOURCE	DF	SS	MS	F
Between	5	54.15	10.83	0.4968
Within (Error)	54	1177	21.8	
Total	59	1231		

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	22.7	22.7		
2	32 %	21.4	21.4	0.6226	
3	42 %	23.3	23.3	-0.2873	
4	56 %	23.8	23.8	-0.5268	
5	75 %	22.9	22.9	-0.09578	
6	100 %	21.2	21.2	0.7184	

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	4.823	21.2	1.3
3	42 %	10	4.823	21.2	-0.6
4	56 %	10	4.823	21.2	-1.1
5	75 %	10	4.823	21.2	-0.2
6	100 %	10	4.823	21.2	1.5

Appendix A3: Water Chemistry

Routine Chemical and Physical Data

Date and Time Test Initiated: March 3, 2015 at 1034
Date and Time Test Terminated: March 10, 2015 at 1030

Effluent Conc.: Control		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	8.3	7.8	8.5	NA	7.3	8.1	8.8
	Final *1	7.4	7.4	7.6	NA	7.5	7.7	7.3
	Final *2	7.5	8.0	7.9	NA	8.2	8.4	
pH, units	Initial	7.6	7.6	7.9	NA	7.6	7.9	7.9
	Final *1	7.8	7.3	7.8	NA	7.9	7.8	7.5
	Final *2	7.8	8.2	7.9	NA	8.0	8.0	
Alkalinity, mg CaCO3/l		82	NA	NA	NA	82	NA	NA
Hardness, mg CaCO3/l		60	NA	NA	NA	58	NA	NA
Conductivity, umhos/cm		280	280	320	NA	280	280	280
Res. Chlorine, mg/l		<0.05	NA	NA	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	8.3	7.9	8.5	NA	7.4	8.2	7.5
	Final *1	7.4	7.4	7.1	NA	7.7	7.6	7.3
	Final *2	7.7	8.1	7.8	NA	8.3	8.2	
pH, units	Initial	7.5	7.8	8.0	NA	8.0	7.8	7.9
	Final *1	8.0	7.6	7.9	NA	8.1	8.1	7.7
	Final *2	8.0	8.5	8.3	NA	8.4	8.2	

Effluent Conc.: 42 %		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	8.1	8.0	8.1	NA	7.8	8.0	7.5
	Final *1	7.2	7.4	7.4	NA	7.7	7.6	7.3
	Final *2	7.8	8.1	7.6	NA	8.3	8.1	
pH, units	Initial	7.5	7.8	8.0	NA	8.0	7.8	7.9
	Final *1	8.1	7.9	8.1	NA	8.1	8.2	7.8
	Final *2	8.3	8.6	8.3	NA	8.4	8.3	

Appendix A3: Water Chemistry

Routine Chemical and Physical Data

Date and Time Test Initiated: March 3, 2015 at 1034
Date and Time Test Terminated: March 10, 2015 at 1030

Effluent Conc.: 56 %		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	8.1	7.4	8.0	NA	7.5	7.7	7.5
	Final *1	7.2	7.4	7.6	NA	7.4	7.7	7.2
	Final *2	7.7	7.9	8.1	NA	8.3	8.2	
pH, units	Initial	7.5	7.8	8.0	NA	8.2	7.8	7.9
	Final *1	8.2	8.0	8.3	NA	8.2	8.2	7.9
	Final *2	8.3	8.6	8.4	NA	8.5	8.4	

Effluent Conc.: 75 %		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	7.9	7.6	8.0	NA	7.4	7.6	7.5
	Final *1	6.9	7.3	7.4	NA	7.4	7.5	7.0
	Final *2	7.6	7.8	7.9	NA	8.2	8.1	
pH, units	Initial	7.5	7.8	8.0	NA	8.2	7.8	7.8
	Final *1	8.2	8.0	8.4	NA	8.2	8.2	8.0
	Final *2	8.4	8.6	8.5	NA	8.6	8.5	

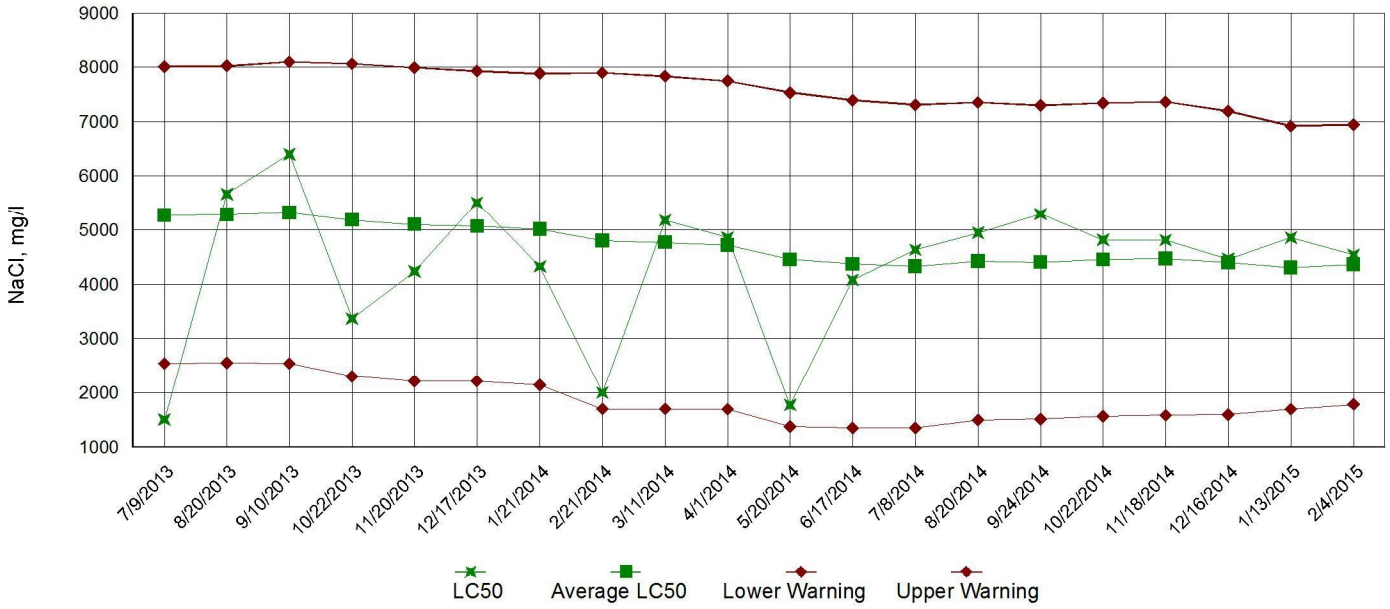
Effluent Conc.: 100 %		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	8.6	7.6	8.3	NA	7.4	8.1	7.4
	Final *1	7.1	7.2	7.4	NA	7.3	7.5	7.2
	Final *2	7.6	8.0	8.0	NA	8.2	8.2	
pH, units	Initial	7.4	7.5	7.8	NA	8.4	8.2	8.0
	Final *1	8.3	8.1	8.4	NA	8.3	8.4	8.2
	Final *2	8.5	8.6	8.5	NA	8.7	8.6	
Alkalinity, mg CaCO3/l		150	NA	NA	NA	150	NA	NA
Hardness, mg CaCO3/l		240	NA	NA	NA	210	NA	NA
Conductivity, umhos/cm		1200	1200	1200	NA	1200	1100	1200
Res. Chlorine, mg/l		<0.05	NA	NA	NA	<0.05	NA	NA

*1 = data from the *Pimephales promelas* (Fathead Minnow) test *2 = data from the *Ceriodaphnia dubia* test

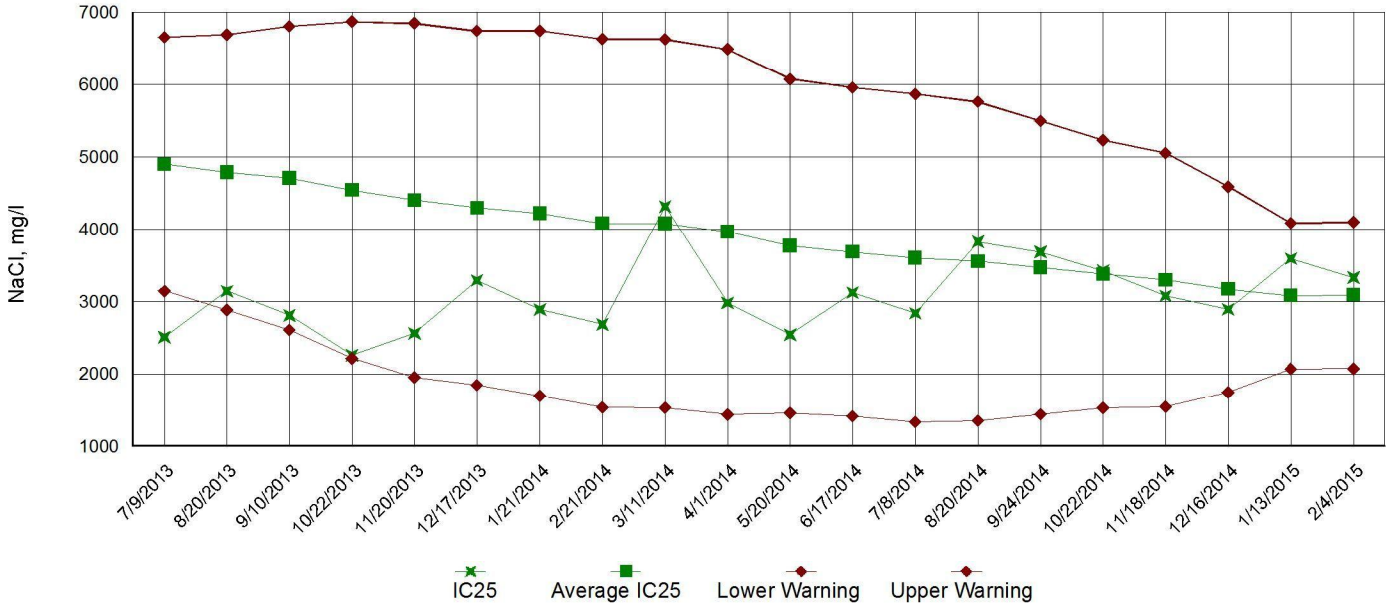
Appendix A4: Test 1000.0

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

LC50 Survival Data



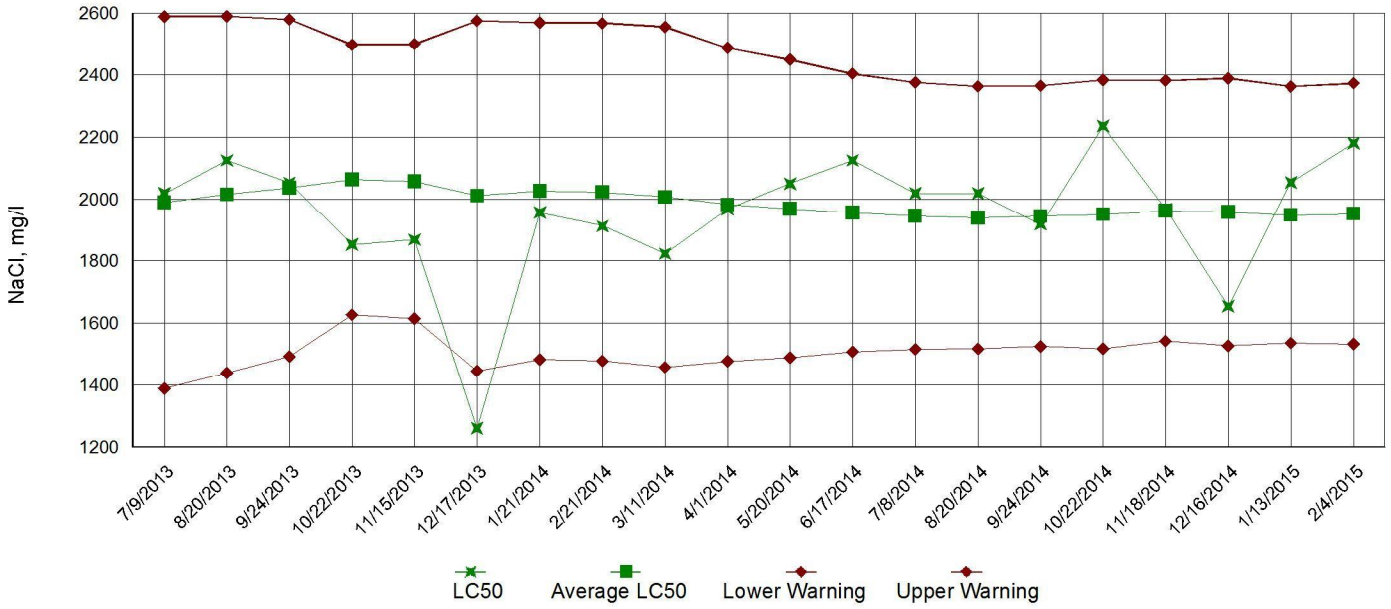
IC25 Growth Data



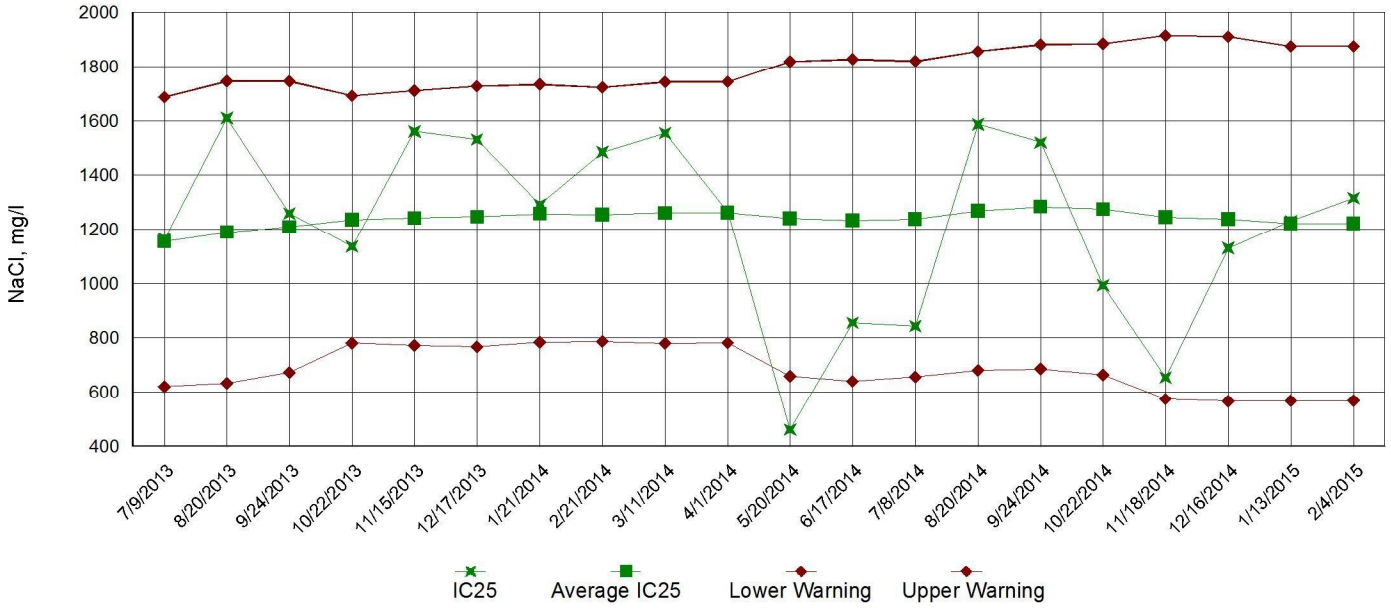
Appendix A4: Test 1002.0

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: City of Siloam Springs

NPDES No.: AR0020273 AFIN# 04-00106

Date and Time Test Initiated: March 3, 2015 at 1205
Date and Time Test Terminated: March 10, 2015 at 1030
Dilution water used: Synthetic Moderately Hard Water #4189

DATA TABLE FOR SURVIVAL

Effluent Conc. %	Percent Survival in replicate chambers A	B	C	D	E	Mean percent survival 24 hr	48 hr	7 days	CV%
Control	100	87.5	100	100	100	100	100	97.5	5.73
32 %	100	100	100	100	100	100	100	100	0.00
42 %	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 A	B	C	D	E	Mean dry weight, mg	CV%
Control	0.316	0.260	0.278	0.286	0.280	0.284	7.16
32 %	0.282	0.264	0.278	0.264	0.235	0.265	6.97
42 %	0.302	0.255	0.272	0.286	0.251	0.273	7.81
56 %	0.231	0.285	0.252	0.282	0.324	0.275	12.9
75 %	0.262	0.266	0.265	0.268	0.268	0.266	0.937
100 %	0.259	0.276	0.288	0.268	0.295	0.277	5.26

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	___X___ NO
b.) 1/2 LOW FLOW DILUTION	(NA)	_____YES	_____ NO

2. Steel's Many-One Rank 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	___X___ 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: 7.16 (TQP6C)

AMERICAN INTERPLEX CORPORATION LABORATORIES

Appendix B: Test 1000.0

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

PERMITTEE: City of Siloam Springs
NPDES NO.: AR0020273 AFIN# 04-00106
CONTACT: Mr. Tom Myers
ANALYST: 280, 304, 310

SAMPLE No. 1 COLLECTED ending: DATE: March 2, 2015 TIME: 0900
SAMPLE No. 3 COLLECTED ending: DATE: March 6, 2015 TIME: 0900
Test Initiated: DATE: March 3, 2015 TIME: 1205
Test Terminated: DATE: March 10, 2015 TIME: 1030

DILUTION Control	DAY 1	2	3	4	5	6	7
D.O. Initial	8.3	7.8	8.5	NA	7.3	8.1	8.8
Final	7.4	7.4	7.6	NA	7.5	7.7	7.3
pH Initial	7.6	7.6	7.9	NA	7.6	7.9	7.9
Final	7.8	7.3	7.8	NA	7.9	7.8	7.5
Alkalinity	82	NA	NA	NA	82	NA	NA
Hardness	60	NA	NA	NA	58	NA	NA
Conductivity	280	280	320	NA	280	280	280
Chlorine	<0.05	NA	NA	NA	<0.05	NA	NA

DILUTION 32 %	DAY 1	2	3	4	5	6	7
D.O. Initial	8.3	7.9	8.5	NA	7.4	8.2	7.5
Final	7.4	7.4	7.1	NA	7.7	7.6	7.3
pH Initial	7.5	7.8	8.0	NA	8.0	7.8	7.9
Final	8.0	7.6	7.9	NA	8.1	8.1	7.7
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	580	580	610	NA	580	540	530
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION 42 %	DAY 1	2	3	4	5	6	7
D.O. Initial	8.1	8.0	8.1	NA	7.8	8.0	7.5
Final	7.2	7.4	7.4	NA	7.7	7.6	7.3
pH Initial	7.5	7.8	8.0	NA	8.0	7.8	7.9
Final	8.1	7.9	8.1	NA	8.1	8.2	7.8
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	660	670	700	NA	670	610	610
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION 56 %	DAY 1	2	3	4	5	6	7
D.O. Initial	8.1	7.4	8.0	NA	7.5	7.7	7.5
Final	7.2	7.4	7.6	NA	7.4	7.7	7.2
pH Initial	7.5	7.8	8.0	NA	8.2	7.8	7.9
Final	8.2	8.0	8.3	NA	8.2	8.2	7.9
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	800	800	830	NA	810	730	720
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION 75 %	DAY 1	2	3	4	5	6	7
D.O. Initial	7.9	7.6	8.0	NA	7.4	7.6	7.5
Final	6.9	7.3	7.4	NA	7.4	7.5	7.0
pH Initial	7.5	7.8	8.0	NA	8.2	7.8	7.8
Final	8.2	8.0	8.4	NA	8.2	8.2	8.0
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	990	990	1000	NA	1000	890	880
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION 100 %	DAY 1	2	3	4	5	6	7
D.O. Initial	8.6	7.6	8.3	NA	7.4	8.1	7.4
Final	7.1	7.2	7.4	NA	7.3	7.5	7.2
pH Initial	7.4	7.5	7.8	NA	8.4	8.2	8.0
Final	8.3	8.1	8.4	NA	8.3	8.4	8.2
Alkalinity	150	NA	NA	NA	150	NA	NA
Hardness	240	NA	NA	NA	210	NA	NA
Conductivity	1200	1200	1200	NA	1200	1100	1200
Chlorine	<0.05	NA	NA	NA	<0.05	NA	NA

Appendix B: Test 1002.0

SUMMARY REPORTING FORMS
CHRONIC BIOMONITORING
Ceriodaphnia dubia
SURVIVAL AND REPRODUCTION

Permittee: City of Siloam Springs

NPDES No.: AR0020273 AFIN# 04-00106

Date and Time Test Initiated: March 3, 2015 at 1410
Date and Time Test Terminated: March 9, 2015 at 1330
Dilution water used: Synthetic Moderately Hard Water #4189

PERCENT SURVIVAL

		Percent Effluent				
Time of Reading	Control	32 %	42 %	56 %	75 %	100 %
24 hour	100	100	100	100	100	100
48 hour	100	100	100	100	100	100
6 day	100	100	100	100	100	100

NUMBER OF YOUNG PRODUCED PER FEMALE @ 6 DAYS

		Percent Effluent				
Replicates	Control	32 %	42 %	56 %	75 %	100 %
A	23	17	18	19	28	11
B	21	29	28	26	15	12
C	21	18	25	25	29	24
D	26	21	27	22	25	17
E	28	27	31	27	31	24
F	22	15	21	25	23	25
G	16	23	20	24	22	25
H	28	23	23	29	25	25
I	23	19	18	19	16	26
J	19	22	22	22	15	23
Mean per Adult	22.7	21.4	23.3	23.8	22.9	21.2
Mean per Surviving Adult	22.7	21.4	23.3	23.8	22.9	21.2
CV %	16.9	20.5	18.8	13.8	25.7	26.8

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 %)	_____YES	__X__ NO
b.) 1/2 LOW FLOW DILUTION	(NA)	_____YES	_____ 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 %)	_____YES	__X__ NO
b.) 1/2 LOW FLOW DILUTION	(NA)	_____YES	_____ 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: 26.8 (TQP3B)

AMERICAN INTERPLEX CORPORATION LABORATORIES

Appendix B: Test 1002.0

CHRONIC TOXICITY SUMMARY FORM
Ceriodaphnia dubia
CHEMICAL PARAMETERS CHART

PERMITTEE: City of Siloam Springs
NPDES NO.: AR0020273 AFIN# 04-00106
CONTACT: Mr. Tom Myers
ANALYST: 280, 304, 310

SAMPLE No. 1 COLLECTED ending: DATE: March 2, 2015 TIME: 0900
SAMPLE No. 3 COLLECTED ending: DATE: March 6, 2015 TIME: 0900
Test Initiated: DATE: March 3, 2015 TIME: 1410
Test Terminated: DATE: March 9, 2015 TIME: 1330

DILUTION Control	DAY 1	2	3	4	5	6	7
D.O. Initial	8.3	7.8	8.5	NA	7.3	8.1	8.8
Final	7.5	8.0	7.9	NA	8.2	8.4	--
pH Initial	7.6	7.6	7.9	NA	7.6	7.9	7.9
Final	7.8	8.2	7.9	NA	8.0	8.0	--
Alkalinity	82	NA	NA	NA	82	NA	NA
Hardness	60	NA	NA	NA	58	NA	NA
Conductivity	280	280	320	NA	280	280	280
Chlorine	<0.05	NA	NA	NA	<0.05	NA	NA

DILUTION 32 %	DAY 1	2	3	4	5	6	7
D.O. Initial	8.3	7.9	8.5	NA	7.4	8.2	7.5
Final	7.7	8.1	7.8	NA	8.3	8.2	--
pH Initial	7.5	7.8	8.0	NA	8.0	7.8	7.9
Final	8.0	8.5	8.3	NA	8.4	8.2	--
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	580	580	610	NA	580	540	530
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION 42 %	DAY 1	2	3	4	5	6	7
D.O. Initial	8.1	8.0	8.1	NA	7.8	8.0	7.5
Final	7.8	8.1	7.6	NA	8.3	8.1	--
pH Initial	7.5	7.8	8.0	NA	8.0	7.8	7.9
Final	8.3	8.6	8.3	NA	8.4	8.3	--
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	660	670	700	NA	670	610	610
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION 56 %	DAY 1	2	3	4	5	6	7
D.O. Initial	8.1	7.4	8.0	NA	7.5	7.7	7.5
Final	7.7	7.9	8.1	NA	8.3	8.2	--
pH Initial	7.5	7.8	8.0	NA	8.2	7.8	7.9
Final	8.3	8.6	8.4	NA	8.5	8.4	--
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	800	800	830	NA	810	730	720
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION 75 %	DAY 1	2	3	4	5	6	7
D.O. Initial	7.9	7.6	8.0	NA	7.4	7.6	7.5
Final	7.6	7.8	7.9	NA	8.2	8.1	--
pH Initial	7.5	7.8	8.0	NA	8.2	7.8	7.8
Final	8.4	8.6	8.5	NA	8.6	8.5	--
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	990	990	1000	NA	1000	890	880
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION 100 %	DAY 1	2	3	4	5	6	7
D.O. Initial	8.6	7.6	8.3	NA	7.4	8.1	7.4
Final	7.6	8.0	8.0	NA	8.2	8.2	--
pH Initial	7.4	7.5	7.8	NA	8.4	8.2	8.0
Final	8.5	8.6	8.5	NA	8.7	8.6	--
Alkalinity	150	NA	NA	NA	150	NA	NA
Hardness	240	NA	NA	NA	210	NA	NA
Conductivity	1200	1200	1200	NA	1200	1100	1200
Chlorine	<0.05	NA	NA	NA	<0.05	NA	NA

AMERICAN INTERPLEX CORPORATION
LABORATORIES

CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

Client: City of Siloam Springs
Project Reference: WET
Project Manager: Tom Myers
Sampled By: Tom Myers

PO No.

MATRIX: W A T E R | S O I L

NO OF BOTTLES

ANALYSES REQUESTED: WET

AIC CONTROL NO: 188052
AIC PROPOSAL NO:
Carrier:
Received Temperature C: 2.1 C

AIC No.	Sample Identification	Date/Time Collected	GRAB	COMP	WATER	SOIL	NO OF BOTTLES	WET	Remarks
(1)	Plant Effluent	3/1/15-3/2/15 10:00-9:00		X	X		3	X	
		Container Type						P	Field pH calibration
		Preservative						NO	on _____ @ _____ 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 | A=$(NH_4)_2SO_4$, NH_4OH

Turnaround Time Requested: (Please circle)
(NORMAL) or EXPEDITED IN ____ DAYS
Expedited results requested by: _____
Who should AIC contact with questions: Tom Myers
Phone: 4795245623 Fax:
Report Attention to: 479-524-5623
Report Address to: Tom Myers P.O. Box 80 Siloam Springs AR, 72761
Email Address:

Relinquished By: Tom Myers	Date/Time 3/2/2015 11:00	Received By: TREY Williams	Date/Time 9:50 3-3-15
Relinquished By:	Date/Time	Received in Lab By:	Date/Time

Comments: UPS 1ZA60Y80 01 9310 8028

9/2014

FORM 0060

AMERICAN INTERPLEX CORPORATION
LABORATORIES

CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

PAGE 3 OF 3

Client: Siloam Springs
Project Reference: WET
Project Manager: Tom Myers
Sampled By: Tom Myers

PO No.

MATRIX: WATER, SOIL

AIC No.	Sample Identification	Date/Time Collected	GRAB	COMP	WATER	SOIL	NO OF BOTTLES	ANALYSES REQUESTED: WET
(2) ✓	WET	3/5/15-3/6/15 10:00 — 9:00		X	X		3	X
		Container Type					P	
		Preservative					NO	

AIC CONTROL NO:
AIC PROPOSAL NO:
Carrier: UPS
Received Temperature C: 0.1
Remarks
Field pH calibration on _____ @ _____ Buffer:

G = Glass, P = Plastic, V = VOA vials, H = HCl to pH2, T = Sodium Thiosulfate
NO = none, S = Sulfuric acid pH2, N = Nitric acid pH2, B = NaOH to pH12, Z = Zinc acetate, A=$(NH_4)_2SO_4$, NH_4OH

Turnaround Time Requested: (Please circle)
(NORMAL) or EXPEDITED IN ____ DAYS
Expedited results requested by: Tom Myers
Who should AIC contact with questions:
Phone: ~~Fax~~: 479-524-5623
Report Attention to: Tom Myers
Report Address to: P.O. Box 80, Siloam Springs AR 72761
Email Address: tmyers@siloamsprings.com

Relinquished By:	Date/Time	Received By:	Date/Time
Tom Myers	3/6/15 11:00		
Relinquished By:	Date/Time	Received in Lab By:	Date/Time
		SH3W	7 MAR 15 1100

Comments:

9/2014

FORM 0060