June 6, 2016

Test Results of
Second Quarter
Chronic 7-Day Renewal
Biomonitoring Testing
for
Outfall 001
Huntsville, AR

Control No. 202409-1

Prepared for:

Mr. Bill Eoff
Huntsville Water Utilities
Post Office Box 430
Huntsville, AR 72740

Prepared by:

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

Huntsville Water Utilities
ATTN: Mr. Bill Eoff
Post Office Box 430
Huntsville, AR 72740

Re: Chronic 7-Day Renewal utilizing *Pimephales promelas* (Fathead minnow) and *Ceriodaphnia dubia*
Outfall 001 - Huntsville, AR
NPDES Permit No. AR0022004 AFIN# 44-00018

Dear Mr. Bill Eoff:

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 Chief Operating Officer 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 %. 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
Chief Operating Officer

PDF cc: Huntsville Water Utilities
ATTN: Mr. Bill Eoff
bill9eoff@hotmail.com

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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	0.461	PASS
Control Growth CV < or = 40%	4.80	PASS
Growth Minimum Significant Difference 12 to 30%	6.54	BELOW
Critical Dilution CV < or = 40%	5.77	PASS

Ceriodaphnia dubia Method 1002.0

CRITERIA	RESULTS	PASS/FAIL
Control Survival > or = 80%	100	PASS
Control Reproduction > or = 15 per Surviving Female	21.3	PASS
Control CV < or = 40% per Surviving Female	22.5	PASS
Reproduction Minimum Significant Difference 13 to 47%	34.0	PASS
Critical Dilution CV < or = 40%	30.4	PASS

II. Outlined Report

A. Introduction

1. Permit Number: AR0022004 AFIN# 44-00018
2. Test Requirements: Chronic Biomonitoring, Quarterly
   Test Methods 1000.0 and 1002.0
3. Receiving Stream: White River Basin

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)	7.4	7.5	7.7
pH (standard units)	7.9	7.7	7.9
Alkalinity (mg/l as CaCO3)	100	110	120
Hardness (mg/l as CaCO3)	220	220	180
Conductivity (umhos/cm)	1100	1100	1000
Residual Chlorine (mg/l)	0.050	0.050	<0.05
Ammonia as N (mg/l)	0.10	0.10	0.11

2. Dilution Water Samples: Synthetic Moderately Hard Water #4332
   a. Dates Prepared: May 22 through June 5, 2016
   b. Chemical Data:

Analysis	Sample 1	Sample 2	Sample 3
Dissolved oxygen (mg/l)	7.9	7.6	7.7
pH (standard units)	8.0	8.1	8.1
Alkalinity (mg/l as CaCO3)	61	61	61
Hardness (mg/l as CaCO3)	89	89	82
Conductivity (umhos/cm)	320	320	330
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:	May 24, 2016 at 1115
Date & Time Test Terminated:	May 31, 2016 at 0920
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:	May 24, 2016 at 1630
Date & Time Test Terminated:	May 30, 2016 at 1540
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 May 19, 2016 at 1600 to May 26, 2016 at 1515
The results were as follows: (Control No. 202382-1.)
Survival LC-50: 4683 mg/l
Growth IC-25: 2989 mg/l
Growth PMSD: 6.57

Ceriodaphnia dubia

Chronic reference tests are performed monthly.
A chronic reference test was performed on May 19, 2016 at 1550 to May 25, 2016 at 1615
The results were as follows: (Control No. 202382-2.)
Survival LC-50: 1673 mg/l
Growth IC-25: 1204 mg/l
Growth PMSD: 23.2

V. Chemical Analysis/Quality Control

Parameter	Method	% Recovery	Relative % Difference
Alkalinity	SM 2320 B	NA	0.640
Hardness	EPA 200.7	99.2	0.152
pH	SM 4500-H+ B	101	0.00
Conductivity	EPA 120.1	107	1.92

VI. Organism History

Pimephales promelas (Fathead minnow)

Date: May 24, 2016
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: May 24, 2016
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

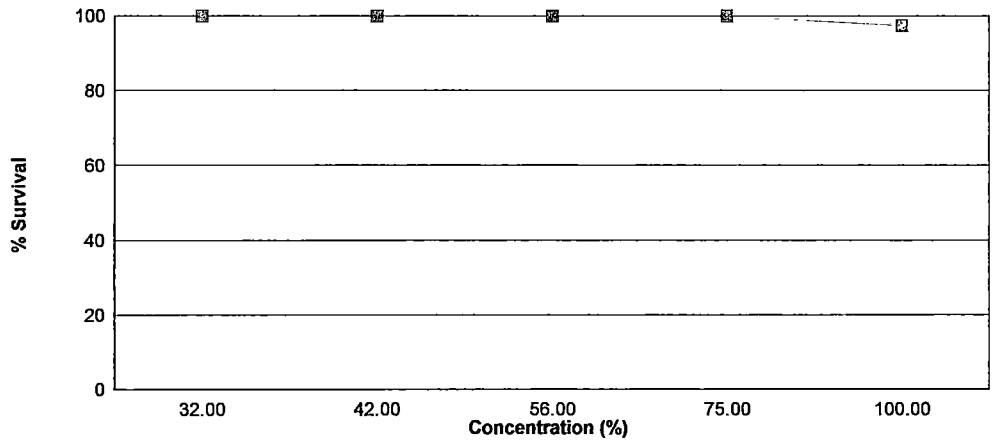
Larvae are exposed in a static renewal system for seven days to different concentrations of effluent with dilution water. Test results are based on the survival and growth (increase in weight) of the larvae.

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 May 24, 2016 at 1115 and continued through May 31, 2016 at 0920. 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	0.461
32 %	100	0.462
42 %	100	0.459
56 %	100	0.450
75 %	100	0.442
100 %	97.5	0.462

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

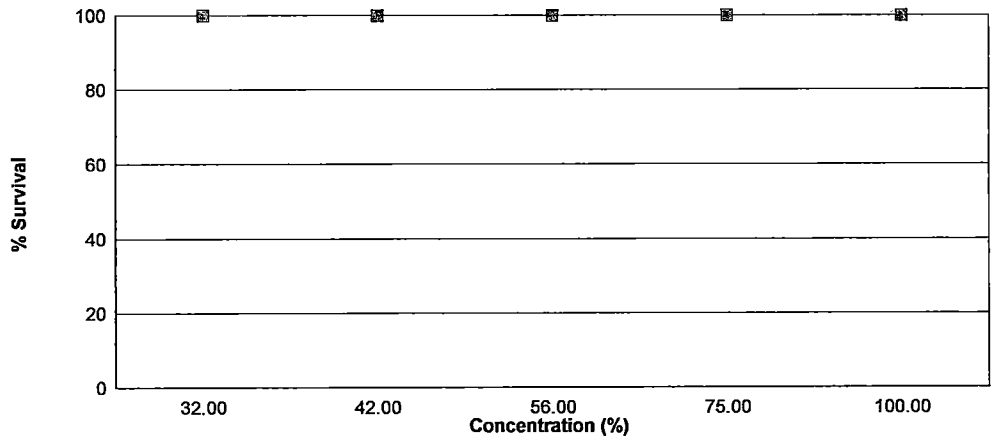
Neonates are exposed in a static renewal system to different concentrations of effluent with dilution water until 60% of surviving control organisms have three broods of offspring with an average of at least 15 young per female.

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 May 24, 2016 at 1630 and continued through May 30, 2016 at 1540. 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	21.3
32 %	100	25.7
42 %	100	23.5
56 %	100	19.9
75 %	100	22.2
100 %	100	21.5

Appendix A1: Test 1000.0

Pimephales promelas (Fathead Minnow) 7-Day Survival

Date and Time Test Initiated: May 24, 2016 at 1115
Date and Time Test Terminated: May 31, 2016 at 0920

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	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	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

Appendix A1: Test 1000.0

Pimephales promelas (Fathead Minnow) 7-Day Growth

Test Initiated: May 24, 2016 at 1115
Test Terminated: May 31, 2016 at 0920

Drying Started: May 27, 2016 at 1535
Drying Ended: June 2, 2016 at 0926

Concentration	Replicate	Weight of pan	Weight of pan + fish	Total weight of fish (g)	Original # of fish	Mean dry weight (mg)
Control	A	.93196	.93566	0.00370	8	0.462
	B	.93244	.93584	0.00340	8	0.425
	C	.93429	.93800	0.00371	8	0.464
	D	.93124	.93513	0.00389	8	0.486
	E	.92863	.93236	0.00373	8	0.466
32 %	A	.92667	.93030	0.00363	8	0.454
	B	.93463	.93830	0.00367	8	0.459
	C	.93424	.93781	0.00357	8	0.446
	D	.92386	.92755	0.00369	8	0.461
	E	.92345	.92738	0.00393	8	0.491
42 %	A	.93047	.93422	0.00375	8	0.469
	B	.92640	.93005	0.00365	8	0.456
	C	.92959	.93312	0.00353	8	0.441
	D	.93202	.93587	0.00385	8	0.481
	E	.92822	.93179	0.00357	8	0.446
56 %	A	.92113	.92462	0.00349	8	0.436
	B	.92372	.92751	0.00379	8	0.474
	C	.93090	.93463	0.00373	8	0.466
	D	.92620	.92958	0.00338	8	0.422
	E	.92750	.93112	0.00362	8	0.452
75 %	A	.93096	.93456	0.00360	8	0.450
	B	.92788	.93130	0.00342	8	0.428
	C	.92387	.92753	0.00366	8	0.458
	D	.92467	.92827	0.00360	8	0.450
	E	.92700	.93039	0.00339	8	0.424
100 %	A	.92830	.93171	0.00341	8	0.426
	B	.93119	.93474	0.00355	8	0.444
	C	.92816	.93202	0.00386	8	0.482
	D	.92754	.93146	0.00392	8	0.490
	E	.92388	.92762	0.00374	8	0.468

Appendix A1: Test 1002.0

Ceriodaphnia dubia Survival and Reproduction

Date and Time Test Initiated: May 24, 2016 at 1630
Date and Time Test Terminated: May 30, 2016 at 1540

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	0	0	0	0	0	0	0	0	0	0	0	10	0.00
4	6	6	4	4	4	2	4	4	4	3	41	10	4.10
5	0	0	7	7	10	8	9	9	7	9	66	10	6.60
6	13	10	13	11	12	11	13	11	0	12	106	10	10.6
7													
8													
TOTAL	19	16	24	22	26	21	26	24	11	24	213	10	21.3

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	3	6	4	2	1	4	4	4	4	4	36	10	3.60
5	8	11	11	9	9	11	9	8	11	8	95	10	9.50
6	10	0	16	14	16	15	14	12	15	14	126	10	12.6
7													
8													
TOTAL	21	17	31	25	26	30	27	24	30	26	257	10	25.7

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	0	0	0	0	0	0	0	0	0	0	0	10	0.00
4	4	0	5	4	4	6	5	3	7	4	42	10	4.20
5	9	11	12	10	11	0	6	10	11	7	87	10	8.70
6	14	0	16	15	16	15	0	15	0	15	106	10	10.6
7													
8													
TOTAL	27	11	33	29	31	21	11	28	18	26	235	10	23.5

Appendix A1: Test 1002.0

Ceriodaphnia dubia Survival and Reproduction

Date and Time Test Initiated: May 24, 2016 at 1630
Date and Time Test Terminated: May 30, 2016 at 1540

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	0	0	0	0	0	0	0	0	0	10	0.00
4	3	0	4	0	4	7	3	3	4	4	32	10	3.20
5	0	0	7	8	9	9	1	10	8	11	63	10	6.30
6	6	10	15	13	15	0	14	15	0	16	104	10	10.4
7													
8													
TOTAL	9	10	26	21	28	16	18	28	12	31	199	10	19.9

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	2	5	2	4	4	6	1	3	5	3	35	10	3.50
5	10	0	7	9	9	10	0	9	9	0	63	10	6.30
6	13	9	13	15	14	17	5	16	15	7	124	10	12.4
7													
8													
TOTAL	25	14	22	28	27	33	6	28	29	10	222	10	22.2

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	4	4	1	4	5	4	3	2	4	35	10	3.50
5	0	10	10	6	7	0	8	10	10	6	67	10	6.70
6	12	0	14	13	17	18	16	16	0	7	113	10	11.3
7													
8													
TOTAL	16	14	28	20	28	23	28	29	12	17	215	10	21.5

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	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	0.87500	1.20940
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 %	27.50	16.00	5.00	
3	42 %	27.50	16.00	5.00	
4	56 %	27.50	16.00	5.00	
5	75 %	27.50	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

Shapiro - Wilk's Test for Normality		No Transformation
D = 0.009771		
W = 0.9595		
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 = 1.738		
Critical B = 15.086	(alpha = 0.01, df = 5)	
Data PASS B1 homogeneity test at 0.01 level.		

Appendix A2: Statistics

Pimephales promelas (Fathead minnow) Growth

ANOVA Table				No Transformation
SOURCE	DF	SS	MS	F
Between	5	0.001671	0.0003342	0.8211
Within (Error)	24	0.009769	0.000407	
Total	29	0.01144		

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	0.4606	0.4606		
2	32 %	0.4622	0.4622	-0.1254	
3	42 %	0.4586	0.4586	0.1567	
4	56 %	0.45	0.45	0.8308	
5	75 %	0.442	0.442	1.458	
6	100 %	0.462	0.462	-0.1097	

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	0.03011	6.54	-0.0016
3	42 %	5	0.03011	6.54	0.002
4	56 %	5	0.03011	6.54	0.0106
5	75 %	5	0.03011	6.54	0.0186
6	100 %	5	0.03011	6.54	-0.0014

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 = 0.111		
D* = 0.8709		
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 = 7.102		
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	203.9	40.78	0.8297
Within (Error)	54	2654	49.15	
Total	59	2858		

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	21.3	21.3		
2	32 %	25.7	25.7	-1.403	
3	42 %	23.5	23.5	-0.7017	
4	56 %	19.9	19.9	0.4465	
5	75 %	22.2	22.2	-0.2871	
6	100 %	21.5	21.5	-0.06379	

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	7.243	34	-4.4
3	42 %	10	7.243	34	-2.2
4	56 %	10	7.243	34	1.4
5	75 %	10	7.243	34	-0.9
6	100 %	10	7.243	34	-0.2

Appendix A3: Water Chemistry

Routine Chemical and Physical Data

Date and Time Test Initiated: May 24, 2016 at 0950
Date and Time Test Terminated: May 31, 2016 at 0920

Effluent Conc.: Control		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	7.9	7.5	7.6	7.4	7.7	7.7	7.6
	Final *1	7.1	6.3	6.9	7.1	7.8	7.3	7.6
	Final *2	7.4	7.7	7.9	7.7	7.9	7.6	
pH, units	Initial	8.0	8.0	8.1	8.2	8.1	8.2	8.0
	Final *1	7.6	7.6	7.8	7.8	8.3	8.1	7.8
	Final *2	7.9	8.4	8.4	8.1	8.6	8.6	
Alkalinity, mg CaCO3/l		61	NA	61	NA	61	NA	NA
Hardness, mg CaCO3/l		89	NA	89	NA	82	NA	NA
Conductivity, umhos/cm		320	320	320	320	330	340	340
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	7.6	7.4	7.5	7.4	7.6	7.6	7.7
	Final *1	6.0	6.5	6.9	6.9	7.7	7.6	7.6
	Final *2	7.4	7.9	8.1	7.9	7.8	7.8	
pH, units	Initial	7.9	7.9	8.0	8.2	8.0	8.4	8.1
	Final *1	7.5	7.7	7.8	7.9	8.4	8.2	8.1
	Final *2	8.0	8.6	8.7	8.3	8.8	8.9	

Effluent Conc.: 42 %		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	7.6	7.6	7.6	7.5	7.6	7.6	7.7
	Final *1	6.8	6.6	7.1	7.1	7.8	7.6	7.6
	Final *2	7.5	8.1	8.2	7.7	8.1	8.2	
pH, units	Initial	7.9	7.9	8.0	8.2	8.0	8.4	8.1
	Final *1	7.7	7.8	7.9	7.9	8.5	8.3	8.2
	Final *2	8.1	8.6	8.7	8.3	8.9	8.9	

Appendix A3: Water Chemistry

Routine Chemical and Physical Data

Date and Time Test Initiated: May 24, 2016 at 0950
Date and Time Test Terminated: May 31, 2016 at 0920

Effluent Conc.: 56 %		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	7.5	7.4	7.7	7.5	7.7	7.7	7.3
	Final *1	7.0	6.7	7.3	7.2	7.7	7.6	7.6
	Final *2	7.6	7.5	8.1	7.8	8.0	8.2	
pH, units	Initial	7.9	7.9	8.0	8.1	8.0	8.4	8.2
	Final *1	7.8	7.8	8.1	8.0	8.5	8.3	8.2
	Final *2	8.1	8.6	8.8	8.4	8.9	9.0	

Effluent Conc.: 75 %		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	7.6	7.4	7.6	7.4	7.8	7.7	7.3
	Final *1	7.0	6.9	7.0	7.3	7.8	7.7	7.7
	Final *2	7.4	7.6	8.0	8.1	8.0	8.0	
pH, units	Initial	7.9	8.0	7.8	8.1	8.0	8.5	8.2
	Final *1	7.8	7.9	8.1	8.1	8.6	8.4	8.4
	Final *2	8.2	8.6	8.8	8.5	8.9	9.0	

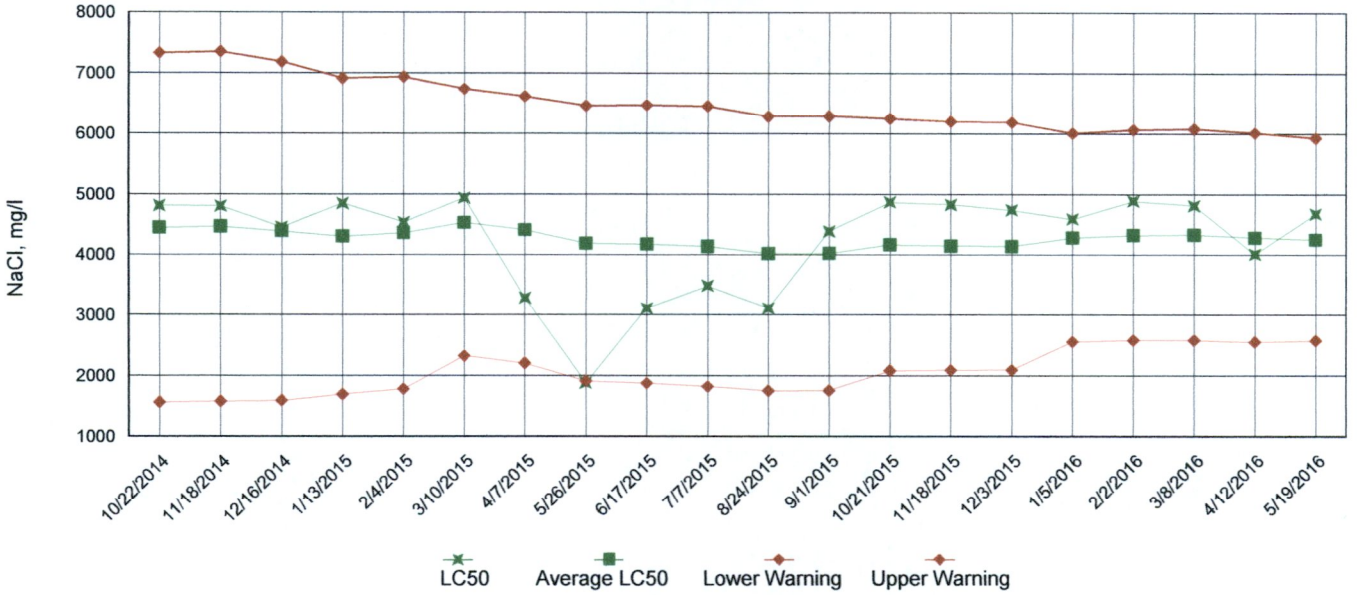
Effluent Conc.: 100 %		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	7.4	7.5	7.5	7.5	7.7	7.5	7.6
	Final *1	6.8	6.8	7.3	6.9	7.6	7.5	7.8
	Final *2	7.4	7.6	8.0	7.6	7.8	8.2	
pH, units	Initial	7.9	7.8	7.7	8.2	7.9	8.6	8.3
	Final *1	7.8	7.9	8.1	8.0	8.6	8.4	8.4
	Final *2	8.2	8.7	8.9	8.5	9.0	9.0	
Alkalinity, mg CaCO3/l		100	NA	110	NA	120	NA	NA
Hardness, mg CaCO3/l		220	NA	220	NA	180	NA	NA
Conductivity, umhos/cm		1100	1100	1100	1100	1000	1000	1000
Res. Chlorine, mg/l		0.050	NA	0.050	NA	<0.05	NA	NA

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

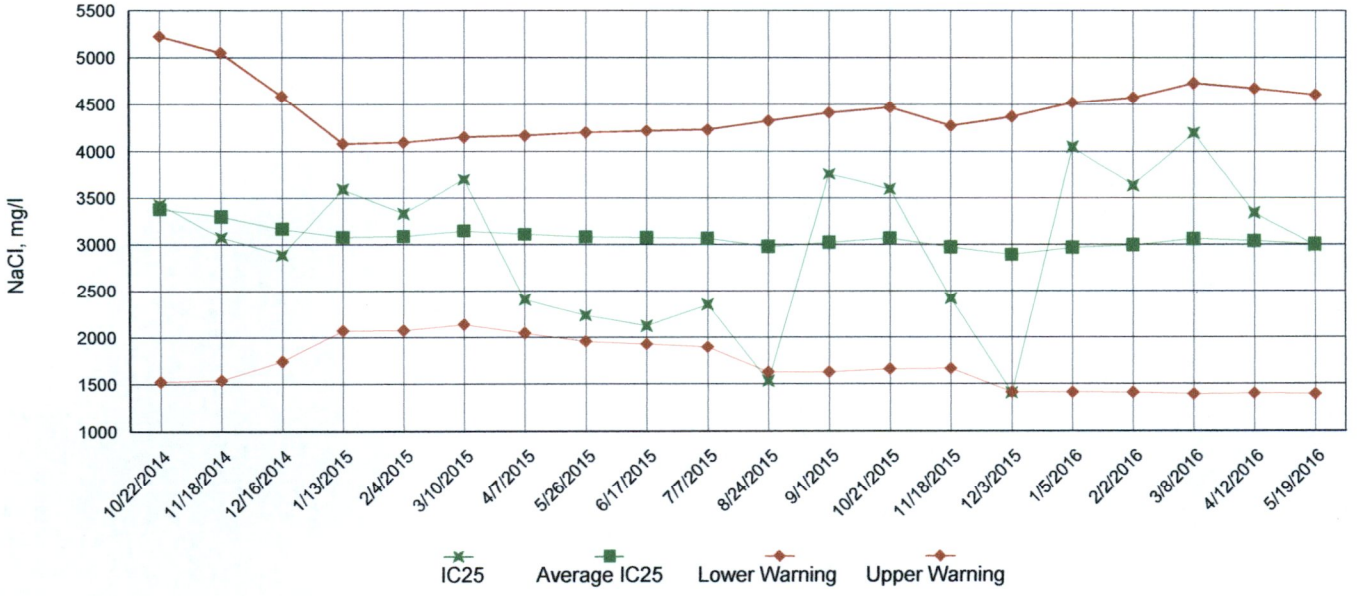
Appendix A4: Test 1000.0

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

LC50 Survival Data



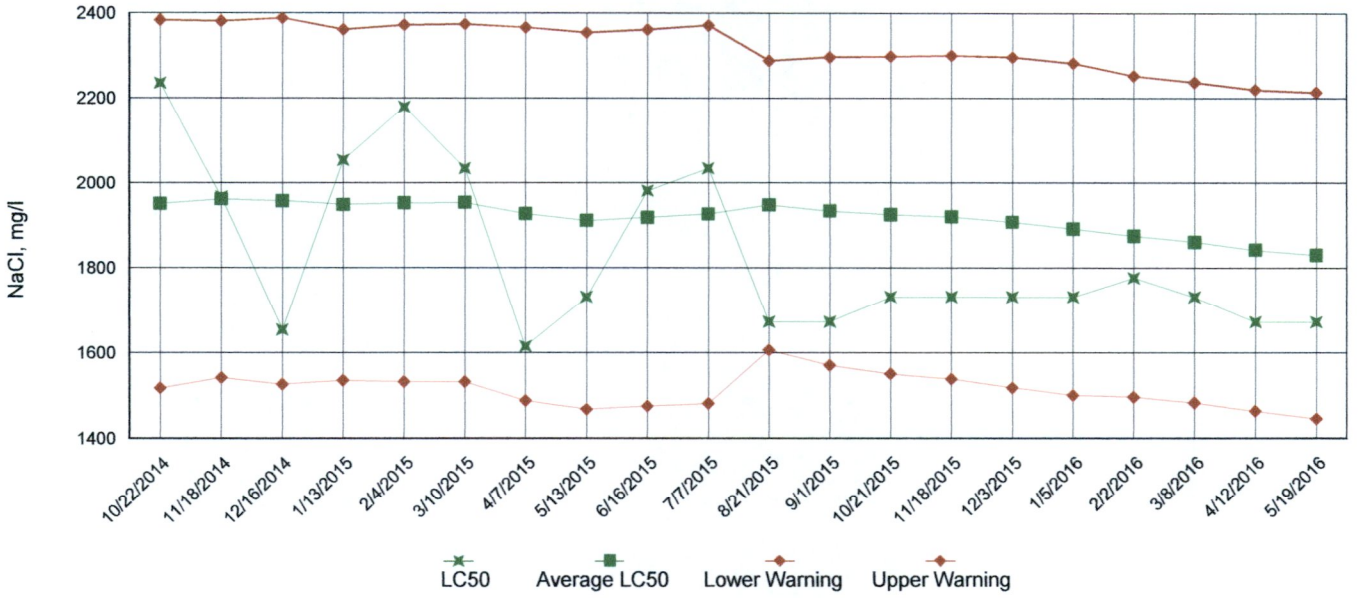
IC25 Growth Data



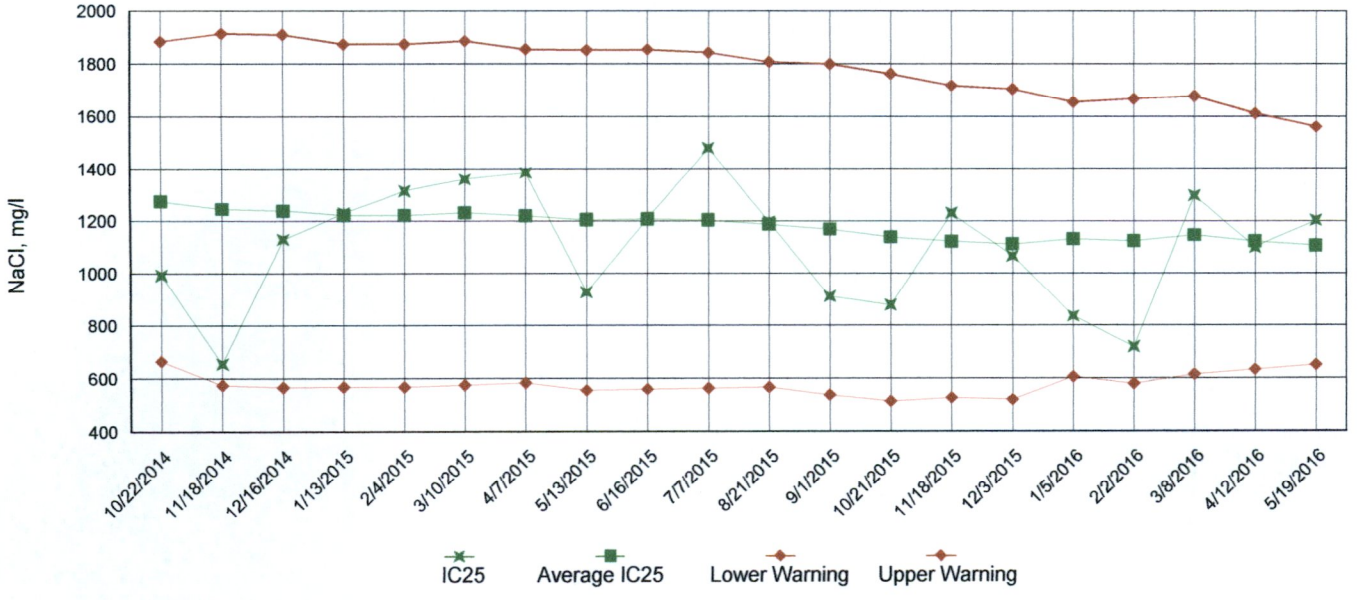
Appendix A4: Test 1002.0

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: Huntsville Water Utilities

NPDES No.: AR0022004 AFIN# 44-00018

Date and Time Test Initiated: May 24, 2016 at 1115
Date and Time Test Terminated: May 31, 2016 at 0920
Dilution water used: Synthetic Moderately Hard Water #4332

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	100	100	100	100	100	100	100	0.00
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	87.5	100	100	100	100	100	97.5	5.73

DATA TABLE FOR GROWTH

Effluent Conc. %	Average dry weight, mg replicate chambers A	B	C	D	E	Mean dry weight, mg	CV%
Control	0.462	0.425	0.464	0.486	0.466	0.461	4.80
32 %	0.454	0.459	0.446	0.461	0.491	0.462	3.70
42 %	0.469	0.456	0.441	0.481	0.446	0.459	3.59
56 %	0.436	0.474	0.466	0.422	0.452	0.45	4.73
75 %	0.450	0.428	0.458	0.450	0.424	0.442	3.40
100 %	0.426	0.444	0.482	0.490	0.468	0.462	5.77

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. 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	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: 5.77 (TQP6C)

Appendix B: Test 1000.0

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

PERMITTEE: Huntsville Water Utilities
NPDES NO.: AR0022004 AFIN# 44-00018
CONTACT: Mr. Bill Eoff
ANALYST: 280, 304, 310, 314

SAMPLE No. 1 COLLECTED ending: DATE: May 23, 2016 TIME: 0500
SAMPLE No. 2 COLLECTED ending: DATE: May 25, 2016 TIME: 0500
SAMPLE No. 3 COLLECTED ending: DATE: May 27, 2016 TIME: 0500
Test Initiated: DATE: May 24, 2016 TIME: 1115
Test Terminated: DATE: May 31, 2016 TIME: 0920

DILUTION Control	DAY 1	2	3	4	5	6	7
D.O. Initial	7.9	7.5	7.6	7.4	7.7	7.7	7.6
Final	7.1	6.3	6.9	7.1	7.8	7.3	7.6
pH Initial	8.0	8.0	8.1	8.2	8.1	8.2	8.0
Final	7.6	7.6	7.8	7.8	8.3	8.1	7.8
Alkalinity	61	NA	61	NA	61	NA	NA
Hardness	89	NA	89	NA	82	NA	NA
Conductivity	320	320	320	320	330	340	340
Chlorine	<0.05	NA	<0.05	NA	<0.05	NA	NA

DILUTION 32 %	DAY 1	2	3	4	5	6	7
D.O. Initial	7.6	7.4	7.5	7.4	7.6	7.6	7.7
Final	6.0	6.5	6.9	6.9	7.7	7.6	7.6
pH Initial	7.9	7.9	8.0	8.2	8.0	8.4	8.1
Final	7.5	7.7	7.8	7.9	8.4	8.2	8.1
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	570	570	580	580	550	550	550
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION 42 %	DAY 1	2	3	4	5	6	7
D.O. Initial	7.6	7.6	7.6	7.5	7.6	7.6	7.7
Final	6.8	6.6	7.1	7.1	7.8	7.6	7.6
pH Initial	7.9	7.9	8.0	8.2	8.0	8.4	8.1
Final	7.7	7.8	7.9	7.9	8.5	8.3	8.2
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	650	650	650	650	620	630	630
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION 56 %	DAY 1	2	3	4	5	6	7
D.O. Initial	7.5	7.4	7.7	7.5	7.7	7.7	7.3
Final	7.0	6.7	7.3	7.2	7.7	7.6	7.6
pH Initial	7.9	7.9	8.0	8.1	8.0	8.4	8.2
Final	7.8	7.8	8.1	8.0	8.5	8.3	8.2
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	770	770	750	760	720	720	730
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION 75 %	DAY 1	2	3	4	5	6	7
D.O. Initial	7.6	7.4	7.6	7.4	7.8	7.7	7.3
Final	7.0	6.9	7.0	7.3	7.8	7.7	7.7
pH Initial	7.9	8.0	7.8	8.1	8.0	8.5	8.2
Final	7.8	7.9	8.1	8.1	8.6	8.4	8.4
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	920	910	900	900	850	860	860
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION 100 %	DAY 1	2	3	4	5	6	7
D.O. Initial	7.4	7.5	7.5	7.5	7.7	7.5	7.6
Final	6.8	6.8	7.3	6.9	7.6	7.5	7.8
pH Initial	7.9	7.8	7.7	8.2	7.9	8.6	8.3
Final	7.8	7.9	8.1	8.0	8.6	8.4	8.4
Alkalinity	100	NA	110	NA	120	NA	NA
Hardness	220	NA	220	NA	180	NA	NA
Conductivity	1100	1100	1100	1100	1000	1000	1000
Chlorine	0.050	NA	0.050	NA	<0.05	NA	NA

Appendix B: Test 1002.0

SUMMARY REPORTING FORMS
CHRONIC BIOMONITORING
Ceriodaphnia dubia
SURVIVAL AND REPRODUCTION

Permittee: Huntsville Water Utilities

NPDES No.: AR0022004 AFIN# 44-00018

Date and Time Test Initiated: May 24, 2016 at 1630
Date and Time Test Terminated: May 30, 2016 at 1540
Dilution water used: Synthetic Moderately Hard Water #4332

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	19	21	27	9	25	16
B	16	17	11	10	14	14
C	24	31	33	26	22	28
D	22	25	29	21	28	20
E	26	26	31	28	27	28
F	21	30	21	16	33	23
G	26	27	11	18	6	28
H	24	24	28	28	28	29
I	11	30	18	12	29	12
J	24	26	26	31	10	17
Mean per Adult	21.3	25.7	23.5	19.9	22.2	21.5
Mean per Surviving Adult	21.3	25.7	23.5	19.9	22.2	21.5
CV %	22.5	16.8	33.7	40.7	40.8	30.4

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: 30.4 (TQP3B)

Appendix B: Test 1002.0

CHRONIC TOXICITY SUMMARY FORM
Ceriodaphnia dubia
CHEMICAL PARAMETERS CHART

PERMITTEE: Huntsville Water Utilities
NPDES NO.: AR0022004 AFIN# 44-00018
CONTACT: Mr. Bill Eoff
ANALYST: 280, 304, 310, 314

SAMPLE No. 1 COLLECTED ending: DATE: May 23, 2016 TIME: 0500
SAMPLE No. 2 COLLECTED ending: DATE: May 25, 2016 TIME: 0500
SAMPLE No. 3 COLLECTED ending: DATE: May 27, 2016 TIME: 0500
Test Initiated: DATE: May 24, 2016 TIME: 1630
Test Terminated: DATE: May 30, 2016 TIME: 1540

DILUTION	DAY						
Control	1	2	3	4	5	6	7
D.O. Initial	7.9	7.5	7.6	7.4	7.7	7.7	7.6
Final	7.4	7.7	7.9	7.7	7.9	7.6	–
pH Initial	8.0	8.0	8.1	8.2	8.1	8.2	8.0
Final	7.9	8.4	8.4	8.1	8.6	8.6	–
Alkalinity	61	NA	61	NA	61	NA	NA
Hardness	89	NA	89	NA	82	NA	NA
Conductivity	320	320	320	320	330	340	340
Chlorine	<0.05	NA	<0.05	NA	<0.05	NA	NA

DILUTION	DAY						
32 %	1	2	3	4	5	6	7
D.O. Initial	7.6	7.4	7.5	7.4	7.6	7.6	7.7
Final	7.4	7.9	8.1	7.9	7.8	7.8	–
pH Initial	7.9	7.9	8.0	8.2	8.0	8.4	8.1
Final	8.0	8.6	8.7	8.3	8.8	8.9	–
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	570	570	580	580	550	550	550
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION	DAY						
42 %	1	2	3	4	5	6	7
D.O. Initial	7.6	7.6	7.6	7.5	7.6	7.6	7.7
Final	7.5	8.1	8.2	7.7	8.1	8.2	–
pH Initial	7.9	7.9	8.0	8.2	8.0	8.4	8.1
Final	8.1	8.6	8.7	8.3	8.9	8.9	–
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	650	650	650	650	620	630	630
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION	DAY						
56 %	1	2	3	4	5	6	7
D.O. Initial	7.5	7.4	7.7	7.5	7.7	7.7	7.3
Final	7.6	7.5	8.1	7.8	8.0	8.2	–
pH Initial	7.9	7.9	8.0	8.1	8.0	8.4	8.2
Final	8.1	8.6	8.8	8.4	8.9	9.0	–
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	770	770	750	760	720	720	730
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION	DAY						
75 %	1	2	3	4	5	6	7
D.O. Initial	7.6	7.4	7.6	7.4	7.8	7.7	7.3
Final	7.4	7.6	8.0	8.1	8.0	8.0	–
pH Initial	7.9	8.0	7.8	8.1	8.0	8.5	8.2
Final	8.2	8.6	8.8	8.5	8.9	9.0	–
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	920	910	900	900	850	860	860
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION	DAY						
100 %	1	2	3	4	5	6	7
D.O. Initial	7.4	7.5	7.5	7.5	7.7	7.5	7.6
Final	7.4	7.6	8.0	7.6	7.8	8.2	–
pH Initial	7.9	7.8	7.7	8.2	7.9	8.6	8.3
Final	8.2	8.7	8.9	8.5	9.0	9.0	–
Alkalinity	100	NA	110	NA	120	NA	NA
Hardness	220	NA	220	NA	180	NA	NA
Conductivity	1100	1100	1100	1100	1000	1000	1000
Chlorine	0.050	NA	0.050	NA	<0.05	NA	NA

AMERICAN INTERPLEX CORPORATION
LABORATORIES

8600 Kanis Road
Little Rock, AR 72204-2322
(501) 224-5060
FAX (501) 224-5072

CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

PAGE OF

Client: Huntsville Water Utilities
Project Reference: Bio Monitoring
Project Manager: Bill Eoff
Sampled By: Bill Eoff

PO No.

AIC CONTROL NO: 202409
AIC PROPOSAL NO:
Carrier:
Received on Ice (4°C)? YES 0.1 NO

AIC No.	Sample Identification	Date/Time Collected	GRAB	COMP	SAMPLE MATRIX: WATER	SOIL	NO OF BOTTLES	ANALYSES REQUESTED: Cd & Fh Chronic	Remarks
1	Huntsville#1	5/22/16@7:00 5/23/16@5:00		X	X		3	X	
		Container Type	P						Field pH calibration
		Preservative	4C						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

Turnaround Time Requested: (Please circle)
NORMAL or EXPEDITED IN ____ DAYS
Expedited results requested by: ____
Who should AIC contact with questions: Bill Eoff
Phone: (479) - 738 - 2081 Fax: (479) - 738 - 1285
Report Attention to: Bill Eoff
Report Address to: Bill Eoff
Huntsville Water Utilities
P.O. Box 430

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	5/23/16@800		
Relinquished By:	Date/Time	Received in Lab By:	Date/Time
		[signature]	5/24/16 0920

Comments:
FedEx# 8019 4081 0227

AMERICAN INTERPLEX CORPORATION
LABORATORIES

8600 Kanis Road
Little Rock, AR 72204-2322
(501) 224-5060
FAX (501) 224-5072

CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

PAGE OF

Client: Huntsville Water Utilities
Project Reference: Bio Monitoring
Project Manager: Bill Eoff
Sampled By: Bill Eoff

PO No.

AIC CONTROL NO: 102409
AIC PROPOSAL NO:
Carrier:
Received on Ice (4°C)? (YES) 0.1 NO

AIC No.	Sample Identification	Date/Time Collected	GRAB	COMP	SAMPLE MATRIX: WATER	SOIL	NO OF BOTTLES	ANALYSES REQUESTED: Cd & Fh Chronic	Remarks
2	Huntsville#2	5/24/16 @ 7:10 5/25/16 @ 8:00		X	X		3	X	
		Container Type	P						
		Preservative	4C						

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

Turnaround Time Requested: (Please circle)
NORMAL or EXPEDITED IN ____ DAYS
Expedited results requested by: _____
Who should AIC contact with questions: Bill Eoff
Phone: (479) - 738 - 2081 Fax: (479) - 738 - 1285
Report Attention to: Bill Eoff
Report Address to: Bill Eoff
Huntsville Water Utilities
P.O. Box 430

Relinquished By:	Date/Time	Received By:	Date/Time
	5/25/16 @ 8:00		
Relinquished By:	Date/Time	Received In Lab By:	Date/Time
			5/26/16 0835

Comments:

AMERICAN INTERPLEX CORPORATION
LABORATORIES

8600 Kanis Road
Little Rock, AR 72204-2322
(501) 224-5060
FAX (501) 224-5072

CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

PAGE OF

Client: Huntsville Water Utilities
Project Reference: Bio Monitoring
Project Manager: Bill Eoff
Sampled By: Bill Eoff

PO No.

AIC CONTROL NO: 202409
AIC PROPOSAL NO:
Carrier: FedEx
Received on Ice (4°C)? YES 0.1 NO

AIC No.	Sample Identification	Date/Time Collected	GRAB	COMP	SAMPLE MATRIX: WATER	SOIL	NO OF BOTTLES	ANALYSES REQUESTED: Cd & Fh Chronic	Remarks
3	Huntsville#3	5/26/16 @ 7:00 5/27/16 @ 5:00		X	X		3	X	
		Container Type	P						Field pH calibration
		Preservative	4C						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

Turnaround Time Requested: (Please circle)
NORMAL or EXPEDITED IN ___ DAYS
Expedited results requested by: _____
Who should AIC contact with questions: Bill Eoff
Phone: (479) - 738 - 2081 Fax: (479) - 738 - 1285
Report Attention to: Bill Eoff
Report Address to: Bill Eoff
Huntsville Water Utilities
P.O. Box 430

Relinquished By:	Date/Time	Received By:	Date/Time
BM	5/27/16 @800		
Relinquished By:	Date/Time	Received in Lab By:	Date/Time
			28 May 16 0800

Comments: TRK# 8019 4081 0205

Huntsville Water Utilities
P.O. Box 430
Huntsville, AR 72740

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