

September 28, 2017

Mr. James Boston  
City of Decatur  
PO Box 247  
Decatur, AR 72722

RE: Project: WET TEST  
Pace Project No.: 60252907

Dear Mr. Boston:

Enclosed are the analytical results for sample(s) received by the laboratory on September 12, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Alice Spiller  
alice.spiller@pacelabs.com  
(913)563-1409  
Project Manager

Enclosures

cc: Mike Liley, City of Decatur



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: WET TEST

Pace Project No.: 60252907

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### **Southeast Kansas Certification IDs**

808 West McKay, Frontenac, KS 66763

Arkansas Certification #: 13-012-0

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Oklahoma Certification #: 2016-082

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

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## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: WET TEST

Pace Project No.: 60252907

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Lab ID	Sample ID	Matrix	Date Collected	Date Received
60252907001	CHRONIC BIO	Water	09/12/17 07:00	09/12/17 14:00

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### SAMPLE ANALYTE COUNT

Project: WET TEST

Pace Project No.: 60252907

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60252907001	CHRONIC BIO	EPA 821/R-02/013	MEB	1	PASI-SE

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## ANALYTICAL RESULTS

Project: WET TEST

Pace Project No.: 60252907

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>Sample: CHRONIC BIO</b>								
<b>Lab ID: 60252907001</b>								
Collected: 09/12/17 07:00    Received: 09/12/17 14:00    Matrix: Water								
<b>Chronic Toxicity</b>	Analytical Method: EPA 821/R-02/013							
Toxicity, Chronic	<b>Complete</b>		1.0	1		09/12/17 15:30		

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## QUALIFIERS

Project: WET TEST

Pace Project No.: 60252907

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-SE Pace Analytical Services - SE Kansas

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WET TEST  
Pace Project No.: 60252907

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<b>Lab ID</b>	<b>Sample ID</b>	<b>QC Batch Method</b>	<b>QC Batch</b>	<b>Analytical Method</b>	<b>Analytical Batch</b>
60252907001	CHRONIC BIO	EPA 821/R-02/013	495208		

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Sample Condition Upon Receipt

WO#: 60252907
Barcode with number 60252907

Client Name: Decatur

Courier: FedEx [ ] UPS [ ] VIA [X] Clay [ ] PEX [ ] ECI [ ] Pace [ ] Xroads [ ] Client [ ] Other [ ]

Tracking #: Pace Shipping Label Used? Yes [ ] No [X]

Custody Seal on Cooler/Box Present: Yes [X] No [ ] Seals intact: Yes [X] No [ ]

Packing Material: Bubble Wrap [ ] Bubble Bags [ ] Foam [ ] None [X] Other [ ]

Thermometer Used: T-243 Type of Ice: Wet [ ] Blue [ ] None [ ]

Cooler Temperature (°C): As-read 3.6 Corr. Factor -1.0 Corrected 2.6

Date and initials of person examining contents:

9/12/17
EC 14:00

Temperature should be above freezing to 6°C

Table with 2 columns: Question/Requirement and Yes/No/N/A checkboxes. Rows include Chain of Custody, Samples arrived, Short Hold Time, Rush Turn Around Time, Sufficient volume, Correct containers used, Pace containers used, Containers intact, Unpreserved soils, Filtered volume, Sample labels match, Samples contain multiple phases, Containers requiring pH preservation, Cyanide water sample checks, Trip Blank present, Headspace in VOA vials, Samples from USDA Regulated Area, Additional labels attached.

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: Alice Date: 09/14/17





# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company:	City of Decatur, AR	Report To:	James Boston	Attention:	
Address:	PO Box 247	Copy To:		Company Name:	
Decatur, AR 72722		Purchase Order #:		Address:	
Phone:	(479) 52-3912	Project Name:	Wet Test, Decatur, AR	Pace Project Manager:	alice.spiller@pacelabs.com
Requested Due Date:		Project #:		Pace Quote:	
				Pace Profile #:	428, line 1
				State / Location:	AR
				Regulatory Agency:	

ITEM #	MATRIX	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analyses Test Y/N	Chronic Wet Test	Residual Chlorine (Y/N)
				START DATE TIME	END DATE TIME						
1	Chronic Bio			9/11 8AM	9/12 7AM		1	Ice	X	X	
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											

ADDITIONAL COMMENTS	REINQUIRED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	ml jdy	9/12/17	8 AM	Ethan Castagno Pace	9/12	14:00	Y Y Y

TEMP in C	
Received on	
Ice (Y/N)	
Custody (Y/N)	
Sealed	
Cooler (Y/N)	
Intact Samples (Y/N)	
SAMPLER NAME AND SIGNATURE	
PRINT Name of SAMPLER:	Mike Lyall
SIGNATURE of SAMPLER:	<i>ml jdy</i>
DATE Signed:	9/12/17



REFERENCE #60252907

**Pace Analytical Services, Inc.**  
9608 Loiret Blvd.  
Lenexa, KS 66219  
Phone: 913.599.5665  
Fax: 913.599.1759

September 21, 2017

James Boston  
City of Decatur  
P.O. Box 247  
Decatur, AR 72722

Re: Lab Project Number: 60252907  
Client Project ID: Wet Test

Dear:

Enclosed are the analytical results for sample(s) received by the laboratory. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any question concerning this report, please feel free to contact me.

Sincerely,

Tim Harrell  
[Tim.Harrell@pacelabs.com](mailto:Tim.Harrell@pacelabs.com)  
Technical Director

Enclosures

## REPORT OF LABORATORY ANALYSIS

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REFERENCE #60252907

**Pace Analytical Services, Inc.**  
9608 Loiret Blvd.  
Lenexa, KS 66219  
Phone: 913.599.5665  
Fax: 913.599.1759

**CHRONIC TOXICITY TEST FOR  
City of Decatur**

PERMIT # AR0022292  
AFIN # 04-00052

PERFORMED ON:

Pimephales promelas

and

Ceriodaphnia dubia

PREPARED FOR:

City of Decatur  
Attn: James Boston  
P.O. Box 247  
Decatur, AR 72722  
1-479-752-3912

PREPARED BY:  
Pace Analytical Services, Inc.  
808 West McKay  
Frontenac, KS 66763  
1-620-235-0003

September 21, 2017

**REPORT OF LABORATORY ANALYSIS**

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### REPORT OF LABORATORY ANALYSIS

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## SUMMARY

A Chronic Whole Effluent Toxicity Test using the 7-day chronic fathead minnows (*Pimephales promelas*), static renewal larval survival and growth test, and three brood 7-day chronic Cladoceran (*Ceriodaphnia dubia*), static renewal survival and reproduction test, was conducted on effluent discharge water collected at the City of Decatur effluent discharge from September 12, 2017 to September 15, 2017. All the test methods followed are as listed in EPA 821-R-02-013, "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms."

Statistically significant ( $p < 0.05$ ) mortality is determined by Dunnet's procedure using average percent survival of each test concentration versus the average survival of the controls. If significant mortality occurs, median lethal concentrations (LC50) are calculated using effluent concentrations and their corresponding percent mortality data. The LC50's and the 95% confidence intervals are calculated where appropriate by the Spearman-Kärber method. Statistical analysis is accomplished by following steps in EPA 821-R-02-013, November 2002 and by use of Toxstat version 3.4.

In minnow section of testing, it was observed that the effluent had no significant effect on the survival of the larvae at the 100% concentration. No significant mortality was observed in the other effluent concentrations after the 7-day exposure period. The No Observed Effect Concentration (NOEC) was determined to be 100% for survival. The LC50 was estimated to be >100% effluent. No significant reduction in growth was observed in the 100% effluent concentration. The Toxic Units is <1. The IC25 is >100. The NOEC for growth in effluent was determined to be 100%. The PMSD was 13.2.

In Cladoceran section of testing, it was observed that the effluent had no significant effect on the survival of the organisms in the 100% effluent concentration. No significant mortality was observed in the other effluent concentrations after the 7-day exposure period. The No Observed Effect Concentration (NOEC) was determined to be 100% for survival. The LC50 was estimated to be >100% effluent. No significant reduction in reproduction was observed in the 100% effluent concentrations. The Toxic Units is <1. The IC25 is >100. The NOEC for reproduction in effluent was determined to be 100%. The PMSD was 16.6.

The chronic toxicity exhibited by the fathead minnows and the *Ceriodaphnia* treated by the effluent sampled from September 12 to September 15 from the City of Decatur effluent discharge, is acceptable as described in EPA 821-R-02-013.

## REPORT OF LABORATORY ANALYSIS

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## INTRODUCTION

Pace Analytical was contracted to perform this chronic toxicity test on effluent from the City of Decatur effluent discharge. Chronic toxicity was measured using the Pimephales promelas at larval for survival and growth test and the Ceriodaphnia dubia survival and reproduction test described in EPA 821-R-02-013, "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms." The raw data of the study is stored at Pace Analytical Services, INC. 808 West McKay, Frontenac, KS 66763.

## TEST MATERIAL

City of Decatur personnel collected sampling of the effluent. A sample of the effluent was delivered to Pace by commercial carrier on 9-12-17. Subsequent samples followed by delivery on 9-13-17 and on 9-15-17. All samples were stored at  $\leq 6^{\circ}$  Celsius. Moderately Hard Synthetic Water was used as a control and also to make the required dilutions in the test as described in EPA 821-R-02-013.

## TEST METHODS

Pace used EPA test method 1000.0 for conducting the Fathead Minnow, Pimephales promelas, Larval Survival and Growth Test. EPA test method 1002.0 was used for conducting the Cladoceran, Ceriodaphnia dubia, Survival and Reproduction Test. The tests were conducted to estimate the LC50, NOEC, and LOEC for survival, growth, and reproduction of these test species.

The Pimephales and Ceriodaphnia tests were initiated on 9-12-17 and carried out until 9-19-17. The Pimephales tests were conducted in 500 ml plastic jars with 250 ml of test solution. Eight larvae were placed in each of at least 5 replicates to make a total of 40 larvae per sample concentration. The Ceriodaphnia tests were carried out in 35ml vials containing 25 ml of test solution. One Neonate was placed in each of 10 replicates to make a total of 10 neonates per sample concentration.

## TEST ORGANISMS

The organisms used in these tests were cultured at Pace under controlled temperature and photoperiod conditions and/or were purchased from an external supplier. Pace maintains records of all culture techniques used in producing organisms.

## REPORT OF LABORATORY ANALYSIS

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## RESULTS

### REPORT OF LABORATORY ANALYSIS

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**TABLE 1**

Permittee: City of Decatur Effluent discharge.

Date Sampled	No. 1:	9-12-17	7:00
	No. 2:	9-13-17	7:00
	No. 3:	9-15-17	7:00
Test Initiated: 15:30	Date:	9-12-17	

Dilution Water used: Moderately Hard Synthetic Water

**FATHEAD MINNOW LARVAE GROWTH AND SURVIVAL**  
**(Pimephales promelas)**

DATA TABLE FOR GROWTH OF FATHEAD MINNOWS

Effluent Concentration (%)	Average Dry Weight in Milligrams in Replicate Chambers					Mean Dry Weight (mg)	CV% *
	A	B	C	D	E		
Control 0%	0.439	0.402	0.346	0.462	0.417	0.413	10.62
Dilution 1 32%	0.453	0.460	0.400	0.444	0.416	0.435	5.88
Dilution 2 42%	0.368	0.379	0.439	0.404	0.469	0.412	10.21
Dilution 3 56%	0.392	0.412	0.423	0.450	0.419	0.419	5.00
Dilution 4 75%	0.472	0.407	0.421	0.338	0.439	0.415	11.95
Dilution 5 100%	0.384	0.434	0.457	0.426	0.412	0.423	6.40

\* Coefficient of Variation = Standard Deviation X 100 / Mean

**REPORT OF LABORATORY ANALYSIS**

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Permittee: City of Decatur Effluent discharge.

FATHEAD MINNOW SURVIVAL

Conc. %	Percent Survival in Replicate Chambers					Mean Percent Survival			CV %
	A	B	C	D	E	24hr	48hr	7 day	
Control 0%	100	100	87.5	100	100	100	100	97.5	4.79
Dilution 1 32%	100	100	100	100	100	100	100	100	0.0
Dilution 2 42%	87.5	87.5	100	100	100	100	100	95	5.99
Dilution 3 56%	100	100	100	100	100	100	100	100	0.0
Dilution 4 75%	100	100	100	87.5	100	100	100	97.5	4.79
Dilution 5 100%	87.5	100	100	100	100	100	100	97.5	4.79

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Permittee: City of Decatur Effluent discharge.

**CERIODAPHNIA SURVIVAL AND REPRODUCTION**

DATA TABLE FOR CERIODAPHNIA YOUNG PRODUCTION

Replicate	Control 0%	Dilution 1 32%	Dilution 2 42%	Dilution 3 56%	Dilution 4 75%	Dilution 5 100%
1	23	19	25	21	25	18
2	22	25	23	23	22	23
3	16	18	20	27	16	18
4	22	27	19	17	16	16
5	16	19	23	17	21	25
6	20	18	18	15	24	27
7	22	22	23	18	22	21
8	22	20	26	25	19	24
9	24	25	16	22	21	24
10	22	22	26	24	19	23
Mean	20.9	21.5	21.9	20.9	20.5	21.9
SD	2.767	3.240	3.479	3.985	3.028	3.542
CV %	13.24	15.07	15.88	19.07	14.77	16.17

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Permittee: City of Decatur Effluent discharge.

CERIODAPHNIA MEAN PERCENT SURVIVAL

Percent Effluent (%)						
Time Elapsed	Control 0%	Dilution 1 32%	Dilution 2 42%	Dilution 3 56%	Dilution 4 75%	Dilution 5 100%
24 hrs	100	100	100	100	100	100
48 hrs	100	100	100	100	100	100
7-day	100	100	100	100	100	100
SD	0.000	0.000	0.000	0.000	0.000	0.000
CV %	0.00	0.00	0.00	0.00	0.000	0.000

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**TABLE 2**  
**SUMMARY OF TEST CONDITIONS FOR THE FATHEAD MINNOW**  
**(*Pimephales promelas*) LARVAL SURVIVAL AND GROWTH TEST**

1. Test type	Static renewal
2. Temperature	25 degrees Celsius
3. Light quality	Ambient laboratory light
4. Light intensity	Ambient laboratory levels
5. Photoperiod	16 hr light, 8 hr dark
6. Test chamber size	500 ml
7. Test solution volume	250 ml
8. Renewal of test concentrations	Daily
9. Age of test organism	< 24 hours
10. No. larvae/chamber	8
11. No. replicates/concentration	5
12. No. larvae/concentration	40
13. Feeding regime	Feed 0.1 ml newly hatched brine shrimp nauplii three times daily. Larvae are not fed 12 hours prior to termination of test.
14. Cleaning	Siphon daily, immediately before test solution renewal
17. Aeration	None

**REPORT OF LABORATORY ANALYSIS**

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**TABLE 2 (CONT.)**

17. Dilution Water	Moderately Hard Synthetic Water prepared with MILLI-Q deionized water and reagent grade chemicals
17. Effluent concentrations	0%, 32%, 42%, 56%, 75%, 100%
18. Test duration	7 days
19. Endpoints	Survival and growth
20. Test acceptability	80% or greater survival in the controls, Average dry weight in controls >0.25 mg, Coefficient of variation in the control must not exceed 40%.

**TABLE 2 (CONT.)**

**SUMMARY OF TEST CONDITIONS FOR THE CLADOCERAN  
(*Ceriodaphnia dubia*) SURVIVAL AND REPRODUCTION TEST**

1. Test type	Static renewal
2. Temperature	25 degrees Celsius
3. Light quality	Ambient laboratory light
4. Light intensity	Ambient laboratory levels
5. Photoperiod	16 hr light, 8 hr dark
6. Test chamber size	30 ml
7. Test solution volume	25 ml

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**TABLE 2 (CONT.)**

8. Renewal of test concentrations	Daily
9. Age of test organism	< 24 hours
10. No. larvae/chamber	1
11. No. replicates/concentration	10
12. No. larvae/concentration	10
13. Feeding regime	Feed 0.1 ml YCT three times daily. Larvae are not fed 12 hours prior to termination of test.
14. Cleaning	Siphon daily, immediately before test solution renewal
17. Aeration	None
17. Dilution Water	Moderately Hard Synthetic Water prepared with MILLI-Q deionized water and reagent grade chemicals
17. Effluent concentrations	0%, 32%, 42%, 56%, 75%, 100%
18. Test duration	Until 60% or more surviving control females have three broods or a maximum of 8 days.
19. Endpoints	Survival and Reproduction
20. Test acceptability	80% or greater survival in the controls, Average reproduction rate of 15 young / adult. Coefficient of variation in the control must not exceed 40%.

**REPORT OF LABORATORY ANALYSIS**

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**TABLE 2 (SECTION 2)**

**BIOMONITORING CHRONIC TOXICITY REPORT  
FATHEAD MINNOW (Pimephales promelas)  
CHEMICAL PARAMETERS CHART**

Permittee: City of Decatur Effluent discharge.

ANALYSTS: Pace Analytical Services, Inc.  
Timothy Harrell  
Mike Bollin

SAMPLE NO. 1 COLLECTED: DATE: 9-12-17

SAMPLE NO. 2 COLLECTED: DATE: 9-13-17

SAMPLE NO. 3 COLLECTED: DATE: 9-15-17

**TABLE 2 (SECTION 2)  
INITIAL WATER QUALITY  
EFFLUENT CONCENTRATION**

	Control	100%
PH	7.59	7.79
D.O.	8.20	8.20
Temp	25.0	25.0
Alk	66	112
Hard	84	250
Cond	377	886
Chlorine	<0.1	<0.1

- \* D.O. is reported as mg/L
- Alkalinity is reported as mg/L CaCO<sub>3</sub>
- Hardness is reported as mg/L CaCO<sub>3</sub>
- Conductance is reported as umhos
- Ammonia is reported as mg/L
- Chlorine is reported as mg/L

**REPORT OF LABORATORY ANALYSIS**

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TEST WATER QUALITY

24-Hour Water Quality Measurements

Effluent Concentration (%)	PH	D.O. (mg/l)	Temperature (C)
0% Control	7.74	7.20	24.9
32% Effluent	7.81	7.20	24.9
42% Effluent	7.85	7.20	24.9
56% Effluent	7.97	7.20	24.9
75% Effluent	8.16	7.20	24.9
100% Effluent	8.44	7.20	24.9

48-Hour Water Quality Measurements

Effluent Concentration (%)	PH	D.O. (mg/l)	Temperature (C)
0% Control	7.70	7.00	25.0
32% Effluent	7.79	7.00	25.1
42% Effluent	7.96	7.00	25.1
56% Effluent	8.09	7.00	25.1
75% Effluent	8.22	7.10	25.1
100% Effluent	8.47	7.10	25.1

**REPORT OF LABORATORY ANALYSIS**

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FINAL WATER QUALITY

EFFLUENT CONCENTRATION

	Control	100%
pH	7.79	8.15
D.O.	6.70	6.50
Temp	25.0	25.1
Alk	64	234
Hard	92	150
Cond	421	900

- \* D.O. is reported as mg/L
- Alkalinity is reported as mg/L CaCO<sub>3</sub>
- Hardness is reported as mg/L CaCO<sub>3</sub>
- Conductance is reported as umhos

**REPORT OF LABORATORY ANALYSIS**

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### TEST VALIDITY

The *Pimephales promelas* control survival rate was 97.5%. The mean dry weight (growth) of the *Pimephales promelas* was determined at 0.413 mg/organism in the controls. The percent coefficient of variation (%CV) values for the fathead minnow control for survival and growth were 4.79 and 10.62. The *Ceriodaphnia dubia* survival rates were 100 in the control. The *Ceriodaphnia* in the control produced an average of 20.9 young over the seven-day exposure period. Percent CV values for *Ceriodaphnia dubia* control survival and reproduction was 0.00 and 13.24. Control data met or exceeded all criteria set out by EPA 821-R-02-013 for test acceptance.

### CONCLUSIONS

The No Observed Effect Concentration (NOEC) for *Pimephales promelas* was 100% for survival and 100% for growth. The No Observed Effect Concentration (NOEC) for *Ceriodaphnia dubia* was 100% for Survival and 100% for Reproduction. The tests were ran using a synthetic control against effluent concentrations of 32%, 42%, 56%, 75%, and 100%. The effluent sampled on 9-12-17, 9-13-17, and 9-15-17 exhibited acceptable chronic toxicity in *Pimephales promelas* and in *Ceriodaphnia dubia* during the exposure period as described in EPA 821-R-02-013.

## REPORT OF LABORATORY ANALYSIS

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**APPENDIX C**

**REFERENCE TOXICANTS**

The absence of significant control mortality during this test indicated the health of the organisms and indicated that any significant mortality in the test concentrations was not due to contaminants or variations in testing conditions.

Reference toxicity testing is routinely performed by staff members in our biomonitoring - bioassay laboratory.

Start: 9/12/17 11:00      End: 9/19/17 10:30

Reference Toxicant (NaCl)      Pimephales promelas

Concentration of Toxicant	Avg. # of Live Organisms/replicate			
	0 hrs	24 hrs	48 hrs	7 days
10 g/l	40	7	2	0
8 g/l	40	37	32	4
6 g/l	40	38	35	26
4 g/l	40	40	40	39
2 g/l	40	40	40	40

IC25 (5.21 g/l Sodium Chloride)

Survival NOEC: 4.0 g/l

Reference Toxicant (NaCl)      Ceriodaphnia Dubia

Concentration of Toxicant	Avg. # of Live Organisms/replicate			
	0 hrs	24 hrs	48 hrs	7 days
2.5 g/l	10	5	0	0
2.0 g/l	10	10	9	1
1.5 g/l	10	10	10	10
1.0 g/l	10	10	10	10
0.5 g/l	10	10	10	10

IC25 (1.17 g/l Sodium Chloride)

Survival NOEC: 1.5 g/l

Submitted By:



Timothy Harrell, Technical Director

**REPORT OF LABORATORY ANALYSIS**

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60252907 Decatur FATHEAD SURVIVAL  
File: 6252907A Transform: ARC SINE(SQUARE ROOT(Y))

Chi-square test for normality: actual and expected frequencies

---

INTERVAL	<-1.5	-1.5 to <-0.5	-0.5 to 0.5	>0.5 to 1.5	>1.5
EXPECTED	2.010	7.260	11.460	7.260	2.010
OBSERVED	3	2	22	3	0

---

Calculated Chi-Square goodness of fit test statistic = 18.5021  
Table Chi-Square value (alpha = 0.01) = 13.277

Data FAIL normality test. Try another transformation.

Warning - The first three homogeneity tests are sensitive to non-normal data and should not be performed.

60252907 Decatur FATHEAD SURVIVAL  
File: 6252907A Transform: ARC SINE(SQUARE ROOT(Y))

Shapiro - Wilk's test for normality

---

D = 0.048

W = 0.752

Critical W (P = 0.05) (n = 30) = 0.927

Critical W (P = 0.01) (n = 30) = 0.900

---

Data FAIL normality test. Try another transformation.

Warning - The first three homogeneity tests are sensitive to non-normal data and should not be performed.

60252907 Decatur FATHEAD SURVIVAL

File: 6252907A Transform: ARC SINE(SQUARE ROOT(Y))

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	CONTROL	5	0.991	1.107	1.084
2	32%	5	1.107	1.107	1.107
3	42%	5	0.991	1.107	1.061
4	56%	5	1.107	1.107	1.107
5	75%	5	0.991	1.107	1.084
6	100%	5	0.991	1.107	1.084

60252907 Decatur FATHEAD SURVIVAL

File: 6252907A Transform: ARC SINE(SQUARE ROOT(Y))

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 of 2

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	CONTROL	0.003	0.052	0.023	4.79
2	32%	0.000	0.000	0.000	0.00
3	42%	0.004	0.064	0.028	5.99
4	56%	0.000	0.000	0.000	0.00
5	75%	0.003	0.052	0.023	4.79
6	100%	0.003	0.052	0.023	4.79

60252907 Decatur FATHEAD SURVIVAL

File: 6252907A Transform: ARC SINE(SQUARE ROOT(Y))

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	0.008	0.002	0.756
Within (Error)	24	0.048	0.002	
Total	29	0.056		

Critical F value = 2.62 (0.05,5,24)

Since F < Critical F FAIL TO REJECT Ho: All equal

60252907 Decatur FATHEAD SURVIVAL

File: 6252907A Transform: ARC SINE(SQUARE ROOT(Y))

## DUNNETT'S TEST

- TABLE 1 OF 2

Ho:Control&lt;Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	CONTROL	1.084	0.780		
2	32%	1.107	0.800	-0.816	
3	42%	1.061	0.760	0.816	
4	56%	1.107	0.800	-0.816	
5	75%	1.084	0.780	0.000	
6	100%	1.084	0.780	0.000	

Dunnett table value = 2.36 (1 Tailed Value, P=0.05, df=24,5)

60252907 Decatur FATHEAD SURVIVAL

File: 6252907A

Transform: ARC SINE(SQUARE ROOT(Y))

## DUNNETT'S TEST

- TABLE 2 OF 2

Ho:Control&lt;Treatment

GROUP	IDENTIFICATION	NUM OF REPS	Minimum Sig Diff (IN ORIG. UNITS)	% of CONTROL	DIFFERENCE FROM CONTROL
1	CONTROL	5			
2	32%	5	0.058	7.4	-0.020
3	42%	5	0.058	7.4	0.020
4	56%	5	0.058	7.4	-0.020
5	75%	5	0.058	7.4	-0.000
6	100%	5	0.058	7.4	0.000

60252907 Decatur FATHEAD GROWTH  
File: 6252907B Transform: NO TRANSFORMATION

Shapiro - Wilk's test for normality

---

D = 0.032

W = 0.974

Critical W (P = 0.05) (n = 30) = 0.927

Critical W (P = 0.01) (n = 30) = 0.900

---

Data PASS normality test at P=0.01 level. Continue analysis.

60252907 Decatur FATHEAD GROWTH  
File: 6252907B Transform: NO TRANSFORMATION

---

Bartlett's test for homogeneity of variance

Calculated B1 statistic = 4.18

---

Table Chi-square value = 15.09 (alpha = 0.01, df = 5)

Table Chi-square value = 11.07 (alpha = 0.05, df = 5)

---

Data PASS B1 homogeneity test at 0.01 level. Continue analysis.

60252907 Decatur FATHEAD GROWTH  
 File: 6252907B Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

---

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	CONTROL	5	0.346	0.462	0.413
2	32%	5	0.400	0.460	0.435
3	42%	5	0.368	0.469	0.412
4	56%	5	0.392	0.450	0.419
5	75%	5	0.338	0.472	0.415
6	100%	5	0.384	0.457	0.423

---

60252907 Decatur FATHEAD GROWTH  
 File: 6252907B Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 of 2

---

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	CONTROL	0.002	0.044	0.020	10.62
2	32%	0.001	0.026	0.011	5.88
3	42%	0.002	0.042	0.019	10.21
4	56%	0.000	0.021	0.009	5.00
5	75%	0.002	0.050	0.022	11.95
6	100%	0.001	0.027	0.012	6.40

---

60252907 Decatur FATHEAD GROWTH  
 File: 6252907B Transform: NO TRANSFORMATION

ANOVA TABLE

---

SOURCE	DF	SS	MS	F
Between	5	0.002	0.000	0.266
Within (Error)	24	0.032	0.001	
Total	29	0.034		

---

Critical F value = 2.62 (0.05,5,24)  
 Since  $F < \text{Critical } F$  FAIL TO REJECT  $H_0$ : All equal

60252907 Decatur FATHEAD GROWTH  
 File: 6252907B Transform: NO TRANSFORMATION



DUNNETT'S TEST - TABLE 1 OF 2

Ho:Control<Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	CONTROL	0.413	0.413		
2	32%	0.435	0.435	-0.928	
3	42%	0.412	0.412	0.061	
4	56%	0.419	0.419	-0.260	
5	75%	0.415	0.415	-0.095	
6	100%	0.423	0.423	-0.408	

Dunnnett table value = 2.36 (1 Tailed Value, P=0.05, df=24,5)

60252907 Decatur FATHEAD GROWTH

File: 6252907B

Transform: NO TRANSFORMATION

DUNNETT'S TEST - TABLE 2 OF 2

Ho:Control<Treatment

GROUP	IDENTIFICATION	NUM OF REPS	Minimum Sig Diff (IN ORIG. UNITS)	% of CONTROL	DIFFERENCE FROM CONTROL
1	CONTROL	5			
2	32%	5	0.054	13.2	-0.021
3	42%	5	0.054	13.2	0.001
4	56%	5	0.054	13.2	-0.006
5	75%	5	0.054	13.2	-0.002
6	100%	5	0.054	13.2	-0.009

FISHER'S EXACT TEST

IDENTIFICATION	NUMBER OF		
	ALIVE	DEAD	TOTAL ANIMALS
CONTROL	10	0	10
32%	10	0	10
TOTAL	20	0	20

CRITICAL FISHER'S VALUE (10,10,10) (p=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	NUMBER OF		
	ALIVE	DEAD	TOTAL ANIMALS
CONTROL	10	0	10
42%	10	0	10
TOTAL	20	0	20

CRITICAL FISHER'S VALUE (10,10,10) (p=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	NUMBER OF		
	ALIVE	DEAD	TOTAL ANIMALS
CONTROL	10	0	10
56%	10	0	10

TOTAL 20 0 20

CRITICAL FISHER'S VALUE (10,10,10) (p=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	NUMBER OF		
	ALIVE	DEAD	TOTAL ANIMALS
CONTROL	10	0	10
75%	10	0	10
TOTAL	20	0	20

CRITICAL FISHER'S VALUE (10,10,10) (p=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	NUMBER OF		
	ALIVE	DEAD	TOTAL ANIMALS
CONTROL	10	0	10
100%	10	0	10
TOTAL	20	0	20

CRITICAL FISHER'S VALUE (10,10,10) (p=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 TESTS

NUMBER NUMBER SIG

GROUP	IDENTIFICATION	EXPOSED	DEAD	(P=.05)
	CONTROL	10	0	
1	32%	10	0	
2	42%	10	0	
3	56%	10	0	
4	75%	10	0	
5	100%	10	0	

60252907 Decatur CERIODAPHNIA DUBIA SURVIVA  
File: 6252907D Transform: NO TRANSFORM

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	CONTROL	10	1.000	1.000	1.000
2	32%	10	1.000	1.000	1.000
3	42%	10	1.000	1.000	1.000
4	56%	10	1.000	1.000	1.000
5	75%	10	1.000	1.000	1.000
6	100%	10	1.000	1.000	1.000

60252907 Decatur CERIODAPHNIA DUBIA SURVIVA  
File: 6252907D Transform: NO TRANSFORM

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 of 2

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	CONTROL	0.000	0.000	0.000	0.00
2	32%	0.000	0.000	0.000	0.00
3	42%	0.000	0.000	0.000	0.00
4	56%	0.000	0.000	0.000	0.00
5	75%	0.000	0.000	0.000	0.00
6	100%	0.000	0.000	0.000	0.00

60252907 Decatur CERIODAPHNIA DUBIA REPRODU  
File: 6252907E Transform: NO TRANSFORMATION

Chi-square test for normality: actual and expected frequencies

---

INTERVAL	<-1.5	-1.5 to <-0.5	-0.5 to 0.5	>0.5 to 1.5	>1.5
EXPECTED	4.020	14.520	22.920	14.520	4.020
OBSERVED	4	15	23	16	2

---

Calculated Chi-Square goodness of fit test statistic = 1.1821  
Table Chi-Square value (alpha = 0.01) = 13.277

Data PASS normality test. Continue analysis.

60252907 Decatur CERIODAPHNIA DUBIA REPRODU  
File: 6252907E Transform: NO TRANSFORMATION

---

Bartlett's test for homogeneity of variance  
Calculated B1 statistic = 1.41

---

Table Chi-square value = 15.09 (alpha = 0.01, df = 5)  
Table Chi-square value = 11.07 (alpha = 0.05, df = 5)

Data PASS B1 homogeneity test at 0.01 level. Continue analysis.

60252907 Decatur CERIODAPHNIA DUBIA REPRODU  
 File: 6252907E Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	CONTROL	10	16.000	24.000	20.900
2	32%	10	18.000	27.000	21.500
3	42%	10	16.000	26.000	21.900
4	56%	10	15.000	27.000	20.900
5	75%	10	16.000	25.000	20.500
6	100%	10	16.000	27.000	21.900

60252907 Decatur CERIODAPHNIA DUBIA REPRODU  
 File: 6252907E Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 of 2

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	CONTROL	7.656	2.767	0.875	13.24
2	32%	10.500	3.240	1.025	15.07
3	42%	12.100	3.479	1.100	15.88
4	56%	15.878	3.985	1.260	19.07
5	75%	9.167	3.028	0.957	14.77
6	100%	12.544	3.542	1.120	16.17

60252907 Decatur CERIODAPHNIA DUBIA REPRODU  
 File: 6252907E Transform: NO TRANSFORMATION

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	17.133	3.427	0.303
Within (Error)	54	610.600	11.307	
Total	59	627.733		

Critical F value = 2.45 (0.05,5,40)  
 Since  $F < \text{Critical } F$  FAIL TO REJECT  $H_0$ : All equal

60252907 Decatur CERIODAPHNIA DUBIA REPRODU  
 File: 6252907E Transform: NO TRANSFORMATION

## DUNNETT'S TEST

TABLE 1 OF 2

Ho:Control&lt;Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	CONTROL	20.900	20.900		
2	32%	21.500	21.500	-0.399	
3	42%	21.900	21.900	-0.665	
4	56%	20.900	20.900	0.000	
5	75%	20.500	20.500	0.266	
6	100%	21.900	21.900	-0.665	

Dunnett table value = 2.31 (1 Tailed Value, P=0.05, df=40,5)

60252907 Decatur CERIODAPHNIA DUBIA REPRODU

File: 6252907E Transform: NO TRANSFORMATION

## DUNNETT'S TEST

TABLE 2 OF 2

Ho:Control&lt;Treatment

GROUP	IDENTIFICATION	NUM OF REPS	Minimum Sig Diff (IN ORIG. UNITS)	% of CONTROL	DIFFERENCE FROM CONTROL
1	CONTROL	10			
2	32%	10	3.474	16.6	-0.600
3	42%	10	3.474	16.6	-1.000
4	56%	10	3.474	16.6	0.000
5	75%	10	3.474	16.6	0.400
6	100%	10	3.474	16.6	-1.000



Conc. ID	1	2	3	4	5	6
Conc. Tested	0	32	42	56	75	100
Response 1	0.439	0.453	0.368	0.392	0.472	0.384
Response 2	0.402	0.460	0.379	0.412	0.407	0.434
Response 3	0.346	0.400	0.439	0.423	0.421	0.457
Response 4	0.462	0.444	0.404	0.450	0.338	0.426
Response 5	0.417	0.416	0.469	0.419	0.439	0.412

\*\*\* Inhibition Concentration Percentage Estimate \*\*\*

Toxicant/Effluent: 60252907 Deactur

Test Start Date: 9/12/17 Test Ending Date: 9/19/17

Test Species: P.promelas

Test Duration: 7 days

DATA FILE:

Conc. ID	Number Replicates	Concentration %	Response Means	Std. Dev.	Pooled Response Means
1	5	0.000	0.413	0.044	0.424
2	5	32.000	0.435	0.026	0.424
3	5	42.000	0.412	0.042	0.417
4	5	56.000	0.419	0.021	0.417
5	5	75.000	0.415	0.050	0.417
6	5	100.000	0.423	0.027	0.417

\*\*\* No Linear Interpolation Estimate can be calculated from the input data since none of the (possibly pooled) group response means were less than 75% of the control response mean.

Conc. ID	1	2	3	4	5	6
Conc. Tested	0	32	42	56	75	100
Response 1	23	19	25	21	25	18
Response 2	22	25	23	23	22	23
Response 3	16	18	20	27	16	18
Response 4	22	27	19	17	16	16
Response 5	16	19	23	17	21	25
Response 6	20	18	18	15	24	27
Response 7	22	22	23	18	22	21
Response 8	22	20	26	25	19	24
Response 9	24	25	16	22	21	24
Response 10	22	22	26	24	19	23

\*\*\* Inhibition Concentration Percentage Estimate \*\*\*

Toxicant/Effluent: 60252907 Decatur

Test Start Date: 9/12/17 Test Ending Date: 9/19/17

Test Species: C. dubia

Test Duration: 7 days

DATA FILE:

Conc. ID	Number Replicates	Concentration %	Response Means	Std. Dev.	Pooled Response Means
1	10	0.000	20.900	2.767	21.433
2	10	32.000	21.500	3.240	21.433
3	10	42.000	21.900	3.479	21.433
4	10	56.000	20.900	3.985	21.100
5	10	75.000	20.500	3.028	21.100
6	10	100.000	21.900	3.542	21.100

\*\*\* No Linear Interpolation Estimate can be calculated from the input data since none of the (possibly pooled) group response means were less than 75% of the control response mean.





**Sample Condition Upon Receipt**

Client Name: Decatur

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: \_\_\_\_\_ Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T-243 Type of Ice: Wet Blue  None

Cooler Temperature (°C): As-read 3.2 Corr. Factor -1.0 Corrected 2.2

Date and initials of person examining contents: 9/14/17  
CC 8:30

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Chain of Custody relinquished:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Short Hold Time analyses (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Samples contain multiple phases? Matrix:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Cyanide water sample checks:	
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_



**Sample Condition Upon Receipt**

Client Name: Deceatur

Cooler: FedEx  VIAL  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: \_\_\_\_\_ Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T-213 Type of Ice: Wet Blue  None

Cooler Temperature (°C): As-read 4.0 Corr. Factor -1.0 Corrected 3.0

Date and initials of person examining contents:

9/15/17  
EC 15:30

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Sample arrives within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<=2hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1000 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? <small>(HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, HCl=2; NaOH=9 Sulfide, NaOH=10 Cyanide)  <small>(Exception: VOA, Micro, O&amp;G, KS TPH, OK-DRO)</small></small>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_





# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

**Section A**  
**Required Client Information:**  
 Company: City of Decatur, AR  
 Address: PO Box 247  
 Decatur, AR 72722  
 Email: iboston.cod@gmail.com  
 Phone: (479)752-3912 Fax  
 Requested Due Date:

**Section B**  
**Required Project Information:**  
 Report To: James Boston  
 Copy To:  
 Purchase Order #: Wet Test, Decatur, AR  
 Project Name:  
 Project #:

**Section C**  
**Invoice Information:**  
 Attention:  
 Company Name:  
 Address:  
 Pace Quote:  
 Pace Project Manager: alicia.spiller@paceclabs.com,  
 Pace Profile #: 428, line 1

**Regulatory Agency:**  
**State / Location:** AR

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES	ANALYSES TEST Y/N	CHRONIC WET TEST	RESIDUAL CHLORINE (Y/N)	TEMP IN C	RECEIVED ON	CUSTODY	SEALED	COOLER	SAMPLES	INTACT	
			START DATE	START TIME															END DATE
1	Drinking Water	DW	9/14	8am	9/15	7am	2	Ice	X	X									
2	Water	WT																	
3	Waste Water	WW																	
4	Product	P																	
5	Solid	SL																	
6	Oil	OL																	
7	Wipe	WP																	
8	Zip	ZP																	
9	Other	OT																	
10	Thru	TS																	
11																			
12																			

**ADDITIONAL COMMENTS:** ml 2/2

**RELINQUISHED BY / AFFILIATION:** ml 2/2

**DATE:** 9/15/17

**TIME:** 8:15am

**ACCEPTED BY / AFFILIATION:** Mike G. Stegwe

**DATE:** 9/15

**TIME:** 3:30

**RECEIVED ON:** 9/13/17

**TEMP IN C:**

**SAMPLER NAME AND SIGNATURE:** Mike G. Stegwe

**PRINT Name of SAMPLER:** Mike G. Stegwe

**SIGNATURE of SAMPLER:** ml 2/2

**DATE Signed:** 9/13/17