



P. 479-968-2105
F. 479-968-3265

"Award Winning Water"

August 6, 2024

Ms. Leslie Allen-Daniel
Compliance Analyst, DEQ Office of Water Quality
Arkansas Department of Energy & Environment
5301 Northshore Drive
North Little Rock, AR 72118-5317

Re: Permit Compliance Progress Report

Dear Ms. Allen-Daniel:

This letter shall serve as the progress report as required by NPDES permit AR0021768, Section B. As of one year from the effective date of the permit, the City Corporation Pollution Control Works facility has been below the Final Effluent Limitation for Whole Effluent Toxicity (*P. promelas* only) over the previous four quarters. Test results are attached. City Corporation considers all subsequent Activity Milestones of the Compliance Schedule to be met, with the final effluent limits becoming effective one year and 30 days from the effective date of the permit.

Should you have any questions or need additional information, please contact Greg Kremers, Wastewater Operations Director at 479-968-2080 ext. 236.

Sincerely,

A handwritten signature in blue ink, appearing to read "Steve Mallett, Jr.", written over a light blue horizontal line.

Steve Mallett, Jr., P.E.
Chief Executive Officer
City Corporation – Russellville Water & Sewer



August 05, 2024

Stacy Ness
EEG, Inc.
2504 West Main St
Suite I
Russellville, AR 72801

RE: Project: CITY CORPORATION
Pace Project No.: 60457212

Dear Stacy Ness:

Enclosed are the analytical results for sample(s) received by the laboratory on July 23, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - SE Kansas

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

Sincerely,

A handwritten signature in blue ink that reads 'Nolie Wood'.

Nolie Wood
nolie.wood@pacelabs.com
1(913)563-1401
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: CITY CORPORATION

Pace Project No.: 60457212

Pace Analytical Services Southeast Kansas

808 West McKay, Frontenac, KS 66763

Arkansas Certification #: 88-01565

Arkansas Microbiological Drinking Water Certification

Iowa Certification #: 431

Florida Certification #: E871149

Kansas/NELAP Certification #: E-10426

Kansas Field Laboratory Certification #: E-92729

Louisiana Certification #: 05115

Missouri Microbiological Drinking Water Certification

Oklahoma Certification #: 2023-171

Texas Certification #: T104704558-23-5

Oklahoma Field Laboratory Certification #: 2023-171

Utah Certification #: KS009402023-2

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: CITY CORPORATION

Pace Project No.: 60457212

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60457212001	OUTFALL 001	Water	07/22/24 07:29	07/23/24 08:00

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SAMPLE ANALYTE COUNT

Project: CITY CORPORATION

Pace Project No.: 60457212

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60457212001	OUTFALL 001	EPA 821/R-02/013	MEB	1	PASI-SE

PASI-SE = Pace Analytical Services - SE Kansas

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: CITY CORPORATION
Pace Project No.: 60457212

Sample: OUTFALL 001		Lab ID: 60457212001		Collected: 07/22/24 07:29		Received: 07/23/24 08:00		Matrix: Water	
Parameters		Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Chronic Toxicity		Analytical Method: EPA 821/R-02/013 Pace Analytical Services - SE Kansas							
Toxicity, Chronic		Complete		1.0	1		07/23/24 11:00		

REPORT OF LABORATORY ANALYSIS



QUALIFIERS

Project: CITY CORPORATION

Pace Project No.: 60457212

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 - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

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.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

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

TNI - The NELAC Institute.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: CITY CORPORATION
Pace Project No.: 60457212

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60457212001	OUTFALL 001	EPA 821/R-02/013	904113		

REPORT OF LABORATORY ANALYSIS

	DC#_Title: ENV-FRM-LENE-0009_Sam	
	Revision: 2	Effective Date: 01/12/2

WO#: 60457212



60457212

Client Name: City Corporation

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐ 60457212

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 4.0 Corr. Factor -2.0 Corrected 2.0

Date and initials of person examining contents: 7/23/24 TC

Temperature should be above freezing to 6°C

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



L296-062542

Page 9 of 41

REFERENCE #60457212

**CHRONIC TOXICITY TEST FOR
EEG CITY CORPORATION**

PERMIT # AR 0021768
AFIN # 58-00105

PERFORMED ON:

Pimephales promelas

and

Ceriodaphnia dubia

PREPARED FOR:

Environmental Enterprise Group Inc.
P.O BOX 3186
Russellville, AR 72811-3186
479-968-4989

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

August 1, 2024

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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 EEG CITY CORPORATION effluent discharge from July 22, 2024 to July 26, 2024. 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 are calculated using effluent concentrations and their corresponding percent mortality data. 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. 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 is 15.2.

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. 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 is 15.7.

The chronic toxicity exhibited by the fathead minnows and the *Ceriodaphnia* treated by the effluent sampled from July 22 to July 26 from the EEG CITY CORPORATION. effluent discharge, is acceptable as described in EPA 821-R-02-013.

INTRODUCTION

Pace Analytical was contracted to perform this chronic toxicity test on effluent from the EEG CITY CORPORATION 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

EEG CITY CORPORATION personnel collected sampling of the effluent. A sample of the effluent was delivered to Pace by commercial carrier 7-23-24. Subsequent samples followed by delivery on 7-25-24 and on 7-27-24. 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 NOEC, and LOEC for survival, growth, and reproduction of these test species.

The Pimephales and Ceriodaphnia tests were initiated on 7-23-24 and carried out until 7-30-24. The Pimephales tests were conducted in 500 ml plastic jars with 250 ml of test solution. Ten larvae were placed in each of at least 5 replicates to make a total of 50 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

Organisms used in these tests were cultured at Pace under controlled temperature and photo period conditions and/or were purchased from an external supplier. Pace maintains records of culture techniques for all organisms, whether produced in house or purchased.

Results

TABLE 1

Permittee: EEG CITY CORPORATION Effluent discharge.

Date Sampled	No. 1: 7-22-24	7:29
	No. 2: 7-24-24	7:25
	No. 3: 7-26-24	7:24

Test Initiated: 11:00	Date: 7-23-24
Test End 11:10	Date 7-30-24

Dilution Water used: Moderately Hard Synthetic

Critical Dilution:	100%
Ceriodaphnia dubia	Results
TLP3B	0
TGP3B	0
TOP3B	100
TPP3B	100
TQP3B	17.08
Pimephales promelas	Results
TLP6C	0
TGP6C	0
TOP6C	100
TPP6C	100
TQP6C	6.79

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%	0.428	0.475	0.480	0.440	0.506	0.466	6.79
Dilution 1 32%	0.478	0.456	0.483	0.520	0.544	0.496	7.11
Dilution 2 42%	0.478	0.476	0.460	0.500	0.562	0.495	8.07
Dilution 3 56%	0.434	0.411	0.561	0.461	0.607	0.495	17.16
Dilution 4 75%	0.523	0.432	0.469	0.512	0.498	0.487	7.54
Dilution 5 100%	0.536	0.471	0.486	0.499	0.551	0.509	6.64

* Coefficient of Variation = Standard Deviation X 100 / Mean

FATHEAD MINNOW SURVIVAL

Conc. %	Percent Survival in Replicate Chambers					Mean Percent Survival			CV %
	A	B	C	D	E	24hr	48hr	7 day	
Control 0%	90	100	100	100	100	100	100	98	5.28
Dilution 1 32%	100	100	100	100	100	100	100	100	0.00
Dilution 2 42%	100	100	100	100	100	100	100	100	0.00
Dilution 3 56%	90	90	100	100	100	100	100	96	6.63
Dilution 4 75%	100	90	100	100	100	100	100	98	5.28
Dilution 5 100%	100	100	100	100	100	100	100	100	0.00

Permittee: EEG CITY CORPORATION. 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	22	24	17	18	17	17
2	24	17	16	23	15	18
3	23	25	25	18	27	24
4	24	18	24	25	22	21
5	18	24	20	22	24	24
6	19	19	22	16	21	24
7	27	22	22	17	18	27
8	25	27	27	23	23	19
9	20	16	20	22	27	16
10	15	23	24	22	22	23
Mean	21.7	21.2	21.1	22.5	20.6	21.1
SD	3.653	3.084	3.247	3.240	2.875	3.604
CV %	16.83	14.55	15.39	14.40	13.96	17.08

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	0.0	0.0	0.0	0.0	0.0	0.0
CV %	0.0	0.0	0.0	0.0	0.0	0.0

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	10
11. No. replicates/concentration	5
12. No. larvae/concentration	50
13. Feeding regime	Feed 0.15 g newly hatched brine shrimp nauplii two times daily. Larvae are not fed 12 hours prior to termination of test.
14. Cleaning	Siphon daily, immediately before test solution renewal
15. Aeration	None
16. 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
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 and 0.1 ml of Algae daily. Larvae are not fed 12 hours prior to termination of test.
14. Cleaning	Siphon daily, immediately before test solution renewal
15. Aeration	None
16. 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%.

TABLE 2 (SECTION 2)
BIOMONITORING CHRONIC TOXICITY REPORT
FATHEAD MINNOW (Pimephales promelas)
CHEMICAL PARAMETERS CHART

Permittee: EEG CITY CORPORATION Effluent discharge.

ANALYSTS: Pace Analytical Services, Inc.
 Mike Bollin
 Tiffaney Lawrence
 Kimberly Lawrence

TABLE 2 (SECTION 2)
INITIAL WATER QUALITY
EFFLUENT CONCENTRATION

	Control	100%
PH	7.4	8.3
D.O.	8.0	8.0
Temp	25.0	25.0
Alk	60	96
Hard	90	100
Cond	356	694
Chlorine	<0.1	<0.1

- * D.O. is reported as mg/L
- Alkalinity is reported as mg/L CaCO₃
- Hardness is reported as mg/L CaCO₃
- Conductance is reported as umhos
- Chlorine is reported as mg/L

TEST WATER QUALITY

24-Hour Water Quality Measurements

Effluent Concentration (%)	PH	D.O. (mg/l)	Temperature (C)
0% Control	7.5	7.3	24.8
32% Effluent	7.5	7.3	25.0
42% Effluent	7.5	7.3	25.0
56% Effluent	7.5	7.3	25.0
75% Effluent	7.6	7.4	25.0
100% Effluent	7.6	7.4	25.0

48-Hour Water Quality Measurements

Effluent Concentration (%)	PH	D.O. (mg/l)	Temperature (C)
0% Control	7.6	7.4	25.0
32% Effluent	7.6	7.5	25.0
42% Effluent	7.6	7.5	25.0
56% Effluent	7.6	7.6	25.0
75% Effluent	7.7	7.6	25.0
100% Effluent	7.7	7.6	25.0

FINAL WATER QUALITY

EFFLUENT CONCENTRATION

	Control	100%
pH	7.5	7.7
D.O.	7.3	7.4
Temp	24.8	24.9
Alk	60	98
Hard	90	102
Cond	360	706

- * D.O. is reported as mg/L
- Alkalinity is reported as mg/L CaCO₃
- Hardness is reported as mg/L CaCO₃
- Conductance is reported as umhos

TEST VALIDITY

The Pimephales promelas control survival rate was 98. The mean dry weight (growth) of the Pimephales promelas was determined at 0.466 g/organism in the controls. The percent coefficient of variation (%CV) values for the fathead minnow control for survival and growth were 5.28 and 6.79. The Ceriodaphnia dubia survival rates were 100 in the control. The Ceriodaphnia in the control produced an average of 21.7 young over the seven-day exposure period. Percent CV values for Ceriodaphnia dubia control survival and reproduction was 0.00 and 16.83. Control data met or exceeded all criteria set out by EPA 821-R-02-013 for test acceptance.

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: 7/9/24 13:30

End: 7/16/24 13:45

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	2	0	0
8 g/l	40	33	27	3
6 g/l	40	37	32	23
4 g/l	40	40	40	40
2 g/l	40	40	40	40

IC25 (5.01 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	8	4	0
2.0 g/l	10	10	10	4
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 (1.23 g/l Sodium Chloride)

Survival NOEC: 1.5 g/l

Submitted By:



**Frontenac Supervisor
Mike Bollin**

60457212 CITY CORP FATHEAD SURVIVAL

File: 6457212A 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	2	2	23	3	0

Calculated Chi-Square goodness of fit test statistic = 19.9412

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.

60457212 CITY CORP FATHEAD SURVIVAL

File: 6457212A Transform: ARC SINE(SQUARE ROOT(Y))

Shapiro - Wilk's test for normality

D = 0.074

W = 0.760

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.

60457212 CITY CORP FATHEAD SURVIVAL

File: 6457212A Transform: ARC SINE(SQUARE ROOT(Y))

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	CONTROL	5	1.249	1.412	1.379
2	32%	5	1.412	1.412	1.412
3	42%	5	1.412	1.412	1.412
4	56%	5	1.249	1.412	1.347
5	75%	5	1.249	1.412	1.379
6	100%	5	1.412	1.412	1.412

60457212 CITY CORP FATHEAD SURVIVAL

File: 6457212A Transform: ARC SINE(SQUARE ROOT(Y))

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 of 2

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	CONTROL	0.005	0.073	0.033	5.28
2	32%	0.000	0.000	0.000	0.00
3	42%	0.000	0.000	0.000	0.00
4	56%	0.008	0.089	0.040	6.63
5	75%	0.005	0.073	0.033	5.28
6	100%	0.000	0.000	0.000	0.00

60457212 CITY CORP FATHEAD SURVIVAL

File: 6457212A Transform: ARC SINE(SQUARE ROOT(Y))

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	0.018	0.004	1.143
Within (Error)	24	0.074	0.003	
Total	29	0.092		

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

Since $F < \text{Critical } F$ FAIL TO REJECT H_0 : All equal

60457212 CITY CORP FATHEAD SURVIVAL

File: 6457212A Transform: ARC SINE(SQUARE ROOT(Y))

DUNNETT'S TEST

TABLE 1 OF 2

Ho:Control<Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	CONTROL	1.379	0.980		
2	32%	1.412	1.000	-0.926	
3	42%	1.412	1.000	-0.926	
4	56%	1.347	0.960	0.926	
5	75%	1.379	0.980	0.000	
6	100%	1.412	1.000	-0.926	

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

60457212 CITY CORP FATHEAD SURVIVAL

File: 6457212A

Transform: ARC SINE(SQUARE ROOT(Y))

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	0.037	3.8	-0.020
3	42%	5	0.037	3.8	-0.020
4	56%	5	0.037	3.8	0.020
5	75%	5	0.037	3.8	0.000
6	100%	5	0.037	3.8	-0.020

60456212 CITY CORP FATHEAD GROWTH
File: 6457212B Transform: NO TRANSFORMATION

Shapiro - Wilk's test for normality

D = 0.054

W = 0.976

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.

60456212 CITY CORP FATHEAD GROWTH
File: 6457212B Transform: NO TRANSFORMATION

Bartlett's test for homogeneity of variance

Calculated B1 statistic = 6.53

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.

60456212 CITY CORP FATHEAD GROWTH
 File: 6457212B Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	CONTROL	5	0.428	0.506	0.466
2	32%	5	0.456	0.544	0.496
3	42%	5	0.460	0.562	0.495
4	56%	5	0.411	0.607	0.495
5	75%	5	0.432	0.523	0.487
6	100%	5	0.471	0.551	0.509

60456212 CITY CORP FATHEAD GROWTH
 File: 6457212B Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 of 2

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	CONTROL	0.001	0.032	0.014	6.79
2	32%	0.001	0.035	0.016	7.11
3	42%	0.002	0.040	0.018	8.07
4	56%	0.007	0.085	0.038	17.16
5	75%	0.001	0.037	0.016	7.54
6	100%	0.001	0.034	0.015	6.64

60456212 CITY CORP FATHEAD GROWTH
 File: 6457212B Transform: NO TRANSFORMATION

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	0.005	0.001	0.453
Within (Error)	24	0.054	0.002	
Total	29	0.059		

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

60456212 CITY CORP FATHEAD GROWTH
 File: 6457212B Transform: NO TRANSFORMATION

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	

60457212 CITY CORP CERIODAPHNIA DUBIA SUR
 File: 6457212D 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

60457212 CITY CORP CERIODAPHNIA DUBIA SUR
 File: 6457212D 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

60457212 CITY CORP CERIODAPHNIA DUBIA REP
File: 6457212E 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	2	17	22	15	4

Calculated Chi-Square goodness of fit test statistic = 1.4915
Table Chi-Square value (alpha = 0.01) = 13.277

Data PASS normality test. Continue analysis.

60457212 CITY CORP CERIODAPHNIA DUBIA REP
File: 6457212E Transform: NO TRANSFORMATION

Bartlett's test for homogeneity of variance
Calculated B1 statistic = 0.72

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.

60457212 CITY CORP CERIODAPHNIA DUBIA REP
 File: 6457212E Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	CONTROL	10	15.000	27.000	21.700
2	32%	10	17.000	26.000	21.200
3	42%	10	17.000	26.000	21.100
4	56%	10	17.000	27.000	22.500
5	75%	10	17.000	25.000	20.600
6	100%	10	16.000	27.000	21.100

60457212 CITY CORP CERIODAPHNIA DUBIA REP
 File: 6457212E Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 of 2

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	CONTROL	13.344	3.653	1.155	16.83
2	32%	9.511	3.084	0.975	14.55
3	42%	10.544	3.247	1.027	15.39
4	56%	10.500	3.240	1.025	14.40
5	75%	8.267	2.875	0.909	13.96
6	100%	12.989	3.604	1.140	17.08

60457212 CITY CORP CERIODAPHNIA DUBIA REP
 File: 6457212E Transform: NO TRANSFORMATION

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	21.533	4.307	0.397
Within (Error)	54	586.400	10.859	
Total	59	607.933		

Critical F value = 2.45 (0.05,5,40)

Since $F < \text{Critical } F$ FAIL TO REJECT H_0 : All equal

60457212 CITY CORP CERIODAPHNIA DUBIA REP
 File: 6457212E 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	21.700	21.700		
2	32%	21.200	21.200	0.339	
3	42%	21.100	21.100	0.407	
4	56%	22.500	22.500	-0.543	
5	75%	20.600	20.600	0.746	
6	100%	21.100	21.100	0.407	

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

60457212 CITY CORP CERIODAPHNIA DUBIA REP

File: 6457212E 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	10			
2	32%	10	3.404	15.7	0.500
3	42%	10	3.404	15.7	0.600
4	56%	10	3.404	15.7	-0.800
5	75%	10	3.404	15.7	1.100
6	100%	10	3.404	15.7	0.600

Conc. ID	1	2	3	4	5	6
Conc. Tested	0	32	42	56	75	100
Response 1	.428	.478	.478	.434	.523	.536
Response 2	.475	.456	.476	.411	.432	.471
Response 3	.480	.483	.460	.561	.469	.486
Response 4	.440	.520	.500	.461	.512	.499
Response 5	.506	.544	.562	.607	.498	.551

*** Inhibition Concentration Percentage Estimate ***

Toxicant/Effluent: CITY CORP

Test Start Date: 7/23/24 Test Ending Date: 7/30/24

Test Species: FATHEAD MINNOWS

Test Duration: 7 DAYS

DATA FILE:

Conc. ID	Number Replicates	Concentration	Response Means	Std. Dev.	Pooled Response Means
1	5	0.000	0.466	0.032	0.491
2	5	32.000	0.496	0.035	0.491
3	5	42.000	0.495	0.040	0.491
4	5	56.000	0.495	0.085	0.491
5	5	75.000	0.487	0.037	0.491
6	5	100.000	0.509	0.034	0.491

*** 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	22	24	17	18	17	17
Response 2	24	17	16	23	15	18
Response 3	23	25	25	18	27	24
Response 4	24	18	24	25	22	21
Response 5	18	24	20	22	24	24
Response 6	19	19	22	16	21	24
Response 7	27	22	22	17	18	27
Response 8	25	27	27	23	23	19
Response 9	20	16	20	22	27	16
Response 10	15	23	24	22	22	23

*** Inhibition Concentration Percentage Estimate ***

Toxicant/Effluent: CITY CORP

Test Start Date: 7/23/24 Test Ending Date: 7/30/24

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	21.700	3.653	21.700
2	10	32.000	21.500	3.749	21.600
3	10	42.000	21.700	3.498	21.600
4	10	56.000	20.600	3.062	21.167
5	10	75.000	21.600	4.006	21.167
6	10	100.000	21.300	3.653	21.167

*** 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.

L246-062542

Company Name:		Phone #:		Requested Analysis							
City Corporation		(479) 968-4989									
Address:		Fax #:									
P.O. Box 3186 Russellville, AR 72811-3186		(479) 968-3430									
Project Name or Number:											
Biomonitoring											
Sampling Personnel Signature(s): <i>Brooks</i>		Printed: <i>Brooks Tester</i>									
Sample I.D.	Date	Time	Comp.	Grab	Cont. Type	# of Containers	Method Preserved	Sample Matrix	Biomonitoring	Laboratory Control Number	Remarks
Outfall 001	7-21-24	0730	X			1	H2SO4		X	0724143	
	7-22-24	0729					HNO3				
							NAOH				
							HCL				
							Ice				
							None				
							Water				
							Soil				
							Air				
							Sludge				
							Other				
Relinquished by: <i>Brooks</i>		Date: 7-22-24	Time: 0838	Received by: <i>11/24/24</i>		Date: 7/23/24	Time: 800				
Received by: <i>Green</i>		Date: 7/22/24	Time: 0838	Relinquished by: <i>11/24/24</i>		Date: 7/23/24	Time: 800				
Relinquished by: <i>Green</i>		Date: 7/22/24	Time: 130	Received by Laboratory:		Date:	Time:				
Comments:											

60457212



L296-062542

Environmental Enterprise Group, Inc.
2504 West Main Street, Suite I
Russellville, Arkansas 72801
Phone: (479) 968-6767

[illegible]

	DC#_Title: ENV-FRM-LENE-0009_Sample Condition Upon Receipt (SCUR)		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: EEG City Corp.

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 4.0 Corr. Factor -2.0 Corrected 20

Date and initials of person examining contents: 1/25/24 8:00
TL

Temperature should be above freezing to 6°C

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



DC#_Title: ENV-FRM-LENE-0009_Sample Condition Upon Receipt (SCUR)

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name:

City Corp.

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 4.4 Corr. Factor -2.0 Corrected 2.4

Date and initials of person examining contents: KL 7/26/24
1920

Temperature should be above freezing to 6°C

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



May 06, 2024

Stacy Ness
EEG
220 N Knoxville Avenue
Russellville, AR 72801

RE: Project: CITY CORPORATION
Pace Project No.: 60451442

Dear Stacy Ness:

Enclosed are the analytical results for sample(s) received by the laboratory on April 23, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - SE Kansas

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

Sincerely,

A handwritten signature in black ink that reads "Nolie Wood".

Nolie Wood
nolie.wood@pacelabs.com
1(913)563-1401
Project Manager

Enclosures

cc: Stacy Ness, EEG, Inc.



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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CERTIFICATIONS

Project: CITY CORPORATION

Pace Project No.: 60451442

Pace Analytical Services Southeast Kansas

808 West McKay, Frontenac, KS 66763

Arkansas Certification #: 88-01565

Arkansas Microbiological Drinking Water Certification

Iowa Certification #: 431

Florida Certification #: E871149

Kansas/NELAP Certification #: E-10426

Kansas Field Laboratory Certification #: E-92729

Louisiana Certification #: 05115

Missouri Microbiological Drinking Water Certification

Oklahoma Certification #: 2023-171

Oklahoma Field Laboratory Certification #: 2023-171

Texas Certification #: T104704558-23-5

Utah Certification #: KS009402023-2

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: CITY CORPORATION

Pace Project No.: 60451442

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60451442001	OUTFALL 001	Water	04/22/24 07:27	04/23/24 08:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: CITY CORPORATION

Pace Project No.: 60451442

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60451442001	OUTFALL 001	EPA 821/R-02/013	GKP	1	PASI-SE

PASI-SE = Pace Analytical Services - SE Kansas

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: CITY CORPORATION
Pace Project No.: 60451442

Sample: OUTFALL 001		Lab ID: 60451442001		Collected: 04/22/24 07:27		Received: 04/23/24 08:00		Matrix: Water	
Parameters		Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Chronic Toxicity		Analytical Method: EPA 821/R-02/013 Pace Analytical Services - SE Kansas							
Toxicity, Chronic	Complete		1.0	1		04/23/24 10:00			

REPORT OF LABORATORY ANALYSIS



QUALIFIERS

Project: CITY CORPORATION

Pace Project No.: 60451442

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 - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

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.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: CITY CORPORATION
Pace Project No.: 60451442

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60451442001	OUTFALL 001	EPA 821/R-02/013	893042		

REPORT OF LABORATORY ANALYSIS



DC#_Title: ENV-FRM-LENE-0009_Sampl

Revision: 2

Effective Date: 01/12/2022

WO#: 60451442



60451442

Client Name: EEG City Corp.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-219 Type of Ice: Wet Blue ☐ None ☐Cooler Temperature (°C): As-read 3.9 Corr. Factor -0.9 Corrected 3.0Date and initials of person examining contents: 4/23/24 800
JL

Temperature should be above freezing to 6°C

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



246-062136

Page 9 of 42

REFERENCE #60451442

**CHRONIC TOXICITY TEST FOR
EEG CITY CORPORATION**

PERMIT # AR 0021768
AFIN # 58-00105

PERFORMED ON:

Pimephales promelas

and

Ceriodaphnia dubia

PREPARED FOR:

Environmental Enterprise Group Inc.
P.O BOX 3186
Russellville, AR 72811-3186
479-968-4989

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

May 2, 2024

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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 EEG CITY CORPORATION effluent discharge from April 22, 2024 to April 26, 2024. 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 are calculated using effluent concentrations and their corresponding percent mortality data. 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. 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 is 12.2.

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. 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 is 7.3.

The chronic toxicity exhibited by the fathead minnows and the Ceriodaphnia treated by the effluent sampled from April 22 to April 26 from the EEG CITY CORPORATION effluent discharge, is acceptable as described in EPA 821-R-02-013.

INTRODUCTION

Pace Analytical was contracted to perform this chronic toxicity test on effluent from the EEG CITY CORPORATION 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

EEG CITY CORPORATION personnel collected sampling of the effluent. A sample of the effluent was delivered to Pace by commercial carrier 4-23-24. Subsequent samples followed by delivery on 4-25-24 and on 4-26-24. 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 NOEC, and LOEC for survival, growth, and reproduction of these test species.

The Pimephales and Ceriodaphnia tests were initiated on 4-23-24 and carried out until 4-30-24. The Pimephales tests were conducted in 500 ml plastic jars with 250 ml of test solution. Ten larvae were placed in each of at least 5 replicates to make a total of 50 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

Organisms used in these tests were cultured at Pace under controlled temperature and photo period conditions and/or were purchased from an external supplier. Pace maintains records of culture techniques for all organisms, whether produced in house or purchased.

Results

TABLE 1

Permittee: EEG CITY CORPORATION. Effluent discharge.

Date Sampled	No. 1: 4-22-24	7:27
	No. 2: 4-24-24	7:28
	No. 3: 4-26-24	7:21

Test Initiated: 10:00	Date: 4-23-24
Test End 10:20	Date 4-30-24

Critical Dilution:	100%
Ceriodaphnia dubia	Results
TLP3B	0
TGP3B	0
TOP3B	100
TPP3B	100
TQP3B	9.11
Pimephales promelas	Results
TLP6C	0
TGP6C	0
TOP6C	100
TPP6C	100
TQP6C	11.51

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%	0.471	0.410	0.409	0.507	0.477	0.455	9.57
Dilution 1 32%	0.406	0.494	0.465	0.466	0.480	0.462	7.26
Dilution 2 42%	0.416	0.402	0.501	0.482	0.456	0.451	9.34
Dilution 3 56%	0.440	0.473	0.456	0.495	0.463	0.465	4.39
Dilution 4 75%	0.493	0.474	0.464	0.480	0.477	0.478	2.20
Dilution 5 100%	0.512	0.410	0.518	0.414	0.501	0.471	11.51

* Coefficient of Variation = Standard Deviation X 100 / Mean

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	90	90	100	100	100	100	96	6.63
Dilution 1 32%	90	100	100	100	100	100	100	98	5.28
Dilution 2 42%	90	90	100	100	100	100	100	96	6.63
Dilution 3 56%	100	100	100	100	100	100	100	100	0.00
Dilution 4 75%	100	100	100	100	100	100	100	100	0.00
Dilution 5 100%	100	90	100	100	100	100	100	96	6.63

REFERENCE #60451442

Permittee: EEG CITY CORPORATION. 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	23	21	22	22	23
2	21	22	20	23	23	22
3	22	21	23	23	23	23
4	17	23	24	21	20	21
5	23	21	21	21	22	23
6	21	25	21	21	23	22
7	22	22	20	23	19	22
8	19	23	22	22	21	22
9	23	24	23	24	24	23
10	21	21	26	22	23	21
Mean	21.2	22.5	22.1	22.2	22.0	22.2
SD	1.932	1.354	1.912	1.033	1.563	0.789
CV %	9.11	6.02	8.65	4.65	7.11	3.55

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	0.0	0.0	0.0	0.0	0.0	0.0
CV %	0.0	0.0	0.0	0.0	0.0	0.0

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	10
11. No. replicates/concentration	5
12. No. larvae/concentration	50
13. Feeding regime	Feed 0.15 g newly hatched brine shrimp nauplii two times daily. Larvae are not fed 12 hours prior to termination of test.
14. Cleaning	Siphon daily, immediately before test solution renewal
15. Aeration	None
16. 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
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 and 0.1 ml of Algae daily. Larvae are not fed 12 hours prior to termination of test.
14. Cleaning	Siphon daily, immediately before test solution renewal
15. Aeration	None
16. 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%.

TABLE 2 (SECTION 2)

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

Permittee: EEG CITY CORPORATION Effluent discharge.

ANALYSTS: Pace Analytical Services, Inc.

Mike Bollin

Garrett Peterson

Tiffaney Lawrence

TABLE 2 (SECTION 2)
INITIAL WATER QUALITY
EFFLUENT CONCENTRATION

	Control	100%
PH	7.4	7.6
D.O.	8.0	8.4
Temp	25.0	25.0
Alk	60	76
Hard	90	68
Cond	296	563
Chlorine	<0.1	<0.1

* D.O. is reported as mg/L

Alkalinity is reported as mg/L CaCO₃

Hardness is reported as mg/L CaCO₃

Conductance is reported as umhos

Chlorine is reported as mg/L

TEST WATER QUALITY

24-Hour Water Quality Measurements

Effluent Concentration (%)	PH	D.O. (mg/l)	Temperature (C)
0% Control	7.5	7.2	25.0
32% Effluent	7.5	7.2	25.0
42% Effluent	7.6	7.3	25.0
56% Effluent	7.7	7.3	25.0
75% Effluent	7.7	7.4	25.0
100% Effluent	7.8	7.4	25.0

48-Hour Water Quality Measurements

Effluent Concentration (%)	PH	D.O. (mg/l)	Temperature (C)
0% Control	7.5	7.4	25.0
32% Effluent	7.5	7.4	25.0
42% Effluent	7.6	7.3	25.0
56% Effluent	7.6	7.2	25.0
75% Effluent	7.7	7.1	25.0
100% Effluent	7.7	7.0	25.0

FINAL WATER QUALITY

EFFLUENT CONCENTRATION

	Control	100%
pH	7.5	7.8
D.O.	7.3	7.0
Temp	25.0	24.8
Alk	60	120
Hard	90	54
Cond	346	510

- * D.O. is reported as mg/L
 Alkalinity is reported as mg/L CaCO₃
 Hardness is reported as mg/L CaCO₃
 Conductance is reported as umhos

TEST VALIDITY

The Pimephales promelas control survival rate was 96. The mean dry weight (growth) of the Pimephales promelas was determined at 0.455 g/organism in the controls. The percent coefficient of variation (%CV) values for the fathead minnow control for survival and growth were 6.63 and 9.57. The Ceriodaphnia dubia survival rates were 100 in the control. The Ceriodaphnia in the control produced an average of 21.2 young over the seven-day exposure period. Percent CV values for Ceriodaphnia dubia control survival and reproduction was 0.00 and 9.11. Control data met or exceeded all criteria set out by EPA 821-R-02-013 for test acceptance.

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: 4/2/24 10:00

End: 4/9/24 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	4	0	0
8 g/l	40	33	27	2
6 g/l	40	39	38	22
4 g/l	40	40	40	38
2 g/l	40	40	40	40

IC25 (4.90 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	7	5	0
2.0 g/l	10	10	9	4
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 (1.20 g/l Sodium Chloride)

Survival NOEC: 1.5 g/l

Submitted By:



Frontenac Supervisor Mike Bollin

60451442 City Corp FATHEAD SURVIVAL

File: 6451442A 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	1	6	14	9	0

Calculated Chi-Square goodness of fit test statistic = 3.7162

Table Chi-Square value (alpha = 0.01) = 13.277

Data PASS normality test. Continue analysis.

60451442 City Corp FATHEAD SURVIVAL

File: 6451442A Transform: ARC SINE(SQUARE ROOT(Y))

Shapiro - Wilk's test for normality

D = 0.117

W = 0.820

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.

60451442 City Corp FATHEAD SURVIVAL

File: 6451442A Transform: ARC SINE(SQUARE ROOT(Y))

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	CONTROL	5	1.249	1.412	1.347
2	32%	5	1.249	1.412	1.379
3	42%	5	1.249	1.412	1.347
4	56%	5	1.412	1.412	1.412
5	80%	5	1.412	1.412	1.412
6	100%	5	1.249	1.412	1.347

60451442 City Corp FATHEAD SURVIVAL

File: 6451442A Transform: ARC SINE(SQUARE ROOT(Y))

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 of 2

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	CONTROL	0.008	0.089	0.040	6.63
2	32%	0.005	0.073	0.033	5.28
3	42%	0.008	0.089	0.040	6.63
4	56%	0.000	0.000	0.000	0.00
5	80%	0.000	0.000	0.000	0.00
6	100%	0.008	0.089	0.040	6.63

60451442 City Corp FATHEAD SURVIVAL

File: 6451442A Transform: ARC SINE(SQUARE ROOT(Y))

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	0.026	0.005	1.055
Within (Error)	24	0.117	0.005	
Total	29	0.143		

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

Since $F < \text{Critical } F$ FAIL TO REJECT H_0 : All equal

60451442 City Corp FATHEAD SURVIVAL

File: 6451442A Transform: ARC SINE(SQUARE ROOT(Y))

DUNNETT'S TEST - TABLE 1 OF 2

Ho:Control<Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	CONTROL	1.347	0.960		
2	32%	1.379	0.980	-0.739	
3	42%	1.347	0.960	0.000	
4	56%	1.412	1.000	-1.477	
5	80%	1.412	1.000	-1.477	
6	100%	1.347	0.960	0.000	

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

60451442 City Corp FATHEAD SURVIVAL

File: 6451442A Transform: ARC SINE(SQUARE ROOT(Y))

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	0.055	5.7	-0.020
3	42%	5	0.055	5.7	0.000
4	56%	5	0.055	5.7	-0.040
5	80%	5	0.055	5.7	-0.040
6	100%	5	0.055	5.7	0.000

60451442 City Corp FATHEAD GROWTH
File: 6451442B Transform: NO TRANSFORMATION

Shapiro - Wilk's test for normality

D = 0.033

W = 0.938

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.

60451442 City Corp FATHEAD GROWTH
File: 6451442B Transform: NO TRANSFORMATION

Bartlett's test for homogeneity of variance
Calculated B1 statistic = 9.43

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.

60451442 City Corp FATHEAD GROWTH
 File: 6451442B Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	CONTROL	5	0.409	0.507	0.455
2	32%	5	0.406	0.494	0.462
3	42%	5	0.402	0.501	0.451
4	56%	5	0.440	0.495	0.465
5	80%	5	0.464	0.493	0.478
6	100%	5	0.410	0.518	0.471

60451442 City Corp FATHEAD GROWTH
 File: 6451442B 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	0.019	9.57
2	32%	0.001	0.034	0.015	7.26
3	42%	0.002	0.042	0.019	9.34
4	56%	0.000	0.020	0.009	4.39
5	80%	0.000	0.011	0.005	2.20
6	100%	0.003	0.054	0.024	11.51

60451442 City Corp FATHEAD GROWTH
 File: 6451442B Transform: NO TRANSFORMATION

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	0.002	0.000	0.350
Within (Error)	24	0.033	0.001	
Total	29	0.035		

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

60451442 City Corp FATHEAD GROWTH
 File: 6451442B 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	0.455	0.455		
2	32%	0.462	0.462	-0.315	
3	42%	0.451	0.451	0.145	
4	56%	0.465	0.465	-0.451	
5	80%	0.478	0.478	-0.971	
6	100%	0.471	0.471	-0.690	

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

60451442 City Corp FATHEAD GROWTH

File: 6451442B 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	0.055	12.2	-0.007
3	42%	5	0.055	12.2	0.003
4	56%	5	0.055	12.2	-0.011
5	80%	5	0.055	12.2	-0.023
6	100%	5	0.055	12.2	-0.016

FISHER'S EXACT TEST

NUMBER OF

IDENTIFICATION

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

NUMBER OF

IDENTIFICATION

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

NUMBER OF

IDENTIFICATION

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
80%	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	80%	10	0	
5	100%	10	0	

60451442 City Corp CERIODAPHNIA DUBIA SUR
 File: 6451442D 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	80%	10	1.000	1.000	1.000
6	100%	10	1.000	1.000	1.000

60451442 City Corp CERIODAPHNIA DUBIA SUR
 File: 6451442D 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	80%	0.000	0.000	0.000	0.00
6	100%	0.000	0.000	0.000	0.00

60451442 City Corp CERIODAPHNIA DUBIA REP
File: 6451442E 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	14	22	17	3

Calculated Chi-Square goodness of fit test statistic = 0.7380
Table Chi-Square value (alpha = 0.01) = 13.277

Data PASS normality test. Continue analysis.

60451442 City Corp CERIODAPHNIA DUBIA REP
File: 6451442E Transform: NO TRANSFORMATION

Bartlett's test for homogeneity of variance
Calculated B1 statistic = 9.47

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.

60451442 City Corp CERIODAPHNIA DUBIA REP
 File: 6451442E Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	CONTROL	10	17.000	23.000	21.200
2	32%	10	21.000	25.000	22.500
3	42%	10	20.000	26.000	22.100
4	56%	10	21.000	24.000	22.200
5	80%	10	19.000	24.000	22.000
6	100%	10	21.000	23.000	22.200

60451442 City Corp CERIODAPHNIA DUBIA REP
 File: 6451442E Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 of 2

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	CONTROL	3.733	1.932	0.611	9.11
2	32%	1.833	1.354	0.428	6.02
3	42%	3.656	1.912	0.605	8.65
4	56%	1.067	1.033	0.327	4.65
5	80%	2.444	1.563	0.494	7.11
6	100%	0.622	0.789	0.249	3.55

60451442 City Corp CERIODAPHNIA DUBIA REP
 File: 6451442E Transform: NO TRANSFORMATION

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	9.733	1.947	0.875
Within (Error)	54	120.200	2.226	
Total	59	129.933		

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

60451442 City Corp CERIODAPHNIA DUBIA REP
 File: 6451442E 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	21.200	21.200		
2	32%	22.500	22.500	-1.948	
3	42%	22.100	22.100	-1.349	
4	56%	22.200	22.200	-1.499	
5	80%	22.000	22.000	-1.199	
6	100%	22.200	22.200	-1.499	

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

60451442 City Corp CERIODAPHNIA DUBIA REP

File: 6451442E 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	10			
2	32%	10	1.541	7.3	-1.300
3	42%	10	1.541	7.3	-0.900
4	56%	10	1.541	7.3	-1.000
5	80%	10	1.541	7.3	-0.800
6	100%	10	1.541	7.3	-1.000

Conc. ID	1	2	3	4	5	6
Conc. Tested	0	32	42	56	80	100
Response 1	0.471	0.406	0.416	0.440	0.493	0.512
Response 2	0.410	0.494	0.402	0.473	0.474	0.410
Response 3	0.409	0.465	0.501	0.456	0.464	0.518
Response 4	0.507	0.466	0.482	0.495	0.480	0.414
Response 5	0.477	0.480	0.456	0.463	0.477	0.501

*** Inhibition Concentration Percentage Estimate ***

Toxicant/Effluent: EEG City Corp

Test Start Date: 4/23/24 Test Ending Date: 4/30/24

Test Species: Fathead

Test Duration: 7 Days

DATA FILE:

Conc. ID	Number Replicates	Concentration	Response Means	Std. Dev.	Pooled Response Means
1	5	0.000	0.455	0.044	0.464
2	5	32.000	0.462	0.034	0.464
3	5	42.000	0.451	0.042	0.464
4	5	56.000	0.465	0.020	0.464
5	5	80.000	0.478	0.011	0.464
6	5	100.000	0.471	0.054	0.464

*** 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	80	100
Response 1	23	23	21	22	22	23
Response 2	21	22	20	23	23	22
Response 3	22	21	23	23	23	23
Response 4	17	23	24	21	20	21
Response 5	23	21	21	21	22	23
Response 6	21	25	21	21	23	22
Response 7	22	22	20	23	19	22
Response 8	19	23	22	22	21	22
Response 9	23	24	23	24	24	23
Response 10	21	21	26	22	23	21

*** Inhibition Concentration Percentage Estimate ***

Toxicant/Effluent: EEG City Corp

Test Start Date: 4/23/24 Test Ending Date: 4/30/24

Test Species: C. dubia

Test Duration: 7 Days

DATA FILE:

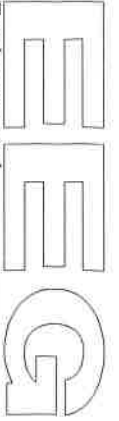
Conc. ID	Number Replicates	Concentration	Response Means	Std. Dev.	Pooled Response Means
1	10	0.000	21.200	1.932	22.033
2	10	32.000	22.500	1.354	22.033
3	10	42.000	22.100	1.912	22.033
4	10	56.000	22.200	1.033	22.033
5	10	80.000	22.000	1.563	22.033
6	10	100.000	22.200	0.789	22.033

*** 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.



Environmental Enterprise Group, Inc.
220 North Knoxville
Russellville, Arkansas 72801
(479) 968-6767 Fax (479) 968-1956

Page 38 of 42



246-062136

Environmental Enterprise Group, Inc.
220 North Knoxville
Russellville, Arkansas 72801
(479) 968-6767 Fax (479) 968-1956

[illegible]

	DC#_Title: ENV-FRM-LENE-0009_Sample Condition Upon Receipt (SCUR)		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: EEG City Corp.

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-219 Type of Ice: Wet Blue ☐ None ☐

Cooler Temperature (°C): As-read 3.9 Corr. Factor -0.9 Corrected 3.0

Date and initials of person examining contents: 4/25/24 BOO TL

Temperature should be above freezing to 6°C

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

	DC#_Title: ENV-FRM-LENE-0009_Sample Condition Upon Receipt (SCUR)	
	Revision: 2	Effective Date: 01/12/2022
Issued By: Lenexa		

Client Name: City Corp

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-219 Type of Ice: Wet ☒ Blue ☐ None ☐

Cooler Temperature (°C): As-read 2.9 Corr. Factor -0.9 Corrected 2.0

Date and initials of person examining contents: 4/26/24 KL
13:50

Temperature should be above freezing to 6°C

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



November 28, 2023

Stacy Ness
EEG, Inc.
220 North Knoxville
Russellville, AR 72801

RE: Project: CITY CORPORATION, L246-061416
Pace Project No.: 60441977

Dear Stacy Ness:

Enclosed are the analytical results for sample(s) received by the laboratory on November 14, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - SE Kansas

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

Sincerely,

A handwritten signature in cursive script that reads "Jamie Church".

Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: CITY CORPORATION, L246-061416

Pace Project No.: 60441977

Pace Analytical Services Southeast Kansas

808 West McKay, Frontenac, KS 66763

Arkansas Certification #: 88-01565

Iowa Certification #: 431

Kansas/NELAP Certification #: E-10426

Louisiana Certification #: 05115

Oklahoma Certification #: 2022-060

Texas Certification #: T104704558-22-4

Utah Certification #: KS009402022-1

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: CITY CORPORATION, L246-061416

Pace Project No.: 60441977

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60441977001	OUTFALL 001	Water	11/13/23 07:22	11/14/23 08:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: CITY CORPORATION, L246-061416

Pace Project No.: 60441977

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60441977001	OUTFALL 001	EPA 821/R-02/013	MEB	1	PASI-SE

PASI-SE = Pace Analytical Services - SE Kansas

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: CITY CORPORATION, L246-061416

Pace Project No.: 60441977

Sample: OUTFALL 001		Lab ID: 60441977001	Collected: 11/13/23 07:22	Received: 11/14/23 08:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Chronic Toxicity		Analytical Method: EPA 821/R-02/013 Pace Analytical Services - SE Kansas						
Toxicity, Chronic	Complete		1.0	1		11/14/23 11:00		

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: CITY CORPORATION, L246-061416

Pace Project No.: 60441977

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 - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

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.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: CITY CORPORATION, L246-061416

Pace Project No.: 60441977

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60441977001	OUTFALL 001	EPA 821/R-02/013	874792		

REPORT OF LABORATORY ANALYSIS

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Pace
ANALYTICAL SERVICES

DC#_Title: ENV-FRM-LENE-0009_San

Revision: 2

Effective Date: 01/12/

WO#: 60441977



Client Name: City Corp

Courier: FedEx ☐ UPS ☐ VIAD 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-193 Type of Ice: Wet Blue ☐ None ☐

Cooler Temperature (°C): As-read 4.4 Corr. Factor -1.9 Corrected 2.5

Temperature should be above freezing to 6°C

Date and initials of person examining contents: 11/14/27
OS.co

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



L246-061416

Page 9 of 42

REFERENCE #60441977

**CHRONIC TOXICITY TEST FOR
EEG CITY CORPORATION**

PERMIT # AR 0021768
AFIN # 58-00105

PERFORMED ON:

Pimephales promelas

and

Ceriodaphnia dubia

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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 EEG CITY CORPORATION effluent discharge from November 13, 2023 to November 17, 2023. 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 are calculated using effluent concentrations and their corresponding percent mortality data. 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. 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 is 12.6.

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. 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 is 13.4.

The chronic toxicity exhibited by the fathead minnows and the Ceriodaphnia treated by the effluent sampled from November 13 to November 17 from the EEG CITY CORPORATION. effluent discharge, is acceptable as described in EPA 821-R-02-013.

INTRODUCTION

Pace Analytical was contracted to perform this chronic toxicity test on effluent from the EEG CITY CORPORATION 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

EEG CITY CORPORATION personnel collected sampling of the effluent. A sample of the effluent was delivered to Pace by commercial carrier on 11-14-23. Subsequent samples followed by delivery on 11-16-23 and on 11-17-23. 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 NOEC, and LOEC for survival, growth, and reproduction of these test species.

The Pimephales and Ceriodaphnia tests were initiated on 11-14-23 and carried out until 11-21-23. The Pimephales tests were conducted in 500 ml plastic jars with 250 ml of test solution. Ten larvae were placed in each of at least 5 replicates to make a total of 50 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

Organisms used in these tests were cultured at Pace under controlled temperature and photo period conditions and/or were purchased from an external supplier. Pace maintains records of culture techniques for all organisms, whether produced in house or purchased.

Results

TABLE 1

Permittee: EEG CITY CORPORATION. Effluent discharge.

Date Sampled	No. 1:	11-13-23	7:22
	No. 2:	11-15-23	7:30
	No. 3:	11-17-23	7:19

Test Initiated: 11:00	Date: 11-14-23
Test End 10:45	Date 11-21-23

Critical Dilution:	100%
Ceriodaphnia dubia	Results
TLP3B	0
TGP3B	0
TOP3B	100
TPP3B	100
TQP3B	15.72
Pimephales promelas	Results
TLP6C	0
TGP6C	0
TOP6C	100
TPP6C	100
TQP6C	6.37
51714	100

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%	0.453	0.482	0.436	0.482	0.476	0.466	4.40
Dilution 1 32%	0.449	0.481	0.418	0.470	0.512	0.466	7.55
Dilution 2 42%	0.493	0.504	0.470	0.429	0.482	0.476	6.09
Dilution 3 56%	0.496	0.550	0.394	0.491	0.443	0.475	12.42
Dilution 4 80%	0.420	0.529	0.495	0.459	0.536	0.488	9.99
Dilution 5 100%	0.439	0.446	0.499	0.432	0.480	0.460	6.37

* Coefficient of Variation = Standard Deviation X 100 / Mean

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	90	100	100	100	100	98	5.28
Dilution 1 32%	100	100	90	100	100	100	100	98	5.28
Dilution 2 42%	100	100	100	90	100	100	100	98	5.28
Dilution 3 56%	100	100	90	100	100	100	100	98	5.28
Dilution 4 80%	90	100	100	100	100	100	100	98	5.28
Dilution 5 100%	100	100	90	100	100	100	100	98	5.28

Permittee: EEG CITY CORPORATION. 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 80%	Dilution 5 100%
1	22	23	23	17	25	17
2	22	19	17	25	26	26
3	23	21	21	18	18	21
4	21	19	23	24	19	20
5	20	23	18	22	17	21
6	18	19	20	20	21	23
7	18	21	15	23	22	15
8	24	20	24	21	17	20
9	18	21	20	22	20	24
10	21	24	22	22	23	19
Mean	20.7	21.0	20.3	21.4	20.8	20.6
SD	2.163	1.826	2.908	2.503	3.190	3.239
CV %	10.45	8.69	14.32	11.70	15.34	15.72

CERIODAPHNIA MEAN PERCENT SURVIVAL

Percent Effluent (%)						
Time Elapsed	Control 0%	Dilution 1 32%	Dilution 2 42%	Dilution 3 56%	Dilution 4 80%	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	0.0	0.0	0.0	0.0	0.0	0.0
CV %	0.0	0.0	0.0	0.0	0.0	0.0

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	10
11. No. replicates/concentration	5
12. No. larvae/concentration	50
13. Feeding regime	Feed 0.15 g newly hatched brine shrimp nauplii two times daily. Larvae are not fed 12 hours prior to termination of test.
14. Cleaning	Siphon daily, immediately before test solution renewal
15. Aeration	None
16. Dilution Water	Moderately Hard Synthetic Water prepared with MILLI-Q deionized water and reagent grade chemicals
17. Effluent concentrations	0%, 32%, 42%, 56%, 80%, 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
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 and 0.1 ml of Algae daily. Larvae are not fed 12 hours prior to termination of test.
14. Cleaning	Siphon daily, immediately before test solution renewal
15. Aeration	None
16. Dilution Water	Moderately Hard Synthetic Water prepared with MILLI-Q deionized water and reagent grade chemicals
17. Effluent concentrations	0%, 32%, 42%, 56%, 80%, 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%.

TABLE 2 (SECTION 2)

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

Permittee: EEG CITY CORPORATION Effluent discharge.

ANALYSTS: Pace Analytical Services, Inc.
Mike Bollin
Garrett Peterson
Devon Fitz

TABLE 2 (SECTION 2)
INITIAL WATER QUALITY
EFFLUENT CONCENTRATION

	Control	100%
PH	7.4	7.3
D.O.	8.4	8.2
Temp	25.0	25.0
Alk	60	36
Hard	90	60
Cond	303	479
Chlorine	<0.1	<0.1

* D.O. is reported as mg/L
Alkalinity is reported as mg/L CaCO₃
Hardness is reported as mg/L CaCO₃
Conductance is reported as umhos
Chlorine is reported as mg/L

TEST WATER QUALITY

24-Hour Water Quality Measurements

Effluent Concentration (%)	PH	D.O. (mg/l)	Temperature (C)
0% Control	7.5	7.5	25.0
32% Effluent	7.5	7.5	25.0
42% Effluent	7.5	7.5	25.0
56% Effluent	7.5	7.4	25.0
80% Effluent	7.4	7.4	25.0
100% Effluent	7.4	7.3	25.0

48-Hour Water Quality Measurements

Effluent Concentration (%)	PH	D.O. (mg/l)	Temperature (C)
0% Control	7.5	7.0	25.1
32% Effluent	7.5	7.0	25.1
42% Effluent	7.5	7.0	25.1
56% Effluent	7.5	7.0	25.1
80% Effluent	7.5	7.0	25.1
100% Effluent	7.5	7.0	25.1

FINAL WATER QUALITY

EFFLUENT CONCENTRATION

	Control	100%
pH	7.6	7.7
D.O.	7.0	6.9
Temp	25.1	25.1
Alk	62	40
Hard	88	66
Cond	455	762

- * D.O. is reported as mg/L
- Alkalinity is reported as mg/L CaCO₃
- Hardness is reported as mg/L CaCO₃
- Conductance is reported as umhos

TEST VALIDITY

The Pimephales promelas control survival rate was 98. The mean dry weight (growth) of the Pimephales promelas was determined at 0.466 g/organism in the controls. The percent coefficient of variation (%CV) values for the fathead minnow control for survival and growth were 5.28 and 4.40. The Ceriodaphnia dubia survival rates were 100 in the control. The Ceriodaphnia in the control produced an average of 20.7 young over the seven-day exposure period. Percent CV values for Ceriodaphnia dubia control survival and reproduction was 0.00 and 10.45. Control data met or exceeded all criteria set out by EPA 821-R-02-013 for test acceptance.

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: 11/14/23 11:00

End: 11/21/23 10:45

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	4	0	0
8 g/l	40	31	22	5
6 g/l	40	38	32	34
4 g/l	40	40	40	40
2 g/l	40	40	40	39

IC25 (4.89 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	8	4	0
2.0 g/l	10	10	8	3
1.5 g/l	10	10	10	9
1.0 g/l	10	10	10	10
0.5 g/l	10	10	10	10

IC25 (1.20 g/l Sodium Chloride)

Survival NOEC: 1.5 g/l

Submitted By:



**Frontenac Supervisor
Mike Bollin**

60441977 City Corp FATHEAD SURVIVAL

File: 6441977A 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	6	0	24	0	0

Calculated Chi-Square goodness of fit test statistic = 38.1722

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.

60441977 City Corp FATHEAD SURVIVAL

File: 6441977A Transform: ARC SINE(SQUARE ROOT(Y))

Shapiro - Wilk's test for normality

D = 0.127

W = 0.490

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.

60441977 City Corp FATHEAD SURVIVAL

File: 6441977A Transform: ARC SINE(SQUARE ROOT(Y))

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	CONTROL	5	1.249	1.412	1.379
2	32%	5	1.249	1.412	1.379
3	42%	5	1.249	1.412	1.379
4	56%	5	1.249	1.412	1.379
5	80%	5	1.249	1.412	1.379
6	100%	5	1.249	1.412	1.379

60441977 City Corp FATHEAD SURVIVAL

File: 6441977A Transform: ARC SINE(SQUARE ROOT(Y))

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 of 2

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	CONTROL	0.005	0.073	0.033	5.28
2	32%	0.005	0.073	0.033	5.28
3	42%	0.005	0.073	0.033	5.28
4	56%	0.005	0.073	0.033	5.28
5	80%	0.005	0.073	0.033	5.28
6	100%	0.005	0.073	0.033	5.28

60441977 City Corp FATHEAD SURVIVAL

File: 6441977A Transform: ARC SINE(SQUARE ROOT(Y))

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	-0.000	-0.000	-0.000
Within (Error)	24	0.127	0.005	
Total	29	0.127		

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

Since $F < \text{Critical } F$ FAIL TO REJECT H_0 : All equal

60441977 City Corp FATHEAD SURVIVAL

File: 6441977A Transform: ARC SINE(SQUARE ROOT(Y))

DUNNETT'S TEST - TABLE 1 OF 2

Ho:Control<Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	CONTROL	1.379	0.980		
2	32%	1.379	0.980	0.000	
3	42%	1.379	0.980	0.000	
4	56%	1.379	0.980	0.000	
5	80%	1.379	0.980	0.000	
6	100%	1.379	0.980	0.000	

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

60441977 City Corp FATHEAD SURVIVAL

File: 6441977A Transform: ARC SINE(SQUARE ROOT(Y))

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	0.051	5.2	0.000
3	42%	5	0.051	5.2	0.000
4	56%	5	0.051	5.2	0.000
5	80%	5	0.051	5.2	0.000
6	100%	5	0.051	5.2	0.000

60441977 City Corp FATHEAD GROWTH
File: 6411977B Transform: NO TRANSFORMATION

Shapiro - Wilk's test for normality

D = 0.037

W = 0.982

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.

60441977 City Corp FATHEAD GROWTH
File: 6411977B Transform: NO TRANSFORMATION

Bartlett's test for homogeneity of variance

Calculated B1 statistic = 5.26

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.

60441977 City Corp FATHEAD GROWTH
 File: 6411977B Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	Control	5	0.436	0.482	0.466
2	32%	5	0.418	0.512	0.466
3	42%	5	0.429	0.504	0.476
4	56%	5	0.394	0.550	0.475
5	80%	5	0.420	0.536	0.488
6	100%	5	0.432	0.499	0.460

60441977 City Corp FATHEAD GROWTH
 File: 6411977B Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 of 2

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	Control	0.000	0.020	0.009	4.40
2	32%	0.001	0.035	0.016	7.55
3	42%	0.001	0.029	0.013	6.09
4	56%	0.003	0.059	0.026	12.42
5	80%	0.002	0.049	0.022	9.99
6	100%	0.001	0.029	0.013	6.37

60441977 City Corp FATHEAD GROWTH
 File: 6411977B Transform: NO TRANSFORMATION

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	0.002	0.000	0.324
Within (Error)	24	0.037	0.002	
Total	29	0.039		

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

60441977 City Corp FATHEAD GROWTH
 File: 6411977B 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	0.466	0.466		
2	32%	0.466	0.466	-0.008	
3	42%	0.476	0.476	-0.396	
4	56%	0.475	0.475	-0.363	
5	80%	0.488	0.488	-0.888	
6	100%	0.460	0.460	0.250	

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

60441977 City Corp FATHEAD GROWTH

File: 6411977B 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	0.058	12.6	-0.000
3	42%	5	0.058	12.6	-0.010
4	56%	5	0.058	12.6	-0.009
5	80%	5	0.058	12.6	-0.022
6	100%	5	0.058	12.6	0.006

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
80%	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	80%	10	0	
5	100%	10	0	

60441977 City Corp CERIODAPHNIA DUBIA SUR
 File: 6441977D 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	80%	10	1.000	1.000	1.000
6	100%	10	1.000	1.000	1.000

60441977 City Corp CERIODAPHNIA DUBIA SUR
 File: 6441977D 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	80%	0.000	0.000	0.000	0.00
6	100%	0.000	0.000	0.000	0.00

60441977 City Corp CERIODAPHNIA DUBIA REP
File: 6441977E 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	3	16	21	16	4

Calculated Chi-Square goodness of fit test statistic = 0.7215

Table Chi-Square value (alpha = 0.01) = 13.277

Data PASS normality test. Continue analysis.

60441977 City Corp CERIODAPHNIA DUBIA REP
File: 6441977E 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.

60441977 City Corp CERIODAPHNIA DUBIA REP
 File: 6441977E Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	Control	10	18.000	24.000	20.700
2	32%	10	19.000	24.000	21.000
3	42%	10	15.000	24.000	20.300
4	56%	10	17.000	25.000	21.400
5	80%	10	17.000	26.000	20.800
6	100%	10	15.000	26.000	20.600

60441977 City Corp CERIODAPHNIA DUBIA REP
 File: 6441977E Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 of 2

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	Control	4.678	2.163	0.684	10.45
2	32%	3.333	1.826	0.577	8.69
3	42%	8.456	2.908	0.920	14.32
4	56%	6.267	2.503	0.792	11.70
5	80%	10.178	3.190	1.009	15.34
6	100%	10.489	3.239	1.024	15.72

60441977 City Corp CERIODAPHNIA DUBIA REP
 File: 6441977E Transform: NO TRANSFORMATION

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	7.000	1.400	0.194
Within (Error)	54	390.600	7.233	
Total	59	397.600		

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

60441977 City Corp CERIODAPHNIA DUBIA REP
 File: 6441977E 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	20.700	20.700		
2	32%	21.000	21.000	-0.249	
3	42%	20.300	20.300	0.333	
4	56%	21.400	21.400	-0.582	
5	80%	20.800	20.800	-0.083	
6	100%	20.600	20.600	0.083	

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

60441977 City Corp CERIODAPHNIA DUBIA REP

File: 6441977E

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	10			
2	32%	10	2.778	13.4	-0.300
3	42%	10	2.778	13.4	0.400
4	56%	10	2.778	13.4	-0.700
5	80%	10	2.778	13.4	-0.100
6	100%	10	2.778	13.4	0.100

Conc. ID	1	2	3	4	5	6
Conc. Tested	0	32	42	56	80	100
Response 1	.453	.449	.493	.496	.420	.439
Response 2	.482	.481	.504	.550	.529	.446
Response 3	.436	.418	.470	.394	.495	.499
Response 4	.482	.470	.429	.491	.459	.432
Response 5	.476	.512	.482	.443	.536	.480

*** Inhibition Concentration Percentage Estimate ***

Toxicant/Effluent: City Corp

Test Start Date: 11/14/23 Test Ending Date: 11/21/23

Test Species: Fathead

Test Duration: 7 Dyas

DATA FILE:

Conc. ID	Number Replicates	Concentration	Response Means	Std. Dev.	Pooled Response Means
1	5	0.000	0.466	0.020	0.474
2	5	32.000	0.466	0.035	0.474
3	5	42.000	0.476	0.029	0.474
4	5	56.000	0.475	0.059	0.474
5	5	80.000	0.488	0.049	0.474
6	5	100.000	0.459	0.029	0.459

*** 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	80	100
Response 1	22	23	23	17	25	17
Response 2	22	19	17	25	26	26
Response 3	23	21	21	18	18	21
Response 4	21	19	23	24	19	20
Response 5	20	23	18	22	17	21
Response 6	18	19	20	20	21	23
Response 7	18	21	15	23	22	15
Response 8	24	20	24	21	17	20
Response 9	18	21	20	22	20	24
Response 10	21	24	22	22	23	19

*** Inhibition Concentration Percentage Estimate ***

Toxicant/Effluent: City Corp

Test Start Date: 11/14/23 Test Ending Date: 11/21/23

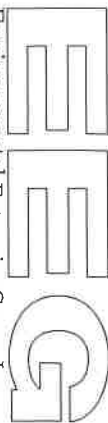
Test Species: C dubia

Test Duration: 7 Days

DATA FILE:

Conc. ID	Number Replicates	Concentration	Response Means	Std. Dev.	Pooled Response Means
1	10	0.000	20.700	2.163	20.850
2	10	32.000	21.000	1.826	20.850
3	10	42.000	20.300	2.908	20.850
4	10	56.000	21.400	2.503	20.850
5	10	80.000	20.800	3.190	20.800
6	10	100.000	20.600	3.239	20.600

*** 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.



L246 - D61416

Environmental Enterprise Group, Inc.
220 North Knoxville
Russellville, Arkansas 72801
(479) 968-6767 Fax (479) 968-1956

[illegible]

	DC#_Title: ENV-FRM-LENE-0009_Sample Condition Upon Receipt (SCUR)		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa <i>leg 2</i>

Client Name: EFG City Corp

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-193 Type of Ice: Wet Blue ☐ None ☐

Cooler Temperature (°C): As-read 4.1 Corr. Factor -1.9 Corrected 3.9

Date and initials of person examining contents: CP 1/16/23
CP

Temperature should be above freezing to 6°C

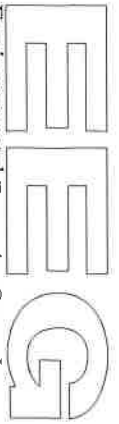
Chain of Custody present:	X Yes ☒ No ☐ N/A ☐	
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	
Short Hold Time analyses (<72hr):	X Yes ☒ No ☐ N/A ☐	
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	
Sufficient volume:	X Yes ☒ No ☐ N/A ☐	
Correct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



Environmental Enterprise Group, Inc.
PROVIDING CUSTOMIZED SERVICES NATIONWIDE

1-246-061416

Environmental Enterprise Group, Inc.
220 North Knoxville
Russellville, Arkansas 72801
(479) 968-6767 Fax (479) 968-1956

Company Name:		Phone #:		Requested Analysis								
City Corporation		(479) 968-4989										
Address:		Fax #:										
P.O. Box 3186 Russellville, AR 72811-3186		(479) 968-3430										
Project Name or Number:		Purchase Order #:										
Sampling Personnel Signature(s): <i>Brooks</i>		Printed: <i>Brooks Tector</i>										
Sample I.D.	Date	Time	24 Hr Comp.	Grab	Cont Type	Glass	# of Containers	Method Preserved	Sample Matrix	Bio-Monitoring	Laboratory Control Number	Remarks (Please note special detection limits below.)
Outfall 001	11-17-23	07:19	X	X			2	H2SO4		X	1123127	
								HNO3				
								NAOH				
								HCL				
								Ice				
								None				
								Water				
								Soil				
								Air				
								Sludge				
								Other				
Relinquished by: <i>Brooks</i>		Date: 11-17-23	Time: 0850	Received by: <i>Matthew Peters</i>		Date: 11-17-23	Time: 1330					
Received by: <i>Shen</i>		Date: 11-17-23	Time: 0850	Relinquished by:		Date: 11-17-23	Time: 1330					
Relinquished by: <i>Shen</i>		Date: 11-17-23	Time: 1100	Received by Laboratory:		Date:	Time:					
Comments:												

	DC#_Title: ENV-FRM-LENE-0009_Sample Condition Upon Receipt (SCUR)	
	Revision: 2	Effective Date: 01/12/2022
Issued By: Lenexa		

Client Name: EEG

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-193 Type of Ice: Wet ☒ Blue ☐ None ☐

Cooler Temperature (°C): As-read 4.4 Corr. Factor -1.9 Corrected 2.5

Date and initials of person examining contents: GP 1/11/23 13130 GP 1/11/23

Temperature should be above freezing to 6°C

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



February 19, 2024

Stacy Ness
EEG
220 N Knoxville Avenue
Russellville, AR 72801

RE: Project: PCW BIOMONITORING
Pace Project No.: 60446553

Dear Stacy Ness:

Enclosed are the analytical results for sample(s) received by the laboratory on February 06, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - SE Kansas

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

Sincerely,

A handwritten signature in black ink that reads "Nolie Wood".

Nolie Wood
nolie.wood@pacelabs.com
1(913)563-1401
Project Manager

Enclosures

cc: Stacy Ness, EEG, Inc.



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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CERTIFICATIONS

Project: PCW BIOMONITORING

Pace Project No.: 60446553

Pace Analytical Services Southeast Kansas

808 West McKay, Frontenac, KS 66763

Arkansas Certification #: 88-01565

Iowa Certification #: 431

Kansas/NELAP Certification #: E-10426

Louisiana Certification #: 05115

Oklahoma Certification #: 2022-060

Texas Certification #: T104704558-23-5

Utah Certification #: KS009402022-1

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PCW BIOMONITORING

Pace Project No.: 60446553

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60446553001	OUTFALL 001	Water	02/05/24 07:39	02/06/24 08:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PCW BIOMONITORING

Pace Project No.: 60446553

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60446553001	OUTFALL 001	EPA 821/R-02/013	GKP	1	PASI-SE

PASI-SE = Pace Analytical Services - SE Kansas

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PCW BIOMONITORING
Pace Project No.: 60446553

Sample: OUTFALL 001		Lab ID: 60446553001	Collected: 02/05/24 07:39	Received: 02/06/24 08:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Chronic Toxicity		Analytical Method: EPA 821/R-02/013 Pace Analytical Services - SE Kansas						
Toxicity, Chronic	Complete		1.0	1		02/06/24 11:00		

REPORT OF LABORATORY ANALYSIS



QUALIFIERS

Project: PCW BIOMONITORING
Pace Project No.: 60446553

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 - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

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.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PCW BIOMONITORING

Pace Project No.: 60446553

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60446553001	OUTFALL 001	EPA 821/R-02/013	883573		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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	DC#_Title: ENV-FRM-LENE-0009_Sample C	
	Revision: 2	Effective Date: 01/12/2022

W0#: 60446553



60446553

Client Name: EE6

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 2.8 Corr. Factor -1.0 Corrected 1.8

Date and initials of person examining contents:

MB 2/6/24
800

Temperature should be above freezing to 6°C

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



Environmental Enterprise Group, Inc.
220 North Knoxville
Russellville, Arkansas 72801
(479) 968-6767 Fax (479) 968-1956

L246-561777

[illegible]

REFERENCE #60446553

**CHRONIC TOXICITY TEST FOR
EEG CITY CORPORATION**

PERMIT # AR 0021768
AFIN # 58-00105

PERFORMED ON:

Pimephales promelas

and

Ceriodaphnia dubia

PREPARED FOR:

Environmental Enterprise Group Inc.
P.O BOX 3186
Russellville, AR 72811-3186
479-968-4989

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

February 15, 2024

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REFERENCE TOXICANT SUMMARY	13

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 EEG CITY CORPORATION effluent discharge from February 5, 2024 to February 9. 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 are calculated using effluent concentrations and their corresponding percent mortality data. 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. 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 is 14.7.

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. 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 is 12.6.

The chronic toxicity exhibited by the fathead minnows and the Ceriodaphnia treated by the effluent sampled from February 5 to February 9 from the EEG CITY CORPORATION effluent discharge, is acceptable as described in EPA 821-R-02-013.

INTRODUCTION

Pace Analytical was contracted to perform this chronic toxicity test on effluent from the EEG CITY CORPORATION 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

EEG CITY CORPORATION personnel collected sampling of the effluent. A sample of the effluent was delivered to Pace by commercial carrier 2-6-24. Subsequent samples followed by delivery on 2-8-24 and on 2-10-24. 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 NOEC, and LOEC for survival, growth, and reproduction of these test species.

The Pimephales and Ceriodaphnia tests were initiated on 2-6-24 and carried out until 2-13-24. The Pimephales tests were conducted in 500 ml plastic jars with 250 ml of test solution. Ten larvae were placed in each of at least 5 replicates to make a total of 50 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

Organisms used in these tests were cultured at Pace under controlled temperature and photo period conditions and/or were purchased from an external supplier. Pace maintains records of culture techniques for all organisms, whether produced in house or purchased.

Results

TABLE 1

Permittee: EEG CITY CORPORATION. Effluent discharge.

Date Sampled	No. 1:	2-5-24	7:39
	No. 2:	2-7-24	7:37
	No. 3:	2-9-24	7:26

Test Initiated: 11:00	Date: 2-6-24
Test End 11:30	Date 2-13-24

Critical Dilution:	100%
Ceriodaphnia dubia	Results
TLP3B	0
TGP3B	0
TOP3B	100
TPP3B	100
TQP3B	15.50
Pimephales promelas	Results
TLP6C	0
TGP6C	0
TOP6C	100
TPP6C	100
TQP6C	10.10

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%	0.398	0.475	0.469	0.419	0.440	0.443	7.51
Dilution 1 32%	0.508	0.380	0.437	0.436	0.476	0.447	10.76
Dilution 2 42%	0.513	0.468	0.437	0.398	0.504	0.464	10.28
Dilution 3 56%	0.433	0.405	0.452	0.446	0.510	0.451	8.36
Dilution 4 75%	0.519	0.420	0.404	0.446	0.489	0.456	10.50
Dilution 5 100%	0.466	0.392	0.473	0.416	0.506	0.447	10.10

* Coefficient of Variation = Standard Deviation X 100 / Mean

FATHEAD MINNOW SURVIVAL

Conc. %	Percent Survival in Replicate Chambers					Mean Percent Survival			CV %
	A	B	C	D	E	24hr	48hr	7 day	
Control 0%	90	100	100	90	100	100	100	96	6.63
Dilution 1 32%	100	90	100	100	100	100	100	98	5.28
Dilution 2 42%	100	100	100	90	100	100	100	98	5.28
Dilution 3 56%	100	90	100	100	100	100	100	98	5.28
Dilution 4 75%	100	90	90	100	100	100	100	96	6.63
Dilution 5 100%	100	90	100	90	100	100	100	96	6.63

Permittee: EEG CITY CORPORATION. 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	22	20	24	23	22	21
2	20	24	18	18	20	18
3	24	17	23	22	18	17
4	21	22	24	24	23	24
5	17	23	20	20	22	20
6	22	19	21	22	17	25
7	25	23	19	21	20	22
8	16	22	17	18	21	23
9	17	20	21	21	17	19
10	24	18	23	19	23	22
Mean	20.8	20.8	21.0	20.8	20.3	21.1
SD	3.225	2.348	2.494	2.044	2.312	2.601
CV %	15.50	11.29	11.88	9.83	11.39	12.33

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	0.0	0.0	0.0	0.0	0.0	0.0
CV %	0.0	0.0	0.0	0.0	0.0	0.0

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	10
11. No. replicates/concentration	5
12. No. larvae/concentration	50
13. Feeding regime	Feed 0.15 g newly hatched brine shrimp nauplii two times daily. Larvae are not fed 12 hours prior to termination of test.
14. Cleaning	Siphon daily, immediately before test solution renewal
15. Aeration	None
16. 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
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 and 0.1 ml of Algae daily. Larvae are not fed 12 hours prior to termination of test.
14. Cleaning	Siphon daily, immediately before test solution renewal
15. Aeration	None
16. 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%.

TABLE 2 (SECTION 2)

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

Permittee: EEG CITY CORPORATION Effluent discharge.

ANALYSTS: Pace Analytical Services, Inc.
Mike Bollin
Garrett Peterson
Tiffaney Lawrence

TABLE 2 (SECTION 2)
INITIAL WATER QUALITY
EFFLUENT CONCENTRATION

	Control	100%
PH	7.6	7.2
D.O.	8.4	8.5
Temp	25.0	25.0
Alk	62	74
Hard	88	72
Cond	298	323
Chlorine	<0.1	<0.1

- * D.O. is reported as mg/L
- Alkalinity is reported as mg/L CaCO₃
- Hardness is reported as mg/L CaCO₃
- Conductance is reported as umhos
- Chlorine is reported as mg/L

TEST WATER QUALITY

24-Hour Water Quality Measurements

Effluent Concentration (%)	PH	D.O. (mg/l)	Temperature (C)
0% Control	7.5	8.1	24.8
32% Effluent	7.5	8.0	24.8
42% Effluent	7.6	7.8	24.8
56% Effluent	7.7	7.6	24.8
75% Effluent	7.8	7.4	24.8
100% Effluent	7.8	7.3	24.8

48-Hour Water Quality Measurements

Effluent Concentration (%)	PH	D.O. (mg/l)	Temperature (C)
0% Control	7.5	7.5	25.0
32% Effluent	7.5	7.5	25.0
42% Effluent	7.5	7.5	25.0
56% Effluent	7.6	7.4	25.0
75% Effluent	7.7	7.3	25.0
100% Effluent	7.7	7.3	25.0

FINAL WATER QUALITY

EFFLUENT CONCENTRATION

	Control	100%
pH	7.5	7.7
D.O.	7.4	7.2
Temp	24.8	25.0
Alk	62	136
Hard	88	84
Cond	326	409

- * D.O. is reported as mg/L
 Alkalinity is reported as mg/L CaCO₃
 Hardness is reported as mg/L CaCO₃
 Conductance is reported as umhos

TEST VALIDITY

The Pimephales promelas control survival rate was 96. The mean dry weight (growth) of the Pimephales promelas was determined at 0.443 g/organism in the controls. The percent coefficient of variation (%CV) values for the fathead minnow control for survival and growth were 6.63 and 7.51. The Ceriodaphnia dubia survival rates were 100 in the control. The Ceriodaphnia in the control produced an average of 20.8 young over the seven-day exposure period. Percent CV values for Ceriodaphnia dubia control survival and reproduction was 0.00 and 15.50. Control data met or exceeded all criteria set out by EPA 821-R-02-013 for test acceptance.

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: 2/6/24 11:00

End: 2/13/24 11:30

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	5	0	0
8 g/l	40	24	19	4
6 g/l	40	33	28	20
4 g/l	40	40	40	40
2 g/l	40	40	40	39

IC25 (4.85 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	2	0
2.0 g/l	10	8	6	3
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 (1.24 g/l Sodium Chloride)

Survival NOEC: 1.5 g/l

Submitted By:



Frontenac Supervisor
Mike Bollin

60446553 EEG City corp FATHEAD SURVIVAL

File: 6446553A 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	6	12	9	0

Calculated Chi-Square goodness of fit test statistic = 3.1588

Table Chi-Square value (alpha = 0.01) = 13.277

Data PASS normality test. Continue analysis.

60446553 EEG City corp FATHEAD SURVIVAL

File: 6446553A Transform: ARC SINE(SQUARE ROOT(Y))

Shapiro - Wilk's test for normality

D = 0.159

W = 0.731

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.

60446553 EEG City corp FATHEAD SURVIVAL
 File: 6446553A Transform: ARC SINE(SQUARE ROOT(Y))

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	CONTROL	5	1.249	1.412	1.347
2	32%	5	1.249	1.412	1.379
3	42%	5	1.249	1.412	1.379
4	56%	5	1.249	1.412	1.379
5	75%	5	1.249	1.412	1.347
6	100%	5	1.249	1.412	1.347

60446553 EEG City corp FATHEAD SURVIVAL
 File: 6446553A Transform: ARC SINE(SQUARE ROOT(Y))

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 of 2

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	CONTROL	0.008	0.089	0.040	6.63
2	32%	0.005	0.073	0.033	5.28
3	42%	0.005	0.073	0.033	5.28
4	56%	0.005	0.073	0.033	5.28
5	75%	0.008	0.089	0.040	6.63
6	100%	0.008	0.089	0.040	6.63

60446553 EEG City corp FATHEAD SURVIVAL
 File: 6446553A Transform: ARC SINE(SQUARE ROOT(Y))

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	0.008	0.002	0.240
Within (Error)	24	0.159	0.007	
Total	29	0.167		

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

60446553 EEG City corp FATHEAD SURVIVAL
 File: 6446553A Transform: ARC SINE(SQUARE ROOT(Y))

DUNNETT'S TEST

TABLE 1 OF 2

Ho:Control<Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	CONTROL	1.347	0.960		
2	32%	1.379	0.980	-0.632	
3	42%	1.379	0.980	-0.632	
4	56%	1.379	0.980	-0.632	
5	75%	1.347	0.960	0.000	
6	100%	1.347	0.960	0.000	

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

60446553 EEG City corp FATHEAD SURVIVAL

File: 6446553A Transform: ARC SINE(SQUARE ROOT(Y))

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	0.065	6.8	-0.020
3	42%	5	0.065	6.8	-0.020
4	56%	5	0.065	6.8	-0.020
5	75%	5	0.065	6.8	0.000
6	100%	5	0.065	6.8	0.000

60446553 EEG City corp Fathead Survival
File: 6446553B Transform: NO TRANSFORMATION

Shapiro - Wilk's test for normality

D = 0.046

W = 0.951

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.

60446553 EEG City corp Fathead Survival
File: 6446553B Transform: NO TRANSFORMATION

Bartlett's test for homogeneity of variance

Calculated B1 statistic = 0.81

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.

60446553 EEG City corp Fathead Survival
 File: 6446553B Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	CONTROL	5	0.398	0.475	0.443
2	32%	5	0.380	0.508	0.447
3	42%	5	0.398	0.513	0.464
4	56%	5	0.405	0.510	0.451
5	75%	5	0.404	0.519	0.456
6	100%	5	0.392	0.506	0.447

60446553 EEG City corp Fathead Survival
 File: 6446553B Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 of 2

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	CONTROL	0.001	0.033	0.015	7.51
2	32%	0.002	0.048	0.022	10.76
3	42%	0.002	0.048	0.021	10.28
4	56%	0.001	0.038	0.017	8.36
5	75%	0.002	0.048	0.021	10.50
6	100%	0.002	0.045	0.020	10.10

60446553 EEG City corp Fathead Survival
 File: 6446553B Transform: NO TRANSFORMATION

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	0.001	0.000	0.150
Within (Error)	24	0.046	0.002	
Total	29	0.047		

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

60446553 EEG City corp Fathead Survival
 File: 6446553B 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	0.443	0.443		
2	32%	0.447	0.447	-0.159	
3	42%	0.464	0.464	-0.760	
4	56%	0.451	0.451	-0.297	
5	75%	0.456	0.456	-0.456	
6	100%	0.447	0.447	-0.130	

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

60446553 EEG City corp Fathead Survival

File: 6446553B 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	0.065	14.7	-0.004
3	42%	5	0.065	14.7	-0.021
4	56%	5	0.065	14.7	-0.008
5	75%	5	0.065	14.7	-0.013
6	100%	5	0.065	14.7	-0.004

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	

60446553 EEG City corp CERIODAPHNIA DUBIA SUR
File: 6446553D 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

60446553 EEG City corp CERIODAPHNIA DUBIA SUR
File: 6446553D 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

60446553 EEG City corp CERIODAPHNIA DUBIA REP
File: 6446553E 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	3	15	19	22	1

Calculated Chi-Square goodness of fit test statistic = 7.0672
Table Chi-Square value (alpha = 0.01) = 13.277

Data PASS normality test. Continue analysis.

60446553 EEG City corp CERIODAPHNIA DUBIA REP
File: 6446553E Transform: NO TRANSFORMATION

Bartlett's test for homogeneity of variance
Calculated B1 statistic = 2.13

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.

60446553 EEG City corp CERIODAPHNIA DUBIA REP
 File: 6446553E Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	CONTROL	10	16.000	25.000	20.800
2	32%	10	17.000	24.000	20.800
3	42%	10	17.000	24.000	21.000
4	56%	10	18.000	24.000	20.800
5	75%	10	17.000	23.000	20.300
6	100%	10	17.000	25.000	21.100

60446553 EEG City corp CERIODAPHNIA DUBIA REP
 File: 6446553E Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 of 2

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	CONTROL	10.400	3.225	1.020	15.50
2	32%	5.511	2.348	0.742	11.29
3	42%	6.222	2.494	0.789	11.88
4	56%	4.178	2.044	0.646	9.83
5	75%	5.344	2.312	0.731	11.39
6	100%	6.767	2.601	0.823	12.33

60446553 EEG City corp CERIODAPHNIA DUBIA REP
 File: 6446553E Transform: NO TRANSFORMATION

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	3.800	0.760	0.119
Within (Error)	54	345.800	6.404	
Total	59	349.600		

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

60446553 EEG City corp CERIODAPHNIA DUBIA REP
 File: 6446553E 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	20.800	20.800		
2	32%	20.800	20.800	0.000	
3	42%	21.000	21.000	-0.177	
4	56%	20.800	20.800	0.000	
5	75%	20.300	20.300	0.442	
6	100%	21.100	21.100	-0.265	

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

60446553 EEG City corp CERIODAPHNIA DUBIA REP

File: 6446553E 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	10			
2	32%	10	2.614	12.6	0.000
3	42%	10	2.614	12.6	-0.200
4	56%	10	2.614	12.6	0.000
5	75%	10	2.614	12.6	0.500
6	100%	10	2.614	12.6	-0.300

Conc. ID	1	2	3	4	5	6
Conc. Tested	0	32	42	56	75	100
Response 1	.398	.513	.513	.433	.519	.466
Response 2	.475	.468	.468	.405	.420	.392
Response 3	.469	.437	.437	.452	.404	.473
Response 4	.419	.398	.398	.446	.446	.416
Response 5	.454	.504	.504	.510	.489	.506

*** Inhibition Concentration Percentage Estimate ***

Toxicant/Effluent: EEG City corp

Test Start Date: 2/6/24 Test Ending Date: 2/13/24

Test Species: Fathead

Test Duration: 7 days

DATA FILE:

Conc. ID	Number Replicates	Concentration	Response Means	Std. Dev.	Pooled Response Means
1	5	0.000	0.443	0.033	0.457
2	5	32.000	0.464	0.048	0.457
3	5	42.000	0.464	0.048	0.457
4	5	56.000	0.449	0.039	0.452
5	5	75.000	0.456	0.048	0.452
6	5	100.000	0.451	0.046	0.451

*** 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	22	20	24	23	22	21
Response 2	20	24	18	18	20	18
Response 3	24	17	23	22	18	17
Response 4	21	22	24	24	23	24
Response 5	17	23	20	20	22	20
Response 6	22	19	21	22	17	25
Response 7	25	23	19	21	20	22
Response 8	16	22	17	18	21	23
Response 9	17	20	21	21	17	19
Response 10	24	18	23	19	23	22

*** Inhibition Concentration Percentage Estimate ***

Toxicant/Effluent: EEG City corp

Test Start Date: 2/6/24 Test Ending Date: 2/13/24

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	20.800	3.225	20.867
2	10	32.000	20.800	2.348	20.867
3	10	42.000	21.000	2.494	20.867
4	10	56.000	20.800	2.044	20.800
5	10	75.000	20.300	2.312	20.700
6	10	100.000	21.100	2.601	20.700

*** 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.



Environmental Enterprise Group, Inc.
220 North Knoxville
Russellville, Arkansas 72801
(479) 968-6767 Fax (479) 968-1956

L246-661777

Company Name:		Phone #:																	
City Corporation		(479) 968-4989																	
Address:		Fax #:																	
P.O. Box 3186 Russellville, AR 72811-3186		(479) 968-3430																	
Project Name or Number:		Purchase Order #:																	
PCW BIOMONITORING																			
Sampling Personnel Signature(s): <i>Brooks</i>		Printed: Brooks Teefer																	
Sample I.D.	Date	Time	24 Hr Comp.	Grab	Plast.	Glass	# of Containers	Method Preserved						Sample Matrix					
								H2SO4	HNO3	NaOH	HCL	Ice	None	Water	Soil	Air	Sludge	Other	
ON 2-4-24 0730	2-4-24	0730	X		X		1					X		X					
Outfall 001 off	2-5-24	0739	X																
Relinquished by: <i>Brooks</i>		Date: 2-5-24	Time: 0822	Received by: <i>WGA</i>															
Received by: <i>Michael B. Bell</i>		Date: 2-5-24	Time: 0822	Relinquished by: <i>WGA</i>															
Relinquished by: <i>Michael B. Bell</i>		Date: 2-5-24	Time: 0844	Received by Laboratory: <i>WGA</i>															
Comments:																			



Environmental Enterprise Group, Inc.
220 North Knoxville
Russellville, Arkansas 72801
(479) 968-6767 Fax (479) 968-1956

L246-061777

Company Name: City Corporation						Phone #: (479) 968-4989											
Address:						Fax #:											
P.O. Box 3186 Russellville, AR 72811-3186						(479) 968-3430											
Project Name or Number: PCW BIO-MONITORING						Purchase Order #:											
Sampling Personnel Signature(s): <i>[Signature]</i>						Printed : Brooks Tester											
Sample I.D.	Date	Time	24 Hr Comp.	Grab	Cont.Type Plast. Glass	# of Containers	H2SO4	HNO3	NaOH	HCL	Ice	None	Water	Soil	Air	Sludge	Other
ON 2-6-24 OFF 2-3-24 Outfall 0010FF		0802 0737	X	X	X	1					X		X				
Relinquished by: <i>[Signature]</i>			Date: 2-7-24			Time: 0846			Received by:			Date:			Time:		
Received by: <i>[Signature]</i>			Date: 2/7/24			Time: 0846			Relinquished by:			Date:			Time:		
Relinquished by: <i>[Signature]</i>			Date: 2/7/24			Time: 1330			Received by Laboratory: <i>[Signature]</i>			Date: 2/7/24			Time: <i>[Signature]</i>		
Comments:																	

	DC#_Title: ENV-FRM-LENE-0009_Sample Condition Upon Receipt (SCUR)		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: City Corp

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 4.4 Corr. Factor -1.0 Corrected 3.4

Date and initials of person examining contents: CP 2/8/24
DP

Temperature should be above freezing to 6°C

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



L246-061777

Page 41 of 42

	DC#_Title: ENV-FRM-LENE-0009_Sample Condition Upon Receipt (SCUR)		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: EEG City Corporation

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 5.0 Corr. Factor -1.0 Corrected 4.0

Date and initials of person examining contents: 2/19/24 TL1350

Temperature should be above freezing to 6°C

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