



ENVIRONMENTAL TESTING & CONSULTING, INC.

2790 Whitten Road

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"A Laboratory Management Partner"

7/28/2014

Blytheville Sewer Department
Mr. James Yankee
P.O. Box 1784
Blytheville, AR, 72316

Ref: Analytical Testing
ETC Report Number: 14-190-0191
Client Project Description: Bioassay - West WWTP

Dear Mr. James Yankee:

The results of this WET (Whole Effluent Toxicity) test are acceptable according to test review criteria. There were no significant deficiencies found in sample handling, test performance, or reporting. The test results are within the limits established by your NPDES permit and were entered into the permittee's records in the database.

Results: CV/NOEL = 100%
Permit Limit: 100%

All statistical interpretations generated by CETIS - Comprehensive Environmental Toxicity Information System (v.1.8.6.1). CETIS created by Tidepool Scientific Software

Respectfully,

A handwritten signature in cursive script that reads "Connie Cook".

Connie Cook
Lab Supervisor

CETIS Test Evaluation Report

Report Date: 28 Jul-14 09:40 (1 of 2)
Test Code: CD 14-190-0191 | 12-8684-0011

Facility: BLYTHEVILLE SEWER West Plant Sample Site: Sample Code: 14-190-0191 Sample Date: 08 Jul-14 08:00 Sample Age: 28h (0.8 °C) Project: WET Biannual Compliance Test (1st)	Test Name: Ceriodaphnia 7-d Survival and Reproduction Test Organism: Ceriodaphnia dubia (Water Flea) Protocol: EPA/821/R-02-013 (2002) Start Date: 09 Jul-14 11:50 End Date: 15 Jul-14 15:45 Duration: 6d 4h Organism Age:
Permitee: Blytheville Sewer Dept. Address: P.O. Box 1784 Halfmoon Road Blytheville, AR 72315 Contact: Mr. James Yankee Phone: 870-763-4961, 870-763-8541(fax) Email:	Laboratory: Environmental Testing and Consulting, Inc. Address: 2790 Whitten Road Memphis, TN 38133 Contact: Connie Cook, Lab Supervisor Phone: 901-213-2454 Email: ccook@etcmemphis.com

Chronic Toxicity Evaluation					
Endpoint	Parameter	C-%	IWC	Pass/Fail	Method
Reproduction	NOEL/LOEL	100/>100	98.99	Pass	Dunnett Multiple Comparison Test

Test Acceptability Criteria				
Endpoint	Attribute	Test Stat	Limits	Pass/Fail
6d Survival Rate	Control CV	0	N/A - 0.4	Pass
6d Survival Rate	Control Resp	1	0.799 - N/A	Pass
Reproduction	Control CV	0.15	N/A - 0.4	Pass
Reproduction	Control Resp	20	15 - N/A	Pass

CETIS Test Evaluation Report

Report Date: 28 Jul-14 09:40 (2 of 2)

Test Code: CD 14-190-0191 | 12-8684-0011

6d Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	10	1	1	1	1	1	0	0	0.0%	0.0%
32		10	1	1	1	1	1	0	0	0.0%	0.0%
42		10	1	1	1	1	1	0	0	0.0%	0.0%
56		10	1	1	1	1	1	0	0	0.0%	0.0%
75		10	1	1	1	1	1	0	0	0.0%	0.0%
100		10	1	1	1	1	1	0	0	0.0%	0.0%

Reproduction Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	10	20	19	21	15	24	0.97	3.1	15.0%	0.0%
32		10	19	17	20	11	25	1.3	4.2	23.0%	6.5%
42		10	19	18	20	15	24	0.8	2.5	13.0%	3.5%
56		10	19	17	20	12	24	1.1	3.5	19.0%	7.5%
75		10	18	17	19	13	23	0.87	2.7	15.0%	11.0%
100		10	18	17	19	14	20	0.75	2.4	13.0%	11.0%

CETIS Summary Report

Report Date: 28 Jul-14 09:41 (p 1 of 2)
 Test Code: CD 14-190-0191 | 12-8684-0011

Ceriodaphnia 7-d Survival and Reproduction Test Environmental Testing and Consulting, Inc.

Batch ID: 17-9847-8351	Test Type: Reproduction-Survival (7d)	Analyst: Ava Davis
Start Date: 09 Jul-14 11:50	Protocol: EPA/821/R-02-013 (2002)	Diluent: Perrier Water
Ending Date: 15 Jul-14 15:45	Species: Ceriodaphnia dubia	Brine: Not Applicable
Duration: 6d 4h	Source: In-House Culture	Age:

Sample ID: 02-0429-2753	Code: 14-190-0191	Client: Blytheville Sewer Dept.
Sample Date: 08 Jul-14 08:00	Material: POTW Effluent	Project: WET Biannual Compliance Test (1st)
Receive Date: 08 Jul-14 17:30	Source: BLYTHEVILLE SEWER West Plant (AR00)	
Sample Age: 28h (0.8 °C)	Station:	

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	14-190-0191	10 Jul-14 07:30	11 Jul-14 11:33	11 Jul-14 00:00	0.8
2	14-190-0191	11 Jul-14 08:00	11 Jul-14 11:33	13 Jul-14 00:00	0.1

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
03-3968-6812	6d Survival Rate	100	>100	NA	NA	1	Fisher Exact/Bonferroni-Holm Test
08-8586-7803	Reproduction	100	>100	NA	16.1%	1	Dunnett Multiple Comparison Test

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
03-3968-6812	6d Survival Rate	Control CV	0	NL - 0.4	Yes	Passes Acceptability Criteria
08-8586-7803	Reproduction	Control CV	0.15	NL - 0.4	Yes	Passes Acceptability Criteria
03-3968-6812	6d Survival Rate	Control Resp	1	0.799 - NL	Yes	Passes Acceptability Criteria
08-8586-7803	Reproduction	Control Resp	20	15 - NL	Yes	Passes Acceptability Criteria

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	10	1	1	1	1	1	0	0	0.0%	0.0%
32		10	1	1	1	1	1	0	0	0.0%	0.0%
42		10	1	1	1	1	1	0	0	0.0%	0.0%
56		10	1	1	1	1	1	0	0	0.0%	0.0%
75		10	1	1	1	1	1	0	0	0.0%	0.0%
100		10	1	1	1	1	1	0	0	0.0%	0.0%

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	10	20	18	22	15	24	0.97	3.1	15.0%	0.0%
32		10	19	16	22	11	25	1.3	4.2	23.0%	6.5%
42		10	19	17	21	15	24	0.8	2.5	13.0%	3.5%
56		10	19	16	21	12	24	1.1	3.5	19.0%	7.5%
75		10	18	16	20	13	23	0.87	2.7	15.0%	11.0%
100		10	18	16	20	14	20	0.75	2.4	13.0%	11.0%

CETIS Summary Report

Report Date: 28 Jul-14 09:41 (p 2 of 2)

Test Code: CD 14-190-0191 | 12-8684-0011

Ceriodaphnia 7-d Survival and Reproduction Test											Environmental Testing and Consulting, Inc.
6d Survival Rate Detail											
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Lab Water	1	1	1	1	1	1	1	1	1	1
32		1	1	1	1	1	1	1	1	1	1
42		1	1	1	1	1	1	1	1	1	1
56		1	1	1	1	1	1	1	1	1	1
75		1	1	1	1	1	1	1	1	1	1
100		1	1	1	1	1	1	1	1	1	1
Reproduction Detail											
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Lab Water	19	23	15	17	24	19	23	21	22	17
32		11	14	19	20	15	25	20	21	19	23
42		20	19	21	21	15	19	19	16	19	24
56		12	20	16	15	24	22	18	21	19	18
75		13	16	18	17	16	23	21	18	18	18
100		19	14	18	19	14	20	16	20	20	19

CETIS Measurement Report

Report Date: 28 Jul-14 09:40 (p 1 of 8)

Test Code: CD 14-190-0191 | 12-8684-0011

Ceriodaphnia 7-d Survival and Reproduction Test		Environmental Testing and Consulting, Inc.	
Batch ID: 17-9847-8351	Test Type: Reproduction-Survival (7d)	Analyst: Ava Davis	
Start Date: 09 Jul-14 11:50	Protocol: EPA/821/R-02-013 (2002)	Diluent: Perrier Water	
Ending Date: 15 Jul-14 15:45	Species: Ceriodaphnia dubia	Brine: Not Applicable	
Duration: 6d 4h	Source: In-House Culture	Age:	
Sample ID: 02-0429-2753	Code: 14-190-0191	Client: Blytheville Sewer Dept.	
Sample Date: 08 Jul-14 08:00	Material: POTW Effluent	Project: WET Biannual Compliance Test (1st)	
Receive Date: 08 Jul-14 17:30	Source: BLYTHEVILLE SEWER West Plant (AR00)		
Sample Age: 28h (0.8 °C)	Station:		

CETIS Measurement Report

Report Date: 28 Jul-14 09:40 (p 2 of 8)

Test Code: CD 14-190-0191 | 12-8684-0011

Ceriodaphnia 7-d Survival and Reproduction Test **Environmental Testing and Consulting, Inc.**

Alkalinity (CaCO3)-mg/L							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	59				
0	Lab Water	2	63				
0	Lab Water	3	62				
0	Lab Water	4	59				
0	Lab Water	5	62				
0	Lab Water	6	63				
0	Lab Water	7	63				

Total Residual Chlorine-mg/L							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	0				
100			0				
0	Lab Water	2	0				
100			0				
0	Lab Water	3	0				
100			0				
0	Lab Water	4	0				
100			0				
0	Lab Water	5	0				
100			0				
0	Lab Water	6	0				
100			0				
0	Lab Water	7	0				
100			0				

Conductivity-µS/cm							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	170				
100			422				
0	Lab Water	2	170				
100			422				
0	Lab Water	3	172				
100			428				
0	Lab Water	4	165				
100			420				
0	Lab Water	5	170				
100			444				
0	Lab Water	6	167				
100			435				
0	Lab Water	7	169				
100			449				

CETIS Measurement Report

Report Date: 28 Jul-14 09:40 (p 3 of 8)

Test Code: CD 14-190-0191 | 12-8684-0011

Ceriodaphnia 7-d Survival and Reproduction Test **Environmental Testing and Consulting, Inc.**

Final Dissolved Oxygen-mg/L							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	8.4				
32			7.8				
42			7.7				
56			7.7				
75			7.7				
100			7.6				
0	Lab Water	2	8.4				
32			8.1				
42			8.1				
56			7.8				
75			7.8				
100			8				
0	Lab Water	3	8.5				
32			8.3				
42			8.3				
56			8.2				
75			8.2				
100			8.3				
0	Lab Water	4	8				
32			8.3				
42			8.2				
56			8				
75			8				
100			8				
0	Lab Water	5	8				
32			7.8				
42			7.8				
56			7.8				
75			7.8				
100			7.8				
0	Lab Water	6	7.6				
32			7.5				
42			7.4				
56			7.4				
75			7.4				
100			7.3				

CETIS Measurement Report

Report Date: 28 Jul-14 09:40 (p 4 of 8)

Test Code: CD 14-190-0191 | 12-8684-0011

Ceriodaphnia 7-d Survival and Reproduction Test Environmental Testing and Consulting, Inc.

Initial Dissolved Oxygen-mg/L							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	8.6				
32			8.7				
42			8.6				
56			8.6				
75			8.3				
100			8.2				
0	Lab Water	2	8.7				
32			8.6				
42			8.3				
56			6.2				
75			8				
100			7.8				
0	Lab Water	3	8.7				
32			8.7				
42			8.4				
56			8.3				
75			8.1				
100			7.7				
0	Lab Water	4	8.5				
32			8.4				
42			8.4				
56			8.2				
75			8.1				
100			7.8				
0	Lab Water	5	8.7				
32			8				
42			8.3				
56			7.7				
75			7.3				
100			7.5				
0	Lab Water	6	7.5				
32			8				
42			7.7				
56			7.6				
75			7.2				
100			6.5				
0	Lab Water	7	7.9				
32			7.8				
42			7.3				
56			6.9				
75			6.7				
100			6.8				
Hardness (CaCO3)-mg/L							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	90				
0	Lab Water	2	95				
0	Lab Water	3	93				
0	Lab Water	4	88				
0	Lab Water	5	87				
0	Lab Water	6	89				
0	Lab Water	7	89				

CETIS Measurement Report

Report Date: 28 Jul-14 09:40 (p 5 of 8)

Test Code: CD 14-190-0191 | 12-8684-0011

Ceriodaphnia 7-d Survival and Reproduction Test **Environmental Testing and Consulting, Inc.**

Final pH-Units							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	7.8				
32			7.8				
42			7.8				
56			7.8				
75			7.8				
100			7.8				
0	Lab Water	2	7.9				
32			7.7				
42			7.7				
56			7.7				
75			7.7				
100			7.7				
0	Lab Water	3	8.2				
32			8				
42			8				
56			8				
75			7.9				
100			7.9				
0	Lab Water	4	7.9				
32			7.7				
42			7.8				
56			7.7				
75			7.7				
100			7.7				
0	Lab Water	5	7.7				
32			7.6				
42			7.6				
56			7.8				
75			7.6				
100			7.6				
0	Lab Water	6	7.8				
32			7.7				
42			7.6				
56			7.6				
75			7.6				
100			7.6				

CETIS Measurement Report

Report Date: 28 Jul-14 09:40 (p 6 of 8)
 Test Code: CD 14-190-0191 | 12-8684-0011

Ceriodaphnia 7-d Survival and Reproduction Test

Environmental Testing and Consulting, Inc.

Initial pH-Units

C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	Lab Water	1	7.9					
32			7.6					
42			7.6					
56			7.5					
75			7.4					
100			7.5					
0			Lab Water	2	7.7			
32	7.5							
42	7.4							
56	7.3							
75	7.3							
100	7.2							
0	Lab Water	3			7.6			
32			7.4					
42			7.3					
56			7.3					
75			7.2					
100			7.1					
0			Lab Water	4	7.7			
32	7.4							
42	7.4							
56	7.3							
75	7.3							
100	7.2							
0	Lab Water	5			7.6			
32			7.4					
42			7.3					
56			7.3					
75			7.2					
100			7.1					
0			Lab Water	6	8			
32	7.6							
42	7.6							
56	7.5							
75	7.4							
100	7.3							
0	Lab Water	7			7.7			
32			7.4					
42			7.3					
56			7.2					
75			7.2					
100			7.1					

CETIS Measurement Report

Report Date: 28 Jul-14 09:40 (p 7 of 8)

Test Code: CD 14-190-0191 | 12-8684-0011

Ceriodaphnia 7-d Survival and Reproduction Test

Environmental Testing and Consulting, Inc.

Final Temperature-°C

C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	Lab Water	1	23					
32			23					
42			23					
56			23					
75			23					
100			23					
0			Lab Water	2	23			
32	23							
42	23							
56	23							
75	23							
100	23							
0	Lab Water	3			23			
32			23					
42			23					
56			23					
75			23					
100			23					
0			Lab Water	4	23			
32	23							
42	23							
56	23							
75	23							
100	23							
0	Lab Water	5			23			
32			23					
42			23					
56			23					
75			23					
100			23					
0			Lab Water	6	23			
32	23							
42	23							
56	23							
75	23							
100	23							

CETIS Measurement Report

Report Date: 28 Jul-14 09:40 (p 8 of 8)
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Ceriodaphnia 7-d Survival and Reproduction Test

Environmental Testing and Consulting, Inc.

Initial Temperature-°C							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	23				
32			23				
42			23				
56			23				
75			23				
100			23				
0	Lab Water	2	23				
32			23				
42			23				
56			23				
75			23				
100			23				
0	Lab Water	3	23				
32			23				
42			23				
56			23				
75			23				
100			23				
0	Lab Water	4	23				
32			23				
42			23				
56			23				
75			23				
100			23				
0	Lab Water	5	23				
32			23				
42			23				
56			23				
75			23				
100			23				
0	Lab Water	6	23				
32			23				
42			23				
56			23				
75			23				
100			23				
0	Lab Water	7	23				
32			23				
42			23				
56			23				
75			23				
100			23				

CETIS Test Evaluation Report

Report Date: 28 Jul-14 09:42 (1 of 2)
Test Code: FH 14-190-0191 | 12-8911-8731

Facility: BLYTHEVILLE SEWER West Plant Sample Site: Sample Code: 14-190-0191 Sample Date: 08 Jul-14 08:00 Sample Age: 27h (0.8 °C) Project: WET Biannual Compliance Test (1st)	Test Name: Fathead Minnow 7-d Larval Survival and Growth Test Organism: Pimephales promelas (Fathead Minnow) Protocol: EPA/821/R-02-013 (2002) Start Date: 09 Jul-14 11:10 End Date: 16 Jul-14 13:23 Duration: 7d 2h Organism Age: < 24
Permitee: Blytheville Sewer Dept. Address: P.O. Box 1784 Halfmoon Road Blytheville, AR 72315 Contact: Mr. James Yankee Phone: 870-763-4961, 870-763-8541(fax) Email:	Laboratory: Environmental Testing and Consulting, Inc. Address: 2790 Whitten Road Memphis, TN 38133 Contact: Connie Cook, Lab Supervisor Phone: 901-213-2454 Email: ccook@etcmemphis.com

Chronic Toxicity Evaluation					
Endpoint	Parameter	C-%	IWC	Pass/Fail	Method
7d Survival Rate	NOEL/LOEL	100/>100	98.99	Pass	Dunnett Multiple Comparison Test
Mean Dry Weight-mg	NOEL/LOEL	100/>100	98.99	Pass	Dunnett Multiple Comparison Test

Test Acceptability Criteria				
Endpoint	Attribute	Test Stat	Limits	Pass/Fail
7d Survival Rate	Control CV	0.14	N/A - 0.4	Pass
7d Survival Rate	Control Resp	0.83	0.8 - N/A	Pass
Mean Dry Weight-mg	Control CV	0.12	N/A - 0.4	Pass
Mean Dry Weight-mg	Control Resp	0.29	0.25 - N/A	Pass

CETIS Test Evaluation Report

Report Date: 28 Jul-14 09:42 (2 of 2)
 Test Code: FH 14-190-0191 | 12-8911-8731

7d Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	5	0.83	0.78	0.87	0.75	1	0.05	0.11	14.0%	0.0%
32		5	0.85	0.81	0.89	0.75	1	0.047	0.1	12.0%	-3.0%
42		5	0.88	0.84	0.91	0.75	1	0.04	0.088	10.0%	-6.1%
56		5	0.88	0.83	0.92	0.75	1	0.056	0.13	14.0%	-6.1%
75		5	0.8	0.77	0.83	0.75	0.88	0.031	0.068	8.6%	3.0%
100		5	0.78	0.71	0.84	0.63	1	0.073	0.16	21.0%	6.1%

Mean Dry Weight-mg Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	5	0.29	0.28	0.31	0.26	0.35	0.016	0.036	12.0%	0.0%
32		5	0.32	0.31	0.33	0.3	0.35	0.011	0.024	7.7%	-8.5%
42		5	0.33	0.31	0.34	0.28	0.38	0.02	0.045	14.0%	-12.0%
56		5	0.29	0.28	0.31	0.22	0.36	0.022	0.049	17.0%	-0.85%
75		5	0.28	0.26	0.3	0.22	0.38	0.026	0.058	21.0%	3.4%
100		5	0.3	0.27	0.32	0.25	0.39	0.026	0.058	20.0%	-0.85%

CETIS Summary Report

Report Date: 28 Jul-14 09:42 (p 1 of 2)
 Test Code: FH 14-190-0191 | 12-8911-8731

Fathead Minnow 7-d Larval Survival and Growth Test Environmental Testing and Consulting, Inc.

Batch ID: 15-8550-0692	Test Type: Growth-Survival (7d)	Analyst: Ava Davis
Start Date: 09 Jul-14 11:10	Protocol: EPA/821/R-02-013 (2002)	Diluent: Perrier Water
Ending Date: 16 Jul-14 13:23	Species: Pimephales promelas	Brine: Not Applicable
Duration: 7d 2h	Source: Aquatic Biosystems, CO	Age: < 24

Sample ID: 02-0429-2753	Code: 14-190-0191	Client: Blytheville Sewer Dept.
Sample Date: 08 Jul-14 08:00	Material: POTW Effluent	Project: WET Biannual Compliance Test (1st)
Receive Date: 08 Jul-14 17:30	Source: BLYTHEVILLE SEWER West Plant (AR00)	
Sample Age: 27h (0.8 °C)	Station:	

Sample Renewals					
Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	14-190-0191	10 Jul-14 07:30	11 Jul-14 11:33	11 Jul-14 00:00	0.8
2	14-190-0191	11 Jul-14 08:00	11 Jul-14 11:33	13 Jul-14 00:00	0.1

Comparison Summary							
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
03-5670-8944	7d Survival Rate	100	>100	NA	23.2%	1	Dunnett Multiple Comparison Test
07-2546-4430	Mean Dry Weight-mg	100	>100	NA	23.8%	1	Dunnett Multiple Comparison Test

Test Acceptability						
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
03-5670-8944	7d Survival Rate	Control CV	0.14	NL - 0.4	Yes	Passes Acceptability Criteria
07-2546-4430	Mean Dry Weight-mg	Control CV	0.12	NL - 0.4	Yes	Passes Acceptability Criteria
03-5670-8944	7d Survival Rate	Control Resp	0.83	0.8 - NL	Yes	Passes Acceptability Criteria
07-2546-4430	Mean Dry Weight-mg	Control Resp	0.29	0.25 - NL	Yes	Passes Acceptability Criteria

7d Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	5	0.83	0.69	0.96	0.75	1	0.05	0.11	14.0%	0.0%
32		5	0.85	0.72	0.98	0.75	1	0.047	0.1	12.0%	-3.0%
42		5	0.88	0.77	0.98	0.75	1	0.04	0.088	10.0%	-6.1%
56		5	0.88	0.72	1	0.75	1	0.056	0.13	14.0%	-6.1%
75		5	0.8	0.71	0.89	0.75	0.88	0.031	0.068	8.6%	3.0%
100		5	0.78	0.57	0.98	0.63	1	0.073	0.16	21.0%	6.1%

Mean Dry Weight-mg Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	5	0.29	0.25	0.34	0.26	0.35	0.016	0.036	12.0%	0.0%
32		5	0.32	0.29	0.35	0.3	0.35	0.011	0.024	7.7%	-8.5%
42		5	0.33	0.27	0.38	0.28	0.38	0.02	0.045	14.0%	-12.0%
56		5	0.29	0.23	0.36	0.22	0.36	0.022	0.049	17.0%	-0.85%
75		5	0.28	0.21	0.35	0.22	0.38	0.026	0.058	21.0%	3.4%
100		5	0.3	0.22	0.37	0.25	0.39	0.026	0.058	20.0%	-0.85%

CETIS Summary Report

Report Date: 28 Jul-14 09:42 (p 2 of 2)
 Test Code: FH 14-190-0191 | 12-8911-8731

Fathead Minnow 7-d Larval Survival and Growth Test **Environmental Testing and Consulting, Inc.**

7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Lab Water	0.75	0.88	0.75	1	0.75
32		0.88	0.88	0.75	0.75	1
42		0.75	0.88	1	0.88	0.88
56		1	0.88	0.75	1	0.75
75		0.88	0.75	0.75	0.75	0.88
100		0.63	1	0.63	0.75	0.88

Mean Dry Weight-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Lab Water	0.26	0.35	0.3	0.29	0.26
32		0.35	0.3	0.34	0.3	0.3
42		0.29	0.36	0.34	0.38	0.28
56		0.36	0.3	0.3	0.29	0.22
75		0.22	0.26	0.38	0.3	0.25
100		0.31	0.39	0.28	0.25	0.25

CETIS Measurement Report

Report Date: 28 Jul-14 09:42 (p 1 of 8)
Test Code: FH 14-190-0191 | 12-8911-8731

Fathead Minnow 7-d Larval Survival and Growth Test		Environmental Testing and Consulting, Inc.	
Batch ID: 15-8550-0692	Test Type: Growth-Survival (7d)	Analyst: Ava Davis	
Start Date: 09 Jul-14 11:10	Protocol: EPA/821/R-02-013 (2002)	Diluent: Perrier Water	
Ending Date: 16 Jul-14 13:23	Species: Pimephales promelas	Brine: Not Applicable	
Duration: 7d 2h	Source: Aquatic Biosystems, CO	Age: < 24	
Sample ID: 02-0429-2753	Code: 14-190-0191	Client: Blytheville Sewer Dept.	
Sample Date: 08 Jul-14 08:00	Material: POTW Effluent	Project: WET Biannual Compliance Test (1st)	
Receive Date: 08 Jul-14 17:30	Source: BLYTHEVILLE SEWER West Plant (AR00)		
Sample Age: 27h (0.8 °C)	Station:		

CETIS Measurement Report

Report Date: 28 Jul-14 09:42 (p 2 of 8)
 Test Code: FH 14-190-0191 | 12-8911-8731

Fathead Minnow 7-d Larval Survival and Growth Test Environmental Testing and Consulting, Inc.

Alkalinity (CaCO3)-mg/L

C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	Lab Water	1	59					
0	Lab Water	2	63					
0	Lab Water	3	62					
0	Lab Water	4	59					
0	Lab Water	5	62					
0	Lab Water	6	63					
0	Lab Water	7	63					

Total Residual Chlorine-mg/L

C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	Lab Water	1	0					
100			0					
0	Lab Water	2	0					
100			0					
0	Lab Water	3	0					
100			0					
0	Lab Water	4	0					
100			0					
0	Lab Water	5	0					
100			0					
0	Lab Water	6	0					
100			0					
0	Lab Water	7	0					
100			0					

Conductivity-µS/cm

C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	Lab Water	1	170					
100			422					
0	Lab Water	2	170					
100			422					
0	Lab Water	3	172					
100			428					
0	Lab Water	4	165					
100			420					
0	Lab Water	5	170					
100			444					
0	Lab Water	6	167					
100			435					
0	Lab Water	7	169					
100			449					

CETIS Measurement Report

Report Date: 28 Jul-14 09:42 (p 3 of 8)
 Test Code: FH 14-190-0191 | 12-8911-8731

Fathead Minnow 7-d Larval Survival and Growth Test Environmental Testing and Consulting, Inc.

Final Dissolved Oxygen-mg/L							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	7.5				
32			7.9				
42			8				
56			7.9				
75			7.3				
100			7.3				
0	Lab Water	2	7.9				
32			8.3				
42			8.1				
56			8				
75			7.6				
100			7.6				
0	Lab Water	3	8.2				
32			8.3				
42			8.2				
56			8.2				
75			7.9				
100			7.2				
0	Lab Water	4	7.9				
32			8				
42			7.8				
56			7.8				
75			7.3				
100			7				
0	Lab Water	5	7.4				
32			6.7				
42			5.6				
56			6.9				
75			7.1				
100			6.7				
0	Lab Water	6	6.7				
32			6.9				
42			6.4				
56			6.6				
75			6.5				
100			6.4				
0	Lab Water	7	7				
32			7				
42			7.1				
56			7.3				
75			7.2				
100			7				

CETIS Measurement Report

Report Date: 28 Jul-14 09:42 (p 4 of 8)
 Test Code: FH 14-190-0191 | 12-8911-8731

Fathead Minnow 7-d Larval Survival and Growth Test Environmental Testing and Consulting, Inc.

Initial Dissolved Oxygen-mg/L							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	8.6				
32			8.7				
42			8.6				
56			8.6				
75			8.3				
100			8.2				
0	Lab Water	2	8.7				
32			8.6				
42			8.3				
56			8.2				
75			8				
100			7.8				
0	Lab Water	3	8.7				
32			8.7				
42			8.4				
56			8.3				
75			8.1				
100			7.7				
0	Lab Water	4	8.5				
32			8.4				
42			8.4				
56			8.2				
75			8.1				
100			7.8				
0	Lab Water	5	8.7				
32			8				
42			8.3				
56			7.7				
75			7.3				
100			7.5				
0	Lab Water	6	7.5				
32			8				
42			7.7				
56			7.6				
75			7.2				
100			6.5				
0	Lab Water	7	7.9				
32			7.8				
42			7.3				
56			6.9				
75			6.7				
100			6.8				

Hardness (CaCO3)-mg/L							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	90				
0	Lab Water	2	95				
0	Lab Water	3	93				
0	Lab Water	4	88				
0	Lab Water	5	87				
0	Lab Water	6	89				
0	Lab Water	7	89				

CETIS Measurement Report

Report Date: 28 Jul-14 09:42 (p 5 of 8)
 Test Code: FH 14-190-0191 | 12-8911-8731

Fathead Minnow 7-d Larval Survival and Growth Test Environmental Testing and Consulting, Inc.

Final pH-Units							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	7.6				
32			7.4				
42			7.5				
56			7.4				
75			7.4				
100			7.4				
0	Lab Water	2	7.5				
32			7.5				
42			7.5				
56			7.5				
75			7.4				
100			7.4				
0	Lab Water	3	7.6				
32			7.5				
42			7.6				
56			7.6				
75			7.5				
100			7.4				
0	Lab Water	4	7.6				
32			7.5				
42			7.4				
56			7.5				
75			7.4				
100			7.4				
0	Lab Water	5	7.2				
32			7.2				
42			7.1				
56			7.3				
75			7.2				
100			7.2				
0	Lab Water	6	7.5				
32			7.3				
42			7.3				
56			7.3				
75			7.3				
100			7.2				
0	Lab Water	7	7.6				
32			7.6				
42			7.5				
56			7.5				
75			7.5				
100			7.6				

CETIS Measurement Report

Report Date: 28 Jul-14 09:42 (p 6 of 8)
 Test Code: FH 14-190-0191 | 12-8911-8731

Fathead Minnow 7-d Larval Survival and Growth Test Environmental Testing and Consulting, Inc.

Initial pH-Units							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	7.9				
32			7.6				
42			7.5				
56			7.5				
75			7.4				
100			7.3				
0	Lab Water	2	7.7				
32			7.5				
42			7.4				
56			7.3				
75			7.3				
100			7.2				
0	Lab Water	3	7.6				
32			7.4				
42			7.3				
56			7.3				
75			7.2				
100			7.1				
0	Lab Water	4	7.7				
32			7.4				
42			7.4				
56			7.3				
75			7.3				
100			7.2				
0	Lab Water	5	7.6				
32			7.4				
42			7.3				
56			7.3				
75			7.2				
100			7.1				
0	Lab Water	6	8				
32			7.6				
42			7.6				
56			7.5				
75			7.4				
100			7.3				
0	Lab Water	7	7.7				
32			7.4				
42			7.3				
56			7.2				
75			7.2				
100			7.1				

CETIS Measurement Report

Report Date: 28 Jul-14 09:42 (p 7 of 8)
 Test Code: FH 14-190-0191 | 12-8911-8731

Fathead Minnow 7-d Larval Survival and Growth Test Environmental Testing and Consulting, Inc.

Final Temperature-°C							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	23				
32			23				
42			23				
56			23				
75			23				
100			23				
0			Lab Water	2	23		
32	23						
42	23						
56	23						
75	23						
100	23						
0	Lab Water	3			23		
32			23				
42			23				
56			23				
75			23				
100			23				
0			Lab Water	4	23		
32	23						
42	23						
56	23						
75	23						
100	23						
0	Lab Water	5			23		
32			23				
42			23				
56			23				
75			23				
100			23				
0			Lab Water	6	23		
32	23						
42	23						
56	23						
75	23						
100	23						
0	Lab Water	7			23		
32			23				
42			23				
56			23				
75			23				
100			23				

CETIS Measurement Report

Report Date: 28 Jul-14 09:42 (p 8 of 8)
 Test Code: FH 14-190-0191 | 12-8911-8731

Fathead Minnow 7-d Larval Survival and Growth Test				Environmental Testing and Consulting, Inc.			
Initial Temperature-°C							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	23				
32			23				
42			23				
56			23				
75			23				
100			23				
0			Lab Water	2	23		
32	23						
42	23						
56	23						
75	23						
100	23						
0	Lab Water	3			23		
32			23				
42			23				
56			23				
75			23				
100			23				
0			Lab Water	4	23		
32	23						
42	23						
56	23						
75	23						
100	23						
0	Lab Water	5			23		
32			23				
42			23				
56			23				
75			23				
100			23				
0			Lab Water	6	23		
32	23						
42	23						
56	23						
75	23						
100	23						
0	Lab Water	7			23		
32			23				
42			23				
56			23				
75			23				
100			23				

Additional Toxicity Test Information

1. Methods/Instrumentation used in chemical analysis:
 - Dissolved oxygen: 4500-O G YSI MODEL - 58
 - pH: 4500-H + B JENCO METER 6072
 - Temperature: 2550 B JENCO METER 6072
 - Conductivity: 2510 B CORNING METER 441
 - Alkalinity: 2320 B
 - Hardness: 200.7
 - Total Residual Chlorine: 4500-Cl G - REPORTED VALUE OF "0" INDICATES RESULT BELOW DETECTION LIMIT OF 0.02 mg/L
 - EPA Acute/Chronic Manual Edition and Date: EPA-821-R-02-012
 - OCT 2002 (Fifth edition)

2. Laboratory
 - Temperature: Average - 25 C Range - 23 - 26
 - Light Cycle: 16 hours light/ 8 hours dark
 - Light intensity: 100 foot-candles, average
 - Control Water: Dilute mineral water made with 20 % Perrier in Nanopure
 - Dilution Water: Laboratory control water
 - Pretreatment: none

3. Method 1002.0
 - Test chambers: 30 mL disposable plastic beakers
 - Volume per chamber: 15 mL
 - Number of organisms per chamber: 1
 - Number of replicates: 10
 - Food: Laboratory culture of Selenastrum algae and YCT solution

4. Method 1000.0
 - Test chambers: 20 oz. Disposable plastic cups
 - Volume per chamber: 200 mL
 - Average number of organisms per chamber: 8
 - Number of replicates per concentration: 5
 - Food: Artemia brine shrimp hatched in laboratory
 - Acclimation of organisms: Organisms are allowed to reach test temperature. Dilution water is added at half-hour intervals until organisms are contained in a culture media that consists of 80% dilution water.

5. Indicate below any other relevant information that may aid in the evaluation of this report. Include any deviations from EPA methodology that were necessary for these tests as well as any sample manipulations which were performed, such as aeration, dechlorination with sodium thiosulfate, etc. and the justification for such manipulations or deviations. Attach additional pages as needed.
 - None



ENVIRONMENTAL TESTING & CONSULTING, INC.

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"A Laboratory Management Partner"

03316

Blytheville Sewer Department
Mr. James Yankee
P.O. Box 1784
Blytheville, AR 72316

Project Bioassay - West WWTP
Information :

Report Date : 7/28/2014

Report Number : 14-190-0191

REPORT OF ANALYSIS

Received : 7/9/2014

Lab No : 90524
Sample ID : Outfall 001

Matrix: Aqueous
Sampled: 7/8/2014 8:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO3)	94	mg/L	1	1	07/21/14 10:15	EWB	2320B-2011
Total Calcium	27.3	mg/L	0.100	1	07/15/14 19:24	JTR	EPA-200.7
Hardness as CaCO3(SM-2340B)	93.3	mg/L	0.100	1	07/15/14 19:24		EPA-200.7
Total Magnesium	6.11	mg/L	0.100	1	07/15/14 19:24	JTR	EPA-200.7

Lab No : 91262
Sample ID : Outfall 001

Matrix: Aqueous
Sampled: 7/10/2014 7:30

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO3)	106	mg/L	1	1	07/21/14 10:15	EWB	2320B-2011
Total Calcium	26.2	mg/L	0.100	1	07/15/14 19:28	JTR	EPA-200.7
Hardness as CaCO3(SM-2340B)	89.8	mg/L	0.100	1	07/15/14 19:28		EPA-200.7
Total Magnesium	5.92	mg/L	0.100	1	07/15/14 19:28	JTR	EPA-200.7

Lab No : 91263
Sample ID : Outfall 001

Matrix: Aqueous
Sampled: 7/11/2014 8:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO3)	110	mg/L	1	1	07/21/14 10:15	EWB	2320B-2011
Total Calcium	26.2	mg/L	0.100	1	07/15/14 19:32	JTR	EPA-200.7
Hardness as CaCO3(SM-2340B)	89.7	mg/L	0.100	1	07/15/14 19:32		EPA-200.7
Total Magnesium	5.90	mg/L	0.100	1	07/15/14 19:32	JTR	EPA-200.7

Qualifiers/ Definitions

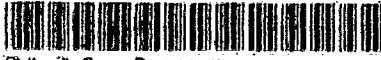
* Outside QC limit
MQL Method Quantitation Limit

DF Dilution Factor



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Blytheville Sewer Department
Bioassay - West WWTP

14-190-0191
03316
07-08-2014
08:31:18

①

Company Name Blytheville Sewer Department		Customer Number 03316		Telephone (870) 763-4961		RUSH	ICE
Site Name WEST semi-annual			Project Comment West Plant			FID Number	
Project Blytheville Sewer - Bioassay		Project Number		PO Number			
Project Manager / Contact Mr. James Yankee				E-mail jlyankee@att.net			
Sample ID	Container Type	Collected Date / Time	# Cont	Preservative	Grab / Comp	Matrix	Analyses
C3-Outfall 001	Plastic - Pint	7-8-14 08:00	1	HNO3 - Nitric Acid	C	Aqueous	hardness
C3-Outfall 001	Plastic - Pint	L	1	NONE	-C	Aqueous	alkalinity
C3-Outfall 001	Plastic - Gallon	L	3	NONE	C	Aqueous	Chronic CD/FH

Sampled By Roger Cross	Method of Shipment ETC Lab	Blank / Cooler Temperature 0°C	Remarks T#4
Relinquished By (sign) Roger Cross	Date / Time 7/8/14 9:38	Received By (sign) Filsinger	Date / Time 7/8/14 1600
Relinquished By (sign)	Date / Time	Received By (sign)	Date / Time
Relinquished By (sign) Filsinger	Date / Time 7/8/14 1730	Received by Lab (sign) Filsinger	Date / Time 7/8/14 1730



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2



14-190-0191
03316
07-09-2014
08:31:18

Blytheville Sewer Department
Bioassay - West WWTP / 7/11/14/7/8/14

Company Name Blytheville Sewer Department			Customer Number 03316		Telephone (870) 763-4961		RUSH	ICE X
Site Name WEST semi-annual			Project Comment West Plant				FID Number	
Project Blytheville Sewer - Bioassay			Project Number 07102014 W		PO Number			
Project Manager / Contact Mr. James Yankee					E-mail jlyankee@att.net			
Sample ID	Container Type	Collected Date / Time	# Cont	Preservative	Grab / Comp	Matrix	Analyses	
C1 - Outfall 001	Plastic - Pint	7/10/14 7:30am	1	HNO3 - Nitric Acid	C	Aqueous	hardness	
C1 - Outfall 001	Plastic - Pint	7/10/14 7:30am	1	NONE	C	Aqueous	Alkalinity	
C1 - Outfall 001	Plastic - Gallon	7/10/14 7:30am	2	NONE	C	Aqueous	chronic CD/FH	
C2 - Outfall 001	Plastic - Pint		1	HNO3 - Nitric Acid	C	Aqueous	hardness	
C2 - Outfall 001	Plastic - Pint		1	NONE	C	Aqueous	alkalinity	
C2 - Outfall 001	Plastic - Gallon		2	NONE	C	Aqueous	chronic CD/FH	

Sampled By ROGER CROSS		Method of Shipment ETC LABS		Blank (Cooler) Temperature 0.8°C TH		Remarks	
Relinquished By (sign) Roger Cross		Date / Time 7/10/14 9:30		Received By (sign) D. Ruck		Date / Time 7/11/14 0957	
Relinquished By (sign)		Date / Time		Received By (sign)		Date / Time	
Relinquished By (sign) D. Ruck		Date / Time 7/11/14 1133		Received by Lab (sign) D. Ruck		Date / Time 7/11/14 1133	



Environmental Testing & Consulting, Inc. 2790 Whitten Road
 Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440
 clientservices@etcmemphis.com



14-190-0191
 03316
 07-09-2014
 08:31:18

Blytheville Sewer Department
 Blossav - West/WWTP / 7/11/14/7/8/14



Company Name <i>Blytheville Wastewater Department</i>			Phone # <i>763-4961</i>		RUSH?		(Note special detection limits / methods)										<input checked="" type="checkbox"/> NPOES	
Project/Site (Include State) <i>West Plant</i>			PO #		Ice	<input checked="" type="checkbox"/>											<input checked="" type="checkbox"/> Wastewater	
Type of Event: Single Daily Weekly Monthly Quarterly Semi-Annual Annual			FID #														<input type="checkbox"/> RCRA	
Project # <i>07112014 West Plant</i>			E-Mail														<input type="checkbox"/> UST	
Project Manager/Contact			Matrix														<input type="checkbox"/> Risk Based Limits	
			1 Wastewater		4 Sludge												<input type="checkbox"/> TRRP 13	
			2 Aqueous		5 Oil/Solvent												<input type="checkbox"/> LA RECAP	
			3 Soil/Sediment		6 Other												<input type="checkbox"/> USACE	
# of Cont.	Sample ID/ Number	Depth	Sample Date	Sample Time	Matrix	Type Grab/Comp											Comments	
1	<i>Hardness</i>		<i>7-11-14</i>	<i>8:00 AM</i>	<i>WW</i>													
1	<i>Alkalinity</i>		<i>7-11-14</i>	<i>8:00 AM</i>	<i>WW</i>													
2	<i>Chronic ED/FH</i>		<i>7-11-14</i>	<i>8:00 AM</i>	<i>WW</i>													
Sampled By <i>ROGER CROSS</i>			Method of Shipment <i>ETC LAB</i>		Blank/Cooler Temp <i>OUTSIDE</i>		Remarks											
RELINQUISHED BY (sign) <i>[Signature]</i>			DATE <i>7/11/14</i>	TIME <i>9:55</i>	RECEIVED BY (sign) <i>[Signature]</i>		DATE <i>7-11-14</i>	TIME <i>0957</i>	1 - Routine Sampling Events Only 2 - Surcharges may apply									
RELINQUISHED BY (sign)			DATE	TIME	RECEIVED BY (sign)		DATE	TIME										
RELINQUISHED BY (sign) <i>[Signature]</i>			DATE <i>7-11-14</i>	TIME <i>1133</i>	RECEIVED BY LAB (print/sign) <i>[Signature]</i>		DATE <i>7-11-14</i>	TIME <i>1133</i>										

Please return ETC Sample Kit Request Form with chain of custody.
 Distribution: Original accompanies samples to the laboratory Yellow copy to Field Crew.



ENVIRONMENTAL TESTING & CONSULTING, INC.

2790 Whitten Road

Memphis, Tennessee 38133

(901) 213-2400

Fax (901) 213-2440

"A Laboratory Management Partner"

7/23/2014

Blytheville Sewer Department
Mr. James Yankee
P.O. Box 1784
Blytheville, AR, 72316

Ref: Analytical Testing
ETC Report Number: 14-190-0190
Client Project Description: Bioassay - South WWTP

Dear Mr. James Yankee:

The results of this WET (Whole Effluent Toxicity) test are acceptable according to test review criteria. There were no significant deficiencies found in sample handling, test performance, or reporting. The test results are within the limits established by your NPDES permit and were entered into the permittee's records in the database.

Results: CV/NOEL = 100%
Permit Limit: 100%

All statistical interpretations generated by CETIS - Comprehensive Environmental Toxicity Information System (v.1.8.6.1). CETIS created by Tidepool Scientific Software

Respectfully,

Connie Cook
Lab Supervisor

CETIS Test Evaluation Report

Report Date: 23 Jul-14 12:46 (1 of 2)
 Test Code: CD 14-190-0190 | 09-6513-2457

Facility: BLYTHEVILLE SEWER South Plant Sample Site: Sample Code: 14-190-0190 Sample Date: 08 Jul-14 09:00 Sample Age: 26h (0.8 °C) Project: WET Biannual Compliance Test (1st)	Test Name: Ceriodaphnia 7-d Survival and Reproduction Test Organism: Ceriodaphnia dubia (Water Flea) Protocol: EPA/821/R-02-013 (2002) Start Date: 09 Jul-14 11:30 End Date: 15 Jul-14 12:30 Duration: 6d 1h Organism Age: < 24
Permittee: Blytheville Sewer Dept. Address: P.O. Box 1784 Halfmoon Road Blytheville, AR 72315 Contact: Mr. James Yankee Phone: 870-763-4961, 870-763-8541(fax) Email:	Laboratory: Environmental Testing and Consulting, Inc. Address: 2790 Whitten Road Memphis, TN 38133 Contact: Connie Cook, Lab Supervisor Phone: 901-213-2454 Email: ccook@etcmemphis.com

Chronic Toxicity Evaluation					
Endpoint	Parameter	C-%	IWC	Pass/Fail	Method
Reproduction	NOEL/LOEL	100/>100	99.99	Pass	Dunnett Multiple Comparison Test

Test Acceptability Criteria				
Endpoint	Attribute	Test Stat	Limits	Pass/Fail
6d Survival Rate	Control CV	0	N/A - 0.4	Pass
6d Survival Rate	Control Resp	1	0.799 - N/A	Pass
Reproduction	Control CV	0.12	N/A - 0.4	Pass
Reproduction	Control Resp	17	15 - N/A	Pass

CETIS Test Evaluation Report

Report Date: 23 Jul-14 12:46 (2 of 2)
Test Code: CD 14-190-0190 | 09-6513-2457

6d Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	10	1	1	1	1	1	0	0	0.0%	0.0%
32		10	1	1	1	1	1	0	0	0.0%	0.0%
42		10	1	1	1	1	1	0	0	0.0%	0.0%
56		10	1	1	1	1	1	0	0	0.0%	0.0%
75		10	1	1	1	1	1	0	0	0.0%	0.0%
100		10	0.9	0.78	1	0	1	0.1	0.32	35.0%	10.0%

Reproduction Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	10	17	16	17	12	20	0.65	2.1	12.0%	0.0%
32		10	16	15	17	13	23	1.1	3.4	21.0%	3.6%
42		10	16	15	17	12	19	0.69	2.2	14.0%	3.6%
56		10	16	15	17	12	21	0.81	2.6	16.0%	3.6%
75		10	17	16	18	12	22	0.81	2.6	15.0%	-3.0%
100		10	16	14	17	5	19	1.4	4.3	28.0%	6.0%

CETIS Summary Report

Report Date: 23 Jul-14 12:46 (p 1 of 2)
 Test Code: CD 14-190-0190 | 09-6513-2457

Ceriodaphnia 7-d Survival and Reproduction Test **Environmental Testing and Consulting, Inc.**

Batch ID: 08-8375-2088	Test Type: Reproduction-Survival (7d)	Analyst: Ava Davis
Start Date: 09 Jul-14 11:30	Protocol: EPA/821/R-02-013 (2002)	Diluent: Perrier Water
Ending Date: 15 Jul-14 12:30	Species: Ceriodaphnia dubia	Brine: Not Applicable
Duration: 6d 1h	Source: In-House Culture	Age: < 24

Sample ID: 09-0227-6670	Code: 14-190-0190	Client: Blytheville Sewer Dept.
Sample Date: 08 Jul-14 09:00	Material: POTW Effluent	Project: WET Biannual Compliance Test (1st)
Receive Date: 08 Jul-14 17:30	Source: BLYTHEVILLE SEWER South Plant (AR00)	
Sample Age: 26h (0.8 °C)	Station:	

Sample Renewals					
Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	14-190-0190	10 Jul-14 08:30	11 Jul-14 11:33	11 Jul-14 00:00	0.1
2	14-190-0190	11 Jul-14 07:30	11 Jul-14 11:33	13 Jul-14 00:00	0.1

Comparison Summary							
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
13-3139-4209	6d Survival Rate	100	>100	NA	NA	1	Fisher Exact/Bonferroni-Holm Test
21-0258-0374	Reproduction	100	>100	NA	18.1%	1	Dunnett Multiple Comparison Test

Test Acceptability						
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
13-3139-4209	6d Survival Rate	Control CV	0	NL - 0.4	Yes	Passes Acceptability Criteria
21-0258-0374	Reproduction	Control CV	0.12	NL - 0.4	Yes	Passes Acceptability Criteria
13-3139-4209	6d Survival Rate	Control Resp	1	0.799 - NL	Yes	Passes Acceptability Criteria
21-0258-0374	Reproduction	Control Resp	17	15 - NL	Yes	Passes Acceptability Criteria

6d Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	10	1	1	1	1	1	0	0	0.0%	0.0%
32		10	1	1	1	1	1	0	0	0.0%	0.0%
42		10	1	1	1	1	1	0	0	0.0%	0.0%
56		10	1	1	1	1	1	0	0	0.0%	0.0%
75		10	1	1	1	1	1	0	0	0.0%	0.0%
100		10	0.9	0.67	1	0	1	0.1	0.32	35.0%	10.0%

Reproduction Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	10	17	15	18	12	20	0.65	2.1	12.0%	0.0%
32		10	16	14	19	13	23	1.1	3.4	21.0%	3.6%
42		10	16	15	18	12	19	0.69	2.2	14.0%	3.6%
56		10	16	14	18	12	21	0.81	2.6	16.0%	3.6%
75		10	17	15	19	12	22	0.81	2.6	15.0%	-3.0%
100		10	16	13	19	5	19	1.4	4.3	28.0%	6.0%

CETIS Summary Report

Report Date: 23 Jul-14 12:46 (p 2 of 2)
Test Code: CD 14-190-0190 | 09-6513-2457

Ceriodaphnia 7-d Survival and Reproduction Test											Environmental Testing and Consulting, Inc.
6d Survival Rate Detail											
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Lab Water	1	1	1	1	1	1	1	1	1	1
32		1	1	1	1	1	1	1	1	1	1
42		1	1	1	1	1	1	1	1	1	1
56		1	1	1	1	1	1	1	1	1	1
75		1	1	1	1	1	1	1	1	1	1
100		0	1	1	1	1	1	1	1	1	1
Reproduction Detail											
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Lab Water	18	16	16	20	16	17	17	17	12	18
32		14	19	19	17	14	16	23	13	13	13
42		19	16	18	16	14	17	18	17	12	14
56		16	18	14	15	18	14	16	17	21	12
75		19	16	22	17	17	17	12	19	17	16
100		5	16	19	18	14	19	18	19	13	16

CETIS Measurement Report

Report Date: 23 Jul-14 12:46 (p 1 of 8)
Test Code: CD 14-190-0190 | 09-6513-2457

Ceriodaphnia 7-d Survival and Reproduction Test		Environmental Testing and Consulting, Inc.	
Batch ID: 08-8375-2088	Test Type: Reproduction-Survival (7d)	Analyst: Ava Davis	
Start Date: 09 Jul-14 11:30	Protocol: EPA/821/R-02-013 (2002)	Diluent: Perrier Water	
Ending Date: 15 Jul-14 12:30	Species: Ceriodaphnia dubia	Brine: Not Applicable	
Duration: 6d 1h	Source: In-House Culture	Age: < 24	
Sample ID: 09-0227-6670	Code: 14-190-0190	Client: Blytheville Sewer Dept.	
Sample Date: 08 Jul-14 09:00	Material: POTW Effluent	Project: WET Biannual Compliance Test (1st)	
Receive Date: 08 Jul-14 17:30	Source: BLYTHEVILLE SEWER South Plant (AR00)		
Sample Age: 26h (0.8 °C)	Station:		

CETIS Measurement Report

Report Date: 23 Jul-14 12:46 (p 2 of 8)
 Test Code: CD 14-190-0190 | 09-6513-2457

Ceriodaphnia 7-d Survival and Reproduction Test							Environmental Testing and Consulting, Inc.		
Alkalinity (CaCO3)-mg/L									
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes	
0	Lab Water	1	61						
0	Lab Water	2	59						
0	Lab Water	3	63						
0	Lab Water	4	62						
0	Lab Water	5	59						
0	Lab Water	6	62						
0	Lab Water	7	63						
Total Residual Chlorine-mg/L									
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes	
0	Lab Water	1	0						
100			0						
0	Lab Water	2	0						
100			0						
0	Lab Water	3	0						
100			0						
0	Lab Water	4	0						
100			0						
0	Lab Water	5	0						
100			0						
0	Lab Water	6	0						
100			0						
0	Lab Water	7	0						
100			0						
Conductivity-µS/cm									
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes	
0	Lab Water	1	168						
100			350						
0	Lab Water	2	170						
100			358						
0	Lab Water	3	172						
100			358						
0	Lab Water	4	165						
100			362						
0	Lab Water	5	170						
100			360						
0	Lab Water	6	167						
100			362						
0	Lab Water	7	169						
100			369						

CETIS Measurement Report

Report Date: 23 Jul-14 12:46 (p 3 of 8)
 Test Code: CD 14-190-0190 | 09-6513-2457

Ceriodaphnia 7-d Survival and Reproduction Test				Environmental Testing and Consulting, Inc.			
Final Dissolved Oxygen-mg/L							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	8.2				
32			8.1				
42			8				
56			8				
75			8				
100			7.9				
0	Lab Water	2	8.1				
32			8.2				
42			8.2				
56			8.2				
75			8.1				
100			8				
0	Lab Water	3	8.2				
32			8.2				
42			8.3				
56			8.2				
75			8.2				
100			8.3				
0	Lab Water	4	8.3				
32			8.2				
42			8.3				
56			8.1				
75			8.3				
100			8.2				
0	Lab Water	5	7.8				
32			7.8				
42			7.8				
56			7.7				
75			7.8				
100			7.8				
0	Lab Water	6	8				
32			8				
42			7.9				
56			7.7				
75			7.8				
100			7.8				

CETIS Measurement Report

Report Date: 23 Jul-14 12:46 (p 4 of 8)
 Test Code: CD 14-190-0190 | 09-6513-2457

Ceriodaphnia 7-d Survival and Reproduction Test						Environmental Testing and Consulting, Inc.		
Initial Dissolved Oxygen-mg/L								
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	Lab Water	1	8					
32			8.6					
42			8.8					
56			8.8					
75			8.9					
100			9					
0			Lab Water	2	8.6			
32	8.7							
42	8.7							
56	8.8							
75	8.8							
100	8.9							
0	Lab Water	3			8.6			
32			8.7					
42			8.8					
56			8.9					
75			9					
100			9.2					
0			Lab Water	4	8.7			
32	8.7							
42	8.6							
56	8.7							
75	8.6							
100	8.4							
0	Lab Water	5			8.7			
32			8.7					
42			8.6					
56			8.4					
75			8.4					
100			8.4					
0			Lab Water	6	7.8			
32	8.1							
42	8.2							
56	8.2							
75	8.2							
100	8.3							
0	Lab Water	7			7.9			
32			8.1					
42			8.3					
56			8.5					
75			8.5					
100			8.6					
Hardness (CaCO3)-mg/L								
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	Lab Water	1	92					
0	Lab Water	2	90					
0	Lab Water	3	95					
0	Lab Water	4	93					
0	Lab Water	5	88					
0	Lab Water	6	87					
0	Lab Water	7	89					

CETIS Measurement Report

Report Date: 23 Jul-14 12:46 (p 5 of 8)

Test Code: CD 14-190-0190 | 09-6513-2457

Ceriodaphnia 7-d Survival and Reproduction Test				Environmental Testing and Consulting, Inc.			
Final pH-Units							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	7.7				
32			7.6				
42			7.6				
56			7.7				
75			7.7				
100			7.6				
0	Lab Water	2	8				
32			7.8				
42			7.8				
56			7.8				
75			7.8				
100			7.7				
0	Lab Water	3	7.6				
32			7.6				
42			7.7				
56			7.7				
75			7.7				
100			7.7				
0	Lab Water	4	7.5				
32			7.6				
42			7.6				
56			7.6				
75			7.6				
100			7.6				
0	Lab Water	5	7.6				
32			7.5				
42			7.6				
56			7.6				
75			7.6				
100			7.6				
0	Lab Water	6	7.9				
32			7.7				
42			7.7				
56			7.6				
75			7.6				
100			7.6				

CETIS Measurement Report

Report Date: 23 Jul-14 12:46 (p 6 of 8)

Test Code: CD 14-190-0190 | 09-6513-2457

Ceriodaphnia 7-d Survival and Reproduction Test				Environmental Testing and Consulting, Inc.			
Initial pH-Units							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	7.7				
32			7.6				
42			7.6				
56			7.6				
75			7.5				
100			7.5				
0			Lab Water	2	8.2		
32	8						
42	8						
56	8						
75	7.9						
100	7.9						
0	Lab Water	3			7.6		
32			7.5				
42			7.5				
56			7.5				
75			7.6				
100			7.6				
0			Lab Water	4	8.1		
32	7.9						
42	7.8						
56	7.8						
75	7.7						
100	7.7						
0	Lab Water	5			8.1		
32			7.9				
42			7.8				
56			7.7				
75			7.7				
100			7.6				
0			Lab Water	6	7.9		
32	7.6						
42	7.6						
56	7.6						
75	7.6						
100	7.5						
0	Lab Water	7			7.9		
32			7.7				
42			7.6				
56			7.6				
75			7.6				
100			7.5				

CETIS Measurement Report

Report Date: 23 Jul-14 12:46 (p 7 of 8)
 Test Code: CD 14-190-0190 | 09-6513-2457

Ceriodaphnia 7-d Survival and Reproduction Test				Environmental Testing and Consulting, Inc.			
Final Temperature-°C							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	23				
32			23				
42			23				
56			23				
75			23				
100			23				
0			Lab Water	2	23		
32	23						
42	23						
56	23						
75	23						
100	23						
0	Lab Water	3			23		
32			23				
42			23				
56			23				
75			23				
100			23				
0			Lab Water	4	23		
32	23						
42	23						
56	23						
75	23						
100	23						
0	Lab Water	5			23		
32			23				
42			23				
56			23				
75			23				
100			23				
0			Lab Water	6	23		
32	23						
42	23						
56	23						
75	23						
100	23						

CETIS Measurement Report

Report Date: 23 Jul-14 12:46 (p 8 of 8)
 Test Code: CD 14-190-0190 | 09-6513-2457

Ceriodaphnia 7-d Survival and Reproduction Test				Environmental Testing and Consulting, Inc.			
Initial Temperature-°C							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	23				
32			23				
42			23				
56			23				
75			23				
100			23				
0			Lab Water	2	23		
32	23						
42	23						
56	23						
75	23						
100	23						
0	Lab Water	3			23		
32			23				
42			23				
56			23				
75			23				
100			23				
0			Lab Water	4	23		
32	23						
42	23						
56	23						
75	23						
100	23						
0	Lab Water	5			23		
32			23				
42			23				
56			23				
75			23				
100			23				
0			Lab Water	6	23		
32	23						
42	23						
56	23						
75	23						
100	23						
0	Lab Water	7			23		
32			23				
42			23				
56			23				
75			23				
100			23				

CETIS Test Evaluation Report

Report Date: 23 Jul-14 12:48 (1 of 2)

Test Code: FH 14-190-0190 | 13-0180-8583

Facility: BLYTHEVILLE SEWER South Plant Sample Site: Sample Code: 14-190-0190 Sample Date: 08 Jul-14 09:00 Sample Age: 26h (0.8 °C) Project: WET Biannual Compliance Test (1st)	Test Name: Fathead Minnow 7-d Larval Survival and Growth Test Organism: Pimephales promelas (Fathead Minnow) Protocol: EPA/821/R-02-013 (2002) Start Date: 09 Jul-14 10:45 End Date: 16 Jul-14 11:15 Duration: 7d 1h Organism Age: < 24
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Permitee: Blytheville Sewer Dept. Address: P.O. Box 1784 Halfmoon Road Blytheville, AR 72315 Contact: Mr. James Yankee Phone: 870-763-4961, 870-763-8541(fax) Email:	Laboratory: Environmental Testing and Consulting, Inc. Address: 2790 Whitten Road Memphis, TN 38133 Contact: Connie Cook, Lab Supervisor Phone: 901-213-2454 Email: ccook@etcmemphis.com
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Chronic Toxicity Evaluation					
Endpoint	Parameter	C-%	IWC	Pass/Fail	Method
7d Survival Rate	NOEL/LOEL	100/>100	99.99	Pass	Dunnett Multiple Comparison Test
Mean Dry Weight-mg	NOEL/LOEL	100/>100	99.99	Pass	Dunnett Multiple Comparison Test

Test Acceptability Criteria				
Endpoint	Attribute	Test Stat	Limits	Pass/Fail
7d Survival Rate	Control CV	0.17	N/A - 0.4	Pass
7d Survival Rate	Control Resp	0.83	0.8 - N/A	Pass
Mean Dry Weight-mg	Control CV	0.13	N/A - 0.4	Pass
Mean Dry Weight-mg	Control Resp	0.28	0.25 - N/A	Pass

CETIS Test Evaluation Report

Report Date: 23 Jul-14 12:48 (2 of 2)
Test Code: FH 14-190-0190 | 13-0180-8583

7d Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	5	0.83	0.77	0.88	0.63	1	0.064	0.14	17.0%	0.0%
32		5	0.7	0.64	0.76	0.5	0.88	0.075	0.17	24.0%	15.0%
42		5	0.8	0.77	0.83	0.75	0.88	0.031	0.068	8.6%	3.0%
56		5	0.9	0.84	0.96	0.63	1	0.073	0.16	18.0%	-9.1%
75		5	0.83	0.77	0.88	0.63	1	0.064	0.14	17.0%	0.0%
100		5	0.75	0.68	0.82	0.5	1	0.079	0.18	24.0%	9.1%

Mean Dry Weight-mg Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	5	0.28	0.26	0.29	0.25	0.32	0.016	0.035	13.0%	0.0%
32		5	0.3	0.29	0.3	0.27	0.31	0.0073	0.016	5.5%	-8.2%
42		5	0.28	0.27	0.28	0.25	0.3	0.0088	0.02	7.2%	0.0%
56		5	0.27	0.26	0.28	0.24	0.31	0.013	0.029	11.0%	2.7%
75		5	0.27	0.26	0.28	0.25	0.3	0.0085	0.019	7.0%	1.8%
100		5	0.25	0.24	0.26	0.23	0.28	0.0092	0.021	8.1%	8.2%

CETIS Summary Report

Report Date: 23 Jul-14 12:48 (p 1 of 2)

Test Code: FH 14-190-0190 | 13-0180-8583

Fathead Minnow 7-d Larval Survival and Growth Test Environmental Testing and Consulting, Inc.

Batch ID: 01-4077-0975	Test Type: Growth-Survival (7d)	Analyst: Ava Davis
Start Date: 09 Jul-14 10:45	Protocol: EPA/821/R-02-013 (2002)	Diluent: Perrier Water
Ending Date: 16 Jul-14 11:15	Species: Pimephales promelas	Brine: Not Applicable
Duration: 7d 1h	Source: Aquatic Biosystems, CO	Age: < 24

Sample ID: 09-0227-6670	Code: 14-190-0190	Client: Blytheville Sewer Dept.
Sample Date: 08 Jul-14 09:00	Material: POTW Effluent	Project: WET Biannual Compliance Test (1st)
Receive Date: 08 Jul-14 17:30	Source: BLYTHEVILLE SEWER South Plant (AR00)	
Sample Age: 26h (0.8 °C)	Station:	

Sample Renewals					
Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	14-190-0190	10 Jul-14 08:30	11 Jul-14 11:33	11 Jul-14 00:00	0.1
2	14-190-0190	11 Jul-14 07:30	11 Jul-14 11:33	13 Jul-14 00:00	0.1

Comparison Summary							
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
15-6614-5712	7d Survival Rate	100	>100	NA	28.1%	1	Dunnett Multiple Comparison Test
05-5752-7188	Mean Dry Weight-mg	100	>100	NA	13.1%	1	Dunnett Multiple Comparison Test

Test Acceptability						
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
15-6614-5712	7d Survival Rate	Control CV	0.17	NL - 0.4	Yes	Passes Acceptability Criteria
05-5752-7188	Mean Dry Weight-mg	Control CV	0.13	NL - 0.4	Yes	Passes Acceptability Criteria
15-6614-5712	7d Survival Rate	Control Resp	0.83	0.8 - NL	Yes	Passes Acceptability Criteria
05-5752-7188	Mean Dry Weight-mg	Control Resp	0.28	0.25 - NL	Yes	Passes Acceptability Criteria

7d Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	5	0.83	0.65	1	0.63	1	0.064	0.14	17.0%	0.0%
32		5	0.7	0.49	0.91	0.5	0.88	0.075	0.17	24.0%	15.0%
42		5	0.8	0.71	0.89	0.75	0.88	0.031	0.068	8.6%	3.0%
56		5	0.9	0.7	1	0.63	1	0.073	0.16	18.0%	-9.1%
75		5	0.83	0.65	1	0.63	1	0.064	0.14	17.0%	0.0%
100		5	0.75	0.53	0.97	0.5	1	0.079	0.18	24.0%	9.1%

Mean Dry Weight-mg Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	5	0.28	0.23	0.32	0.25	0.32	0.016	0.035	13.0%	0.0%
32		5	0.3	0.28	0.32	0.27	0.31	0.0073	0.016	5.5%	-8.2%
42		5	0.28	0.25	0.3	0.25	0.3	0.0088	0.02	7.2%	0.0%
56		5	0.27	0.23	0.3	0.24	0.31	0.013	0.029	11.0%	2.7%
75		5	0.27	0.25	0.29	0.25	0.3	0.0085	0.019	7.0%	1.8%
100		5	0.25	0.23	0.28	0.23	0.28	0.0092	0.021	8.1%	8.2%

CETIS Summary Report

Report Date: 23 Jul-14 12:48 (p 2 of 2)

Test Code: FH 14-190-0190 | 13-0180-8583

Fathead Minnow 7-d Larval Survival and Growth Test						Environmental Testing and Consulting, Inc.
7d Survival Rate Detail						
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Lab Water	0.63	0.88	0.75	1	0.88
32		0.88	0.63	0.5	0.88	0.63
42		0.75	0.75	0.75	0.88	0.88
56		0.63	0.88	1	1	1
75		0.88	1	0.75	0.88	0.63
100		0.75	0.75	0.5	1	0.75
Mean Dry Weight-mg Detail						
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Lab Water	0.3	0.32	0.25	0.25	0.25
32		0.31	0.29	0.3	0.27	0.31
42		0.29	0.3	0.25	0.27	0.26
56		0.26	0.24	0.28	0.31	0.25
75		0.27	0.3	0.26	0.25	0.26
100		0.28	0.24	0.23	0.26	0.26

CETIS Measurement Report

Report Date: 23 Jul-14 12:48 (p 1 of 8)

Test Code: FH 14-190-0190 | 13-0180-8583

Fathead Minnow 7-d Larval Survival and Growth Test		Environmental Testing and Consulting, Inc.	
Batch ID: 01-4077-0975	Test Type: Growth-Survival (7d)	Analyst: Ava Davis	
Start Date: 09 Jul-14 10:45	Protocol: EPA/821/R-02-013 (2002)	Diluent: Perrier Water	
Ending Date: 16 Jul-14 11:15	Species: Pimephales promelas	Brine: Not Applicable	
Duration: 7d 1h	Source: Aquatic Biosystems, CO	Age: < 24	
Sample ID: 09-0227-6670	Code: 14-190-0190	Client: Blytheville Sewer Dept.	
Sample Date: 08 Jul-14 09:00	Material: POTW Effluent	Project: WET Biannual Compliance Test (1st)	
Receive Date: 08 Jul-14 17:30	Source: BLYTHEVILLE SEWER South Plant (AR00		
Sample Age: 26h (0.8 °C)	Station:		

CETIS Measurement Report

Report Date: 23 Jul-14 12:48 (p 2 of 8)

Test Code: FH 14-190-0190 | 13-0180-8583

Fathead Minnow 7-d Larval Survival and Growth Test							Environmental Testing and Consulting, Inc.		
Alkalinity (CaCO3)-mg/L									
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes	
0	Lab Water	1	61						
0	Lab Water	2	59						
0	Lab Water	3	63						
0	Lab Water	4	62						
0	Lab Water	5	59						
0	Lab Water	6	62						
0	Lab Water	7	63						
Total Residual Chlorine-mg/L									
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes	
0	Lab Water	1	0						
100			0						
0	Lab Water	2	0						
100			0						
0	Lab Water	3	0						
100			0						
0	Lab Water	4	0						
100			0						
0	Lab Water	5	0						
100			0						
0	Lab Water	6	0						
100			0						
0	Lab Water	7	0						
100			0						
Conductivity-µS/cm									
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes	
0	Lab Water	1	168						
100			350						
0	Lab Water	2	170						
100			358						
0	Lab Water	3	172						
100			358						
0	Lab Water	4	165						
100			362						
0	Lab Water	5	170						
100			360						
0	Lab Water	6	167						
100			362						
0	Lab Water	7	169						
100			369						

CETIS Measurement Report

Report Date: 23 Jul-14 12:48 (p 3 of 8)

Test Code: FH 14-190-0190 | 13-0180-8583

Fathead Minnow 7-d Larval Survival and Growth Test				Environmental Testing and Consulting, Inc.			
Final Dissolved Oxygen-mg/L							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	7.6				
32			8.4				
42			8.2				
56			8.1				
75			8.1				
100			8				
0			Lab Water	2	7.9		
32	8.3						
42	8.3						
56	8.2						
75	8.1						
100	8						
0	Lab Water	3			7.9		
32			8.7				
42			8.6				
56			8.6				
75			8.5				
100			8.3				
0			Lab Water	4	8.1		
32	8.3						
42	8.4						
56	8.4						
75	8.1						
100	8						
0	Lab Water	5			7.5		
32			7.3				
42			7.3				
56			7.3				
75			7.7				
100			7.2				
0			Lab Water	6	7.4		
32	6.6						
42	6.8						
56	6.8						
75	6.7						
100	6.7						
0	Lab Water	7			7.5		
32			7.6				
42			7				
56			7				
75			7.8				
100			7.5				

CETIS Measurement Report

Report Date: 23 Jul-14 12:48 (p 4 of 8)
 Test Code: FH 14-190-0190 | 13-0180-8583

Fathead Minnow 7-d Larval Survival and Growth Test						Environmental Testing and Consulting, Inc.	
Initial Dissolved Oxygen-mg/L							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	8				
32			8.6				
42			8.8				
56			8.8				
75			8.9				
100			9				
0			Lab Water	2	8.6		
32	8.7						
42	8.7						
56	8.8						
75	8.8						
100	8.9						
0	Lab Water	3			8.6		
32			8.7				
42			8.8				
56			8.9				
75			9				
100			9.2				
0			Lab Water	4	8.7		
32	8.7						
42	8.6						
56	8.7						
75	8.6						
100	8.4						
0	Lab Water	5			8.7		
32			8.7				
42			8.6				
56			8.4				
75			8.4				
100			8.4				
0			Lab Water	6	7.8		
32	8.1						
42	8.2						
56	8.2						
75	8.2						
100	8.3						
0	Lab Water	7			7.9		
32			8.1				
42			8.3				
56			8.5				
75			8.5				
100			8.6				
Hardness (CaCO3)-mg/L							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	92				
0	Lab Water	2	90				
0	Lab Water	3	95				
0	Lab Water	4	93				
0	Lab Water	5	88				
0	Lab Water	6	87				
0	Lab Water	7	89				

CETIS Measurement Report

Report Date: 23 Jul-14 12:48 (p 5 of 8)

Test Code: FH 14-190-0190 | 13-0180-8583

Fathead Minnow 7-d Larval Survival and Growth Test				Environmental Testing and Consulting, Inc.			
Final pH-Units							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	8.1				
32			7.9				
42			7.9				
56			7.8				
75			7.8				
100			7.8				
0	Lab Water	2	7.7				
32			7.6				
42			7.6				
56			7.6				
75			7.6				
100			7.6				
0	Lab Water	3	8				
32			7.8				
42			7.8				
56			7.8				
75			7.8				
100			7.8				
0	Lab Water	4	8				
32			7.8				
42			7.8				
56			7.8				
75			7.7				
100			7.7				
0	Lab Water	5	7.8				
32			7.6				
42			7.6				
56			7.6				
75			7.5				
100			7.5				
0	Lab Water	6	7.4				
32			7.3				
42			7.3				
56			7.4				
75			7.4				
100			7.3				
0	Lab Water	7	7.7				
32			7.9				
42			7.8				
56			7.8				
75			7.5				
100			7.7				

CETIS Measurement Report

Report Date: 23 Jul-14 12:48 (p 6 of 8)
 Test Code: FH 14-190-0190 | 13-0180-8583

Fathead Minnow 7-d Larval Survival and Growth Test				Environmental Testing and Consulting, Inc.			
Initial pH-Units							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	7.7				
32			7.6				
42			7.6				
56			7.6				
75			7.5				
100			7.5				
0	Lab Water	2	8.2				
32			8				
42			8				
56			8				
75			7.9				
100			7.9				
0	Lab Water	3	7.6				
32			7.5				
42			7.5				
56			7.5				
75			7.6				
100			7.6				
0	Lab Water	4	8.1				
32			7.9				
42			7.8				
56			7.8				
75			7.7				
100			7.7				
0	Lab Water	5	8.1				
32			7.9				
42			7.8				
56			7.7				
75			7.7				
100			7.6				
0	Lab Water	6	7.9				
32			7.6				
42			7.6				
56			7.6				
75			7.6				
100			7.5				
0	Lab Water	7	7.9				
32			7.7				
42			7.6				
56			7.6				
75			7.6				
100			7.5				

CETIS Measurement Report

Report Date: 23 Jul-14 12:48 (p 7 of 8)

Test Code: FH 14-190-0190 | 13-0180-8583

Fathead Minnow 7-d Larval Survival and Growth Test				Environmental Testing and Consulting, Inc.			
Final Temperature-°C							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	23				
32			23				
42			23				
56			23				
75			23				
100			23				
0	Lab Water	2	23				
32			23				
42			23				
56			23				
75			23				
100			23				
0	Lab Water	3	23				
32			23				
42			23				
56			23				
75			23				
100			23				
0	Lab Water	4	23				
32			23				
42			23				
56			23				
75			23				
100			23				
0	Lab Water	5	23				
32			23				
42			23				
56			23				
75			23				
100			23				
0	Lab Water	6	23				
32			23				
42			23				
56			23				
75			23				
100			23				
0	Lab Water	7	23				
32			23				
42			23				
56			23				
75			23				
100			23				

CETIS Measurement Report

Report Date: 23 Jul-14 12:48 (p 8 of 8)

Test Code: FH 14-190-0190 | 13-0180-8583

Fathead Minnow 7-d Larval Survival and Growth Test				Environmental Testing and Consulting, Inc.			
Initial Temperature-°C							
C-%	Control Type	Reading Time	Measure	QA	Diff-%	Inst ID	Analyst Notes
0	Lab Water	1	23				
32			23				
42			23				
56			23				
75			23				
100			23				
0			Lab Water	2	23		
32	23						
42	23						
56	23						
75	23						
100	23						
0	Lab Water	3			23		
32			23				
42			23				
56			23				
75			23				
100			23				
0			Lab Water	4	23		
32	23						
42	23						
56	23						
75	23						
100	23						
0	Lab Water	5			23		
32			23				
42			23				
56			23				
75			23				
100			23				
0			Lab Water	6	23		
32	23						
42	23						
56	23						
75	23						
100	23						
0	Lab Water	7			23		
32			23				
42			23				
56			23				
75			23				
100			23				

Environmental Testing and Consulting, Inc.
2790 Whitten Road
Memphis, TN 38133

Additional Toxicity Test Information

1. Methods/Instrumentation used in chemical analysis:
 - Dissolved oxygen: 4500-O G YSI MODEL - 58
 - pH: 4500-H + B JENCO METER 6072
 - Temperature: 2550 B JENCO METER 6072
 - Conductivity: 2510 B CORNING METER 441
 - Alkalinity: 2320 B
 - Hardness: 200.7
 - Total Residual Chlorine: 4500-Cl G - REPORTED VALUE OF "0" INDICATES RESULT BELOW DETECTION LIMIT OF 0.02 mg/L
 - EPA Acute/Chronic Manual Edition and Date: EPA-821-R-02-012
 - OCT 2002 (Fifth edition)

2. Laboratory
 - Temperature: Average - 25 C Range - 23 - 26
 - Light Cycle: 16 hours light/ 8 hours dark
 - Light intensity: 100 foot-candles, average
 - Control Water: Dilute mineral water made with 20 % Perrier in Nanopure
 - Dilution Water: Laboratory control water
 - Pretreatment: none

3. Method 1002.0
 - Test chambers: 30 mL disposable plastic beakers
 - Volume per chamber: 15 mL
 - Number of organisms per chamber: 1
 - Number of replicates: 10
 - Food: Laboratory culture of Selenastrum algae and YCT solution

4. Method 1000.0
 - Test chambers: 20 oz. Disposable plastic cups
 - Volume per chamber: 200 mL
 - Average number of organisms per chamber: 8
 - Number of replicates per concentration: 5
 - Food: Artemia brine shrimp hatched in laboratory
 - Acclimation of organisms: Organisms are allowed to reach test temperature. Dilution water is added at half-hour intervals until organisms are contained in a culture media that consists of 80% dilution water.

5. Indicate below any other relevant information that may aid in the evaluation of this report. Include any deviations from EPA methodology that were necessary for these tests as well as any sample manipulations which were performed, such as aeration, dechlorination with sodium thiosulfate, etc. and the justification for such manipulations or deviations. Attach additional pages as needed.
 - None



ENVIRONMENTAL TESTING & CONSULTING, INC.

2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440
 "A Laboratory Management Partner"

03316
 Blytheville Sewer Department
 Mr. James Yankee
 P.O. Box 1784
 Blytheville, AR 72316

Project Bioassay - South WWTP
 Information :

Report Date : 7/23/2014

Report Number : 14-190-0190

REPORT OF ANALYSIS

Received : 7/9/2014

Lab No : 90523
 Sample ID : Outfall 001

Matrix: Aqueous
 Sampled: 7/8/2014 9:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO3)	82	mg/L	1	1	07/21/14 10:15	EWB	2320B-2011
Total Calcium	23.8	mg/L	0.100	1	07/15/14 19:10	JTR	EPA-200.7
Hardness as CaCO3(SM-2340B)	81.6	mg/L	0.100	1	07/15/14 19:10		EPA-200.7
Total Magnesium	5.38	mg/L	0.100	1	07/15/14 19:10	JTR	EPA-200.7

Lab No : 91255
 Sample ID : Outfall 001

Matrix: Aqueous
 Sampled: 7/10/2014 8:30

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO3)	83	mg/L	1	1	07/21/14 10:15	EWB	2320B-2011
Total Calcium	22.3	mg/L	0.100	1	07/15/14 19:15	JTR	EPA-200.7
Hardness as CaCO3(SM-2340B)	76.6	mg/L	0.100	1	07/15/14 19:15		EPA-200.7
Total Magnesium	5.07	mg/L	0.100	1	07/15/14 19:15	JTR	EPA-200.7

Lab No : 91256
 Sample ID : Outfall 001

Matrix: Aqueous
 Sampled: 7/11/2014 7:30

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO3)	82	mg/L	1	1	07/21/14 10:15	EWB	2320B-2011
Total Calcium	21.6	mg/L	0.100	1	07/15/14 19:19	JTR	EPA-200.7
Hardness as CaCO3(SM-2340B)	74.3	mg/L	0.100	1	07/15/14 19:19		EPA-200.7
Total Magnesium	4.95	mg/L	0.100	1	07/15/14 19:19	JTR	EPA-200.7

Qualifiers/ Definitions * MQL Outside QC limit Method Quantitation Limit

DF Dilution Factor



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2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440

CHAIN OF CUSTODY



Blytheville Sewer Department
Bioassay - South WWTP

14-190-0190
03316
07-09-2014
08:29:33

①

Company Name Blytheville Sewer Department			Customer Number 03316		Telephone (870) 763-4961		RUSH	ICE X
Site Name South Plant			Project Comment south Plant				FID Number	
Project Blytheville Sewer - Bioassay			Project Number		PO Number			
Project Manager / Contact Mr. James Yankee					E-mail jyankee@att.net			
Sample ID	Container Type	Collected Date / Time	# Cont	Preservative	Grab / Comp	Matrix	Analyses	
C3-Outfall 001	Plastic - Pint	7-8-14 09:00	1	HNO3 - Nitric Acid	C	Aqueous	hardness	
C3-Outfall 001	Plastic - Pint	I	1	NONE	C	Aqueous	alkalinity	
C3-Outfall 001	Plastic - Gallon	I	3	NONE	C	Aqueous	Chronic CD/FH	

Sampled By Roger Cross	Method of Shipment ETC Lab	<input checked="" type="checkbox"/> Blank Cooler Temperature 0.8°C	Remarks T#4
Relinquished By (sign) Roger Cross	Date / Time 7/8/14 9:38	Received By (sign) Tilman	Date / Time 7/8/14 1600
Relinquished By (sign)	Date / Time	Received By (sign)	Date / Time
Relinquished By (sign) Tilman	Date / Time 7/8/14 1730	Received by Lab (sign) Tilman	Date / Time 7/8/14 1730



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ENVIRONMENTAL TESTING & CONSULTING, INC.

2780 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440

2



Blytheville Sewer Department
Bioassav - South WWTP / 7/11/14/7/8/14

14-190-0190
03316
07-08-2014
08:29:33

Company Name Blytheville Sewer Department				Customer Number 03316		Telephone (870) 763-4961		RUSH	ICE ✓
Site Name South Plant			Project Comment south Plant					FID Number	
Project Blytheville Sewer - Bioassay			Project Number 07102014S		PO Number				
Project Manager / Contact Mr. James Yankee					E-mail jlyanke@att.net				
Sample ID	Container Type	Collected Date / Time	# Cont	Preservative	Grab / Comp	Matrix	Analyses		
C1-Outfall 001	Plastic - Pint	8:30 AM 7/10/14	1	HNO3 - Nitric Acid	C	Aqueous	hardness		
C1-Outfall 001	Plastic - Pint	8:30 AM 7/10/14	1	NONE	C	Aqueous	Alkalinity		
C1-Outfall 001	Plastic - Gallon	8:30 AM 7/10/14	2	NONE	C	Aqueous	chronic CD/FH		
C2-Outfall 001	Plastic - Pint		1	HNO3 - Nitric Acid	C	Aqueous	hardness		
C2 - Outfall 001	Plastic - Pint		1	NONE	C	Aqueous	alkalinity		
C2-Outfall 001	Plastic - Gallon		2	NONE	C	Aqueous	chronic CD/FH		

Sampled By ROBERT CROSS	Method of Shipment KTC LAB	Blank / Cooler Temperature 0.1°C	Remarks TU
Relinquished By (sign) ROBERT CROSS	Date / Time 7/10/14 9:30	Received By (sign) D. Zuck	Date / Time 7-11-14 0957
Relinquished By (sign)	Date / Time	Received By (sign)	Date / Time
Relinquished By (sign) D. Zuck	Date / Time 7-11-14 1133	Received by Lab (sign) D. Zuck	Date / Time 7-11-14 1133



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2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440

3



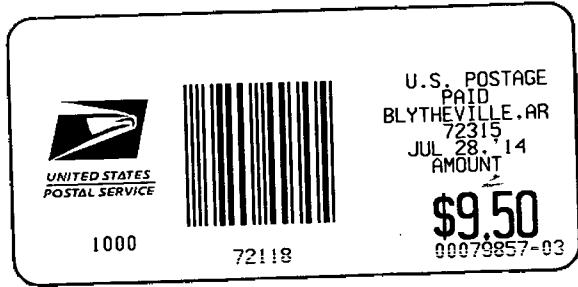
Blytheville Sewer Department
Bioassay - South WWTP / 7/11/14/7/8/14

14-190-0190
03316
07-09-2014
08:29:33

Company Name Blytheville Sewer Department				Customer Number 03316		Telephone (870) 763-4961		RUSH	ICE X
Site Name South Plant			Project Comment south Plant				FID Number		
Project Blytheville Sewer - Bioassay			Project Number 07/11/2014 5		PO Number				
Project Manager / Contact Mr. James Yankee					E-mail jlyankee@at.net				
Sample ID	Container Type	Collected Date / Time	# Cont	Preservative	Grab / Comp	Matrix	Analyses		
C1 - Outfall 001	Plastic - Pint		1	HNO3 - Nitric Acid	C	Aqueous	hardness		
C1-Outfall 001	Plastic - Pint		1	NONE	C	Aqueous	Alkalinity		
C1-Outfall 001	Plastic - Gallon		2	NONE	C	Aqueous	chronic CD/FH		
C2-Outfall 001	Plastic - Pint	7/11/14 7:30 AM	1	HNO3 - Nitric Acid	C	Aqueous	hardness		
C2 - Outfall 001	Plastic - Pint	7/11/14 7:30 AM	1	NONE	C	Aqueous	alkalinity		
C2-Outfall 001	Plastic - Gallon	7/11/14 7:30 AM	2	NONE	C	Aqueous	chronic CD/FH		

Sampled By ROGER CROSS	Method of Shipment ETC LAB	Blank (Cooler) Temperature 0.1°C	Remarks TH
Relinquished By (sign) Roger Cross	Date / Time 7/11/14 9:55	Received By (sign) D. Ruck	Date / Time 7/11/14 09:57
Relinquished By (sign)	Date / Time	Received By (sign)	Date / Time
Relinquished By (sign) D. Ruck	Date / Time 7/11/14 11:33	Received by Lab (sign) D. Ruck	Date / Time 7/11/14 11:33

Blytheville Wastewater Dept.
P.O. Box 1784
Blytheville, AR. 72315



ADEO
NPDES Enforcement
3301 North Shore Drive
North Little Rock, AR.
72118-5317

**RETURN RECEIPT
REQUESTED**

