

03/18/2021

Pine Bluff Wastewater Utility
Mr. Vincent Miles
900 Island Harbour Marina Rd.
Pine Bluff, AR 71602

Ref: Analytical Testing
Report Number: 21-061-0390
Client Project Description: Bioassay
Quarterly - 1
AR0033316

Dear Permittee:

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: *Ceriodaphnia dubia* NOEL = 12 % CV = 37.59 %
 Fathead Minnow NOEL = 12 % CV = 8.65 %

Permit Limit: Critical Dilution = 9 %
 Maximum Coefficient of Variation (CV) < 40 %

EPA Methods: 1002.0 *Ceriodaphnia dubia* Survival and Reproduction
 1000.0 *Pimephales promelas* Larval Survival and Growth

All statistical interpretations generated by CETIS - Comprehensive Environmental Toxicity Information System (v.1.9.1.4). CETIS created by Tidepool Scientific Software

Respectfully,



Blake Andres
Lab Supervisor

CETIS Test Evaluation Report

Report Date: 18 Mar-21 14:09 (1 of 1)
Test Code: 21-061-0390 cd | 18-8068-9984

Facility: Pine Bluff Wastewater Utility
Sample Site:
Sample Code: 21-061-0390
Sample Date: 01 Mar-21 08:45
Sample Age: 26h (1.1 °C)
Project: WET Quarterly Compliance Test (1Q)

Permittee: Pine Bluff Wastewater Utility
Address: 1520 South Ohio Street
 Pine Bluff, AR 71601-6055

Contact: Mr. Vincent Miles
Phone: 870-535-6603
Email: Vincent@pbwastewater.com

Test Name: Ceriodaphnia 7-d Survival and Reproduction Test
Organism: Ceriodaphnia dubia (Water Flea)
Protocol: EPA/821/R-02-013 (2002)
Start Date: 02 Mar-21 11:06
End Date: 09 Mar-21 11:20
Duration: 7d 0h **Organism Age:** <24

Laboratory: Waypoint Analytical Tennessee , LLC.
Address: 2790 Whitten Road
 Memphis, TN 38133

Contact: Ms. Blake Andres, Lab Supervisor
Phone: 901-271-5200, 901-213-2440(fax)
Email: sandres@waypointanalytical.com

Comments:

Chronic Toxicity Evaluation

Endpoint	Criteria	Conc-%	IWC	Decision	Method
7d Survival Rate	NOEL/LOEL	12/>12	8.99	Passes IWC	Fisher Exact/Bonferroni-Holm Test
Reproduction	NOEL/LOEL	12/>12	8.99	Passes IWC	Steel Many-One Rank Sum Test

Test Acceptability Criteria

Endpoint	Attribute	Test Stat	TAC Limits			Decision
			Lower	Upper	Overlap	
7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Acceptability Criteria
Reproduction	Control Resp	18.1	15	>>	Yes	Passes Acceptability Criteria

7d Survival Rate Data Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	10	1	1	1	1	1	0	0	0.00%	0.0%
4		10	0.8	0.6453	0.9547	0	1	0.1333	0.4216	52.70%	20.0%
5		10	1	1	1	1	1	0	0	0.00%	0.0%
7		10	0.8	0.6453	0.9547	0	1	0.1333	0.4216	52.70%	20.0%
9		10	0.9	0.784	1	0	1	0.1	0.3162	35.14%	10.0%
12		10	1	1	1	1	1	0	0	0.00%	0.0%

Reproduction Data Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	10	18.1	17.23	18.97	13	21	0.752	2.378	13.14%	0.0%
4		10	15.3	11.8	18.8	0	28	3.019	9.546	62.39%	15.47%
5		10	22.1	19.25	24.95	10	35	2.461	7.781	35.21%	-22.1%
7		10	18.9	14.59	23.21	3	40	3.719	11.76	62.23%	-4.42%
9		10	25.4	21.9	28.9	9	45	3.019	9.548	37.59%	-40.33%
12		10	23	21.25	24.75	14	30	1.506	4.761	20.70%	-27.07%

CETIS Summary Report

Report Date: 18 Mar-21 14:09 (p 1 of 2)
 Test Code: 21-061-0390 cd | 18-8068-9984

Ceriodaphnia 7-d Survival and Reproduction Test

Waypoint Analytical Tennessee, LLC.

Batch ID: 05-6056-1335	Test Type: Reproduction-Survival (7d)	Analyst: Chase M. Featherston
Start Date: 02 Mar-21 11:06	Protocol: EPA/821/R-02-013 (2002)	Diluent: 20% DMW
Ending Date: 09 Mar-21 11:20	Species: Ceriodaphnia dubia	Brine: Not Applicable
Duration: 7d 0h	Source: In-House Culture	Age: <24
Sample ID: 13-5451-8796	Code: 21-061-0390	Client: Pine Bluff Wastewater Utility
Sample Date: 01 Mar-21 08:45	Material: POTW Effluent	Project: WET Quarterly Compliance Test (1Q)
Receipt Date: 02 Mar-21 08:15	Source: Pine Bluff Wastewater Utility (AR0033316)	
Sample Age: 26h (1.1 °C)	Station:	

Sample Renewals

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	21-061-0390	03 Mar-21 08:45	04 Mar-21 08:45	04 Mar-21 00:00	0.4
2	21-061-0390	05 Mar-21 08:45	05 Mar-21 12:10	06 Mar-21 00:00	3.2

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD ✓
00-3776-0303	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test	12	> 12	n/a	8.333	n/a
03-8881-6644	Reproduction	Steel Many-One Rank Sum Test	12	> 12	n/a	8.333	46.7%

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
00-3776-0303	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Acceptability Criteria
03-8881-6644	Reproduction	Control Resp	18.1	15	>>	Yes	Passes Acceptability Criteria

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
4		10	0.8000	0.4984	1.0000	0.0000	1.0000	0.1333	0.4216	52.70%	20.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
7		10	0.8000	0.4984	1.0000	0.0000	1.0000	0.1333	0.4216	52.70%	20.00%
9		10	0.9000	0.6738	1.0000	0.0000	1.0000	0.1000	0.3162	35.14%	10.00%
12		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	10	18.1	16.4	19.8	13	21	0.752	2.378	13.14%	0.00%
4		10	15.3	8.471	22.13	0	28	3.019	9.546	62.39%	15.47%
5		10	22.1	16.53	27.67	10	35	2.461	7.781	35.21%	-22.10%
7		10	18.9	10.49	27.31	3	40	3.719	11.76	62.23%	-4.42%
9		10	25.4	18.57	32.23	9	45	3.019	9.548	37.59%	-40.33%
12		10	23	19.59	26.41	14	30	1.506	4.761	20.70%	-27.07%

CETIS Summary Report

Report Date: 18 Mar-21 14:09 (p 2 of 2)
Test Code: 21-061-0390 cd | 18-8068-9984

Ceriodaphnia 7-d Survival and Reproduction Test

Waypoint Analytical Tennessee, LLC.

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	L	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4		1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
7		1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
9		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000
12		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Reproduction Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	L	16	13	16	19	19	19	19	20	21	19
4		28	17	18	0	16	18	12	0	28	16
5		21	18	17	30	10	21	14	28	35	27
7		19	3	35	40	16	13	20	24	14	5
9		20	25	28	45	30	32	22	18	9	25
12		20	30	25	29	23	24	14	21	25	19

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	L	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
4		1/1	1/1	1/1	0/1	1/1	1/1	1/1	0/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
7		1/1	0/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	0/1
9		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	0/1	1/1
12		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

CETIS Measurement Report

Report Date: 18 Mar-21 14:09 (p 1 of 3)
Test Code: 21-061-0390 cd | 18-8068-9984

Ceriodaphnia 7-d Survival and Reproduction Test

Waypoint Analytical Tennessee, LLC.

Batch ID: 05-6056-1335	Test Type: Reproduction-Survival (7d)	Analyst: Chase M. Featherston
Start Date: 02 Mar-21 11:06	Protocol: EPA/821/R-02-013 (2002)	Diluent: 20% DMW
Ending Date: 09 Mar-21 11:20	Species: Ceriodaphnia dubia	Brine: Not Applicable
Duration: 7d 0h	Source: In-House Culture	Age: <24

Sample ID: 13-5451-8796	Code: 21-061-0390	Client: Pine Bluff Wastewater Utility
Sample Date: 01 Mar-21 08:45	Material: POTW Effluent	Project: WET Quarterly Compliance Test (1Q)
Receipt Date: 02 Mar-21 08:15	Source: Pine Bluff Wastewater Utility (AR0033316)	
Sample Age: 26h (1.1 °C)	Station:	

CETIS Measurement Report

Report Date: 18 Mar-21 14:09 (p 2 of 3)
Test Code: 21-061-0390 cd | 18-8068-9984

Ceriodaphnia 7-d Survival and Reproduction Test

Waypoint Analytical Tennessee , LLC.

Total Residual Chlorine-mg/L

Conc.-%	Code	1	2	3	4	5	6	7
0	L	0	0	0	0	0	0	0
4								
5								
7								
9								
12		0	0	0	0	0	0	0

Conductivity-µS/cm

Conc.-%	Code	1	2	3	4	5	6	7
0	L	146.3	158.1	158.9	173.8	166.8	162.3	161.3
4								
5								
7								
9								
12		541	551	535	564	567	578	513

Final Dissolved Oxygen-mg/L

Conc.-%	Code	1	2	3	4	5	6	7
0	L	8.5	8.6	8.4	8.8	8.3	8.7	8.5
4		8.5	8.6	8.4	8.8	8.3	8.7	8.4
5		8.4	8.6	8.4	8.8	8.4	8.7	8.4
7		8.4	8.6	8.4	8.8	8.4	8.7	8.4
9		8.4	8.5	8.3	8.8	8.5	8.6	8.5
12		8.3	8.5	8.4	8.8	8.5	8.6	8.6

Initial Dissolved Oxygen-mg/L

Conc.-%	Code	1	2	3	4	5	6	7
0	L	8.4	8.2	8.1	8.2	8.3	8.8	8.4
4		8.6	8.3	8.2	8.4	8.3	8.8	8.5
5		8.4	8.4	8.3	8.4	8.4	8.8	8.4
7		8.4	8.3	8.4	8.4	8.4	8.8	8.4
9		8.5	8.3	8.4	8.4	8.4	8.7	8.3
12		8.6	8.3	8.4	8.1	8.3	8.6	8.3

Final pH-Units

Conc.-%	Code	1	2	3	4	5	6	7
0	L	7.8	7.6	7.6	7.8	7.4	7.6	7.4
4		7.8	7.6	7.6	7.8	7.4	7.6	7.5
5		7.8	7.6	7.6	7.8	7.5	7.6	7.5
7		7.8	7.6	7.6	7.8	7.6	7.6	7.5
9		7.8	7.6	7.6	7.8	7.5	7.7	7.5
12		7.8	7.6	7.6	7.8	7.5	7.7	7.5

Initial pH-Units

Conc.-%	Code	1	2	3	4	5	6	7
0	L	7.4	7.5	7.4	7.4	7.5	7.3	7.5
4		7.4	7.5	7.4	7.4	7.5	7.3	7.4
5		7.4	7.5	7.4	7.4	7.5	7.3	7.4
7		7.4	7.4	7.3	7.4	7.5	7.3	7.4
9		7.4	7.4	7.3	7.4	7.5	7.3	7.4
12		7.4	7.4	7.2	7	7.4	7.2	7.3

CETIS Measurement Report

Report Date: 18 Mar-21 14:09 (p 3 of 3)
Test Code: 21-061-0390 cd | 18-8068-9984

Ceriodaphnia 7-d Survival and Reproduction Test

Waypoint Analytical Tennessee, LLC.

Final Temperature-°C

Conc-%	Code	1	2	3	4	5	6	7
0	L	25.6	25.5	25.4	25.6	25.6	25.6	25.7
4		25.8	25.7	25.7	25.8	25.5	25.6	25.4
5		25.7	25.7	25.6	25.7	25.6	25.6	25.6
7		25.8	25.7	25.7	25.7	25.5	25.6	25.5
9		25.7	25.6	25.6	25.7	25.7	25.6	25.3
12		25.8	25.7	25.7	25.8	25.7	25.5	25.5

Initial Temperature-°C

Conc-%	Code	1	2	3	4	5	6	7
0	L	23.5	23.8	24.3	24	24.1	24.4	24.5
4		23.7	24.1	24.5	24	24.2	24.4	24.6
5		23.6	24.3	24.4	24.1	24.2	24.5	24.4
7		23.5	24.3	24.4	24.2	24.3	24.6	24.3
9		23.7	24.4	24.4	24.1	24.4	24.9	24.3
12		24.2	24.3	24.3	24.4	24.4	25.1	24.4

CETIS Test Evaluation Report

Report Date: 18 Mar-21 14:10 (1 of 1)
Test Code: 21-061-0390 fh | 08-5390-5808

Facility: Pine Bluff Wastewater Utility
Sample Site:
Sample Code: 21-061-0390
Sample Date: 01 Mar-21 08:45
Sample Age: 27h (1.1 °C)
Project: WET Quarterly Compliance Test (1Q)

Permittee: Pine Bluff Wastewater Utility
Address: 1520 South Ohio Street
 Pine Bluff, AR 71601-6055

Contact: Mr. Vincent Miles
Phone: 870-535-6603
Email: Vincent@pbwastewater.com

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: 02 Mar-21 11:23
End Date: 09 Mar-21 11:06
Duration: 7d **Organism Age:** <24

Laboratory: Waypoint Analytical Tennessee , LLC.
Address: 2790 Whitten Road
 Memphis, TN 38133

Contact: Ms. Blake Andres, Lab Supervisor
Phone: 901-271-5200, 901-213-2440(fax)
Email: sandres@waypointanalytical.com

Comments:

Chronic Toxicity Evaluation

Endpoint	Criteria	Conc-%	IWC	Decision	Method
7d Survival Rate	NOEL/LOEL	12/>12	8.99	Passes IWC	Steel Many-One Rank Sum Test
Mean Dry Weight-mg	NOEL/LOEL	12/>12	8.99	Passes IWC	Dunnett Multiple Comparison Test

Test Acceptability Criteria

Endpoint	Attribute	Test Stat	TAC Limits			Decision
			Lower	Upper	Overlap	
7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Acceptability Criteria
Mean Dry Weight-mg	Control Resp	0.55	0.25	>>	Yes	Passes Acceptability Criteria

7d Survival Rate Data Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	5	1	1	1	1	1	0	0	0.00%	0.0%
4		5	1	1	1	1	1	0	0	0.00%	0.0%
5		5	0.975	0.9545	0.9955	0.875	1	0.025	0.0559	5.73%	2.5%
7		5	0.925	0.884	0.966	0.75	1	0.05	0.1118	12.09%	7.5%
9		5	1	1	1	1	1	0	0	0.00%	0.0%
12		5	1	1	1	1	1	0	0	0.00%	0.0%

Mean Dry Weight-mg Data Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	5	0.55	0.5325	0.5675	0.5	0.6	0.02129	0.0476	8.65%	0.0%
4		5	0.6725	0.6538	0.6912	0.6125	0.725	0.02284	0.05108	7.60%	-22.27%
5		5	0.66	0.6389	0.6811	0.5875	0.725	0.02574	0.05755	8.72%	-20.0%
7		5	0.6825	0.6495	0.7155	0.6	0.8125	0.04023	0.08997	13.18%	-24.09%
9		5	0.6975	0.6822	0.7128	0.6625	0.7625	0.01871	0.04183	6.00%	-26.82%
12		5	0.76	0.7424	0.7776	0.725	0.8375	0.02143	0.04793	6.31%	-38.18%

CETIS Summary Report

Report Date: 18 Mar-21 14:10 (p 1 of 2)
Test Code: 21-061-0390 fh | 08-5390-5808

Fathead Minnow 7-d Larval Survival and Growth Test

Waypoint Analytical Tennessee, LLC.

Batch ID: 11-8360-1980 **Test Type:** Growth-Survival (7d) **Analyst:** Chase M. Featherston
Start Date: 02 Mar-21 11:23 **Protocol:** EPA/821/R-02-013 (2002) **Diluent:** 20% DMW
Ending Date: 09 Mar-21 11:06 **Species:** Pimephales promelas **Brine:** Not Applicable
Duration: 7d **Source:** Aquatic Biosystems, CO **Age:** <24

Sample ID: 13-5451-8796 **Code:** 21-061-0390 **Client:** Pine Bluff Wastewater Utility
Sample Date: 01 Mar-21 08:45 **Material:** POTW Effluent **Project:** WET Quarterly Compliance Test (1Q)
Receipt Date: 02 Mar-21 08:15 **Source:** Pine Bluff Wastewater Utility (AR0033316)
Sample Age: 27h (1.1 °C) **Station:**

Sample Renewals

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	21-061-0390	03 Mar-21 08:45	04 Mar-21 08:45	04 Mar-21 00:00	0.4
2	21-061-0390	05 Mar-21 08:45	05 Mar-21 12:10	06 Mar-21 00:00	3.2

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD ✓
09-3870-2832	7d Survival Rate	Steel Many-One Rank Sum Test	12	> 12	n/a	8.333	7.92%
17-1973-9296	Mean Dry Weight-mg	Dunnett Multiple Comparison Test	12	> 12	n/a	8.333	15.8%

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
09-3870-2832	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Acceptability Criteria
17-1973-9296	Mean Dry Weight-mg	Control Resp	0.55	0.25	>>	Yes	Passes Acceptability Criteria

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
4		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
5		5	0.9750	0.9056	1.0000	0.8750	1.0000	0.0250	0.0559	5.73%	2.50%
7		5	0.9250	0.7862	1.0000	0.7500	1.0000	0.0500	0.1118	12.09%	7.50%
9		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
12		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

Mean Dry Weight-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	5	0.55	0.4909	0.6091	0.5	0.6	0.02129	0.0476	8.65%	0.00%
4		5	0.6725	0.6091	0.7359	0.6125	0.725	0.02284	0.05108	7.60%	-22.27%
5		5	0.66	0.5885	0.7315	0.5875	0.725	0.02574	0.05755	8.72%	-20.00%
7		5	0.6825	0.5708	0.7942	0.6	0.8125	0.04023	0.08997	13.18%	-24.09%
9		5	0.6975	0.6456	0.7494	0.6625	0.7625	0.01871	0.04183	6.00%	-26.82%
12		5	0.76	0.7005	0.8195	0.725	0.8375	0.02143	0.04793	6.31%	-38.18%

CETIS Summary Report

Report Date: 18 Mar-21 14:10 (p 2 of 2)
Test Code: 21-061-0390 fh | 08-5390-5808

Fathead Minnow 7-d Larval Survival and Growth Test

Waypoint Analytical Tennessee, LLC.

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	1.0000	1.0000	1.0000	1.0000	1.0000
4		1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	0.8750	1.0000
7		0.7500	1.0000	1.0000	1.0000	0.8750
9		1.0000	1.0000	1.0000	1.0000	1.0000
12		1.0000	1.0000	1.0000	1.0000	1.0000

Mean Dry Weight-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	0.5	0.5625	0.5875	0.6	0.5
4		0.725	0.6625	0.6375	0.725	0.6125
5		0.725	0.6875	0.6875	0.5875	0.6125
7		0.6	0.8125	0.725	0.675	0.6
9		0.7625	0.6875	0.7125	0.6625	0.6625
12		0.725	0.8375	0.775	0.725	0.7375

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	8/8	8/8	8/8	8/8	8/8
4		8/8	8/8	8/8	8/8	8/8
5		8/8	8/8	8/8	7/8	8/8
7		6/8	8/8	8/8	8/8	7/8
9		8/8	8/8	8/8	8/8	8/8
12		8/8	8/8	8/8	8/8	8/8

CETIS Measurement Report

Report Date: 18 Mar-21 14:10 (p 1 of 3)
Test Code: 21-061-0390 fh | 08-5390-5808

Fathead Minnow 7-d Larval Survival and Growth Test

Waypoint Analytical Tennessee, LLC.

Batch ID: 11-8360-1980	Test Type: Growth-Survival (7d)	Analyst: Chase M. Featherston
Start Date: 02 Mar-21 11:23	Protocol: EPA/821/R-02-013 (2002)	Diluent: 20% DMW
Ending Date: 09 Mar-21 11:06	Species: Pimephales promelas	Brine: Not Applicable
Duration: 7d	Source: Aquatic Biosystems, CO	Age: <24

Sample ID: 13-5451-8796	Code: 21-061-0390	Client: Pine Bluff Wastewater Utility
Sample Date: 01 Mar-21 08:45	Material: POTW Effluent	Project: WET Quarterly Compliance Test (1Q)
Receipt Date: 02 Mar-21 08:15	Source: Pine Bluff Wastewater Utility (AR0033316)	
Sample Age: 27h (1.1 °C)	Station:	

CETIS Measurement Report

Report Date: 18 Mar-21 14:10 (p 2 of 3)
Test Code: 21-061-0390 fh | 08-5390-5808

Fathead Minnow 7-d Larval Survival and Growth Test

Waypoint Analytical Tennessee , LLC.

Total Residual Chlorine-mg/L

Conc.-%	Code	1	2	3	4	5	6	7
0	L	0	0	0	0	0	0	0
4								
5								
7								
9								
12		0	0	0	0	0	0	0

Conductivity-µS/cm

Conc.-%	Code	1	2	3	4	5	6	7
0	L	146.3	158.1	158.9	173.8	166.8	162.3	161.3
4								
5								
7								
9								
12		541	551	535	564	567	578	513

Final Dissolved Oxygen-mg/L

Conc.-%	Code	1	2	3	4	5	6	7
0	L	6.6	7	7.6	6.8	6.9	6.8	6.6
4		6.2	6.8	7.4	6.5	6.9	6.7	6.6
5		6.4	6.3	7.3	6.5	6.8	6.2	6.4
7		6.6	6.3	7.2	6.5	6.9	6.3	6.9
9		6.6	6.8	7.1	6.5	6.8	6.3	6.8
12		6.5	6.3	6.7	7.1	6.8	6.3	6

Initial Dissolved Oxygen-mg/L

Conc.-%	Code	1	2	3	4	5	6	7
0	L	8.4	8.2	8.1	8.2	8.3	8.8	8.4
4		8.6	8.3	8.2	8.4	8.3	8.8	8.5
5		8.4	8.4	8.3	8.4	8.4	8.8	8.4
7		8.4	8.3	8.4	8.4	8.4	8.8	8.4
9		8.5	8.3	8.4	8.4	8.4	8.7	8.3
12		8.6	8.3	8.4	8.1	8.3	8.6	8.3

Final pH-Units

Conc.-%	Code	1	2	3	4	5	6	7
0	L	6.8	7	7.1	6.8	7	6.9	6.7
4		6.8	7	7.1	6.9	6.9	6.9	6.8
5		6.9	6.9	7.1	6.9	7	6.8	6.8
7		7.1	6.9	7.1	6.9	7	6.9	6.9
9		7.1	6.9	7.1	7	7	6.9	6.9
12		7	6.9	7	6.9	7	6.9	6.8

Initial pH-Units

Conc.-%	Code	1	2	3	4	5	6	7
0	L	7.4	7.5	7.4	7.4	7.5	7.3	7.5
4		7.4	7.5	7.4	7.4	7.5	7.3	7.4
5		7.4	7.5	7.4	7.4	7.5	7.3	7.4
7		7.4	7.4	7.3	7.4	7.5	7.3	7.4
9		7.4	7.4	7.3	7.4	7.5	7.3	7.4
12		7.4	7.4	7.2	7	7.4	7.2	7.3

CETIS Measurement Report

Report Date: 18 Mar-21 14:10 (p 3 of 3)
Test Code: 21-061-0390 fh | 08-5390-5808

Fathead Minnow 7-d Larval Survival and Growth Test

Waypoint Analytical Tennessee, LLC.

Final Temperature-°C

Conc.-%	Code	1	2	3	4	5	6	7
0	L	24.3	24.9	24.4	24.4	24.6	24	24.1
4		24.6	25	24.5	24.6	24.5	24.6	24.2
5		24.7	25.1	24.4	24.5	24.3	24.7	24.3
7		24.5	25.1	24.7	24.6	24.5	24.6	24.2
9		24.6	24.8	24.6	24.3	24.4	24.3	23.7
12		24.5	24.8	24.4	24.4	24.3	24.1	24.2

Initial Temperature-°C

Conc.-%	Code	1	2	3	4	5	6	7
0	L	23.5	23.8	24.3	24	24.1	24.4	24.5
4		23.7	24.1	24.5	24	24.2	24.4	24.6
5		23.6	24.3	24.4	24.1	24.2	24.5	24.4
7		23.5	24.3	24.4	24.2	24.3	24.6	24.3
9		23.7	24.4	24.4	24.1	24.4	24.9	24.3
12		24.2	24.3	24.3	24.4	24.4	25.1	24.4

Additional Toxicity Test Information

1. Methods/Instrumentation used in chemical analysis:
 - Dissolved oxygen, DM 4: (SM 4500-O G-2011)
 - pH, PH 21: (SM 4500-H + B-2011)
 - Temperature, T 83
 - Conductivity, C 1: (SM 2510 B-2011)
 - Alkalinity: (SM 2320 B-2011)
 - Hardness: (EPA 200.7 / SM 2340 B-2011)
 - Total Residual Chlorine: (SM 4500-CL G-2011)
 - Reported value of “0” indicates result below detection limit of 0.02 mg/L
 - Reported value of “1” indicates result above detection limit of 0.02 mg/L
 - EPA Acute Manual Edition and Date: EPA-821-R-02-012, OCT 2002 (Fifth edition)
 - EPA Chronic Manual Edition and Date: EPA-821-R-02-013, OCT 2002 (Fourth edition)
2. Laboratory
 - Incubator Temperature: 25± 1°C
 - Incubator ID: BIO Thermometer ID: 120554
 - Sample Temperature: 25± 3°C
 - Sample Temperatures are read after the organisms have been transferred and counted.
 - Depending on temperature of laboratory and time spent on organisms the temperature of the sample may drop below limits. However, the organisms are maintained at 25± 3°C
 - Light Cycle: 16 hours light/ 8 hours dark
 - Light intensity: 50-100 foot-candles, average
 - Control (Dilution) Water: Dilute mineral water made with 20 % Perrier in Nanopure (20%DMW)
 - Maintained in the incubator at 25± 1°C
 - Pretreatment: none
3. Method 1002.0 *Ceriodaphnia dubia* Survival and Reproduction
 - Test chambers: 30 mL disposable plastic beakers
 - Volume per chamber: 15 mL
 - Number of organisms per chamber: 1
 - Number of replicates: 10
 - Food: *Ceriodaphnia dubia* are fed 0.15mL *Raphidocelis subcapitata* (Algae) and YTC solution daily.
 - Acclimation of organisms: In house cultures are raised at 25°C. Purchased organisms are allowed to reach 25°C prior to use.
4. Method 1000.0 *Pimephales promelas* (Fathead minnow) Larval Survival and Growth
 - Test chambers: 20 oz. Disposable plastic cups
 - Volume per chamber: 250 mL
 - Average number of organisms per chamber: 8
 - Number of replicates per concentration: 5
 - Food: Fathead minnows are fed 0.15 mL *Artemia* brine shrimp hatched in laboratory twice daily
 - Acclimation of organisms: Dilution water is added until organisms are contained in a culture media that consists of 80% dilution water. Organisms are allowed to reach 25°C prior to use.
5. Reference Toxicity
 - Reference toxicity tests are performed monthly on each method performed by the laboratory.
 - Potassium Chloride is used as the reference toxicity chemical for vertebrate species
 - Current chemical ID: CS 6156984
 - Sodium Chloride is used as the reference toxicity chemical for invertebrate species
 - Current chemical ID: CS 6159667
6. 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

03326
 Pine Bluff Wastewater Utility
 Mr. Ken Johnson
 900 Island Harbour Marina Rd.
 Pine Bluff , AR 71602

Project Bioassay
 Information :

Report Date : 03/18/2021

Report Number : **21-061-0390**

REPORT OF ANALYSIS

Received : 03/02/2021

Lab No : **87184**
 Sample ID : **Outfall 001 - Composite 1**

Matrix: **Aqueous**
 Sampled: **3/1/2021 8:45**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO ₃)	149	mg/L	1	1	03/09/21 09:20	CJD	2320B-2011
Calcium	10.2	mg/L	0.500	1	03/17/21 05:39	TJS	EPA-200.7
Hardness as CaCO ₃ (SM-2340B)	35.9	mg/L	0.100	1	03/17/21 05:39		EPA-200.7
Magnesium	2.54	mg/L	0.100	1	03/17/21 05:39	JADS	EPA-200.7

Lab No : **87185**
 Sample ID : **Outfall 001 - Composite 2**

Matrix: **Aqueous**
 Sampled: **3/3/2021 8:45**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO ₃)	148	mg/L	1	1	03/09/21 09:20	CJD	2320B-2011
Calcium	10.2	mg/L	0.500	1	03/17/21 05:45	TJS	EPA-200.7
Hardness as CaCO ₃ (SM-2340B)	36.1	mg/L	0.100	1	03/17/21 05:45		EPA-200.7
Magnesium	2.57	mg/L	0.100	1	03/17/21 05:45	JADS	EPA-200.7

Lab No : **87186**
 Sample ID : **Outfall 001 - Composite 3**

Matrix: **Aqueous**
 Sampled: **3/4/2021 8:45**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO ₃)	145	mg/L	1	1	03/09/21 09:20	CJD	2320B-2011
Calcium	10.2	mg/L	0.500	1	03/17/21 05:50	TJS	EPA-200.7
Hardness as CaCO ₃ (SM-2340B)	36.2	mg/L	0.100	1	03/17/21 05:50		EPA-200.7
Magnesium	2.61	mg/L	0.100	1	03/17/21 05:50	JADS	EPA-200.7

Qualifiers/ Definitions DF Dilution Factor L Limit Exceeded
 MQL Method Quantitation Limit



Kit ID:	152938
Initiated By:	Sydney Andres
Initiated Date:	2/9/2021
Project Comment	Pine Bluff Bioassay

CHAIN-OF-CUSTODY



Pine Bluff Wastewater Utility
 Bioassay

21-061-0390
 03326
 03-02-2021
 09:50:01

Company Name	Company Number	Client Project Manager/Contact	Purchase Order Number
Pine Bluff Wastewater Utility	03326	Pine Bluff Wastewater Utility	48465
Site Name	Project Number	<input type="checkbox"/> RUSH – Additional charges apply <input type="checkbox"/> Special Detection Limits(s) Date Results Needed	Method of Shipment <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> USPS <input type="checkbox"/> Courier <input type="checkbox"/> Client Drop Off Other
QTR 1 A - Bioassay - 02/28/21 - 03/01/21			
LIMS Project ID	Project Manager Phone #	Project Manager Email	Site/Facility ID #
Pine Bluff - Bioassay	(870) 535-0821	vincent@pbwastewater.com	

Date	Time	Sample ID	Matrix	Grab/Comp	# of Cont	Container Type	Preservation	Analyses
2/28/2021	0845 hrs	Outfall 001 - Composite 1	Aqueous	C	1	Plastic - Pint	NONE	alkalinity
2/28/2021	0845 hrs	Outfall 001 - Composite 1	Aqueous	C	1	Plastic - Pint	HNO3 - Nitric Acid	hardness
2/28/2021	0845 hrs	Outfall 001 - Composite 1	Aqueous	C	2	Plastic - Quart	NONE	Chronic CD/FH

3/1/2021
 HZ
 03/02/2021

For Laboratory Use Only			Sampled by (Name - Print)	Client Remarks/Comments				
Ice	Custody Seals	Lab Comments	Isaiah Solomon					
Y/N	Y/N		Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
			Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
			Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
Blank/ Cooler Temp			Page 16 of 26					
1.1 °C T100 HZ			Received by: (SIGNATURE) [Signature] Date 0815 03/02/2021					

#2

Kit ID:	152939
Initiated By:	Sydney Andres
Initiated Date:	2/9/2021
Project Comment	Pine Bluff Bioassay

CHAIN-OF-CUSTODY



21-061-0390
 03326
 03-02-2021
 09:50:01

Pine Bluff Wastewater Utility
 Bioassay / 3/2/21

Company Name	Company Number	Client Project Manager/Contact	Purchase Order Number
Pine Bluff Wastewater Utility	03326	Pine Bluff Wastewater Utility	48465
Site Name	Project Number	<input type="checkbox"/> RUSH – Additional charges apply <input type="checkbox"/> Special Detection Limits(s) Date Results Needed	Method of Shipment
QTR 1 B - Bioassay - 03/02-03/2021			<input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> USPS <input type="checkbox"/> Courier <input type="checkbox"/> Client Drop Off Other
LIMS Project ID	Project Manager Phone #	Project Manager Email	Site/Facility ID #
Pine Bluff - Bioassay	(870) 535-0821	vincent@pbwastewater.com	

Date	Time	Sample ID	Matrix	Grab/Comp	# of Cont	Container Type	Preservation	Analyses
3/2/21	0845 HRS	Outfall 001 - Composite 2	Aqueous	C	1	Plastic - Pint	NONE	alkalinity
3/2/21	0845 HRS	Outfall 001 - Composite 2	Aqueous	C	1	Plastic - Pint	HNO3 - Nitric Acid	hardness
3/2/21	0845 HRS	Outfall 001 - Composite 2	Aqueous	C	2	Plastic - Quart	NONE	Chronic CD/FH

For Laboratory Use Only		Sampled by (Name - Print)	Client Remarks/Comments				
Ice	Custody Seals	Jorretta Shaw Relinquished by: (SIGNATURE) Relinquished by: (SIGNATURE) Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
Y/N	Y/N						
Blank/Cooler Temp							
0.4 T102 mw							

Page 17 of 26

M Nakayla Weaver 2/12/2021



Kit ID:	152940
Initiated By:	Sydney Andres
Initiated Date:	2/9/2021
Project Comment	Pine Bluff Bioassay

CHAIN-OF-CUSTODY

#3

Company Name	Company Number	Client Project Manager/Contact	Purchase Order Number
Pine Bluff Wastewater Utility	03326	Pine Bluff Wastewater Utility	48465
Site Name	Project Number	<input type="checkbox"/> RUSH – Additional charges apply <input type="checkbox"/> Special Detection Limits(s) Date Results Needed	Method of Shipment
QTR 1 C - Bioassay - 03/04-05/2021			<input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> USPS <input type="checkbox"/> Courier <input type="checkbox"/> Client Drop Off Other
LIMS Project ID	Project Manager Phone #	Project Manager Email	Site/Facility ID #
Pine Bluff - Bioassay	(870) 535-0821	vincent@pbwastewater.com	

Date	Time	Sample ID	Matrix	Grab/Comp	# of Cont	Container Type	Preservation	Analyses
3/4/21	0845 HRS	Outfall 001 - Composite 3	Aqueous	C	1	Plastic - Pint	NONE	alkalinity
3/4/21	0845 HRS	Outfall 001 - Composite 3	Aqueous	C	1	Plastic - Pint	HNO3 - Nitric Acid	hardness
3/4/21	0845 HRS	Outfall 001 - Composite 3	Aqueous	C	3	Plastic - Quart	NONE	Chronic CD/FH


 21-061-0390
 03326
 Pine Bluff Wastewater Utility
 Bioassay / 3/2/21/3/4/21
 03-02-2021
 09:50:01

For Laboratory Use Only			Sampled by (Name - Print)		Client Remarks/Comments				
Ice	Custody Seals	Lab Comments	Jornetta Shaw						
(Y/N)	(Y/N)		Relinquished by: (SIGNATURE)						Date
			Stacy Carpenter		3/5	10:10			
			Relinquished by: (SIGNATURE)		Date	Time	Received by: (SIGNATURE)	Date	Time
Blank/Cooler Temp			Relinquished by: (SIGNATURE)		Date	Time	Received by: (SIGNATURE)	Date	Time
3.2799 Slt								1210 03/05/2021	

Waypoint Analytical, LLC.
 READINGS DATA SHEET FOR 7-DAY CHRONIC TESTING

SAMPLE ID: Pine Bluff

Report Number: 21-061-0390

Date test started: 3/2/21

DAY		1	2	3	4	5	6	7
INITIAL READINGS	pH CTRL	7.4	7.5	7.4	7.4	7.5	7.3	7.5
	Initial R							
	1	7.4	7.5	7.4	7.4	7.5	7.3	7.4
	2	7.4	7.5	7.4	7.4	7.5	7.3	7.4
	3	7.4	7.4	7.3	7.4	7.5	7.3	7.4
	4	7.4	7.4	7.3	7.4	7.5	7.3	7.4
	5	7.4	7.4	7.2	7.0	7.4	7.2	7.3
	DO CTRL	8.4	8.2	8.1	8.2	8.3	8.8	8.4
	Initial (mg/L) R							
	1	8.6	8.3	8.2	8.4	8.3	8.8	8.5
	2	8.4	8.4	8.3	8.4	8.4	8.8	8.4
	3	8.4	8.3	8.4	8.4	8.4	8.8	8.4
	4	8.5	8.3	8.4	8.4	8.4	8.7	8.3
	5	8.6	8.3	8.4	8.1	8.3	8.6	8.3
	Temp CTRL	23.5	23.8	24.3	24.0	24.1	24.4	24.5
Initial (°C) R								
1	23.7	24.1	24.5	24.0	24.2	24.4	24.6	
2	23.6	24.3	24.4	24.1	24.2	24.5	24.4	
3	23.5	24.3	24.4	24.2	24.3	24.6	24.3	
4	23.7	24.4	24.4	24.1	24.4	24.9	24.3	
5	24.2	24.3	24.3	24.4	24.4	25.1	24.4	
ANALYST:	CF	CF	CF	CF	lw	lw	CF	
DATE:	3/2/21	3/3/21	3/4/21	3/5/21	3/6/21	3/7/21	3/8/21	

DAY		1	2	3	4	5	6	7
CERIODAPHNIA DUBIA READINGS	pH - CD CTRL	7.8	7.6	7.6	7.8	7.4	7.6	7.4
	After 24 hrs. R							
	1	7.8	7.6	7.6	7.8	7.4	7.6	7.5
	2	7.8	7.6	7.6	7.8	7.5	7.6	7.5
	3	7.8	7.6	7.6	7.8	7.6	7.6	7.5
	4	7.8	7.6	7.6	7.8	7.5	7.7	7.6
	5	7.8	7.6	7.6	7.8	7.5	7.7	7.5
	DO - CD CTRL	8.5	8.6	8.4	8.8	8.3	8.7	8.5
	After 24 hrs. R							
	1	8.5	8.6	8.4	8.8	8.3	8.7	8.4
	2	8.4	8.6	8.4	8.8	8.4	8.7	8.4
	3	8.4	8.6	8.4	8.8	8.4	8.7	8.4
	4	8.4	8.5	8.3	8.8	8.5	8.6	8.5
	5	8.3	8.5	8.4	8.8	8.5	8.6	8.6
	Temp CTRL	25.6	25.5	25.4	25.6	25.6	25.6	25.7
After 24 hrs (°C)R								
1	25.8	25.7	25.7	25.8	25.5	25.6	25.4	
2	25.7	25.7	25.6	25.7	25.6	25.6	25.6	
3	25.8	25.7	25.7	25.7	25.5	25.6	25.5	
4	25.7	25.6	25.6	25.7	25.7	25.6	25.3	
5	25.8	25.7	25.7	25.8	25.7	25.5	25.5	
ANALYST:	CF	CF	CF	lw	lw	CF		
DATE:	3/3/21	3/4/21	3/5/21	3/6/21	3/7/21	3/8/21		

READINGS DATA SHEET FOR 7-DAY CHRONIC TESTING

SAMPLE ID: Pine Bluff

Report Number: 24061-0396

Date test started: 3/2/21

DAY		1	2	3	4	5	6	7
FATHEAD MINNOW READINGS	pH - FH CTRL	6.8	7.0	7.1	6.8	7.0	6.9	6.7
	After 24 hrs. R							
	1	6.8	7.0	7.1	6.9	6.9	6.9	6.8
	2	6.9	7.0	7.1	6.9	7.0	6.8	6.8
	3	7.1	6.9	7.1	6.9	7.0	6.9	6.9
	4	7.1	6.9	7.1	7.0	7.0	6.9	6.9
	5	7.0	6.9	7.0	6.9	7.0	6.9	6.8
	DO - FH CTRL	6.6	7.0	7.6	6.8	6.9	6.8	6.6
	After 24 hrs. R							
	1	6.2	6.8	7.4	6.5	6.9	6.7	6.6
	2	6.4	6.3	7.3	6.5	6.8	6.2	6.4
	3	6.6	6.3	7.2	6.5	6.9	6.3	6.9
	4	6.6	6.8	7.1	6.5	6.8	6.3	6.8
	5	6.5	6.3	6.7	7.1	6.8	6.3	6.0
	Temp CTRL	24.3	24.9	24.4	24.4	24.6	24.0	24.1
After 24 hrs. (°C)R								
1	24.6	25.0	24.5	24.6	24.5	24.6	24.2	
2	24.7	25.1	24.4	24.5	24.3	24.7	24.3	
3	24.5	25.1	24.7	24.6	24.5	24.6	24.2	
4	24.6	24.8	24.6	24.3	24.4	24.3	23.7	
5	24.5	24.8	24.4	24.4	24.3	24.1	24.2	
ANALYST:	CF	CF	CF	IW	IW	CF	IW	
DATE:	3/3/21	3/4/21	3/5/21	3/6/21	3/7/21	3/8/21	3/9/21	

Conductivity (µS/cm)

INITIAL READINGS	Initial CTRL	146.3	158.1	158.9	173.8	166.8	162.3	161.3	
	R								
	100%	541	551	535	564	567	578	573	
	INITIAL :	CF	IW	CF	CF	IW	IW	CF	
	DATE :	3/2/21	3/3/21	3/4/21	3/5/21	3/6/21	3/7/21	3/8/21	
	Total Residual Chlorine		DL = 0.02mg/L						
	Initial CTRL	20.02		20.02		20.02			
	R								
	100%	20.02		20.02		20.02			
	INITIAL :	IW		CF		IW			
DATE :	3/2/21		3/4/21		3/6/21				
DPD Cl2 Reagent	21-Reag- 0181		21-Reag- 0181		21-Reag- 0181				

Comments / Observations:

Tests are maintained at 25 ± 1 ° C
Incubator ID: BIO Thermometer ID: 120554

Meter	ID
pH	PH 21
Conductivity	C1
DO	DM4
Temp.	T83

Waypoint Analytical, LLC.
CERIODAPHNIA SURVIVAL AND REPRODUCTION DATA

SAMPLE ID: Pine Bluff TEST START - DATE/TIME: 3/2/21 11:06 ANALYST: CF
 REPORT #: 21-061-0390 TEST END - DATE/TIME: 3/9/21 11:20 ANALYST: WJ
 ORGANISM REF#: 21-REAG-0017 RANDOMIZING KEY #: #4 ANALYST: CF

CONC.	REPLICATE										INITIALS	DATE	
	DAY	1	2	3	4	5	6	7	8	9			10
1	1	0	0	0	0	0	0	0	0	0	0	CF	3/3/21
	2	0	0	0	0	0	0	0	0	0	0	CF	3/4/21
	3	0	0	0	3	0	0	0	0	4	0	CF	3/5/21
	4	5	0	0	0	0	0	0	0	0	0	WJ	3/6/21
	5	4	4	0	9	10	3	3	0	0	0	WJ	3/7/21
	6	10	13	12	12	0	9	9	11	10	9	CF	3/8/21
	7	0	0	4	16	20	20	0	10	0	10	WJ	3/9/21
2	1	0	0	0	0	0	0	0	0	0	0	CF	
	2	0	0	0	0	0	0	0	0	0	0	CF	
	3	0	0	2	4	0	0	0	0	2	0	CF	
	4	0	0	0	0	0	0	0	0	0	0	WJ	
	5	13	2	11	9	13	1	0	10	6	6	WJ	
	6	7	7	13	15	0	0	10	10	6	6	CF	
	7	0	21	22	18	6	20	10	10	14	9	WJ	
3	1	0	0	0	0	0	0	0	0	0	0	CF	
	2	0	0	0	0	0	0	0	0	0	0	CF	
	3	3	0	0	0	0	0	0	0	5	0	CF	
	4	0	0	0	0	0	0	0	0	0	0	WJ	
	5	13	0	0	10	8	4	4	0	1	4	WJ	
	6	0	6	8	0	15	6	13	11	14	15	CF	
	7	0	12	10	9	0	14	13	15	0	0	WJ	
4	1	0	0	0	0	0	0	0	0	0	0	CF	
	2	0	0	0	0	0	0	0	0	0	0	CF	
	3	0	0	0	0	0	0	0	6	0	0	CF	
	4	0	0	1	X	2	0	0	6	0	0	WJ	
	5	2	10	8	I	6	1	5	3	9	1	WJ	
	6	5	3	10	I	7	7	6	X	X	7	CF	
	7	13	0	6	I	1	10	10	13	7	8	WJ	
5	1	0	0	0	0	0	0	0	0	0	0	CF	
	2	0	0	0	0	0	0	0	0	0	0	CF	
	3	0	0	4	0	0	0	0	0	0	0	CF	
	4	5	3	0	2	1	0	0	X	0	1	WJ	
	5	5	8	12	13	7	0	2	I	11	6	WJ	
	6	10	14	12	14	2	7	12	I	0	11	CF	
	7	1	0	7	6	0	12	0	I	10	9	WJ	
6	1	0	0	0	0	0	0	0	0	0	0	CF	
	2	0	0	0	0	0	0	0	0	0	0	CF	
	3	0	3	0	3	0	0	0	0	2	0	CF	
	4	3	0	0	0	0	0	0	2	0	0	WJ	
	5	2	X2	6	10	0	5	6	8	14	5	WJ	
	6	8	I	11	9	6	5	8	8	9	2	CF	
	7	15	I	0	8	10	0	0	0	0	2	WJ	

WAYPOINT ANALYTICAL, LLC.
 TEST TRACEABILITY RECORD
7-DAY CERIODAPHNIA DUBIA

SAMPLE ID: Pine Bluff REPORT # 21-061-0390

DATE START: 3/2/21 DATE END: 3/9/21

CERIODAPHNIA DUBIA REFERENCE # 21-REAG- 0017

Neonates obtained from: Brood Tray ID: Monday / Tuesday / Wednesday A / B
 (circle) Brood Tray Set: Y / P / B / O / G

REFERENCE NUMBERS

PARAMETER	DATE	INITIALS	TEST DAY	ALGAE	YCT
CHRONIC	3/2/21	CF	0	21-REAG- 0791	21-REAG- 0792
	3/3/21	CF	1	21-REAG- 0791	21-REAG- 0792
	3/4/21	CF	2	21-REAG- 0791	21-REAG- 0792
	3/5/21	CF	3	21-REAG- 0791	21-REAG- 0792
	3/6/21	lw	4	21-REAG- 0907	21-REAG- 0792
	3/7/21	lw	5	21-REAG- 0907	21-REAG- 0792
	3/8/21	CF	6	21-REAG- 0907	21-REAG- 0792

	TEST DAY	CONTROL WATER	SAMPLE LAB ID
(Comp. 1)	0	21-REAG-0884/97	87184
	1	21-REAG- 0898	↓
(Comp. 2)	2	21-REAG-0961	87185
	3	21-REAG- 0961 0984	↓
(Comp. 3)	4	21-REAG- 1010	L87186
	5	21-REAG- 1021	↓
	6	21-REAG- 1051	↓

COMMENTS: YCT is filtered with 60 - micron mesh to remove additional debris.
 Organisms are fed 0.15 mL Algae and YCT daily after renewal.
 Test conducted at 25 ±1 °C Incubator ID: BIO / Thermometer ID: 120554

ANALYST COMMENTS:

If an organisms did not produce any broods, check under microscope for sex of organism.
 Annotate the Concentration and Replicate of organism that is MALE: _____

WAYPOINT ANALYTICAL, LLC.

CERIODAPHNIA RANDOMIZATION TRANSLATION

RANDOMIZING KEY #:

4

REPORT #

21-0601-0390

TEST CONCENTRATIONS:

1: Control

2: 4

3: 5

4: 7

5: 9

6: 12

Row	REPLICATE									
	1	2	3	4	5	6	7	8	9	10
1	4	2	1	4	5	5	2	6	4	6

Row	REPLICATE									
	1	2	3	4	5	6	7	8	9	10
2	5	6	5	6	1	3	4	1	2	5

Row	REPLICATE									
	1	2	3	4	5	6	7	8	9	10
3	1	3	2	1	6	6	1	4	3	1

Row	REPLICATE									
	1	2	3	4	5	6	7	8	9	10
4	6	1	6	2	2	2	5	3	5	2

Row	REPLICATE									
	1	2	3	4	5	6	7	8	9	10
5	3	5	4	5	3	1	3	2	1	3

Row	REPLICATE									
	1	2	3	4	5	6	7	8	9	10
6	2	4	3	3	4	4	6	5	6	4

Waypoint Analytical, LLC.
TEST DATA SHEET FOR FATHEAD MINNOW SURVIVAL (7-DAY)

SAMPLE ID: Pine Bluff REPORT #: 21-061-0390

TEST START - DATE/TIME: 3/2/21 1123 ANALYST: CF

TEST END - DATE/TIME : 3/9/21 1106 ANALYST: lw

NOTE: PER ADEQ REQUIREMENTS THE INTIAL NUMBER OF FISH PER REPLICATE MUST BE 8 !!

CONC.	REP NO.	NO. OF SURVIVORS								REMARKS
		DAY								
		0	1	2	3	4	5	6	7	
1	12 A	8	8	8	8	8	8	8	8	
	4 B	8	8	8	8	8	8	8	8	
	5 C	8	8	8	8	8	8	8	8	
	12 D	8	8	8	8	8	8	8	8	
	C E	8	8	8	8	8	8	8	8	
2	9 A	8	8	8	8	8	8	8	8	
	7 B	8	8	8	7	6	6	6	6	
	C C	8	8	8	8	8	8	8	8	
	4 D	8	8	8	8	8	8	8	8	
	9 E	8	8	8	8	8	8	8	8	
3	4 A	8	8	8	8	8	8	8	8	
	12 B	8	8	8	8	8	8	8	8	
	7 C	8	8	8	8	8	8	8	8	
	5 D	8	8	8	8	8	8	8	8	
	7 E	8	8	8	8	8	8	8	8	
4	7 A	8	8	8	8	8	8	8	8	
	5 B	8	8	8	8	8	8	8	8	
	4 C	8	8	8	8	8	8	8	8	
	C D	8	8	8	8	8	8	8	8	
	9 E	8	8	8	8	8	8	8	8	
5	12 A	8	8	8	8	8	8	8	8	
	C B	8	8	8	8	8	8	8	8	
	9 C	8	8	8	8	8	8	8	8	
	12 D	8	8	8	8	8	8	8	8	
	5 E	8	8	8	8	8	8	8	8	
6	C A	8	8	8	8	8	8	8	8	
	4 B	8	8	8	8	8	8	8	8	
	5 C	8	8	8	8	8	8	8	8	
	7 D	8	8	8	8	8	8	8	8	
	9 E	8	8	8	8	8	8	8	8	
INITIALS		CF	CF	CF	CF	lw	lw	CF	lw	
DATE		3/2/21	3/3/21	3/4/21	3/5/21	3/6/21	3/7/21	3/8/21	3/9/21	

ORGANISM REF#: 20-REAG-0906

COMMENTS:

WAYPOINT ANALYTICAL, LLC.
TEST TRACEABILITY RECORD
7-DAY FATHEAD MINNOW

SAMPLE ID: Pine Bluff REPORT # 21-061-0390

DATE START: 3/2/21 DATE END: 3/9/21

FATHEAD MINNOW REFERENCE # 21-REAG-0906

REFERENCE NUMBERS

PARAMETER	DATE	INITIALS	TEST DAY	CONTROL WATER	BRINE SHRIMP	SAMPLE LAB ID:	
CHRONIC	3/2/21	CF	0	21-REAG-0894/97	21-REAG-0885	87184	(Comp. 1)
	3/3/21	CF	1	21-REAG-0898	21-REAG-0896	↓	
	3/4/21	CF	2	21-REAG-0961	21-REAG-0931	87185	(Comp. 2)
	3/5/21	CF	3	21-REAG-0984	21-REAG-0906	↓	
	3/6/21	W	4	21-REAG-1010	21-REAG-1003	L87186	(Comp. 3)
	3/7/21	W	5	21-REAG-1020 ^W	21-REAG-1020	↓	
	3/8/21	CF	6	21-REAG-1051	21-REAG-1049	↓	

COMMENTS Fathead minnows are fed 0.15 mL Artemia Brine Shrimp x2 daily.
Test conducted at 25 ±1 °C Incubator ID: BIO / Thermometer ID: 120554

ANALYST COMMENTS:

FATHEAD MINNOW FINAL WEIGHT SHEET

SAMPLE ID: Pine Bluff AR REPORT #: 21-0601-0390
 INITIAL WEIGHT DATE/TIME: 3/9/21 740 ANALYST: BA.
 DATE/TIME IN OVEN: 3/9/21 1654 TEMP (°C): 89 ANALYST: CF
 DATE/TIME OUT OVEN: 3/10/21 817 TEMP (°C): 86 ANALYST: CF
 FINAL WEIGHT DATE/TIME: 3/10/21 1603 ANALYST: CF

Oven ID : 03

Thermometer ID: T49

Balance ID: B12

Temp Range : 50 - 105 °C

	REP ID	CRUC ID	INT WEIGHT (g)	FINAL WEIGHT (g)	# LARV	REMARKS
1	A	Love	31.3197	31.3255	8	
	B	Shot	33.1212	33.1270	8	
	C	Shi	28.9354	28.9412	8	
	D	turb	28.5076	28.5143	8	
	E	Dit	28.2970	28.3010	8	
2	A	leb	31.5058	31.5119	8	
	B	kn	31.1261	31.1309	6	
	C	pawn	31.1015	31.1060	8	
	D	delta	31.5342	31.5395	8	
	E	Mtn	31.1657	31.1712	8	
3	A	tina	28.41002	28.4653	8	
	B	Sml	22.6133	22.6195	8	
	C	fran	31.3818	31.3883	8	
	D	tree	30.4886	30.4941	8	
	E	egg	32.2817	32.2875	8	
4	A	attic	28.5834	28.5888	8	
	B	92	23.7018	23.7073	8	
	C	Red	27.1813	27.1871	8	
	D	Ivey	30.8087	30.8734	8	
	E	1071	25.4186	25.4243	8	
5	A	col	31.0983	31.1041	8	
	B	skt	22.6713	22.6761	8	
	C	leave	33.6382	33.6435	8	
	D	trun	31.0904	31.0963	8	
	E	exit	33.9328	33.9375	7	
6	A	pd	29.0088	29.0128	8	
	B	bull	26.7046	26.7095	8	
	C	153	31.2693	31.2742	8	
	D	pet	31.5544	31.5592	7	
	E	oat	29.6231	29.6284	8	

Page 26 of 26

Crucibles must be in the oven a minimum of 6 hours. Immediately after removal from the oven the crucibles must be allowed to cool in the dessicator a minimum of 2 hours.

Comments/Observations:

F:\CETIS\bio report forms\BIO BATCH SHEETS\2021 Bio Batch Sheets\21 - 5 rep FH Weights