

# Arkansas Analytical, Inc.

## Toxicity Test Results

**CITY of SHERIDAN**  
**NPDES PERMIT NUMBER: AR0034347**  
**November 2022**  
**AFIN # 27-00022**  
**Outfall 002**

Fathead Minnow, *Pimephales promelas*, Larval Survival and Growth Test  
Test 1000.0

*Ceriodaphnia dubia*, Survival and Reproduction Test  
Test 1002.0

Prepared for: **Mr. David Fitzgerald**  
**City of Sheridan**  
**P.O.Box 486**  
**Sheridan, Arkansas 72150**

Prepared by: Arkansas Analytical, Inc.  
8100 National Drive  
Little Rock, Arkansas 72209  
**Lab Number K2211017**

Tuesday, December 27, 2022

## Plant Location

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Sheridan Wastewater Treatment Facility. The plant is located near the south end of Gatzke Drive, Sheridan, AR 72150 in Grant County. From US Hwy 270 in Sheridan, turn south of Gatzke Drive, go to the end of the cul-de-sac and the facility is located approximately 500 ft to the southeast.

## Test Methods

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EPA Method 1000.0 *Pimephales promelas*, Larval survival and growth test

- Test chambers: 500 mL plastic cups
- Test solution volume: 250 mL
- Number of test organisms per chamber: 10
- Number of replicates per concentration: 5
- Test temperature 25°C ± 1°C
- Test concentrations: 0%, 10%, 13%, 17%, 23%, 31%
- Dilution water: Soft synthetic
- No deviation from method

EPA Method 1002.0 *Ceriodaphnia dubia*, Survival and reproduction test

- Test chambers: 30 mL plastic cups
- Test solution volume: 15 mL
- Number of test organisms per chamber: 1
- Number of replicates per concentration: 10
- Test temperature 25°C ± 1°C
- Test concentrations: 0%, 10%, 13%, 17%, 23%, 31%
- Dilution water: Soft synthetic
- No deviation from method

## Reference Toxicant Data

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### REFERENCE TOXICANT (Potassium Chloride)

<i>Ceriodaphnia dubia</i> 10/11/22-10/18/22		<i>Pimephales promelas</i> 10/11/22-10/18/22	
NOEC Survival:	500 ppm KCl	NOEC Survival:	500 ppm KCl
LOEC Survival:	1000 ppm KCl	LOEC Survival:	1000 ppm KCl
NOEC Reproduction:	250 ppm KCl	NOEC Growth:	500 ppm KCl
LOEC Reproduction:	500 ppm KCl	LOEC Growth:	1000 ppm KCl

## Summary of Results

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### Sheridan Waterworks Outfall 002

<i>Ceriodaphnia dubia</i>		<i>Pimephales promelas</i>	
NOEC Survival Parameter: <b>TOP3B</b>	31%	NOEC Survival Parameter: <b>TOP6C</b>	31%
Pass/Fail Survival Parameter: <b>TLP3B</b>	Pass	Pass/Fail Survival Parameter: <b>TLP6C</b>	Pass
NOEC Reproduction Parameter: <b>TPP3B</b>	31%	NOEC Growth Parameter: <b>TPP6C</b>	31%
Pass/Fail Reproduction Parameter: <b>TGP3B</b>	Pass	Pass/Fail Growth Parameter: <b>TGP6C</b>	Pass
%CV Reproduction Parameter: <b>TQP3B</b>	21.2%	%CV Growth Parameter: <b>TQP6C</b>	7.75%
PMSD Reproduction	24.6%	PMSD Growth	14.4%

## Conclusion

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*Pimephales promelas*, (Method 1000.0): The permit issued to Sheridan Waterworks, specifies that the **critical dilution is 23% effluent**. The effluent samples **did not** exhibit lethal or sublethal effects at the critical dilution, and, as such, **passed** both portions of the test.

*Ceriodaphnia dubia*, (Method 1002.0): The permit issued to Sheridan Waterworks, specifies the **critical dilution is 23% effluent**. The effluent samples **did not** exhibit lethal or sublethal effects at the critical dilution, and, as such, **passed** both portions of the test.

Biomonitoring Analysts: Melissa Bird, Jettie Parnell, Jason Bird

Reviewed by:

  
Melissa Bird

## Appendices

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Appendix A.....	Chains of custody
Appendix B.....	Fathead minnow data & statistics
Appendix C.....	<i>Ceriodaphnia dubia</i> data & statistics
Appendix D.....	Water chemistry data
Appendix E.....	Reference toxicant control charts



8100 National Dr.  
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 FAX: 501-455-6118

# CHAIN OF CUSTODY RECORD

CLIENT INFORMATION		BILLING INFORMATION		Project Description		Turnaround Time		Preservation Codes:			
Sheridan Waterworks		Sheridan Waterworks		Outfall 002 Chronic Toxicity		1 Day (100%)		1. Cool, 6 Degrees Centigrade			
104 W High St.		P.O. Box 486		AR0034347 -- September-November		2 Day (50%)		2. Sulfuric Acid (H <sub>2</sub> SO <sub>4</sub> ), pH < 2			
Sheridan, AR 72150		Sheridan, AR 72150		Reporting Information		3 Day (25%)		3. Nitric Acid (HNO <sub>3</sub> ), pH < 2			
Attn: David Fitzgerald		Telephone: 870-942-2722		Routine		TEST PARAMETERS		6. Sodium Hydroxide (NaOH), pH > 12			
Fax: 870-942-1937		Email: sheridanwater@windstream.net		Preservative Code: 1		P		Arkansas Analytical Work Order Number: 44 K22011017			
Bottle Type:		P		V = Septum; A = Amber							
Sampler(s) Signature: <i>Cliff Wood</i>		Sampler(s) Printed: <i>Cliff Wood</i>		SAMPLE COLLECTION		SAMPLE IDENTIFICATION/ DESCRIPTION		Chronic Toxicity (Ceriodaphnia Dubia, Pimephales Promelas)		REMARKS / SAMPLE COMMENTS	
Field Number	DATE/s	Time/s	Grab	Comp	Number of Bottles	Sample Matrix	Water	Outfall 002 Grab	X		
	11/30/02	1139	X		3						
1. Relinquished by: (Signature)		Date/Time		2. Received by: (Signature)		SAMPLE CONDITION UPON RECEIPT IN LAB					
<i>Cliff Wood</i>		11/30/02		<i>Cliff Wood</i>		1. CUSTODY SEALS: Yes ___ No <input checked="" type="checkbox"/>					
<i>Cliff Wood</i>		12/4/5		<i>Cliff Wood</i>		2. CONTAINERS CORRECT: Yes ___ No <input checked="" type="checkbox"/>					
3. Relinquished by: (Signature)		Date/Time		4. Received by lab: (Signature)		3. COC/LABELS AGREE: Yes ___ No <input checked="" type="checkbox"/>					
<i>Cliff Wood</i>				<i>Cliff Wood</i>		4. RECEIVED ON ICE: Yes ___ No <input checked="" type="checkbox"/>					
						5. TEMPERATURE ON RECEIPT: 1 °C					
						6. TEMPERATURE GUN ID: HHT# 5					
						FOR COMPLETION BY LAB ONLY					



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# CHAIN OF CUSTODY RECORD

CLIENT INFORMATION		BILLING INFORMATION		Project Description		Turnaround Time		Preservation Codes:										
Sheridan Waterworks 104 W High St. Sheridan, AR 72150		Sheridan Waterworks P.O. Box 486 Sheridan, AR 72150		Outfall 002 Chronic Toxicity AR0034347 -- September-November Reporting Information Telephone: 870-942-2722 Fax: 870-942-1937 Email: sheridanwater@windstream.net		1 Day (100%) 2 Day (50%) 3 Day (25%) Routine		1. Cool, 6 Degrees Centigrade 2. Sulfuric Acid (H <sub>2</sub> SO <sub>4</sub> ), pH < 2 3. Nitric Acid (HNO <sub>3</sub> ), pH < 2 4. Thiosulfate for Dechlorination 5. Hydrochloric Acid(HCl) 6. Sodium Hydroxide (NaOH), pH > 12										
Attn: David Fitzgerald		Preservative Code: 1		Bottle Type: P		TEST PARAMETERS		Bottle Type Code										
G = Glass; P = Plastic V = Septum; A = Amber																		
Sampler(s) Signature: <i>Christ Wood</i>		Sampler(s) Printed: <i>Christ Wood</i>		SAMPLE COLLECTION		SAMPLE IDENTIFICATION/ DESCRIPTION		Arkansas Analytical Work Order Number: <i>K221017B</i>										
Field Number	DATE/S	Time/s	Grab	Comp	Number of Bottles	Sample Matrix	Water	Outfall	002	Grab								
			X		3						X							
1. Relinquished by: (Signature) <i>Christ Wood</i>		Date/Time: 12/1/03		2. Received by: (Signature) <i>Christ Wood</i>		Date/Time: 1/3/04		SAMPLE CONDITION UPON RECEIPT IN LAB				REMARKS / SAMPLE COMMENTS						
3. Relinquished by: (Signature) <i>Christ Wood</i>		Date/Time: 1/3/04		4. Received by lab: (Signature) <i>M.B.</i>				1. CUSTODY SEALS: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 2. CONTAINERS CORRECT: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 3. COC/LABELS AGREE: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 4. RECEIVED ON ICE: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 5. TEMPERATURE ON RECEIPT: 1 °C 6. TEMPERATURE GUN ID: HHT#S				1-1251 3-1253 2-1252						
								FOR COMPLETION BY LAB ONLY										



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# CHAIN OF CUSTODY RECORD

CLIENT INFORMATION		BILLING INFORMATION		Project Description		Turnaround Time		Preservation Codes:	
Sheridan Waterworks		Sheridan Waterworks		Outfall 002 Chronic Toxicity		1 Day (100%)		1. Cool, 6 Degrees Centigrade	
104 W High St.		P.O. Box 486		AR0034347 -- September-November		2 Day (50%)		2. Sulfuric Acid (H <sub>2</sub> SO <sub>4</sub> ), pH < 2	
Sheridan, AR 72150		Sheridan, AR 72150		Reporting Information		3 Day (25%)		3. Nitric Acid (HNO <sub>3</sub> ), pH < 2	
Attn: David Fitzgerald		Telephone: 870-942-2722		Routine		TEST PARAMETERS		4. Thiosulfate for Dechlorination	
		Fax: 870-942-1937		Email: sheridanwater@windstream.net		Preservative Codes:		5. Hydrochloric Acid(HCl)	
		Bottle Type:		1		P		6. Sodium Hydroxide (NaOH), pH > 12	
Sampler(s) Signature <i>David Fitzgerald</i>		Sampler(s) Printed <i>David Fitzgerald</i>		SAMPLE IDENTIFICATION/ DESCRIPTION		Chronic Toxicity (Ceriodaphnia Dubia, PimephalesPromelas)		Arkansas Analytical Work Order Number: <i>K221077c</i>	
Field Number	SAMPLE COLLECTION Dates	Times	Grab	Comp	Number of Bottles	Sample Matrix			
	12-2-22	1149	X		3	Water	Outfall 002 Grab	X	
1. Relinquished by: (Signature)		Date/Time		2. Received by: (Signature)		SAMPLE CONDITION UPON RECEIPT IN LAB		REMARKS / SAMPLE COMMENTS	
<i>David Fitzgerald</i>		12/2/22		<i>M. B.</i>		1. CUSTODY SEALS: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 2. CONTAINERS CORRECT: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 3. COC/LABELS AGREE: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 4. RECEIVED ON ICE: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 5. TEMPERATURE ON RECEIPT: <u>1</u> °C 6. TEMPERATURE GUN ID: <u>HHT# 5</u>		1-1149 2-150 3-1151	
3. Relinquished by: (Signature)		Date/Time		4. Received by lab: (Signature)		FOR COMPLETION BY LAB ONLY			
<i>David Fitzgerald</i>				<i>M. B.</i>					

**CETIS Summary Report**

Report Date: 27 Dec-22 11:14 (p 1 of 2)  
 Test Code/ID: K2211017FH / 03-3709-3588

**Fathead Minnow 7-d Larval Survival and Growth Test**

Arkansas Analytical

Batch ID: 19-6398-9150	Test Type: Growth-Survival (7d)	Analyst: Melissa Bird
Start Date: 30 Nov-22 14:40	Protocol: EPA/821/R-02-013 (2002)	Diluent: Soft Synthetic Water
Ending Date: 07 Dec-22 12:55	Species: Pimephales promelas	Brine: Not Applicable
Test Length: 6d 22h	Taxon: Actinopterygii	Source: Aquatox, AR
		Age: <24
Sample ID: 08-1629-2977	Code: K2211017FH	Project: WET Monthly Compliance Test (NOV)
Sample Date: 30 Nov-22 11:39	Material: Industrial Effluent	Source: Sheridan (AR0034347)
Receipt Date: 30 Nov-22 12:45	CAS (PC):	Station: 002
Sample Age: 3h (1 °C)	Client: Sheridan	

**Sample Renewals**

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	K2211017B	01 Dec-22 12:51	01 Dec-22 13:58	02 Dec-22 00:00	1
2	K2211017C	02 Dec-22 11:49	02 Dec-22 13:06	03 Dec-22 00:00	1

**Multiple Comparison Summary**

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	TU	PMSD	S
03-0507-9083	7d Survival Rate	Steel Many-One Rank Sum Test	31	>31	n/a	3.226	7.02%	1
11-7223-7201	Mean Dry Weight-mg	Dunnett Multiple Comparison Test	31	>31	n/a	3.226	14.4%	1

**Test Acceptability**

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
03-0507-9083	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes 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%
10		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
13		5	0.9400	0.8289	1.0000	0.8000	1.0000	0.0400	0.0894	9.52%	6.00%
17		5	0.9400	0.8720	1.0000	0.9000	1.0000	0.0245	0.0548	5.83%	6.00%
23		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
31		5	0.9800	0.9245	1.0000	0.9000	1.0000	0.0200	0.0447	4.56%	2.00%

**Mean Dry Weight-mg Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	5	0.548	0.4953	0.6007	0.477	0.587	0.01898	0.04245	7.75%	0.00%
10		5	0.4964	0.4473	0.5455	0.458	0.562	0.01768	0.03954	7.96%	9.42%
13		5	0.527	0.4449	0.6091	0.432	0.6	0.02957	0.06611	12.55%	3.83%
17		5	0.5712	0.4697	0.6727	0.512	0.714	0.03657	0.08176	14.31%	-4.23%
23		5	0.548	0.5151	0.5809	0.511	0.585	0.01187	0.02653	4.84%	0.00%
31		5	0.556	0.5078	0.6042	0.504	0.593	0.01735	0.0388	6.98%	-1.46%



**CETIS Summary Report**Report Date: 27 Dec-22 11:14 (p 2 of 2)  
Test Code/ID: K2211017FH / 03-3709-3588**Fathead Minnow 7-d Larval Survival and Growth Test**

Arkansas Analytical

**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
10		1.0000	1.0000	1.0000	1.0000	1.0000
13		0.8000	1.0000	1.0000	0.9000	1.0000
17		1.0000	0.9000	0.9000	1.0000	0.9000
23		1.0000	1.0000	1.0000	1.0000	1.0000
31		1.0000	1.0000	1.0000	1.0000	0.9000

**Mean Dry Weight-mg Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	0.545	0.569	0.562	0.587	0.477
10		0.478	0.485	0.499	0.458	0.562
13		0.432	0.6	0.536	0.572	0.495
17		0.714	0.542	0.56	0.512	0.528
23		0.541	0.585	0.511	0.553	0.55
31		0.59	0.593	0.564	0.529	0.504

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	10/10	10/10	10/10	10/10	10/10
10		10/10	10/10	10/10	10/10	10/10
13		8/10	10/10	10/10	9/10	10/10
17		10/10	9/10	9/10	10/10	9/10
23		10/10	10/10	10/10	10/10	10/10
31		10/10	10/10	10/10	10/10	9/10

**CETIS Summary Report**

Report Date: 27 Dec-22 11:07 (p 1 of 2)  
 Test Code/ID: K2211017CD / 02-5920-1977

**Ceriodaphnia 7-d Survival and Reproduction Test**

Arkansas Analytical

Batch ID: 00-5682-7947	Test Type: Reproduction-Survival (7d)	Analyst: Melissa Bird
Start Date: 30 Nov-22 14:22	Protocol: EPA/821/R-02-013 (2002)	Diluent: Soft Synthetic Water
Ending Date: 07 Dec-22 12:59	Species: Ceriodaphnia dubia	Brine: Not Applicable
Test Length: 6d 23h	Taxon: Branchiopoda	Source: In-House Culture Age: <24
Sample ID: 01-7783-1485	Code: A997E3D	Project: WET Monthly Compliance Test (NOV)
Sample Date: 30 Nov-22 11:39	Material: Industrial Effluent	Source: Sheridan (AR0034347)
Receipt Date: 30 Nov-22 12:45	CAS (PC):	Station: 002
Sample Age: 3h (1 °C)	Client: Sheridan	

**Sample Renewals**

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	K2211017B	01 Dec-22 12:51	01 Dec-22 13:58	02 Dec-22 00:00	1
2	K2211017C	02 Dec-22 11:49	02 Dec-22 13:06	03 Dec-22 00:00	1

**Multiple Comparison Summary**

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	TU	PMSD	S
19-2853-1305	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test	31	>31	n/a	3.226	n/a	1
13-5736-9266	Reproduction	Steel Many-One Rank Sum Test	31	>31	n/a	3.226	24.6%	1

**Test Acceptability**

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits			Overlap	Decision
				Lower	Upper			
19-2853-1305	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria	
13-5736-9266	Reproduction	Control Resp	26.6	15	>>	Yes	Passes Criteria	
13-5736-9266	Reproduction	PMSD	0.2457	0.13	0.47	Yes	Passes 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%
10		10	0.9000	0.6738	1.0000	0.0000	1.0000	0.1000	0.3162	35.14%	10.00%
13		10	0.9000	0.6738	1.0000	0.0000	1.0000	0.1000	0.3162	35.14%	10.00%
17		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
23		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
31		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	26.6	22.56	30.64	19	35	1.784	5.641	21.21%	0.00%
10		10	24.8	17.27	32.33	0	38	3.329	10.53	42.45%	6.77%
13		10	23.4	18.8	28	11	34	2.034	6.433	27.49%	12.03%
17		10	25.5	21.79	29.21	17	34	1.641	5.191	20.36%	4.14%
23		10	26.8	23.75	29.85	23	36	1.348	4.264	15.91%	-0.75%
31		10	25	22.2	27.8	19	32	1.238	3.916	15.66%	6.02%

**CETIS Summary Report**

Report Date: 27 Dec-22 11:07 (p 2 of 2)  
 Test Code/ID: K2211017CD / 02-5920-1977

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Arkansas Analytical**

**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
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000
13		1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000
17		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
23		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
31		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	30	31	30	35	27	20	19	21	31	22
10		31	29	25	29	38	31	0	25	25	15
13		26	34	29	24	11	24	21	23	26	16
17		33	26	17	34	25	24	22	25	28	21
23		23	24	23	31	29	25	23	36	26	28
31		19	23	28	28	25	28	22	32	22	23

**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
10		1/1	1/1	1/1	1/1	1/1	1/1	0/1	1/1	1/1	1/1
13		1/1	1/1	1/1	1/1	0/1	1/1	1/1	1/1	1/1	1/1
17		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
23		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
31		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

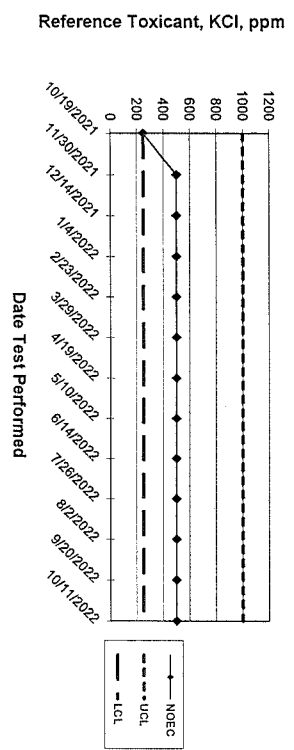
CHEMICAL DATA SHEET FOR CHRONIC TOXICITY TESTING										Fathead Minnow			
Lab # / Sample ID				K2211017				Test Start (Date/Time)				11-30-22 / 1440	
Client:				Shuidan 002				Test End (Date/Time)				12-7-22 / 1255	
										Day of Test			
		1	2	3	4	5	6	7	notes/remarks				
<b>Control</b>		SS052	11/30	12/1	12/2	12/3	12/4	12/5	12/6				
D.O. (mg/L)		INITIAL	8.9	8.5	9.0	8.5	8.9	8.7	7.4				
		FINAL	7.2	7.0	6.9	8.2	7.2	6.9	7.8*	6.6			
pH (s.u.)		INITIAL	6.8	7.4	7.8	8.3	8.0	7.8	7.6				
		FINAL	8.1	7.7	7.6	7.7	7.7	6.3	7.5*	7.3			
temp (C)		INITIAL	21	20	20	20	19	22	20				
		FINAL	25	25	25	19	25	25	25*	25			
ALKALINITY (mg/L)			31										
HARDNESS (mg/L)			43										
CONDUCTIVITY (umhos/cm)			182										
CHLORINE (mg/L)			0.05										
<b>CONC:</b>													
D.O. (mg/L)		INITIAL	8.9	8.9	9.0	8.7	9.0	8.8	7.3				
		FINAL	7.3	7.0	6.6	8.2	6.9	6.9	6.9*	6.7			
pH (s.u.)		INITIAL	6.8	7.4	7.7	8.1	7.8	7.8	7.5				
		FINAL	7.8	7.6	7.5	7.6	7.6	6.3	7.4*	7.2			
temp (C)		INITIAL	21	20	20	20	19	22	21				
		FINAL	25	25	25	19	25	25	25*	25			
<b>CONC:</b>													
D.O. (mg/L)		INITIAL	8.8	9.0	8.9	8.7	9.0	8.9	7.4				
		FINAL	7.5	6.8	6.5	8.0	6.7	6.6	7.7*	6.2			
pH (mg/L)		INITIAL	6.8	7.4	7.7	8.0	7.8	7.8	7.5				
		FINAL	7.7	7.6	7.5	7.5	2.5	6.3	7.4*	7.2			
temp (C)		INITIAL	21	20	20	21	19	22	21				
		FINAL	25	25	25	19	25	25	25*	25			
<b>CONC:</b>													
D.O. (mg/L)		INITIAL	8.8	9.0	8.9	8.8	9.1	8.9	7.2				
		FINAL	6.9	6.6	6.9	8.2	6.8	6.2	7.8*	6.1			
pH (s.u.)		INITIAL	6.8	7.4	7.7	8.9	7.7	7.7	7.4				
		FINAL	7.5	7.5	7.4	7.4	7.4	6.4	7.5*	7.1			
temp (C)		INITIAL	21	20	20	21	19	22	21				
		FINAL	25	25	25	19	25	25	25*	25			
<b>CONC:</b>													
D.O. (mg/L)		INITIAL	8.7	9.0	8.8	8.7	9.2	8.9	6.9				
		FINAL	7.1	6.5	7.1	8.3	6.6	6.0	7.6*	6.6			
pH (s.u.)		INITIAL	6.8	7.4	7.6	7.8	7.7	7.7	7.4				
		FINAL	7.5	7.4	7.4	7.4	7.4	6.4	7.5*	7.1			
temp (C)		INITIAL	21	20	20	21	19	22	21				
		FINAL	25	25	25	19	25	25	25*	25			
<b>CONC:</b>													
D.O. (mg/L)		INITIAL	8.5	9.0	8.8	8.5	9.2	8.9	6.8				
		FINAL	6.8	6.4	6.9	8.2	6.5	5.9	7.7*	6.6			
pH (s.u.)		INITIAL	6.9	7.5	7.6	7.7	7.7	7.7	7.4				
		FINAL	7.4	7.4	7.4	7.3	7.4	6.4	7.7*	7.1			
temp (C)		INITIAL	21	20	21	21	19	22	22				
		FINAL	25	25	25	19	25	25	25*	25			
<b>CONC:</b>													
ALKALINITY (mg/L)			41		42	58	42	58					
HARDNESS (mg/L)			78		60	69	60	69					
CONDUCTIVITY (umhos/cm)			371		372	374	372	374					
CHLORINE (mg/L)			0.07		0.08	0.05	0.08	0.05					

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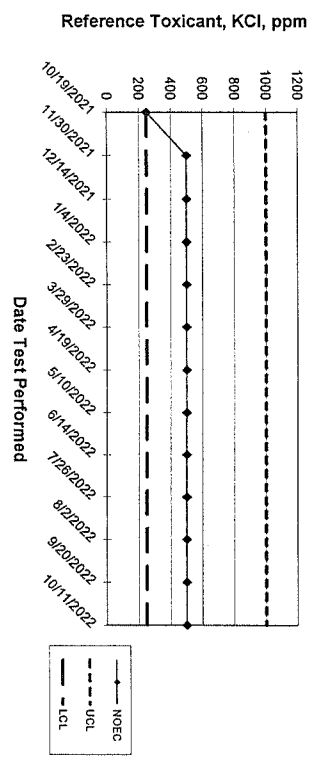
CHEMICAL DATA SHEET FOR CHRONIC TOXICITY TESTING									
					Cerodaphnia Dubia				
Lab # / Sample ID		K2211017			Test Start (Date/Time)		11-30-22/1422		
Client:		Shridan 002			Test End (Date/Time)		12-7-22/1259		
		Day of Test							
		1	2	3	4	5	6	7	notes/remarks
<b>Control</b>	SS 052	11/30	12/1	12/2	12/3	12/4	12/5	12/6	
D.O. (mg/L)	INITIAL	8.9	8.3	9.0	8.5	8.9	8.7	7.4	
	FINAL	8.8	8.6	8.9	8.2	8.8	8.7	7.7	
pH (s.u.)	INITIAL	6.8	7.4	7.8	8.3	8.0	7.8	7.6	
	FINAL	7.5	7.7	8.0	7.7	7.6	7.5	8.9	
temp (C)	INITIAL	21	20	20	20	19	22	20	
	FINAL	25	25	25	19	25	25	25	
ALKALINITY (mg/L)		31							
HARDNESS (mg/L)		43							
CONDUCTIVITY (umhos/cm)		182							
CHLORINE (mg/L)		LO.05							
<b>CONC:</b>									
D.O. (mg/L)	INITIAL	8.9	8.9	9.0	8.7	9.0	8.8	7.3	
	FINAL	8.7	8.4	8.9	8.2	8.8	6.9	7.3	
pH (s.u.)	INITIAL	6.8	7.4	7.7	8.1	7.8	7.8	7.5	
	FINAL	7.4	7.6	7.9	7.6	7.6	7.4	8.5	
temp (C)	INITIAL	21	20	20	20	19	22	21	
	FINAL	25	25	25	19	25	25	25	
<b>CONC:</b>									
D.O. (mg/L)	INITIAL	8.8	9.0	8.9	8.7	9.0	8.9	7.4	
	FINAL	8.7	8.4	8.9	8.0	8.8	7.2	7.6	
pH (mg/L)	INITIAL	6.8	7.4	7.7	8.0	7.8	7.8	7.5	
	FINAL	7.5	7.6	7.9	7.5	7.5	7.4	7.9	
temp (C)	INITIAL	21	20	20	21	19	22	21	
	FINAL	25	25	25	19	25	25	25	
<b>CONC:</b>									
D.O. (mg/L)	INITIAL	8.8	9.0	8.9	8.8	9.1	8.9	7.2	
	FINAL	8.6	8.5	8.9	8.2	8.8	7.8	7.1	
pH (s.u.)	INITIAL	6.8	7.4	7.7	7.9	7.7	7.7	7.4	
	FINAL	7.4	7.6	7.8	7.4	7.5	7.3	7.9	
temp (C)	INITIAL	21	20	20	21	19	22	21	
	FINAL	25	25	25	19	25	25	25	
<b>CONC:</b>									
D.O. (mg/L)	INITIAL	8.7	9.0	8.8	8.7	9.2	8.9	6.9	
	FINAL	8.5	8.4	8.9	8.3	8.8	7.6	7.4	
pH (s.u.)	INITIAL	6.8	7.4	7.6	7.8	7.7	7.7	7.4	
	FINAL	7.5	7.6	7.8	7.4	7.5	7.3	7.7	
temp (C)	INITIAL	21	20	20	21	19	22	21	
	FINAL	25	25	25	19	25	25	25	
<b>CONC:</b>									
D.O. (mg/L)	INITIAL	8.5	9.0	8.8	8.5	9.2	8.9	6.8	
	FINAL	8.3	8.4	8.8	8.2	8.7	7.7	7.1	
pH (s.u.)	INITIAL	6.9	7.5	7.6	7.7	7.7	7.7	7.4	
	FINAL	7.5	7.6	7.8	7.3	7.5	7.3	7.6	
temp (C)	INITIAL	21	20	21	21	19	22	22	
	FINAL	25	25	25	19	25	25	25	
<b>CONC:</b>									
ALKALINITY (mg/L)		41		42	58	42	58		
HARDNESS (mg/L)		78		60	69	60	69		
CONDUCTIVITY (umhos/cm)		371		372	374	372	374		
CHLORINE (mg/L)		0.07		0.08	LO.05	0.08	LO.05		

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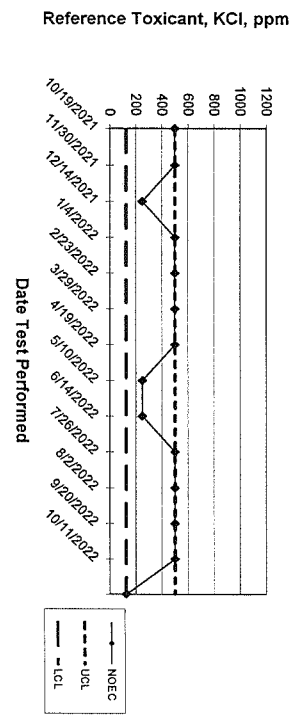
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