

Customer: Allen County Sanitary Engineer
Facility: American-Bath WWTP
Outfall: Effluent 001
Report Date: 8/7/17
Ohio EPA Permit No.: 2PH00007*KD
Alloway Lab #: L17-16920-01

Report of Chronic Biomonitoring

Samples Collected on:

7/24/17
7/26/17
7/28/17

Pimephales promelas
Ceriodaphnia dubia

Allen County Sanitary Engineer
American-Bath WWTP
3226 North Cole Street
Lima, OH 45805

Customer: Allen County Sanitary Engineer
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Date: 8/7/17

Rick Boerger
Allen County Sanitary Engineer
3226 North Cole Street
Lima, OH 45805

Dear Mr. Boerger:

Enclosed is the report of the biomonitoring on the sample listed above. The objective of the chronic biomonitoring was to determine the effects, both the acute endpoint (mortality) and chronic endpoints (mortality and growth, or reproduction), from the test water. Fathead minnow larvae (*Pimephales promelas*) and neonate water fleas (*Ceriodaphnia dubia*) were the test organisms.

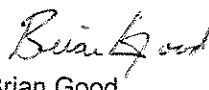
Acute toxicity was determined by locating the median lethal concentration (LC50) and the median effective concentration (EC50). Growth was determined from the dry weight of surviving *Pimephales promelas* larvae. Reproduction was monitored daily by counting the number of young produced by each female *Ceriodaphnia dubia*.

Dissolved oxygen, pH, and temperature were recorded daily at each renewal and at the end of each 24-hour exposure period. Results may be found in Appendix C "Parameter Data Sheets". Samples were analyzed for alkalinity, hardness and conductivity. These results may also be found in Appendix C.

Alloway (Lima, Ohio) performs biomonitoring testing in accordance with procedures established by the Environmental Protection Agency. The Standard Operating Procedures for the testing is on file with the Ohio EPA.

Please call if you have any questions or need additional information.


Richard F. Rupp
Bioassay Lab Manager


Brian Good
Bioassay Analyst



Alloway
Your Resource for Defensible Data

Outfall: Effluent 001
Report Date: 8/7/17
Ohio EPA Permit No.: 2PH00007*KD

1. Facility Name	Allen County Sanitary Engineer
2. Facility Address	American-Bath WWTP 3226 North Cole Street Lima, OH 45805
3. Ohio EPA Permit No.	2PH00007*KD
4. NPDES No.	OH0023841
5. Facility Contact	Rick Boerger
6. Telephone No.	419-225-8084
7. Consulting Laboratory	Alloway
8. Lab Contact	Brian Good
9. Lab Telephone No.	419-223-1362
10. Receiving water(s) of discharge	Pike Run
11. Outfall(s) tested	Effluent 001
12. Is your current Standard Operating Procedure (SOP) Manual on file with Ohio EPA? Yes If yes, indicate date in which SOP was submitted to the EPA:	<u>6/19/2017</u>

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and based on my inquiry of those individuals immediately responsible for obtaining information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature

Date

Name (typed or printed)

Title

Customer: Allen County Sanitary Engineer
 Facility: American-Bath WWTP
 Outfall: Effluent 001
 Ohio EPA Permit No.: 2PH00007*KD
 Date of *P. promelas* Test: 7/25-8/1/17
 Date of *C. dubia* Test: 7/25-31/17

Summary of Chronic Toxicity Test Results
Pimephales promelas

	4500 Form Value	MDL	4500 Comments Required
Effluent/Outfall:			
Chronic Toxicity, <i>Pimephales promelas</i> - TUc	AA	1.0	
Acute Toxicity, <i>Pimephales promelas</i> - TUa	AA	0.2	
Upstream:			
96 Hr. Acute Toxicity, <i>Pimephales promelas</i> - % Affected	AA	2.5	
7 day Chronic Toxicity, <i>Pimephales promelas</i> - % Affected	5.0	2.5	

Summary of Chronic Toxicity Test Results
Ceriodaphnia dubia

	4500 Form Value	MDL	4500 Comments Required
Effluent/Outfall:			
Chronic Toxicity, <i>Ceriodaphnia dubia</i> - TUc	AA	1.0	
Acute Toxicity, <i>Ceriodaphnia dubia</i> - TUa	AA	0.2	
Upstream:			
48 Hr. Acute Toxicity, <i>Ceriodaphnia dubia</i> - % Affected	AA	10.0	
7 day Chronic Toxicity, <i>Ceriodaphnia dubia</i> - % Affected	AA	10.0	

AA = below detectable

Conclusion/Comments:

Customer: Allen County Sanitary Engineer
 Facility: American-Bath WWTP
 Outfall: Effluent 001
 Ohio EPA Permit No.: 2PH00007*KD
 Date of Test: 7/25-8/1/17

Chronic Toxicity Test Results

Results of a 7-Day Pimephales promelas Survival and Growth Test

Test Solutions	Cumulative Percent Mortality* (Cumulative Percent Adversely Affected)*							Mean Dry Weight*	
	Test Day							Mean	SD
	1	2	3	4	5	6	7		
Primary Control Upstream	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	5.0% (5.0%)	5.0% (5.0%)	5.0% (5.0%)	0.714	0.100
Secondary Control Lab	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	7.5% (7.5%)	12.5% (12.5%)	12.5% (12.5%)	20.0% (20.0%)	0.656	0.055
20%	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.810	0.142
40%	0.0% (0.0%)	0.0% (0.0%)	2.5% (2.5%)	2.5% (2.5%)	5.0% (5.0%)	12.5% (12.5%)	12.5% (12.5%)	0.709	0.073
60%	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	7.5% (7.5%)	10.0% (10.0%)	10.0% (10.0%)	0.781	0.049
80%	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	7.5% (7.5%)	10.0% (10.0%)	10.0% (10.0%)	0.702	0.087
100%	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	7.5% (7.5%)	17.5% (17.5%)	17.5% (17.5%)	0.687	0.169
LC50 Values (%):		>100	>100	>100	>100	>100	>100	Calculated TUC for Survival <1.0	
95% Confidence Limits	LL								
	UL								
EC50 Values (%):		>100	>100	>100	>100	>100	>100	Calculated TUC for Growth (100/IC25) <1.0	
95% Confidence Limits	LL								
	UL								
7-Day NOEC for Mortality (%)		100			7-Day NOEC for Growth (%)		100	Method(s) used to determine Values: IC Pin, Dunnett's	
7-Day LOEC for Mortality (%)		>100			7-Day LOEC for Growth (%)		>100		
Chronic Value for Mortality (%)		>100			Chronic Value for Growth (%)		>100		
IC25 (%)		>100			IC50 (%)		>100		

*indicates significant differences from the primary control with an * (p<0.05)

Chronic Value = square root of (NOEC x LOEC)

Customer: Allen County Sanitary Engineer
 Facility: American-Bath WWTP
 Outfall: Effluent 001
 Ohio EPA Permit No.: 2PH00007*KD
 Date of Test: 7/25-31/17

Chronic Toxicity Test Results

Results of a Ceriodaphnia dubia Survival and Reproduction Test

Test Solutions		Cumulative Percent Mortality* (Cumulative Percent Adversely Affected)* Test Day							Number of Young Produced
		1	2	3	4	5	6	7	
									Mean
Primary Control Upstream		0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	--- (---)	27.5
Secondary Control Lab		0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	--- (---)	32.5
20%		0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	--- (---)	27.3
40%		0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	--- (---)	29.7
60%		0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	--- (---)	30.3
80%		0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	--- (---)	29.4
100%		0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	--- (---)	29.6
LC50 Values (%):		>100	>100	>100	>100	>100	>100	---	Calculated TUC Value for Survival <1.0
95% Confidence Limits	LL								
	UL								
EC50 Values (%):		>100	>100	>100	>100	>100	>100	---	Calculated TUC Value for Reproduction <1.0
95% Confidence Limits	LL								
	UL								
NOEC for Mortality (%)			100		NOEC for Reproduction (%)			100	Method(s) used to determine Values:
LOEC for Mortality (%)			>100		LOEC for Reproduction (%)			>100	
Chronic Value for Mortality (%)			>100		Chronic Value for Reprod (%)			>100	
IC25 (%)			>100		IC50 (%)			>100	IC Pin, Steel's Many One Rank Test

*indicates significant differences from the primary control with an α (p<0.05)

Chronic Value = square root of (NOEC x LOEC)

Customer: Allen County Sanitary Engineer
Facility: American-Bath WWTP
Outfall: Effluent 001
Report Date: 8/7/17
Ohio EPA Permit No.: 2PH00007*KD

Sampling Summary for Chronic Toxicity Tests

Sample Location & Description		Sample	Sample Collection	
			Beginning	Ending
Final Effluent:				
Outfall No.:	Effluent 001	1st	7/23/17 @ 09:00	7/24/17 @ 09:00
Type (Grab/Comp):	Comp	2nd	7/25/17 @ 10:00	7/26/17 @ 10:00
Volume Collected:	5 Gal.	3rd	7/27/17 @ 09:00	7/28/17 @ 09:00
Upstream Station:				
Waterbody:	Pike Run			
Station No.:	801	1st		7/24/17 @ 10:00
Type (Grab/Comp):	Grab	2nd		7/26/17 @ 11:30
Volume Collected:	5 Gal.	3rd		7/28/17 @ 08:30

Samples collected by: Alloway

PIMEPHALES PROMELAS CHRONIC TOXICITY TEST CONDITIONS

Summary of Toxicity Test Conditions (Ohio EPA 1998; EPA-821R-02-013, Oct. 2002)	
1. Test Species and Age:	<i>Pimephales promelas</i> < 24 hours old
2. Test Type and Duration:	Static renewal; 7 days
3. Test Dates:	7/25-8/1/17
4. Test Temperature (°C):	25°C ± 1°C
5. Light Quality:	Ambient laboratory illumination
6. Photoperiod:	16 h light, 8 h dark
7. Feeding Regime:	Feed 0.1 g (0.1 to 0.2 mL) newly hatched brine shrimp nauplii three times daily (M-F) at 4-h intervals. On weekends 0.1g of nauplii are fed at the beginning of the workday, after renewal, and at the end of the workday. Sufficient larvae are added to provide an excess. Fish are not fed during the final 12-h of the test.
8. Size of Test Vessel:	500 mL plastic cup
9. Volume and Depth of Test Solutions:	250 mL, 6.7 cm deep
10. No. of Test Organisms per Test Vessel:	10 per test vessel
11. No. of Test Vessels per Test Solution:	4 per solution tested
12. Total No. of Test Organisms per Test Solution:	40 per solution tested
13. Test Concentrations (as percent by volume effluent):	100, 80, 60, 40 and 20% effluent (001)
14. Renewal of Test Solutions:	Daily - day 0, 1 - 7/24/17 ; day 2, 3 - 7/26/17 ; day 4, 5, 6 - 7/28/17
15. Dilution Control Water:	Upstream grab from the receiving stream
16. Secondary Control Water:	Lab rearing unit water
17. Aeration During Test:	None
18. Endpoints Measured:	Mortality, and atypical behavior or appearance; and growth (dry weight).
19. If secondary control water used as diluent due to toxicity in primary control water, indicate number of consecutive tests conducted with alternative diluent:	

CERIODAPHNIA DUBIA CHRONIC TOXICITY TEST CONDITIONS

Summary of Toxicity Test Conditions (Ohio EPA 1998; EPA-821R-02-013, Oct. 2002)	
1. Test Species and Age:	<i>Ceriodaphnia dubia</i> 17-19 hours
2. Test Type and Duration:	Static renewal; Until 60% or more of surviving control females have three broods (maximum test duration 8 days)
3. Test Dates:	7/25-31/17
4. Test Temperature (°C):	25°C ± 1°C
5. Light Quality:	Ambient laboratory illumination
6. Photoperiod:	16 h light, 8 h dark
7. Feeding Regime:	Fed 0.1 mL YCT and 0.1 mL (3.5 million cells) <i>Selenastrum capricornutum</i> .
8. Size of Test Vessel:	1 fl. oz. (30 mL) clear plastic cup
9. Volume and Depth of Test Solutions:	15 mL, 20 mm deep
10. No. of Test Organisms per Test Vessel:	1 per test vessel
11. No. of Test Vessels per Test Solution:	10 per solution tested
12. Total No. of Test Organisms per Test Solution:	10 per solution tested
13. Test Concentrations (as percent by volume effluent):	100, 80, 60, 40 and 20% effluent (001)
14. Renewal of Test Solutions:	Daily - day 0, 1 - 7/24/17 ; day 2, 3 - 7/26/17 ; day 4, 5, 6 - 7/28/17
15. Dilution Control Water:	Upstream grab from the receiving stream
16. Secondary Control Water:	Lab rearing unit water
17. Aeration During Test:	None
18. Endpoints Measured:	Mortality, and atypical behavior or appearance; and reproduction (number of young produced).
19. If secondary control water used as diluent due to toxicity in primary control water, indicate number of consecutive tests conducted with alternative diluent:	

Appendix A

Field Data



1101 North Cole Street, Lima, OH 45805
(P) 419-223-1362 (F) 419-227-3792
1776 Marion-Waldo Road, Marion OH 43302
(H) 724 455 2664 (F) 724 455 4364
1 44906

This is a legal document that authorizes Alloway to perform testing on samples submitted under this agreement.

Project: L17-16920

Transported to: Lima Marion	By: _____	Received By: _____	Date: _____	Time: _____
Transported to: Lima Marion	By: _____	Received By: _____	Date: _____	Time: _____

ACSE Biomonitoring Field Data Sheet

Client: ACSE Bait

Field Technicians: HD

Date: 7/21/17

Grab Parameters for Collection Site Determinations

	Parameter Time	Temperature (°C)	Conductivity (umhos/cm)	Dissolved Oxygen (mg/L)	pH (s.u.)
Effluent	0700	21	627	3.04	7.55
Upstream	1000	22.4	439	6.98	7.75

Diagram of Collection Sites

~ Width of stream= 1.5
~ Depth of stream= 1 meter

Weather Conditions

- ☒ Cloudy
- ☐ Heavy Rain
- ☐ Light Rain
- ☐ Clear Skies
- ☐ Sunny
- ☐ Snow
- ☐ _____

Stream Conditions

- ☒ Rapid and Complete Mixing
- ☐ Mixing is not Rapid and Complete

Other Conditions

- ☐ Outfall Flooded Due to Heavy Rain
- ☐ _____



This is a legal document that authorizes Alloway to perform testing on samples submitted under this agreement.

- 1101 North Cole Street, Lima, OH 45805
(P) 419-223-1362 (F) 419-227-3792
- 1776 Marion-Waldo Road, Marion OH 43302
(P) 740-389-5999 (F) 740-389-1481
- 1502 W. Fourth Street, Mansfield, OH 44806
(P) 419-525-1644 (F) 419-524-5575

Transported to: Lima
Marion

By: _____

Received By: _____

Date: _____

Time: _____

Transported to: Lima
Marion

By: _____

Received By: _____

Date: _____

Time: _____

ACSE Biomonitoring Field Data Sheet

Client: ACSE

Field Technicians: JH

Date: 7/26/17

Grab Parameters for Collection Site Determinations

	Parameter Time	Temperature (°C)	Conductivity (umhos/cm)	Dissolved Oxygen (mg/L)	pH (s.u.)
Effluent	10:00	22.3°C	743	7.40 7.30	8.15
Upstream	11:30	21.4°C	561 (561)	7.40 ↑	8.05

[Handwritten signature]
7/26/17

Diagram of Collection Sites

~ Width of stream= 8 ft
~ Depth of stream= 1.5 ft

Weather Conditions

- ☐ Cloudy
- ☐ Heavy Rain
- ☐ Light Rain
- ☒ Clear Skies
- ☐ Sunny
- ☐ Snow
- ☐ _____

Stream Conditions

- ☐ Rapid and Complete Mixing
- ☒ Mixing is not Rapid and Complete

Other Conditions

- ☐ Outfall Flooded Due to Heavy Rain
- ☐ _____



Alloway®
Your Resource for Defensible Data

Chain of Custody Record

This is a legal document that authorizes Alloway to perform testing on samples submitted under this agreement.

- ☐ 1101 North Cole Street, Lima, OH 45805
(P) 419-223-1362 (F) 419-227-3792
- ☐ 1776 Marion-Waldo Road, Marion OH 43302
(P) 740-389-5991 (F) 740-389-1481
- ☐ 1502 W. Fourth Street, Mansfield, OH 44906
(P) 419-525-1644 (F) 419-524-5575

Report To: Rick Boerger Name: Allen County Sanitary Engineer Company: 3226 North Cole St. Address: Lima, OH 45805		Invoice To (if Different): Name: Company: Address:		Notes/Comments:											
Phone #: 419-225-8048		Fax #:		Turnaround: (Rush Charges May Apply) Next Day ☐ 3 Working Days ☐ 5 Working Days ☒ Routine ☒											
E-mail: rboerger@allencountyohio.com		PO#:													
Project Name: Bioassay - AM BATH - DAY 3															
Sampler	Customer	Sample Date	Sample Time	Composite	Grab	Matrix Code	Number of Containers	Preservation Code #	Analysis Required	Alloway LIMS # For Lab Use Only					
1	Effluent	7/27/17	0930	X		WW	1	1	Toxicity						
2	Upstream	7/28/17	0830		X	SW	1	1	Toxicity						
3															
4															
5															
6															
7															
8															
Relinquished by:		Received by:		Date		Time		Method of Delivery		Matrix Codes:		Preservation Codes:		Sample Receiving (For Lab Use Only)	
1								UPS ☐		WW - wastewater GW - groundwater		1 - None 7 - Sodium Thiosulfate		13 - Zinc Acetate	
2								Fed Ex ☐		DW - drinking water SW - surface water		2 - HNO ₃ 8 - Ascorbic Acid Sulfite		14 - Sodium Sulfite	
3								Client ☐		W - water O - oil		3 - H ₂ SO ₄ 9 - Maleic Acid Citrate		15 - Potassium Dihydrogen Citrate	
4								Alloway Pick Up ☐		S - Solid SG - sludge		4 - HCl 10 - EDA		16 - Sodium Sulfite/Sodium Bisulfite	
5								Alloway Sampling ☒		L - leachate A - acid		5 - NaOH 11 - Ammonium Chloride		Ice Present? Y ☐ N ☐	
6								Other ☐		P - product O - other		6 - NaOH & Zinc Acetate 12 - (NH ₄) ₂ SO ₄ & NH ₄ OH		Proper Preservation? Y ☐ N ☐	
Received for Laboratory By: (circle one)		Mansfield		Lima		Marion								Container Temperature: °C	
(Signature)		7/28/17												8/1/17	

Transported to: Lima
By: _____
Received By: _____
Date: _____
Time: _____

Transported to: Lima
By: _____
Received By: _____
Date: _____
Time: _____

ACSE Biomonitoring Field Data Sheet

Client: ACSE Beth Ann Field Technicians: JH

Date: 7/28/17

Grab Parameters for Collection Site Determinations

	Parameter Time	Temperature (°C)	Conductivity (umhos/cm)	Dissolved Oxygen (mg/L)	pH (s.u.)
Effluent	0830 0830	20.7°C	782	7.31	7.85
Upstream	0830	20.6°C	414	6.11	7.75

Diagram of Collection Sites

~ Width of stream= 8 ft
~ Depth of stream= 2 ft

Weather Conditions

- ☒ Cloudy
- ☐ Heavy Rain
- ☐ Light Rain
- ☐ Clear Skies
- ☐ Sunny
- ☐ Snow
- ☐ _____

Stream Conditions

- ☐ Rapid and Complete Mixing
- ☒ Mixing is not Rapid and Complete

Other Conditions

- ☐ Outfall Flooded Due to Heavy Rain
- ☐ _____

Appendix B

Raw Data Sheets

CONDITION OF ORGANISMS* IN REPLICATE TEST VESSELS 7-DAY PIMEPHALES PROMELAS CHRONIC TOXICITY TEST

Industry/Toxicant:	Allen County, Am. - Bath WWTP	Person(s) Conducting Test:	BG, RFR, CS, KS
Address:	3226 North Cole St., Lima OH 45805	Beginning: Date	7/25/17
Effluent Serial No.:	001	Ending: Date	8/1/17
	NPDES Permit No.: 2PH00007*KD	Age of <i>Pimephales promelas</i> :	< 24 Hours #1,4
		Dilution Water Used:	Upstream

Day	Lab Control					Upstream Control					20% Effluent					40% Effluent				
	1	2	3	4	Total	1	2	3	4	Total	1	2	3	4	Total	1	2	3	4	Total
start	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G
1	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G
2	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G
3	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G
4	10G	10G	7G 3D	10G	37G 3D	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G	10G	10G	10G	9G 1D	39G 1D
5	9G 1D	9G 1D	7G 3D	10G	35G 5D	10G	9G 1D	10G	9G 1D	38G 3D	10G	10G	10G	10G	40G	10G	9G 1D	10G	9G 1D	39G 1D
6	9G 1D	9G 1D	7G 3D	10G	35G 5D	10G	9G 1D	10G	9G 1D	38G 2D	10G	10G	10G	10G	40G	10G	9G 1D	8G 2D	8G 2D	35G 5D
7	9G 1D	9G 1D	7G 3D	7G 3D	32G 8D	10G	9G 1D	10G	9G 1D	38G 2D	10G	10G	10G	10G	40G	10G	9G 1D	8G 2D	8G 2D	35G 5D

* Condition of Adult: G = Good Condition; D = Dead; A = Atypical Behavior or Appearance.
LA = Lab Accident (not used in analyses of data).

CONDITION OF ORGANISMS* IN REPLICATE TEST VESSELS 7-DAY PIMEPHALES PROMELAS CHRONIC TOXICITY TEST

Industry/Toxicant: Allen County, Am. - Bath WWTP
Address: 3226 North Cole St., Lima OH 45805
Effluent Serial No.: 001 NPDES Permit No.: 2PH00007*KD

Person(s) Conducting Test: BG, RFR, CS, KS
Beginning: Date 7/25/17 Time 1144
Ending: Date 8/1/17 Time 1243
Age of *Pimephales promelas*: < 24 Hours
Dilution Water Used: Upstream

Day	60% Effluent					80% Effluent					100% Effluent				
	1	2	3	4	Total	1	2	3	4	Total	1	2	3	4	Total
start	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G
1	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G
2	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G
3	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G
4	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G
5	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G
6	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G
7	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G	10G	10G	10G	10G	40G

* Condition of Adult: G = Good Condition; D = Dead; A = Atypical Behavior or Appearance.
LA = Lab Accident (not used in analyses of data).

WEIGHT OF FISH IN REPLICATE TEST VESSELS **7-DAY PIMEPHALES PROMELAS CHRONIC TOXICITY TEST**

Discharge: Allen County, Am. - Bath WWTP
 Address: 3226 North Cole St., Lima OH 45805
 Effluent Serial No.: 001
 Drying Temperature (C°): 60
 Drying Time (h): 24
 NPDES Permit No.: 2PH00007*
 Date of Test: 7/25/17 - 8/1/17
 Pimephales promelas Age at Start: < 24 Hours
 Date Weighed: 8-4-17
 Analyst: B6
 Balance Calibration Check: 1 gram weight = 0.99998 grams
 Date: 8-4-17
 Analyst: B6
 Dilution Water Used: Upstream

Test Solution	Replicate	A Number of Fish Weighed	B Dry Weight (g) of Boat	C Dry Weight (g) Boat + Fish	D No. of Original Fish	E = C-B Total Dry Weight of Fish (mg)	F = E/D Avg. Dry Weight of Fish (mg)
Fish at Start of Test		10	1.13028	1.13135	10	1.07	1.07
Lab Control	1	9	1.08959	1.09604	10	6.45	6.45
	2	9	1.13024	1.13760	10	7.36	7.36
	3	7	1.08271	1.08888	10	6.17	1.607
	4	7	1.10406	1.11031	10	6.25	6.25
Upstream Control	1	10	1.11076	1.11714	10	6.38	6.38
	2	9	1.13109	1.13425	10	8.16	8.16
	3	10	1.12696	1.13420	10	7.84	7.84
	4	9	1.09244	1.09862	10	6.18	6.18
20% Effluent	1	10	1.13205	1.14208	10	10.03	1.003
	2	10	1.09776	1.10430	10	6.16	6.16
	3	10	1.09175	1.09912	10	7.97	7.97
	4	10	1.12454	1.13233	10	7.79	7.79
40% Effluent	1	10	1.12999	1.13814	10	8.15	8.15
	2	9	1.12390	1.13078	10	6.88	6.88
	3	8	1.08343	1.09027	10	6.84	6.84
	4	8	1.08815	1.09463	10	6.18	6.18

Reviewed By: B6-8-7-17

WEIGHT OF FISH IN REPLICATE TEST VESSELS **7-DAY PIMEPHALES PROMELAS CHRONIC TOXICITY TEST**

Discharge: Allen County, Am. - Bath WWTP
 Address: 3226 North Cole St., Lima OH 45805
 Effluent Serial No.: 001
 Drying Temperature (C°): 60
 NPDES Permit No.: 2PH00007*
 KD
 Drying Time (h): 24
 Date of Test: 7/25/17 - 8/1/17
 Pimephales promelas Age at Start: < 24 Hours
 Dilution Water Used: Upstream

Test Solution	Replicate	A Number of Fish Weighed	B Dry Weight (g) of Boat	C Dry Weight (g) Boat + Fish	D No. of Original Fish	E = C-B Total Dry Weight of Fish (mg)	F = E/D Avg. Dry Weight of Fish (mg)
60% Effluent	1	10	1.12891	1.13734	10	8.443	843
	2	9	1.09501	1.10225	10	7.24	724
	3	8	1.13245	1.14024	10	7.84	784
	4	9	1.09100	1.09869	10	7.69	769
80% Effluent	1	9	1.10024	1.10746	10	7.22	722
	2	9	1.09090	1.09903	10	8.63	863
	3	9	1.10158	1.10770	10	6.12	612
	4	9	1.12543	1.13203	10	6.66	666
100% Effluent	1	9	1.12116	1.12900	10	7.84	784
	2	8	1.08402	1.09070	10	6.68	668
	3	7	1.12322	1.12778	10	4.56	456
	4	9	1.09984	1.10822	10	8.38	838
	1				10		
	2				10		
	3				10		
	4				10		

Larval Fish Growth and Survival Test-7 Day Growth

Start Date: 7/25/2017 Test ID: bath0717p Sample ID: L17-16920-01
 End Date: 8/1/2017 Lab ID: ALL-ALLOWAY Sample Type: DMR-Discharge Monitoring Report
 Sample Date: Protocol: EPAFW02-EPA/821/R-02-01 Test Species: PP-Pimephales promelas
 Comments:

Conc-%	1	2	3	4
Upstr Control	0.6380	0.8160	0.7840	0.6180
20	1.0030	0.6600	0.7970	0.7790
40	0.8150	0.6880	0.6840	0.6480
60	0.8430	0.7240	0.7890	0.7690
80	0.7220	0.8130	0.6120	0.6600
100	0.7840	0.6680	0.4560	0.8380

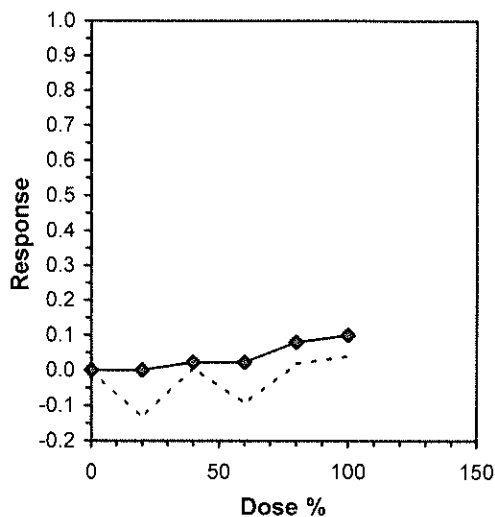
Conc-%	Mean	N-Mean	Transform: Untransformed					t-Stat	1-Tailed Critical	MSD	Isotonic	
			Mean	Min	Max	CV%	N				Mean	N-Mean
Upstr Control	0.7140	1.0000	0.7140	0.6180	0.8160	14.075	4				0.7619	1.0000
20	0.8098	1.1341	0.8098	0.6600	1.0030	17.592	4	-1.217	2.410	0.1897	0.7619	1.0000
40	0.7088	0.9926	0.7088	0.6480	0.8150	10.311	4	0.067	2.410	0.1897	0.7450	0.9779
60	0.7813	1.0942	0.7813	0.7240	0.8430	6.314	4	-0.854	2.410	0.1897	0.7450	0.9779
80	0.7018	0.9828	0.7018	0.6120	0.8130	12.364	4	0.156	2.410	0.1897	0.7018	0.9211
100	0.6865	0.9615	0.6865	0.4560	0.8380	24.653	4	0.349	2.410	0.1897	0.6865	0.9011

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution ($p > 0.05$)	0.97761	0.916	-0.1169	0.15484
Bartlett's Test indicates equal variances ($p = 0.43$)	4.88694	15.0863		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	100	>100		1	0.18968	0.26566	0.00984	0.01239	0.56761	5, 18
Treatments vs Upstr Control										

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL(Exp)	Skew
IC05	69.812			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



CERIODAPHNIA DUBIA CHRONIC TOXICITY TEST

Solution Tested: Lab Control

Person(s) Conducting Test: RFR, BG, CS, KS

Industry/Toxicant: Allen County, Am. - Bath WWTP

Beginning Date: 7/25/17

Time: 1220

Address: 3226 North Cole St., Lima OH 45805

Ending Date: 7-28/31/17

Time: 1148

Effluent Serial No.: 001

Age of Ceriodaphnia dubia: 17-19H #149A

NPDES Permit No.: 2PH00007*KD

Dilution Water Used: Upstream

NO. YOUNG PRODUCED / CONDITION OF ADULT*									TOTAL PER REP	
Rep.	DAY of TEST								No. Young	No. Broods
	0	1	2	3	4	5	6	7		
1	0 / G	0 / G	0 / G	6 / G	0 / G	11 / G	12 / G	1 /	34	3
2	1 /	1 /	1 /	0 /	5 /	13 / G	16 /	1 /	34	3
3	1 /	1 /	1 /	0 /	5 /	12 / G	4 / 14	1 /	31	3
4	1 /	1 /	1 /	3 /	0 /	10 / G	13 /	1 /	26	3
5	1 /	1 /	1 /	0 /	4 /	11 / G	17 /	1 /	32	3
6	1 /	1 /	1 /	5 /	0 /	12 / G	18 /	1 /	35	3
7	1 /	1 /	1 /	0 /	3 /	4 / G	16 /	1 /	28	3
8	1 /	1 /	1 /	4 /	0 /	13 / G	18 /	1 /	35	3
9	1 /	1 /	1 /	5 /	0 /	13 / G	20 /	1 /	38	3
10	0 / G	8 / G	8 / G	0 / G	5 / G	11 / G	16 / G	1 /	32	3
Total Adult Cond.	10G	10G	10G	10G	10G	10G	10G	-		
SUM									325	30
MEAN									32.5	3.0
S.D.									3.5	0.0

* Condition of Adult: G = Good Condition; D = Dead; A = Atypical Behavior or Appearance.

LA = Lab Accident (not used in analyses of data).

Reviewed by: RFR

CERIODAPHNIA DUBIA CHRONIC TOXICITY TEST

Solution Tested: <u>Upstream Control</u>	Person(s) Conducting Test: <u>RFR, BG, CS, KS</u>
Industry/Toxicant: <u>Allen County, Am. - Bath WWTP</u>	Beginning Date: <u>7/25/17</u> Time: <u>1220</u>
Address: <u>3226 North Cole St., Lima OH 45805</u>	Ending Date: <u>7.8/31/17</u> Time: <u>1145</u>
Effluent Serial No.: <u>001</u>	Age of <i>Ceriodaphnia dubia</i> : <u>12-14H</u>
NPDES Permit No.: <u>2PH00007*KD</u>	Dilution Water Used: <u>Upstream</u>

NO. YOUNG PRODUCED / CONDITION OF ADULT*									TOTAL PER REP		
Rep.	DAY of TEST								No. Young	No. Broods	
	0	1	2	3	4	5	6	7			
1	0 / 6	0 / 6	0 / 6	4 / 6	0 / 6	15 / 6	12 / 6	/	31	3	
2	/	/	/	4 / 6	6 / 6	14 / 6	8 / 6	/	28	3	
3	/	/	/	0 / 6	6 / 6	12 / 6	18 / 6	/	36	3	
4	/	/	/	0 / 6	0 / 6	10 / 6	4 / 6	/	14	2	
5	/	/	/	6 / 6	4 / 6	10 / 6	17 / 6	/	31	3	
6	/	/	/	0 / 6	6 / 6	12 / 6	12 / 6	/	30	3	
7	/	/	/	0 / 6	4 / 6	10 / 6	16 / 6	/	30	3	
8	/	/	/	0 / 6	6 / 6	4 / 6	19 / 6	/	34	3	
9	/	/	/	5 / 6	0 / 6	0 / 6	6 / 6	/	11	2	
10	0 / 6	8 / 6	8 / 6	0 / 6	6 / 6	6 / 6	17 / 6	/	30	3	
Total Adult Cond.	10G	10G	10G	10G	10G	10G	10G	✓	SUM	275	28
									MEAN	27.5	2.8
									S.D.	8.2	0.4

* Condition of Adult: G = Good Condition; D = Dead; A = Atypical Behavior or Appearance.
 LA = Lab Accident (not used in analyses of data).

CERIODAPHNIA DUBIA CHRONIC TOXICITY TEST

Solution Tested: <u>20% Effluent</u>	Person(s) Conducting Test: <u>RFR, BG, CS, KS</u>
Industry/Toxicant: <u>Allen County, Am. - Bath WWTP</u>	Beginning Date: <u>7/25/17</u> Time: <u>12:20</u>
Address: <u>3226 North Cole St., Lima OH 45805</u>	Ending Date: <u>7/31/17</u> Time: <u>11:45</u>
Effluent Serial No.: <u>001</u>	Age of <i>Ceriodaphnia dubia</i> : <u>17-19 d</u>
NPDES Permit No.: <u>2PH00007*KD</u>	Dilution Water Used: <u>Upstream</u>

NO. YOUNG PRODUCED / CONDITION OF ADULT*									TOTAL PER REP		
Rep.	DAY of TEST								No. Young	No. Broods	
	0	1	2	3	4	5	6	7			
1	0 / G	0 / G	0 / G	5 / G	0 / G	7 / G	14 / G	/	26	3	
2	/	/	/	0 /	7 /	10 / G	13 /	/	30	3	
3	/	/	/	0 /	6 /	10 / G	18 /	/	34	3	
4	/	/	/	4 /	0 /	9 / G	16 /	/	29	3	
5	/	/	/	(3) /	(2) /	9 / G	10 /	/	24	3	
6	/	/	/	(5) /	(1) /	2 / G	3 /	/	11	3	
7	/	/	/	5 /	0 /	11 / G	4 /	/	20	3	
8	/	/	/	5 /	0 /	8 / G	18 /	/	31	3	
9	/	/	/	6 /	0 /	10 / G	16 /	/	32	3	
10	0 / G	8 / G	0 / G	0 / G	6 / G	12 / G	18 / G	/	36	3	
Total Adult Cond.	10G	10G	10G	10G	10G	10G	10G	.	SUM	273	30
									MEAN	27.3	3.0
									S.D.	7.4	0.0

* Condition of Adult: G = Good Condition; D = Dead; A = Atypical Behavior or Appearance.
 LA = Lab Accident (not used in analyses of data).

CERIODAPHNIA DUBIA CHRONIC TOXICITY TEST

Solution Tested: <u>40% Effluent</u>	Person(s) Conducting Test: <u>RFR, BG, CS, KS</u>
Industry/Toxicant: <u>Allen County, Am. - Bath WWTP</u>	Beginning Date: <u>7/25/17</u> Time: <u>1220</u>
Address: <u>3226 North Cole St., Lima OH 45805</u>	Ending Date: <u>78/31/17</u> Time: <u>1145</u>
Effluent Serial No.: <u>001</u>	Age of <i>Ceriodaphnia dubia</i> : <u>17-19 d</u>
NPDES Permit No.: <u>2PH00007*KD</u>	Dilution Water Used: <u>Upstream</u>

NO. YOUNG PRODUCED / CONDITION OF ADULT*									TOTAL PER REP	
Rep.	DAY of TEST								No. Young	No. Broods
	0	1	2	3	4	5	6	7		
1	0 / G	0 / G	0 / G	6 / G	0 / G	11 / G	17 / G	/	34	3
2	/	/	/	0 /	6 /	12 / G	15 /	/	33	3
3	/	/	/	0 /	6 /	10 / G	17 /	/	33	3
4	/	/	/	1 /	4 /	8 / G	16 /	/	29	3
5	/	/	/	0 /	5 /	12 / G	16 /	/	33	3
6	/	/	/	6 /	0 /	9 / G	15 /	/	30	3
7	/	/	/	6 /	0 /	12 / G	15 /	/	33	3
8	/	/	/	6 /	0 /	8 / G	18 /	/	32	3
9	/	/	/	0 /	0 /	7 / G	16 /	/	25	2
10	0 / G	0 / G	0 / G	0 / G	6 / G	9 / G	0 / G	/	15	2
Total Adult Cond.	10G	10G	10G	10G	10G	10G	10G	-		
SUM									297	28
MEAN									29.7	2.8
S.D.									5.8	0.4

* Condition of Adult: G = Good Condition; D = Dead; A = Atypical Behavior or Appearance.
 LA = Lab Accident (not used in analyses of data).

CERIODAPHNIA DUBIA CHRONIC TOXICITY TEST

Solution Tested: 60% Effluent

Person(s) Conducting Test: RFR, BG, CS, KS

Industry/Toxicant: Allen County, Am. - Bath WWTP

Beginning Date: 7/25/17

Time: 1220

Address: 3226 North Cole St., Lima OH 45805

Ending Date: 7/31/17

Time: 1145

Effluent Serial No.: 001

Age of *Ceriodaphnia dubia*: 17-19 d

NPDES Permit No.: 2PH00007*KD

Dilution Water Used: Upstream

NO. YOUNG PRODUCED / CONDITION OF ADULT*									TOTAL PER REP	
Rep.	DAY of TEST								No. Young	No. Broods
	0	1	2	3	4	5	6	7		
1	0/G	0/G	0/G	6/G	0/G	6/G	21/G	/	33	3
2	/	/	/	0/	5/	9/	16/	/	30	3
3	/	/	/	0/	6/	10/G	17/	/	33	3
4	/	/	/	0/	5/	6/G	12/	/	23	3
5	/	/	/	0/	5/	5/G	16/	/	26	3
6	/	/	/	0/	8/	11/G	18/	/	37	3
7	/	/	/	0/	4/	8/G	17/	/	29	3
8	/	/	/	0/	6/	7/G	15/	/	28	3
9	/	/	/	5/	0/	11/G	15/	/	31	3
10	0/G	8/G	8/G	0/G	6/G	10/G	17/G	/	33	3
Total Adult Cond.	10G	10G	10G	10G	10G	10G	10G	-		
SUM									303	30
MEAN									30.3	3.0
S.D.									4.0	0.0

* Condition of Adult: G = Good Condition; D = Dead; A = Atypical Behavior or Appearance.
LA = Lab Accident (not used in analyses of data).

CERIODAPHNIA DUBIA CHRONIC TOXICITY TEST

Solution Tested: <u>80% Effluent</u>	Person(s) Conducting Test: <u>RFR, BG, CS, KS</u>
Industry/Toxicant: <u>Allen County, Am. - Bath WWTP</u>	Beginning Date: <u>7/25/17</u> Time: <u>1220</u>
Address: <u>3226 North Cole St., Lima OH 45805</u>	Ending Date: <u>7/31/17</u> Time: <u>1145</u>
Effluent Serial No.: <u>001</u>	Age of <i>Ceriodaphnia dubia</i> : <u>17-19 d</u>
NPDES Permit No.: <u>2PH00007*KD</u>	Dilution Water Used: <u>Upstream</u>

NO. YOUNG PRODUCED / CONDITION OF ADULT*									TOTAL PER REP	
Rep.	DAY of TEST								No. Young	No. Broods
	0	1	2	3	4	5	6	7		
1	0/G	0/G	0/G	5/G	0/G	7/G	17/G	/	29	3
2	/	/	/	0	5	9/G	17	/	31	3
3	/	/	/	0	5	9/G	19	/	33	3
4	/	/	/	4	1	5/G	10	/	20	3
5	/	/	/	0	6	8/G	17	/	31	3
6	/	/	/	4	1	9/G	12	/	27	3
7	/	/	/	4	0	10/G	15	/	29	3
8	/	/	/	0	4	9/G	15	/	28	3
9	/	/	/	5	0	13/G	14	/	32	3
10	0/G	8/G	8/G	0/G	6/G	12/G	16/G	/	34	3
Total Adult Cond.	10G	10G	10G	10G	10G	10G	105	/	SUM 294	30
									MEAN 29.4	3.0
									S.D. 4.0	0.0

* Condition of Adult: G = Good Condition; D = Dead; A = Atypical Behavior or Appearance.
 LA = Lab Accident (not used in analyses of data).

CERIODAPHNIA DUBIA CHRONIC TOXICITY TEST

Solution Tested: 100% Effluent

Person(s) Conducting Test: RFR, BG, CS, KS

Industry/Toxicant: Allen County, Am. - Bath WWTP

Beginning Date: 7/25/17

Time: 1210

Address: 3226 North Cole St., Lima OH 45805

Ending Date: 7/31/17

Time: 1145

Effluent Serial No.: 001

Age of *Ceriodaphnia dubia*: 17-19 d

NPDES Permit No.: 2PH00007*KD

Dilution Water Used: Upstream

NO. YOUNG PRODUCED / CONDITION OF ADULT*									TOTAL PER REP	
Rep.	DAY of TEST								No. Young	No. Broods
	0	1	2	3	4	5	6	7		
1	0/G	0/G	0/G	4/G	0/G	8/G	18/G	/	30	3
2	/	/	/	0/G	4/G	7/G	14/G	/	25	3
3	/	/	/	0/G	6/G	7/G	16/G	/	29	3
4	/	/	/	0/G	6/G	8/G	16/G	/	30	3
5	/	/	/	0/G	6/G	7/G	18/G	/	31	3
6	/	/	/	6/G	0/G	9/G	16/G	/	31	3
7	/	/	/	4/G	0/G	8/G	16/G	/	28	3
8	/	/	/	5/G	0/G	9/G	18/G	/	32	3
9	/	/	/	0/G	6/G	6/G	15/G	/	27	3
10	0/G	0/G	0/G	0/G	6/G	10/G	17/G	/	33	3
Total Adult Cond.	10G	10G	10G	10G	10G	10G	10G	-	SUM 296	30
									MEAN 29.6	3.0
									S.D. 2.4	0.0

* Condition of Adult: G = Good Condition; D = Dead; A = Atypical Behavior or Appearance.
LA = Lab Accident (not used in analyses of data).

Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date: 7/25/2017 Test ID: bath0717c Sample ID: L17-16920-01
End Date: 7/31/2017 Lab ID: ALL-ALLOWAY Sample Type: DMR-Discharge Monitoring Report
Sample Date: Protocol: EPAFW02-EPA/821/R-02-01 Test Species: CD-Ceriodaphnia dubia
Comments:

Conc-%	1	2	3	4	5	6	7	8	9	10
Upstr Control	31.000	28.000	36.000	14.000	31.000	30.000	30.000	34.000	11.000	30.000
20	26.000	30.000	34.000	29.000	24.000	11.000	20.000	31.000	32.000	36.000
40	34.000	33.000	33.000	29.000	33.000	30.000	33.000	32.000	25.000	15.000
60	33.000	30.000	33.000	23.000	26.000	37.000	29.000	28.000	31.000	33.000
80	29.000	31.000	33.000	20.000	31.000	27.000	29.000	28.000	32.000	34.000
100	30.000	25.000	29.000	30.000	31.000	31.000	28.000	32.000	27.000	33.000

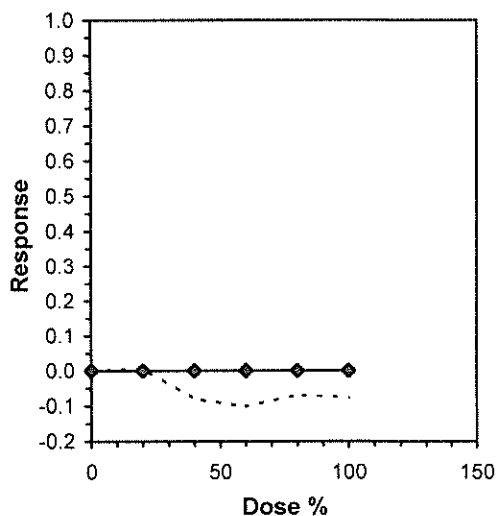
Conc-%	Mean	N-Mean	Transform: Untransformed					Rank Sum	1-Tailed Critical	Isotonic	
			Mean	Min	Max	CV%	N			Mean	N-Mean
Upstr Control	27.500	1.0000	27.500	11.000	36.000	29.998	10			28.967	1.0000
20	27.300	0.9927	27.300	11.000	36.000	27.250	10	102.00	75.00	28.967	1.0000
40	29.700	1.0800	29.700	15.000	34.000	19.636	10	115.00	75.00	28.967	1.0000
60	30.300	1.1018	30.300	23.000	37.000	13.297	10	110.00	75.00	28.967	1.0000
80	29.400	1.0691	29.400	20.000	34.000	13.530	10	106.00	75.00	28.967	1.0000
100	29.600	1.0764	29.600	25.000	33.000	8.152	10	103.50	75.00	28.967	1.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Kolmogorov D Test indicates non-normal distribution (p <= 0.05)	1.18762	0.895	-1.4511	2.32598
Bartlett's Test indicates unequal variances (p = 7.60E-03)	15.7496	15.0863		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	100	>100		1
Treatments vs Upstr Control				

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



**CERIODAPHNIA BROOD STOCK INDIVIDUAL CULTURE INFORMATION FORM
FOR C. DUBIA BROODS USED IN CHRONIC TESTS**

Discharger/Toxicant: Allen County, Am. - Bath WWTP
 Address: 3226 North Cole St., Lima OH 45805
 Type of Test: Chronic Date of Test: 7/25/17 - 8/1/17
 Effluent Serial No.: 001 Permit No.: 2PH00007*KD

Investigator: AFH Culture No.: 149
 Culture initiation date: 7/19/17 Culture ending date: 7/26/17
 Origin of parental organisms: 144 Alluvium
 Age at start of culture: > 24H
 Culture water renewal frequency: minimum 3 times per week Culture water: 2H:819145F
 Culture temperature: 25°C Fed Daily: 0.1 mL YCT & 0.1 mL *Selenastrum capricornutum*

Number of brood organisms at start of culture: 40
 Percent survival of parental organisms after 7 days: 100
 Percent of non-reproducing adults after 7 days: 0
 Average young production after 7 days of brood adults for test: _____

	<u>BROOD ADULT NO.</u>	<u>BROOD SIZE</u>	<u>HATCHING TIME WINDOW</u>	<u>TOTAL; YOUNG PROD. (7 DAYS)</u>	<u>USED IN REP. NO.</u>
1)	<u>A1</u>	<u>14</u>	<u>1710 to 1850 7/24/17</u>	<u>-</u>	<u>1</u>
2)	<u>A5</u>	<u>16</u>		<u>-</u>	<u>2</u>
3)	<u>A9</u>	<u>15</u>		<u>-</u>	<u>3</u>
4)	<u>A10</u>	<u>17</u>		<u>-</u>	<u>4</u>
5)	<u>B1</u>	<u>18</u>		<u>36</u>	<u>5</u>
6)	<u>B2</u>	<u>13</u>		<u>27</u>	<u>6</u>
7)	<u>B10</u>	<u>18</u>		<u>37</u>	<u>7</u>
8)	<u>C10</u>	<u>18</u>		<u>-</u>	<u>8</u>
9)	<u>D1</u>	<u>17</u>		<u>-</u>	<u>9</u>
10)	<u>D4</u>	<u>19</u>		<u>-</u>	<u>10</u>

COMMENTS: _____

Appendix C

Parameter Data

PHYSICAL-CHEMICAL DATA OF SAMPLES WHEN RECEIVED BY LAB For Chronic Toxicity Testing

Industry/Toxicant: Allen Co (American - Brth WWTP) Type of Test: Chronic
Address: Lima, OH Date of Test: 7/25 to 8/1/17
Effluent Serial No.: 001 Permit No.: 2PA00007*kd

1st Sample Collection

Date Samples Collected: 7/24/17 Date Samples Read: 7/24/17 Analyst: KES

	<u>100% Effluent</u>	<u>Upstream</u>
Temperature (°C)	22.4	23.0
Dissolved Oxygen (mg/L)	7.9	7.7
pH (s.u.)	7.48	7.50
Conductivity (µmhos)	616	435
Chlorine, total (mg/L)	2.02	2.02
Visual Description	light stain	stain

2nd Sample Collection

Date Samples Collected: 7/26/17 Date Samples Read: 7/26/17 Analyst: BG

	<u>100% Effluent</u>	<u>Upstream</u>
Temperature (°C)	23.0	22.7
Dissolved Oxygen (mg/L)	8.4	8.6
pH (s.u.)	7.87	7.94
Conductivity (µmhos)	733	564
Chlorine, total (mg/L)	20.02	20.02
Visual Description	stain	yellow, tan

3rd Sample Collection

Date Samples Collected: 7/28/17 Date Samples Read: 7/28/17 Analyst: BG

	<u>100% Effluent</u>	<u>Upstream</u>
Temperature (°C)	20.4	19.5
Dissolved Oxygen (mg/L)	8.6	7.8
pH (s.u.)	7.66	7.73
Conductivity (µmhos)	779	403
Chlorine, total (mg/L)	20.02	20.02
Visual Description	light stain	tan, yellow

PHYSICAL-CHEMICAL DATA PIMEPHALES PROMELAS 7-DAY CHRONIC TOXICITY TEST

Solution Tested: Lab Control
 Industry/Toxicant: Allen County, Am. - Bath WWTP
 Address: 3226 North Cole St., Lima OH 45805
 Effluent Serial No.: 001
 NPDES Permit No.: 2PH00007*KD

Person(s) conducting Test: BG, RFR, CS, KS
 Beginning Date: 7/25/17 Time: 11:44
 Ending Date: 8/1/17 Time: 12:43
 Test Organism: Pimephales promelas Age: < 24 Hours
 Dilution Water Used: Upstream

Day	0	1		2		3		4		5		6		7
Solution	New	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	Old
Temperature (°C)	25.7	25.5	24.9 to 25.3	25.3	24.7 to 24.9	25.2	24.9 to 25.1	25.3	24.6 to 24.8	25.1	24.8 to 24.9	25.6	25.2 to 25.7	25.0 to 25.1
Dissolved Oxygen (mg/L)	8.3	8.5	5.8	8.5	5.4	8.3	5.5	8.2	6.4	9.1	6.5	8.5	5.4	5.9
pH (s.u.)	7.67	7.46	7.25	7.60	7.66	6.46	7.46	7.60	7.32	7.52	7.21	7.58	7.31	7.17
Conductivity (µmho/cm)	352	352	370	335	370	337	353	334	358	339	358	338	355	348
Hardness (mg/L CaCO ₃)	120	-	-	120	-	-	-	120	-	-	-	-	-	-
Alkalinity (mg/L CaCO ₃)	68	-	-	86	-	-	-	86	-	-	-	-	-	-

PHYSICAL-CHEMICAL DATA PIMEPHALES PROMELAS 7-DAY CHRONIC TOXICITY TEST

Solution Tested: Upstream Control
 Industry/Toxicant: Allen County, Am. - Bath WWTP
 Address: 3226 North Cole St., Lima OH 45805
 Effluent Serial No.: 001
 NPDES Permit No.: 2PH00007*KD
 Person(s) conducting Test: BG, RFR, CS, KS
 Beginning Date: 7/25/17 Time: 1144
 Ending Date: 8/1/17 Time: 1243
 Test Organism: Pimephales promelas Age: < 24 Hours
 Dilution Water Used: Upstream

Day	0		1		2		3		4		5		6		7
Solution	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	Old
Temperature (°C)	25.4	25.4	24.4 40 25.3	24.7 40 24.9	25.3	24.9 40 25.1	25.3	24.9 40 25.1	25.4	24.6 40 24.4	25.2	24.8 40 24.9	25.6	25.7	25.0 40 25.1
Dissolved Oxygen (mg/L)	8.2	8.7	5.6	4.6	8.7	5.5	8.7	5.5	8.2	6.3	7.1	5.7	8.6	5.7	5.7
pH (s.u.)	7.78	7.77	7.62	7.60	7.94	7.54	7.82	7.54	7.70	5.4 7.71	7.69	7.45	7.76	7.33	7.34
Conductivity (µmho/cm)	435	436	448	457	564	574	566	574	403	581	404	430	403	427	418
Hardness (mg/L CaCO ₃)	239	-	-	-	257	-	-	-	154	-	-	-	-	-	-
Alkalinity (mg/L CaCO ₃)	154	-	-	-	205	-	-	-	137	-	-	-	-	-	-

PIMEPHALES PROMELAS 7-DAY CHRONIC TOXICITY TEST

Dilution Water Used: Upstream

[illegible]

PIMEPHALES PROMELAS 7-DAY CHRONIC TOXICITY TEST

Dilution Water Used: Upstream

[illegible]

PHYSICAL-CHEMICAL DATA

Person(s) conducting Test: BG, RFR, CS, KS

Time: 1144

Ending Date: 8/1/17 Time: 1243

NPDES Permit No.: 2PH00007*³KD

Dilution Water Used: Upstream

[illegible]

PHYSICAL-CHEMICAL DATA

Person(s) conducting Test: BG, RFR, CS, KS

Industry/Toxicant: Allen County, Am. - Bath WWTP

Address: 3226 North Cole St., Lima OH 45805

Effluent Serial No.: 001
NPDES Permit No.: 2PH00007*KD

Effluent Serial No.: 001
NPDES Permit No.: 2PH00007*KD

[illegible][illegible]

Person(s) conducting Test: BG, RFR, CS, KS

Beginning Date: 7/25/17 Time: 1144

Ending Date: 8/1/17 Time: 12:43

Test Organism: *Pimephales promelas* (fathead minnow) **Age:** < 24 Hours

Dilution Water Used: Upstream

[illegible]

PHYSICAL-CHEMICAL DATA PIMEPHALES PROMELAS 7-DAY CHRONIC TOXICITY TEST

Solution Tested: 100% Effluent
 Industry/Toxicant: Allen County, Am. - Bath WWTP
 Address: 3226 North Cole St., Lima OH 45805
 Effluent Serial No.: 001
 NPDES Permit No.: 2PH00007*KD
 Person(s) conducting Test: BG, RFR, CS, KS
 Beginning Date: 7/25/17 Time: 1144
 Ending Date: 8/1/17 Time: 1213
 Test Organism: Pimephales promelas
 Age: < 24 hours
 Dilution Water Used: Upstream

Day	0		1		2		3		4		5		6		7
Solution	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	Old
Temperature (°C)	25.3	25.4 24.9 25.3	25.3	24.7 24.9 25.1	25.3	24.9 25.1	25.3	24.9 25.1	25.3	24.6 24.8 24.9	25.3	24.9 25.1	25.3	25.2 25.7	25.0 25.1
Dissolved Oxygen (mg/L)	8.3	8.6	5.5	5.4	8.6	4.8	8.7	4.8	8.3	5.6	9.0	6.4	8.5	5.8	5.9
pH (s.u.)	7.73	7.88	7.74	7.76	7.98	7.75	8.02	7.75	7.76	7.78	7.79	7.70	7.93	7.73	7.69
Conductivity (µmho/cm)	616	614	636	645	735	761	736	761	773	776	773	800	772	803	802
Hardness (mg/L CaCO ₃)	308	-	-	-	325	-	-	-	342	-	-	-	-	-	-
Alkalinity (mg/L CaCO ₃)	188	-	-	-	222	-	-	-	188	-	-	-	-	-	-

PHYSICAL-CHEMICAL DATA CERIODAPHNIA DUBIA CHRONIC TOXICITY TEST

Solution Tested: Lab Control

Industry/Toxicant: Allen County, Am. - Bath WWTP

Address: 3226 North Cole St., Lima OH 45805

Effluent Serial No.: 001

NPDES Permit No.: 2PH00007*KD

Person(s) conducting Test: RFR, BG, CS, KS

Beginning Date: 7/25/17 Time: 1220

Ending Date: 7/27/17 Time: 1145

Test Organism: Ceriodaphnia dubia Age: 17-19d

Dilution Water Used: Upstream #149 A

Day	0		1		2		3		4		5		6		7
	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	
Temperature (°C)	25.4	25.2 25.2 25.6	25.2	25.2 25.4	25.4	25.0 25.4	25.2	25.1 25.3	25.3	24.8 25.3	25.1	25.0 25.4	-	25.0 25.1	-
Dissolved Oxygen (mg/L)	8.3	8.7	8.7	8.2	8.3	7.7	8.5	8.3	8.5	8.0	9.0	8.9		8.1	
pH (s.u.)	7.72	7.54	7.74		7.60	7.15	7.39	7.89	7.69	7.68	7.76	7.56		7.14	
Conductivity (umho/cm)	360	360	365		357	366	359	366	336	366	337	345		346	
Hardness (mg/L CaCO ₃)	137				154				120						
Alkalinity (mg/L CaCO ₃)	103				120				86						

PHYSICAL-CHEMICAL DATA CERIODAPHNIA DUBIA CHRONIC TOXICITY TEST

Solution Tested: Upstream Control

Industry/Toxicant: Allen County, Am. - Bath WWTP

Address: 3226 North Cole St., Lima OH 45805

Effluent Serial No.: 001

NPDES Permit No.: 2PH00007*KD

Person(s) conducting Test: RFR, BG, CS, KS

Beginning Date: 7/25/17

Ending Date: 8/ /17

Test Organism: Ceriodaphnia dubia

Dilution Water Used: Upstream

Time: 1220

Time: 1145

Age: 17-19h

Day	0		1		2		3		4		5		6		7
Solution	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	Old
Temperature (°C)	25.4	25.4 25.2 25.6	25.4	25.2 25.6	25.3	25.4 25.0 25.4	25.3	25.1 25.8	25.4	24.8 25.3	25.2	25.0 25.4	-	25.0 25.4	-
Dissolved Oxygen (mg/L)	8.2	8.7	8.1	7.9	8.7	8.4	8.2	8.0	8.2	8.0	4.1	8.8		8.3	
pH (s.u.)	7.78	7.77	7.82	7.55	7.82	7.97	7.70	7.98	7.69	7.66				7.44	
Conductivity (µmho/cm)	435	436	446	564	480	571	403	573	404	420				416	
Hardness (mg/L CaCO ₃)	239	-	-	257	-	-	154	-	-	-	-	-	-	-	-
Alkalinity (mg/L CaCO ₃)	154	-	-	205	-	-	137	-	-	-	-	-	-	-	-

PHYSICAL-CHEMICAL DATA

Solution Tested: 20% Effluent

Industry/Toxicant: Allen County, Am. - Bath WWTP

Address: 3226 North Cole St., Lima OH 45805

Effluent Serial No.: 001

NPDES Permit No.: 2PH00007*KD

Person(s) conducting Test: RFR, BG, CS, KS

Beginning Date:

Time: 1220

Ending Date:

Time: 1:45

Test Organism: Ceriodaphnia dubia

Age: 17-19 H

Dilution Water Used: _____ Upstream

[illegible]

PHYSICAL-CHEMICAL DATA

Solution Tested: 40% Effluent

Industry/Toxicant: Allen County, Am. - Bath WWTP

Address: 3226 North Cole St., Lima OH 45805

Effluent Serial No.: 001

NPDES Permit No.: 2PH00007*KD

Person(s) conducting Test: RFR, BG, CS, KS

Beginning Date: 7/25/17 Time: 1220

Ending Date: 7/8/3/17 Time: 1145

Test Organism: Ceriodaphnia dubia

Dilution Water Used: Upstream

[illegible]

PHYSICAL-CHEMICAL DATA

Solution Tested: 60% Effluent

Industry/Toxicant: Allen County, Am. - Bath WWTP

Address: 3226 North Cole St., Lima OH 45805

Effluent Serial No.: 001

NPDES Permit No.: 2PH00007*KD

Person(s) conducting Test: RFR, BG, CS, KS

Beginning Date:

Ending Date:

Test Organism: Ceriodaphnia dubia

Dilution Water Used: Upstream

§

Time: 12:20

Time: 1148

Age: 17-19

[illegible]

PHYSICAL-CHEMICAL DATA

Solution Tested: 80% Effluent

Industry/Toxicant: Allen County, Am. - Bath WWTP

Address: 3226 North Cole St., Lima OH 45805

Effluent Serial No.: 001

NPDES Permit No.: 2PH00007*KD

Person(s) conducting Test: RFR, BG, CS, KS

Beginning Date:

Ending Date:

Test Organism: Ceriodaphnia dubia

Dilution Water Used: Upstream

Time: 1220

Time: 11:58

Age: 17-1914

Day	0		1		2		3		4		5		6		7
	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	
Solution															
Temperature (°C)	25.3	25.4 25.2 25.6	25.3	25.0 25.4	25.3	25.1 25.8	25.1	24.8 25.3	25.1	25.1	25.2	25.0 25.4	-	25.0 25.4	-
Dissolved Oxygen (mg/L)	8.4	8.5	8.6	8.1	8.6	8.3	8.7	8.2	9.1	9.0				8.3	
pH (s.u.)	7.76	7.91	7.96	7.96	8.00	8.04	7.77	8.05	7.78	7.88				7.94	
Conductivity (µmho/cm)	580	580	592	594	703	707	702	720	703	722				723	
Hardness (mg/L CaCO ₃)	-	-	-	-	-	-	-	-	-	-				-	
Alkalinity (mg/L CaCO ₃)	-	-	-	-	-	-	-	-	-	-				-	

PHYSICAL-CHEMICAL DATA CERIODAPHNIA DUBIA CHRONIC TOXICITY TEST

Solution Tested: 100% Effluent
 Industry/Toxicant: Allen County, Am. - Bath WWTP
 Address: 3226 North Cole St., Lima OH 45805
 Effluent Serial No.: 001
 NPDES Permit No.: 2PH00007*KD

Person(s) conducting Test: RFR, BG, CS, KS
 Beginning Date: 7/25/17 Time: 1220
 Ending Date: 7/31/17 Time: 1145
 Test Organism: Ceriodaphnia dubia Age: 12-19H
 Dilution Water Used: Upstream

Day	0	1		2		3		4		5		6		7
		New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	
Temperature (°C)	25.3	25.4	25.2 to 25.4	25.3	25.0 to 25.4	25.3	25.1 to 25.8	25.3	24.8 to 25.3	25.3	25.0 to 25.4	-	25.0 to 25.4	-
Dissolved Oxygen (mg/L)	8.3	8.6	8.3	8.6	8.1	8.7	8.5	8.3	8.2	9.0	9.0	-	8.1	-
pH (s.u.)	7.73	7.88	7.97	7.98	7.99	8.02	8.08	7.76	8.06	7.79	7.91	-	7.99	-
Conductivity (µmho/cm)	616	614	654	731	639	736	760	773	758	773	860	-	798	-
Hardness (mg/L CaCO ₃)	308	-	-	325	-	-	-	342	-	-	-	-	-	-
Alkalinity (mg/L CaCO ₃)	188	-	-	222	-	-	-	188	-	-	-	-	-	-

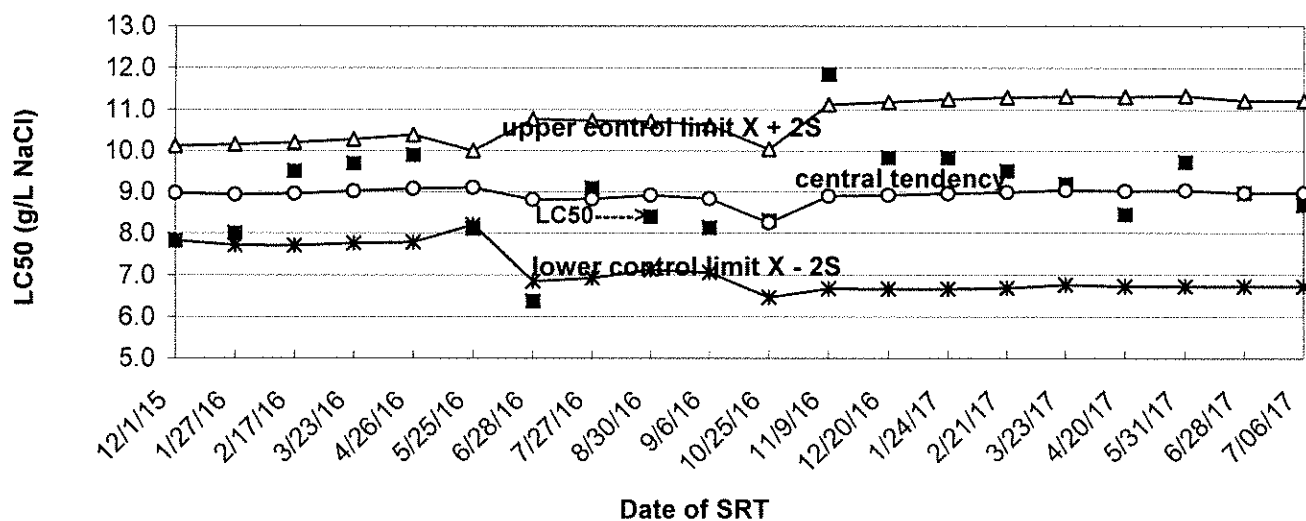
Appendix D

SRT Data

48-H LC50 for *Pimephales promelas* Acute NaCl SRT

Date of	Cumulative								LC50
Test	LC50	LC50 Mean	SD	X+2SD	X-2SD	CV*	X+3SD	X-3SD	Method ¹
12/1/15	7.8	9.0	0.6	10.1	7.8	0.06	10.7	7.3	SK
1/27/16	8.0	8.9	0.6	10.1	7.7	0.07	10.8	7.1	G
2/17/16	9.5	9.0	0.6	10.2	7.7	0.07	10.8	7.1	SK
3/23/16	9.7	9.0	0.6	10.3	7.8	0.07	10.9	7.1	SK
4/26/16	9.9	9.1	0.7	10.4	7.8	0.07	11.0	7.1	G
5/25/16	8.1	9.1	0.4	10.0	8.2	0.05	10.4	7.8	SK
6/28/16	6.4	8.8	1.0	10.8	6.8	0.11	11.8	5.9	SK
7/27/16	9.1	8.8	1.0	10.7	6.9	0.11	11.7	6.0	SK
8/30/16	8.4	8.9	0.9	10.7	7.1	0.10	11.6	6.2	Probit
9/6/16	8.1	8.8	0.9	10.6	7.0	0.10	11.5	6.2	SK
10/25/16	8.3	8.2	0.9	10.0	6.5	0.11	10.9	5.6	SK
11/9/16	11.8	8.9	1.1	11.1	6.7	0.13	12.2	5.6	SK
12/20/16	9.8	8.9	1.1	11.2	6.7	0.13	12.3	5.5	SK
1/24/17	9.8	9.0	1.1	11.2	6.7	0.13	12.4	5.5	SK
2/21/17	9.5	9.0	1.2	11.3	6.7	0.13	12.4	5.5	SK
3/23/17	9.2	9.0	1.1	11.3	6.8	0.13	12.5	5.6	SK
4/20/17	8.5	9.0	1.1	11.3	6.7	0.13	12.5	5.6	TSK
5/31/17	9.7	9.0	1.2	11.3	6.7	0.13	12.5	5.6	TSK
6/28/17	9.0	9.0	1.1	11.2	6.7	0.13	12.3	5.6	Probit
7/06/17	8.7	9.0	1.1	11.2	6.7	0.13	12.3	5.6	TSK

Control Chart for *Pimephales promelas* Acute SRT



*- compare calculated CV to 75th percentile of CVs reported nationally in Table 3-3 in EPA/833/R-00/003 .

75th percentile of CVs for LC50 = 0.19

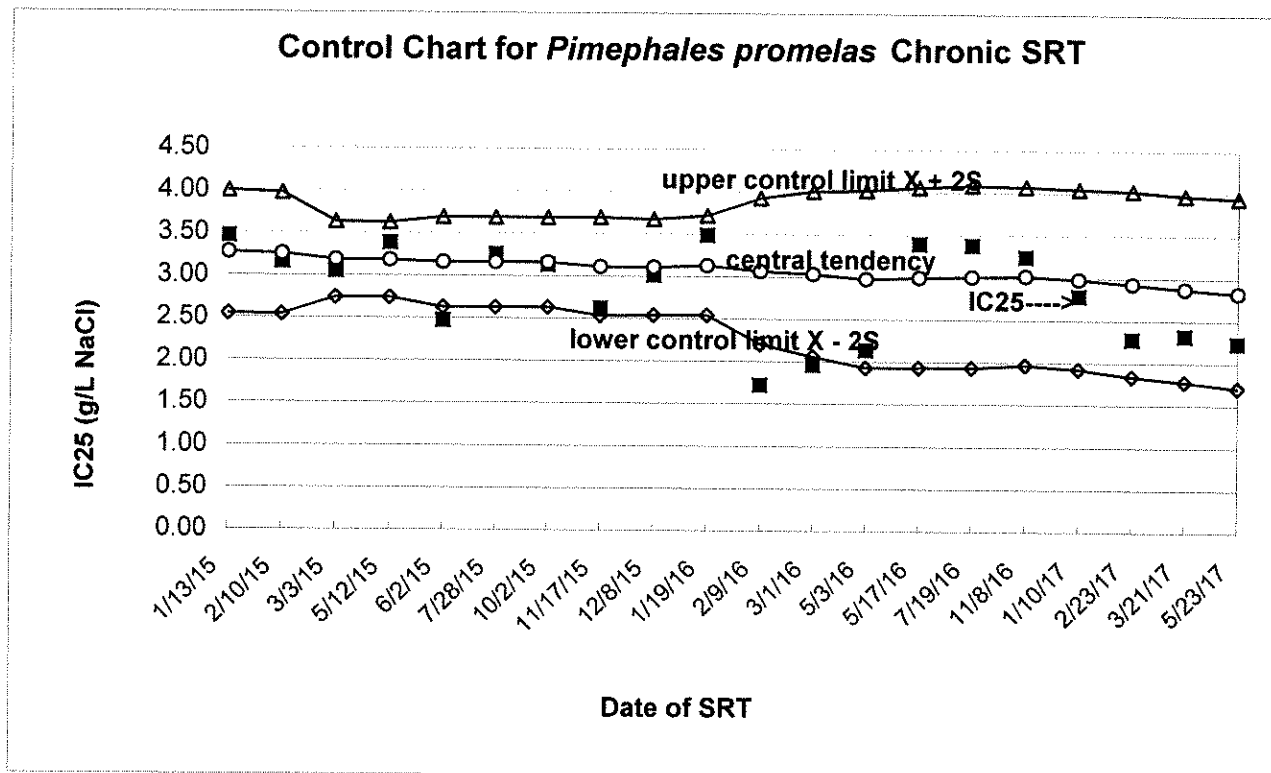
Calculated CV should not exceed 75th percentile of CVs.

$\bar{X} \pm 3SD$ = Well outside expected range.

1 - P = Probit method, G = Graphical method, SK = Spearman-Kärber method, TSK = Trimmed Spearman-Kärber method.

IC25 for *Pimephales promelas* Chronic NaCl SRT

Date of	Cumulative							
Test	IC25	IC25 Mean	SD	X+2SD	X-2SD	CV*	X+3SD	X-3SD
1/13/15	3.47	3.27	0.36	4.00	2.55	0.11	4.36	2.19
2/10/15	3.16	3.26	0.36	3.98	2.54	0.11	4.33	2.18
3/3/15	3.05	3.19	0.22	3.63	2.74	0.07	3.86	2.52
5/12/15	3.39	3.19	0.22	3.63	2.74	0.07	3.85	2.52
6/2/15	2.47	3.16	0.27	3.70	2.63	0.08	3.96	2.36
7/28/15	3.26	3.16	0.27	3.69	2.63	0.08	3.96	2.36
10/2/15	3.13	3.16	0.26	3.69	2.63	0.08	3.96	2.37
11/17/15	2.62	3.11	0.29	3.69	2.53	0.09	3.98	2.24
12/8/15	3.01	3.11	0.28	3.67	2.54	0.09	3.96	2.26
1/19/16	3.49	3.13	0.29	3.72	2.54	0.09	4.02	2.25
2/9/16	1.73	3.07	0.43	3.93	2.21	0.14	4.36	1.78
3/1/16	1.96	3.04	0.49	4.01	2.06	0.16	4.50	1.57
5/3/16	2.14	2.98	0.52	4.03	1.93	0.18	4.55	1.41
5/17/16	3.40	3.00	0.53	4.06	1.93	0.18	4.59	1.40
7/19/16	3.39	3.01	0.54	4.09	1.94	0.18	4.63	1.40
11/8/16	3.25	3.02	0.53	4.08	1.97	0.17	4.60	1.44
1/10/17	2.79	2.99	0.53	4.05	1.92	0.18	4.58	1.39
2/23/17	2.29	2.94	0.55	4.03	1.84	0.19	4.58	1.29
3/21/17	2.32	2.88	0.55	3.98	1.78	0.19	4.53	1.23
5/23/17	2.24	2.83	0.56	3.95	1.71	0.20	4.51	1.15



*- compare calculated CV to 75th percentile of CVs reported nationally in Table 3-2 in EPA/833/R-00/003 .

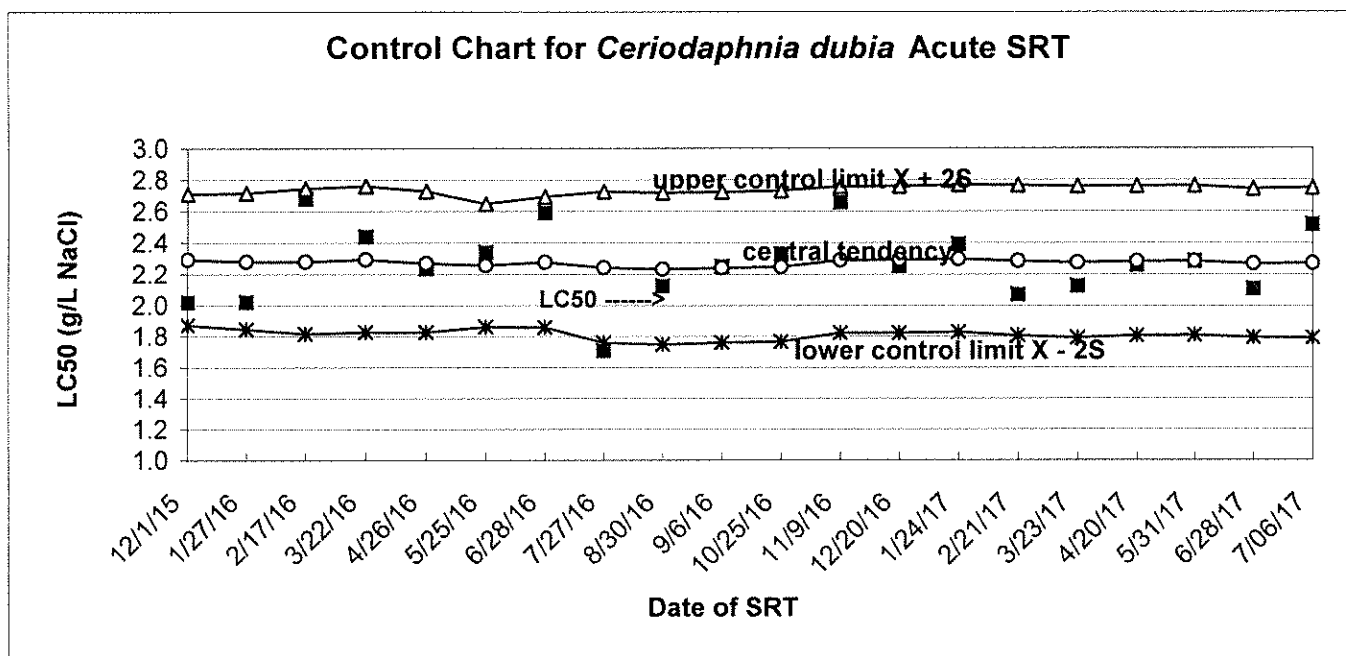
75th percentile of CVs for IC25 = 0.38

Calculated CV should not exceed 75th percentile of CVs.

$\bar{X} \pm 3SD$ = Well outside expected range.

48-H LC50 for *Ceriodaphnia dubia* Acute NaCl SRT

Date of Test	Cumulative LC50	LC50 Mean	SD	X+2SD	X-2SD	CV*	X+3SD	X-3SD	LC50 Method ¹
12/1/15	2.0	2.3	0.2	2.7	1.9	0.09	2.9	1.7	SK
1/27/16	2.0	2.3	0.2	2.7	1.8	0.10	2.9	1.6	SK
2/17/16	2.7	2.3	0.2	2.7	1.8	0.10	3.0	1.6	SK
3/22/16	2.4	2.3	0.2	2.8	1.8	0.10	3.0	1.6	Probit
4/26/16	2.2	2.3	0.2	2.7	1.8	0.10	3.0	1.6	Probit
5/25/16	2.3	2.3	0.2	2.6	1.9	0.10	3.0	1.6	Probit
6/28/16	2.6	2.3	0.2	2.7	1.9	0.09	2.9	1.7	Probit
7/27/16	1.7	2.2	0.2	2.7	1.8	0.11	3.0	1.5	Probit
8/30/16	2.1	2.2	0.2	2.7	1.7	0.11	3.0	1.5	Probit
9/6/16	2.3	2.2	0.2	2.7	1.8	0.11	3.0	1.5	Probit
10/25/16	2.3	2.2	0.2	2.7	1.8	0.11	3.0	1.5	SK
11/9/16	2.7	2.3	0.2	2.8	1.8	0.10	3.0	1.6	Probit
12/20/16	2.3	2.3	0.2	2.8	1.8	0.10	3.0	1.6	Probit
1/24/17	2.4	2.3	0.2	2.8	1.8	0.10	3.0	1.6	Probit
2/21/17	2.1	2.3	0.2	2.8	1.8	0.10	3.0	1.6	SK
3/23/17	2.1	2.3	0.2	2.8	1.8	0.11	3.0	1.6	Probit
4/20/17	2.3	2.3	0.2	2.8	1.8	0.10	3.0	1.6	SK
5/31/17	2.3	2.3	0.2	2.8	1.8	0.10	3.0	1.6	Probit
6/28/17	2.1	2.3	0.2	2.7	1.8	0.10	3.0	1.6	Probit
7/06/17	2.5	2.3	0.2	2.7	1.8	0.11	3.0	1.6	Probit



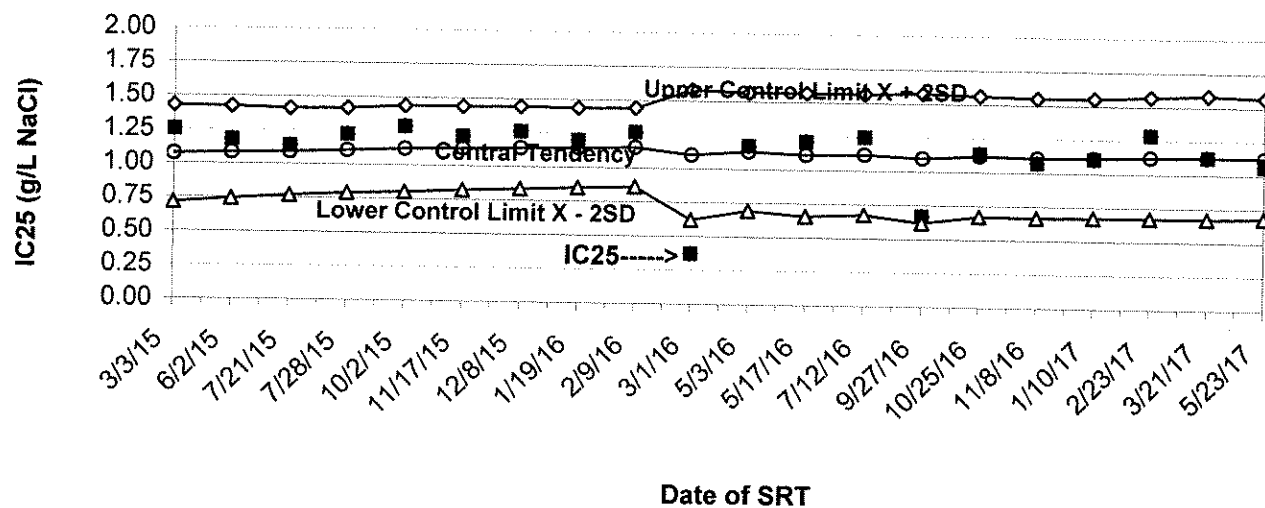
*- compare calculated CV to 75th percentile of CVs reported nationally in Table 3-3 in EPA/833/R-00/003 .
 75th percentile of CVs for LC50 = 0.29
 Calculated CV should not exceed 75th percentile of CVs.
 $\bar{X} \pm 3SD$ = Well outside expected range.

1 - P = Probit method, G = Graphical method, SK = Spearman-Kärber method, TSK = Trimmed Spearman-Kärber method.

IC25 for *Ceriodaphnia dubia* Chronic NaCl SRT

Date of Test	IC25	Cumulative IC25 Mean	SD	X+2SD	X-2SD	CV*	X+3SD	X-3SD
3/3/15	1.25	1.07	0.18	1.43	0.71	0.17	1.61	0.53
6/2/15	1.18	1.08	0.17	1.42	0.74	0.16	1.60	0.57
7/21/15	1.14	1.09	0.16	1.41	0.77	0.15	1.57	0.61
7/28/15	1.22	1.10	0.16	1.42	0.79	0.14	1.57	0.63
10/2/15	1.29	1.12	0.16	1.44	0.80	0.14	1.60	0.64
11/17/15	1.22	1.13	0.15	1.44	0.82	0.14	1.59	0.67
12/8/15	1.26	1.14	0.15	1.44	0.84	0.13	1.59	0.68
1/19/16	1.20	1.14	0.15	1.44	0.85	0.13	1.58	0.70
2/9/16	1.27	1.15	0.15	1.44	0.86	0.13	1.59	0.72
3/1/16	0.38	1.10	0.24	1.58	0.62	0.22	1.82	0.38
5/3/16	1.17	1.13	0.22	1.57	0.70	0.19	1.78	0.48
5/17/16	1.21	1.11	0.23	1.57	0.66	0.20	1.79	0.43
7/12/16	1.25	1.12	0.22	1.57	0.67	0.20	1.79	0.45
9/27/16	0.67	1.10	0.24	1.58	0.62	0.22	1.81	0.38
10/25/16	1.14	1.12	0.22	1.56	0.67	0.20	1.79	0.45
11/8/16	1.07	1.11	0.22	1.55	0.67	0.20	1.77	0.45
1/10/17	1.11	1.11	0.22	1.55	0.67	0.20	1.77	0.45
2/23/17	1.29	1.12	0.22	1.57	0.68	0.20	1.79	0.45
3/21/17	1.13	1.13	0.23	1.58	0.67	0.20	1.81	0.45
5/23/17	1.07	1.13	0.22	1.57	0.68	0.20	1.79	0.46

Control Chart for *Ceriodaphnia dubia* Chronic SRT



*- compare calculated CV to 75th percentile of CVs reported nationally in Table 3-2 in EPA/833/R-00/003 .
 75th percentile of CVs for IC25 = 0.45
 Calculated CV should not exceed 75th percentile of CVs.
 $\bar{X} \pm 3SD$ = Well outside expected range.