AQUATIC TOXICOLOGY REPORT

Project Name: SPOKANE COUNTY REGIONAL WRF

Location: SPOKANE, WASHINGTON

c/o Jacobs

Prepared by: Eurofins TestAmerica - Corvallis

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with NELAP

Oregon Environmental Laboratory Accreditation Program #OR100022 (NELAP)
State of Washington DOE Environmental Laboratory Accreditation Program, Lab ID C556
California State Environmental Laboratory Accreditation Program, Certificate No.: 1726

Report Date: May 28, 2020 Released by: Brett Muckey

Eurofins TestAmerica – Corvallis Lab I.D. No. B4687

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INTRODUCTION

Eurofins TestAmerica – Corvallis (ET-C) Aquatic Toxicology Laboratory conducted toxicity testing on samples from the Jacobs - Spokane County Regional Water Reclamation Facility, Spokane, Washington.

Testing was conducted on behalf of: Jacobs

The Project Name was: Spokane County Regional Water Reclamation facility

Testing was initiated on: May 7, 2020

The test was conducted using:

- the fathead minnow (*Pimephales promelas*)

OVERVIEW OF REGULATORY GUIDANCE

The following provides an overview and excerpts of applicable permit specifics, regulatory guidance, and other relevant information. This is intended only as a helpful guide, from a laboratory perspective, for understanding test outcomes. The final responsibility for interpretation of results remains with the client and/or regulatory agency.

The following guidance is taken from ET-C's reading of the NPDES permit for Spokane County Regional Water Reclamation Facility (permit #WA0093317, effective Dec 1, 2011, expired Nov 31, 2016). At the time of testing, no additional permit information was available.

Chronic toxicity:

- *Effluent Limit for Chronic Toxicity*:
  - "No toxicity detected in a test concentration representing the chronic critical effluent concentration (CCEC)."
  - "The CCEC equals 8.4% effluent."
- *Compliance with the Effluent Limit for Chronic Toxicity*:
  - "Compliance with the effluent limit for chronic toxicity means the results … show no statistically significant difference in response between the control and the CCEC."
  - "The Permittee must determine the statistical significance by conducting a hypothesis test at the 0.05 level of significance …" (i.e. alpha = 0.05)
  - "If the difference in survival between the control and the CCEC is less than 20 percent, … must conduct the hypothesis test at the 0.01 level of significance."
- *Compliance Testing for Chronic Toxicity:*
  - "Conduct quarterly chronic toxicity testing on the final effluent ..."
  - "… using the following species on a rotating basis …"

- *Response to Noncompliance with the Effluent Limit for Chronic Toxicity*:
    - "If a toxicity test … determines a statistically significant difference in response between the CCEC and the control … the Permittee must begin additional compliance monitoring within one week of receiving the test results".

The following is taken from the WDOE guidance (WQ-R-95-80, June 2016 revision):

- "To reduce WET limit violations due to statistically significance that is a Type I error (false positive), we lower the alpha for hypothesis testing when differences in test organisms response are small."
- "Alpha will be lowered from 0.05 to 0.01 if a 10% difference in an acute test is significant or a 20% difference in a chronic test is significant."

SUMMARY OF TEST RESULTS

Exhibit 1 provides a summary of the final test results.

EXHIBIT 1
Summary of Chronic Test Results

Species	NOEC (%)	LOEC (%)	IC_{25} (%)	Was a statistically significant difference in response shown between control and the CCEC?
P. promelas	100	> 100	> 100	No

Note: acronyms are as defined below.

From the NPDES permit: "Compliance with the effluent limit for chronic toxicity means the results … show no statistically significant difference in response between the control and the CCEC (8.4% effluent)."

More detailed information is provided in the Results and Discussion section.

ACRONYM DEFINITIONS (from EPA guidance):

NOEC = No Observed Effect Concentration: The highest test concentration that causes no observable adverse effects on the test organisms (i.e. no statistically significant reduction from the control).

LOEC = Low Observed Effect Concentration: The lowest test concentration that does cause an observable adverse effect on the test organisms (i.e. is statistically significant reduction from the control).
IC_{25} = Inhibition Concentration (25%): A point estimate of the test concentration that would cause a 25 percent reduction of a non-quantal biological measurement (i.e. growth, reproduction, etc.) for the test population.

SAMPLE INFORMATION

Exhibit 2 provides a summary of the sample conditions as received.

EXHIBIT 2
Sample Conditions on Receipt

Sample ID	**Final Effluent**		
ET-C SDG + suffix	B4687 -01	-02	-03
Collection - Date and Time	5/6/20 09:00	5/8/20 10:05	5/11/20 09:22
Receipt - Date and Time	5/7/20 10:50	5/9/20 10:30	5/12/20 10:30
Temperature (^oC)	0.0 (not frozen)	1.1	0.5
Dissolved Oxygen (mg/L)	11.8	11.9	12.8
pH	7.4	7.2	7.4
Conductivity (µS/cm)	886	884	892
Total Residual Chlorine (mg/L)	< 0.02	< 0.02	< 0.02
Ammonia (mg/L as NH_3-N)	< 0.10	< 0.10	< 0.10
Total Hardness (mg/L as $CaCO_3$)	223	210	210
Total Alkalinity (mg/L as $CaCO_3$)	63	68	68

Note: a sample collected on May 4 was delayed during shipment on not used.

Water quality measurements during testing remained within test design limits as prescribed by EPA and WDOE, except as noted with the individual test results. (see the Results and Discussion section)

METHODS AND MATERIALS

TEST METHODS

The chronic test methods were performed according to: *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, (EPA 2002), EPA-821-R-02-013.

Additional guidance was provided by:

- *Whole Effluent Toxicity Testing Guidance and Test Review Criteria*, Washington State Department of Ecology (revised June 2016) Pub# WQ-R-95-80.
- *Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing* (40 CFR Part 136), (EPA August 2000), EPA 821-B-00-004.

DEVIATIONS FROM PROTOCOLS

Deviations from required procedures in the test methods:

- None noted.

Deviations from recommended procedures in the test methods:

- None noted.

TEST DESIGN

The following summarizes the conditions used for both overall testing and the specifics for each test (observations and notations can be found on the datasheets in Appendix A):

Overall Test Design:

Chronic tests: 6.25, 8.40, 25.0, 56.5, and 100 percent sample + dilution water for the control.

Test Organism Conditions**:**

All organisms tested were fed and maintained during culturing, acclimation, and testing as prescribed by the EPA (2002).

The test organisms appeared vigorous and in good condition prior to testing.

P. promelas chronic test:

- Source: Aquatox Inc., Hot Springs, Arkansas
- Age: Less than 48 hours old and within an 24 hour age range
- Design: Four test vessels per concentration, ten organisms per vessel
- Test Solution Renewal: Daily

- Monitoring:
    - Daily: Survival
    - Daily: DO and pH in pre and post-renewal solutions, all concentrations
    - Daily: Temperature in pre-renewal solutions, all concentrations
    - With each new sample: Conductivity in post-renewal solutions, control and highest sample concentration
- Termination: 7 days after test initiation.
- Endpoints: Survival and Growth (average dry weight per organism added @ initiation)
- Acute Dual-Endpoint: 48 hour Survival (from the 2 day chronic exposure data)

DILUTION WATER

The dilution water used was the standard culture water used by ET-C:

- Reconstituted, moderately hard water (as per EPA protocol) with a total hardness of 75 to 105 mg/L as $CaCO_3$ and an alkalinity of 50 to 75 mg/L as $CaCO_3$.

SAMPLE COLLECTION AND STORAGE

Samples were collected by Jacobs - Spokane personnel. The samples were accepted as scheduled by ET-C. Chain of Custody and Sample Receipt Records are provided in Appendix C.

- All samples were received within the EPA recommended 0 to 6 ^{o}C range.
- All samples were initially used for test initiation or test solution renewal within the EPA recommended maximum holding time of 36 hours of sample collection.
- All subsequent uses of a sample occurred within the EPA recommended maximum holding time of 72 hours past the time of initial use of that sample.
- Following receipt, the samples were stored in the dark at 0 to 6 °C until test solutions were prepared and tested.

SAMPLE PREPARATION

Samples used during these tests were:

- Temperature adjusted prior to test initiation and each daily renewal.

DATA ANALYSIS

The statistical analyses performed for the chronic test were those outlined in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, USEPA Office of Water, Fourth Edition (EPA 2002), EPA-821-R-02-013, CETIS.

- The specific statistical analysis and CETIS version used for each endpoint evaluation is listed with the statistical outputs included with each test in Appendix A.
- If any additional analysis methods were also used, an explanation of the rationale and reference to the source method is included with the presentation of those results below.

RESULTS AND DISCUSSION

The raw data sheets for all tests are presented in Appendix A.

CHRONIC BIOASSAY

Table 1 summarizes the survival and reproduction data for the *P. promelas* chronic test.

Table 1
Summary of Chronic Results
P. promelas

Sample Concentration (%)	Percent Survival	Mean Dry Weight per Organism Added (mg)
Control	97.5	0.716
6.25	100	0.752
8.40	95.0	0.692
25.0	100	0.716
56.5	92.5	0.720
100	100	0.795

Statistical analysis in accordance with the EPA protocol results in:

- NOEC = 100 %
- LOEC > 100 %
- IC_{25} > 100 %

From the NPDES permit: "Compliance with the effluent limit for chronic toxicity means the results … show no statistically significant difference in response between the control and the CCEC (8.4% effluent)."

- A statistically significant difference between control and CCEC was not shown.

The dissolved oxygen levels in the chronic tests remained above 4.0 mg/L. Test temperatures remained at 25±1 °C.

The *C. dubia* test meets Test Acceptability Criteria (TAC) for a minimum 80 percent control survival and a minimum 15 young produced per surviving control adult. Unless referenced above, the tests proceeded without any noted deviations or interruptions that could have affected test results. The testing should be considered "valid".

REFERENCE TOXICANT TESTS

Reference toxicant (reftox) testing is performed to document both initial and ongoing laboratory performance of the test method(s). While the health of the test organisms is primarily evaluated by the performance of the laboratory control, reftox test results also may be used to assess the health and sensitivity of the test organisms. Reftox test results within their respective cumulative summary (Cusum) chart limits are indicative of consistent laboratory performance and normal test organism sensitivity.

The results of the reftox tests indicate that the test organisms were within their respective cusum chart limits based on EPA guidelines. This demonstrates ongoing laboratory proficiency of the test methods and suggests normal test organism sensitivity in the associated client testing.

The *P. promelas* reftox test was conducted using potassium chloride. The data sheets for the reference toxicant tests are provided in Appendix B.

Table 2 summarizes the reference toxicant test results and Cusum chart limits.

Table 2
Chronic Reference Toxicant Tests (g/L)

Species	IC_{25}	Cusum Chart Limits
P. promelas (survival)	0.62	0.52 to 0.67
P. promelas (growth)	0.62	0.44 to 0.72

APPENDIX A

RAW DATA SHEETS

TestAmerica

FRESHWATER TOXICITY TEST: SAMPLE AND DILUTION WATER DATA

Client: Jacobs - Spokane County RWRF

Contact: Neil DeJonge (509) 536-3710 x20710

SDG # B 4687

Test Initiation: Date 5-7-20

Test Termination: Date 5-14-20

Sample ID Number	Field ID	Collected Date (mm/dd/yy)	Collected Time (Pacific Zone)	Received Date (mm/dd/yy)	Received Time (Pacific Zone)	Temp (°C) as Rc'vd	Total Residual Chlorine (mg/l) ☐ Dechlorination allowed: as Rc'vd / after Dechlor.	Ammonia NH_3-N mg/l as Rc'vd	Hardness mg/l as $CaCO_3$ as Rc'vd	Alkalinity mg/l as $CaCO_3$ as Rc'vd	DO (mg/L) as Rc'vd	pH as Rc'vd	Cond. (uS) as Rc'vd	60 um filtered? (organisms noted)
B4687-01	B102005068	5/6/20	09:00	5/7/20	10:50	-1.5 -2.0 8.0	<0.02 / -	<0.10	223	63	12.8	7.4	886	☐
-02	B102005807	5/8/20	10:05	5/9/20	10:30	1.1	<0.02 / -	<0.10	210	68	11.9	7.2	884	☐
B4687-03	B102005109	5/11/20	09:22	5/12/20	10:30	0.5	<0.02 / -	<0.10	210	68	12.8	7.4	892	☐
							/							
							/							
							/							
							/							
							/							
							/							
							/							
							/							
							/							
							/							
			Reporting Limits:			na	0.02 mg/L	0.10 mg/L	5 mg/L	5 mg/L	na	na	na	na

Note: "-" Indicates data collection or dechlorination not needed. Any other adjustments to samples prior to use are documented in Comments below or on Dilutions page.

Dilution Water	ID#	Hardness mg/l as $CaCO_3$	Alkalinity mg/l as $CaCO_3$
Recon MH (FHM)	5095	88	60
	5096	94	62
	5097	88	62

Comments: ☑ Indicates the action was taken, (☐= action not taken): " - " = sample not dechlorinated, or analyte not collected/needed.

Sample B4687-02 Ammonia spilled and was retaken 5/13/20 at 1500

Water Quality Meters Used/ID#: Dissolved Oxygen # 4 pH # 11 Conductivity # 2

TestAmerica

FRESHWATER TOXICITY TEST: TEST ORGANISM INFORMATION

Client Jacobs - Spokane County RWRF

Sample Designation (SDG): B 4687

Test Species Information	FHM # 2104 *Pimephales promelas* Chronic				
Organism Age at Initiation	<48 hrs, all within a 24 hour window				
Test Container Size	400 ml				
Test Volume	500 ml				
Feeding: Type and Amount	0.15 ml *Artemia*, 2 x Daily				
Aeration: In Test Chambers via Slow Bubble :	☒ None ☐ Prior to use ☐ @ _____ hrs				
Acclimation Period	<24 hrs				
Organism Source	Aquatox				
Size	-				
Loading Rate	-				

Dissolved Oxygen aeration justifications (in test chambers):

Test(s): ☐ All ☐ _____

Date:

Comments:

Test Solution Preparation and Dilution Record

Client: Jacobs - Spokane County RWRF

Note: ☐ Indicates task not done, ☑ Indicates task was done. Temp adj. = Temperature adjusted to ambient or test temp

Ditto marks (' ') indicate that the same SDG, batch of dilution water, or food as the previous day's entry was used.

Fathead minnow - Chronic

Test Concentration (%)	Sample Volume (mls)		Final Volume (mls)
Control	0.00	→	2000
6.25	125	→	2000
8.4	168	→	2000
25.0	500	→	2000
56.5	1,130	→	2000
100	2,000	→	2000

Total Sample volume needed per day = 3923 mls

Test Day	Sample ID Used	Daily Sample Preparation (prior to dilution)	Dilution Water Used	Date	Time	Initials
0 (Initiation)	B4687-01	☐ Temp adj, ☐ Aerated	ID # 5095	5/7/2020	11:15	JK
1	B4687-01	☐ Temp adj, ☐ Aerated	ID # 5095	5/8/"	08:15	JK
2	B4687-02	☐ Temp adj, ☐ Aerated	ID # 5096	5/9/"	10:50	JK
3	B -02	☐ Temp adj, ☐ Aerated	ID # 5096	5/10/"20	07:20	TA
4	B -02	☐ Temp adj, ☐ Aerated	ID # 5096	5/11/"20	09:20	BC
5	B -03	☐ Temp adj, ☐ Aerated	ID # 5097	5/12/"20	11:10	BC
6	B -03	☐ Temp adj, ☐ Aerated	ID # 5097	5/13/"	08:00	JK

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

FATHEAD MINNOW 7-DAY SURVIVAL AND WATER QUALITY DATA

Random Template Used: 6 conc. x 4 reps. # 8 | Waterbath/incubator Used: # 10 | Date Initiated 5 / 7 /20 20 Time 13 : 50

Initial sample ID B 46887 - 01 | Date Terminated 5 /14 /20 20 Time 10 : 10

Client: Jacobs - Spokane County RWRF | Sample Description:

Tech: Day 0 JD Day 1 BC Day 2 TA Day 3 TA Day 4 BC Day 5 BC Day 6 BC Day 7 BC

Time: Day 0 1350 Day 1 1120 Day 2 1240 Day 3 11:20 Day 4 1400 Day 5 1400 Day 6 1045 Day 7 1010

Conc. or Percent	Day	Number of Live Organisms A	B	C	D	Dissolved O_2 (mg/l) Pre	Post	pH Pre	Post	Temp. (°C) Pre	Therm. ID #	Conductivity (µS) Post (1st use)
Control	0	10	10	10	10		7.9		8.2	Post: 24.6	251	306
	1	10	10	10	9	7.0	7.8	7.9	8.2	24.6	252	
	2	10	10	10	9	7.4	7.7	7.8	8.2	24.6	251	307
	3	10	10	10	9	7.4	7.9	7.9	8.2	24.5	251	
	4	10	10	10	9	6.9	7.7	7.9	8.3	24.7	250	3 BC 5/12/20
	5	10	10	10	9	7.0	8.3	7.7	8.4	24.5	251	321
	6	10	10	10	9	7.0	7.9	7.7	8.3	24.5	251	
	7	10	10	10	9	6.8		7.8		24.6	251	
6.25 %	0	10	10	BC 5/12/20 10 9	10		8.0		8.2	Post: 24.6		356
	1	10	10	10	10	7.1	8.0	7.9	8.2	24.7		
	2	10	10	10	10	7.2	7.9	7.8	8.2	24.6		356
	3	10	10	10	10	7.3	7.9	8.0	8.2	24.5		
	4	10	10	10	10	6.9	7.8	7.9	8.2	24.7		
	5	10	10	9 m	10	7.0	8.3	7.7	8.3	24.6		361
	6	10	10	9	10	6.9	8.0	7.8	8.3	24.5		
	7	10	10	9	10	6.8		7.8		24.5		
8.4 %	0	BC 5/12/20 10 11	10	10	10		8.1		8.2	Post: 24.5		378
	1	11	10	10	10	7.0	8.1	7.9	8.2	24.6		
	2	11	10	10	10	7.0	8.0	7.8	8.2	24.5		378
	3	11	10	8	10	7.2	7.9	8.0	8.2	24.5		
	4	11	10	8	10	6.9	7.9	7.9	8.3	24.7		
	5	11 ✓	10	8	10	6.9	8.4	7.8	8.3	24.7		375
	6	11	10	8	10	6.9	8.1	7.7	8.3	24.6		
	7	11	10	8	10	6.7		7.8		24.5		
25.0 %	0	10	10	10	10		8.2		8.1	Post: 24.6		455
	1	10	10	10	10	7.1	8.2	7.9	8.1	24.5		
	2	10	10	10	10	7.0	8.1	7.8	8.0	24.5		461
	3	10	10	10	10	7.2	7.9	7.9	8.0	24.5		
	4	10	10	10 ✓	10	7.0	8.1	7.9	8.1	24.6		
	5	10 ✓	10	10	10	6.8	7.9	7.7	8.3	24.5		464
	6	10	10	10	10	6.9	8.3	7.8	8.2	24.6		
	7	10	10	10	10	6.7		7.8		24.5		
56.5 %	0	10	10	10	10		8.2		7.8	Post: 24.5		620
	1	10	10	9	8	7.0	7.8	7.9	7.8	24.6		
	2	10	10	9	8	7.0	8.3	7.8	7.7	24.5		610
	3	10	10	9	8	7.1	8.1	7.9	7.7	24.5		
	4	10	10	9	8	7.0	7.7	7.9	7.8	24.6		
	5	10	10	9 ✓	8	6.8	8.0	7.7	8.1	24.5		631
	6	10	10	9	8	6.9	8.3	7.8	8.1	24.5		
	7	10	10	9	8	6.7		7.8		24.4		
100 %	0	10	10	10	10		8.3		7.5	Post: 24.6		839
	1	10	10	10	10	7.0	8	7.8	7.6	24.6		
	2	10	10	10	10	7.1	8.4	7.8	7.5	24.3		826
	3	10	10	10	10	7.2	8.3	7.9	7.4	24.3		
	4	10	10	10	10	7.0	8.0	7.8	7.4	24.5		
	5	10	10	10	10	6.8	8.1	7.7	7.9	24.6		862
	6	10	10	10	10 ✓	6.8	8.6	7.8	8.0	24.6		
	7	10	10	10	10	6.7		7.8		24.3		

✓ Indicates one organism inadvertently poured off during solution renewal, replaced into container.
"M" = organism missing, start count reduced. "Inj" = organism injured, remove from stats.
"F" = fungus noted on dead organisms.
☐ Aeration in test chambers begun @ _____ (Note observations on Test Organism Info sheet)

Pre =Pre-renewal solutions. Post =Post-renewal solutions.
Day 0 Temperatures = Post-renewals
Therm ID# = Thermometer ID used for all measurements that day.
(23.8) = Temp. out of recommended range

FATHEAD MINNOW 7-DAY GROWTH DATA

Client: Spokane / Jacobs Tins Labeled As: Spokane

Lab ID: B4687 Start Date: 5-7-20

Sample Description:

Technician:		JD
Date:		5/5/2020
Balance Serial #:	B328543647	B328543647

Percent	Replicate	Total Weight (mg)	Tare Weight (mg)	No. of Fish
Control	A		1038.36	10
	B		1008.62	10
	C		1041.08	10
	D		1033.40	9
6.25 %	A		1039.46	10
	B		1011.23	10
	C		1029.62	9 of 9
	D		1030.61	10
8.4 %	A		1023.77	11
	B		1034.86	10
	C		1021.58	8
	D		1048.34	10
25 %	A		1041.28	10
	B		1011.36	10
	C		1030.92	10
	D		1032.89	10
56.5 %	A		1027.15	10
	B		1013.92	10
	C		1025.55	9
	D		1016.50	8
100 %	A		1029.82	10
	B		1020.31	10
	C		1029.67	10
	D		1029.99	10
	A			
	B			
	C			
	D			

weigh to 0.01 mg

FATHEAD MINNOW 7-DAY GROWTH DATA

Client: Spokane

Tins Labeled As: Spokane

Lab ID:

Start Date:

Sample Description:

Technician:	bc	JD
Date:	5/18/2020	5/5/2020
Balance Serial #:	B328543647	B328543647

Percent	Replicate	Total Weight (mg)	Tare Weight (mg)	No. of Fish
Control	A	1045.26	1038.36	10
	B	1015.41	1008.62	10
	C	1048.64	1041.08	10
	D	1040.78	1033.40	9
6.25 %	A	1046.28	1039.46	10
	B	1018.68	1011.23	10
	C	1036.70	1029.62	9of9
	D	1038.54	1030.61	10
8.4 %	A	1029.36	1023.77	11
	B	1041.95	1034.86	10
	C	1028.99	1021.58	8
	D	1056.45	1048.34	10
25 %	A	1047.53	1041.28	10
	B	1018.29	1011.36	10
	C	1038.93	1030.92	10
	D	1040.33	1032.89	10
56.5 %	A	1034.90	1027.15	10
	B	1020.32	1013.92	10
	C	1033.41	1025.55	9
	D	1023.28	1016.50	8
100 %	A	1037.21	1029.82	10
	B	1028.29	1020.31	10
	C	1038.08	1029.67	10
	D	1038.01	1029.99	10
	A			
	B			
	C			
	D			

weigh to 0.01 mg

CETIS Summary Report

Report Date: 19 May-20 11:06 (p 1 of 2)
Test Code: B468701ppc | 06-5581-5061

Fathead Minnow 7-d Larval Survival and Growth Test — **Eurofins TestAmerica - Corvallis**

Batch ID:	04-0511-3245	**Test Type:**	Growth-Survival (7d)	**Analyst:**	Alyssa Lampi
Start Date:	07 May-20 13:50	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Mod-Hard Synthetic Water
Ending Date:	14 May-20 10:10	**Species:**	Pimephales promelas	**Brine:**	
Duration:	6d 20h	**Source:**	Aquatox, AR	**Age:**	

Sample ID:	06-3691-2818	**Code:**	B4687-01	**Client:**	
Sample Date:	06 May-20 09:00	**Material:**	POTW Effluent	**Project:**	
Receive Date:	07 May-20 10:50	**Source:**	Jacobs - Spokane County Regional Water (		
Sample Age:	29h (0 °C)	**Station:**			

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
15-1392-3124	7d Survival Rate	100	>100	NA	10.0%	1	Steel Many-One Rank Sum Test
12-6831-6026	Mean Dry Biomass-mg	100	>100	NA	17.7%	1	Dunnett Multiple Comparison Test

Point Estimate Summary

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
19-7221-4669	7d Survival Rate	EC25	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
17-9145-4894	Mean Dry Biomass-mg	IC25	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
15-1392-3124	7d Survival Rate	Control Resp	0.975	0.8 - NL	Yes	Passes Acceptability Criteria
19-7221-4669	7d Survival Rate	Control Resp	0.975	0.8 - NL	Yes	Passes Acceptability Criteria
12-6831-6026	Mean Dry Biomass-mg	Control Resp	0.7158	0.25 - NL	Yes	Passes Acceptability Criteria
17-9145-4894	Mean Dry Biomass-mg	Control Resp	0.7158	0.25 - NL	Yes	Passes Acceptability Criteria
12-6831-6026	Mean Dry Biomass-mg	PMSD	0.1775	0.12 - 0.3	Yes	Passes Acceptability Criteria

7d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	4	0.975	0.8954	1	0.9	1	0.025	0.05	5.13%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	-2.56%
8.4		4	0.95	0.7909	1	0.8	1	0.05	0.1	10.53%	2.56%
25		4	1	1	1	1	1	0	0	0.0%	-2.56%
56.5		4	0.925	0.7727	1	0.8	1	0.04787	0.09574	10.35%	5.13%
100		4	1	1	1	1	1	0	0	0.0%	-2.56%

Mean Dry Biomass-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	4	0.7158	0.6567	0.7748	0.679	0.756	0.01855	0.0371	5.18%	0.0%
6.25		4	0.7517	0.6704	0.833	0.682	0.793	0.02554	0.05109	6.8%	-5.02%
8.4		4	0.6923	0.4856	0.899	0.5082	0.811	0.06496	0.1299	18.77%	3.28%
25		4	0.7157	0.5966	0.8349	0.625	0.801	0.03744	0.07487	10.46%	0.0%
56.5		4	0.7198	0.6052	0.8343	0.64	0.786	0.03599	0.07198	10.0%	-0.56%
100		4	0.795	0.7281	0.8619	0.739	0.841	0.02103	0.04207	5.29%	-11.07%

Analyst: ____ QA: ____

Fathead Minnow 7-d Larval Survival and Growth Test

Eurofins TestAmerica - Corvallis

7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Dilution Water	1	1	1	0.9
6.25		1	1	1	1
8.4		1	1	0.8	1
25		1	1	1	1
56.5		1	1	0.9	0.8
100		1	1	1	1

Mean Dry Biomass-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Dilution Water	0.69	0.679	0.756	0.738
6.25		0.682	0.745	0.7867	0.793
8.4		0.5082	0.709	0.741	0.811
25		0.625	0.693	0.801	0.744
56.5		0.775	0.64	0.786	0.678
100		0.739	0.798	0.841	0.802

7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Dilution Water	10/10	10/10	10/10	9/10
6.25		10/10	10/10	9/9	10/10
8.4		11/11	10/10	8/10	10/10
25		10/10	10/10	10/10	10/10
56.5		10/10	10/10	9/10	8/10
100		10/10	10/10	10/10	10/10

CETIS Analytical Report

Report Date:	19 May-20 11:06 (p 1 of 4)
Test Code:	B468701ppc | 06-5581-5061

Fathead Minnow 7-d Larval Survival and Growth Test — **Eurofins TestAmerica - Corvallis**

Analysis ID:	15-1392-3124	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.8
Analyzed:	19 May-20 11:06	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Batch ID:	04-0511-3245	**Test Type:**	Growth-Survival (7d)	**Analyst:**	Alyssa Lampi
Start Date:	07 May-20 13:50	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Mod-Hard Synthetic Water
Ending Date:	14 May-20 10:10	**Species:**	Pimephales promelas	**Brine:**	
Duration:	6d 20h	**Source:**	Aquatox, AR	**Age:**	

Sample ID:	06-3691-2818	**Code:**	B4687-01	**Client:**	
Sample Date:	06 May-20 09:00	**Material:**	POTW Effluent	**Project:**	
Receive Date:	07 May-20 10:50	**Source:**	Jacobs - Spokane County Regional Water (		
Sample Age:	29h (0 °C)	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	10.0%	100	>100	NA	1

Steel Many-One Rank Sum Test

Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Dilution Water		6.25	20	10	1	6	0.9516	Asymp	Non-Significant Effect
		8.4	17.5	10	1	6	0.7867	Asymp	Non-Significant Effect
		25	20	10	1	6	0.9516	Asymp	Non-Significant Effect
		56.5	15.5	10	2	6	0.5438	Asymp	Non-Significant Effect
		100	20	10	1	6	0.9516	Asymp	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.04691739	0.009383477	5	1.085	0.4018	Non-Significant Effect
Error	0.1556462	0.008647013	18			
Total	0.2025636		23			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	1.667	4.248	0.1935	Equal Variances
Variances	Levene Equality of Variance	7.044	4.248	0.0008	Unequal Variances
Distribution	Shapiro-Wilk W Normality	0.8281	0.884	0.0009	Non-normal Distribution

7d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Dilution Water	4	0.975	0.8954	1	1	0.9	1	0.025	5.13%	0.0%
6.25		4	1	1	1	1	1	1	0	0.0%	-2.56%
8.4		4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	2.56%
25		4	1	1	1	1	1	1	0	0.0%	-2.56%
56.5		4	0.925	0.7727	1	0.95	0.8	1	0.04787	10.35%	5.13%
100		4	1	1	1	1	1	1	0	0.0%	-2.56%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Dilution Water	4	1.371	1.242	1.501	1.412	1.249	1.412	0.04074	5.94%	0.0%
6.25		4	1.41	1.403	1.417	1.412	1.403	1.412	0.002171	0.31%	-2.81%
8.4		4	1.338	1.093	1.582	1.412	1.107	1.419	0.07686	11.49%	2.45%
25		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	-2.97%
56.5		4	1.295	1.061	1.529	1.331	1.107	1.412	0.07348	11.35%	5.56%
100		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	-2.97%

CETIS Analytical Report

Report Date:	19 May-20 11:06 (p 1 of 3)
Test Code:	B468701ppc | 06-5581-5061

Fathead Minnow 7-d Larval Survival and Growth Test — **Eurofins TestAmerica - Corvallis**

Analysis ID:	19-7221-4669	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.8
Analyzed:	19 May-20 11:06	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Batch ID:	04-0511-3245	**Test Type:**	Growth-Survival (7d)	**Analyst:**	Alyssa Lampi
Start Date:	07 May-20 13:50	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Mod-Hard Synthetic Water
Ending Date:	14 May-20 10:10	**Species:**	Pimephales promelas	**Brine:**	
Duration:	6d 20h	**Source:**	Aquatox, AR	**Age:**	

Sample ID:	06-3691-2818	**Code:**	B4687-01	**Client:**	
Sample Date:	06 May-20 09:00	**Material:**	POTW Effluent	**Project:**	
Receive Date:	07 May-20 10:50	**Source:**	Jacobs - Spokane County Regional Water (		
Sample Age:	29h (0 °C)	**Station:**			

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X+1)	Linear	72139	200	Yes	Two-Point Interpolation

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC25	>100	N/A	N/A	<1	NA	NA

7d Survival Rate Summary

			Calculated Variate(A/B)								
C-%	**Control Type**	**Count**	**Mean**	**Min**	**Max**	**Std Err**	**Std Dev**	**CV%**	**%Effect**	**A**	**B**
0	Dilution Water	4	0.975	0.9	1	0.025	0.05	5.13%	0.0%	39	40
6.25		4	1	1	1	0	0	0.0%	-2.56%	39	39
8.4		4	0.95	0.8	1	0.05	0.1	10.53%	2.56%	39	41
25		4	1	1	1	0	0	0.0%	-2.56%	40	40
56.5		4	0.925	0.8	1	0.04787	0.09574	10.35%	5.13%	37	40
100		4	1	1	1	0	0	0.0%	-2.56%	40	40

7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Dilution Water	1	1	1	0.9
6.25		1	1	1	1
8.4		1	1	0.8	1
25		1	1	1	1
56.5		1	1	0.9	0.8
100		1	1	1	1

7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Dilution Water	10/10	10/10	10/10	9/10
6.25		10/10	10/10	9/9	10/10
8.4		11/11	10/10	8/10	10/10
25		10/10	10/10	10/10	10/10
56.5		10/10	10/10	9/10	8/10
100		10/10	10/10	10/10	10/10

Fathead Minnow 7-d Larval Survival and Growth Test — **Eurofins TestAmerica - Corvallis**

Analysis ID:	12-6831-6026	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.8
Analyzed:	19 May-20 11:06	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes

Batch ID:	04-0511-3245	**Test Type:**	Growth-Survival (7d)	**Analyst:**	Alyssa Lampi
Start Date:	07 May-20 13:50	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Mod-Hard Synthetic Water
Ending Date:	14 May-20 10:10	**Species:**	Pimephales promelas	**Brine:**	
Duration:	6d 20h	**Source:**	Aquatox, AR	**Age:**	

Sample ID:	06-3691-2818	**Code:**	B4687-01	**Client:**	
Sample Date:	06 May-20 09:00	**Material:**	POTW Effluent	**Project:**	
Receive Date:	07 May-20 10:50	**Source:**	Jacobs - Spokane County Regional Water (		
Sample Age:	29h (0 °C)	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Untransformed	NA	C > T	NA	NA	17.7%	100	>100	NA	1

Dunnett Multiple Comparison Test

Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Dilution Water		6.25	-0.6806	2.407	0.127	6	0.9606	CDF	Non-Significant Effect
		8.4	0.4445	2.407	0.127	6	0.6714	CDF	Non-Significant Effect
		25	5.845E-05	2.407	0.127	6	0.8333	CDF	Non-Significant Effect
		56.5	-0.07578	2.407	0.127	6	0.8547	CDF	Non-Significant Effect
		100	-1.502	2.407	0.127	6	0.9959	CDF	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.02644043	0.005288086	5	0.9493	0.4737	Non-Significant Effect
Error	0.1002716	0.005570642	18			
Total	0.126712		23			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	6.003	15.09	0.3060	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.959	0.884	0.4186	Normal Distribution

Mean Dry Biomass-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Dilution Water	4	0.7158	0.6567	0.7748	0.714	0.679	0.756	0.01855	5.18%	0.0%
6.25		4	0.7517	0.6704	0.833	0.7658	0.682	0.793	0.02554	6.8%	-5.02%
8.4		4	0.6923	0.4856	0.899	0.725	0.5082	0.811	0.06496	18.77%	3.28%
25		4	0.7157	0.5966	0.8349	0.7185	0.625	0.801	0.03744	10.46%	0.0%
56.5		4	0.7198	0.6052	0.8343	0.7265	0.64	0.786	0.03599	10.0%	-0.56%
100		4	0.795	0.7281	0.8619	0.8	0.739	0.841	0.02103	5.29%	-11.07%

Mean Dry Biomass-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Dilution Water	0.69	0.679	0.756	0.738
6.25		0.682	0.745	0.7867	0.793
8.4		0.5082	0.709	0.741	0.811
25		0.625	0.693	0.801	0.744
56.5		0.775	0.64	0.786	0.678
100		0.739	0.798	0.841	0.802

Fathead Minnow 7-d Larval Survival and Growth Test — **Eurofins TestAmerica - Corvallis**

Analysis ID:	17-9145-4894	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.8
Analyzed:	19 May-20 11:06	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Batch ID:	04-0511-3245	**Test Type:**	Growth-Survival (7d)	**Analyst:**	Alyssa Lampi
Start Date:	07 May-20 13:50	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Mod-Hard Synthetic Water
Ending Date:	14 May-20 10:10	**Species:**	Pimephales promelas	**Brine:**	
Duration:	6d 20h	**Source:**	Aquatox, AR	**Age:**	

Sample ID:	06-3691-2818	**Code:**	B4687-01	**Client:**	
Sample Date:	06 May-20 09:00	**Material:**	POTW Effluent	**Project:**	
Receive Date:	07 May-20 10:50	**Source:**	Jacobs - Spokane County Regional Water (		
Sample Age:	29h (0 °C)	**Station:**			

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X+1)	Linear	1006598	200	Yes	Two-Point Interpolation

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>100	N/A	N/A	<1	NA	NA

Mean Dry Biomass-mg Summary

			Calculated Variate						
C-%	**Control Type**	**Count**	**Mean**	**Min**	**Max**	**Std Err**	**Std Dev**	**CV%**	**%Effect**
0	Dilution Water	4	0.7158	0.679	0.756	0.01855	0.0371	5.18%	0.0%
6.25		4	0.7517	0.682	0.793	0.02554	0.05109	6.8%	-5.02%
8.4		4	0.6923	0.5082	0.811	0.06496	0.1299	18.77%	3.28%
25		4	0.7157	0.625	0.801	0.03744	0.07487	10.46%	0.0%
56.5		4	0.7198	0.64	0.786	0.03599	0.07198	10.0%	-0.56%
100		4	0.795	0.739	0.841	0.02103	0.04207	5.29%	-11.07%

Mean Dry Biomass-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Dilution Water	0.69	0.679	0.756	0.738
6.25		0.682	0.745	0.7867	0.793
8.4		0.5082	0.709	0.741	0.811
25		0.625	0.693	0.801	0.744
56.5		0.775	0.64	0.786	0.678
100		0.739	0.798	0.841	0.802

APPENDIX B

REFERENCE TOXICANT DATA SHEETS

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

FATHEAD MINNOW 7-DAY SURVIVAL AND WATER QUALITY DATA

Random Template Used: 6 conc. x 4 reps. # 4
Stock Sol. ID 2 B 081 - 01
Organism ID: FHM 2103

Waterbath/incubator Used: # 4

Date Initiated 5 / 5 /20 20 Time 14 : 15
Date Terminated 5 / 12 /20 20 Time 08 : 50

Test Container Size: 800 ml
Solution Volume / rep: 500 ml

C QA / QC - RefTox

Sample Description KCl (50 g/L stock)

Tech: Day 0 JD Day 1 BC Day 2 BC Day 3 JK Day 4 TA Day 5 TA Day 6 BC Day 7 JD
Time Day 0 1415 Day 1 1205 Day 2 1140 Day 3 1345 Day 4 0835 Day 5 0935 Day 6 1510 Day 7 0850

Conc. or Percent	Day	Number of Live Organisms A	B	C	D	Dissolved O_2 (mg/l) Pre	Post	pH Pre	Post	Temp. (°C) Pre	Therm. ID #	Conductivity (µS) Post (daily)
Control	0	10	10	10	10		8.2		8.3	Post: 24.2	252	350
	1	10	10	5	10	7.3	8.1	8.0	8.3	24.2	251	419
	2	10	10	5	10	7.4	7.9	7.9	8.2	23.5	251	306
	3	10	10	5	10	7.5	8.2	7.8	8.3	24.3	251	332
	4	10	10	5	10	7.1	7.9	7.8	8.0	24.0	251	293
	5	10	10	5	10	7.3	7.8	7.8	8.0	24.1	251	287
	6	10	10	5	10	*~~7.7~~ 7.0	7.7	7.7	8.2	24.5	250	348
	7	10	10	5	10	7.6		7.9		23.8	251	
0.25 g/L	0	10	10	10	10		8.3		8.2	Post: 24.6		757
	1	10	10	10	10	7.3	8.1	7.9	8.3	24.5		820
	2	10	10	10	10	7.3	8.0	7.9	8.2	23.7		791
	3	10	10	10	10	7.5	8.2	7.8	8.2	24.2		788
	4	10	10	10	10	7.1	8.0	7.8	8.2	24.1		755
	5	10	10	10	10	7.3	7.9	7.9	8.2	24.3		768
	6	10	10	10	10	*~~7.7~~ 7.0	7.7	7.7	8.3	24.6		833
	7	10	10	10	10	7.5		7.8		23.9		
0.50 g/L	0	10	~~10~~ 9	10	10		8.2		8.2	Post: 24.1		1244
	1	10	9 m	9	10	7.1	8.1	7.9	8.3	24.0		1320
	2	10	9	9	10	7.4	8.1	7.9	8.2	23.3		1237
	3	10	9	9	10	7.5	8.2	7.8	8.2	24.2		1235
	4	10	9	9	10	7.1	8.0	7.8	8.3	23.9		1240
	5	10	9	9	10	7.2	7.9	7.9	8.3	24.1		1192
	6	10	9	9	10	6.9	7.8	7.9	8.3	24.5		1346
	7	10	9	9	10	7.3		7.8		24.0		
1.0 g/L	0	10	10	10	10		8.3		8.2	Post: 24.1		2060
	1	0	2	0	0	7.2	8.0	7.9	8.3	23.8		2190
	2	0	2	0	0	7.3	8.1	7.8	8.3	23.7		2130
	3		1			7.6	8.2	7.9	8.3	24.3		2160
	4		1			7.1	8.0	7.8	8.3	24.1		2080
	5		1			7.2	8.0	7.9	8.3	24.2		2060
	6		1			6.9	7.8	7.8	8.3	24.8		2240
	7		1			7.4		7.9		24.0		
2.0 g/L	0	10	10	10	10		8.2		8.2	Post: 24.1		3850
	1	0	0	0	0	7.3	8.0	7.9	8.3	24.2		3760
	2											
	3											
	4											
	5											
	6											
	7											
4.0 g/L	0	10	10	10	10		8.3		8.1	Post: 24.3		7220
	1	0	0	0	0	7.3	8.1	7.9	8.2	24.3		7080
	2											
	3											
	4											
	5											
	6											
	7											

✓ Indicates one organism inadvertently poured off during solution renewal, replaced into container.
"M" = organism missing, start count reduced. "Inj" = organism injured, remove from stats.
"F" = fungus noted on dead organisms.

Pre =Pre-renewal solutions. Post =Post-renewal solutions.

Day 0 Temperatures = Post-renewals
Therm ID# = Thermometer ID used for all measurements that day.
(23.8) = Temp out of recommended range

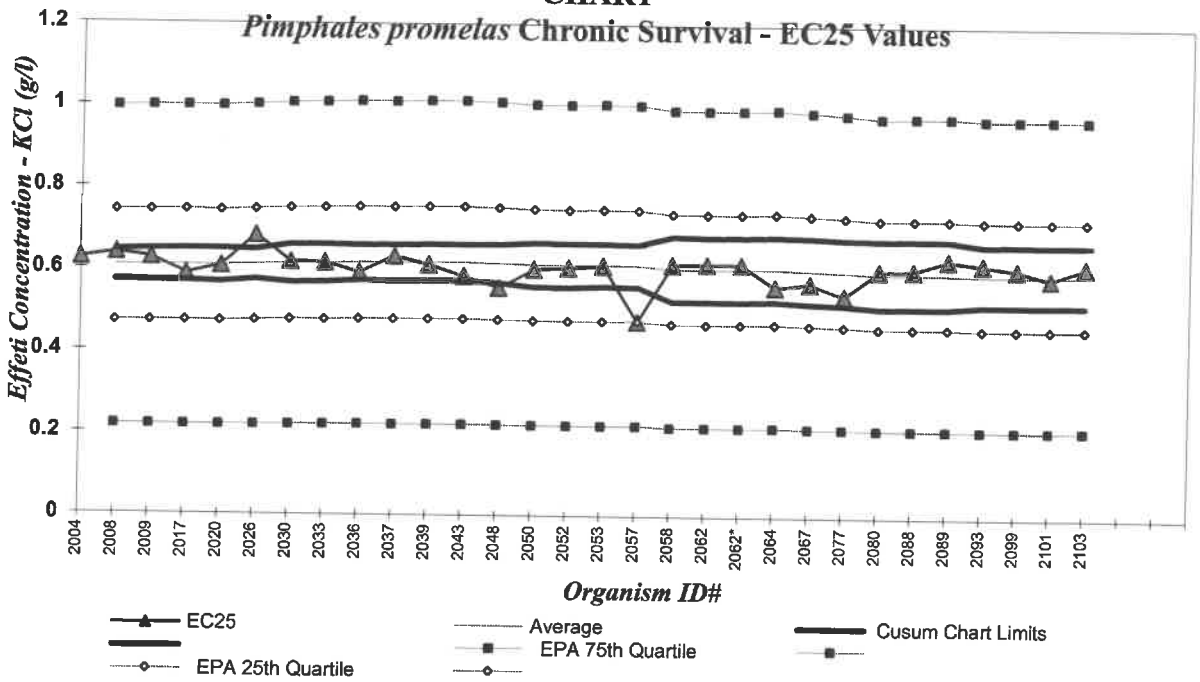
Endpoint		Cusum Chart Limits	
Survival - EC_{25}	0.62	0.52 to	0.67
Growth - IC_{25}	0.62	0.44 to	0.72

Task Manager
Project Manager Alyssa Lamp
QA Officer

REFTOX - FHM chronic (NOEC) ASL1282-1118.xlsm Doc Control ID: ASL1282-1118

*BC R06 5/11/20

REFERENCE TOXICANT CUMLATIVE SUMMARY (CUSUM) CHART



Pimephales promelas **- Chronic (EPA Test Method 1000.0)**

POTASSIUM CHLORIDE (g/L)

Endpoint: Chronic Survival

Stats Method: Linear Interpolation

Test Conditions: Recon MH, 25 oC

From EPA 833-R-00-003:

10th Quartile CV (*control limit*) = 0.03

25th Quartile CV (*warning limit*) = 0.11

75th Quartile CV (*warning limit*) = 0.32

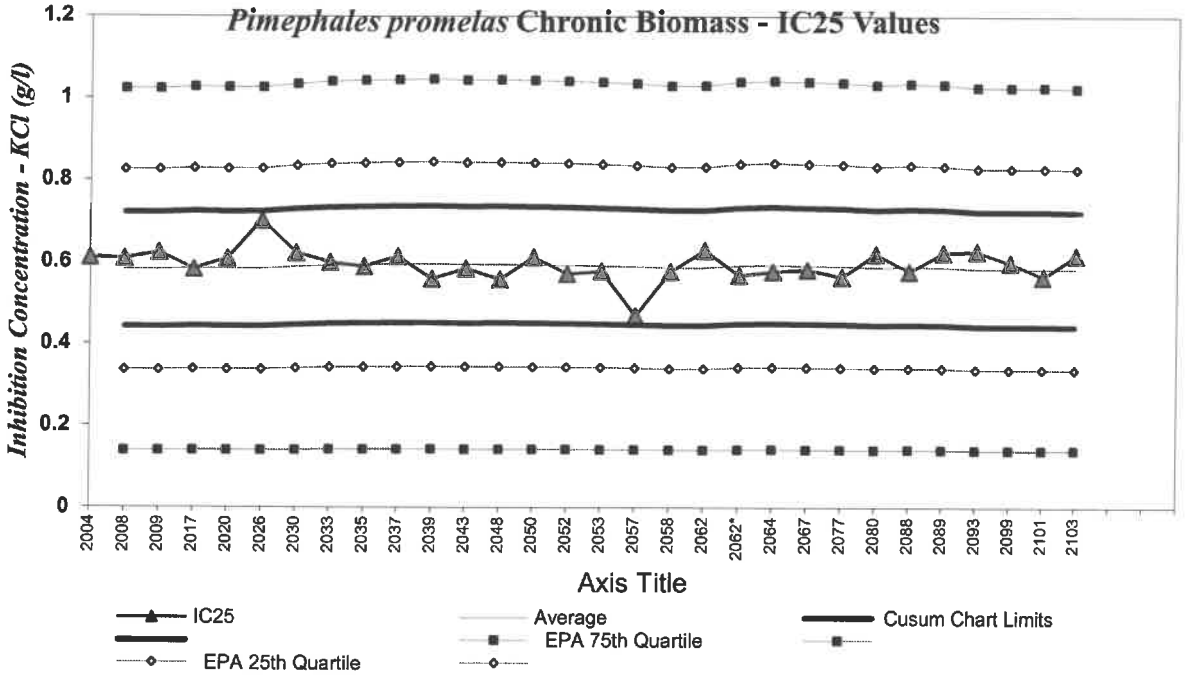
90th Quartile CV (*control limit*) = 0.52

Intralab CV is compared to EPA ***Warning limits*** *(25th and 75th CV's) and* ***Control limits*** *(10th and 90th CV's),*

If lab CV is outside EPA Control limits, the EPA Control limits are used to set Cusum chart limits.

Event #	FHM ID #	Test Start Date	EC25	Running Average	Running SD	Cusum Chart Limits AVG-2SD	Cusum Chart Limits AVG+2SD	Intralab CV
41	2052	6/25/2019	**0.61**	0.6	0.03	**0.56**	**0.67**	0.04
42	2053	7/9/2019	**0.61**	0.6	0.03	**0.56**	**0.67**	0.04
43	2057	8/1/2019	**0.48**	0.6	0.03	**0.56**	**0.66**	0.07
44	2058	8/6/2019	**0.62**	0.6	0.04	**0.53**	**0.68**	0.06
45	2062	9/5/2019	**0.62**	0.6	0.04	**0.53**	**0.68**	0.07
46	2062*	95/19	**0.62**	0.6	0.04	**0.53**	**0.68**	0.06
47	2064	9/17/2019	**0.56**	0.6	0.04	**0.53**	**0.69**	0.07
48	2067	10/1/2019	**0.57**	0.6	0.04	**0.52**	**0.68**	0.07
49	2077	11/12/2019	**0.54**	0.6	0.04	**0.52**	**0.68**	0.07
50	2080	12/3/2019	**0.60**	0.6	0.04	**0.51**	**0.68**	0.07
51	2088	1/28/2020	**0.61**	0.6	0.04	**0.51**	**0.68**	0.07
52	2089	2/4/2020	**0.63**	0.6	0.04	**0.51**	**0.68**	0.06
53	2093	3/3/2020	**0.62**	0.6	0.04	**0.52**	**0.67**	0.06
54	2099	4/7/2020	**0.61**	0.6	0.04	**0.52**	**0.67**	0.06
55	2101	4/21/2020	**0.59**	0.6	0.04	**0.52**	**0.67**	0.06
56	2103	5/5/2020	**0.62**	0.6	0.04	**0.52**	**0.67**	0.06

REFERENCE TOXICANT CUMLATIVE SUMMARY (CUSUM) CHART



Pimephales promelas **- Chronic (EPA Test Method 1000.0)**

POTASSIUM CHLORIDE (g/L)

Endpoint: Chronic Growth (Biomass)

Stats Method: Linear Interpolation

Test Conditions: Recon MH, 25 oC

From EPA 833-R-00-003:

10th Quartile CV (*control limit*) =	0.12
25th Quartile CV (*warning limit*) =	0.21
75th Quartile CV (*warning limit*) =	0.38
90th Quartile CV (*control limit*) =	0.45

Intralab CV is compared to EPA ***Warning limits*** *(25th and 75th CV's) and* ***Control limits*** *(10th and 90th CV's), If lab CV is outside EPA Control limits, the EPA Control limits are used to set Cusum chart limits.*

Event #	FHM ID #	Test Start Date	IC25	Running Average	Running SD	Cusum Chart Limits AVG-2SD	Cusum Chart Limits AVG+2SD	Intralab CV
41	2052	6/25/2019	**0.57**	0.59	0.04	**0.45**	**0.73**	0.07
42	2053	7/9/2019	**0.58**	0.59	0.04	**0.45**	**0.73**	0.07
43	2057	8/1/2019	**0.47**	0.59	0.04	**0.45**	**0.73**	0.08
44	2058	8/6/2019	**0.58**	0.59	0.05	**0.45**	**0.73**	0.08
45	2062	9/5/2019	**0.63**	0.59	0.05	**0.45**	**0.73**	0.08
46	2062*	95/19	**0.57**	0.59	0.04	**0.45**	**0.73**	0.07
47	2064	9/17/2019	**0.58**	0.59	0.04	**0.45**	**0.74**	0.07
48	2067	10/1/2019	**0.58**	0.59	0.04	**0.45**	**0.73**	0.07
49	2077	11/12/2019	**0.56**	0.59	0.04	**0.45**	**0.73**	0.07
50	2080	12/3/2019	**0.62**	0.59	0.04	**0.45**	**0.73**	0.07
51	2088	1/28/2020	**0.58**	0.59	0.04	**0.45**	**0.73**	0.07
52	2089	2/4/2020	**0.62**	0.59	0.04	**0.45**	**0.73**	0.06
53	2093	3/3/2020	**0.63**	0.58	0.04	**0.44**	**0.72**	0.06
54	2099	4/7/2020	**0.60**	0.58	0.04	**0.44**	**0.72**	0.06
55	2101	4/21/2020	**0.57**	0.58	0.04	**0.44**	**0.72**	0.06
56	2103	5/5/2020	**0.62**	0.58	0.04	**0.44**	**0.72**	0.06

APPENDIX C

CHAIN OF CUSTODY

CHAIN OF CUSTODY RECORD - FOR AQUATIC TOXICITY TESTING

eurofins | Environment Testing TestAmerica

Client: JACOBS / Spokane County
NPDES#: WA-0093317

Address: ~~Sp~~ Spokane County
1004 N Freya St
Spokane, WA 99202

Contact Person: Neil DeJonge
Phone: 509 536-3710

PO#:

Composite Sample Information

Samples/Hour: 4 — Volume/Sample: 400 mL
Total Hours: 24 — Total Volume: 38,400 mL
Initiated: Date 5/3/20 Time 0915
Ended: Date 5/4/20 Time 0930
Chilled During Collection: YES

Ship Samples to:
Eurofins TestAmerica - Corvallis
Attention: Aquatic Toxicology Laboratory
1100 NE Circle Blvd, Suite 310
Corvallis, OR 97330
Phone: 541.243.6137

Analysis Required / Comments

Sample ID	Date	Time	Sample Type: Comp.	Sample Type: Grab	# of Container	Lab ID#	Fathead Acute	Fathead Chronic	Cerio Acute	Cerio Chronic	Daphnia Acute	Trout Acute	SHM Acute	SHM Chronic	MB Acute	MB Chronic	MYS Acute	MYS Chronic	Algae	CA Haz Waste	WA Haz Waste			Concentration and/or Comments
BND200504006	5/3-4/20	0915-0930	X		5			X																2 Coolers/4 sample Need Analysis
																								Sample not used - out of hold time. JD 5-6-20

Sampled By & Title: Cornelis DeJonge LabSupp (Please sign and print name)	Date/Time: 5/4/20 1302	Relinquished By: Cornelis DeJonge (Please sign and print name)	Date/Time: 5/4/20 1302
Received By: (Please sign and print name)	Date/Time: 5/6/20	Relinquished By: (Please sign and print name)	Date/Time
Received By: (Please sign and print name)	Date/Time	Relinquished By: (Please sign and print name)	Date/Time
Received By: (Please sign and print name)	Date/Time	Shipped Via: UPS Bus Fed-Ex Hand Other	Shipping #
Work Authorized By: (Please sign and print name)	Remarks		~~COC_Bioassay.xls~~ Doc Control ID: ASL612-0519

CHAIN OF CUSTODY RECORD - FOR AQUATIC TOXICITY TESTING

eurofins | Environment Testing TestAmerica

Client: JACOBS / Spokane County
NPDES#: WA-0093317

Address: ~~Sp~~ Spokane County
1004 N Freya ST
Spokane, WA 99202

Contact Person: Neil DeJonge
Phone: 509 536-3710

PO#:

Composite Sample Information

Samples/Hour: 4 Volume/Sample: 400 mL
Total Hours: 24 Total Volume: 38,400 mL
Initiated: Date 5/3/20 Time 0915
Ended: Date 5/4/20 Time 0930
Chilled During Collection: YES

Ship Samples to:
Eurofins TestAmerica - Corvallis
Attention: Aquatic Toxicology Laboratory
1100 NE Circle Blvd, Suite 310
Corvallis, OR 97330
Phone: 541.243.6137

Analysis Required / Comments

Sample ID	Date	Time	Sample Type: Comp.	Sample Type: Grab	# of Container	Lab ID#	Fathead Acute	Fathead Chronic	Cerio Acute	Cerio Chronic	Daphnia Acute	Trout Acute	SHM Acute	SHM Chronic	MB Acute	MB Chronic	MYS Acute	MYS Chronic	Algae	CA Haz Waste	WA Haz Waste			Concentration and/or Comments
2A0200504106	5/3-4/20	0915-0930	X		4			X																2 Coole RS/4 Sample Need Combined
																								Sample not used - Out of hold time. JD 5-6-20

Sampled By & Title (Please sign and print name): Cornelis DeJonge LabSupr	Date/Time: 5/4/20 1302	Relinquished By (Please sign and print name): Cornelis DeJonge	Date/Time: 5/4/20 1302
Received By (Please sign and print name)	Date/Time: 5/6/20	Relinquished By (Please sign and print name)	Date/Time
Received By (Please sign and print name)	Date/Time	Relinquished By (Please sign and print name)	Date/Time
Received By (Please sign and print name)	Date/Time	Shipped Via: UPS Bus Fed-Ex Hand Other	Shipping #
Work Authorized By (Please sign and print name)	Remarks		~~COC_Bioassay.xls~~ Doc Control ID: ASL612-0519

samples not headspace free. BC 4 5/7/20

eurofins | Environment Testing TestAmerica

Sample Receipt Record

Batch Number: 13487-01 Date Received: 5/7/20

Client/Project: Spokane county Received By: BC

Were custody seals intact?	☒ Yes	☐ No	☐ N/A
Packing Material:	☒ Ice	☐ Blue Ice	☐ Box
Temp OK? (≤ 6°C) Therm ID: 173 Expires: 7 /21 /2020 Observed: ~~-2.3~~ -1.8 °C, Actual Temp: ~~-2.0~~ -1.5 °C	☒ Yes	☐ No	☐ N/A
If sample is noted @ ≤ 0.0 °C, is the sample frozen or partially frozen? (0.3 / 0.0 / 0.0)	☐ Yes	☒ No	☐ N/A
Was a Chain of Custody (CoC) Provided?	☒ Yes	☐ No	☐ N/A
Was the CoC correctly filled out? (If No, document below)	☒ Yes	☐ No	☐ N/A
Were the sample containers in good condition (not broken or leaking)?	☒ Yes	☐ No	☐ N/A
Are all samples within 36 hours of collection?	☒ Yes	☐ No	☐ N/A

Method of Shipment: ☐ Hand Delivered, ☐ FedEx, ☒ UPS, ☐ Greyhound, ☐ Other: _____ ☐ N/A

Sample Exception Report (The following exceptions were noted)

Client v

Resolu

NEIL DEJONGE
(509) 536-3710
JACOBS
1004 N FREYA ST
SPOKANE WA 99202-6004

66 LBS 1 OF 2
SHP WT: 132 LBS
DATE: 06 MAY 2020
AH

SHIP MICHELLE BENNETT
TO: (541) 243-6137
EURONFINS TESTAMERICA
STE 310
1100 NE CIRCLE BLVD
CORVALLIS OR 97330-4741

OR 973 1-01

UPS NEXT DAY AIR 1
TRACKING #: 1Z 940 X50 01 8391 1073

BILLING: P/P

ISH 13.00N 22P 450 28.5U 04/2020

SEE NOTICE ON REVERSE regarding UPS Terms, and notice of limitation of liability. Where allowed by law, shipper authorizes UPS to act as forwarding agent for export control and customs purposes. If exported from the US, shipper certifies that the commodities, technology or software were exported from the US in accordance with the Export Administration Regulations. Diversion contrary to law is prohibited.

CHAIN OF CUSTODY RECORD - FOR AQUATIC TOXICITY TESTING

eurofins | Environment Testing TestAmerica

Client: Spokane County Jacobs NPDES#: WA 0093317

Address: 1004 N Freya St, Spokane WA 99202

Contact Person: Neil DaSonge

Phone: 509-536-3710

PO#:

Composite Sample Information

Samples/Hour: 1 Volume/Sample: 400 mL

Total Hours: 24 Total Volume: 38,400 mL

Initiated: Date 5/5/20 Time 0915

Ended: Date 5/6/20 Time 0900

Chilled During Collection: YES

Ship Samples to:

Eurofins TestAmerica - Corvallis
Attention: Aquatic Toxicology Laboratory
1100 NE Circle Blvd, Suite 310
Corvallis, OR 97330
Phone: 541.243.6137

Analysis Required / Comments

Sample ID	Date	Time	Sample Type: Comp.	Sample Type: Grab	# of Containers	Lab ID#	Fathead Acute	Fathead Chronic	Cerio Acute	Cerio Chronic	Daphnia Acute	Trout Acute	SHM Acute	SHM Chronic	MB Acute	MB Chronic	MYS Acute	MYS Chronic	Algae	CA Haz Waste	WA Haz Waste			Concentration and/or Comments
BIOR0050608	5/5-6/20	0915-0900	X		1	4687-01		X																2 cooler / 4 containers must be composited.

Sampled By & Title: Cornelis DaSonge	(Please sign and print name)	Date/Time: 5/6/20 1415	Relinquished By: Cornelis DaSonge	Date/Time: 5/6/20 1415
Received By: Brett Cowdin	(Please sign and print name) Brett Cowdin	Date/Time: 5/7/20 1050	Relinquished By	Date/Time
Received By	(Please sign and print name)	Date/Time	Relinquished By	Date/Time
Received By	(Please sign and print name)	Date/Time	Shipped Via: UPS___ Bus___ Fed-Ex___ Hand___ Other___	Shipping #: COC_Bioassay.xls
Work Authorized By	(Please sign and print name)	Remarks		Doc Control ID: ASL612-0519

CHAIN OF CUSTODY RECORD - FOR AQUATIC TOXICITY TESTING

eurofins | Environment Testing TestAmerica

Client: Spokane County Tacods
NPDES#: WA 0093317
Address: 1004 N Freya ST
Spokane WA
99202

Contact Person: Neil DaTonge
Phone: 509-536-3710

PO#:

Composite Sample Information

Samples/Hour: N/A
Volume/Sample: 400 mL
Total Hours: 24
Total Volume: 38,400 mL
Initiated: Date 5/5/20 Time 0915
Ended: Date 5/6/20 Time 0900
Chilled During Collection: YES

Ship Samples to:
Eurofins TestAmerica - Corvallis
Attention: Aquatic Toxicology Laboratory
1100 NE Circle Blvd, Suite 310
Corvallis, OR 97330
Phone: 541.243.6137

Analysis Required / Comments

Sample ID	Date	Time	Sample Type: Comp.	Sample Type: Grab	# of Containers	Lab ID#	Fathead Acute	Fathead Chronic	Cerio Acute	Cerio Chronic	Daphnia Acute	Trout Acute	SHM Acute	SHM Chronic	MB Acute	MB Chronic	MYS Acute	MYS Chronic	Algae	CA Haz Waste	WA Haz Waste			Concentration and/or Comments
BIOR0050608	5/5-6/20	0915-0900	X		1	B4687.01		X																2 cooler / 4 container must be composited

Sampled By & Title: Cornelis DaTonge (Please sign and print name)	Date/Time: 5/6/20 1415	Relinquished By: Cornelis DaTonge (Please sign and print name)	Date/Time: 5/6/20 1415
Received By: BC (Please sign and print name) Brett Cowden	Date/Time: 5/7/20 1045	Relinquished By: (Please sign and print name)	Date/Time:
Received By: (Please sign and print name)	Date/Time:	Relinquished By: (Please sign and print name)	Date/Time:
Received By: (Please sign and print name)	Date/Time:	Shipped Via: UPS___ Bus___ Fed-Ex___ Hand___ Other___	Shipping #: COC_Bioassay.xls
Work Authorized By: (Please sign and print name)	Remarks		Doc Control ID: ASL612-0519

eurofins | Environment Testing TestAmerica

Sample Receipt Record

Batch Number: 04687-02 Date Received: 5-9-20

Client/Project: Spokane Received By: JT

Were custody seals intact?	☑ Yes	☐ No	☐ N/A
Packing Material:	☑ Ice	☐ Blue Ice	☐ Box
Temp OK? (≤ 6°C) Therm ID: 173 Expires: 7/21/2020 Observed: 1.4 °C, Actual Temp: 1.1 °C	☑ Yes	☐ No	☐ N/A
If sample is noted @ ≤ 0.0 °C, is the sample frozen or partially frozen?	☐ Yes	☐ No	☑ N/A
Was a Chain of Custody (CoC) Provided?	☑ Yes	☐ No	☐ N/A
Was the CoC correctly filled out? (If No, document below)	☑ Yes	☐ No	☐ N/A
Were the sample containers in good condition (not broken or leaking)?	☑ Yes	☐ No	☐ N/A
Are all samples within 36 hours of collection?	☑ Yes	☐ No	☐ N/A

Method of Shipment: ☐ Hand Delivered, ☐ FedEx, ☑ UPS, ☐ Greyhound, ☐ Other: _____ ☐ N/A

Sample Exception Report (The following exceptions were noted)

EUROFINS TESTAMERICA
1100 NE CIRCLE BLVD
STE 310
CORVALLIS OR 97330

P: S: I:
ROBT-1001
17940X50418393 6123 1000
QRF6ZMY ORCOR965UDC MAY 9 09:40:15 2020
US 9731 HIP 20.3.0 M4210

EUROFINS TESTAMERICA
1100 NE CIRCLE BLVD
STE 310
CORVALLIS OR 97330

P: S: I:
ROBT-1001
17940X50415060 4463 1000
QRF6ZMY ORCOR965UDC MAY 9 09:41:40 2020
US 9731 HIP 20.3.0 M4210

Client was notified on: Client contact:

Resolution to Exception:

Bioassay Receipt verification.xlsx
Doc Control ID: ASL993-1119

CHAIN OF CUSTODY RECORD - FOR AQUATIC TOXICITY TESTING

eurofins | Environment Testing TestAmerica

Client: Spokane County / Jacobs
NPDES#: WA-0093317
Address: 1004 N Freya St
Spokane, WA

Contact Person: Neil DeTonge
Phone: 509-536-3710

PO#:

Composite Sample Information

Samples/Hour: 4 — Volume/Sample: ~~400~~ 500 mL
Total Hours: 24 — Total Volume: 38400 mL
Initiated: Date 5/7/20 Time 0900
Ended: Date 5/8/20 Time 0902
Chilled During Collection:

Ship Samples to:
Eurofins TestAmerica - Corvallis
Attention: Aquatic Toxicology Laboratory
1100 NE Circle Blvd, Suite 310
Corvallis, OR 97330
Phone: 541.243.6137

Analysis Required / Comments

Sample ID	Date	Time	Sample Type: Comp.	Sample Type: Grab	# of Containers	Lab ID#	Fathead Acute	Fathead Chronic	Cerio Acute	Cerio Chronic	Daphnia Acute	Trout Acute	SHM Acute	SHM Chronic	MB Acute	MB Chronic	MYS Acute	MYS Chronic	Algae	CA Haz Waste	WA Haz Waste			Concentration and/or Comments
BIO20050807	5/7-8/20	0900-0902	X		1	BV6382-02		X																2 coolers 4 sample must be composited

Sampled By & Title (Please sign and print name): Cornelis DeTonge	Date/Time: 5/8/20 1005	Relinquished By (Please sign and print name): Cornelis DeTonge	Date/Time: 5/8/20 1005
Received By (Please sign and print name): Josh Kryger	Date/Time: 5-9-20 1050	Relinquished By (Please sign and print name)	Date/Time
Received By (Please sign and print name)	Date/Time	Relinquished By (Please sign and print name)	Date/Time
Received By (Please sign and print name)	Date/Time	Shipped Via: UPS___ Bus___ Fed-Ex___ Hand___ Other___	Shipping #: COC_Bioassay.xls
Work Authorized By (Please sign and print name)	Remarks		Doc Control ID: ASL612-0519

CHAIN OF CUSTODY RECORD - FOR AQUATIC TOXICITY TESTING

eurofins | Environment Testing TestAmerica

Client: Spokane County / Jacobs
NPDES#: WA-0093317
Address: 1004 N Freya St, Spokane, WA

Contact Person: Neil DeJonge
Phone: 509-536-3710

PO#:

Composite Sample Information

Samples/Hour: 4
Volume/Sample: ~~4800~~ 9600 mL
Total Hours: 24
Total Volume: 38400 mL
Initiated: Date 5/7/20 Time 0900
Ended: Date 5/8/20 Time 0902
Chilled During Collection:

Ship Samples to:
Eurofins TestAmerica - Corvallis
Attention: Aquatic Toxicology Laboratory
1100 NE Circle Blvd, Suite 310
Corvallis, OR 97330
Phone: 541.243.6137

Analysis Required / Comments

Sample ID	Date	Time	Sample Type: Comp.	Sample Type: Grab	# of Containers	Lab ID#	Fathead Acute	Fathead Chronic	Cerio Acute	Cerio Chronic	Daphnia Acute	Trout Acute	SHM Acute	SHM Chronic	MB Acute	MB Chronic	MYS Acute	MYS Chronic	Algae	CA Haz Waste	WA Haz Waste			Concentration and/or Comments
BIO[illegible]005UE07	5/7-8/20	0900-0902	X		1	04687-02		X																2 coolers 4 sample must be composited

Sampled By & Title (Please sign and print name): Cornelis DeJonge	Date/Time: 5/8/20 1005	Relinquished By (Please sign and print name): Cornelis DeJonge	Date/Time: 5/8/20 1005
Received By (Please sign and print name): Josh Kersey	Date/Time: 5-9-20 1030	Relinquished By (Please sign and print name)	Date/Time
Received By (Please sign and print name)	Date/Time	Relinquished By (Please sign and print name)	Date/Time
Received By (Please sign and print name)	Date/Time	Shipped Via: UPS ___ Bus ___ Fed-Ex ___ Hand ___ Other ___	Shipping #: COC_Bioassay.xls
Work Authorized By (Please sign and print name)	Remarks		Doc Control ID: ASL612-0519

eurofins | Environment Testing TestAmerica

Sample Receipt Record

Batch Number: B4687-03

Client/Project: Spokane County

Date Received: 5/12/20

Received By: BC

Were custody seals intact?	☒ Yes	☐ No	☐ N/A
Packing Material:	☒ Ice	☐ Blue Ice	☐ Box
Temp OK? (≤ 6°C) Therm ID: 173 Expires: 7/2/2020 Observed: ~~1.5~~ 1.1 °C (BC ROG 5/12/20), Actual Temp: 0.5°C	☒ Yes	☐ No	☐ N/A
If sample is noted @ ≤ 0.0 °C, is the sample frozen or partially frozen?	☐ Yes	☐ No	☒ N/A
Was a Chain of Custody (CoC) Provided?	☒ Yes	☐ No	☐ N/A
Was the CoC correctly filled out? (If No, document below)	☒ Yes	☐ No	☐ N/A
Were the sample containers in good condition (not broken or leaking)?	☒ Yes	☐ No	☐ N/A
Are all samples within 36 hours of collection?	☒ Yes	☐ No	☐ N/A

Method of Shipment: ☐ Hand Delivered, ☐ FedEx, ☒ UPS, ☐ Greyhound, ☐ Other: _____ ☐ N/A

Sample Exception Report (The following exceptions were noted)

Client was notified on: Client contact:

Resolution to Exception:

EUROFINS TESTAMERICA
1100 NE CIRCLE BLVD
STE 310
CORVALLIS OR 97330

P: UPPER S: OFFICE I: 0
GREE-1348
1Z940X50012503 0080 1030
QEFGZMY COR965UDC MAY 12 08:41:11 2020
US 9731 HIPP 20.3.0 M4210

2-PD
Door- 0301
AAD44722UPS
OR 9731-01
OR 97330
1Z940X5001583650 87
3782695 May 12 01:13:26 2020 HIPPS 20.3.0 US
9159 N

Bioassay Receipt verification.xlsx
Doc Control ID: ASL993-1119

CHAIN OF CUSTODY RECORD - FOR AQUATIC TOXICITY TESTING

eurofins | Environment Testing TestAmerica

Client: Spokane County WATERS NPDES#: WA-0093317

Address: 1004 N. Freya St, Spokane WA 99202

Contact Person: Neil DeTonge

Phone: 541-391 3844

PO#:

Composite Sample Information

Samples/Hour: 4 Volume/Sample: 480 mL

Total Hours: 24 Total Volume: 3840 mL

Initiated: Date 5/10/20 Time 0900

Ended: Date 5/11/20 Time 0922

Chilled During Collection: YES

Ship Samples to:

Eurofins TestAmerica - Corvallis
Attention: Aquatic Toxicology Laboratory
1100 NE Circle Blvd, Suite 310
Corvallis, OR 97330
Phone: 541.243.6137

Analysis Required / Comments

Sample ID	Date	Time	Sample Type: Comp.	Sample Type: Grab	# of Container	Lab ID#	Fathead Acute	Fathead Chronic	Cerio Acute	Cerio Chronic	Daphnia Acute	Trout Acute	SHM Acute	SHM Chronic	MB Acute	MB Chronic	MYS Acute	MYS Chronic	Algae	CA Haz Waste	WA Haz Waste			Concentration and/or Comments
BIO20051109	5/10-11/20	0900-0922	X		1	B46703		X																2 Coolers, 4 Containers must be Composited,

Sampled By & Title (Please sign and print name): Corrie's DeTonge	Date/Time: 5/11/20 1400	Relinquished By (Please sign and print name): Corrie's DeTonge	Date/Time: 5/11/20 1400
Received By (Please sign and print name): Corrie's DeTonge	Date/Time: ~~5/11/20 1400~~	Relinquished By (Please sign and print name):	Date/Time:
Received By (Please sign and print name): BO in Brea Cowden	Date/Time: 5/12/20	Relinquished By (Please sign and print name):	Date/Time:
Received By (Please sign and print name):	Date/Time:	Shipped Via: UPS Bus Fed-Ex Hand Other	Shipping #:
Work Authorized By (Please sign and print name):	Remarks:		

~~COC_Bioassay.xls~~
Doc Control ID: ASL612-0519

CHAIN OF CUSTODY RECORD - FOR AQUATIC TOXICITY TESTING

eurofins
Environment Testing
TestAmerica

Client: Spokane County WATERS NPDES#: WA-0093317
Address: 1004 N. Freya St
Spokane WA 99202

Contact Person: Neil DeTonge
Phone: 541-391 3844

PO#:

Composite Sample Information
Samples/Hour: 4 Volume/Sample: 480 mL
Total Hours: 24 Total Volume: 3840 mL
Initiated: Date 5/10/20 Time 0900
Ended: Date 5/11/20 Time 0922
Chilled During Collection: YES

Ship Samples to:
Eurofins TestAmerica - Corvallis
Attention: Aquatic Toxicology Laboratory
1100 NE Circle Blvd, Suite 310
Corvallis, OR 97330
Phone: 541.243.6137

Analysis Required / Comments

Sample ID	Date	Time	Sample Type: Comp.	Sample Type: Grab	# of Container	Lab ID#	Fathead Acute	Fathead Chronic	Cerio Acute	Cerio Chronic	Daphnia Acute	Trout Acute	SHM Acute	SHM Chronic	MB Acute	MB Chronic	MYS Acute	MYS Chronic	Algae	CA Haz Waste	WA Haz Waste			Concentration and/or Comments
BIO20051109	5/10-11/20	0900-0922	X		1			X																2 Coolers, 1 Container MUST be Composited

Sampled By & Title (Please sign and print name): Cornelis DeTonge	Date/Time: 5/11/20 1400	Relinquished By (Please sign and print name): Cornelis DeTonge	Date/Time: 5/11/20 1400
Received By (Please sign and print name): Cornelis DeTonge	Date/Time: ~~5/11/20 1400~~	Relinquished By (Please sign and print name)	Date/Time
Received By (Please sign and print name)	Date/Time	Relinquished By (Please sign and print name)	Date/Time
Received By (Please sign and print name)	Date/Time	Shipped Via: UPS Bus Fed-Ex Hand Other	Shipping #
Work Authorized By (Please sign and print name)	Remarks		

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