



Environment Testing
America

AQUATIC TOXICOLOGY REPORT

Project Name:

KAISER ALUMINUM

Location:

SPOKANE VALLEY, WASHINGTON

Outfall 001

Prepared by:

Eurofins Environment Testing Northwest, LLC

(aka TestAmerica – ASL)

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Accredited in accordance
with NELAP

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Results relate only to the items tested and the sample(s) as received by the laboratory. The results included in this report have been reviewed for compliance and meet all requirements for accredited parameters. All data have been found to be compliant with laboratory protocol, with the exception of any items noted in this report. For questions, please contact the Project Manager (contact info on next page).

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INTRODUCTION

Eurofins Environment Testing Northwest, LLC Applied Sciences Laboratory (EETNW - ASL) conducted toxicity testing on sample(s) from Kaiser Aluminum, Spokane Valley, Washington.

The Sample ID was: Outfall 001

Testing was initiated on: March 23, 2022

The test(s) were conducted using:

- the fathead minnow (*Pimephales promelas*)

Note: Due to previous tests exhibiting pathogenic effects in the fathead minnow tests, the chronic *P. promelas* test was conducted using the State of Washington alternate method.

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 EETNW's reading of the NPDES permit for Kaiser Aluminum Fabricated products, LLC (permit #WA0000892, effective July 1, 2011, and expired on June 30, 2016).

Note: No subsequent permit had been received by EETNW - ASL at the time of testing.

Acute toxicity:

- **S13.B:** *Effluent Limit for Acute Toxicity:*
 - "... no acute toxicity detected in a test concentration representing the acute critical effluent concentration (ACEC)."
 - "The ACEC equals 71.8% effluent."
- **S13.C:** *Monitoring for Compliance with an Effluent Limit for Acute Toxicity:*
 - "Monitoring ... shall be conducted quarterly ... using each species listed .. on a rotating basis ... using at a minimum 100%, the ACEC, and a control"
 - "Compliance with the effluent limit for acute toxicity means no statistically significant difference in survival between the control and the test concentration representing the ACEC."
 - "The Permittee shall immediately implement subsection D if any acute toxicity test conducted for compliance monitoring determines a statistically significant difference in survival between the control and the ACEC using hypothesis testing at the 0.05 level of significance" (i.e. alpha = 0.05)

- “If the difference in survival between the control and the ACEC is less than 10 percent, ... the hypothesis test shall be conducted at the 0.01 level of significance.”
- **S13.D:** *Compliance Testing for Acute Toxicity:*
 - “Conduct quarterly acute toxicity testing on the final effluent.”
 - “... using each of the species and protocols listed ... on a rotating basis.”
- **S13.E:** *Response to Noncompliance With an Effluent Limit for Acute Toxicity:*
 - “If Permittee violates the acute toxicity limit in subsection the Permittee shall begin additional compliance monitoring within one week from the time of receiving the test results”.

Chronic toxicity:

- **S14.B:** *Effluent Limit for Chronic Toxicity:*
 - “... no toxicity detected in a test concentration representing the chronic critical effluent concentration (CCEC).”
 - “The CCEC equals 17.1% effluent.”
- **S14.C:** *Compliance with the Effluent Limit for Chronic Toxicity:*
 - “Monitoring ... shall be conducted quarterly ... using each species listed .. on a rotating basis ... using at a minimum the CCEC, the ACEC, and a control.”
 - “Compliance with the effluent limit for chronic toxicity means no statistically significant difference in response between the control and the test concentration representing the CCEC.”
 - “The Permittee shall immediately implement subsection D if any chronic toxicity test conducted for compliance monitoring determines a statistically significant difference in response between the control and the CCEC using hypothesis testing at the 0.05 level of significance” (i.e. alpha = 0.05)
 - “If the difference in response between the control and the CCEC is less than 20%, the hypothesis test shall be conducted at the 0.01 level of significance.”
- **S14.D:** *Response to Noncompliance With an Effluent Limit for Chronic Toxicity:*
 - “If a toxicity test ... determines a statistically significant difference in response between the CCEC and the control, the Permittee shall begin additional compliance monitoring within one week from the time 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

Exhibits 1 and 2 provide a summary of the final test results.

EXHIBIT 1

Summary of Acute Test Results

Species	NOEC (%)	LOEC (%)	LC ₅₀ (%)	Was there a statistically significant difference in survival between the control and the test concentration representing the ACEC (71.8%)?
<i>P. promelas</i>	100	> 100	> 100	No

Note: acronyms are as defined below.

From the NPDES permit: “Compliance with the effluent limit for acute toxicity means no statistically significant difference in survival between the control and the test concentration representing the ACEC.”

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

EXHIBIT 2

Summary of Chronic Test Results

Species	NOEC (%)	LOEC (%)	IC ₂₅ (%)	Was there a statistically significant difference in response between the control and the test concentration representing the CCEC (17.1%)?
<i>P. promelas</i>	100	> 100	>100	No

Note: acronyms are as defined below.

From the NPDES permit: “Compliance with the effluent limit for chronic toxicity means no statistically significant difference in response between the control and the test concentration representing the CCEC.”

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).

LC₅₀ = Lethal Concentration (50%): A point estimate of the test concentration that would cause death in 50 percent of the test population.

IC₂₅ = 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 3 provides a summary of the sample conditions as received.

EXHIBIT 3
Sample Conditions on Receipt

Sample ID + suffix	Outfall 001		
	-01	-02	-03
EETNW - ASL SDG	B5317		
Collection - Date and Time	03/22/2022 10:00	03/24/2022 10:00	03/28/2022 12:00
Receipt - Date and Time	03/23/2022 10:45	03/25/2022 09:30	03/29/2022 10:30
Temperature (°C)	3.5	2.6	6.2
Dissolved Oxygen (mg/L)	8.7	10.0	10.1
pH	7.8	7.5	7.6
Conductivity (µS/cm)	440	482	442
Total Residual Chlorine (mg/L)	< 0.02	0.02	0.02
Ammonia (mg/L as NH ₃ -N)	0.10	0.12	< 0.10
Total Hardness (mg/L as CaCO ₃)	206	228	211
Total Alkalinity (mg/L as CaCO ₃)	214	164	158

METHODS AND MATERIALS

TEST METHODS

The acute test methods were performed according to: *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, USEPA Office of Water (2002), EPA-821-R-02-012.

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, (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 Jun 2016) Pub# WQ-R-95-80.

DEVIATIONS FROM PROTOCOLS

Deviations from required procedures in the test methods:

- Not all of the samples were within the EPA recommended and WDOE required holding temperature range of 0 to 6 °C upon arrival at the laboratory. See notation in Sample Collection and Storage below.

Deviations from recommended procedures in the test methods:

- The subsequent use of the samples collected on March 22nd and 25th, did not occur within the WDOE recommended maximum holding time of 72 hours past the time of sample collection. See Sample Storage and Collection for further details.

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:

- Acute tests: 6.25, 17.1 25, 71.8, and 100 percent sample + dilution water for the control.
- Chronic tests: 6.25, 17.1 25, 71.8, 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 acute test (renewal):

- Source: Aquatox Inc., Hot Springs, Arkansas
- Age: 1 to 14 days old, within a 24 hour age range
- Design: Four test vessels per concentration, Ten organisms per vessel

- Test Solution Renewal: Once @ 48 hours (i.e. static-renewal test)
- Monitoring:
 - Daily: Survival, DO, pH, and temperature; all concentrations.
 - Pre and Post Renewal solutions: DO and pH, all concentrations.
 - Test Initiation, with each new sample use, and Termination:
 - Conductivity, all concentrations (WDOE)
- Termination: 96 hours.
- Endpoints: Survival (at termination)

P. promelas chronic test (WDOE Alternate version):

- Source: Aquatox Inc., Hot Springs, Arkansas
- Age: Less than 48 hours old and within an 24 hour age range
- Design: Ten test vessels per concentration, two 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)

DILUTION WATER

The dilution water used was the standard culture water used by EETNW - ASL:

- Reconstituted, moderately hard water (as per EPA protocol) with a total hardness of 75 to 105 mg/L as CaCO₃ and an alkalinity of 50 to 75 mg/L as CaCO₃.

SAMPLE COLLECTION AND STORAGE

Samples were collected by Kaiser Aluminum personnel. The samples were accepted as scheduled by EETNW - ASL. Chain of Custody and Sample Receipt Records are provided in Appendix C.

- Not all samples were received within the EPA recommended and WDOE required 0 to 6 °C range.
 - The sample collected on March 28, 2022 was received at 6.2 °C which is outside of the EPA recommended 0 to 6 °C range.
 - The March 22nd and March 25th samples were received in the 0 to 6 °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.
- Not all subsequent uses of a sample occurred within the WDOE recommended maximum holding time of 72 hours past the time of sample collection.

- The sample was collected on March 22, 2022 at 10:00. The subsequent use of the sample took place on Day 2 of the *P. promelas* chronic test.
 - Day 2 at 13:32 (75 hours and 32 minutes past sample collection time).
- The sample was collected on March 25, 2022 at 10:00. The subsequent use of the sample took place on Day 5 of the *P. promelas* chronic test.
 - Day 5 at 15:35 (77 hours and 35 minutes past sample collection time).
- All subsequent uses of a sample occurred within the WDOE recommended maximum holding time of 84 hours past the time of sample collection. (Extended for renewals of a 96 hour duration acute test).
- 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 acute tests were those outlined in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, USEPA Office of Water, Fifth Edition (2002), EPA-821-R-02-012, using CETIS.

The statistical analyses performed for the chronic tests 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, using 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.

Additional guidance was provided by:

- *Whole Effluent Toxicity Testing Guidance and Test Review Criteria*, Washington State Department of Ecology (revised Jun 2016) Pub# WQ-R-95-80.

RESULTS AND DISCUSSION

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

ACUTE BIOASSAYS

Table 1 summarizes the survival data for the *P. promelas* acute test.

Table 1 Summary of Acute Results <i>P. promelas</i>	
Sample Concentration (%)	Percent Survival (at Test Termination)
Control	100
6.25	100
17.1	100
25.0	97.5
71.8	100
100	100

Statistical analysis in accordance with the EPA protocol and WDOE guidance results in:

- NOEC = 100 %
- LOEC > 100 %
- LC₅₀ > 100 %

From the NPDES permit: “Compliance with the effluent limit for acute toxicity means no statistically significant difference in survival between the control and the test concentration representing the ACEC.”

- No statistically significant difference in survival between control and ACEC (71.8%) was shown.

Dissolved oxygen concentrations remained at 4.0 mg/L or greater throughout the test period. Test temperatures remained in the range of 20±1 °C. Test pH remained within the recommended 6.0 to 9.0 range.

The *P. promelas* acute test meets Test Acceptability Criteria (TAC) of a minimum 90 percent control survival. Unless referenced above, the tests proceeded without any noted deviations or interruptions that could have affected test results. The testing should be considered “valid”.

CHRONIC BIOASSAYS

Table 2 summarizes the survival and reproduction data for the *P. promelas* chronic test.

Table 3 Summary of Chronic Results <i>P. promelas</i>		
Sample Concentration (%)	Percent Survival	Mean Dry Weight Per Organism Added (mg)
Control	100	0.937
6.25	100	0.880
17.1	95.0	0.864
25	100	0.988
71.8	100	0.961
100	100	0.962

Statistical analysis in accordance with the EPA protocol and WDOE guidance results in:

- NOEC = 100 %
- LOEC > 100 %
- IC₂₅ > 100 %

From the NPDES permit: “Compliance with the effluent limit for chronic toxicity means no statistically significant difference in response between the control and the test concentration representing the CCEC.”

- No statistically significant difference in response between control and CCEC (17.1%) was shown.

Dissolved oxygen concentrations remained at 4.0 mg/L or greater throughout the test period. Test temperatures remained at 25±1°C. Test pH remained within the recommended 6.0 to 9.0 range.

The *P. promelas* test meets Test Acceptability Criteria (TAC) for a minimum 80 percent control survival and a minimum weight of 0.250 mg per surviving control organism. 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* acute reftox test was conducted using sodium chloride. The *P. promelas* chronic reftox test was conducted using potassium chloride. The data sheets for the reference toxicant tests are provided in Appendix B.

Tables 3 and 4 summarize the reference toxicant test results and Cusum chart limits.

Table 3		
Acute Reference Toxicant Tests (g/L)		
Species	LC₅₀	Cusum Chart Limits
<i>P. promelas</i>	8.1	6.2 to 8.6

Table 4		
Chronic Reference Toxicant Tests (g/L)		
Species	IC₂₅	Cusum Chart Limits
<i>P. promelas</i> (survival)	0.64	0.57 to 0.67
<i>P. promelas</i> (growth)	0.63	0.44 to 0.72

APPENDIX A
RAW DATA SHEETS

FRESHWATER TOXICITY TEST: TEST ORGANISM INFORMATION

Client Kaiser Aluminum - Trentwood

Sample Designation (SDG): B 9317

Test Species Information	FHM # <u>2212</u> <i>Pimephales promelas</i> Chronic	FHM # <u>2211</u> <i>Pimephales promelas</i> Acute			
Organism Age at Initiation	<48 hrs, all within a 24 hour window	<u>2</u> Days, within a 24 hour window			
Test Container Size	400 ml	400 ml			
Test Volume	20 ml	250 ml			
Feeding: Type and Amount	0.15 ml <i>Artemia</i> , 2 x Daily	0.15 ml <i>Artemia</i> , @ 48 hrs			
Aeration: In Test Chambers via Slow Bubble :	<input checked="" type="checkbox"/> None <input type="checkbox"/> Prior to use <input type="checkbox"/> @ _____ hrs	<input checked="" type="checkbox"/> None <input type="checkbox"/> Prior to use <input type="checkbox"/> @ _____ hrs			
Acclimation Period	<24 hrs	<u>1</u> Days			
Organism Source	<u>Aquatox</u>	<u>Aquatox</u>			
Size	-	-			
Loading Rate	-	-			

Dissolved Oxygen aeration justifications (in test chambers):

Test(s): All _____

Date:

Comments:

Test Solution Preparation and Dilution Record

Client: Kaiser Aluminum - Trentwood

Fathead minnow - Acute

Test Concentration (%)	Sample Volume (mls)	Final Volume (mls)
Control	0.00 →	1000
6.25	62.5 →	1000
17.1	171 →	1000
25	250 →	1000
71.8	718 →	1000
100	1,000 →	1000

Fathead minnow - Chronic

Test Concentration (%)	Sample Volume (mls)	Final Volume (mls)
Control	0.00 →	200
6.25	12.5 →	200
17.1	34.2 →	200
25	50.0 →	200
71.8	144 →	200
100	200 →	200

Total Sample volume needed per day = 441 mls

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.

Test Day	Sample ID Used	Daily Sample Preparation (prior to dilution)	Dilution Water Used	Date	Time	Initials
0 (Initiation)	B5317-01	<input type="checkbox"/> Temp adj, <input type="checkbox"/> Aerated	ID # 5519	3/23/2022	11:14	TC
2	B5317-01	<input type="checkbox"/> Temp adj, <input type="checkbox"/> Aerated	ID # 5522	3/25/2022	10:07	KG

Total Sample volume needed per day = 2202 mls

Test Day	Sample ID Used	Daily Sample Preparation (prior to dilution)	Dilution Water Used	Date	Time	Initials
0 (Initiation)	B5317-01	<input type="checkbox"/> Temp adj, <input type="checkbox"/> Aerated	ID # 5519	3/23/2022	11:13	TC
1	B5317-01	<input type="checkbox"/> Temp adj, <input type="checkbox"/> Aerated	ID # 5522	3/24/2022	07:31	TC
2	B5317-01	<input type="checkbox"/> Temp adj, <input type="checkbox"/> Aerated	ID # 5522	3/25/2022	10:02	KS
3	B5317-02	<input type="checkbox"/> Temp adj, <input type="checkbox"/> Aerated	ID # 5522	3/26/2022	11:10	KG
4	B5317-02	<input type="checkbox"/> Temp adj, <input type="checkbox"/> Aerated	ID # 5522	3/27/2022	07:40	TC
5	B5317-02	<input type="checkbox"/> Temp adj, <input type="checkbox"/> Aerated	ID # 5522	3/28/2022	09:37	TC
6	B5317-03	<input type="checkbox"/> Temp adj, <input type="checkbox"/> Aerated	ID # 5523	3/29/2022	11:53	TC

96 HOUR FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Random Template Used: 6 conc. x 4 reps. # 7 Waterbath/Incubator Used: # 5317-01 Date: 3/27/20 Time: 12:30
 Sample Description: Outfall 001 Initial Sample ID # B Technician TC Termination 48 hr 12:15 72 hr 12:15 96 hr 12:15
 Client: Kaiser Aluminum - Trentwood Time 0 hr 12:30 24 hr 12:15 48 hr 12:30 72 hr 12:15 96 hr 12:15
 Test Species: Pimephales promelas ID# FHM 2211 Therm. ID# 750 # 280 24 hr 280 48 hr 280 72 hr 280 96 hr 280

Percent	Test Container Number	Number of Live Organisms				Dissolved Oxygen (mg/l)				pH				Temperature (°C)				Conductivity (µmhos/cm)			
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
Control	A	10	10	10	10	10	8.6	7.9	7.4	8.1	8.1	7.7	7.6	7.4	20.4	20.1	20.2	20.1	335	314	337
	B	10	10	10	10	10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	C	10	10	10	10	10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	D	10	10	10	10	10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
6.25	A	10	10	10	10	10	8.5	8.1	7.9	8.0	7.9	7.8	7.5	7.4	20.4	20.0	20.1	20.1	355	332	351
	B	10	10	10	10	10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	C	10	10	10	10	10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	D	10	10	10	10	10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
17.1	A	10	10	10	10	10	8.5	8.1	7.8	8.0	7.8	7.4	7.4	7.4	20.2	20.1	20.2	20.1	348	341	364
	B	10	10	10	10	10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	C	10	10	10	10	10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	D	10	10	10	10	10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

CETIS Summary Report

Report Date: 18 Apr-22 14:13 (p 1 of 1)
 Test Code/ID: B531701ppa / 10-3349-8731

Fathead Minnow 96-h Acute Survival Test

Eurofins TestAmerica - Corvallis

Batch ID: 11-5612-5393	Test Type: Survival (96h)	Analyst: Michelle Bennett
Start Date: 23 Mar-22 12:30	Protocol: EPA/821/R-02-012 (2002)	Diluent: Mod-Hard Synthetic Water
Ending Date: 27 Mar-22 10:05	Species: Pimephales promelas	Brine:
Test Length: 94h	Taxon: Actinopterygii	Source: Aquatox, AR Age: 2D
Sample ID: 05-4974-9949	Code: B5317-01	Project:
Sample Date: 22 Mar-22 10:10	Material: Industrial Effluent	Source: Kaiser Aluminum Trentwood (WA0000)
Receipt Date: 23 Mar-22 10:45	CAS (PC):	Station: Outfall 001
Sample Age: 26h (3.5 °C)	Client:	

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	PMSD	TU	S
00-3073-4483	96h Survival Rate	Steel Many-One Rank Sum Test	100	>100	---	4.57%	1	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓ Level	%	95% LCL	95% UCL	TU	S
01-3114-5629	96h Survival Rate	Linear Interpolation (ICPIN)	EC50	>100	---	---	<1	1

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits			Decision
				Lower	Upper	Overlap	
00-3073-4483	96h Survival Rate	Control Resp	1	0.9	>>	Yes	Passes Criteria
01-3114-5629	96h Survival Rate	Control Resp	1	0.9	>>	Yes	Passes Criteria

96h Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	D	4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
6.25		4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
17.1		4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
25		4	0.9750	0.8954	1.0550	0.9000	1.0000	0.0250	0.0500	5.13%	2.50%
71.8		4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
100		4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%

96h Survival Rate Detail

MD5: 36B3630C04D5AF4F22A8F091F8565EFD

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000
17.1		1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	0.9000
71.8		1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000

96h Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	10/10	10/10	10/10	10/10
6.25		10/10	10/10	10/10	10/10
17.1		10/10	10/10	10/10	10/10
25		10/10	10/10	10/10	9/10
71.8		10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

CETIS Analytical Report

Report Date: 18 Apr-22 14:06 (p 1 of 2)
Test Code/ID: B531701ppa / 10-3349-8731

Fathead Minnow 96-h Acute Survival Test

Eurofins TestAmerica - Corvallis

Analysis ID: 00-3073-4483	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.9.7
Analyzed: 18 Apr-22 14:00	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Edit Date: 18 Apr-22 13:59	MD5 Hash: 36B3630C04D5AF4F22A8F091F8565EFD	Editor ID: 000-042-882-4

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Angular (Corrected)	C > T	100	>100	---	1	0.04568	4.57%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Dilution Water		6.25	18	10	1	6	CDF	0.8333	Non-Significant Effect
		17.1	18	10	1	6	CDF	0.8333	Non-Significant Effect
		25	16	10	1	6	CDF	0.6105	Non-Significant Effect
		71.8	18	10	1	6	CDF	0.8333	Non-Significant Effect
		100	18	10	1	6	CDF	0.8333	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0055332	0.0011066	5	1	0.4457	Non-Significant Effect
Error	0.0199195	0.0011066	18			
Total	0.0254527		23			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test				Indeterminate
Distribution	Shapiro-Wilk W Normality Test	0.4634	0.884	<1.0E-05	Non-Normal Distribution

96h Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6.25		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
17.1		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
25		4	0.9750	0.8954	1.0000	1.0000	0.9000	1.0000	0.0250	5.13%	2.50%
71.8		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

Angular (Corrected) Transformed Summary

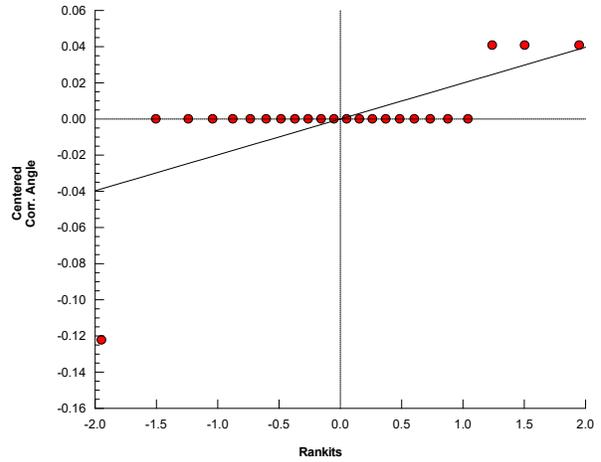
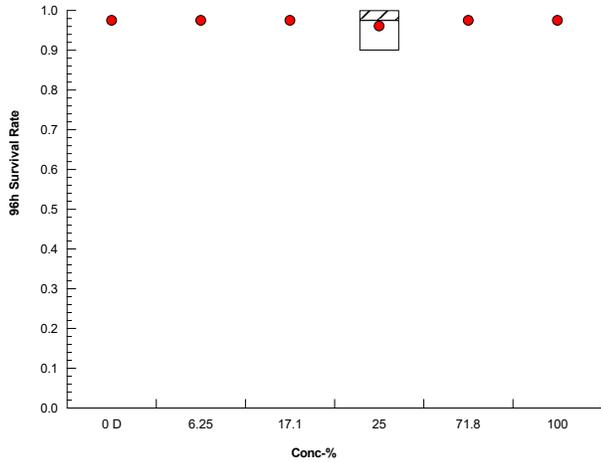
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	1.4120	1.4120	1.4120	1.4120	1.4120	1.4120	0.0000	0.00%	0.00%
6.25		4	1.4120	1.4120	1.4120	1.4120	1.4120	1.4120	0.0000	0.00%	0.00%
17.1		4	1.4120	1.4120	1.4120	1.4120	1.4120	1.4120	0.0000	0.00%	0.00%
25		4	1.3710	1.2420	1.5010	1.4120	1.2490	1.4120	0.0407	5.94%	2.89%
71.8		4	1.4120	1.4120	1.4120	1.4120	1.4120	1.4120	0.0000	0.00%	0.00%
100		4	1.4120	1.4120	1.4120	1.4120	1.4120	1.4120	0.0000	0.00%	0.00%

Fathead Minnow 96-h Acute Survival Test

Eurofins TestAmerica - Corvallis

Analysis ID: 00-3073-4483	Endpoint: 96h Survival Rate	CETIS Version: CETISv1.9.7
Analyzed: 18 Apr-22 14:00	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Edit Date: 18 Apr-22 13:59	MD5 Hash: 36B3630C04D5AF4F22A8F091F8565EFD	Editor ID: 000-042-882-4

Graphics



CETIS Analytical Report

Report Date: 18 Apr-22 14:10 (p 1 of 1)
 Test Code/ID: B531701ppa / 10-3349-8731

Fathead Minnow 96-h Acute Survival Test

Eurofins TestAmerica - Corvallis

Analysis ID: 01-3114-5629 Endpoint: 96h Survival Rate CETIS Version: CETISv1.9.7
 Analyzed: 18 Apr-22 14:00 Analysis: Linear Interpolation (ICPIN) Status Level: 1
 Edit Date: 18 Apr-22 13:59 MD5 Hash: 36B3630C04D5AF4F22A8F091F8565EFD Editor ID: 000-042-882-4

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X+1)	Linear	1100184	200	Yes	Two-Point Interpolation

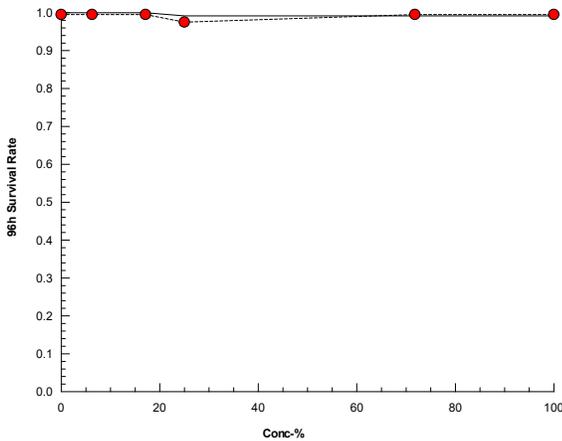
Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC50	>100	---	---	<1	---	---

96h Survival Rate Summary

Conc-%	Code	Count	Calculated Variate(A/B)							Isotonic Variate	
			Mean	Median	Min	Max	CV%	%Effect	A/B	Mean	%Effect
0	D	4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	40/40	1.0000	0.00%
6.25		4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	40/40	1.0000	0.00%
17.1		4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	40/40	1.0000	0.00%
25		4	0.9750	1.0000	0.9000	1.0000	5.13%	2.50%	39/40	0.9917	0.83%
71.8		4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	40/40	0.9917	0.83%
100		4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	40/40	0.9917	0.83%

Graphics



FATHEAD MINNOW 7-DAY SURVIVAL AND WATER QUALITY DATA

Random Template Used: Cerio board # 19 Waterbath/incubator Used: _____ Date Initiated 3/23/2022 Time 12:55
 Initial sample ID B 5317 - 01 # 10 Date Terminated 3/30/2022 Time 10:18

Client Kaiser Aluminum - Trentwood Sample Description Outfall 001
 Tech: Day 0 TC Day 1 TC Day 2 K6 Day 3 K6 Day 4 K6 Day 5 K6 Day 6 K6 Day 7 TC
 Time Day 0 1355 Day 1 1010 Day 2 1332 Day 3 1452 Day 4 1250 Day 5 1535 Day 6 1307 Day 7 1018

Conc. or Percent	Day	Number of Live Organisms										Dissolved O ₂ (mg/l)		pH		Temp. (°C)	# Therm. ID	Conductivity (µS)	
		A	B	C	D	E	F	G	H	I	J	Pre	Post	Pre	Post	Pre		Post (1 st use)	
Control	0	2	2	2	2	2	2	2	2	2	2		6.3		7.9	Post: 26.0	250	335	
	1	2	2	2	2	2	2	2	2	2	2		6.1	6.2	7.3	7.6	25.0	250	
	2	2	2	2	2	2	2	2	2	2	2		5.4	8.0	7.1	7.8	25.1	250	
	3	2	2	2	2	2	2	2	2	2	2		6.0	6.1	7.4	7.6	25.4	250	325
	4	2	2	2	2	2	2	2	2	2	2		6.0	8.1	7.3	7.5	26.2	250	
	5	2	2	2	2	2	2	2	2	2	2		5.6	8.5	7.0	7.6	25.3	250	
	6	2	2	2	2	2	2	2	2	2	2		4.6	7.8	7.1	7.8	25.4	250	335
	7	2	2	2	2	2	2	2	2	2	2		6.0		7.6		26.0	250	
6.25 %	0	2	2	2	2	2	2	2	2	2	2		6.4		8.0	Post: 26.0			
	1	2	2	2	2	2	2	2	2	2	2		4.8	6.2	7.2	7.6	25.2		
	2	2	2	2	2	2	2	2	2	2	2		5.4	8.2	7.0	7.8	25.3		
	3	2	2	2	2	2	2	2	2	2	2		6.1	8.2	7.5	7.6	25.3		
	4	2	2	2	2	2	2	2	2	2	2		5.8	8.2	7.2	7.5	25.1		
	5	2	2	2	2	2	2	2	2	2	2		5.6	8.6	6.9	7.7	25.3		
	6	2	2	2	2	2	2	2	2	2	2		4.5	8.5	7.1	7.8	25.3		
	7	2	2	2	2	2	2	2	2	2	2		6.0		7.5		24.4		
17.1 %	0	2	2	2	2	2	2	2	2	2	2		6.6		7.9	Post: 26.0			
	1	2	2	2	2	2	2	2	2	2	2		4.6	6.2	7.1	7.7	25.4		
	2	2	2	2	2	2	2	2	2	2	2		5.2	8.1	7.1	7.7	25.1		
	3	2	2	2	2	2	2	2	2	2	2		5.7	8.3	7.4	7.7	25.0		
	4	2	2	2	2	2	2	2	2	2	2		5.3	8.0	7.1	7.5	25.0		
	5	2	2	2	2	2	2	2	2	2	2		5.2	8.3	7.0	7.6	25.0		
	6	2	2	2	2	2	2	2	2	2	2		4.4	8.3	7.1	7.8	25.2		
	7	2	2	2	2	2	2	2	2	2	2		6.0		7.4		24.4		
25 %	0	2	2	2	2	2	2	2	2	2	2		6.6		7.6	Post: 26.0			
	1	2	2	2	2	2	2	2	2	2	2		4.4	6.3	7.0	7.7	25.1		
	2	2	2	2	2	2	2	2	2	2	2		5.3	8.2	7.1	7.8	25.1		
	3	2	2	2	2	2	2	2	2	2	2		5.7	8.3	7.4	7.7	25.1		
	4	2	2	2	2	2	2	2	2	2	2		5.4	8.0	7.0	7.5	25.0		
	5	2	2	2	2	2	2	2	2	2	2		5.3	8.4	7.1	7.7	25.3		
	6	2	2	2	2	2	2	2	2	2	2		4.6	8.0	7.2	7.8	25.3		
	7	2	2	2	2	2	2	2	2	2	2		6.0		7.4		24.0		
71.8 %	0	2	2	2	2	2	2	2	2	2	2		6.3		7.7	Post: 26.0			
	1	2	2	2	2	2	2	2	2	2	2		4.2	6.2	7.0	7.8	25.1		
	2	2	2	2	2	2	2	2	2	2	2		5.3	8.4	7.3	7.8	25.3		
	3	2	2	2	2	2	2	2	2	2	2		5.8	8.2	7.5	7.7	25.0		
	4	2	2	2	2	2	2	2	2	2	2		5.3	8.1	7.2	7.5	25.1		
	5	2	2	2	2	2	2	2	2	2	2		5.4	8.1	7.3	7.8	25.0		
	6	2	2	2	2	2	2	2	2	2	2		4.7	8.2	7.4	7.8	25.4		
	7	2	2	2	2	2	2	2	2	2	2		6.1		7.5		24.6		
100 %	0	2	2	2	2	2	2	2	2	2	2		6.4		7.6	Post: 26.0		426	
	1	2	2	2	2	2	2	2	2	2	2		4.0	6.4	7.1	7.8	25.1		
	2	2	2	2	2	2	2	2	2	2	2		5.2	8.4	7.4	7.8	25.1		
	3	2	2	2	2	2	2	2	2	2	2		5.8	8.2	7.6	7.8	25.0	485	
	4	2	2	2	2	2	2	2	2	2	2		5.2	8.2	7.3	7.5	25.3		
	5	2	2	2	2	2	2	2	2	2	2		5.5	8.2	7.5	7.8	25.0		
	6	2	2	2	2	2	2	2	2	2	2		4.9	8.5	7.5	7.7	25.3	457	
	7	2	2	2	2	2	2	2	2	2	2		6.9		7.6		25.0		

✓ Indicates one organism inadvertently poured off during solution renewal, replaced into container. Pre = Pre-renewal solutions. Post = Post-renewal solutions.
 "M" = organism missing, start count reduced. "Inj" = organism injured, remove from stats. Day 0 Temperatures = Post-renewals
 "F" = fungus noted on dead organisms. Therm ID# = Thermometer ID used for all measurements that day.
 Aeration in test chambers begun @ _____ (Note observations on Test Organism Info sheet) 23.8 = Temp. out of recommended range

FATHEAD MINNOW 7-DAY GROWTH DATA

Client Kaiser 001 Tins Labeled As: K001
 Lab ID: B 5317 Start Date 3/24/2022
 Sample Description: _____

Technician: _____ KG
 Date: 3/28/2022
 Balance Serial #: B328543647 B328543647

Concentration or Percent	Replicate	Total Weight (mg)	Tare Weight (mg)	No. of Fish
Control	A		782.27	2
	B		806.21	2
	C		814.21	2
	D		805.02	2
	E		802.80	2
	F		837.45	2
	G		814.74	2
	H		813.06	2
	I		806.67	2
	J		776.41	2
6.25 %	A		798.66	2
	B		835.50	2
	C		819.48	2
	D		825.56	2
	E		825.13	2
	F		823.92	2
	G		820.29	2
	H		814.72	2
	I		817.75	2
	J		819.13	2
12.5 %	A		819.91	2
	B		816.57	2
	C		804.16	2
	D		805.03	2
	E		821.99	2
	F		807.08	2
	G		807.69	2
	H		814.48	1
	I		821.25	2
	J		791.15	2

weigh to 0.01 mg

FATHEAD MINNOW 7-DAY GROWTH DATA

Client Kaiser 001 Tins Labeled As: K001
 Lab ID: B 5317 Start Date 44644
 Sample Description: _____

Technician: _____ KG
 Date: _____ 3/28/2022
 Balance Serial #: 50309851 50309851

Concentration or Percent	Replicate	Total Weight (mg)	Tare Weight (mg)	No. of Fish
25 %	A		829.10	2
	B		783.60	2
	C		773.48	2
	D		774.63	2
	E		820.16	2
	F		809.62	2
	G		813.80	2
	H		828.96	2
	I		845.22	2
	J		847.92	2
50 %	A		838.14	2
	B		851.04	2
	C		808.97	2
	D		820.42	2
	E		776.39	2
	F		823.91	2
	G		822.82	2
	H		818.57	2
	I		831.29	2
	J		834.09	2
100 %	A		811.35	2
	B		813.08	2
	C		812.97	2
	D		790.70	2
	E		808.34	2
	F		817.30	2
	G		778.41	2
	H		810.47	2
	I		813.86	2
	J		800.60	2

weigh to 0.01 mg

CETIS Summary Report

Report Date: 18 Apr-22 09:45 (p 1 of 2)
 Test Code/ID: B531701ppc / 04-9917-7674

Fathead Minnow 7-d Larval Survival and Growth Test

Eurofins TestAmerica - Corvallis

Batch ID: 04-0493-1491 Test Type: Growth-Survival (7d) Analyst: Michelle Bennett
 Start Date: 23 Mar-22 12:55 Protocol: EPA/821/R-02-013 (2002) Diluent: Mod-Hard Synthetic Water
 Ending Date: 30 Mar-22 10:18 Species: Pimephales promelas Brine:
 Test Length: 6d 21h Taxon: Actinopterygii Source: Aquatox, AR Age: 1D

Sample ID: 05-4974-9949 Code: B5317-01 Project:
 Sample Date: 22 Mar-22 10:10 Material: Industrial Effluent Source: Kaiser Aluminum Trentwood (WA0000)
 Receipt Date: 23 Mar-22 10:45 CAS (PC): Station: Outfall 001
 Sample Age: 27h (3.5 °C) Client:

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	PMSD	TU	S
03-0719-4124	7d Survival Rate	Steel Many-One Rank Sum Test	100	>100	---	16.4%	1	1
14-0520-4877	Mean Dry Biomass-mg	Dunnett Multiple Comparison Test	100	>100	---	20.4%	1	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	Level	%	95% LCL	95% UCL	TU	S
01-3901-3811	Mean Dry Biomass-mg	Linear Interpolation (ICPIN)	IC25	>100	---	---	<1	1

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits			Overlap	Decision
				Lower	Upper			
03-0719-4124	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria	
01-3901-3811	Mean Dry Biomass-mg	Control Resp	0.9365	0.25	>>	Yes	Passes Criteria	
14-0520-4877	Mean Dry Biomass-mg	Control Resp	0.9365	0.25	>>	Yes	Passes Criteria	
14-0520-4877	Mean Dry Biomass-mg	PMSD	0.2036	0.12	0.3	Yes	Passes Criteria	

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	D	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
6.25		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
17.1		10	0.9500	0.8369	1.0630	0.5000	1.0000	0.0500	0.1581	16.64%	5.00%
25		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
71.8		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
100		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%

Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	D	10	0.9365	0.84	1.033	0.765	1.19	0.04265	0.1349	14.40%	0.00%
6.25		10	0.8795	0.7875	0.9715	0.645	1.11	0.04065	0.1286	14.62%	6.09%
17.1		10	0.864	0.639	1.089	0.385	1.4	0.09946	0.3145	36.40%	7.74%
25		10	0.988	0.8802	1.096	0.67	1.22	0.04765	0.1507	15.25%	-5.50%
71.8		10	0.961	0.8449	1.077	0.595	1.195	0.05131	0.1623	16.88%	-2.62%
100		10	0.9615	0.8475	1.075	0.64	1.125	0.05038	0.1593	16.57%	-2.67%

CETIS Summary Report

Report Date: 18 Apr-22 09:45 (p 2 of 2)
Test Code/ID: B531701ppc / 04-9917-7674

Fathead Minnow 7-d Larval Survival and Growth Test

Eurofins TestAmerica - Corvallis

7d Survival Rate Detail

MD5: DB1A93CE5A3B2BD290F328D8DF1B311A

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	D	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
17.1		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.5000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
71.8		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Mean Dry Biomass-mg Detail

MD5: 81E15E813988D43EF9D9182FF285CE10

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	D	0.765	0.84	0.895	1.19	1.07	0.94	0.83	0.805	1.025	1.005
6.25		0.98	0.915	0.87	0.86	0.645	1.11	0.965	0.74	0.835	0.875
17.1		0.775	0.865	0.86	0.675	1.4	1.19	1.14	0.48	0.87	0.385
25		1.015	0.97	0.67	1.165	1.22	1.03	1.04	0.92	0.925	0.925
71.8		1.025	0.595	0.91	1.075	1.085	0.995	1.195	0.9	0.96	0.87
100		0.64	0.865	0.845	1.045	1.125	1.125	1.025	0.985	1.115	0.845

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	D	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2
6.25		2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2
17.1		2/2	2/2	2/2	2/2	2/2	2/2	2/2	1/2	2/2	2/2
25		2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2
71.8		2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2
100		2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2

CETIS Analytical Report

Report Date: 18 Apr-22 09:45 (p 1 of 3)
Test Code/ID: B531701ppc / 04-9917-7674

Fathead Minnow 7-d Larval Survival and Growth Test

Eurofins TestAmerica - Corvallis

Analysis ID: 03-0719-4124 **Endpoint:** 7d Survival Rate **CETIS Version:** CETISv1.9.7
Analyzed: 14 Apr-22 14:13 **Analysis:** Nonparametric-Control vs Treatments **Status Level:** 1
Edit Date: 14 Apr-22 14:12 **MD5 Hash:** DB1A93CE5A3B2BD290F328D8DF1B311 **Editor ID:** 000-042-882-4

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Angular (Corrected)	C > T	100	>100	---	1	0.1643	16.43%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Dilution Water		6.25	105	75	1	18	CDF	0.8333	Non-Significant Effect
		17.1	100	75	1	18	CDF	0.6974	Non-Significant Effect
		25	105	75	1	18	CDF	0.8333	Non-Significant Effect
		71.8	105	75	1	18	CDF	0.8333	Non-Significant Effect
		100	105	75	1	18	CDF	0.8333	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0149835	0.0029967	5	1	0.4267	Non-Significant Effect
Error	0.161822	0.0029967	54			
Total	0.176806		59			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	1264	15.09	<1.0E-05	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.2524	0.9459	<1.0E-05	Non-Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6.25		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
17.1		10	0.9500	0.8369	1.0000	1.0000	0.5000	1.0000	0.0500	16.64%	5.00%
25		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
71.8		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

Angular (Corrected) Transformed Summary

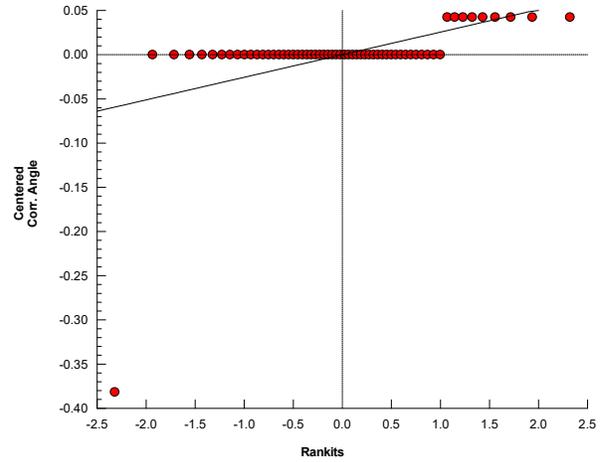
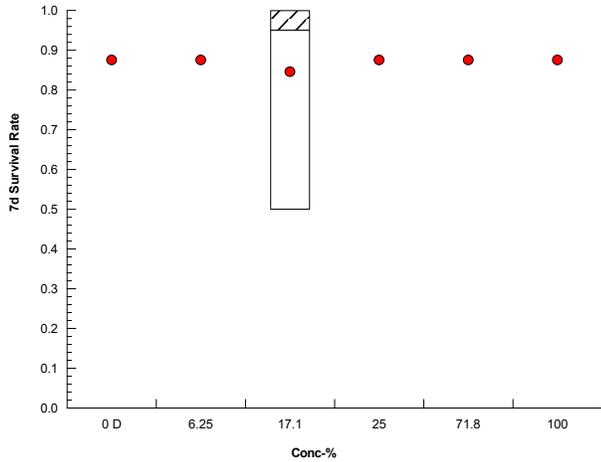
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	10	1.2090	1.2090	1.2100	1.2090	1.2090	1.2090	0.0000	0.00%	0.00%
6.25		10	1.2090	1.2090	1.2100	1.2090	1.2090	1.2090	0.0000	0.00%	0.00%
17.1		10	1.1670	1.0710	1.2630	1.2090	0.7854	1.2090	0.0424	11.49%	3.51%
25		10	1.2090	1.2090	1.2100	1.2090	1.2090	1.2090	0.0000	0.00%	0.00%
71.8		10	1.2090	1.2090	1.2100	1.2090	1.2090	1.2090	0.0000	0.00%	0.00%
100		10	1.2090	1.2090	1.2100	1.2090	1.2090	1.2090	0.0000	0.00%	0.00%

Fathead Minnow 7-d Larval Survival and Growth Test

Eurofins TestAmerica - Corvallis

Analysis ID: 03-0719-4124	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.7
Analyzed: 14 Apr-22 14:13	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Edit Date: 14 Apr-22 14:12	MD5 Hash: DB1A93CE5A3B2BD290F328D8DF1B311	Editor ID: 000-042-882-4

Graphics



Fathead Minnow 7-d Larval Survival and Growth Test

Eurofins TestAmerica - Corvallis

Analysis ID: 14-0520-4877	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.7
Analyzed: 14 Apr-22 14:13	Analysis: Parametric-Control vs Treatments	Status Level: 1
Edit Date: 14 Apr-22 14:12	MD5 Hash: 2D1B52236FCB55BA02E80AFC4E9C40AA	Editor ID: 000-042-882-4

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Untransformed	C > T	100	>100	---	1	0.1906	20.36%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Dilution Water		6.25	0.6844	2.289	0.191	18	CDF	0.5625	Non-Significant Effect
		17.1	0.8706	2.289	0.191	18	CDF	0.4760	Non-Significant Effect
		25	-0.6185	2.289	0.191	18	CDF	0.9557	Non-Significant Effect
		71.8	-0.2943	2.289	0.191	18	CDF	0.9062	Non-Significant Effect
		100	-0.3003	2.289	0.191	18	CDF	0.9074	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.122484	0.0244969	5	0.7065	0.6211	Non-Significant Effect
Error	1.87248	0.0346756	54			
Total	1.99497		59			

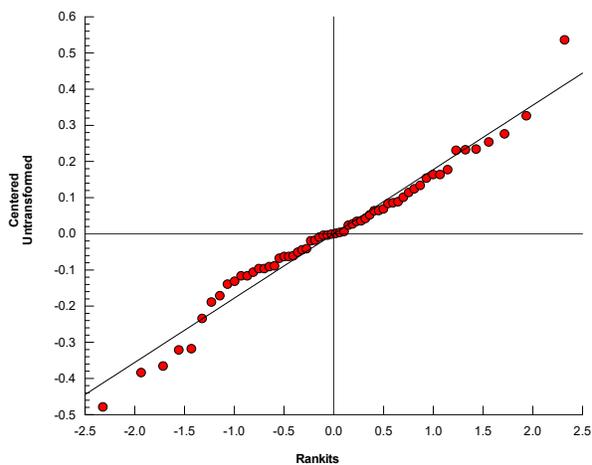
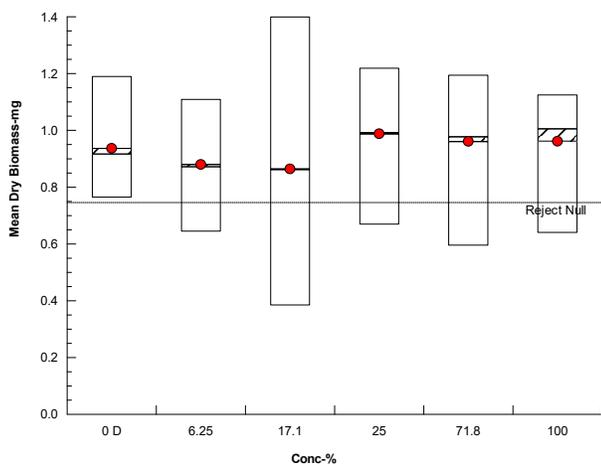
ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	11.64	15.09	0.0401	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9756	0.9459	0.2704	Normal Distribution

Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	10	0.9365	0.84	1.033	0.9175	0.765	1.19	0.04265	14.40%	0.00%
6.25		10	0.8795	0.7875	0.9715	0.8725	0.645	1.11	0.04065	14.62%	6.09%
17.1		10	0.864	0.639	1.089	0.8625	0.385	1.4	0.09946	36.40%	7.74%
25		10	0.988	0.8802	1.096	0.9925	0.67	1.22	0.04765	15.25%	-5.50%
71.8		10	0.961	0.8449	1.077	0.9775	0.595	1.195	0.05131	16.88%	-2.62%
100		10	0.9615	0.8475	1.075	1.005	0.64	1.125	0.05038	16.57%	-2.67%

Graphics



CETIS Analytical Report

Report Date: 18 Apr-22 09:45 (p 1 of 1)
 Test Code/ID: B531701ppc / 04-9917-7674

Fathead Minnow 7-d Larval Survival and Growth Test

Eurofins TestAmerica - Corvallis

Analysis ID: 01-3901-3811 Endpoint: Mean Dry Biomass-mg CETIS Version: CETISv1.9.7
 Analyzed: 14 Apr-22 14:13 Analysis: Linear Interpolation (ICPIN) Status Level: 1
 Edit Date: 14 Apr-22 14:12 MD5 Hash: 2D1B52236FCB55BA02E80AFC4E9C40AA Editor ID: 000-042-882-4

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X+1)	Linear	987638	200	Yes	Two-Point Interpolation

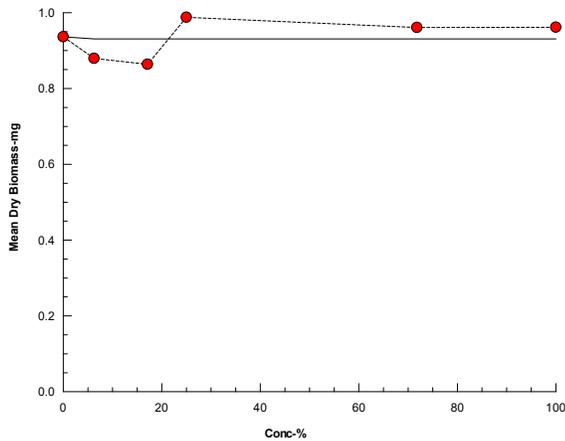
Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>100	---	---	<1	---	---

Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Calculated Variate						Isotonic Variate	
			Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	D	10	0.9365	0.9175	0.765	1.19	14.40%	0.00%	0.9365	0.00%
6.25		10	0.8795	0.8725	0.645	1.11	14.62%	6.09%	0.9308	0.61%
17.1		10	0.864	0.8625	0.385	1.4	36.40%	7.74%	0.9308	0.61%
25		10	0.988	0.9925	0.67	1.22	15.25%	-5.50%	0.9308	0.61%
71.8		10	0.961	0.9775	0.595	1.195	16.88%	-2.62%	0.9308	0.61%
100		10	0.9615	1.005	0.64	1.125	16.57%	-2.67%	0.9308	0.61%

Graphics



APPENDIX B
REFERENCE TOXICANT DATA SHEETS

REFERENCE TOXICANT DATA SHEET

Client	QA/QC	Reference Toxicant	NaCl	Test Begin: Date	3/22/2022	Time	13 : 15
Test Organism	<i>Pimphales promelas</i>	Stock Solution	20 g/L in DI (ASTM Type I) water	Test End: Date	3/24/2022	Time	11 : 20
Source	Aquastox	Reagent Log ID #	7B0916-07	*Dilution Water (Recon MH) ID# 5519			
ID#	FHM 2211	Designed Test Temperature	20 ± 1 °C	Dilution Water Hardness (as CaCO ₃) 90			
Age	1 Days			Dilution Water Alkalinity (as CaCO ₃) 56			
Feeding:	none	Technician	0 hr TC/K6	48 hr TC			
Test Chamber Size	800 ml	Time	0 hr 1315	48 hr 1120			
Volume per Replicate	750 ml	Therm. ID #	0 hr 230	48 hr 280			

Toxicant Concentration (g/L)	Test Chamber Number	Survival in Controls: ≥ 90% (required TAC)	Number of Live Organisms	Dissolved Oxygen (mg/l)			pH			Temperature (°C)			Conductivity (µS)			
				0	24	48	0	24	48	0	24	48	0	24	48	
Control	A	10	10	8.2	8.0	7.8	8.0	8.1	8.1	7.8	7.8	20.4	20.2	20.0	312	335
4.0	A	10	10	8.3	8.1	8.0	8.1	7.8	7.8	7.8	20.4	20.2	20.0	7630	7420	
6.0	A	10	10	8.3	8.3	8.2	8.1	7.8	7.9	7.9	20.3	20.2	20.0	10890	11000	
8.0	A	10	7	8.4	8.3	8.2	8.1	7.8	7.8	7.8	20.4	20.2	20.0	14630	14910	
10.0	A	10	0	8.5	8.5	—	8.0	7.8	—	—	20.4	20.1	—	19100	17570	
12.0	A	10	0	8.5	8.4	—	8.0	7.8	—	—	20.4	20.2	—	21000	19970	
Test Acceptability Criteria (TAC) or test condition:			Survival in Controls: ≥ 90% (required TAC)			pH: > 6.0 and < 9.0 (recommended)			Temperature + 1 °C (recommended)			(QA) none				

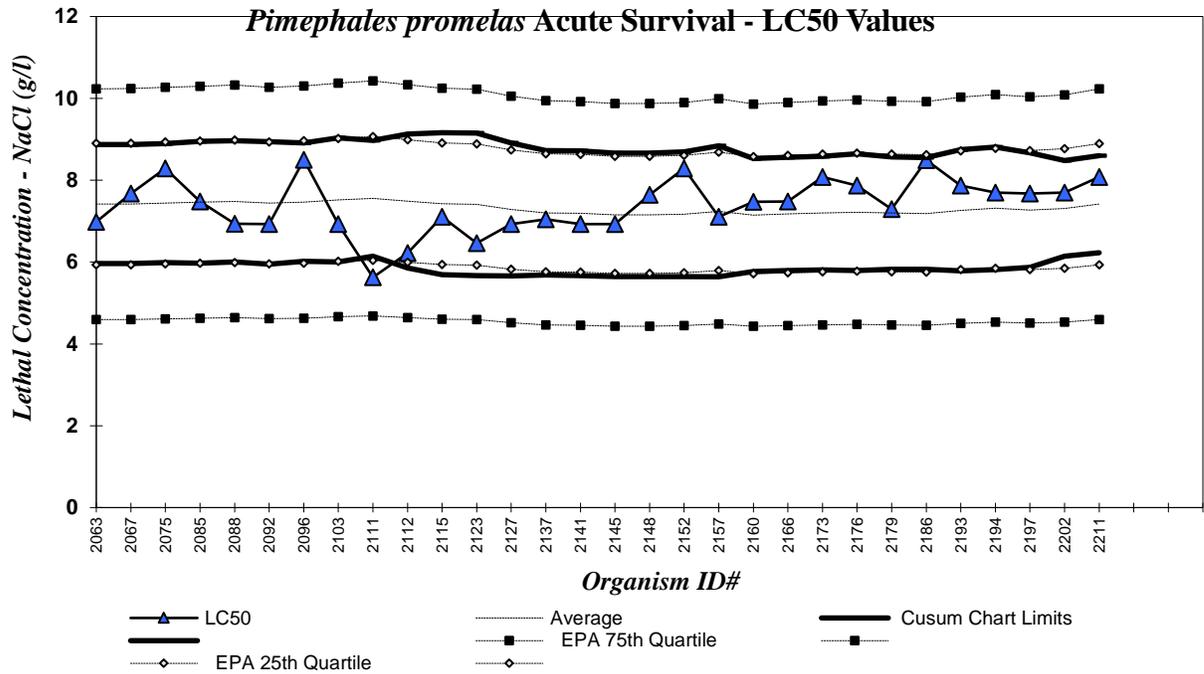
*Dilution Water Code
 Recon. - reconstituted water
 S - soft
 MH - moderately hard
 H - hard
 Art. Sea - Artificial Sea Water

We verify this data is true and correct.

Task Manager: Kendal Laila
 Project Manager: [Signature]
 QA Officer: [Signature]

48 Hour LC₅₀: 8.1
 Cusum Chart Limits: 6.2 to 8.6
 Statistical Method: Spearman-Kärber

**REFERENCE TOXICANT CUMLATIVE SUMMARY (CUSUM)
CHART**



***Pimephales promelas* - ACUTE (EPA Test Method 2000.0)**

SODIUM CHLORIDE (g/L) **From EPA 833-R-00-003:**

Organism age: 1 to 14 days 10th Quartile CV (*control limit*) = 0.08

Endpoint: 48 hour Survival 25th Quartile CV (*warning limit*) = 0.10

Stats Method: Probit, Spearman-Kärber, Linear Interpolation 75th Quartile CV (*warning limit*) = 0.19

Test Conditions: Recon MH, 20 oC 90th Quartile CV (*control limit*) = 0.33

*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	LC50	Running Average	Running SD	Cusum Chart Limits		Intralab CV
						AVG-2SD	AVG+2SD	
954	2166	7/7/2021	7.5	7.2	0.69	5.8	8.6	0.10
955	2173	8/10/2021	8.1	7.2	0.69	5.8	8.6	0.10
956	2176	8/25/2021	7.9	7.2	0.71	5.8	8.6	0.10
957	2179	9/21/2021	7.3	7.2	0.69	5.8	8.6	0.10
958	2186	10/21/2021	8.5	7.2	0.68	5.8	8.6	0.10
959	2193	11/23/2021	7.9	7.3	0.74	5.8	8.7	0.10
960	2194	12/7/2021	7.7	7.3	0.75	5.8	8.8	0.10
961	2197	1/4/2022	7.7	7.3	0.70	5.9	8.7	0.10
962	2202	2/8/2022	7.7	7.3	0.70	6.1	8.5	0.08
963	2211	3/22/2022	8.1	7.4	0.58	6.2	8.6	0.07
964								
965								
966								

FATHEAD MINNOW 7-DAY SURVIVAL AND WATER QUALITY DATA

Random Template Used: 6 conc. x 4 reps. # 4 Waterbath/incubator Used: _____ Date Initiated 3/8/2022 Time 16:45
 Stock Sol. ID 2 B096 - 05 # 410 ^{R⁰ K⁶} ₃₋₈₋₂₂ Date Terminated 3/15/2022 Time 11:35
 Organism ID: FHM 2210 Test Container Size: 800 ml Solution Volume / rep: 500 ml

Client QA/QC - RefTox Sample Description _____ KCl (50 g/L stock) _____

Tech: Day 0 KG Day 1 TC Day 2 TC Day 3 KG Day 4 KG Day 5 KG Day 6 KG Day 7 KG
 Time Day 0 16:45 Day 1 10:51 Day 2 14:39 Day 3 11:25 Day 4 14:20 Day 5 12:05 Day 6 13:35 Day 7 11:35

Conc. or Percent	Day	Number of Live Organisms				Dissolved O ₂ (mg/l)		pH		Temp. (°C)	Therm. ID#	Conductivity (µS)
		A	B	C	D	Pre	Post	Pre	Post			
Control	0	10	10	10	10		8.1		7.8	Post: 24.3	252	321
	1	10	10	10	10	10.9	8.0	7.4	8.0	25.4	250	325
	2	10	10	10	10	10.4	8.2	7.3	7.7	25.2	250	330
	3	10	10	10	10	7.2	8.3	7.2	7.6	25.2	250	313
	4	10	10	10	10	7.4	8.1	7.2	7.6	25.4	250	328
	5	10	10	10	10	7.5	8.4	7.2	7.7	25.5	250	320
	6	10	10	10	10	7.3	8.2	7.2	7.7	25.5	250	327
	7	10	10	10	10	7.0		7.3		25.5	250	
0.25 g/L	0	10	10	10	10		8.1		7.8	Post: 24.3		790
	1	10	10	10	10	7.0	8.1	7.4	8.0	25.1		795
	2	10	10	10	10	10.9	8.3	7.2	7.8	25.3		773
	3	10	10	10	10	7.2	8.4	7.3	7.8	25.4		777
	4	10	10	10	10	7.5	8.2	7.3	7.7	25.4		760
	5	10	10	10	10	7.4	8.5	7.4	7.8	25.6		775
	6	10	10	10	10	7.2	8.2	7.3	7.8	25.6		787
	7	10	10	10	10	7.1		7.4		25.8		
0.50 g/L	0	10	10	10	10		8.3		7.9	Post: 24.3		1253
	1	10	10	10	10	7.0	8.1	7.4	8.0	25.1		1228
	2	10	10	9M	10	10.4	8.4	7.3	7.8	25.3		1234
	3	10	10	9	9M	7.1	8.3	7.4	7.8	25.3		1230
	4	10	10	9	8	7.3	8.1	7.4	7.8	25.3		1280
	5	10	10	9	8	7.3	8.6	7.5	7.8	25.3		1230
	6	10	10	9	8	7.0	8.3	7.4	7.8	25.5		1227
	7	10	10	9	8	7.2		7.5		25.5		
1.0 g/L	0	10	10	10	10		8.1		7.9	Post: 24.3		2100
	1	9	7	3	7	10.9	8.2	7.4	8.0	25.4		2120
	2	9	5	3	5	10.4	8.4	7.4	7.8	25.3		2130
	3	5	5	3	5	7.0	8.5	7.4	7.8	25.0		2090
	4	5	5	3	4	7.3	8.2	7.5	7.8	25.1		2140
	5	3	5	2	4	7.2	8.5	7.0	7.9	25.1		2130
	6	3	5	2	3	7.1	8.2	7.5	7.9	25.2		2180
	7	3	4	1	3	7.3		7.6		25.3		
2.0 g/L	0	10	10	10	10		8.2		8.0	Post: 24.3		3160
	1	0	0	0	0	7.0	8.2	7.5	8.1	25.4		3780
	2											
	3											
	4											
	5											
	6											
	7											
4.0 g/L	0	10	10	10	10		8.2		8.0	Post: 24.4		7060
	1	0	0	0	0	7.0		7.6		25.1		
	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

Survival - EC₂₅ 0.64

Growth - IC₂₅ 0.63

Cusum Chart Limits

0.57 to 0.67

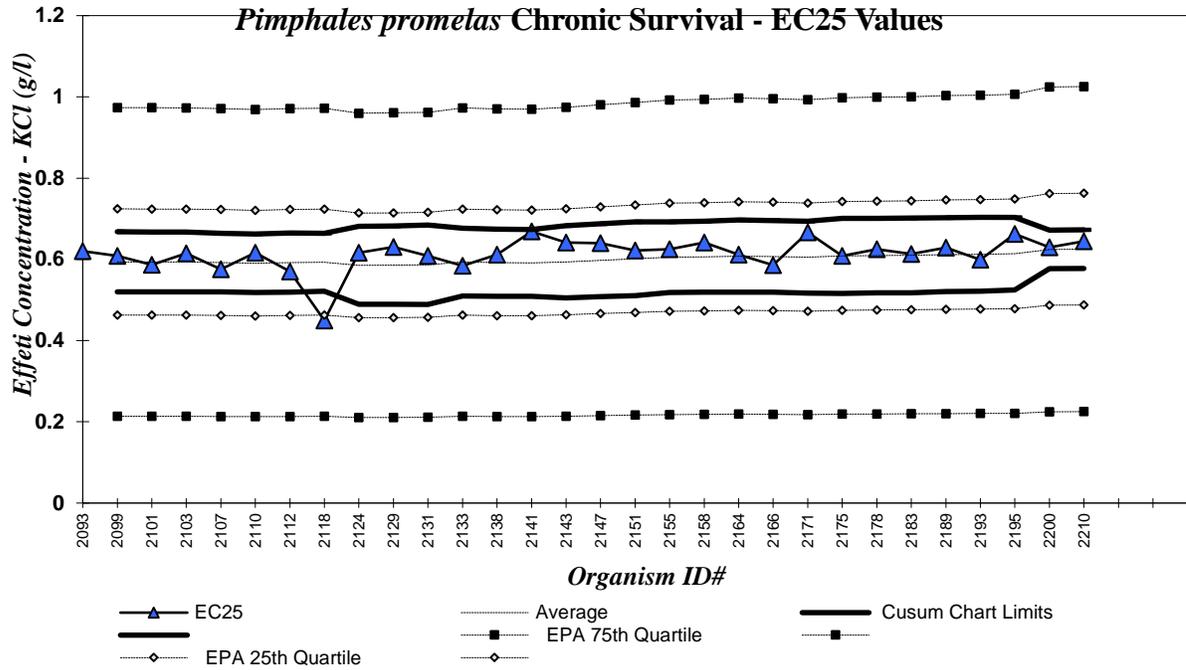
0.44 to 0.72

Task Manager Kendal

Project Manager [Signature]

QA Officer _____

**REFERENCE TOXICANT CUMULATIVE SUMMARY (CUSUM)
CHART**



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

POTASSIUM CHLORIDE (g/L)

From EPA 833-R-00-003:

Endpoint: Chronic Survival

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

Stats Method: Linear Interpolation

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

Test Conditions: Recon MH, 25 oC

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

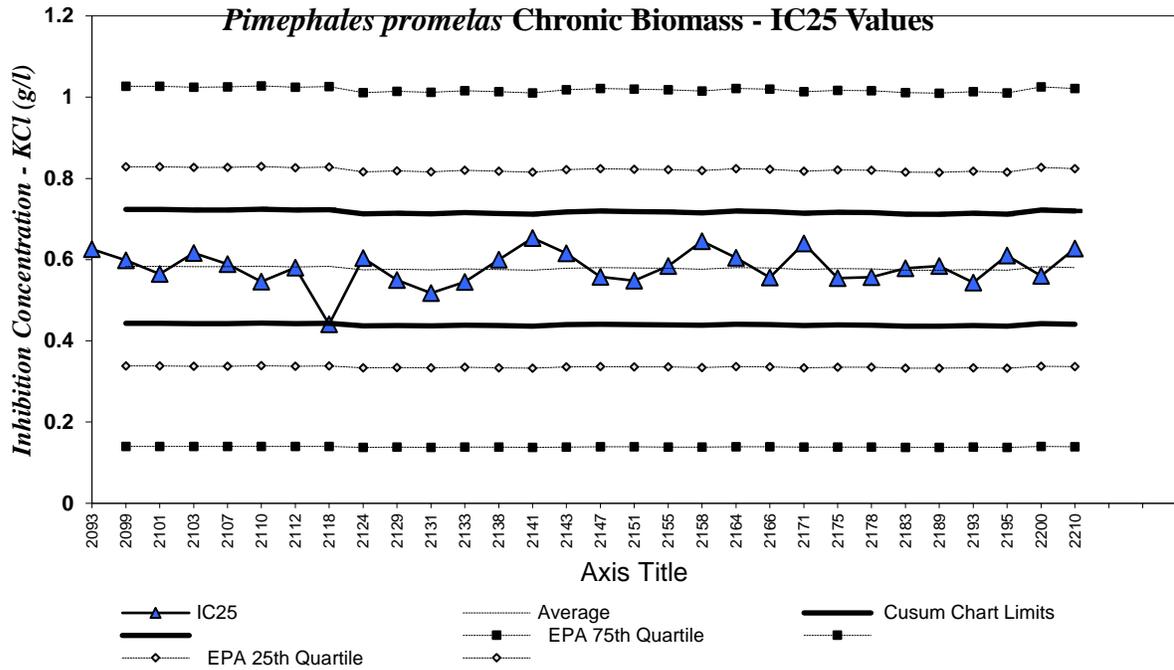
90th Quartile CV (*control limit*) = 0.52

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		Intralab CV
						AVG-2SD	AVG+2SD	
75	2175	8/17/2021	0.61	0.6	0.05	0.52	0.70	0.08
76	2178	9/9/2021	0.63	0.6	0.05	0.52	0.70	0.08
77	2183	9/28/2021	0.61	0.6	0.05	0.52	0.70	0.07
78	2189	11/2/2021	0.63	0.6	0.05	0.52	0.70	0.07
79	2193	11/16/2021	0.60	0.6	0.05	0.52	0.70	0.07
80	2195	12/7/2021	0.66	0.6	0.04	0.52	0.70	0.04
81	2200	1/25/2022	0.63	0.6	0.02	0.58	0.67	0.04
82	2210	3/8/2022	0.64	0.6	0.02	0.58	0.67	0.04
83								
84								

**REFERENCE TOXICANT CUMULATIVE SUMMARY (CUSUM)
CHART**



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

POTASSIUM CHLORIDE (g/L)

From EPA 833-R-00-003:

Endpoint: Chronic Growth (Biomass)

10th Quartile CV (*control limit*) = 0.12

Stats Method: Linear Interpolation

25th Quartile CV (*warning limit*) = 0.21

Test Conditions: Recon MH, 25 oC

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		Intralab CV
						AVG-2SD	AVG+2SD	
70	2155	4/15/2021	0.58	0.58	0.05	0.44	0.72	0.08
71	2158	5/11/2021	0.65	0.58	0.05	0.44	0.72	0.08
72	2164	6/22/2021	0.60	0.58	0.05	0.44	0.72	0.08
73	2166	7/1/2021	0.56	0.58	0.05	0.44	0.72	0.08
74	2171	7/20/2021	0.64	0.58	0.05	0.44	0.71	0.09
75	2175	8/17/2021	0.55	0.58	0.05	0.44	0.72	0.09
76	2178	9/9/2021	0.56	0.58	0.05	0.44	0.72	0.09
77	2183	9/28/2021	0.58	0.57	0.05	0.44	0.71	0.09
78	2189	11/2/2021	0.58	0.57	0.05	0.44	0.71	0.08
79	2193	11/16/2021	0.54	0.58	0.05	0.44	0.71	0.09
80	2195	12/7/2021	0.61	0.57	0.05	0.44	0.71	0.07
81	2200	1/25/2022	0.56	0.58	0.04	0.44	0.72	0.07
82	2210	3/8/2022	0.63	0.58	0.04	0.44	0.72	0.07
83								
84								
85								

APPENDIX C
CHAIN OF CUSTODY



Environment Testing
TestAmerica

Sample Receipt Record

Batch Number: B9317-01
Client/Project: K001

Date Received: 3/23/22
Received By: TC

- Were custody seals intact? Yes No N/A
- Packing Material: Ice Blue Ice Box
- Temp OK? ($\leq 6^{\circ}\text{C}$) Therm ID: 169 Expires: 6/12/2022 Observed: 3.2^{\circ}\text{C}, Actual Temp: 3.5^{\circ}\text{C} Yes No N/A
- If sample is noted @ $\leq 0.0^{\circ}\text{C}$, 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	MATERIAL CONTROL CENTER (509) 927-6407 KAISER ALUMINUM 15000 E EUCLID AVE SPOKANE VALLEY WA 99216	69 LBS	DMT: 23, 15, 16
Resolution	SHIP TO: AQUATIC TOXICOLOGY LAB (541) 768-3160 EUROFINS TESTAMERICA-CORVALLIS 1100 NE CIRCLE BLVD SUITE 310 CORVALLIS OR 97330		
OR 973 1-01			
UPS NEXT DAY AIR		TRACKING #: 1Z 20A 238 01 4573 2860	
BILLING: 0/P			
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Environment Testing
TestAmerica

Sample Receipt Record

Batch Number: B5317-02
Client/Project: Kaiser # D21

Date Received: 3-26-22
Received By: KG

- Were custody seals intact? Yes No N/A
- Packing Material: Ice Blue Ice Box
- Temp OK? ($\leq 6^{\circ}\text{C}$) Therm ID: KA Expires: 6/12/2023 Observed: 2.8 $^{\circ}\text{C}$, Actual Temp: 2.6 $^{\circ}\text{C}$ Yes No N/A
- If sample is noted @ $\leq 0.0^{\circ}\text{C}$, 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	64 LBS	DWT: 16, 14, 23
Resolution	<p>SHIP TO: AQUATIC TOXICOLOGY LAB (541) 768-3160 EUROFINS TESTAMERICA-CORVALLIS 1100 NE CIRCLE BLVD SUITE 310 CORVALLIS OR 97330</p>	

OR 973 1-01

UPS NEXT DAY AIR 1 S

TRACKING #: 1Z 20A 238 44 4451 1921

BILLING: P/P

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Environment Testing
TestAmerica

Sample Receipt Record

Batch Number: B5317-03
Client/Project: Kaiser 001

Date Received: 3-29-22
Received By: KG

- Were custody seals intact? Yes No N/A
- Packing Material: Ice Blue Ice Box
- Temp OK? ($\leq 6^{\circ}\text{C}$) Therm ID: 109 Expires: 01/2023 Observed: 6.6 $^{\circ}\text{C}$, Actual Temp: 6.7 $^{\circ}\text{C}$ Yes No N/A
- If sample is noted @ $\leq 0.0^{\circ}\text{C}$, 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
Resolution

52 LBS
DMT: 21, 14, 15

SHIP TO:
AQUATIC TOXICOLOGY LAB
(541) 768-3160
EUROFINS TESTAMERICA-CORVALLIS
1100 NE CIRCLE BLVD SUITE 310
CORVALLIS OR 97330

OR 973 1-01

UPS NEXT DAY AIR

1

TRACKING #: 1Z 20A 238 01 4411 4155

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