



**Whole Effluent Toxicity Test Report  
Liberty Lake**

January 2025

Report date: January 24, 2025

Submitted to:

**Liberty Lake Sewer and Water District**  
2218 N. Harvard Road  
Liberty Lake, WA 99019

*Rainier Environmental*  
5013 Pacific Hwy East  
Suite 20  
Tacoma, WA 98424

## **1.0 INTRODUCTION**

Chronic toxicity tests were conducted using effluent samples collected from Liberty Lake in January 2025. Bioassays were conducted using the test organisms *Ceriodaphnia dubia* (*Ceriodaphnia*) and *Pimephales promelas* (fathead minnow). Testing was performed at Rainier Environmental Laboratory located in Tacoma, Washington.

## **2.0 METHODS**

### **2.1 Sample Collection and Transport**

Three 24-hour effluent samples were collected into 10-liter (L) LDPE cubitainers by Liberty Lake personnel. The samples were packed in coolers containing ice and transported to Rainier Environmental. Appropriate chain-of-custody procedures were employed during collection and transport.

### **2.2 Sample Receipt**

Upon arrival at Rainier Environmental, coolers were opened, samples inspected, and the contents compared with the chain-of-custody forms. Receipt temperature was measured and recorded on the chain-of-custody form for each sample. Standard water quality parameters were measured and recorded on a sample check-in sheet (Appendix D). Samples were stored at 4°C in the dark until use.

### **2.3 Test Methods**

The chronic toxicity tests were conducted according to USEPA (2002b) procedures for *Ceriodaphnia* and fathead minnow. Conditions for the chronic tests are summarized in Tables 1 and 2.

**Table 1. Summary of conditions for the 7-day *Ceriodaphnia* survival and reproduction test.**

Test initiation date and time	1/14/2025; 1450h
Test termination date and time	1/21/2025; 1445h
Test organism	<i>Ceriodaphnia dubia</i>
Test organism source	In-house cultures
Test organism age	< 24 hours
Test duration	7 days
Feeding	1:1 mixture YTC:algal suspension daily
Test chamber	30 mL plastic cup
Test solution volume	15 mL
Test temperature	25 ± 1°C
Dilution water	Diluted mineral water
Test concentrations (% sample)	100, 50, 27, 12.5, 2.4, control
Number of organisms/chamber	1
Number of replicates	10
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test protocol	EPA-821-R-02-013
Test acceptability criteria for controls	≥ 80% survival; ≥ 15 neonates per surviving adult
Reference toxicant	Sodium chloride

**Table 2. Summary of conditions for the fathead minnow 7-day survival and growth test.**

Test initiation date and time	1/14/2025; 1400h
Test termination date and time	1/21/2025; 1410h
Test organism	<i>Pimephales promelas</i>
Test organism source	Aquatic BioSystems; Fort Collins, CO
Test organism age	< 24 hours
Feeding	<i>Artemia</i> nauplii, twice daily
Test chamber	500 mL plastic cup
Test solution volume	250 mL
Test temperature	25 ± 1°C
Dilution water	Moderately hard synthetic water
Test concentrations (% sample)	100, 50, 27, 12.5, 2.4, control
Number of organisms/chamber	10
Number of replicates	4
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test protocol	EPA-821-R-02-013
Test acceptability criteria for controls	≥ 80% survival; average dry weight ≥ 0.25 mg
Reference toxicant	Sodium chloride

### 3.0 RESULTS

Details of standard water quality measurements conducted upon receipt of samples are provided in Table 3.

**Table 3. Sample information.**

Sample ID	Effluent Sample #1	Effluent Sample #2	Effluent Sample #3
Rainier Log-In No.	25-009	25-010	25-013
Collection date and time	1/13/2025; 0915h	1/15/2025; 0920h	1/17/2025; 0920h
Receipt date and time	1/14/2025; 1300h	1/16/2025; 0815h	1/18/2025; 0930h
Receipt temperature (°C)	3.7	3.0	2.0
Dissolved oxygen (mg/L)	9.4	8.6	8.0
pH	7.89	7.84	7.85
Conductivity (µS/cm)	505	531	525
Hardness (mg/L CaCO <sub>3</sub> )	128	132	124
Alkalinity (mg/L CaCO <sub>3</sub> )	124	112	120
Total Chlorine (mg/L)	<0.03	<0.03	<0.03
Total Ammonia (mg/L)	<1.0	<1.0	<1.0

Results for the chronic toxicity tests are summarized in Table 4. Chronic tests involved a 7-day static-renewal exposure to the effluent for fathead minnows and *Ceriodaphnia*. The endpoints from these tests were *Ceriodaphnia* survival and reproduction and fathead minnow survival and growth (evaluated on the basis of dry weight divided by initial count for biomass and final count for dry weight) at the end of the 7-day exposure.

The no observed effect concentration (NOEC) in the fathead minnow test was 100 percent for survival, biomass and mean dry weight. The NOEC in the *Ceriodaphnia* test was 100 percent for both survival and reproduction. There was no observed effect at the acute critical effluent concentration (ACEC) or chronic critical effluent concentration (CCEC) of 27 percent and 2.4 percent concentration respectively.

**Table 4. Summary of results for the *Ceriodaphnia* and fathead minnow chronic toxicity tests.**

Species	Endpoint	NOEC <sup>a</sup> (% effluent)	LOEC <sup>b</sup> (% effluent)
<i>Ceriodaphnia</i>	Survival	100	>100
	Reproduction	100	>100
Fathead minnow	Survival	100	>100
	Biomass	100	>100
	Weight	100	>100

<sup>a</sup> No Observed Effect Concentration, <sup>b</sup> Lowest Observed Effect Concentration

Individual statistical summaries for all tests, copies of the laboratory bench sheets, sample check-in sheet and chains of custody are provided in Appendices A through E.

#### 4.0 QA/QC

Samples were received in good condition and within the temperature range specified by EPA (2002). The toxicity tests met all acceptability criteria for performance of control organisms. There were no deviations from the protocols and all water quality parameters remained within the ranges specified in the corresponding test methods throughout the tests.

Results for the reference toxicant tests used to monitor laboratory performance and test organism sensitivity are summarized in Table 5. The results for the reference toxicant tests fell within the acceptable range of mean  $\pm$  two standard deviations of historical test results, indicating that the test organisms were of an appropriate degree of sensitivity. The coefficients of variation (CV) for the tests are also shown in the table. Based on the reference toxicant and control results, test organisms appeared to be of an appropriate degree of sensitivity.

**Table 5. Reference toxicant test results.**

Species	Endpoint	Date initiated	LC <sub>50</sub> /EC <sub>50</sub>	Acceptable Range	CV (%)
<i>Ceriodaphnia</i>	7d survival	1/14/2025	2.00 g/L NaCl	1.05 – 2.47 g/L	23.9
	7d reproduction	1/14/2025	1.34 g/L NaCl	1.00 – 1.78 g/L	15.4
Fathead minnow	7d survival	1/14/2025	3.20 g/L NaCl	0.20 – 5.10 g/L	126
	7d growth	1/14/2025	2.85 g/L NaCl	0.20 – 3.34 g/L	101

## REFERENCES

- Tidepool Scientific Software. 2001-2011. CETIS Comprehensive Environmental Toxicity Information System Software, Version 1.8.4.6.
- USEPA. 2002a. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. EPA-821-R-02-012. Pp.51-52, 55-56.
- USEPA. 2002b. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition. EPA-821-R-02-013. Pp. 141-196, 53-111.

**Appendix A**  
***Ceriodaphnia dubia* Survival and Reproduction Chronic Test**  
**Statistical Summaries and Raw Bench Sheets**

# CETIS Summary Report

Report Date: 23 Jan-25 15:14 (p 1 of 2)  
 Test Code: 2501-035 | 03-9141-2504

## Ceriodaphnia 7-d Survival and Reproduction Test

Rainier Environmental Laboratory

Batch ID:	11-9787-5811	Test Type:	Reproduction-Survival (7d)	Analyst:	Eric Tollefson
Start Date:	14 Jan-25 14:50	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Perrier Water
Ending Date:	21 Jan-25 14:45	Species:	Ceriodaphnia dubia	Brine:	
Duration:	7d	Source:	In-House Culture	Age:	<24h
Sample ID:	14-5865-8594	Code:	25-009	Client:	Liberty Lake
Sample Date:	13 Jan-25 09:15	Material:	POTW Effluent	Project:	
Receive Date:	14 Jan-25 13:00	Source:	Liberty Lake (WA0045144)		
Sample Age:	30h (3.7 °C)	Station:			

## Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
20-5374-2190	7d Survival Rate	100	>100	NA	NA	1	Fisher Exact/Bonferroni-Holm Test
14-2104-0006	Reproduction	100	>100	NA	30.2%	1	Steel Many-One Rank Sum Test

## Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
20-5374-2190	7d Survival Rate	Control Resp	0.9	0.8 - NL	Yes	Passes Acceptability Criteria
14-2104-0006	Reproduction	Control Resp	22.3	15 - NL	Yes	Passes Acceptability Criteria
14-2104-0006	Reproduction	PMSD	0.3019	0.13 - 0.47	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	10	0.9	0.7819	1	0	1	0.1	0.3162	35.14%	0.0%
2.4		10	0.9	0.7819	1	0	1	0.1	0.3162	35.14%	0.0%
12.5		10	1	1	1	1	1	0	0	0.0%	-11.11%
27		10	1	1	1	1	1	0	0	0.0%	-11.11%
50		10	1	1	1	1	1	0	0	0.0%	-11.11%
100		10	0.9	0.7819	1	0	1	0.1	0.3162	35.14%	0.0%

## Reproduction Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	10	22.3	19.35	25.25	2	32	2.499	7.903	35.44%	0.0%
2.4		10	21.1	17.79	24.41	0	29	2.803	8.863	42.0%	5.38%
12.5		10	24.4	22.86	25.94	15	29	1.301	4.115	16.86%	-9.42%
27		10	22.2	20.51	23.89	14	30	1.428	4.517	20.35%	0.45%
50		10	23.4	21.94	24.86	14	27	1.24	3.921	16.76%	-4.93%
100		10	21.4	18.37	24.43	0	28	2.566	8.113	37.91%	4.04%

## 7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Dilution Water	0	1	1	1	1	1	1	1	1	1
2.4		1	1	1	0	1	1	1	1	1	1
12.5		1	1	1	1	1	1	1	1	1	1
27		1	1	1	1	1	1	1	1	1	1
50		1	1	1	1	1	1	1	1	1	1
100		1	1	1	0	1	1	1	1	1	1

## Reproduction Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Dilution Water	2	26	25	27	25	22	20	22	32	22
2.4		29	28	22	0	28	24	24	21	23	12
12.5		24	23	28	29	21	25	26	15	28	25
27		25	24	30	23	25	18	22	23	18	14
50		26	22	25	26	26	14	27	20	24	24
100		21	26	28	0	21	21	19	26	26	26



CETIS Summary Report

Report Date: 23 Jan-25 15:14 (p 2 of 2)  
Test Code: 2501-035 | 03-9141-2504

Ceriodaphnia 7-d Survival and Reproduction Test Rainier Environmental Laboratory

7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Dilution Water	0/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
2.4		1/1	1/1	1/1	0/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
27		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	0/1	1/1	1/1	1/1	1/1	1/1	1/1

Rainier Environmental  
Washington Laboratory

Client: Liberty Lake  
Sample ID: Effluent Sample #1  
Test No: 2501-035  
Log-In#: 25-009 25-010

Initial and Final Chemistries

Seven Day Chronic Freshwater Bioassay

Start Date & Time: 1/14/2025 1450  
Stop Date & Time: 1/21/2025 1445  
Test Species: Ceriodaphnia dubia  
25-013

Conc. or % <u>CON</u>	Days													
	0		1		2		3		4		5		6	
	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final
pH	8.01	8.04	7.98	8.01	7.95	8.08	7.92	8.05	7.97	8.10	7.95	8.08	7.90	8.11
DO (mg/l)	7.8	8.1	7.8	8.0	7.6	8.1	7.5	8.0	7.2	7.9	7.5	7.4	7.6	8.0
Cond. (µmhos-cm)	301	328	298	322	310	318	303	311	298	308	295	300	297	303
Temperature (°C)	25.0	25.2	25.0	25.1	25.1	25.2	25.0	25.1	25.0	25.1	24.8	25.1	25.1	25.2
<u>2.4</u>	Days													
	0		1		2		3		4		5		6	
	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final
pH	8.03	8.03	7.98	8.07	7.94	8.11	7.91	8.10	7.94	8.11	7.95	8.10	7.91	8.13
DO (mg/l)	7.5	8.1	7.8	7.9	7.7	8.1	7.6	8.0	7.4	7.9	7.7	7.4	7.4	8.0
Cond. (µmhos-cm)	307	314	303	324	309	320	307	314	303	307	301	309	303	310
Temperature (°C)	25.0	25.2	25.0	25.1	25.1	25.2	25.1	25.1	25.0	25.1	24.8	25.1	25.1	25.2
<u>12.5</u>	Days													
	0		1		2		3		4		5		6	
	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final
pH	7.98	8.07	7.97	8.09	7.94	8.15	7.94	8.12	7.94	8.14	7.93	8.11	7.91	8.14
DO (mg/l)	7.7	8.0	7.8	8.0	7.8	8.0	7.8	7.9	7.5	8.1	7.8	7.4	7.4	7.9
Cond. (µmhos-cm)	328	339	322	334	325	334	319	324	313	318	313	316	315	318
Temperature (°C)	25.1	25.2	25.1	25.2	25.0	25.2	25.1	25.1	25.0	25.1	25.0	25.1	25.2	25.2
<u>27</u>	Days													
	0		1		2		3		4		5		6	
	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final
pH	7.97	8.13	7.94	8.15	7.92	8.18	7.95	8.15	7.92	8.17	7.91	8.14	7.89	8.08
DO (mg/l)	7.8	8.2	7.7	8.0	7.9	8.2	7.9	8.0	7.8	8.1	7.8	7.3	7.1	7.9
Cond. (µmhos-cm)	365	384	370	387	376	379	372	381	362	371	359	372	361	368
Temperature (°C)	25.1	25.2	25.0	25.1	25.1	25.2	25.1	25.1	25.0	25.1	25.1	25.0	25.1	25.2
<u>50</u>	Days													
	0		1		2		3		4		5		6	
	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final
pH	7.95	8.23	7.93	8.26	7.90	8.27	7.90	8.24	7.89	8.27	7.88	8.20	7.85	8.19
DO (mg/l)	8.0	8.2	7.8	8.1	8.0	8.1	7.9	8.1	7.8	8.0	7.9	7.0	7.9	8.0
Cond. (µmhos-cm)	448	452	445	457	449	455	452	462	448	455	445	456	447	452
Temperature (°C)	25.1	25.2	25.0	25.1	25.1	25.2	25.1	25.1	25.0	25.1	25.3	25.1	25.1	25.2
<u>100</u>	Days													
	0		1		2		3		4		5		6	
	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final
pH	7.92	8.38	7.90	8.42	7.86	8.38	7.89	8.35	7.87	8.32	7.82	8.24	7.80	8.20
DO (mg/l)	8.1	8.1	7.9	8.2	8.0	8.2	7.9	8.0	8.0	8.2	8.0	7.0	8.0	7.9
Cond. (µmhos-cm)	610	617	607	619	614	619	619	622	618	632	622	644	625	633
Temperature (°C)	25.1	25.2	25.2	25.1	25.1	25.2	25.1	25.1	25.0	25.1	25.6	25.1	25.1	25.2
Tech. Initials	et	et	et	et	et	et	et	et	et	et	et	et	et	et

Dilution Water Batch #: MHSW 005  
Test Chamber: RM2

QA Check: et

Sample Description: In-house cultures  
Animal Source: In-house cultures  
Comments:

Date Received: \_\_\_\_\_ Date of Hatch: \_\_\_\_\_

Client/Sample ID: Liberty Lake  
Test Number: 85-68 3501-035

Ceriodaphnia 7-Day Chronic Survival and Reproduction

Start Date and Time: 7/14/2025 1450  
Stop Date and Time: 7/21/2025 1445

Rep	Conc.	Cont	Daily Reproduction								Day 6 Total	Third Brood
			1	2	3	4	5	6	7	8		
1	CON	34	—	—	—	3	—	X	—	—	3	3
2		19	—	—	—	4	—	10	12	—	14	26
3		55	—	—	—	5	—	9	11	—	14	25
4		1	—	—	—	5	—	9	12	—	15	27
5		52	—	—	—	5	—	7	10	—	12	22
6		26	—	—	—	5	—	6	11	—	9	20
7		10	—	—	—	5	—	6	11	—	11	22
8		46	—	—	—	5	—	6	11	—	11	22
9		35	—	—	—	4	—	13	15	—	17	32
10		60	—	—	—	4	—	8	8	—	14	22

Rep	Conc.	Cont	Daily Reproduction								Day 6 Total	Third Brood
			1	2	3	4	5	6	7	8		
1	27	54	—	—	—	4	—	10	11	—	14	25
2		20	—	—	—	4	—	8	12	—	12	24
3		29	—	—	—	6	—	11	13	—	17	30
4		2	—	—	—	3	—	10	10	—	13	23
5		25	—	—	—	4	—	9	12	—	13	25
6		49	—	—	—	4	—	6	9	—	10	18
7		9	—	—	—	5	—	6	10	—	12	22
8		36	—	—	—	5	—	5	12	—	11	23
9		5	—	—	—	5	—	4	9	—	9	18
10		45	—	—	—	6	—	—	8	—	6	14

Rep	Conc.	Cont	Daily Reproduction								Day 6 Total	Third Brood
			1	2	3	4	5	6	7	8		
1	2.4	27	—	—	—	4	—	12	13	—	16	29
2		11	—	—	—	5	—	11	12	—	16	28
3		38	—	—	—	5	—	7	10	—	12	22
4		43	—	—	—	X	—	—	—	—	0	0
5		18	—	—	—	6	—	10	12	—	16	29
6		33	—	—	—	4	—	9	11	—	13	24
7		47	—	—	—	4	—	8	12	—	12	24
8		21	—	—	—	5	—	7	9	—	12	21
9		4	—	—	—	4	—	7	12	—	11	22
10		42	—	—	—	4	—	—	8	—	4	12

Rep	Conc.	Cont	Daily Reproduction								Day 6 Total	Third Brood
			1	2	3	4	5	6	7	8		
1	50	28	—	—	—	4	—	10	12	—	14	26
2		12	—	—	—	5	—	7	10	—	12	22
3		23	—	—	—	5	—	8	11	—	14	25
4		37	—	—	—	5	—	10	11	—	15	26
5		31	—	—	—	4	—	10	12	—	14	26
6		16	—	—	—	5	—	9	12	—	15	27
7		46	—	—	—	5	—	10	12	—	15	27
8		44	—	—	—	5	—	9	12	—	11	20
9		8	—	—	—	4	—	9	11	—	13	24
10		50	—	—	—	5	—	8	11	—	13	24

Rep	Conc.	Cont	Daily Reproduction								Day 6 Total	Third Brood
			1	2	3	4	5	6	7	8		
1	12.5	48	—	—	—	4	—	8	12	—	12	24
2		14	—	—	—	5	—	8	10	—	13	23
3		58	—	—	—	5	—	10	12	—	16	28
4		7	—	—	—	5	—	11	13	—	16	29
5		41	—	—	—	5	—	7	9	—	12	21
6		32	—	—	—	4	—	9	12	—	13	25
7		13	—	—	—	5	—	9	12	—	14	26
8		53	—	—	—	5	—	10	12	—	15	26
9		22	—	—	—	5	—	12	13	—	15	28
10		59	—	—	—	5	—	9	11	—	14	25

Rep	Conc.	Cont	Daily Reproduction								Day 6 Total	Third Brood
			1	2	3	4	5	6	7	8		
1	100	30	—	—	—	4	—	6	11	—	10	21
2		40	—	—	—	5	—	9	12	—	14	26
3		17	—	—	—	5	—	10	12	—	15	28
4		58	—	—	—	X	—	—	—	—	0	0
5		51	—	—	—	3	—	8	10	—	11	21
6		15	—	—	—	4	—	9	11	—	10	21
7		51	—	—	—	4	—	9	11	—	8	19
8		39	—	—	—	5	—	10	12	—	13	25
9		24	—	—	—	5	—	9	12	—	14	26
10		24	—	—	—	5	—	11	10	—	16	26

Comments: X=mortality

QA 94

**Appendix B**  
**Fathead Minnow Survival and Growth Chronic Test**  
**Statistical Summaries and Raw Bench Sheets**

# CETIS Summary Report

Report Date: 23 Jan-25 15:37 (p 1 of 2)

Test Code: 2501-036 | 17-5057-7106

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

Rainier Environmental Laboratory

Batch ID:	00-1778-3580	Test Type:	Growth-Survival (7d)	Analyst:	Eric Tollefson
Start Date:	14 Jan-25 14:00	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Mod-Hard Synthetic Water
Ending Date:	21 Jan-25 14:10	Species:	Pimephales promelas	Brine:	
Duration:	7d 0h	Source:	Aquatic Biosystems, CO	Age:	<24h
Sample ID:	14-5865-8594	Code:	25-009	Client:	Liberty Lake
Sample Date:	13 Jan-25 09:15	Material:	POTW Effluent	Project:	
Receive Date:	14 Jan-25 13:00	Source:	Liberty Lake (WA0045144)		
Sample Age:	29h (3.7 °C)	Station:			

## Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
16-8397-5988	7d Survival Rate	100	>100	NA	6.56%	1	Steel Many-One Rank Sum Test
21-0148-1196	Mean Dry Biomass-mg	100	>100	NA	23.7%	1	Dunnett Multiple Comparison Test
10-7708-2612	Mean Dry Weight-mg	100	>100	NA	24.9%	1	Dunnett Multiple Comparison Test

## Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
16-8397-5988	7d Survival Rate	Control Resp	0.975	0.8 - NL	Yes	Passes Acceptability Criteria
21-0148-1196	Mean Dry Biomass-mg	Control Resp	0.6323	0.25 - NL	Yes	Passes Acceptability Criteria
21-0148-1196	Mean Dry Biomass-mg	PMSD	0.2369	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	0.9563	0.9937	0.9	1	0.025	0.05	5.13%	0.0%
2.4		4	1	1	1	1	1	0	0	0.0%	-2.56%
12.5		4	0.95	0.9284	0.9716	0.9	1	0.02887	0.05774	6.08%	2.56%
27		4	0.975	0.9563	0.9937	0.9	1	0.025	0.05	5.13%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	-2.56%
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	0.6323	0.6163	0.6482	0.601	0.692	0.02134	0.04268	6.75%	0.0%
2.4		4	0.601	0.5744	0.6276	0.544	0.705	0.03558	0.07117	11.84%	4.94%
12.5		4	0.6603	0.6318	0.6887	0.593	0.757	0.03812	0.07624	11.55%	-4.43%
27		4	0.5927	0.5594	0.6261	0.523	0.722	0.04465	0.08929	15.06%	6.25%
50		4	0.6575	0.6104	0.7046	0.542	0.837	0.06303	0.1261	19.17%	-3.99%
100		4	0.6897	0.6526	0.7269	0.575	0.81	0.04974	0.09948	14.42%	-9.09%

## Mean Dry Weight-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	4	0.6489	0.6343	0.6636	0.602	0.692	0.01965	0.03931	6.06%	0.0%
2.4		4	0.601	0.5744	0.6276	0.544	0.705	0.03558	0.07117	11.84%	7.39%
12.5		4	0.7003	0.6551	0.7455	0.593	0.8411	0.06051	0.121	17.28%	-7.92%
27		4	0.6079	0.5767	0.6392	0.523	0.722	0.04184	0.08368	13.76%	6.32%
50		4	0.6575	0.6104	0.7046	0.542	0.837	0.06303	0.1261	19.17%	-1.32%
100		4	0.6897	0.6526	0.7269	0.575	0.81	0.04974	0.09948	14.42%	-6.29%

# CETIS Summary Report

Report Date: 23 Jan-25 15:37 (p 2 of 2)  
Test Code: 2501-036 | 17-5057-7106

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

Rainier Environmental Laboratory

### 7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Dilution Water	1	1	0.9	1
2.4		1	1	1	1
12.5		0.9	0.9	1	1
27		1	1	1	0.9
50		1	1	1	1
100		1	1	1	1

### Mean Dry Biomass-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Dilution Water	0.692	0.602	0.601	0.634
2.4		0.705	0.544	0.581	0.574
12.5		0.757	0.685	0.593	0.606
27		0.722	0.58	0.523	0.546
50		0.837	0.631	0.62	0.542
100		0.81	0.719	0.575	0.655

### Mean Dry Weight-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Dilution Water	0.692	0.602	0.6678	0.634
2.4		0.705	0.544	0.581	0.574
12.5		0.8411	0.7611	0.593	0.606
27		0.722	0.58	0.523	0.6067
50		0.837	0.631	0.62	0.542
100		0.81	0.719	0.575	0.655

### 7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Dilution Water	10/10	10/10	9/10	10/10
2.4		10/10	10/10	10/10	10/10
12.5		9/10	9/10	10/10	10/10
27		10/10	10/10	10/10	9/10
50		10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Rainier Environmental  
Washington Laboratory

Client: Liberty Lake  
Sample ID: Effluent Sample #1  
Test No: 2501-036  
Log-In#: 25-009 25-010

Initial and Final Chemistries

Seven Day Chronic Freshwater Bioassay  
Start Date & Time: 1/14/2025 1400  
Stop Date & Time: 1/21/2025 1410  
Test Species: pimephales promelas  
25-013

Conc. or (%)	Days													
	0		1		2		3		4		5		6	
	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final
CON														
pH	8.06	7.80	8.09	7.88	8.04	7.85	8.10	7.91	8.03	7.90	7.98	7.87	7.95	7.84
DO (mg/l)	7.7	7.0	7.6	6.9	7.8	6.9	7.5	6.7	7.8	6.6	7.9	6.9	7.8	6.7
Cond. (µmhos-cm)	310	327	314	315	314	319	310	312	308	309	303	310	307	309
Temperature (°C)	25.1	25.0	24.9	24.7	25.1	25.1	24.9	25.2	25.0	25.1	25.3	25.1	25.1	25.1
2.4	Days													
	0		1		2		3		4		5		6	
	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final
pH	8.05	7.73	8.07	7.89	8.03	7.87	8.11	7.94	8.08	7.95	8.03	7.86	7.99	7.85
DO (mg/l)	7.8	7.0	7.7	6.7	7.8	7.0	7.5	6.6	7.8	6.7	7.9	7.0	7.8	6.8
Cond. (µmhos-cm)	304	296	310	316	312	314	311	312	310	312	307	311	310	311
Temperature (°C)	25.1	25.0	24.9	24.8	25.1	25.1	25.1	25.2	25.0	25.1	25.2	25.1	25.1	25.1
12.5	Days													
	0		1		2		3		4		5		6	
	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final
pH	8.03	7.78	8.01	7.90	8.00	7.89	8.06	7.95	8.08	7.97	8.08	7.88	8.04	7.88
DO (mg/l)	7.9	7.0	7.7	6.8	7.6	7.1	7.6	6.7	8.0	6.9	7.8	7.0	7.9	6.8
Cond. (µmhos-cm)	331	327	334	330	332	330	325	327	322	320	322	326	326	329
Temperature (°C)	25.2	25.1	25.0	24.7	24.9	25.0	24.8	25.1	25.1	25.2	25.2	25.2	25.2	25.0
27	Days													
	0		1		2		3		4		5		6	
	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final
pH	8.03	7.90	8.00	7.94	8.00	7.92	8.05	7.87	8.02	7.99	8.01	7.90	8.03	7.90
DO (mg/l)	8.1	7.1	7.9	6.8	7.9	7.2	7.8	6.7	8.0	6.5	7.9	6.8	8.0	7.1
Cond. (µmhos-cm)	377	373	379	376	384	380	376	375	371	368	354	350	357	362
Temperature (°C)	25.1	25.1	24.9	24.8	25.1	25.1	25.0	25.2	25.1	25.1	25.0	25.1	25.1	25.1
50	Days													
	0		1		2		3		4		5		6	
	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final
pH	8.00	7.90	7.99	7.95	7.98	7.96	8.04	7.93	8.01	7.91	7.98	7.92	8.01	7.91
DO (mg/l)	8.2	6.9	8.0	6.9	8.0	7.2	7.9	6.8	8.1	6.5	8.0	6.8	8.1	7.0
Cond. (µmhos-cm)	452	442	450	442	455	451	446	450	445	443	438	435	440	454
Temperature (°C)	25.1	25.0	24.9	24.8	25.2	25.0	25.0	25.2	25.4	25.2	25.0	25.1	25.1	25.1
100	Days													
	0		1		2		3		4		5		6	
	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final	init.	final
pH	7.93	8.02	7.90	8.07	7.87	8.11	7.90	7.99	7.92	7.94	7.95	7.96	8.00	7.92
DO (mg/l)	8.2	6.7	8.2	6.9	8.1	7.1	8.2	6.8	8.2	6.5	8.0	6.7	8.1	7.0
Cond. (µmhos-cm)	608	593	610	598	612	610	614	612	611	606	612	610	615	627
Temperature (°C)	25.1	25.0	24.9	24.8	25.1	25.1	25.0	25.2	25.8	25.2	24.8	25.1	25.1	25.1
Tech. Initials	off	off	off	off	off	off	off	off	off	off	off	off	off	off

Dilution Water Batch #: MHS W 005  
Test Chamber: RM2

QA Check: off

Sample Description: \_\_\_\_\_  
Animal Source: ABS  
Comments: \_\_\_\_\_

Date Received: 1/14/2025 Date of Hatch: 1/13/2025

Rainier Environmental  
Washington Laboratory  
5013 Pacific Hwy. E., Suite 20  
Tacoma, WA 98424

Raw Data Sheet  
Fathead Minnow  
(*Pimephales promelas*)  
Larval Survival

Client Name: Liberty Lake

Test No.: 2501-036

Sample ID: Effluent Sample #1

Rep.	Conc. or %	Cont.	Days								Mean % Survival
			0	1	2	3	4	5	6	7	
1	CON	10	10	10	10	10	10	10	10	10	
2		15	10	10	10	10	10	10	10	10	
3		2	10	10	9	9	9	9	9	9	
4		17	10	10	10	10	10	10	10	10	
1	2.4	24	10	10	10	10	10	10	10	10	
2		1	10	10	10	10	10	10	10	10	
3		22	10	10	10	10	10	10	10	10	
4		9	10	10	10	10	10	10	10	10	
1	12.5	6	10	10	10	10	10	9	9	9	
2		21	10	10	10	10	9	9	9	9	
3		3	10	10	10	10	10	10	10	10	
4		12	10	10	10	10	10	10	10	10	
1	27	19	10	10	10	10	10	10	10	10	
2		8	10	10	10	10	10	10	10	10	
3		14	10	10	10	10	10	10	10	10	
4		4	10	10	10	10	10	9	9	9	
1	50	18	10	10	10	10	10	10	10	10	
2		13	10	10	10	10	10	10	10	10	
3		5	10	10	10	10	10	10	10	10	
4		16	10	10	10	10	10	10	10	10	
1	100	7	10	10	10	10	10	10	10	10	
2		20	10	10	10	10	10	10	10	10	
3		23	10	10	10	10	10	10	10	10	
4		11	10	10	10	10	10	10	10	10	
1											
2											
3											
4											
1											
2											
3											
4											
Tech Initials			st	st	st	st	st	st	st	st	

Feeding Times: 0 10300 2 0815 3 0815 4 0800 5 0845 6 0815  
1545 1545 1600 1600 1415 1600 1545

Comments: \_\_\_\_\_

QA Check: st



Rainier Environmental  
Washington Laboratory  
5013 Pacific Hwy. E., Suite 20  
Tacoma, WA 98424

Raw Data Sheet  
Fish Weights  
Seven Day Chronic Bioassay

Client: Liberty Lake

Test No: 2501-036

Sample ID: Effluent Sample #1

Species: Pimephales promelas

rep #	Conc. or (%)	cont #	pan wt. (gm)	pan + fish (gm)	fish wt. (mg)	# fish	avg. per fish (mg)	avg. per conc. (mg)
1	CON	10	0.04281	0.04973		10		
2		15	0.04382	0.04984		10		
3		2	0.04448	0.05049		9		
4		17	0.04309	0.04943		10		
1	2.4	24	0.04422	0.05127		10		
2		1	0.04540	0.05084		10		
3		22	0.04439	0.05020		10		
4		9	0.04132	0.04706		10		
1	12.5	6	0.04162	0.04919		9		
2		21	0.04619	0.05304		9		
3		3	0.04304	0.04897		10		
4		12	0.04446	0.05052		10		
1	27	19	0.04250	0.04972		10		
2		8	0.04474	0.05054		10		
3		14	0.04336	0.04859		10		
4		4	0.04331	0.04877		9		
1	50	18	0.04413	0.05250		10		
2		13	0.04352	0.04983		10		
3		5	0.04172	0.04792		10		
4		16	0.04499	0.05041		10		
1	100	7	0.04034	0.04844		10		
2		20	0.04617	0.05336		10		
3		23	0.04372	0.04947		10		
4		11	0.04012	0.04667		10		
1								
2								
3								
4								
Technician Initials:			JS	JS				

Date/Time in: 1/21/2025 1410 Oven temp. (°C): 630  
Date/Time out: 1/23/2025 1230 Oven temp. (°C): 650

QA Check: 0

**Appendix C**  
**Control QC Plots**

## Ceriodaphnia 7-d Survival and Reproduction Test

Rainier Environmental Laboratory

Test Type: Reproduction-Survival (7d)

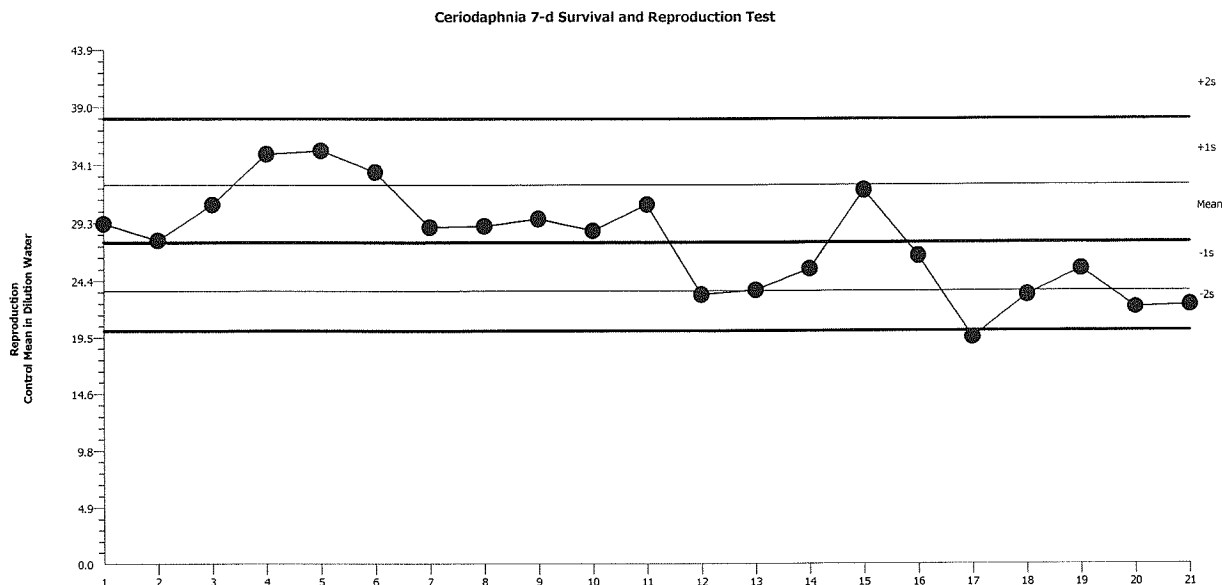
Organism: Ceriodaphnia dubia (Water Flea)

Material: All Materials

Protocol: EPA/821/R-02-013 (2002)

Endpoint: Reproduction

Source: All SampleID Sources



Mean: 27.63

Count: 20

-1s Warning Limit: 23.55

-2s Action Limit: 20.08

Sigma: NA

CV: 17.30%

+1s Warning Limit: 32.42

+2s Action Limit: 38.03

## Quality Control Data

Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2024	May	14	29.2	1.567	0.3455			15-9613-8738	
2			14	27.8	0.1673	0.0378			01-9538-6166	
3			21	30.8	3.167	0.6795			09-8991-2807	
4		Jun	11	35	7.367	1.48	(+)		18-9159-9758	
5			11	35.3	7.667	1.533	(+)		00-5777-7309	
6			18	33.5	5.867	1.206	(+)		20-8245-3945	
7		Jul	16	28.9	1.267	0.2808			17-3807-1168	
8			16	29	1.367	0.3024			17-7421-1515	
9			23	29.6	1.967	0.4306			03-0655-5794	
10		Aug	6	28.6	0.9673	0.2154			15-9971-7023	
11			6	30.8	3.167	0.6795			13-0922-4626	
12		Oct	1	23.2	-4.433	-1.095	(-)		01-9069-8683	
13			1	23.6	-4.033	-0.9878			05-4902-5345	
14			7	25.4	-2.233	-0.5276			06-5159-8852	
15			8	32	4.367	0.9188			13-2115-6114	
16			24	26.5	-1.133	-0.2621			02-0221-0802	
17		Nov	19	19.5	-8.133	-2.183	(-)	(-)	06-2884-1781	
18			19	23.2	-4.433	-1.095	(-)		18-2827-4131	
19	2025	Jan	7	25.4	-2.233	-0.5276			04-6641-2554	
20			14	22.1	-5.533	-1.399	(-)		14-2000-2667	
21			14	22.3	-5.333	-1.343	(-)		03-9141-2504	

## Ceriodaphnia 7-d Survival and Reproduction Test

Rainier Environmental Laboratory

Test Type: Reproduction-Survival (7d)

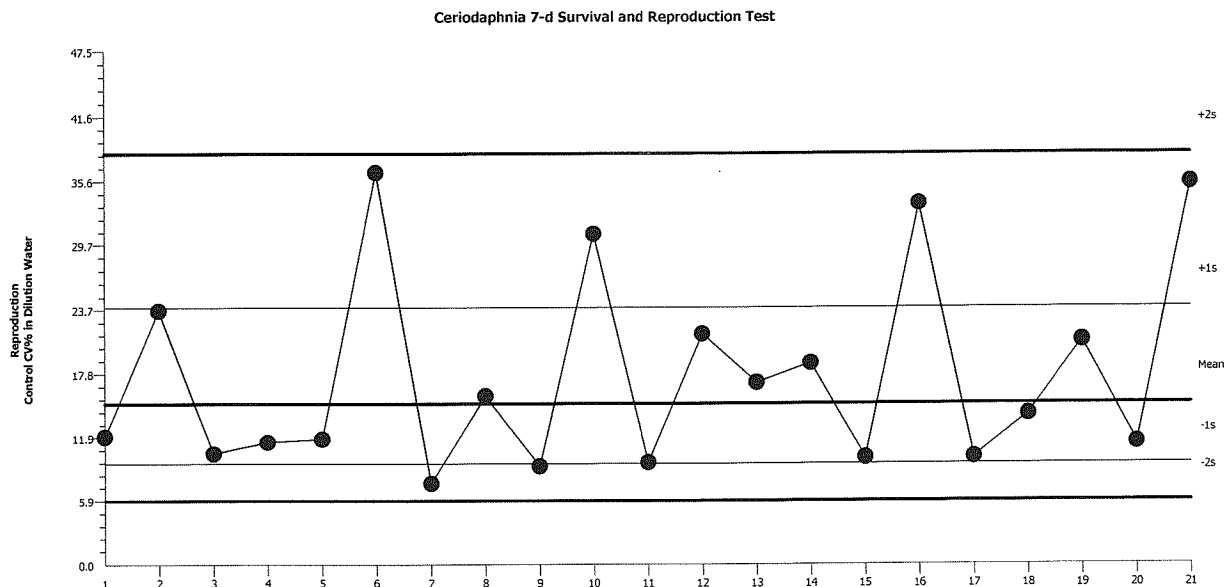
Organism: Ceriodaphnia dubia (Water Flea)

Material: All Materials

Protocol: EPA/821/R-02-013 (2002)

Endpoint: Reproduction

Source: All SampleID Sources



Mean: 15.04

Count: 20

-1s Warning Limit: 9.45

-2s Action Limit: 5.936

Sigma: NA

CV: 59.20%

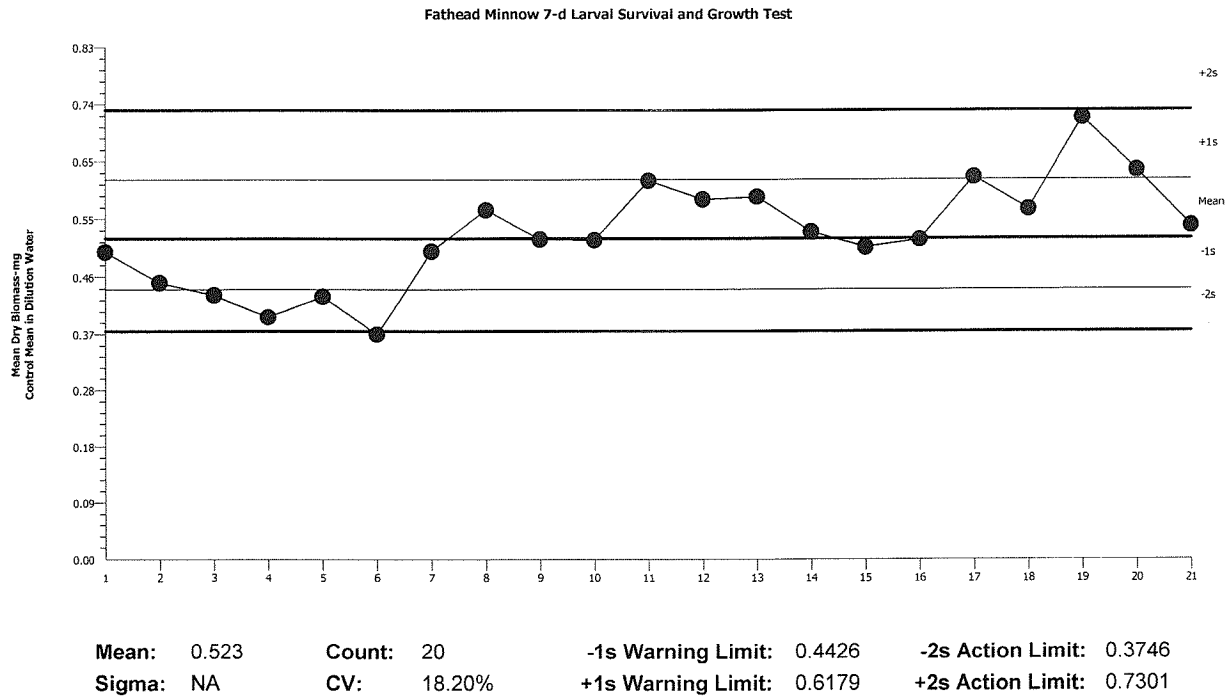
+1s Warning Limit: 23.95

+2s Action Limit: 38.13

## Quality Control Data

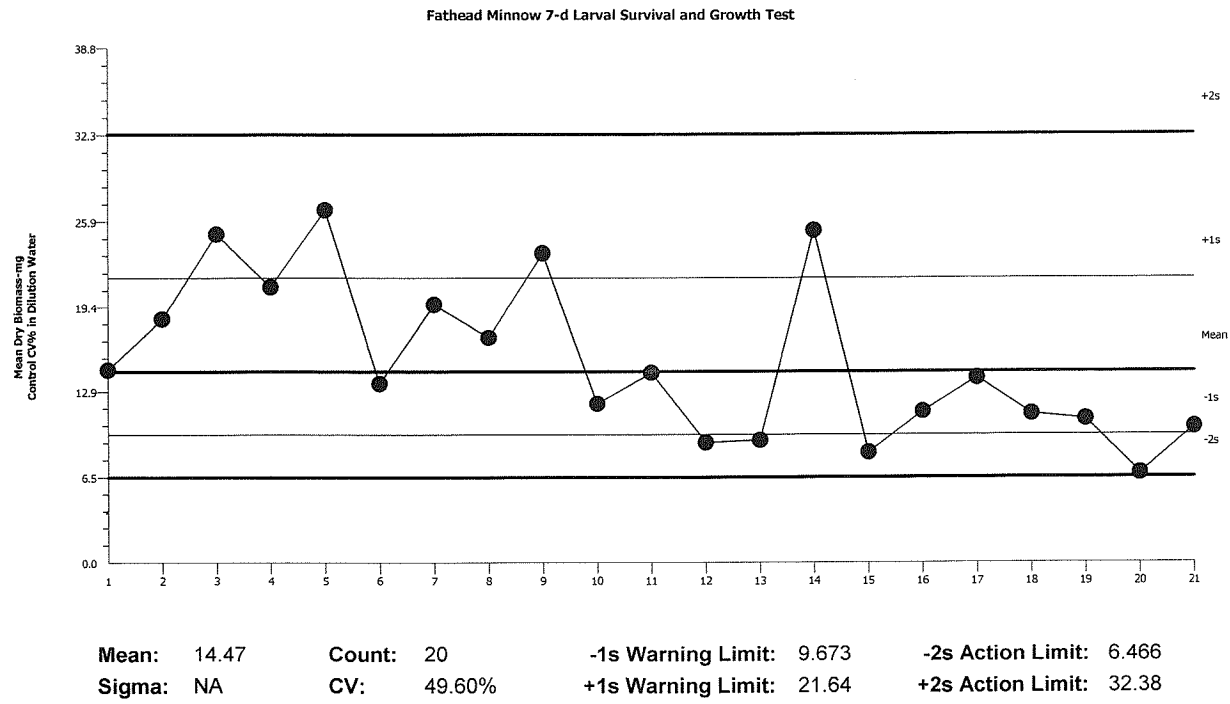
Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2024	May	14	11.95	-3.094	-0.4952			15-9613-8738	
2			14	23.67	8.626	0.9746			01-9538-6166	
3			21	10.36	-4.684	-0.8023			09-8991-2807	
4		Jun	11	11.43	-3.614	-0.5909			18-9159-9758	
5			11	11.72	-3.324	-0.537			00-5777-7309	
6			18	36.43	21.39	1.902	(+)		20-8245-3945	
7		Jul	16	7.555	-7.489	-1.481	(-)		17-3807-1168	
8			16	15.76	0.7157	0.09995			17-7421-1515	
9			23	9.176	-5.868	-1.063	(-)		03-0655-5794	
10		Aug	6	30.71	15.67	1.535	(+)		15-9971-7023	
11			6	9.534	-5.51	-0.9809			13-0922-4626	
12		Oct	1	21.48	6.436	0.7659			01-9069-8683	
13			1	16.97	1.926	0.259			05-4902-5345	
14			7	18.76	3.716	0.4747			06-5159-8852	
15			8	9.991	-5.053	-0.8802			13-2115-6114	
16			24	33.53	18.49	1.724	(+)		02-0221-0802	
17		Nov	19	10.04	-5.004	-0.8697			06-2884-1781	
18			19	14.05	-0.9943	-0.147			18-2827-4131	
19	2025	Jan	7	20.85	5.806	0.7018			04-6641-2554	
20			14	11.38	-3.664	-0.6003			14-2000-2667	
21			14	35.44	20.4	1.843	(+)		03-9141-2504	

Fathead Minnow 7-d Larval Survival and Growth Test			Rainier Environmental Laboratory	
Test Type: Growth-Survival (7d)	Organism: Pimephales promelas (Fathead Minn	Material: All Materials		
Protocol: EPA/821/R-02-013 (2002)	Endpoint: Mean Dry Biomass-mg	Source: All SampleID Sources		



Quality Control Data										
Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2024	Mar	12	0.5015	-0.02149	-0.2515			12-6533-2406	
2		Apr	9	0.4528	-0.07019	-0.8639			10-6534-6394	
3			9	0.4333	-0.08969	-1.128	(-)		12-4196-6332	
4		May	14	0.3975	-0.1255	-1.645	(-)		10-1458-3236	
5			14	0.431	-0.09199	-1.16	(-)		20-2457-6232	
6			21	0.3695	-0.1535	-2.083	(-)	(-)	18-9094-6554	
7		Jun	18	0.5025	-0.02049	-0.2396			15-4882-8964	
8		Jul	16	0.5688	0.04581	0.5034			06-0325-7712	
9			16	0.5218	-0.001186	-0.01361			17-5429-7338	
10			23	0.5205	-0.002486	-0.02857			01-3876-0430	
11		Aug	6	0.616	0.09301	0.9814			08-0546-9266	
12			6	0.5857	0.06271	0.679			17-5692-4200	
13		Oct	1	0.5898	0.06681	0.7208			08-3358-0411	
14			1	0.5335	0.01051	0.1193			08-2869-0677	
15			8	0.509	-0.01399	-0.1625			09-3873-2737	
16			24	0.5215	-0.001486	-0.01706			20-9095-8789	
17		Nov	19	0.6217	0.09871	1.037	(+)		19-8737-0786	
18			19	0.57	0.04701	0.5161			16-2235-3874	
19	2025	Jan	9	0.7175	0.1945	1.896	(+)		04-7646-3369	
20			14	0.6323	0.1093	1.138	(+)		17-5057-7106	
21			14	0.543	0.02001	0.2251			12-5672-6537	

Fathead Minnow 7-d Larval Survival and Growth Test			Rainier Environmental Laboratory	
Test Type: Growth-Survival (7d)	Organism: Pimephales promelas (Fathead Minn	Material: All Materials		
Protocol: EPA/821/R-02-013 (2002)	Endpoint: Mean Dry Biomass-mg	Source: All SampleID Sources		



Quality Control Data											
Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	
1	2024	Mar	12	14.61	0.1411	0.0241			12-6533-2406		
2		Apr	9	18.53	4.061	0.6143			10-6534-6394		
3		May	9	24.92	10.45	1.35	(+)		12-4196-6332		
4			14	20.96	6.491	0.9203			10-1458-3236		
5			14	26.75	12.28	1.526	(+)		20-2457-6232		
6			21	13.56	-0.9089	-0.1611			18-9094-6554		
7			Jun	18	19.63	5.161	0.7575			15-4882-8964	
8			Jul	16	17.12	2.651	0.4178			06-0325-7712	
9			16	23.48	9.011	1.202	(+)		17-5429-7338		
10			23	12.01	-2.459	-0.4625			01-3876-0430		
11			Aug	6	14.38	-0.08888	-0.0153			08-0546-9266	
12			6	9.072	-5.397	-1.159	(-)		17-5692-4200		
13			Oct	1	9.263	-5.206	-1.107	(-)		08-3358-0411	
14			1	25.2	10.73	1.378	(+)		08-2869-0677		
15			8	8.328	-6.141	-1.372	(-)		09-3873-2737		
16			24	11.42	-3.049	-0.5876			20-9095-8789		
17			Nov	19	13.99	-0.4789	-0.08358			19-8737-0786	
18				19	11.24	-3.229	-0.6271			16-2235-3874	
19	2025	Jan	9	10.85	-3.619	-0.7148			04-7646-3369		
20			14	6.75	-7.719	-1.893	(-)		17-5057-7106		
21			14	10.24	-4.229	-0.8585			12-5672-6537		

**Appendix D**  
**Sample Check-in Sheet**

Client: Liberty Lake Sewer and Water District Tests Performed: cd-c ; pp-c ; cd-q ; pp-q  
Test ID No(s): 2501-035 ; 2501-036 ; 2501-037 ; 2501-038

Sample ID:	Effluent Sample #1	Effluent Sample #2	Effluent Sample #3
Log-in No. (20-xxxx):	25-009	25-010	25-013
Sample Collection Date & Time:	11/3/25 0915	11/5/25 0920	11/7/25 0930
Sample Receipt Date & Time:	11/14/25 1300	11/16/25 0815	11/18/25 0930
Check-in Temperature (°C)	3.1	3.0	2.0
Temperature OK?	<input checked="" type="radio"/> Y <input type="radio"/> N	<input checked="" type="radio"/> Y <input type="radio"/> N	<input checked="" type="radio"/> Y <input type="radio"/> N
DO (mg/L)	9.4	8.6	8.0
pH (units)	7.89	7.84	7.85
Conductivity (µS/cm)	505	531	525
Salinity (ppt)	0.3	0.3	0.3
Tit. Vol / Sam. Vol. / Alkalinity (mg/L)*	3.1 / 25 / 124	2.8 / 25 / 112	3.5 / 35 / 130
Tit. Vol. / Sam. Vol. / Hardness (mg/L)* <sup>2</sup>	3.2 / 25 / 128	3.3 / 25 / 132	3.1 / 35 / 124
Total Chlorine (mg/L)	<0.03	<0.03	<0.03
Total Ammonia Nitrogen (mg/L)	<1.0	<1.0	<1.0
Technician Initials	sf	sf	sf

\* = mg/L as CaCO<sub>3</sub>, <sup>2</sup> = Measured for freshwater samples only, NA = Not Applicable,

Freshwater Tests:

Control/Dilution Water Source: test type: DP-4 8:2 (DMW) MHW Other: -005 Alkalinity: 60 Hardness: 80  
Control/Dilution Water Source: test type: 8:2 (DMW) MHW Other:     Alkalinity:     Hardness:      
Additional Control? Y N =     Alkalinity:     Hardness:    

Marine Tests:

Control/Dilution Water Source: test type:     ART SW NAT SW Alkalinity:     Salinity:      
Control/Dilution Water Source: test type:     ART SW NAT SW Alkalinity:     Salinity:      
Additional Control? Y N =     Alkalinity:     Salinity:      
Sample Salted w/ artificial salt? Y N If yes, what ppt?     test type:      
Sample salted w/brine? Y N If yes, what ppt?     test type:    

Comments: Temperature for grab sample must be 0-20°C if received within 1 hour of collection time, 0-12°C if effluent received within 4 hours of collection time, and 0-6°C for all other samples.

Sample Description:

COC Complete? Y or N  
1 Y 2 Y 3 Y

Filtration? Y ☒ N  
Pore Size:      
Organisms or Debris:    

Aeration? Y ☒ N  
Length of Time:      
Final DO:      
Final pH:    

Hardness Adjustment? Y ☒ N  
If adjusted, please see worksheet for details.

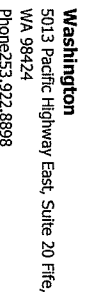
Sub-samples for additional chemistry:

QC Check: sf



**Appendix E**  
**Chain-of-Custody Forms**



[illegible]



Washington  
5013 Pacific Highway East, Suite 20 File,  
WA 98424  
Phone 253.922.8898

Sample Collection By:				Report to:				Invoice To:				ANALYSES REQUIRED												Receipt Temperature (°C)					
Company Address City/State/Zip Contact Phone Email				Liberty Lake Sewer and Water District 2218 N. Harvard Rd Liberty Lake, WA 99019 Greg Sattler 509-922-5443 gsattler@libertylake.org				Company Address City/State/Zip Contact Phone Email				Liberty Lake Sewer and Water District 22510 E. Mission Ave Liberty Lake, WA 99019 Megan Johnson 509-922-5443 AP@libertylake.org																	
SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE	NO. OF CONTAINERS	COMMENTS																							
Effluent sample #3	1/17/25	9:20 am	Wastewater	Cubtainer	1														Acute & Chronic WET										
1																			30										
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
PROJECT INFORMATION				SAMPLE RECEIPT				RELINQUISHED BY (CLIENT)				RELINQUISHED BY (COURIER)																	
Client:	LLSWD	Total No. of Containers		1		(Signature) Greg Sattler		(Time) 1/17/25		(Signature)		(Time)																	
PO No.:	25073	Received Good Condition?		Y		(Printed Name) Greg Sattler		(Date) 1/17/25		(Printed Name)		(Date)																	
Shipped Via:	FedEx	Matches Test Schedule?		Y		(Company) Liberty Lake Sewer and Water District				(Company)																			
SPECIAL INSTRUCTIONS/COMMENTS:				RECEIVED BY (COURIER)				RECEIVED BY (LABORATORY)																					
				(Signature) Eric Tolleson				(Time) 0930																					
				(Printed Name) Eric Tolleson				(Date) 1/18/25																					
				(Company) 25-013				(Log in #)																					