Sconza Candy Company
Candy Manufacturers Since 1939

1 Sconza Candy Lane ● Oakdale, California 95631 ● TEL: (209) 845-3700 ● FAX: (209) 845-3779

October 24, 2012
Mr. Lucio Orellana
California Regional Water Board
Central Valley Region RWQCB
11020 Sun Center Drive #200
Rancho Cordova, CA 95670

12 OCT 30 PM 2:10
SACRAMENTO
CVRWQCB

Lucio /Victor:

Attached are the results of monitoring for the third quarter of 2012 for effluent water for Sconza Candy Company at their Oakdale facility. This report relates to Limited Threat General Order number R5-2008-0082-015.
Daily and monthly monitoring was done by in house staff.
Please let us know if there are any concerns.
Eric McDonald - 209-896-6287 or Jesse Hodges - 209 918-0140

"I certify under penalty of the law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Sincerely,

Ron Sconza,
President, CEO
Sconza Candy Company

AJ 11/9/12

Sconza Candy Company

Date (2012)	Flow MGD	pH	Total Chlorine PPM	Bisulfate PPM	Date (2012)	Flow MGD	pH	Total Chlorine PPM	Bisulfate PPM
7/2	2.06	7.59	0.009	0.910	8/31	1.88	6.70	0.015	1.580
7/3	1.88	7.63	0.010	0.020	9/4			0.014	1.510
7/6	1.88	7.53	0.014	0.080	9/5	1.88	6.51	0.013	0.260
7/9	1.88	7.21	0.013	0.160	9/6	1.71	6.65	0.013	1.010
7/12	1.88	7.48	0.020	0.110	9/7	1.71	6.53	0.011	1.290
7/13	2.43	7.32	0.007	0.080	9/8	1.54	6.51	0.005	1.250
7/14	2.43	7.42	0.009	0.480	9/10	1.71	6.61	0.013	1.040
7/16	2.06	7.46	0.008	0.300	9/11	1.88	6.68	0.007	1.060
7/18	1.88	7.67	0.013	0.040	9/12	1.88	6.56	0.009	1.220
7/19	1.88	7.65	0.013	0.210	9/13	1.54	6.71	0.008	1.270
7/20	2.43	7.26	0.008	0.380	9/14	1.54	6.50	0.013	1.470
7/21	2.43	7.68	0.009	0.350	9/15	1.54	6.49	0.014	1.380
7/23	1.72	7.38	0.008	0.190	9/17	1.71	6.40	0.008	1.200
7/24	2.43	7.27	0.010	0.890	9/18	1.71	6.59	0.009	1.430
7/25	2.43	6.67	0.007	0.470	9/19	1.71	6.48	0.013	1.530
7/26	2.24	6.68	0.010	1.070	9/20	1.71	6.76	0.008	1.760
7/27	2.06	6.75	0.004	0.810	9/21	1.71	6.79	0.006	1.500
7/30	2.06	6.69	0.008	0.570	9/22	1.71	6.78	0.012	1.850
7/31	1.54	6.59	0.012	1.120	9/24	1.71	6.74	0.009	1.190
8/1	1.54	6.57	0.014	0.670	9/25	1.71	6.78	0.008	1.380
8/2	1.54	6.58	0.012	0.800	9/26	1.88	6.73	0.005	1.520
8/3	1.88	6.61	0.011	0.540	9/27	1.54	6.78	0.011	1.890
8/6			0.009	0.710	9/28	1.71	6.74	0.011	2.090
8/7	1.54	6.34	0.011	0.840	9/29	1.71	6.69	0.010	2.110
8/8	1.54	6.55	0.010	0.840					
8/9	1.54	6.54	0.013	0.780					
8/10	1.54	6.36	0.012	0.810					
8/13	1.54	6.45	0.014	0.580					
8/14	1.54	6.66	0.014	0.800					
8/15	1.54	6.60	0.008	0.770					
8/16	1.54	6.74	0.012	0.750					
8/17	1.54	6.73	0.019	1.220					
8/18	1.54	6.68	0.015	0.790					
8/20	1.54	6.74	0.012	0.760					
8/21	1.54	6.65	0.016	1.040					
8/22	1.54	6.48	0.010	0.840					
8/23	1.54	6.46	0.010	0.950					
8/24	1.54	6.50	0.016	1.450					
8/25	1.54	6.57	0.010	1.060					
8/27	1.54	6.60	0.015	0.650					
8/28	1.54	6.61	0.005	1.550					
8/29	1.54	6.70	0.012	1.050					
8/30	1.88	6.62	0.016	1.070					

On days not listed the plant was not in production, no effluent flow to canal

Sconza Candy Company
2012 Quarterly Monitoring
EFFLUENT MONITORING (NON-CONTACT COOLING WATER)
Limited Threat General Order number R5-2008-0082-015

DATE (2012)	Electrical Conductivity *Monthly*	ACUTE TOXICITY (% Survival) *Annual*	Ammonia *(with toxicity samples)*
7/5	271	NT	NT
8/6	269	NT	NT
9/5	271	NT	NT
9/10	NT	100	0.0 mg/l

CHRONIC TOXICITY (% Survival/Growth) *Annual*			
Organism	EFF-001 Sconza Effluent	RSW-001 Receiving water	DMW lab control
Fathead Minnow	97.5% survival Dry wt 0.80 mg	47.5% * survival Dry wt 0.49 mg	100 % survival Dry wt 0.61 mg
Ceriodaphia (Water Flea)	100 % survival Young/female 17.4	100 % survival Young/female 25.4	100 % survival Young/female 17.0
Algae	Cells/mL (million) 3.90	Cells/mL (million) 1.09*	Cells/mL (million) 1.62

*** = significant reduction**

Sconza Candy

Pond Testing Log sheet

printed 2/13/2012

Date & Time	Tester Initials	Pond Inlet ORP Reading mv	Pond Outlet ORP Reading mv	Bisulfite ORP On Setpoint mv	Bisulfite ORP Off Setpoint mv	Pond Inlet Sulfite 4-6 ppm	Pond Inlet Total Chlorine ppm	Pond Outlet Total Chlorine ppm	Bisulfite tank level gal. 0-300
6/29/12 09a	GG	179	200	30	29	0.69	0.012	0.008	80
6/30/12 13:00	GG	180	193	30	29	0.25	0.008	0.010	75
7/2/12 0800	GG	180	198	30	29	0.91	0.008	0.009	70
7/3/12 1100	GG	179	198	30	29	0.02	0.018	0.010	65
7/6/12 07:30	GG	180	201	30	29	0.08	0.006	0.014	55
7/9/12 1000	GG	180	189	30	29	0.16	0.018	0.013	45
7/12/12 0600	GG	180	185	30	29	0.11	0.010	0.020	35
7/13/12 0700	GG	179	187	30	29	0.08	0.009	0.007	255
7/14/12 0700	GG	180	215	30	29	0.48	0.010	0.009	250
7/16/12 0800	GG	180	198	30	29	0.30	0.008	0.008	240
7/18/12 0830	GG	180	202	30	29	0.04	0.012	0.013	236
7/19/12 0800	GG	180	201	30	29	0.21	0.011	0.013	230
7/20/12 0830	GG	180	197	30	29	0.38	0.008	0.008	226
7/21/12 1100	GG	179	196	30	29	0.35	0.005	0.009	220
7/23/12 1100	GG	179	193	30	29	0.19	0.015	0.008	218
7/24/12 1030	GG	181	209	30	29	0.89	0.010	0.010	215
7/25/12 1200	GG	181	208	30	29	0.47	0.014	0.007	210
7/26/12 0700	GG	181	238	30	29	1.07	0.012	0.010	205
7/27/12 0800		180	235	30	29	0.81	0.010	0.004	200

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printed 2/13/2012

Date & Time	Tester Initials	Pond Inlet ORP Reading mv	Pond Outlet ORP Reading mv	Bisulfite ORP On Setpoint mv	Bisulfite ORP Off Setpoint mv	Pond Inlet Sulfite 4-6 ppm	Pond Inlet Total Chlorine ppm	Pond Outlet Total Chlorine ppm	Bisulfite tank level gal. 0-300
7/30/12 0900	GG	180	257	30	29	0.57	0.014	0.008	190
7/31/12 1000		180	245	30	29	1.12	0.015	0.012	185
8/1/12 12:30	E.G.jr	180	255	30	29	0.67	0.013	0.014	180
8/2/12 11:45	E.G.jr	179	286	30	29	0.80	0.009	0.012	175
8/3/12 1300	G.G	179	264	30	29	0.54	0.014	0.011	170
8/6/12 0900	G.G	179	257	30	29	0.71	0.012	0.009	160
8/7/12 0930	GG	180	312	30	29	0.84	0.015	0.011	155
8/8/12 1:45	E.G.jr	179	335	30	29	0.84	0.011	0.010	150
8/9/12 1400	GG	179	280	30	29	0.78	0.018	0.013	145
8/10/12 0800	GG	180	256	30	29	0.81	0.011	0.012	143
8/13/12 11:00	E.G.jr	180	278	30	29	0.58	0.014	0.014	130
8/14/12 2:30	E.G.jr	180	265	30	29	0.80	0.012	0.014	125
8/15/12 11:10	E.G.jr	180	259	30	29	0.77	0.015	0.008	123
8/16/12 1200	GG	180	253	30	29	0.75	0.013	0.012	118
8/17/12 1030	GG	180	246	30	29	1.22	0.013	0.019	113
8/18/12 11:30	E.G.jr	180	245	30	29	0.79	0.014	0.015	110
8/20/12 12:00	GG	180	242	30	29	0.76	0.009	0.012	100
8/21/12 0800	GG	180	227	30	29	1.04	0.015	0.010	98
8/22/12 0800	GG	180	228	30	29	0.84	0.010	0.010	93

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Pond Testing Log sheet

printed 2/13/2012

Date & Time	Tester Initials	Pond Inlet ORP Reading mv	Pond Outlet ORP Reading mv	Bisulfite ORP On Setpoint mv	Bisulfite ORP Off Setpoint mv	Pond Inlet Sulfite 4-6 ppm	Pond Inlet Total Chlorine ppm	Pond Outlet Total Chlorine ppm	Bisulfite tank level gal. 0-300
8/23/12 09:00	GG	180	214	30	29	0.95	0.010	0.010	90
8/24/12 1030	GG	180	194	30	29	1.45	0.008	0.016	85
8/25/12 7:20	E.G.jr	180	192	30	29	1.06	0.010	0.010	80
8/27/12 0730	GG	180	185	30	25	0.65	0.011	0.015	70
8/28/12 10:00	GG	180	174	30	29	1.55	0.007	0.005	67
8/29/12 0830	GG	181	170	30	29	1.05	0.009	0.012	65
8/30/12 0830	GG	180	180	30	29	1.07	0.009	0.016	60
8/31/12 0900	GG	180	169	30	29	1.58	0.011	0.015	55
9/4/12 1000	GG	180	162	30	29	1.51	0.008	0.014	40
9/5/12 0830	GG	181	162	30	29	0.26	0.011	0.013	35
9/6/12 0830	GG	181	169	30	29	1.01	0.008	0.013	30
9/7/12 1000	GG	181	187	30	29	1.29	0.013	0.011	25
9/8/12 0930	GG	181	186	30	29	1.25	0.010	0.005	240
9/10/12 0830	GG	181	214	30	29	1.04	0.006	0.013	230
9/11/12 1000	GG	180	212	30	29	1.06	0.008	0.007	225
9/12/12 0900	GG	181	224	30	29	1.22	0.013	0.009	220
9/13/12 10:00	GG	180	239	30	29	1.27	0.010	0.008	217
9/14/12 09:00	GG	180	240	30	29	1.47	0.016	0.013	215
9/15/12 0900	GG	180	228	30	29	1.38	0.010	0.010	210

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Date & Time	Tester Initials	Pond Inlet ORP Reading mv	Pond Outlet ORP Reading mv	Bisulfite ORP On Setpoint mv	Bisulfite ORP Off Setpoint mv	Pond Inlet Sulfite 4-6 ppm	Pond Inlet Total Chlorine ppm	Pond Outlet Total Chlorine ppm	Bisulfite tank level gal. 0-300
9/17/12 0830	GG	180	224	30	29	1.20	0.009	0.008	200
9/18/12 0900	GG	180	233	30	29	1.43	0.010	0.009	197
9/19/12 0800	GG	180	227	30	29	1.53	0.011	0.013	192
9/20/12 0900	GG	180	198	30	29	1.76	0.010	0.008	188
9/21/12 10[illegible]	GG	180	201	30	29	1.50	0.008	0.006	183
9/22/12 7:50am	E. Gyr	180	190	30	29	1.85	0.013	0.012	180
9/24/12 0930	GG	180	180	30	29	1.19	0.010	0.009	170
9/25/12 0900	GG	180	179	30	29	1.38	0.019	0.008	167
9/26/12 0900	GG	180	185	30	29	1.52	0.008	0.005	163
9/27/12 1200	GG	180	197	30	29	1.89	0.011	0.011	158
9/28/12 0900	GG	180	190	30	29	2.09	0.008	0.011	153
9/29/12 0900	GG	180	195	30	29	2.11	0.016	0.010	150
10/1/12 0800	GG	180	195	30	29	1.65	0.010	0.014	142
10/2/12 12:30	GG	180	215	30	29	1.59	0.009	0.013	137

NPDES pH Log- with meter calibrations

Date	Time	pH Calibration			Pond effluent		Remarks	Name-Initials
		4	7	10	pH	Flow at Parshall		
6/8/12	06:00		OK		7.51	0.36		GG
6/9/12	16:00		OK		7.79	0.30		GG
6/11/12	0900		OK		7.67	0.34		GG
6/12/12	0800		OK		7.43	0.34		GG
6/13/12	1030		OK		7.48	0.30		GG
6/14/12	0700		OK		7.44	0.32		GG
6/15/12	1200		OK		7.46	0.34		GG
6/16/12	1800		OK		7.62	0.34		GG
6/18/12	0830		OK		7.59	0.32		GG
6/19/12	0700		OK		7.28	0.34		GG
6/20/12	0700		OK		7.20	0.34		GG
6/21/12	0800		OK		7.29	0.34		GG
6/22/12	0830		OK		7.41	0.34		GG
6/25/12	0830		OK		7.62	0.34		GG
6/26/12	1000		OK		7.64	0.32		GG
6/27/12	0830		OK		7.59	0.34		GG
6/28/12	0800		OK		7.72	0.34		GG
6/29/12	0830		OK		7.56	0.34		GG
6/30/12	1300		OK		7.59	0.34		GG
7/2/12	0900		OK		7.59	0.34		GG
7/3/12	1000		OK		7.63	0.34		GG
7/6/12	0700		OK		7.53	0.34		GG
7/9/12	0830		OK		7.21	0.34		GG
7/12/12	0530		OK		7.48	0.34		GG
7/13/12	0700		OK		7.32	0.40		GG
7/14/12	0630		OK		7.42	0.40		GG

NPDES pH Log- with meter calibrations

Date	Time	pH Calibration			Pond effluent		Remarks	Name-Initials
		4	7	10	pH	Flow at Parshall		
7/16/12	0800		OK		7.46	0.36		GG
7/18/12	0700		OK		7.67	0.34		GG
7/19/12	0730		OK		7.65	0.34		GG
7/20/12	0730		OK		7.26	0.40		G.G
7/21/12	1100		OK		7.68	0.40		GG
7/23/12	1030		OK		7.38	0.32		GG
7/24/12	1000		OK		7.27	0.40		GG
7/25/12	1200		OK		6.67	0.40		GG
7/26/12	0700		OK		6.68	0.38		GG
7/27/12	0730		OK		6.75	0.36		GG
7/30/12	0830		OK		6.69	0.36		GG
7/31/12	1000		OK		6.59	0.30		G.G
8/1/12	12:03		OK		6.57	0.30		E.G.jr
8/2/12	11:55		OK		6.58	0.30		E.G.jr
8/3/12	1300		OK		6.61	0.34		GG
8/7/12	0930		OK		6.34	0.30		GG
8/8/12	12:05		OK		6.55	0.30		E.G.jr
8/9/12	14:00		OK		6.54	0.30		GG
8/10/12	0730		OK		6.36	0.30		GG
8/13/12	11:25		OK		6.45	0.30		E.G.jr
8/14/12	2:30		OK		6.66	0.30		E.G.jr
8/15/12	11:28		OK		6.60	0.30		E.G.jr
8/16/12	1130		OK		6.74	0.30		GG
8/17/12	0900		OK		6.73	0.30		GG
8/18/12	10:30		OK		6.68	0.30		E.G.jr
8/20/12	1145		OK		6.74	0.30		GG

NPDES pH Log- with meter calibrations

Date	Time	pH Calibration			Pond effluent		Remarks	Name-Initials
		4	7	10	pH	Flow at Parshall		
8/21/12	0800		ok		6.65	0.30		GG
8/22/12	0800		ok		6.48	0.30		G.G.
8/23/12	0900		ok		6.46	0.30		GG
8/24/12	0930		ok		6.50	0.30		GG
8/25/12	7.50 Am		ok		6.57	0.30		E.G.Jr
8/27/12	0830		ok		6.60	0.30		GG
8/28/12	1000		ok		6.61	0.30		GG
8/29/12	0830		ok		6.70	0.30		GG
8/30/12	0900		ok		6.62	0.34		GG
8/31/12	0900		ok		6.70	0.34		GG
9/5/12	0800		ok		6.51	0.34		G.G
9/6/12	1000		ok		6.65	0.32		GG
9/7/12	1000		ok		6.53	0.32		GG
9/8/12	1000		ok		6.51	0.30		GG
9/10/12	0830		ok		6.61	0.32		GG
9/11/12	0900		ok		6.68	0.34		GG
9/12/12	0900		ok		6.56	0.34		GG
9/13/12	0930		ok		6.71	0.30		GG
9/14/12	0900		ok		6.50	0.30		GG
9/15/12	0900		ok		6.49	0.30		GG
9/17/12	0830		ok		6.40	0.32		GG
9/18/12	0830		ok		6.59	0.32		GG
9/19/12	0900		ok		6.48	0.32		GG
9/20/12	0900		ok		6.76	0.32		GG
9/21/12	0930		ok		6.79	0.32		GG
9/22/12	8:20 Am		ok		6.78	0.32		E.G.Jr

NPDES pH Log- with meter calibrations

Date	Time	pH Calibration			Pond effluent		Remarks	Name-Initials
		4	7	10	pH	Flow at Parshall		
9/24/12	0845		OK		6.74	0.32		GG
9/25/12	0900		OK		6.78	0.32		GG
9/26/12	0900		OK		6.73	0.34		GG
9/27/12	1200		OK		6.78	0.30		GG
9/28/12	0830		OK		6.74	0.32		GG
9/29/12	0900		OK		6.69	0.32		GG
10/1/12	0830		OK		6.67	0.32		GG
10/2/12	1300		OK		6.73	0.42		GG

Sample Site	Time	Date	Temperature °C	°F	Conductivity	pH	Dissolved -O2 mg/L	Residual Chlorine PPM	Remarks: Conditions, outside tests, Storm water observations
Well 3	7:50	6/4/12	22.4		264				
4	8:05		20.2		276				Down
E	7:55		20.9		269				Clean SW – No Flow
Locker room mop sink	2:40							0.02	
NW Storage restroom sink	4:00							0.02	
Well #3	7:55	7/5/12	20.3		271				
E	8:25		20.8		277				Clean Flow 0.32 SW – No Flow
Well #4	8:05				277				
Beam Bldg	8:15							0.02	
Conch Hall	8:35							0.03	
Well #3	8:10	8/6/12	20.3		273				
~~Well #4~~ Drinking Fountain	9:30								Well #4 Malfunction - shut down during purge Chlorinated by-products
Equip Wash	8:25							0.03	
Shipping	8:40							0.03	
E	8:20		21.8		269				Clean flow 0.30 SW No Flow

Sample Site	Time	Date	Temperature °C	°F	Conductivity	pH	Dissolved -O2 mg/L	Residual Chlorine PPM	Remarks: Conditions, outside tests, Storm water observations
Well #3	5:50	9/5/12	20.8		268				Coliforms To JL Analytical
E	5:55		21.7		271				SW – No Flow
Nut Storage	6:15							0.02	
Picker Room	6:35							0.01	
Well #4	6:55		19.2		266				
R1	10:45	9/10/12							Ammonia Test – 0.0 mg/L Chronic & Acute Toxicity 3 gal
E	11:00								Clear
R1	8:05	9/12/12							Chronic Toxicity 3 gal
E	8:15								Clear
R1	1:30P	9/13/12							Chronic Toxicity 4 gal
E	1:35								Clear
Well #3	8:35	10/2/12	20.4		262				
E	8:45		22.3		254				Clear Canal Full Flow 0.42 SW No Flow
Well #4	8:25		22.8		257				
Bean Building	8:55							0.08	
Conch Hall	9:10							0.04	

IEH - JL ANALYTICAL

217 Primo Way • Modesto, California 95358 • Office (209) 538-8111 • FAX (209) 538-3966

Sconza Candy Company
Attn: Jesse Hodges
1 Sconza Candy Lane
Oakdale, CA 95361

Report # L2.2-35R00125
Report Date: 10/04/2012
Received Date: 10/03/2012
Work Order: 276945

Laboratory Number: 27694501
Description: Waste Water, Effluent Grab, 9-10-12, 1100

Certificate of Analysis

Constituent	Result	Method Reference	Analysis Date	Laboratory
Bioassay (Acute Toxicity)	See Report	See Attached Report	10/04/2012	Sierra Foothills Lab

Notes

Authorized By: Amos Snider 10/04/2012
Amos Snider Laboratory Supervisor

These results relate only to the samples tested. This report shall not be reproduced except in full, without written approval of the laboratory.

SIERRA
FOOTHILL LABORATORY Inc

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sandy@sierralab.com

REPORT

9/20/12

J L Analytical Services Inc
217 Primo Way, Ste 2
Modesto CA 95358

96h Static Screening Acute Bioassay with Fathead Minnow 9/11/12-9/15/12
Sconza Candy Effluent collected 9/10/12 1100
Laboratory # 753676
NPDES# R5-2008-0082 CAG995002

Sample description:

Two 1-gallon plastic containers of Sconza Candy EFF-001 sample collected Grab 9/10/12 1100 was received at the lab 9/11/12 1340 via courier. The sample was iced, 2.8C and in good condition. Laboratory # 753676was assigned to the effluent, and chemical measurements made are summarized on the following report page.

Control/ comparison water was Diluted Mineral Water (dMW) prepared 9/04/12 using 26% Evian and 74% Arrowhead Distilled. Organisms are cultured in dMW.

Testing method closely followed:

EPA 600/4-90/027F Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms. 4th edition.

Endpoint of test is death or 96h. The testing began 9/11/12 1545 and ended 9/15/12 1450. Test chambers were 500ml plastic containing 300ml of test solution. There were two replicate chambers per treatment, with 10 fish per chamber. *Pimephales promelas* (fathead minnow) obtained from EnviroScience, hatched 9/10/12 were used. Organism age was 1d. Test temperature was 25C with maximum – minimum <3C. KCl reference toxicant test date was 9/11/12 and data were in control. Test ran without incidence for 96h.

Results:

Treatment	# Organisms	# Replicates	96h % Survival
100% Sconza Candy EFF-001 sample collected Grab 9/10/12 1100	20	2	100
dMW Lab Control	20	2	100

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ELAP #2784, 1113A, 1881

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REPORT

9/20/12

J L Analytical Services Inc
217 Primo Way, Ste 2
Modesto CA 95358

96h Static Screening Acute Bioassay with Fathead Minnow 9/11/12-9/15/12
Sconza Candy Effluent collected 9/10/12 1100
Laboratory # 753676
NPDES# R5-2008-0082 CAG995002

Summary:

On 9/11/12 1545, 1d old fathead minnows were exposed to Sconza Candy EFF-001 sample collected Grab 9/10/12 1100. The effluent sample was 29h old at test initiation. At 96h test termination, there was 100% survival of organisms exposed to Sconza Candy EFF-001 sample collected Grab 9/10/12 1100. There was 100% survival of organisms exposed to laboratory control.

Percent survival of organisms exposed to the Sconza Candy EFF-001 sample collected Grab 9/10/12 1100 was not significantly reduced from survival of organisms in lab control.

Summary prepared by:

Sandy Nurse

Sandy Nurse

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ELAP #2784, 1113A, 1881

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Jackson CA 95642
(T) 209 223-2800 (F) 209 223-2747

JLAN

CUSTOMER NAME: JESSE HODGES
SHIP TO:
ADDRESS: 1400 SOUTH YOSEMITE AVE
CITY, STATE, ZIP: OAKDALE CA 95361

J&L ANALYTICAL for Sconza Candy
217 PRIMO WAY
MODESTO CA 95358

ATTN: JESSE HODGES
NPDES# R5-2008-0082 CAG995002 6-12-08, provided 8-2012

SFL ID#	SOURCE DESCRIPTION	ANALYSIS (x)		SAMPLING & CONTAINER INFORMATION:			
		Chronic*	Acute**	MATRIX	P/G	DATE/HR COLLECTED	BY
753676-01	EFF-001, GRAB	X	X	WW	Gal P	9/10/12 11:00a	[illegible]
753677-01	RSW-001	X		W		9/10/12 10:45a	[illegible]

* Chronic 3 species, aquatic toxicity, EPA 821/R02/013 testing undiluted effluent and undiluted receiving water. Annual. TUc trigger = >1
**96h acute fathead screening, EPA 821/R02/012, testing 100% effluent Annual

Collection for September 2012 is as follows:

Date	Amt. EFF-001 to collect		Amt RSW-001 to collect	
Mon 9/10/12	2 gallon	CT42, AFS5	1 gallon	CT42
Wed 9/12/12	1 gallon	ct42	1 gallon	ct42
Thurs 9/13/12	2 gallon	ct42	2 gallon	ct42

Transportation notes: Ice and Ship or Transport for next day receipt at lab, sample temp 4-6C. Maximum hold time to first use of samples is 36 hours from time of collection.

2.8+6 [illegible]

RELINQUISHED BY: [signature] DATE/TIME: 9/10/12 12:00
RECEIVED BY: [signature] DATE/TIME: 9/11/12 1340
RELINQUISHED BY: DATE/TIME:
RECEIVED BY: DATE/TIME:

[signature] 9/11/12

Sierra Foothill Laboratory, Inc.

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Client: **JLAN**

J-L Analytical Services, Inc.
217 Primo Way, Ste 2
Modesto, CA 95358-

Project Report: **215388**

Results for Project 215388

753676 EFF-001, GRAB — Liquid Taken: 09/10/2012 1100 By: Client — Rec:09/11/2012

Parameter	Result	Unit	Flag	RL	Method	Analyzed	By	CAS
Acute tox 96h fathead, 5th ed	See Report	compliance			821-R-02-012	09/12/2012 1100	SFL	
Chronic Tox 3sp/1 conc, 4th e	See Report	Date			821-R-02-013	09/12/2012 1100	SFL	
Specific Conductance	239	umhos/cm		1.00	EPA120.1/SM2510B	09/11/2012 0900	R&L	
Alkalinity, Total as CaCO3	88	mg/L		5.0	EPA310.1/SM2320B	09/17/2012 1335	RK	
Hardness as CaCO3	83	mg/L		5.0	SM2340C	09/18/2012 1345	TN	
pH, Lab*	8.2	unit		0.1	SM4500-H+B	09/11/2012 0850	L&R	*past hold
Oxygen, Dissolved, Lab*	9.0	mg/L		0.1	SM4500-O G	09/11/2012 0850	ATR	*past hold
Chlorine Residual,Total, Lab*	<0.10	mg/L		0.10	SM4500Cl G	09/11/2012 0845	RAT	*past hold

753677 RSW-001 — Liquid Taken: 09/10/2012 1045 By: Client — Rec:09/11/2012

Parameter	Result	Unit	Flag	RL	Method	Analyzed	By	CAS
Chronic Tox 3sp/1 conc, 4th e	See Report	Date			821-R-02-013	09/12/2012 1100	SFL	
Specific Conductance	53.5	umhos/cm		1.00	EPA120.1/SM2510B	09/11/2012 0900	R&L	
Alkalinity, Total as CaCO3	24	mg/L		5.0	EPA310.1/SM2320B	09/17/2012 1335	RK	
Hardness as CaCO3	24	mg/L		5.0	SM2340C	09/18/2012 1345	TN	
pH, Lab*	7.8	unit		0.1	SM4500-H+B	09/11/2012 0850	L&R	*past hold
Oxygen, Dissolved, Lab*	11.9	mg/L		0.1	SM4500-O G	09/11/2012 0850	ATR	*past hold
Chlorine Residual,Total, Lab*	<0.10	mg/L		0.10	SM4500Cl G	09/11/2012 0845	RAT	*past hold

Sample Preparation Steps for Project 215388

753676 EFF-001, GRAB — Liquid Taken: 09/10/2012 1100 By: Client — Rec:09/11/2012

Parameter	Result	Unit		Method	Analyzed	By
Nitrogen, Ammonia-N Screen	ND	mg/L	0.50	SFL SOP 125	09/11/2012 1100	TAR

753677 RSW-001 — Liquid Taken: 09/10/2012 1045 By: Client — Rec:09/11/2012

Parameter	Result	Unit		Method	Analyzed	By
Nitrogen, Ammonia-N Screen	ND	mg/L	0.50	SFL SOP 125	09/11/2012 1100	TAR

SET Quality Control/Quality Assurance for Project 215388

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SET Quality Control/Quality Assurance for Project 215388

Alkalinity, Total as CaCO3

(Analyzed: 09/17/2012 1335 RK Verified: 09/18/2012 16:04 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	500	513	mg/L	97.5	
	Blank	<5.0		mg/L		
753507	Duplicate	52	54	mg/L		3.8
753615	Duplicate	104	104	mg/L		0.0
753702	Duplicate	15	15	mg/L		0.0
753816	Duplicate	360	360	mg/L		0.0
753598	Matrix SPK	81.6	80	mg/L	102	
753678	Matrix SPK	80.0	80	mg/L	100	
753698	Matrix SPK	80.0	80	mg/L	100	
753798	Matrix SPK	89.0	89	mg/L	100	

Chlorine Residual,Total, Lab*

(Analyzed: 09/11/2012 0845 RAT Verified: 09/12/2012 11:59 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	0.21	0.22	mg/L	95.5	
	Standard	1.58	1.58	mg/L	100.0	
	Blank	<0.10		mg/L		
753577	Duplicate	<0.10	<0.10	mg/L		0.0
753604	Duplicate	<0.10	<0.10	mg/L		0.0
753680	Duplicate	<0.10	<0.10	mg/L		0.0

Oxygen, Dissolved, Lab*

(Analyzed: 09/11/2012 0850 ATR Verified: 09/12/2012 11:59 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
753577	Duplicate	9.3	9.3	mg/L		0.0
753603	Duplicate	7.8	7.8	mg/L		0.0
753669	Duplicate	10.7	10.6	mg/L		0.9

Specific Conductance

(Analyzed: 09/11/2012 0900 R&L Verified: 09/12/2012 11:52 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	102	100	umhos/cm	102.0	
753577	Duplicate	373	370	umhos/cm		0.8
753604	Duplicate	118	118	umhos/cm		0.0
753645	Duplicate	573	573	umhos/cm		0.0
753677	Duplicate	53.5	54.1	umhos/cm		1.1
753705	Duplicate	645	644	umhos/cm		0.2

Hardness as CaCO3

(Analyzed: 09/18/2012 1345 TN Verified: 09/19/2012 09:51 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	552	563	mg/L	98.0	
	Blank	<5.0		mg/L		

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Client: **JLAN**
Project Report: **215388**

SET Quality Control/Quality Assurance for Project 215388

Hardness as CaCO3

(Analyzed: 09/18/2012 1345 TN Verified: 09/19/2012 09:51 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
753574	Duplicate	47	43	mg/L		8.9
753667	Duplicate	71	76	mg/L		6.8
753755	Duplicate	51	53	mg/L		3.8
753824	Duplicate	126	126	mg/L		0.0
753879	Duplicate	79	83	mg/L		4.9
753574	Matrix SPK	83.6	82	mg/L	102	
753760	Matrix SPK	82.8	82	mg/L	101	
753818	Matrix SPK	206	206	mg/L	100	
753909	Matrix SPK	86.9	82	mg/L	106	

pH, Lab*

(Analyzed: 09/11/2012 0850 L&R Verified: 09/12/2012 11:55 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	7.5	7.5	unit	100.0	
753578	Duplicate	7.8	7.9	unit		1.3
753626	Duplicate	7.4	7.5	unit		1.3
753646	Duplicate	7.6	7.6	unit		0.0
753677	Duplicate	7.8	7.7	unit		1.3
753705	Duplicate	7.0	7.0	unit		0.0

ELAP #2784, #1113A, #1881

Sandy Nurse

Sandy Nurse, Lab Director

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Sierra Foothill Laboratory, Inc.
255 Scottsville Blvd.
Jackson, CA 95642

Client: J&L Analytical for Sconza Candy 753674p

Test Conducted By: LG/SN/JCM

Exposure Chamber: Capacity 500 mL
Test Solution Volume 300 mL

Feeding Schedule: Not Fed _____
Fed Daily, Siphon Debris Daily __X__
Fed Irregularly (.1 mL @46h; Siphon @ 48h) ____

Food Used: <24h Artemia Code: 6590
Exposed Organisms: 10/test exposure chamber
Renewal Volume and Date: 100 mLs @ 48h
X☐ EPA 821-R02-012
Temp: 25°C +/- 1 Temp: max.- min. ≤ 3° C

Test Period:
Beginning: Date 9-11-12 Time 1545
Ending: Date 9-15-12 Time 1450

Test Organism:
Species: Pimephales promelas
Age: Hatch Date 9-10-12 1 day old
Source: Enviro Science
Control Water: dMW of 9-04-12
Reference Toxicant Test Date: 9-05-12 Prep Date: 9-04-12
KCl Reagent Code 6718 Prep Code 0912-01

Conc or %	Test Container #	# Exposed	24h Survival	48h Survival	72h Survival	96h Survival	Dissolved oxygen (mg/L): 0h	24h	48h	72h	96h	pH (unit): 0h	24h	48h	72h	96h	EC (µmho/cm): 0h	48h	96h
EFF	3011	10	10	10	10	10	7.9	7.5	7.7	7.8	7.6	8.4	8.3	8.4	8.4	8.4	239	327	299
	3012	10	10	10	10	10													

Mortality Check Time/Initials

Lab Comments:

Sierra Foothill Laboratory, Inc.
255 Scottsville Blvd.
Jackson, CA 95642

Client: J&L Analytical for Sconza Candy 753676

Test Conducted By: LG/SN/JCM

Exposure Chamber: Capacity 500 mL
Test Solution Volume 300 mL

Feeding Schedule: Not Fed _____
Fed Daily, Siphon Debris Daily X
Fed Irregularly (.1 mL @46h; Siphon @ 48h) _____

Food Used: <24h Artemia Code: 6590
Exposed Organisms: 10/test exposure chamber
Renewal Volume and Date: 100 mLs @ 48h
X☐ EPA 821-R02-012
Temp: 25°C +/- 1 Temp: max.- min. ≤ 3° C

Test Period:
Beginning: Date 9-11-12 Time 1545
Ending: Date 9-15-12 Time 1450

Test Organism:
Species: Pimephales promelas
Age: Hatch Date 9-10-12 1 day old
Source: Enviro Science
Control Water: dMW of 9-07-12
Reference Toxicant Test Date: 9-11-12 Prep Date: 9-10-12
KCl Reagent Code: 6718 Prep Code: 0912-14

Test Cont. number	0h Temp	24h Temp	48h Temp	72h Temp	96h Temp	Total Alkalinity (mg/L as $CaCO_3$) 0h	Total Hardness (mg/L as $CaCO_3$) 0h	Cl_2 (mg/L) 0h	NH_3P (mg/L) 0h
3011 Initial	25.3	24.8	25.4	25.4	24.3	88	83	<0.10	ND

Sierra Foothill Laboratory, Inc.
255 Scottsville Blvd.
Jackson, CA 95642

Client: dMW/Ref Tox

Test Conducted By: LG/SN/JCM

Exposure Chamber: Capacity 500 mL
Test Solution Volume 300 mL

Feeding Schedule: Not Fed ____
Fed Daily, Siphon Debris Daily X
Fed Irregularly (.1 mL @46h; Siphon @ 48h) ____

Test Period:
Beginning: Date 9-11-12 Time 1545
Ending: Date 9-15-12 Time 1450

Food Used: <24h Artemia Code: 6590
Exposed Organisms: 10/test exposure chamber
Renewal Volume and Date: 100 mLs @ 48h
X☐ EPA 821-R02-012
Temp: 25°C +/- 1 Temp: max.- min. ≤ 3° C

Test Organism:
Species: Pimephales promelas
Age: Hatch Date 9-10-12 1 day old
Source: Enviro Science
Control Water: dMW of 9-07-12
Reference Toxicant Test Date : 9-11-12 Prep Date: 9-10-12
KCl Reagent Code: 6718 Prep Code: 0912-14

Conc or %	Test Container #	# Exposed	24h Survival	48h Survival	72h Survival	96h Survival	Dissolved oxygen (mg/L): 0h	24h	48h	72h	96h	pH (unit): 0h	24h	48h	72h	96h	EC (µmho/cm): 0h	48h	96h
dMW	3001	10	10	10	10	10	7.7	7.9	7.8	7.7	7.6	8.4	8.1	8.3	8.2	8.3	187	206	202
	3002	8 10 9	9	9	9	9													
KCl 0.25 g/L	3003	10	10	10	10	10	7.8	7.6	7.5	7.6	7.5	8.4	8.2	8.3	8.3	8.4	712	690	666
	3004	10	10	10	10	10													
KCl 0.50 g/L	3005	10	10	10	10	10	7.8	7.4	7.5	7.7	7.5	8.4	8.2	8.3	8.3	8.3	1080	1167	1151
	3006	10	10	10	10	10													
KCl 1.0 g/L	3007	10	5	5	5	5	7.9	7.7	7.7	7.9	7.5	8.4	8.2	8.3	8.3	8.3	1880	2030	2060 (E)
	3008	10	8	7	7	7													
KCl 2.0 g/L	3009	10	0	—	—	—	7.9	7.6	—	—	—	8.3	8.2	—	—	—	3370		
	3010	10	0	—	—	—													
Mortality Check Time/Initials			1410 JCM	1355 JCM	1545 JCM	~~1155~~ JCM 1450 JCM	1715 JCM	0900 B	1010 BB	920 BB	1155 JCM	1750 JCM	0915 B	1200 BB	0930 BB	1210 JCM		1215 BB	1200 JCM

CETIS Summary Report

Report Date: 20 Sep-12 10:08 (p 1 of 1)
Test Code: 091112PA5RT1 | 12-0708-1352

Fathead Minnow 96-h Acute Survival Test — **Sierra Foothill Laboratory Inc.**

Batch ID:	05-2426-6205	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	11 Sep-12 15:45	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	15 Sep-12 14:50	**Species:**	Pimephales promelas	**Brine:**	
Duration:	95h	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d

Sample ID:	19-4677-3288	**Code:**	0912-14	**Client:**	Sierra Foothill Laboratory
Sample Date:	10 Sep-12	**Material:**	Potassium chloride	**Project:**	
Receive Date:	10 Sep-12	**Source:**	KCl Reference Toxicant		
Sample Age:	40h	**Station:**			

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
04-3095-5121	96h Survival Rate	0.5	1	0.7071	NA		Fisher Exact Test

Point Estimate Summary

Analysis ID	Endpoint	Level	gm/L	95% LCL	95% UCL	TU	Method
09-2041-4558	96h Survival Rate	EC50	1.072	0.9208	1.248		Spearman-Kärber

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
04-3095-5121	96h Survival Rate	Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria
09-2041-4558	96h Survival Rate	Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria

96h Survival Rate Summary

C-gm/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	2	1	1	1	1	1	0	0	0.0%	0.0%
0.258		2	1	1	1	1	1	0	0	0.0%	0.0%
0.5		2	1	1	1	1	1	0	0	0.0%	0.0%
1		2	0.6	0	1	0.5	0.7	0.1	0.1414	23.57%	40.0%
2		2	0	0	0	0	0	0	0		100.0%

96h Survival Rate Detail

C-gm/L	Control Type	Rep 1	Rep 2
0	DMW	1	1
0.258		1	1
0.5		1	1
1		0.5	0.7
2		0	0

96h Survival Rate Binomials

C-gm/L	Control Type	Rep 1	Rep 2
0	DMW	10/10	9/9
0.258		10/10	10/10
0.5		10/10	10/10
1		5/10	7/10
2		0/10	0/10

CETIS Analytical Report

Report Date: 20 Sep-12 10:08 (p 1 of 2)
Test Code: 091112PA5RT1 | 12-0708-1352

Fathead Minnow 96-h Acute Survival Test — Sierra Foothill Laboratory Inc.

Analysis ID:	09-2041-4558	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.6
Analyzed:	20 Sep-12 10:08	**Analysis:**	Untrimmed Spearman-Kärber	**Official Results:**	Yes

Batch ID:	05-2426-6205	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	11 Sep-12 15:45	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	15 Sep-12 14:50	**Species:**	Pimephales promelas	**Brine:**	
Duration:	95h	**Source:**	Enviro-Sciences-Inc,-TX	**Age:**	1d

Sample ID:	19-4677-3288	**Code:**	0912-14	**Client:**	Sierra Foothill Laboratory
Sample Date:	10 Sep-12	**Material:**	Potassium chloride	**Project:**	
Receive Date:	10 Sep-12	**Source:**	KCl Reference Toxicant		
Sample Age:	40h	**Station:**			

Spearman-Kärber Estimates

Threshold Option	Threshold	Trim	Mu	Sigma	EC50	95% LCL	95% UCL
Control Threshold	0	0.00%	0.0301	0.03298	1.072	0.9208	1.248

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria

96h Survival Rate Summary

			Calculated Variate(A/B)								
C-gm/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	DMW	2	1	1	1	0	0	0.0%	0.0%	19	19
0.258		2	1	1	1	0	0	0.0%	0.0%	20	20
0.5		2	1	1	1	0	0	0.0%	0.0%	20	20
1		2	0.6	0.5	0.7	0.1	0.1414	23.57%	40.0%	12	20
2		2	0	0	0	0	0		100.0%	0	20

96h Survival Rate Detail

C-gm/L	Control Type	Rep 1	Rep 2
0	DMW	1	1
0.258		1	1
0.5		1	1
1		0.5	0.7
2		0	0

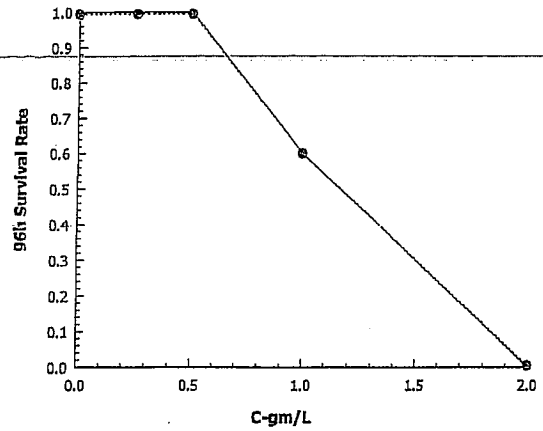
96h Survival Rate Binomials

C-gm/L	Control Type	Rep 1	Rep 2
0	DMW	10/10	9/9
0.258		10/10	10/10
0.5		10/10	10/10
1		5/10	7/10
2		0/10	0/10

Fathead Minnow 96-h Acute Survival Test — **Sierra Foothill Laboratory Inc.**

Analysis ID:	09-2041-4558	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.6
Analyzed:	20 Sep-12 10:08	**Analysis:**	Untrimmed Spearman-Kärber	**Official Results:**	Yes

Graphics



Fathead Minnow 96-h Acute Survival Test — Sierra Foothill Laboratory Inc.

Analysis ID:	04-3095-5121	Endpoint:	96h Survival Rate	CETIS Version:	CETISv1.8.6
Analyzed:	20 Sep-12 10:08	Analysis:	Single 2x2 Contingency Table	Official Results:	Yes

Batch ID:	05-2426-6205	Test Type:	Survival (96h)	Analyst:	
Start Date:	11 Sep-12 15:45	Protocol:	EPA/821/R-02-012 (2002)	Diluent:	Diluted Mineral Water
Ending Date:	15 Sep-12 14:50	Species:	Pimephales promelas	Brine:	
Duration:	95h	Source:	Enviro-Sciences-Inc, TX	Age:	1d

Sample ID:	19-4677-3288	Code:	0912-14	Client:	Sierra Foothill Laboratory
Sample Date:	10 Sep-12	Material:	Potassium chloride	Project:	
Receive Date:	10 Sep-12	Source:	KCl Reference Toxicant		
Sample Age:	40h	Station:			

Data Transform	Zeta	Alt Hyp	Trials	Seed	NOEL	LOEL	TOEL	TU
Untransformed		C > T	NA	NA	0.5	1	0.7071	

Fisher Exact Test

Control	vs	C-gm/L	Test Stat	P-Value	P-Type	Decision(α:5%)
DMW		0.258	1	1.0000	Exact	Non-Significant Effect
		0.5	1	1.0000	Exact	Non-Significant Effect
		1	0.002048	0.0020	Exact	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria

Data Summary

C-gm/L	Control Type	NR	R	NR + R	Prop NR	Prop R	%Effect
0	DMW	19	0	19	1	0	0.0%
0.258		20	0	20	1	0	0.0%
0.5		20	0	20	1	0	0.0%
1		12	8	20	0.6	0.4	40.0%
2		0	20	20	0	1	100.0%

96h Survival Rate Detail

C-gm/L	Control Type	Rep 1	Rep 2
0	DMW	1	1
0.258		1	1
0.5		1	1
1		0.5	0.7
2		0	0

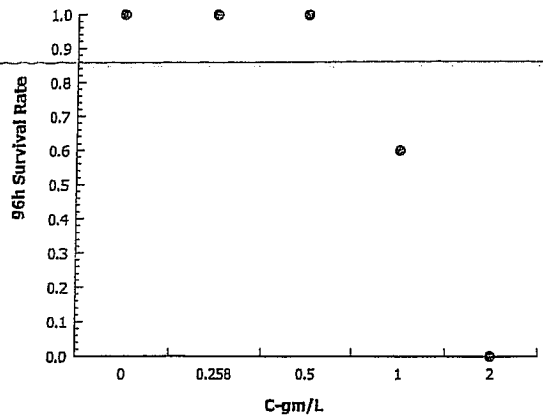
96h Survival Rate Binomials

C-gm/L	Control Type	Rep 1	Rep 2
0	DMW	10/10	9/9
0.258		10/10	10/10
0.5		10/10	10/10
1		5/10	7/10
2		0/10	0/10

Fathead Minnow 96-h Acute Survival Test — Sierra Foothill Laboratory Inc.

Analysis ID:	04-3095-5121	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.6
Analyzed:	20 Sep-12 10:08	**Analysis:**	Single 2x2 Contingency Table	**Official Results:**	Yes

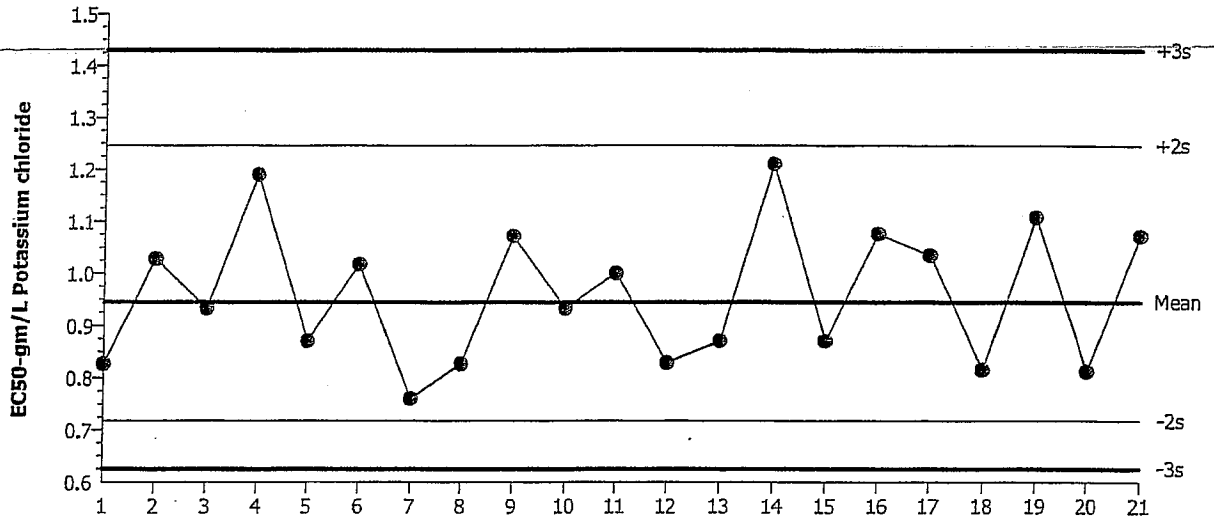
Graphics



Fathead Minnow 96-h Acute Survival Test — Sierra Foothill Laboratory Inc.

Test Type:	Survival (96h)	**Organism:**	Pimephales promelas (Fathead Minn	**Material:**	Potassium chloride
Protocol:	EPA/821/R-02-012 (2002)	**Endpoint:**	96h Survival Rate	**Source:**	KCl Reference Toxicant-RT1

Fathead Minnow 96-h Acute Survival Test



Mean:	0.9455	**Count:**	20	**-2s Warning Limit:**	0.7176	**-3s Action Limit:**	0.6251
Sigma:	NA	**CV:**	14.80%	**+2s Warning Limit:**	1.246	**+3s Action Limit:**	1.43

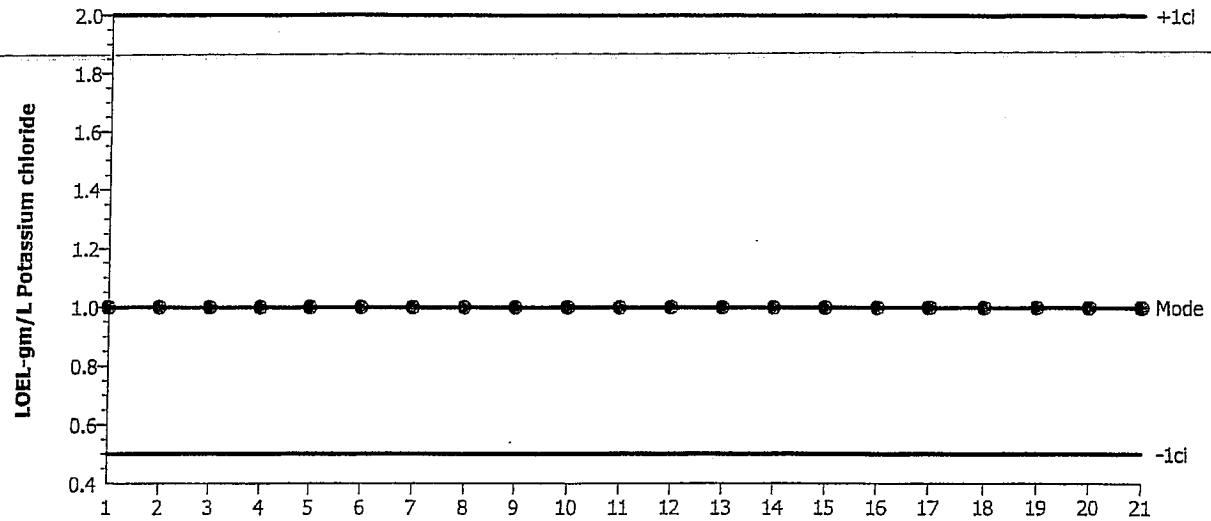
Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2012	Jan	18	13:00	0.8265	-0.119	-0.9757			06-0810-1654	19-7131-7953
2			24	16:00	1.028	0.08269	0.608			04-3212-8859	11-7427-2249
3		Feb	7	0:00	0.933	-0.01244	-0.09605			08-9080-4022	21-0082-9113
4			15	14:00	1.189	0.2437	1.663			20-7447-0918	07-1508-5253
5		Mar	13	15:30	0.8706	-0.07492	-0.5987			14-1523-2926	21-0762-7665
6			21	13:45	1.017	0.07201	0.5323			04-1999-7767	16-2158-2637
7			27	0:00	0.7606	-0.1848	-1.578			16-6455-7819	06-8712-6799
8		Apr	10	15:15	0.8265	-0.119	-0.9757			05-4021-5558	02-4624-4488
9			18	12:50	1.072	0.1263	0.9092			11-2180-7667	05-0611-7384
10			24	15:20	0.933	-0.01244	-0.09605			16-7895-1986	17-7725-9018
11		May	15	15:20	1	0.05453	0.4066			07-8435-0987	04-1156-1699
12			16	12:55	0.8286	-0.1168	-0.9565			00-8536-3155	04-9934-4897
13		Jun	12	15:50	0.8706	-0.07492	-0.5987			01-3483-5271	00-2534-6274
14			20	12:50	1.21	0.2645	1.789			21-4382-5213	05-2020-9277
15		Jul	10	14:20	0.8706	-0.07492	-0.5987			03-9923-7584	14-3599-4605
16			18	13:15	1.076	0.1301	0.9346			07-9611-3872	05-6801-2830
17			24	15:15	1.035	0.08979	0.6579			07-6956-6012	12-1229-1130
18		Aug	14	14:45	0.8153	-0.1302	-1.074			00-9291-7181	10-6881-1046
19			22	13:10	1.108	0.1622	1.148			13-8387-3532	11-6951-5931
20		Sep	6	10:00	0.8123	-0.1332	-1.101			03-7871-2154	17-9324-4918
21			11	15:45	1.072	0.1263	0.9092			12-0708-1352	09-2041-4558

Fathead Minnow 96-h Acute Survival Test — Sierra Foothill Laboratory Inc.

Test Type:	Survival (96h)	**Organism:**	Pimephales promelas (Fathead Minn	**Material:**	Potassium chloride
Protocol:	EPA/821/R-02-012 (2002)	**Endpoint:**	96h Survival Rate	**Source:**	KCl Reference Toxicant-RT1

Fathead Minnow 96-h Acute Survival Test



Mode: 1 **Count:** 20 **-1ci Action Limit:** 0.5
Dil Fact: 0.5 **+1ci Action Limit:** 2

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2012	Jan	18	13:00	1	0				06-0810-1654	12-4174-8814
2			24	16:00	1	0				04-3212-8859	13-8982-7713
3		Feb	7	0:00	1	0				08-9080-4022	00-8207-5000
4			15	14:00	1	0				20-7447-0918	08-8249-4379
5		Mar	13	15:30	1	0				14-1523-2926	06-1544-3359
6			21	13:45	1	0				04-1999-7767	13-7271-9378
7			27	0:00	1	0				16-6455-7819	11-5039-1170
8		Apr	10	15:15	1	0				05-4021-5558	18-8827-4437
9			18	12:50	1	0				11-2180-7667	17-5224-3590
10			24	15:20	1	0				16-7895-1986	06-9123-8932
11		May	15	15:20	1	0				07-8435-0987	21-4681-3517
12			16	12:55	1	0				00-8536-3155	16-1061-7500
13		Jun	12	15:50	1	0				01-3483-5271	03-0821-0372
14			20	12:50	1	0				21-4382-5213	05-3383-0159
15		Jul	10	14:20	1	0				03-9923-7584	02-5798-7101
16			18	13:15	1	0				07-9611-3872	09-6868-6314
17			24	15:15	1	0				07-6956-6012	03-3258-6605
18		Aug	14	14:45	1	0				00-9291-7181	04-2907-0771
19			22	13:10	1	0				13-8387-3532	03-8688-4851
20		Sep	6	10:00	1	0				03-7871-2154	03-8263-0958
21			11	15:45	1	0				12-0708-1352	04-3095-5121

Sierra Foothill Laboratory, Inc.

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September 27, 2012

J & L Analytical Services, Inc.
217 Primo Way, Ste 2
Modesto CA 95358

TEST SUMMARY

RE: Abbreviated static-renewal chronic toxicity testing of J & L Analytical for Sconza Candy Grab EFF-001 Effluent and RSW-001 Receiving compared to DMW Laboratory Control Water 09-11-12 to 09-18-12

Method = EPA-821-R-02-013

Effluent Lab# 753676 753916 753963
Receiving Lab# 753677 753917 753964

WATER:
The three sets of effluent samples were similar for the chemical parameters measured.

1000.0 Fathead Minnow (Pimephales promelas) Larval Survival and Growth Test

Treatment	7 day % Survival	Avg Dry Wt (mg)
EFF-001	97.5	0.80
RSW-001	47.5*	0.49*
+DMW Lab Control	100.0	0.61

Neither survival nor growth of fathead minnows exposed to 100% effluent was significantly reduced from that in the DMW control. Effluent TUc = 1.
Both survival and growth of fathead minnows exposed to RSW-001 were significantly reduced from that in the DMW control

1002.0 Ceriodaphnia dubia Survival and Reproduction Test

Treatment	6 day % Survival	Avg Young/Female (ON)
EFF-001	100.0	17.4
RSW-001	100.0	25.4
+DMW Lab Control	100.0	17.0

Neither survival nor reproduction of Ceriodaphnia exposed to Effluent or Receiving water were significantly reduced from that in the DMW control. Effluent TUc = 1.

Sierra Foothill Laboratory certifies that test results meet all applicable ELAP requirements unless stated otherwise.
Results are specific to the sample(s) as submitted and only to the parameter(s) reported.
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ELAP # 2784, 1113A, 1881

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September 27, 2012

RE: Abbreviated static-renewal chronic toxicity testing of J & L Analytical for Sconza Candy Grab EFF-001 Effluent and RSW-001 Receiving compared to DMW Laboratory Control Water 09-14-12 to 09-18-12

1003.0 Algae (Selenastrum capricornutum) Growth Test

Treatment	96h cells/mL (million)
EFF-001	3.90
RSW-001	1.09*
+DMW Lab Control	1.62

Algal cell density in 100% effluent was not significantly reduced from cell density in the DMW control. Effluent TUc = 1
Algal growth in Receiving water was significantly reduced from cell density in the DMW control.

Note: *Significantly reduced from control
+Meets EPA criteria for acceptability as control group
-Data does not meet EPA criteria for acceptability using Receiving water control.

Summary prepared by:

Sandy Nurse

Sandy Nurse

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September 27, 2012

J & L Analytical Services, Inc.
217 Primo Way, Ste 2
Modesto CA 95358 FATHEAD MINNOW (Pimephales promelas), 1000.0

RE: Abbreviated static-renewal chronic toxicity testing of J & L Analytical for Sconza Candy Grab EFF-001 Effluent and RSW-001 Receiving compared to DMW Laboratory Control Water
Started 09-11-12 15:45 Ended 09-18-12 13:55
The testing method used closely followed EPA-821-R-02-013. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. 4th Edition.

Grab Effluent Lab# 753676 753916 753963 collected 09-10-12 09-12-12 09-13-12
Receiving Lab# 753677 753917 753964 collected 09-10-12 09-12-12 09-13-12
Comparison/Control Laboratory water was DMW (diluted mineral water: 26% Evian Spring + 74% Arrowhead Distilled) prepared 09-07-12
Pimephales promelas (fathead minnow) positively identified to species 01-12-12
Organism age: 1 d from EnviroScience
Test chambers: 500 mL size plastic, containing 300 mL test solution
Solution renewal: 250 mL daily
Feeding: twice daily with 0.1 mL <24 h old live brine shrimp
Test temperature (25C) did not range more than 3C during the test
KCl reference toxicant test date: 09-11-12

RESULTS: Treatment	# Larvae	# Replicates	% Survival 7 day	Avg Dry Wt (mg)
EFF-001	40	4	97.5	0.80
RSW-001	40	4	47.5*	0.49*
+DMW Lab Control	40	4	100.0	0.61

Data meet EPA criteria for acceptability using DMW lab control.

Neither survival nor growth of fathead minnows exposed to 100% effluent was significantly reduced from that in the DMW control. Effluent TUc = 1.
Both survival and growth of fathead minnows exposed to RSW-001 were significantly reduced from that in the DMW control

100% Effluent vs DMW Control
Survival: Wilcoxon Rank Sum Two-Sample Test PMSD = 5.6
Growth: Equal Variance t Two-Sample Test PMSD = 13

Receiving Water vs DMW Control
Survival: Equal Variance t Two-Sample Test PMSD = 10
Growth: Equal Variance t Two-Sample Test PMSD = 16

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September 27, 2012

J & L Analytical Services, Inc.
217 Primo Way, Ste 2
Modesto CA 95358 CERIODAPHNIA (Ceriodaphnia dubia), 2000.0

RE: Abbreviated static-renewal chronic toxicity testing of J & L Analytical for Sconza Candy Grab EFF-001 Effluent and RSW-001 Receiving compared to DMW Laboratory Control Water
Started 09-11-12 16:30 Ended 09-19-12 13:30
The testing method used closely followed EPA-821-R-02-013. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. 4th Edition.

Grab Effluent Lab# 753676 753916 753963 collected 09-10-12 09-12-12 09-13-12
Receiving Lab# 753677 753917 753964 collected 09-10-12 09-12-12 09-13-12
Comparison/Control Laboratory water was DMW (diluted mineral water: 26% Evian Spring + 74% Arrowhead Distilled) prepared 09-07-12
Ceriodaphnia dubia (water flea) positively identified to species 01-12-12
Organism age: 9 h from Sierra Foothill Laboratory
Test chambers: 30 mL size glass, containing 15 mL test solution
Solution renewal: daily
Feeding: daily with .1 mL YCT prepared 08-29-12 + .1 mL algae prepared 09-07-12
Test temperature (25C) did not range more than 3C during the test
Zinc sulfate reference toxicant test date: 09-11-12

RESULTS:

Treatment	# Neonates/ # Replicates	% Survival 6 day	Average young per female (ON)
EFF-001	9 / 9	100.0	17.4
RSW-001	10 / 10	100.0	25.4
DMW Lab Control	10 / 10	100.0	17.0

Data meet EPA criteria for acceptability using DMW lab control.

Neither survival nor reproduction of Ceriodaphnia exposed to Effluent or Receiving water were significantly reduced from that in the DMW control. Effluent TUc = 1.

100% Effluent vs DMW Control
Survival: Fisher Exact Test PMSD = NA
Reproduction: Equal Variance t Two-Sample Test PMSD = 20

Receiving Water vs DMW Control
Survival: Fisher Exact Test PMSD = NA
Reproduction: Equal Variance t Two-Sample Test PMSD = 23

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September 27, 2012

J & L Analytical Services, Inc.
217 Primo Way, Ste 2
Modesto CA 95358 ALGAE (Selenastrum capricornutum), 1003.0

RE: Abbreviated static-renewal chronic toxicity testing of J & L Analytical for Sconza Candy Grab EFF-001 Effluent and RSW-001 Receiving compared to DMW Laboratory Control Water
Started 09-14-12 16:05 Ended 09-18-12 14:11
The testing method used closely followed EPA-821-R-02-013. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. 4th Edition.

Grab Effluent Lab# 753963 collected 09-13-12
Receiving Lab# 753964 collected 09-13-12
Comparison/Control Laboratory water was DMW (diluted mineral water: 26% Evian Spring + 74% Arrowhead Distilled) prepared 09-07-12
Sample and dilution water were filtered prior to preparation of test concentrations using cellulose nitrate .45u pore size filters
Selenastrum capricornutum (algae) positively identified to species 03-27-12
Organism age: 7d from Sierra Foothill Laboratory, UTEX 10-19-09, subcultured 09-07-12 to 09-14-12. Unialgal microscopic exam by SFL on 09-14-12
Nutrient spike: 1 mL/100 mL Bolds Basal Medium with EDTA
Test chambers: 250 mL size glass containing 100 mL test solution; continuous light and shaking
Test temperature (25C) did not range more than 3C during the test
Cell density determined by spectrophotometric turbidity method
Four replicates were initiated; one of which was used solely for daily chemistry measurements.
Boron reference toxicant test date: 09-14-12

RESULTS: Treatment	# cells/mL in inoculum	initial # replicates	96h cells/mL (million)
EFF-001	10000	4	3.90
RSW-001	10000	4	1.09*
DMW Lab Control	10000	4	1.62

Data meet EPA criteria for acceptability using DMW lab control.

Algal cell density in 100% effluent was not significantly reduced from cell density in the DMW control. Effluent TUc = 1
Algal growth in Receiving water was significantly reduced from cell density in the DMW control.

100% Effluent vs DMW Control
Growth: Equal Variance t Two-Sample Test PMSD = 23
Receiving Water vs DMW Control
Growth: Equal Variance t Two-Sample Test [PMSD 2.4, adj to 9.1]

Note: [PMSD adj] Statistically significant but oversensitive reduction was re-evaluated at the EPA lower bound PMSD

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JLAN

CUSTOMER NAME: JESSE HODGES J&L ANALYTICAL for Sconza Candy
SHIP TO:
ADDRESS: 1400 SOUTH YOSEMITE AVE 217 PRIMO WAY
CITY, STATE, ZIP: OAKDALE CA 95361 MODESTO CA 95358

ATTN: JESSE HODGES
NPDES# R5-2008-0082 CAG995002 6-12-08, provided 8-2012

SFL ID#	SOURCE DESCRIPTION	ANALYSIS (x)		SAMPLING & CONTAINER INFORMATION:			
		Chronic*	Acute**	MATRIX	P/G	DATE/HR COLLECTED	BY
753676-01	EFF-001, GRAB	X	X	WW	Gal P	9/10/12 11:00a	[illegible]
753677-01	RSW-001	X		W		9/10/12 10:45a	[illegible]

* Chronic 3 species, aquatic toxicity, EPA 821/R02/013 testing undiluted effluent and undiluted receiving water. Annual. TUc trigger = >1
**96h acute fathead screening, EPA 821/R02/012, testing 100% effluent Annual

Collection for September 2012 is as follows:

Date	Amt. EFF-001 to collect		Amt RSW-001 to collect	
Mon 9/10/12	2 gallon	CT42, AFS5	1 gallon	CT42
Wed 9/12/12	1 gallon	ct42	1 gallon	ct42
Thurs 9/13/12	2 gallon	ct42	2 gallon	ct42

Transportation notes: Ice and Ship or Transport for next day receipt at lab, sample temp 4-6C. Maximum hold time to first use of samples is 36 hours from time of collection.

2.8+6 [illegible]

RELINQUISHED BY: [illegible] DATE/TIME: 9/10/12 12:00
RECEIVED BY: [illegible] DATE/TIME: 9/11/12 1340
RELINQUISHED BY: DATE/TIME:
RECEIVED BY: DATE/TIME:

[illegible] 9/11/12

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Client: **JLAN**

J L Analytical Services, Inc.
217 Primo Way, Ste 2
Modesto, CA 95358-

Project Report: **215388**

Results for Project 215388

753676 EFF-001, GRAB — Liquid Taken: 09/10/2012 1100 By: Client — Rec:09/11/2012

Parameter	Result	Unit	Flag	RL	Method	Analyzed	By	CAS
Acute tox 96h fathead, 5th ed	See Report	compliance			821-R-02-012	09/12/2012 1100	SFL	
Chronic Tox 3sp/1 conc, 4th e	See Report	Date			821-R-02-013	09/12/2012 1100	SFL	
Specific Conductance	239	umhos/cm		1.00	EPA120.1/SM2510B	09/11/2012 0900	R&L	
Alkalinity, Total as CaCO3	88	mg/L		5.0	EPA310.1/SM2320B	09/17/2012 1335	RK	
Hardness as CaCO3	83	mg/L		5.0	SM2340C	09/18/2012 1345	TN	
pH, Lab*	8.2	unit		0.1	SM4500-H+B	09/11/2012 0850	L&R	*past hold
Oxygen, Dissolved, Lab*	9.0	mg/L		0.1	SM4500-O G	09/11/2012 0850	ATR	*past hold
Chlorine Residual,Total, Lab*	<0.10	mg/L		0.10	SM4500Cl G	09/11/2012 0845	RAT	*past hold

753677 RSW-001 — Liquid Taken: 09/10/2012 1045 By: Client — Rec:09/11/2012

Parameter	Result	Unit	Flag	RL	Method	Analyzed	By	CAS
Chronic Tox 3sp/1 conc, 4th e	See Report	Date			821-R-02-013	09/12/2012 1100	SFL	
Specific Conductance	53.5	umhos/cm		1.00	EPA120.1/SM2510B	09/11/2012 0900	R&L	
Alkalinity, Total as CaCO3	24	mg/L		5.0	EPA310.1/SM2320B	09/17/2012 1335	RK	
Hardness as CaCO3	24	mg/L		5.0	SM2340C	09/18/2012 1345	TN	
pH, Lab*	7.8	unit		0.1	SM4500-H+B	09/11/2012 0850	L&R	*past hold
Oxygen, Dissolved, Lab*	11.9	mg/L		0.1	SM4500-O G	09/11/2012 0850	ATR	*past hold
Chlorine Residual,Total, Lab*	<0.10	mg/L		0.10	SM4500Cl G	09/11/2012 0845	RAT	*past hold

Sample Preparation Steps for Project 215388

753676 EFF-001, GRAB — Liquid Taken: 09/10/2012 1100 By: Client — Rec:09/11/2012

Parameter	Result	Unit		Method	Analyzed	By
Nitrogen, Ammonia-N Screen	ND	mg/L	0.50	SFL SOP 125	09/11/2012 1100	TAR

753677 RSW-001 — Liquid Taken: 09/10/2012 1045 By: Client — Rec:09/11/2012

Parameter	Result	Unit		Method	Analyzed	By
Nitrogen, Ammonia-N Screen	ND	mg/L	0.50	SFL SOP 125	09/11/2012 1100	TAR

SET Quality Control/Quality Assurance for Project 215388

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SET Quality Control/Quality Assurance for Project 215388

Alkalinity, Total as CaCO3

(Analyzed: 09/17/2012 1335 RK Verified: 09/18/2012 16:04 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	500	513	mg/L	97.5	
	Blank	<5.0		mg/L		
753507	Duplicate	52	54	mg/L		3.8
753615	Duplicate	104	104	mg/L		0.0
753702	Duplicate	15	15	mg/L		0.0
753816	Duplicate	360	360	mg/L		0.0
753598	Matrix SPK	81.6	80	mg/L	102	
753678	Matrix SPK	80.0	80	mg/L	100	
753698	Matrix SPK	80.0	80	mg/L	100	
753798	Matrix SPK	89.0	89	mg/L	100	

Chlorine Residual,Total, Lab*

(Analyzed: 09/11/2012 0845 RAT Verified: 09/12/2012 11:59 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	0.21	0.22	mg/L	95.5	
	Standard	1.58	1.58	mg/L	100.0	
	Blank	<0.10		mg/L		
753577	Duplicate	<0.10	<0.10	mg/L		0.0
753604	Duplicate	<0.10	<0.10	mg/L		0.0
753680	Duplicate	<0.10	<0.10	mg/L		0.0

Oxygen, Dissolved, Lab*

(Analyzed: 09/11/2012 0850 ATR Verified: 09/12/2012 11:59 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
753577	Duplicate	9.3	9.3	mg/L		0.0
753603	Duplicate	7.8	7.8	mg/L		0.0
753669	Duplicate	10.7	10.6	mg/L		0.9

Specific Conductance

(Analyzed: 09/11/2012 0900 R&L Verified: 09/12/2012 11:52 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	102	100	umhos/cm	102.0	
753577	Duplicate	373	370	umhos/cm		0.8
753604	Duplicate	118	118	umhos/cm		0.0
753645	Duplicate	573	573	umhos/cm		0.0
753677	Duplicate	53.5	54.1	umhos/cm		1.1
753705	Duplicate	645	644	umhos/cm		0.2

Hardness as CaCO3

(Analyzed: 09/18/2012 1345 TN Verified: 09/19/2012 09:51 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	552	563	mg/L	98.0	
	Blank	<5.0		mg/L		

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Client: **JLAN**
Project Report: **215388**

SET Quality Control/Quality Assurance for Project 215388

Hardness as CaCO3

(Analyzed: 09/18/2012 1345 TN Verified: 09/19/2012 09:51 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
753574	Duplicate	47	43	mg/L		8.9
753667	Duplicate	71	76	mg/L		6.8
753755	Duplicate	51	53	mg/L		3.8
753824	Duplicate	126	126	mg/L		0.0
753879	Duplicate	79	83	mg/L		4.9
753574	Matrix SPK	83.6	82	mg/L	102	
753760	Matrix SPK	82.8	82	mg/L	101	
753818	Matrix SPK	206	206	mg/L	100	
753909	Matrix SPK	86.9	82	mg/L	106	

pH, Lab*

(Analyzed: 09/11/2012 0850 L&R Verified: 09/12/2012 11:55 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	7.5	7.5	unit	100.0	
753578	Duplicate	7.8	7.9	unit		1.3
753626	Duplicate	7.4	7.5	unit		1.3
753646	Duplicate	7.6	7.6	unit		0.0
753677	Duplicate	7.8	7.7	unit		1.3
753705	Duplicate	7.0	7.0	unit		0.0

ELAP #2784, #1113A, #1881

Sandy Nurse

Sandy Nurse, Lab Director

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JLAN

CUSTOMER NAME: JESSE HODGES
SHIP TO:
ADDRESS: 1400 SOUTH YOSEMITE AVE
CITY, STATE, ZIP: OAKDALE CA 95361

J&L ANALYTICAL for Sconza Candy
217 PRIMO WAY
MODESTO CA 95358

ATTN: JESSE HODGES
NPDES# R5-2008-0082 CAG995002 6-12-08, provided 8-2012

SFL ID#	SOURCE DESCRIPTION	ANALYSIS (x)		SAMPLING & CONTAINER INFORMATION:			
		Chronic*	Acute**	MATRIX	P/G	DATE/HR COLLECTED	BY
7539160-01	EFF-001, GRAB BOTTLE READS SITE AS "POND EFFLUENT"	X	X	WW	Gal P NO	9/12/12 8:15 SAMPLE TIME	
7539170-01	RSW-001 BOTTLE READS SITE AS "RECEIVING WATER"	X		W		9/12/12 8:05	
				NO	SAMPLE TIME		
						9/13/12	

*Chronic 3 species, aquatic toxicity, EPA 821/R02/013 testing undiluted effluent and undiluted receiving water. Annual. TUc trigger = >1
**96h acute fathead screening, EPA 821/R02/012, testing 100% effluent Annual

Collection for September 2012 is as follows:

Date	Amt. EFF-001 to collect		Amt RSW-001 to collect	
Mon 9/10/12	2 gallon	CT42, AFS5	1 gallon	CT42
Wed 9/12/12	1 gallon	ct42	1 gallon	ct42
Thurs 9/13/12	2 gallon	ct42	2 gallon	ct42

Transportation notes: Ice and Ship or Transport for next day receipt at lab, sample temp 4-6C.
Maximum hold time to first use of samples is 36 hours from time of collection.

4.1 c to ICE

RELINQUISHED BY: Jesse Hodges DATE/TIME: 9/12/12 9:00
RECEIVED BY: DATE/TIME: 9/13/12 13:50 (PDT)
RELINQUISHED BY: DATE/TIME:
RECEIVED BY: DATE/TIME:

CB 09/13/12

Sierra Foothill Laboratory, Inc.

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Client: **JLAN**

J L Analytical Services, Inc.
217 Primo Way, Ste 2
Modesto, CA 95358-

Project Report: **215521**

Results for Project 215521

753916 EFF-001, GRAB Liquid Taken: 09/12/2012 0815 By: JH Rec:09/13/2012

BOTTLE READS SITE AS "POND EFFLUENT" NO SAMPLE TIME ON BOTTLE

Parameter	Result	Unit	Flag	RL	Method	Analyzed	By	CAS
Renewal water chronic 4th ed	See Report					09/14/2012 1100	SFL	
Specific Conductance	241	umhos/cm		1.00	EPA120.1/SM2510B	09/13/2012 0900	LRA	
Alkalinity, Total as CaCO3	92	mg/L		5.0	EPA310.1/SM2320B	09/20/2012 1350	RK	
Hardness as CaCO3	91	mg/L		5.0	SM2340C	09/18/2012 1345	TN	
pH, Lab*	8.1	unit		0.1	SM4500-H+B	09/13/2012 1220	LRA	*past hold
Oxygen, Dissolved, Lab*	8.4	mg/L		0.1	SM4500-O G	09/13/2012 1210	RAL	*past hold
Chlorine Residual,Total, Lab*	<0.10	mg/L		0.10	SM4500Cl G	09/13/2012 0855	LRA	*past hold

753917 RSW-001 Liquid Taken: 09/12/2012 0805 By: JH Rec:09/13/2012

BOTTLE READS SITE AS "RECEIVING WATER R1" NO SAMPLE TIME ON BOTTLE

Parameter	Result	Unit	Flag	RL	Method	Analyzed	By	CAS
Renewal water chronic 4th ed	See Report					09/14/2012 1100	SFL	
Specific Conductance	57.4	umhos/cm		1.00	EPA120.1/SM2510B	09/13/2012 0900	LRA	
Alkalinity, Total as CaCO3	25	mg/L		5.0	EPA310.1/SM2320B	09/20/2012 1350	RK	
Hardness as CaCO3	24	mg/L		5.0	SM2340C	09/18/2012 1345	TN	
pH, Lab*	7.6	unit		0.1	SM4500-H+B	09/13/2012 1220	LRA	*past hold
Oxygen, Dissolved, Lab*	11.2	mg/L		0.1	SM4500-O G	09/13/2012 1210	RAL	*past hold
Chlorine Residual,Total, Lab*	<0.10	mg/L		0.10	SM4500Cl G	09/13/2012 0855	LRA	*past hold

Sample Preparation Steps for Project 215521

753916 EFF-001, GRAB Liquid Taken: 09/12/2012 0815 By: JH Rec:09/13/2012

Parameter	Result	Unit		Method	Analyzed	By
Nitrogen, Ammonia-N Screen	ND	mg/L	0.50	SFL SOP 125	09/13/2012 1100	RAL

753917 RSW-001 Liquid Taken: 09/12/2012 0805 By: JH Rec:09/13/2012

Parameter	Result	Unit		Method	Analyzed	By
Nitrogen, Ammonia-N Screen	ND	mg/L	0.50	SFL SOP 125	09/13/2012 1100	RAL

SET Quality Control/Quality Assurance for Project 215521

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Client: **JLAN**
Project Report: **215521**

SET Quality Control/Quality Assurance for Project 215521

Alkalinity, Total as CaCO3

(Analyzed: 09/20/2012 1350 RK Verified: 09/21/2012 10:26 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	510	513	mg/L	99.4	
	Blank	<5.0		mg/L		
753898	Duplicate	21	20	mg/L		4.9
753917	Duplicate	25	24	mg/L		4.1
753946	Duplicate	48	52	mg/L		8.0
753975	Duplicate	48	52	mg/L		8.0
753984	Duplicate	88	88	mg/L		0.0
753877	Matrix SPK	76.0	80	mg/L	95	
753918	Matrix SPK	80.0	80	mg/L	100	
753948	Matrix SPK	84.0	80	mg/L	105	
753978	Matrix SPK	81.6	80	mg/L	102	
753983	Matrix SPK	80.0	80	mg/L	100	

Chlorine Residual,Total, Lab*

(Analyzed: 09/13/2012 0855 LRA Verified: 09/14/2012 13:05 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	0.20	0.22	mg/L	90.9	
	Standard	1.59	1.58	mg/L	100.6	
	Blank	<0.10		mg/L		
753854	Duplicate	<0.10	<0.10	mg/L		0.0
753877	Duplicate	<0.10	<0.10	mg/L		0.0
753917	Duplicate	<0.10	<0.10	mg/L		0.0

Oxygen, Dissolved, Lab*

(Analyzed: 09/13/2012 1210 RAL Verified: 09/14/2012 13:05 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
753811	Duplicate	10.3	10.3	mg/L		0.0
753869	Duplicate	9.6	9.6	mg/L		0.0
753918	Duplicate	12.6	12.6	mg/L		0.0

Specific Conductance

(Analyzed: 09/13/2012 0900 LRA Verified: 09/14/2012 13:00 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	100	100	umho/cm	100.0	
753755	Duplicate	464	467	umho/cm		0.6
753879	Duplicate	571	574	umho/cm		0.5
753906	Duplicate	485	484	umho/cm		0.2
753909	Duplicate	123	123	umho/cm		0.0
753918	Duplicate	982	984	umho/cm		0.2

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Client: **JLAN**
Project Report: **215521**

SET Quality Control/Quality Assurance for Project 215521

Hardness as CaCO3

(Analyzed: 09/18/2012 1345 TN Verified: 09/19/2012 09:51 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	552	563	mg/L	98.0	
	Blank	<5.0		mg/L		
753574	Duplicate	47	43	mg/L		8.9
753667	Duplicate	71	76	mg/L		6.8
753755	Duplicate	51	53	mg/L		3.8
753824	Duplicate	126	126	mg/L		0.0
753879	Duplicate	79	83	mg/L		4.9
753574	Matrix SPK	83.6	82	mg/L	102	
753760	Matrix SPK	82.8	82	mg/L	101	
753818	Matrix SPK	206	206	mg/L	100	
753909	Matrix SPK	86.9	82	mg/L	106	

pH, Lab*

(Analyzed: 09/13/2012 1220 LRA Verified: 09/14/2012 13:03 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	7.5	7.5	unit	100.0	
753873	Duplicate	7.6	7.6	unit		0.0
753891	Duplicate	7.4	7.4	unit		0.0
753915	Duplicate	6.0	6.0	unit		0.0
753918	Duplicate	7.7	7.7	unit		0.0

ELAP #2784, #1113A, #1881

Sandy Nurse

Sandy Nurse, Lab Director

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JLAN

CUSTOMER NAME: JESSE HODGES
SHIP TO: J&L ANALYTICAL for Sconza Candy
ADDRESS: 1400 SOUTH YOSEMITE AVE — 217 PRIMO WAY
CITY, STATE, ZIP: OAKDALE CA 95361 — MODESTO CA 95358

ATTN: JESSE HODGES
NPDES# R5-2008-0082 CAG995002 6-12-08, provided 8-2012

SFL ID#	SOURCE DESCRIPTION	ANALYSIS (x)		SAMPLING & CONTAINER INFORMATION:			
		Chronic*	Acute**	MATRIX	P/G	DATE/HR COLLECTED	BY
753963	EFF-001, GRAB	X	X	WW	Gal P	9/13/12 1:35	
753964	RSW-001	X		W		9/13/12 1:35	
	* Receiving bottle that needs			9/13/12			
						9/13/12	
	per phone note, COC should read	9/13/12					

* Chronic 3 species, aquatic toxicity, EPA 821/R02/013 testing undiluted effluent and undiluted receiving water. Annual. TUc trigger = >1
**96h acute fathead screening, EPA 821/R02/012, testing 100% effluent Annual

H.5+6 ee

Collection for September 2012 is as follows:

Date	Amt. EFF-001 to collect		Amt RSW-001 to collect	
Mon 9/10/12	2 gallon	CT42, AFS5	1 gallon	CT42
Wed 9/12/12	1 gallon	ct42	1 gallon	ct42
Thurs 9/13/12	2 gallon	ct42	2 gallon	ct42

Transportation notes: Ice and Ship or Transport for next day receipt at lab, sample temp 4-6C. Maximum hold time to first use of samples is 36 hours from time of collection.

RELINQUISHED BY: [signature] DATE/TIME: 9/13/12 [illegible]
RECEIVED BY: CB (FedEx) DATE/TIME: 9/14/12 1315
RELINQUISHED BY: DATE/TIME:
RECEIVED BY: DATE/TIME:

CB 9/14/12

Sierra Foothill Laboratory, Inc.

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Client: **JLAN**

J L Analytical Services, Inc.
217 Primo Way, Ste 2
Modesto, CA 95358-

Project Report: **215547**

Results for Project 215547

753963 EFF-001, GRAB Liquid Taken: 09/13/2012 1335 By: JH Rec:09/14/2012

Parameter	Result	Unit	Flag	RL	Method	Analyzed	By	CAS
Renewal water chronic 4th ed	See Report					09/14/2012 1100	SFL	
Specific Conductance	247	umhos/cm		1.00	EPA120.1/SM2510B	09/14/2012 1000	L&T	
Alkalinity, Total as CaCO3	88	mg/L		5.0	EPA310.1/SM2320B	09/20/2012 1350	RK	
Hardness as CaCO3	93	mg/L		5.0	SM2340C	09/21/2012 0925	LV	
pH, Lab*	8.3	unit		0.1	SM4500-H+B	09/14/2012 1040	L&T	*past hold
Oxygen, Dissolved, Lab*	7.9	mg/L		0.1	SM4500-O G	09/14/2012 1150	KLT	*past hold
Chlorine Residual,Total, Lab*	<0.10	mg/L		0.10	SM4500Cl G	09/14/2012 1205	TN	*past hold

753964 RSW-001 Liquid Taken: 09/13/2012 1330 By: JH Rec:09/14/2012

SAMPLE DATE ON BOTTLE READS: 9/13/12, SAMPLE DATE ON COC READS: 9/12/12. PER PHONE CALL TO NICOLE @ JL ANALYTICAL, SAMPLE COLLECTED 9/13/12.

Parameter	Result	Unit	Flag	RL	Method	Analyzed	By	CAS
Renewal water chronic 4th ed	See Report					09/14/2012 1100	SFL	
Specific Conductance	56.8	umhos/cm		1.00	EPA120.1/SM2510B	09/14/2012 1000	L&T	
Alkalinity, Total as CaCO3	24	mg/L		5.0	EPA310.1/SM2320B	09/20/2012 1350	RK	
Hardness as CaCO3	32	mg/L		5.0	SM2340C	09/21/2012 0925	LV	
pH, Lab*	8.0	unit		0.1	SM4500-H+B	09/14/2012 1040	L&T	*past hold
Oxygen, Dissolved, Lab*	9.5	mg/L		0.1	SM4500-O G	09/14/2012 1150	KLT	*past hold
Chlorine Residual,Total, Lab*	<0.10	mg/L		0.10	SM4500Cl G	09/14/2012 1205	TN	*past hold

Sample Preparation Steps for Project 215547

753963 EFF-001, GRAB Liquid Taken: 09/13/2012 1335 By: JH Rec:09/14/2012

Parameter	Result	Unit		Method	Analyzed	By
Nitrogen, Ammonia-N Screen	ND	mg/L	0.50	SFL SOP 125	09/14/2012 1100	TN

753964 RSW-001 Liquid Taken: 09/13/2012 1330 By: JH Rec:09/14/2012

Parameter	Result	Unit		Method	Analyzed	By
Nitrogen, Ammonia-N Screen	ND	mg/L	0.50	SFL SOP 125	09/14/2012 1100	TN

SET Quality Control/Quality Assurance for Project 215547

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Client: **JLAN**
Project Report: **215547**

SET Quality Control/Quality Assurance for Project 215547

Alkalinity, Total as CaCO3

(Analyzed: 09/20/2012 1350 RK Verified: 09/21/2012 10:26 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	510	513	mg/L	99.4	
	Blank	<5.0		mg/L		
753898	Duplicate	21	20	mg/L		4.9
753917	Duplicate	25	24	mg/L		4.1
753946	Duplicate	48	52	mg/L		8.0
753975	Duplicate	48	52	mg/L		8.0
753984	Duplicate	88	88	mg/L		0.0
753877	Matrix SPK	76.0	80	mg/L	95	
753918	Matrix SPK	80.0	80	mg/L	100	
753948	Matrix SPK	84.0	80	mg/L	105	
753978	Matrix SPK	81.6	80	mg/L	102	
753983	Matrix SPK	80.0	80	mg/L	100	

Chlorine Residual,Total, Lab*

(Analyzed: 09/14/2012 1205 TN Verified: 09/17/2012 09:20 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	0.20	0.22	mg/L	90.9	
	Standard	1.58	1.58	mg/L	100.0	
	Blank	<0.10		mg/L		
753945	Duplicate	<0.10	<0.10	mg/L		0.0
753964	Duplicate	<0.10	<0.10	mg/L		0.0

Oxygen, Dissolved, Lab*

(Analyzed: 09/14/2012 1150 KLT Verified: 09/17/2012 09:22 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
753933	Duplicate	7.6	7.7	mg/L		1.3
753948	Duplicate	11.0	10.9	mg/L		0.9
753964	Duplicate	9.5	9.6	mg/L		1.0

Specific Conductance

(Analyzed: 09/14/2012 1000 L&T Verified: 09/17/2012 09:11 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	103	100	umhos/cm	103.0	
753922	Duplicate	729	728	umhos/cm		0.1
753944	Duplicate	631	630	umhos/cm		0.2
umhos/	Duplicate	56.8	56.9	cm		0.2

Hardness as CaCO3

(Analyzed: 09/21/2012 0925 LV Verified: 09/24/2012 09:49 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	572	563	mg/L	101.6	
	Blank	<5.0		mg/L		
753922	Duplicate	47	45	mg/L		4.3

Sierra Foothill Laboratory certifies that test results meet all applicable ELAP requirements unless stated otherwise.
Results are specific to the sample(s) as submitted and only to the parameter(s) reported.
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Continued

Sierra Foothill Laboratory, Inc.

255 Scottsville Blvd
PO Box 1268
Jackson, CA 95642

Phone 209/223-2800
Fax 209/223-2747
Email info@sierralab.com

Client: **JLAN**
Project Report: **215547**

SET Quality Control/Quality Assurance for Project 215547

Hardness as CaCO3

(Analyzed: 09/21/2012 0925 LV Verified: 09/24/2012 09:49 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
753947	Duplicate	79	79	mg/L		0.0
753977	Duplicate	122	126	mg/L		3.2
754001	Duplicate	128	130	mg/L		1.6
753932	Matrix SPK	86.9	82	mg/L	106	
753963	Matrix SPK	81.2	82	mg/L	99	
753982	Matrix SPK	77.1	82	mg/L	94	
753994	Matrix SPK	89.4	82	mg/L	109	
754126	Matrix SPK	41.0	41	mg/L	100	

pH, Lab*

(Analyzed: 09/14/2012 1040 L&T Verified: 09/17/2012 09:09 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	7.5	7.5	unit	100.0	
753922	Duplicate	6.0	6.0	unit		0.0
753946	Duplicate	8.0	8.0	unit		0.0
753964	Duplicate	8.0	8.0	unit		0.0

ELAP #2784, #1113A, #1881

Sandy Nurse

Sandy Nurse, Lab Director

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Fathead Minnow 7-d Larval Surv and Growth (Screen) — **Sierra Foothill Laboratory Inc.**

Batch ID:	10-0567-8742	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	11 Sep-12 15:45	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	18 Sep-12 13:55	**Species:**	Pimephales promelas	**Brine:**	
Duration:	6d 22h	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d

Sample ID:	16-8436-7861	**Code:**	753676	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	10 Sep-12 11:00	**Material:**	POTW Effluent	**Project:**	
Receive Date:	11 Sep-12	**Source:**	Sconza Candy EFF-001 (CA000416)		
Sample Age:	29h	**Station:**			

Sample Renewals

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	753916	12 Sep-12 08:15	13 Sep-12	13 Sep-12	
2	753963	13 Sep-12 13:35	14 Sep-12	14 Sep-12	

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
00-7502-7168	7d Survival Rate	<0	0		10.5%		Equal Variance t Two-Sample Test
04-3876-8448	7d Survival Rate	100	>100	NA	5.56%	1	Wilcoxon Rank Sum Two-Sample Test
00-6976-1129	7d Survival Rate	100	>100	NA	NA	1	TST-Welch's t Test
07-5848-9807	7d Survival Rate	<0	0		NA		TST-Welch's t Test
07-6748-8846	Mean Dry Biomass-mg	100	>100	NA	13.1%	1	Equal Variance t Two-Sample Test
21-0209-6731	Mean Dry Biomass-mg	<0	0		16.1%		Equal Variance t Two-Sample Test
07-0296-7555	Mean Dry Biomass-mg	100	>100	NA	NA	1	TST-Welch's t Test
18-3416-4489	Mean Dry Biomass-mg	0	>0		NA		TST-Welch's t Test

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
00-6976-1129	7d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria
00-7502-7168	7d Survival Rate	Control Resp	0.475	0.8 - NL	Yes	Below Acceptability Criteria
	7d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria
04-3876-8448	7d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria
07-5848-9807	7d Survival Rate	Control Resp	0.475	0.8 - NL	Yes	Below Acceptability Criteria
	7d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria
07-0296-7555	Mean Dry Biomass-mg	Control Resp	0.6075	0.25 - NL	Yes	Passes Acceptability Criteria
07-6748-8846	Mean Dry Biomass-mg	Control Resp	0.6075	0.25 - NL	Yes	Passes Acceptability Criteria
18-3416-4489	Mean Dry Biomass-mg	Control Resp	0.49	0.25 - NL	Yes	Passes Acceptability Criteria
	Mean Dry Biomass-mg	Control Resp	0.6075	0.25 - NL	Yes	Passes Acceptability Criteria
21-0209-6731	Mean Dry Biomass-mg	Control Resp	0.49	0.25 - NL	Yes	Passes Acceptability Criteria
	Mean Dry Biomass-mg	Control Resp	0.6075	0.25 - NL	Yes	Passes Acceptability Criteria
07-6748-8846	Mean Dry Biomass-mg	PMSD	0.1305	0.12 - 0.3	Yes	Passes Acceptability Criteria
21-0209-6731	Mean Dry Biomass-mg	PMSD	0.1612	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	DMW	4	1	1	1	1	1	0	0	0.0%	0.0%
0	RSW-001 Recei	4	0.475	0.2032	0.7468	0.3	0.7	0.08539	0.1708	35.95%	52.5%
100		4	0.975	0.8954	1	0.9	1	0.025	0.05	5.13%	2.5%

Mean Dry Biomass-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	4	0.6075	0.4917	0.7233	0.54	0.68	0.03637	0.07275	11.97%	0.0%
0	RSW-001 Recei	4	0.49	0.379	0.601	0.42	0.55	0.03488	0.06976	14.24%	19.34%
100		4	0.795	0.7362	0.8538	0.75	0.84	0.01848	0.03696	4.65%	-30.87%

Fathead Minnow 7-d Larval Surv and Growth (Screen) **Sierra Foothill Laboratory Inc.**

7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1	1	1	1
0	RSW-001 Recei	0.7	0.5	0.4	0.3
100		0.9	1	1	1

Mean Dry Biomass-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	0.66	0.54	0.55	0.68
0	RSW-001 Recei	0.55	0.42	0.55	0.44
100		0.84	0.79	0.8	0.75

7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	10/10	10/10	10/10	10/10
0	RSW-001 Recei	7/10	5/10	4/10	3/10
100		9/10	10/10	10/10	10/10

Fathead Minnow 7-d Larval Surv and Growth (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	00-7502-7168	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 11:17	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Batch ID:	10-0567-8742	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	11 Sep-12 15:45	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	18 Sep-12 13:55	**Species:**	Pimephales promelas	**Brine:**	
Duration:	6d 22h	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d

Sample ID:	16-8436-7861	**Code:**	753676	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	10 Sep-12 11:00	**Material:**	POTW Effluent	**Project:**	
Receive Date:	11 Sep-12	**Source:**	Sconza Candy EFF-001 (CA000416)		
Sample Age:	29h	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Angular (Corrected)	NA	C > T	NA	NA	10.5%	Fails 7d survival rate

Equal Variance t Two-Sample Test

Control	vs	Control	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
DMW		RSW-001 Receivin	7.433	1.943	0.170	6	0.0002	CDF	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.475	0.8 - NL	Yes	Below Acceptability Criteria
Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.8496544	0.8496544	1	55.25	0.0003	Significant Effect
Error	0.09227525	0.01537921	6			
Total	0.9419296		7			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	6.733	13.75	0.0409	Equal Variances
Variances	Levene Equality of Variance	7.372	13.75	0.0349	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.8547	0.6451	0.1063	Normal Distribution

7d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	RSW-001 Recei	4	0.475	0.2032	0.7468	0.85	0.3	0.7	0.08539	35.95%	0.0%
0	DMW	4	1	1	1	0.85	1	1	0	0.0%	-110.5%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	RSW-001 Rece	4	0.7602	0.4812	1.039	1.202	0.5796	0.9912	0.08769	23.07%	0.0%
0	DMW	4	1.412	1.412	1.412	1.202	1.412	1.412	0	0.0%	-85.74%

7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1	1	1	1
0	RSW-001 Recei	0.7	0.5	0.4	0.3

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1.412	1.412	1.412	1.412
0	RSW-001 Recei	0.9912	0.7854	0.6847	0.5796

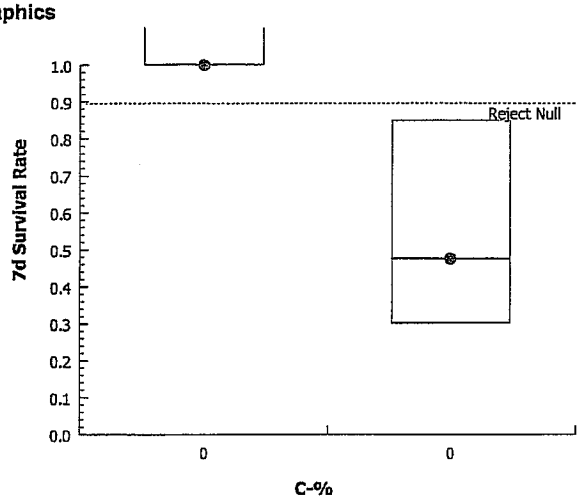
Fathead Minnow 7-d Larval Surv and Growth (Screen) — **Sierra Foothill Laboratory Inc.**

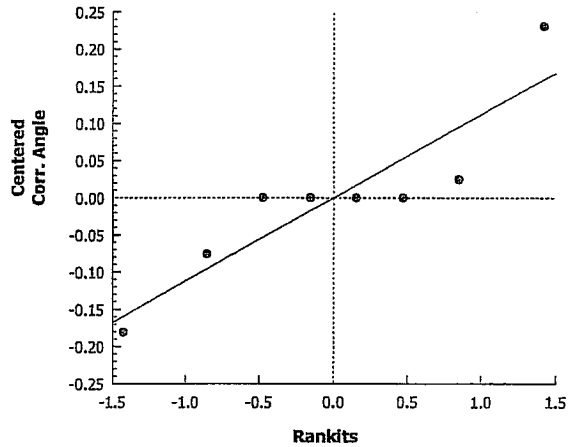
Analysis ID:	00-7502-7168	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 11:17	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	10/10	10/10	10/10	10/10
0	RSW-001 Recei	7/10	5/10	4/10	3/10

Graphics





Fathead Minnow 7-d Larval Surv and Growth (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	07-5848-9807	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 11:19	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Batch ID:	10-0567-8742	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	11 Sep-12 15:45	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	18 Sep-12 13:55	**Species:**	Pimephales promelas	**Brine:**	
Duration:	6d 22h	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d

Sample ID:	16-8436-7861	**Code:**	753676	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	10 Sep-12 11:00	**Material:**	POTW Effluent	**Project:**	
Receive Date:	11 Sep-12	**Source:**	Sconza Candy EFF-001 (CA000416)		
Sample Age:	29h	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	TST b	Test Result
Angular (Corrected)	NA	C*b < T	NA	NA	0.75	Fails 7d survival rate

TST-Welch's t Test

Control	vs	Control	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:25%)
DMW		RSW-001 Receivin	-3.407	0.7649		3	0.9789	CDF	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.475	0.8 - NL	Yes	Below Acceptability Criteria
Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.8496544	0.8496544	1	55.25	0.0003	Significant Effect
Error	0.09227525	0.01537921	6			
Total	0.9419296		7			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	6.733	13.75	0.0409	Equal Variances
Variances	Levene Equality of Variance	7.372	13.75	0.0349	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.8547	0.6451	0.1063	Normal Distribution

7d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	RSW-001 Recei	4	0.475	0.2032	0.7468	0.85	0.3	0.7	0.08539	35.95%	0.0%
0	DMW	4	1	1	1	0.85	1	1	0	0.0%	-110.5%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	RSW-001 Rece	4	0.7602	0.4812	1.039	1.202	0.5796	0.9912	0.08769	23.07%	0.0%
0	DMW	4	1.412	1.412	1.412	1.202	1.412	1.412	0	0.0%	-85.74%

7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1	1	1	1
0	RSW-001 Recei	0.7	0.5	0.4	0.3

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1.412	1.412	1.412	1.412
0	RSW-001 Recei	0.9912	0.7854	0.6847	0.5796

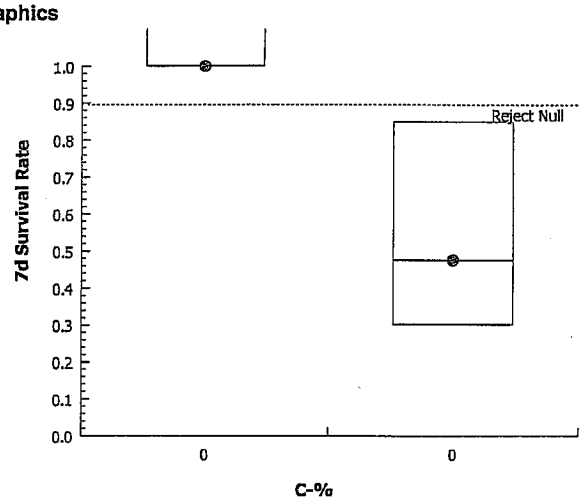
Fathead Minnow 7-d Larval Surv and Growth (Screen) — **Sierra Foothill Laboratory Inc.**

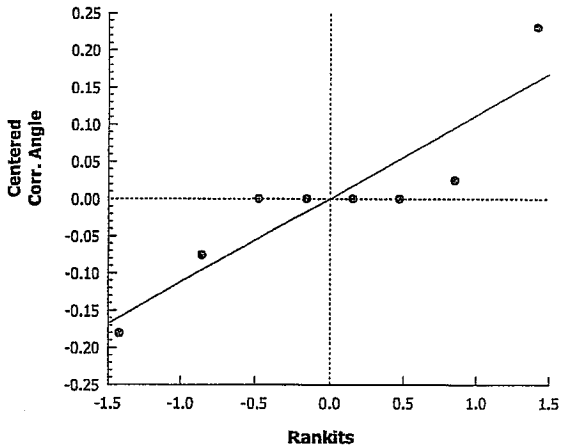
Analysis ID:	07-5848-9807	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 11:19	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	10/10	10/10	10/10	10/10
0	RSW-001 Recei	7/10	5/10	4/10	3/10

Graphics





Fathead Minnow 7-d Larval Surv and Growth (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	04-3876-8448	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 11:23	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

Batch ID:	10-0567-8742	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	11 Sep-12 15:45	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	18 Sep-12 13:55	**Species:**	Pimephales promelas	**Brine:**	
Duration:	6d 22h	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d

Sample ID:	16-8436-7861	**Code:**	753676	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	10 Sep-12 11:00	**Material:**	POTW Effluent	**Project:**	
Receive Date:	11 Sep-12	**Source:**	Sconza Candy EFF-001 (CA000416)		
Sample Age:	29h	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Angular (Corrected)	NA	C > T	NA	NA	5.56%	Passes 7d survival rate

Wilcoxon Rank Sum Two-Sample Test

Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
DMW		100	16	NA	1	6	0.5000	Exact	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.003319917	0.003319917	1	1	0.3559	Non-Significant Effect
Error	0.0199195	0.003319917	6			
Total	0.02323942		7			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	1	13.75	0.3559	Equal Variances
Variances	Levene Equality of Variance	9	13.75	0.0240	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.7065	0.6451	0.0027	Non-normal Distribution

7d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	DMW	4	1	1	1	1	1	1	0	0.0%	0.0%
100		4	0.975	0.8954	1	1	0.9	1	0.025	5.13%	2.5%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	DMW	4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	0.0%
100		4	1.371	1.242	1.501	1.412	1.249	1.412	0.04074	5.94%	2.89%

7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1	1	1	1
100		0.9	1	1	1

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1.412	1.412	1.412	1.412
100		1.249	1.412	1.412	1.412

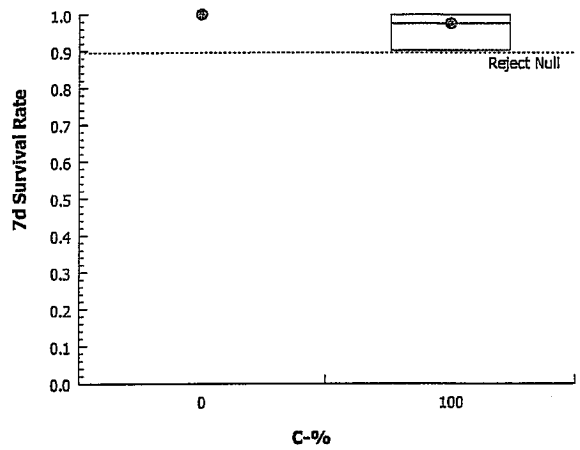
7d Survival Rate Binomials

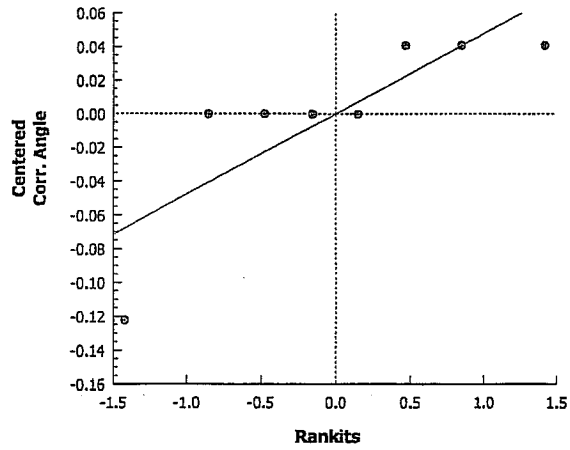
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	10/10	10/10	10/10	10/10
100		9/10	10/10	10/10	10/10

Fathead Minnow 7-d Larval Surv and Growth (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	04-3876-8448	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 11:23	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

Graphics





Fathead Minnow 7-d Larval Surv and Growth (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	00-6976-1129	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 11:23	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Batch ID:	10-0567-8742	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	11 Sep-12 15:45	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	18 Sep-12 13:55	**Species:**	Pimephales promelas	**Brine:**	
Duration:	6d 22h	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d

Sample ID:	16-8436-7861	**Code:**	753676	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	10 Sep-12 11:00	**Material:**	POTW Effluent	**Project:**	
Receive Date:	11 Sep-12	**Source:**	Sconza Candy EFF-001 (CA000416)		
Sample Age:	29h	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	TST b	Test Result
Angular (Corrected)	NA	C*b < T	NA	NA	0.75	Passes 7d survival rate

TST-Welch's t Test

Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:25%)
DMW		100*	7.664	0.7649		3	0.0023	CDF	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.003319917	0.003319917	1	1	0.3559	Non-Significant Effect
Error	0.0199195	0.003319917	6			
Total	0.02323942		7			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	1	13.75	0.3559	Equal Variances
Variances	Levene Equality of Variance	9	13.75	0.0240	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.7065	0.6451	0.0027	Non-normal Distribution

7d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	DMW	4	1	1	1	1	1	1	0	0.0%	0.0%
100		4	0.975	0.8954	1	1	0.9	1	0.025	5.13%	2.5%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	DMW	4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	0.0%
100		4	1.371	1.242	1.501	1.412	1.249	1.412	0.04074	5.94%	2.89%

7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1	1	1	1
100		0.9	1	1	1

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1.412	1.412	1.412	1.412
100		1.249	1.412	1.412	1.412

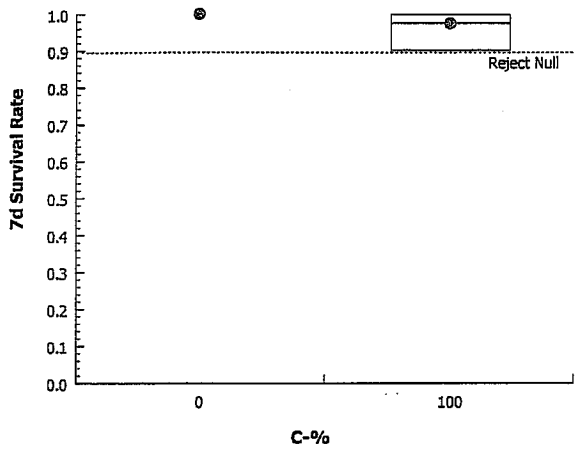
7d Survival Rate Binomials

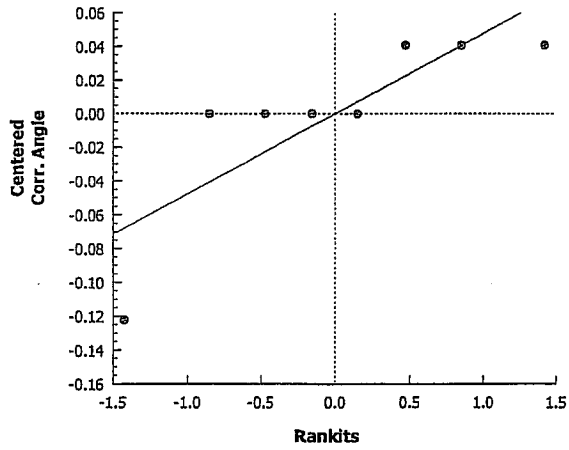
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	10/10	10/10	10/10	10/10
100		9/10	10/10	10/10	10/10

Fathead Minnow 7-d Larval Surv and Growth (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	00-6976-1129	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 11:23	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Graphics





Fathead Minnow 7-d Larval Surv and Growth (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	21-0209-6731	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 11:19	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Batch ID:	10-0567-8742	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	11 Sep-12 15:45	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	18 Sep-12 13:55	**Species:**	Pimephales promelas	**Brine:**	
Duration:	6d 22h	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d

Sample ID:	16-8436-7861	**Code:**	753676	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	10 Sep-12 11:00	**Material:**	POTW Effluent	**Project:**	
Receive Date:	11 Sep-12	**Source:**	Sconza Candy EFF-001 (CA000416)		
Sample Age:	29h	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Untransformed	NA	C > T	NA	NA	16.1%	Fails mean dry biomass-mg

Equal Variance t Two-Sample Test

Control	vs	Control	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
DMW		RSW-001 Receivin	2.332	1.943	0.098	6	0.0293	CDF	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.49	0.25 - NL	Yes	Passes Acceptability Criteria
Control Resp	0.6075	0.25 - NL	Yes	Passes Acceptability Criteria
PMSD	0.1612	0.12 - 0.3	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.02761186	0.02761186	1	5.436	0.0585	Non-Significant Effect
Error	0.03047469	0.005079116	6			
Total	0.05808655		7			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.087	47.47	0.9467	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.7673	0.6451	0.0127	Normal Distribution

Mean Dry Biomass-mg Summary

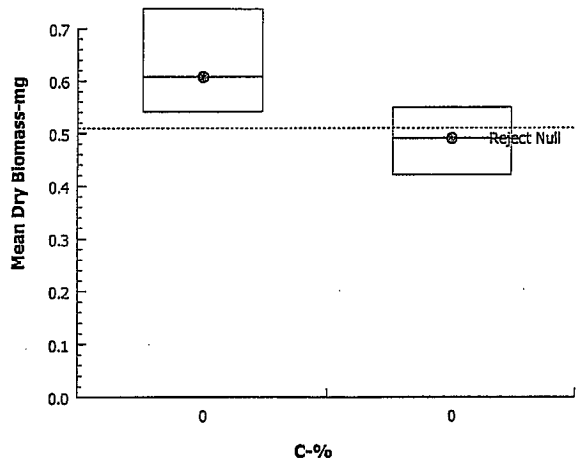
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	RSW-001 Recei	4	0.49	0.379	0.601	0.55	0.42	0.55	0.03488	14.24%	0.0%
0	DMW	4	0.6075	0.4917	0.7233	0.55	0.54	0.68	0.03637	11.97%	-23.98%

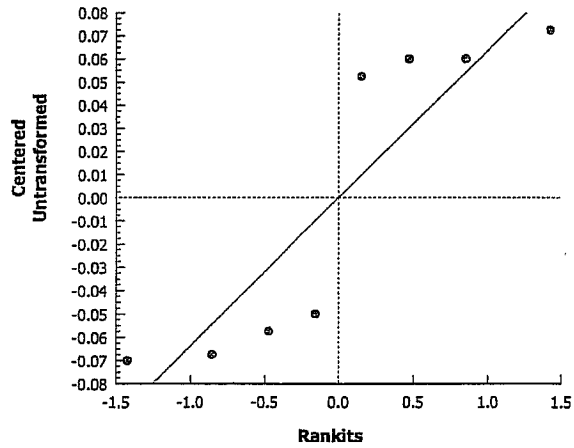
Mean Dry Biomass-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	0.66	0.54	0.55	0.68
0	RSW-001 Recei	0.55	0.42	0.55	0.44

Analysis ID:	21-0209-6731	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 11:19	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Graphics





Fathead Minnow 7-d Larval Surv and Growth (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	18-3416-4489	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 11:20	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Batch ID:	10-0567-8742	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	11 Sep-12 15:45	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	18 Sep-12 13:55	**Species:**	Pimephales promelas	**Brine:**	
Duration:	6d 22h	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d

Sample ID:	16-8436-7861	**Code:**	753676	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	10 Sep-12 11:00	**Material:**	POTW Effluent	**Project:**	
Receive Date:	11 Sep-12	**Source:**	Sconza Candy EFF-001 (CA000416)		
Sample Age:	29h	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	TST b	Test Result
Untransformed	NA	C*b < T	NA	NA	0.75	Passes mean dry biomass-mg

TST-Welch's t Test

Control	vs	Control	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:25%)
DMW		RSW-001 Receivin	0.7763	0.7267		5	0.2363	CDF	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.49	0.25 - NL	Yes	Passes Acceptability Criteria
Control Resp	0.6075	0.25 - NL	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.02761186	0.02761186	1	5.436	0.0585	Non-Significant Effect
Error	0.03047469	0.005079116	6			
Total	0.05808655		7			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.087	47.47	0.9467	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.7673	0.6451	0.0127	Normal Distribution

Mean Dry Biomass-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	RSW-001 Recei	4	0.49	0.379	0.601	0.55	0.42	0.55	0.03488	14.24%	0.0%
0	DMW	4	0.6075	0.4917	0.7233	0.55	0.54	0.68	0.03637	11.97%	-23.98%

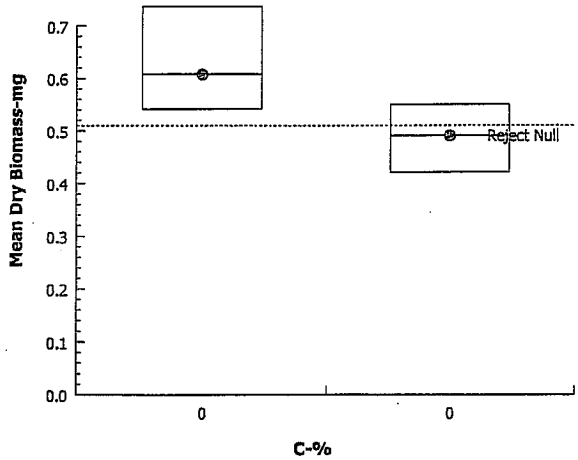
Mean Dry Biomass-mg Detail

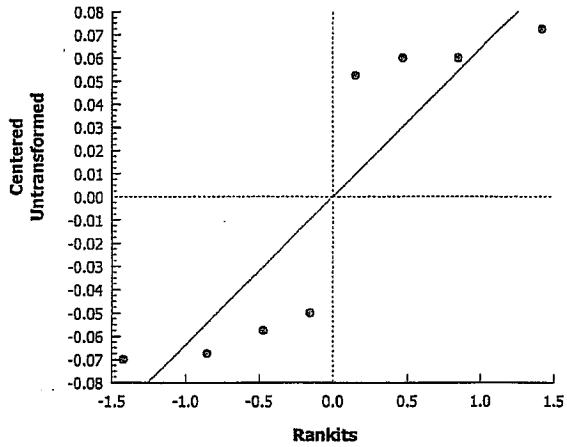
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	0.66	0.54	0.55	0.68
0	RSW-001 Recei	0.55	0.42	0.55	0.44

Fathead Minnow 7-d Larval Surv and Growth (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	18-3416-4489	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 11:20	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Graphics





Fathead Minnow 7-d Larval Surv and Growth (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	07-6748-8846	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 11:24	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Batch ID:	10-0567-8742	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	11 Sep-12 15:45	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	18 Sep-12 13:55	**Species:**	Pimephales promelas	**Brine:**	
Duration:	6d 22h	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d

Sample ID:	16-8436-7861	**Code:**	753676	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	10 Sep-12 11:00	**Material:**	POTW Effluent	**Project:**	
Receive Date:	11 Sep-12	**Source:**	Sconza Candy EFF-001 (CA000416)		
Sample Age:	29h	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Untransformed	NA	C > T	NA	NA	13.1%	Passes mean dry biomass-mg

Equal Variance t Two-Sample Test

Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
DMW		100	-4.596	1.943	0.079	6	0.9981	CDF	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.6075	0.25 - NL	Yes	Passes Acceptability Criteria
PMSD	0.1305	0.12 - 0.3	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.07031571	0.07031571	1	21.12	0.0037	Significant Effect
Error	0.01997478	0.00332913	6			
Total	0.09029049		7			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	3.873	47.47	0.2954	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9236	0.6451	0.4598	Normal Distribution

Mean Dry Biomass-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	DMW	4	0.6075	0.4917	0.7233	0.605	0.54	0.68	0.03637	11.97%	0.0%
100		4	0.795	0.7362	0.8538	0.795	0.75	0.84	0.01848	4.65%	-30.87%

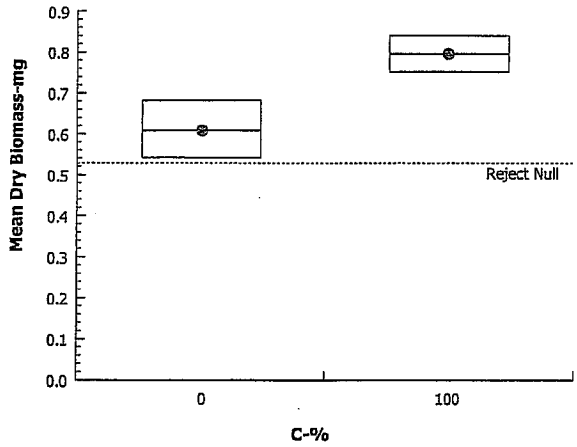
Mean Dry Biomass-mg Detail

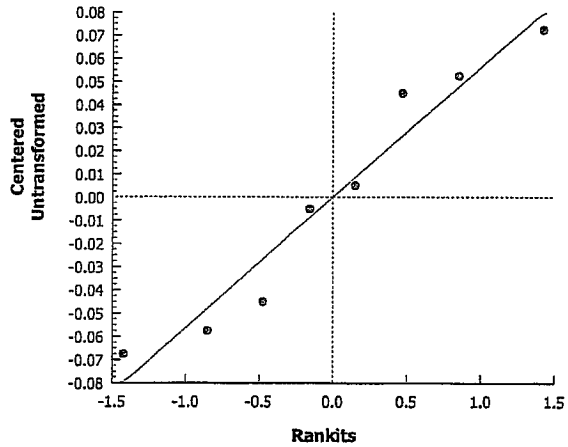
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	0.66	0.54	0.55	0.68
100		0.84	0.79	0.8	0.75

Fathead Minnow 7-d Larval Surv and Growth (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	07-6748-8846	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 11:24	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Graphics





Fathead Minnow 7-d Larval Surv and Growth (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	07-0296-7555	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 11:25	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Batch ID:	10-0567-8742	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	11 Sep-12 15:45	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	18 Sep-12 13:55	**Species:**	Pimephales promelas	**Brine:**	
Duration:	6d 22h	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d

Sample ID:	16-8436-7861	**Code:**	753676	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	10 Sep-12 11:00	**Material:**	POTW Effluent	**Project:**	
Receive Date:	11 Sep-12	**Source:**	Sconza Candy EFF-001 (CA000416)		
Sample Age:	29h	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	TST b	Test Result
Untransformed	NA	C*b < T	NA	NA	0.75	Passes mean dry biomass-mg

TST-Welch's t Test

Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:25%)
DMW		100*	10.3	0.7267		5	<0.0001	CDF	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.6075	0.25 - NL	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.07031571	0.07031571	1	21.12	0.0037	Significant Effect
Error	0.01997478	0.00332913	6			
Total	0.09029049		7			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	3.873	47.47	0.2954	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9236	0.6451	0.4598	Normal Distribution

Mean Dry Biomass-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	DMW	4	0.6075	0.4917	0.7233	0.605	0.54	0.68	0.03637	11.97%	0.0%
100		4	0.795	0.7362	0.8538	0.795	0.75	0.84	0.01848	4.65%	-30.87%

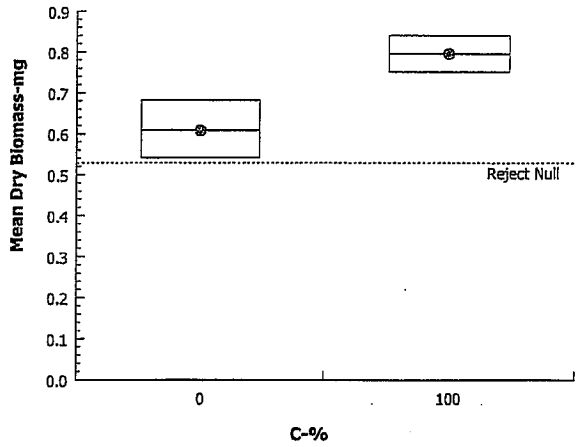
Mean Dry Biomass-mg Detail

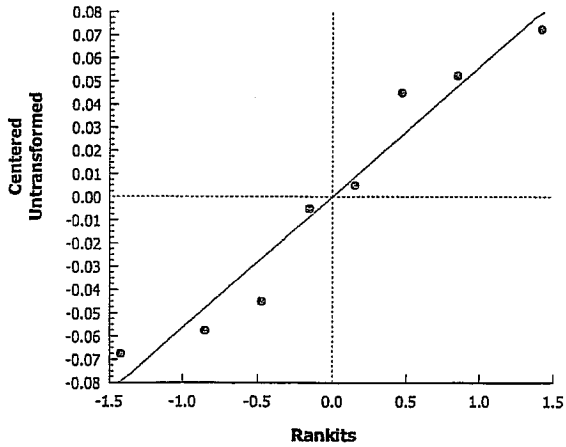
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	0.66	0.54	0.55	0.68
100		0.84	0.79	0.8	0.75

Fathead Minnow 7-d Larval Surv and Growth (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	07-0296-7555	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 11:25	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Graphics





CETIS Summary Report

Report Date: 25 Sep-12 10:15 (p 1 of 2)
Test Code: 091112CC4SJLAN | 05-7699-2626

Ceriodaphnia Surv and Reprod Test (Screen) — **Sierra Foothill Laboratory Inc.**

Batch ID:	21-2348-9071	**Test Type:**	Reproduction-Survival (2-8d)	**Analyst:**	
Start Date:	11 Sep-12 16:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	19 Sep-12 13:30	**Species:**	Ceriodaphnia dubia	**Brine:**	
Duration:	7d 21h	**Source:**	In-House Culture	**Age:**	9h

Sample ID:	16-8436-7861	**Code:**	753676	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	10 Sep-12 11:00	**Material:**	POTW Effluent	**Project:**	
Receive Date:	11 Sep-12	**Source:**	Sconza Candy EFF-001 (CA000416)		
Sample Age:	29h	**Station:**			

Sample Renewals

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	753916	12 Sep-12 08:15	13 Sep-12	13 Sep-12	
2	753963	13 Sep-12 13:35	14 Sep-12	14 Sep-12	

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
09-3872-1913	6d Survival Rate	100	>100	NA	NA	1	Fisher Exact Test
11-2135-1491	6d Survival Rate	0	>0		NA		Fisher Exact Test
04-4953-4670	Reproduction	100	>100	NA	19.8%	1	Equal Variance t Two-Sample Test
17-2200-0401	Reproduction	0	>0		22.7%		Equal Variance t Two-Sample Test
04-6533-8018	Reproduction	100	>100	NA	NA	1	TST-Welch's t Test

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
09-3872-1913	6d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria
11-2135-1491	6d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria
	6d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria
04-4953-4670	Reproduction	Control Resp	17	15 - NL	Yes	Passes Acceptability Criteria
04-6533-8018	Reproduction	Control Resp	17	15 - NL	Yes	Passes Acceptability Criteria
17-2200-0401	Reproduction	Control Resp	25.4	15 - NL	Yes	Passes Acceptability Criteria
	Reproduction	Control Resp	17	15 - NL	Yes	Passes Acceptability Criteria
04-4953-4670	Reproduction	PMSD	0.1982	0.13 - 0.47	Yes	Passes Acceptability Criteria
17-2200-0401	Reproduction	PMSD	0.2272	0.13 - 0.47	Yes	Passes Acceptability Criteria

6d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	dMW10	10	1	1	1	1	1	0	0	0.0%	0.0%
0	RSW-001 Recei	10	1	1	1	1	1	0	0	0.0%	0.0%
100		9	1	1	1	1	1	0	0	0.0%	0.0%

Reproduction Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	dMW10	10	17	13.89	20.11	8	25	1.374	4.346	25.57%	0.0%
0	RSW-001 Recei	10	25.4	21.44	29.36	13	33	1.752	5.542	21.82%	-49.41%
100		9	17.44	14.32	20.57	10	22	1.355	4.065	23.31%	-2.61%

6d 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	dMW10	1	1	1	1	1	1	1	1	1	1
0	RSW-001 Recei	1	1	1	1	1	1	1	1	1	1
100		1	1	1	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	dMW10	8	17	16	25	21	16	16	16	16	19
0	RSW-001 Recei	30	22	27	13	28	33	22	24	27	28
100		22	19	10	18	15	18	22	20	13	

Ceriodaphnia Surv and Reprod Test (Screen) **Sierra Foothill Laboratory Inc.**

6d 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	dMW10	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
0	RSW-001 Recei	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	1/1	1/1	1/1	1/1	1/1	1/1	

Ceriodaphnia Surv and Reprod Test (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	17-2200-0401	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.8.6
Analyzed:	25 Sep-12 10:14	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Batch ID:	21-2348-9071	**Test Type:**	Reproduction-Survival (2-8d)	**Analyst:**	
Start Date:	11 Sep-12 16:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	19 Sep-12 13:30	**Species:**	Ceriodaphnia dubia	**Brine:**	
Duration:	7d 21h	**Source:**	In-House Culture	**Age:**	9h

Sample ID:	16-8436-7861	**Code:**	753676	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	10 Sep-12 11:00	**Material:**	POTW Effluent	**Project:**	
Receive Date:	11 Sep-12	**Source:**	Sconza Candy EFF-001 (CA000416)		
Sample Age:	29h	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Untransformed	NA	C > T	NA	NA	22.7%	Passes reproduction

Equal Variance t Two-Sample Test

Control	vs	Control	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
dMW10		RSW-001 Receivin	-3.772	1.734	3.862	18	0.9993	CDF	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	25.4	15 - NL	Yes	Passes Acceptability Criteria
Control Resp	17	15 - NL	Yes	Passes Acceptability Criteria
PMSD	0.2272	0.13 - 0.47	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	352.8	352.8	1	14.23	0.0014	Significant Effect
Error	446.4	24.8	18			
Total	799.2		19			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.626	6.541	0.4803	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.928	0.866	0.1415	Normal Distribution

Reproduction Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	RSW-001 Recei	10	25.4	21.44	29.36	21.5	13	33	1.752	21.82%	0.0%
0	dMW10	10	17	13.89	20.11	21.5	8	25	1.374	25.57%	33.07%

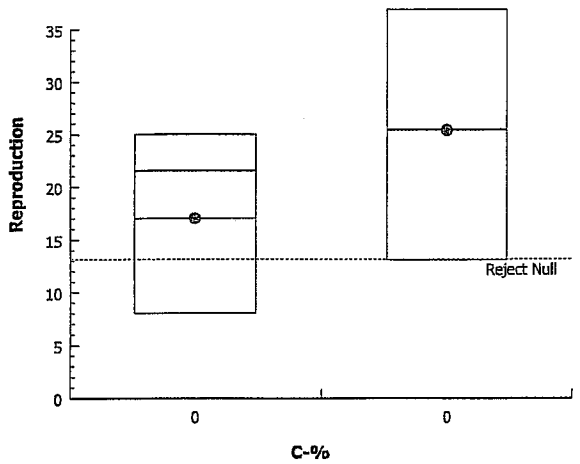
Reproduction Detail

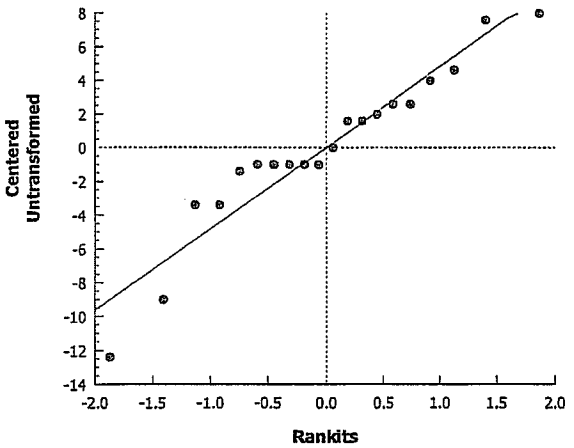
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	dMW10	8	17	16	25	21	16	16	16	16	19
0	RSW-001 Recei	30	22	27	13	28	33	22	24	27	28

Ceriodaphnia Surv and Reprod Test (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	17-2200-0401	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.8.6
Analyzed:	25 Sep-12 10:14	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Graphics





Ceriodaphnia Surv and Reprod Test (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	04-4953-4670	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.8.6
Analyzed:	25 Sep-12 10:14	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Batch ID:	21-2348-9071	**Test Type:**	Reproduction-Survival (2-8d)	**Analyst:**	
Start Date:	11 Sep-12 16:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	19 Sep-12 13:30	**Species:**	Ceriodaphnia dubia	**Brine:**	
Duration:	7d 21h	**Source:**	In-House Culture	**Age:**	9h

Sample ID:	16-8436-7861	**Code:**	753676	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	10 Sep-12 11:00	**Material:**	POTW Effluent	**Project:**	
Receive Date:	11 Sep-12	**Source:**	Sconza Candy EFF-001 (CA000416)		
Sample Age:	29h	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Untransformed	NA	C > T	NA	NA	19.8%	Passes reproduction

Equal Variance t Two-Sample Test

Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
dMW10		100	-0.2294	1.74	3.37	17	0.5894	CDF	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	17	15 - NL	Yes	Passes Acceptability Criteria
PMSD	0.1982	0.13 - 0.47	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.9356725	0.9356725	1	0.05263	0.8213	Non-Significant Effect
Error	302.2222	17.77778	17			
Total	303.1579		18			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.143	7.339	0.8613	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9594	0.8605	0.5613	Normal Distribution

Reproduction Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	dMW10	10	17	13.89	20.11	16	8	25	1.374	25.57%	0.0%
100		9	17.44	14.32	20.57	18	10	22	1.355	23.31%	-2.61%

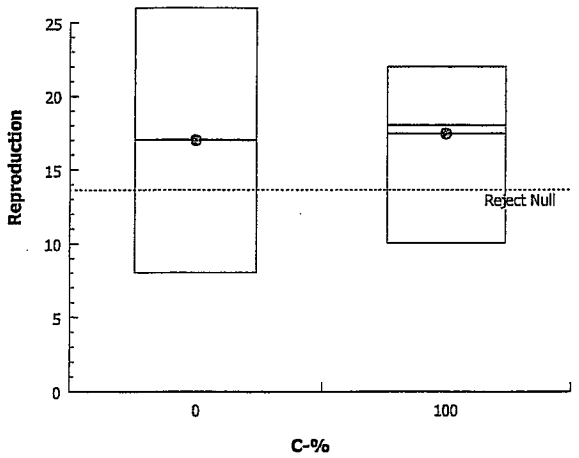
Reproduction Detail

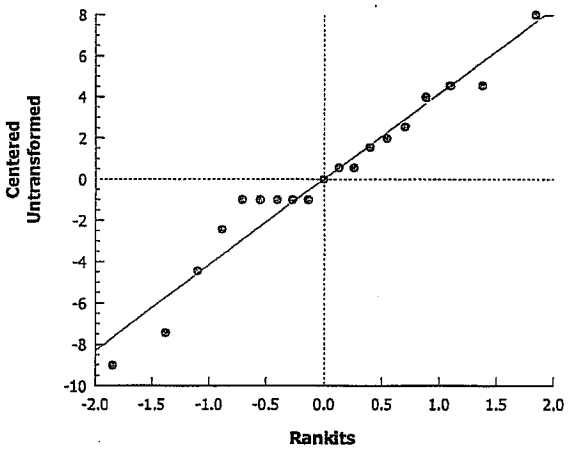
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	dMW10	8	17	16	25	21	16	16	16	16	19
100		22	19	10	18	15	18	22	20	13	

Ceriodaphnia Surv and Reprod Test (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	04-4953-4670	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.8.6
Analyzed:	25 Sep-12 10:14	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Graphics





Ceriodaphnia Surv and Reprod Test (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	04-6533-8018	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.8.6
Analyzed:	25 Sep-12 10:15	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Batch ID:	21-2348-9071	**Test Type:**	Reproduction-Survival (2-8d)	**Analyst:**	
Start Date:	11 Sep-12 16:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	19 Sep-12 13:30	**Species:**	Ceriodaphnia dubia	**Brine:**	
Duration:	7d 21h	**Source:**	In-House Culture	**Age:**	9h

Sample ID:	16-8436-7861	**Code:**	753676	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	10 Sep-12 11:00	**Material:**	POTW Effluent	**Project:**	
Receive Date:	11 Sep-12	**Source:**	Sconza Candy EFF-001 (CA000416)		
Sample Age:	29h	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	TST b	Test Result
Untransformed	NA	C*b < T	NA	NA	0.75	Passes reproduction

TST-Welch's t Test

Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:20%)
dMW10		100*	2.757	0.8662		15	0.0073	CDF	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	17	15 - NL	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.9356725	0.9356725	1	0.05263	0.8213	Non-Significant Effect
Error	302.2222	17.77778	17			
Total	303.1579		18			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.143	7.339	0.8613	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9594	0.8605	0.5613	Normal Distribution

Reproduction Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	dMW10	10	17	13.89	20.11	16	8	25	1.374	25.57%	0.0%
100		9	17.44	14.32	20.57	18	10	22	1.355	23.31%	-2.61%

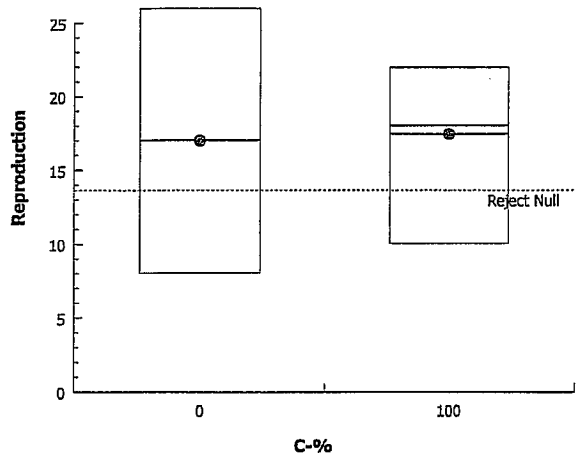
Reproduction Detail

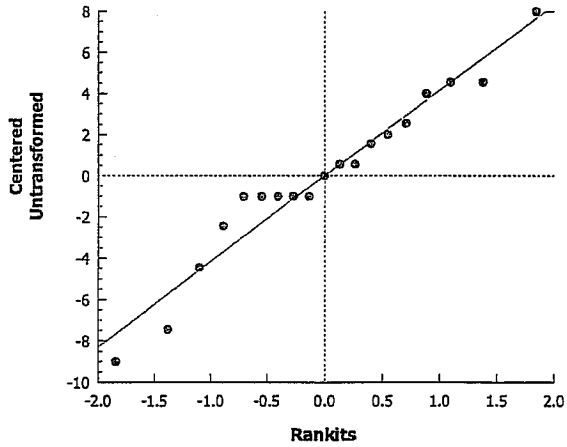
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	dMW10	8	17	16	25	21	16	16	16	16	19
100		22	19	10	18	15	18	22	20	13	

Ceriodaphnia Surv and Reprod Test (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	04-6533-8018	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.8.6
Analyzed:	25 Sep-12 10:15	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Graphics





Ceriodaphnia Surv and Reprod Test (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	11-2135-1491	**Endpoint:**	6d Survival Rate	**CETIS Version:**	CETISv1.8.6
Analyzed:	25 Sep-12 10:14	**Analysis:**	Single 2x2 Contingency Table	**Official Results:**	Yes

Batch ID:	21-2348-9071	**Test Type:**	Reproduction-Survival (2-8d)	**Analyst:**	
Start Date:	11 Sep-12 16:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	19 Sep-12 13:30	**Species:**	Ceriodaphnia dubia	**Brine:**	
Duration:	7d 21h	**Source:**	In-House Culture	**Age:**	9h

Sample ID:	16-8436-7861	**Code:**	753676	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	10 Sep-12 11:00	**Material:**	POTW Effluent	**Project:**	
Receive Date:	11 Sep-12	**Source:**	Sconza Candy EFF-001 (CA000416)		
Sample Age:	29h	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	Test Result
Untransformed		C > T	NA	NA	Passes 6d survival rate

Fisher Exact Test

Control	vs	Control	Test Stat	P-Value	P-Type	Decision(α:5%)
dMW10		RSW-001 Receiving	1	1.0000	Exact	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria
Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria

Data Summary

C-%	Control Type	NR	R	NR + R	Prop NR	Prop R	%Effect
0	dMW10	10	0	10	1	0	0.0%
0	RSW-001 Rece	10	0	10	1	0	0.0%

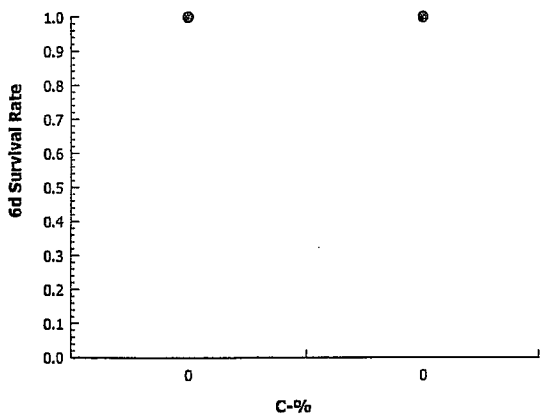
6d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	dMW10	1	1	1	1	1	1	1	1	1	1
0	RSW-001 Recei	1	1	1	1	1	1	1	1	1	1

6d 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	dMW10	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
0	RSW-001 Recei	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Graphics



Ceriodaphnia Surv and Reprod Test (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	09-3872-1913	**Endpoint:**	6d Survival Rate	**CETIS Version:**	CETISv1.8.6
Analyzed:	25 Sep-12 10:14	**Analysis:**	Single 2x2 Contingency Table	**Official Results:**	Yes

Batch ID:	21-2348-9071	**Test Type:**	Reproduction-Survival (2-8d)	**Analyst:**	
Start Date:	11 Sep-12 16:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	19 Sep-12 13:30	**Species:**	Ceriodaphnia dubia	**Brine:**	
Duration:	7d 21h	**Source:**	In-House Culture	**Age:**	9h

Sample ID:	16-8436-7861	**Code:**	753676	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	10 Sep-12 11:00	**Material:**	POTW Effluent	**Project:**	
Receive Date:	11 Sep-12	**Source:**	Sconza Candy EFF-001 (CA000416)		
Sample Age:	29h	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	Test Result
Untransformed		C > T	NA	NA	Passes 6d survival rate

Fisher Exact Test

Control	vs	C-%	Test Stat	P-Value	P-Type	Decision(α:5%)
dMW10		100	1	1.0000	Exact	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria

Data Summary

C-%	Control Type	NR	R	NR + R	Prop NR	Prop R	%Effect
0	dMW10	10	0	10	1	0	0.0%
100		9	0	9	1	0	0.0%

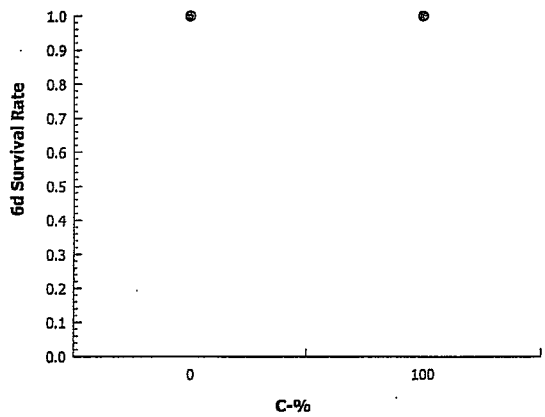
6d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	dMW10	1	1	1	1	1	1	1	1	1	1
100		1	1	1	1	1	1	1	1	1	

6d 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	dMW10	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	1/1	1/1	1/1	1/1	1/1	1/1	

Graphics



CETIS Summary Report

Report Date: 24 Sep-12 15:49 (p 1 of 1)
Test Code: 091412SC4SJLAN | 14-2104-9771

Selenastrum Growth Test (Screen) — **Sierra Foothill Laboratory Inc.**

Batch ID:	19-3895-6549	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	14 Sep-12 16:05	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	18 Sep-12 14:11	**Species:**	Selenastrum capricornutum	**Brine:**	
Duration:	94h	**Source:**	In-House Culture	**Age:**	7d

Sample ID:	10-3117-3590	**Code:**	753963	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	13 Sep-12 13:35	**Material:**	POTW Effluent	**Project:**	
Receive Date:	14 Sep-12	**Source:**	Sconza Candy EFF-001 (CA000416)		
Sample Age:	27h	**Station:**			

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
03-5793-1468	Cell Density	100	>100	NA	22.6%	1	Equal Variance t Two-Sample Test
10-5835-0845	Cell Density	<0	0		2.38%		Equal Variance t Two-Sample Test
06-8287-3736	Cell Density	100	>100	NA	NA	1	TST-Welch's t Test

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
03-5793-1468	Cell Density	Control CV	0.01326	NL - 0.2	Yes	Passes Acceptability Criteria
06-8287-3736	Cell Density	Control CV	0.01326	NL - 0.2	Yes	Passes Acceptability Criteria
10-5835-0845	Cell Density	Control CV	0.02095	NL - 0.2	Yes	Passes Acceptability Criteria
	Cell Density	Control CV	0.01326	NL - 0.2	Yes	Passes Acceptability Criteria
03-5793-1468	Cell Density	Control Resp	1.62E+6	1.00E+6 - NL	Yes	Passes Acceptability Criteria
06-8287-3736	Cell Density	Control Resp	1.62E+6	1.00E+6 - NL	Yes	Passes Acceptability Criteria
10-5835-0845	Cell Density	Control Resp	1.09E+6	1.00E+6 - NL	Yes	Passes Acceptability Criteria
	Cell Density	Control Resp	1.62E+6	1.00E+6 - NL	Yes	Passes Acceptability Criteria
03-5793-1468	Cell Density	PMSD	0.2256	0.091 - 0.29	Yes	Passes Acceptability Criteria
10-5835-0845	Cell Density	PMSD	0.02381	0.091 - 0.29	Yes	Below Acceptability Criteria

Cell Density Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	MHSFW Lab Co	4	1.438E+6	1.400E+6	1.476E+6	1.412E+6	1.470E+6	1.190E+4	2.380E+4	1.66%	0.0%
0	DMW	4	1.614E+6	1.584E+6	1.644E+6	1.592E+6	1.629E+6	9.325E+3	1.865E+4	1.16%	-12.2%
0	RSW-001 Recei	4	1.124E+6	1.002E+6	1.247E+6	1.064E+6	1.236E+6	3.842E+4	7.683E+4	6.83%	21.82%
100		4	4.049E+6	3.433E+6	4.664E+6	3.598E+6	4.502E+6	1.935E+5	3.870E+5	9.56%	-181.5%

Cell Density Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	MHSFW Lab Co	1.435E+6	1.412E+6	1.436E+6	1.470E+6
0	DMW	1.629E+6	1.592E+6	1.629E+6	1.604E+6
0	RSW-001 Recei	1.064E+6	1.110E+6	1.087E+6	1.236E+6
100		3.904E+6	4.190E+6	3.598E+6	4.502E+6

Selenastrum Growth Test (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	10-5835-0845	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 15:47	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Batch ID:	19-3895-6549	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	14 Sep-12 16:05	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	18 Sep-12 14:11	**Species:**	Selenastrum capricornutum	**Brine:**	
Duration:	94h	**Source:**	In-House Culture	**Age:**	7d

Sample ID:	10-3117-3590	**Code:**	753963	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	13 Sep-12 13:35	**Material:**	POTW Effluent	**Project:**	
Receive Date:	14 Sep-12	**Source:**	Sconza Candy EFF-001 (CA000416)		
Sample Age:	27h	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Untransformed	NA	C > T	NA	NA	2.38%	Fails cell density

Equal Variance t Two-Sample Test

Control	vs	Control	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
DMW		RSW-001 Receivin	29.34	2.132	38500	4	<0.0001	CDF	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control CV	0.02095	NL - 0.2	Yes	Passes Acceptability Criteria
Control CV	0.01326	NL - 0.2	Yes	Passes Acceptability Criteria
Control Resp	1.09E+6	1.00E+6 - NL	Yes	Passes Acceptability Criteria
Control Resp	1.62E+6	1.00E+6 - NL	Yes	Passes Acceptability Criteria
PMSD	0.02381	0.091 - 0.29	Yes	Below Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	4.211242E+11	4.211242E+11	1	861	<0.0001	Significant Effect
Error	1956486000	489121500	4			
Total	4.230807E+11		5			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.128	199	0.9398	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.8779	0.43	0.2598	Normal Distribution

Cell Density Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	RSW-001 Recei	3	1.087E+6	1.031E+6	1.144E+6	1351000	1.064E+6	1.110E+6	1.315E+4	2.1%	0.0%
0	DMW	3	1.617E+6	1.564E+6	1.670E+6	1351000	1.592E+6	1.629E+6	1.238E+4	1.33%	-48.74%

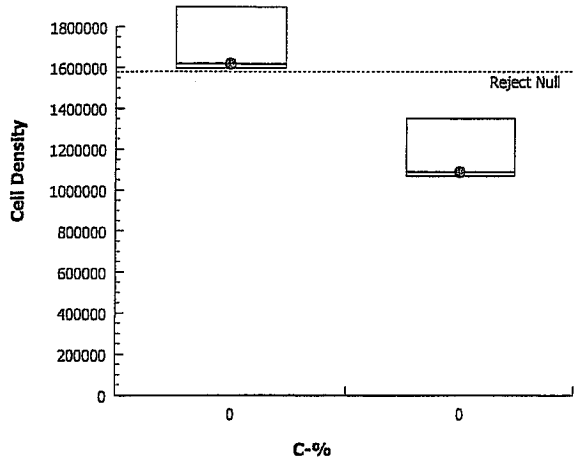
Cell Density Detail

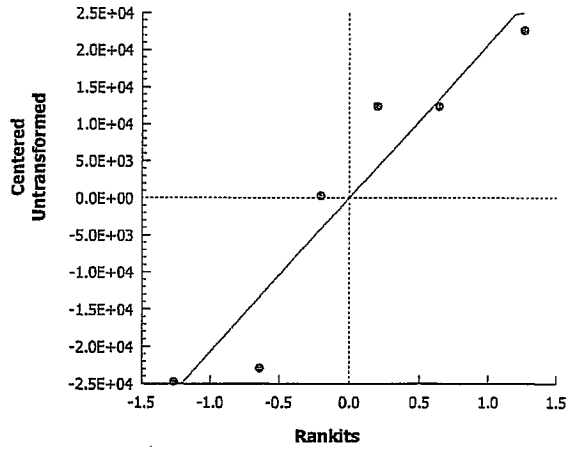
C-%	Control Type	Rep 1	Rep 2	Rep 3
0	DMW	1.629E+6	1.592E+6	1.629E+6
0	RSW-001 Recei	1.064E+6	1.110E+6	1.087E+6

Selenastrum Growth Test (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	10-5835-0845	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 15:47	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Graphics





Selenastrum Growth Test (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	03-5793-1468	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 15:48	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Batch ID:	19-3895-6549	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	14 Sep-12 16:05	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	18 Sep-12 14:11	**Species:**	Selenastrum capricornutum	**Brine:**	
Duration:	94h	**Source:**	In-House Culture	**Age:**	7d

Sample ID:	10-3117-3590	**Code:**	753963	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	13 Sep-12 13:35	**Material:**	POTW Effluent	**Project:**	
Receive Date:	14 Sep-12	**Source:**	Sconza Candy EFF-001 (CA000416)		
Sample Age:	27h	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Untransformed	NA	C > T	NA	NA	22.6%	Passes cell density

Equal Variance t Two-Sample Test

Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
DMW		100	-13.33	2.132	4E+05	4	0.9999	CDF	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control CV	0.01326	NL - 0.2	Yes	Passes Acceptability Criteria
Control Resp	1.62E+6	1.00E+6 - NL	Yes	Passes Acceptability Criteria
PMSD	0.2256	0.091 - 0.29	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	7.80069E+12	7.80069E+12	1	177.6	0.0002	Significant Effect
Error	1.756897E+11	43922420000	4			
Total	7.976379E+12		5			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	190.1	199	0.0105	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.87	0.43	0.2263	Normal Distribution

Cell Density Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	DMW	3	1.617E+6	1.564E+6	1.670E+6	1629000	1.592E+6	1.629E+6	1.238E+4	1.33%	0.0%
100		3	3.898E+6	3.163E+6	4.632E+6	3904000	3.598E+6	4.190E+6	1.707E+5	7.59%	-141.0%

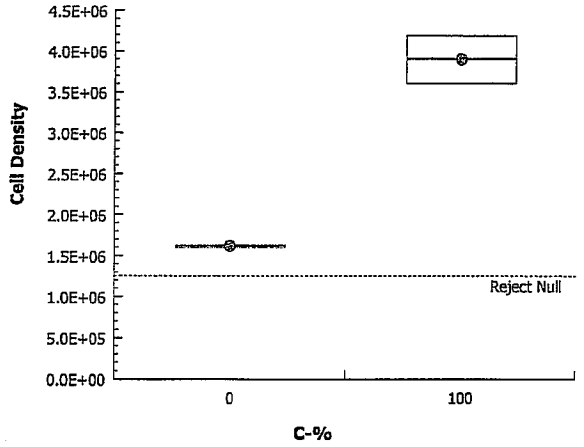
Cell Density Detail

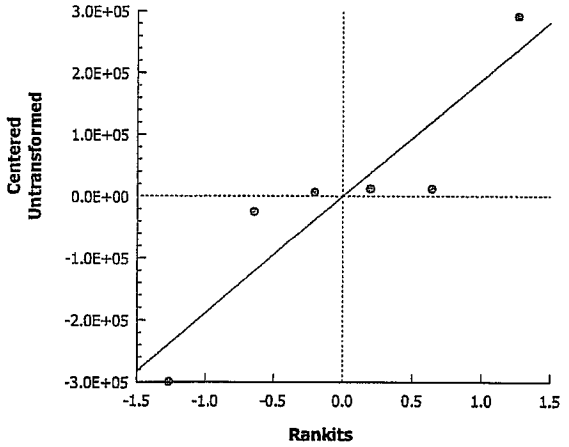
C-%	Control Type	Rep 1	Rep 2	Rep 3
0	DMW	1.629E+6	1.592E+6	1.629E+6
100		3.904E+6	4.190E+6	3.598E+6

Selenastrum Growth Test (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	03-5793-1468	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 15:48	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Graphics





Selenastrum Growth Test (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	06-8287-3736	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 15:49	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Batch ID:	19-3895-6549	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	14 Sep-12 16:05	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	18 Sep-12 14:11	**Species:**	Selenastrum capricornutum	**Brine:**	
Duration:	94h	**Source:**	In-House Culture	**Age:**	7d

Sample ID:	10-3117-3590	**Code:**	753963	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	13 Sep-12 13:35	**Material:**	POTW Effluent	**Project:**	
Receive Date:	14 Sep-12	**Source:**	Sconza Candy EFF-001 (CA000416)		
Sample Age:	27h	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	TST b	Test Result
Untransformed	NA	C*b < T	NA	NA	0.75	Passes cell density

TST-Welch's t Test

Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:25%)
DMW		100*	15.71	0.8165		2	0.0020	CDF	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control CV	0.01326	NL - 0.2	Yes	Passes Acceptability Criteria
Control Resp	1.62E+6	1.00E+6 - NL	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	7.80069E+12	7.80069E+12	1	177.6	0.0002	Significant Effect
Error	1.756897E+11	43922420000	4			
Total	7.976379E+12		5			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	190.1	199	0.0105	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.87	0.43	0.2263	Normal Distribution

Cell Density Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	DMW	3	1.617E+6	1.564E+6	1.670E+6	1629000	1.592E+6	1.629E+6	1.238E+4	1.33%	0.0%
100		3	3.898E+6	3.163E+6	4.632E+6	3904000	3.598E+6	4.190E+6	1.707E+5	7.59%	-141.0%

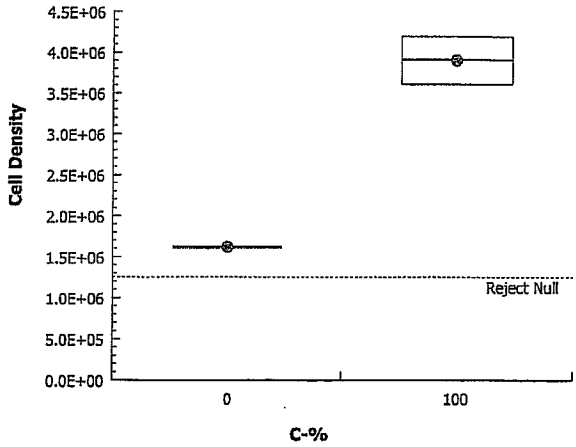
Cell Density Detail

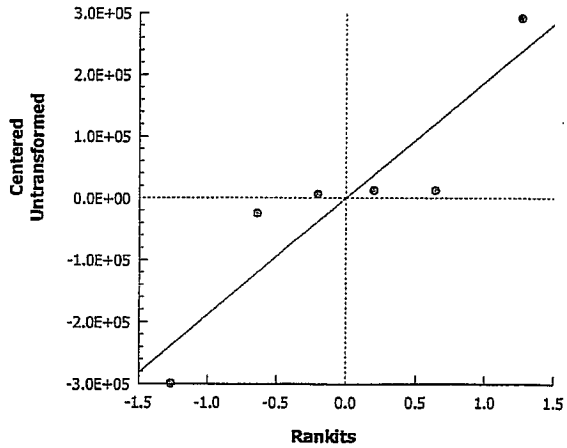
C-%	Control Type	Rep 1	Rep 2	Rep 3
0	DMW	1.629E+6	1.592E+6	1.629E+6
100		3.904E+6	4.190E+6	3.598E+6

Selenastrum Growth Test (Screen) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	06-8287-3736	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 15:49	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Graphics





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REPORT

Reference Toxicant Test Data Report
9-11-2012

Sierra Foothill Laboratory, Inc.

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September 25, 2012

SFL

TEST SUMMARY

RE: Definitive static-renewal chronic toxicity testing of KCl Reference Toxicant / Fish diluted with DMW Laboratory Control Water 09-11-12 to 09-18-12
Method = EPA-821-R-02-013 Lab# 0912-14

1000.0 Fathead Minnow (Pimephales promelas) Larval Survival and Growth Test

Treatment	7 day % Survival	Avg Dry Wt (mg)
2.0g/L KCl in Lab	0.0*	0.00*
1.0g/L KCl in Lab	20.0*	0.13*
0.5g/L KCl in Lab	97.7	0.44*
0.25g/L KCl in Lab	97.5	0.52
+DMW Lab Control	100.0	0.61

7d LC50 = 0.80g/L
NOAEC, Survival = 0.5g/L LOAEC, Survival = 1.0g/L
Dose-Response (Survival): Type 1
IC50 = 0.722g/L IC25 = 0.461g/L
NOAEC, Growth = 0.25g/L LOAEC, Growth = 0.5g/L
Dose-Response (Growth): Type 1

Note: The growth IC25 for this test was out of control when compared to the last 20 repetitions of this reference toxicant test; however, the IC25 CV of the last 20 repetitions was only 6.8%.

Note: * Significantly reduced from control
+ Meets EPA criteria for acceptability as control group

Summary prepared by:

Sandy Nurse

Sandy Nurse

Dose-Response Relationship Types (EPA 821-B-00-004, with page reference)
Type 1: Ideal concentration-response relationship. p4-6.

Sierra Foothill Laboratory certifies that test results meet all applicable ELAP requirements unless stated otherwise.
Results are specific to the sample(s) as submitted and only to the parameter(s) reported.
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September 25, 2012

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FATHEAD MINNOW (Pimephales promelas), 1000.0

RE: Definitive static-renewal chronic toxicity testing of KCl Reference Toxicant / Fish diluted with DMW Laboratory Control Water Started 09-11-12 15:45 Ended 09-18-12 13:55
The testing method used closely followed EPA-821-R-02-013. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. 4th Edition.

KCl Reference Toxicant / Fish Laboratory # 0912-14 prepared 09-10-12
Dilution/control water was DMW (diluted mineral water: 26% Evian Spring + 74% Arrowhead Distilled) prepared 09-07-12
Pimephales promelas (fathead minnow) positively identified to species 01-12-12
Organism age: 1 d from EnviroScience
Test chambers: 500 mL size plastic, containing 300 mL test solution
Solution renewal: 250 mL daily
Feeding: twice daily with 0.1 mL <24 h old live brine shrimp
Test temperature (25C) did not range more than 3C during the test

RESULTS:

Treatment	# Larvae	# Replicates	% Survival 7 day	Avg Dry Wt (mg)
2.0g/L KCl in Lab	40	4	0.0*	0.00*
1.0g/L KCl in Lab	40	4	20.0*	0.13*
0.5g/L KCl in Lab	41	4	97.7	0.44*
0.25g/L KCl in Lab	40	4	97.5	0.52
+DMW Lab Control	40	4	100.0	0.61

Data meet EPA criteria for acceptability using DMW lab control.

Survival
7d LC50 = 0.80g/L Trimmed Spearman-Karber
NOAEC, Survival = 0.5g/L Dunnett's Multiple Comparison Test PMSD = 8.6
LOAEC, Survival = 1.0g/L
Dose-Response (Survival): Type 1

Growth
IC50 = 0.722g/L IC25 = 0.461g/L Linear Interpolation
NOAEC, Growth = 0.25g/L Dunnett's Multiple Comparison Test PMSD = 18
LOAEC, Growth = 0.5g/L
Dose-Response (Growth): Type 1

Note: * Significantly reduced from control
+ Meets EPA criteria for acceptability as control group

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September 25, 2012

SFL

TEST SUMMARY

RE: Definitive static-renewal chronic toxicity testing of Zinc Sulfate.7H2O Ref Toxicant / Cerio diluted with DMW Laboratory Control Water 09-11-12 to 09-19-12
Method = EPA-821-R-02-013 Lab# 0912-904

1002.0 Ceriodaphnia dubia Survival and Reproduction Test

Treatment	6 day % Survival	Avg Young/Female (ON)
1.7mg/L ZnSO4 in Lab	0.0*	0.0*
0.85mg/L ZnSO4 in Lab	40.0*	2.0*
0.43mg/L ZnSO4 in Lab	0.0*	1.2*
0.21mg/L ZnSO4 in Lab	0.0*	3.1*
0.11mg/L ZnSO4 in Lab	50.0*	8.4*
0.053mg/L ZnSO4 in Lab	100.0	7.4*
+DMW Lab Control	100.0	17.0

6d LC50 = 0.14mg/L
NOAEC, Survival = 0.053mg/L LOAEC, Survival = 0.11mg/L
Dose-Response (Survival): Type 1
IC50 = 0.050mg/L IC25 = 0.025mg/L
NOAEC, Reproduction = <0.053mg/L LOAEC, Reproduction = 0.053mg/L
Dose-Response (Reproduction): Type 9

Note: The survival LC50 and NOEC, and the reproduction EC25 for this test were out of control when compared to the last 20 repetitions of this reference toxicant test.

Note: * Significantly reduced from control
+ Meets EPA criteria for acceptability as control group

Summary prepared by:

Sandy Nurse

Sandy Nurse

Dose-Response Relationship Types (EPA 821-B-00-004, with page reference)
Type 1: Ideal concentration-response relationship. p4-6.
Type 9: Significant effects at all test concentrations with a sloped concentration-response curve. P 4-17.

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September 25, 2012

SFL

CERIODAPHNIA (Ceriodaphnia dubia), 2000.0

RE: Definitive static-renewal chronic toxicity testing of Zinc Sulfate.7H2O Ref Toxicant / Cerio diluted with DMW Laboratory Control Water
Started 09-11-12 16:30 Ended 09-19-12 13:30
The testing method used closely followed EPA-821-R-02-013. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. 4th Edition.

Zinc Sulfate.7H2O Ref Toxicant / Cerio Laboratory # 0912-904 prepared 09-10-12
Dilution/control water was DMW (diluted mineral water: 26% Evian Spring + 74% Arrowhead Distilled) prepared 09-07-12
Ceriodaphnia dubia (water flea) positively identified to species 01-12-12
Organism age: 9 h from Sierra Foothill Laboratory
Test chambers: 30 mL size glass, containing 15 mL test solution
Solution renewal: daily
Feeding: daily with .1 mL YCT prepared 08-29-12 + .1 mL algae prepared 09-07-12
Test temperature (25C) did not range more than 3C during the test

RESULTS:

Treatment	# Neonates/ # Replicates	% Survival 6 day	Average young per female (ON)
1.7mg/L ZnSO4 in Lab	10 / 10	0.0*	0.0*
0.85mg/L ZnSO4 in Lab	10 / 10	40.0*	2.0*
0.43mg/L ZnSO4 in Lab	10 / 10	0.0*	1.2*
0.21mg/L ZnSO4 in Lab	10 / 10	0.0*	3.1*
0.11mg/L ZnSO4 in Lab	10 / 10	50.0*	8.4*
0.053mg/L ZnSO4 in Lab	9 / 9	100.0	7.4*
+DMW Lab Control	10 / 10	100.0	17.0

Data meet EPA criteria for acceptability using DMW lab control.

Survival
6d LC50 = 0.14mg/L Spearman-Karber
NOAEC, Survival = 0.053mg/L Fishers Exact Test PMSD = NA
LOAEC, Survival = 0.11mg/L
Dose-Response (Survival): Type 1

Reproduction
IC50 = 0.050mg/L IC25 = 0.025mg/L Linear Interpolation
NOAEC, Reproduction = <0.053mg/L Wilcoxon/Bonferroni Adj Test PMSD = 20
LOAEC, Reproduction = 0.053mg/L
Dose-Response (Reproduction): Type 9

Note: * Significantly reduced from control
+ Meets EPA criteria for acceptability as control group

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September 25, 2012

SFL

TEST SUMMARY

RE: Definitive static-renewal chronic toxicity testing of Boron Reference Toxicant / Algae diluted with DMW Laboratory Control Water 09-14-12 to 09-18-12
Method = EPA-821-R-02-013 Lab# 0912-905

1003.0 Algae (Selenastrum capricornutum) Growth Test

Treatment	96h cells/mL (million)
50mg/L Boron in Lab	.099*
25mg/L Boron in Lab	.724*
12.5mg/L Boron in Lab	1.47*
6.25mg/L Boron in Lab	1.53
+DMW Lab Control	1.62

IC50 = 23.6mg/L IC25 = 16.8mg/L
NOAEC = 6.25mg/L LOAEC = 12.5mg/L
Dose-Response (Growth): Type 1

Note: * Significantly reduced from control
+ Meets EPA criteria for acceptability as control group

Summary prepared by:
Sandy Nurse
Sandy Nurse

Dose-Response Relationship Types (EPA 821-B-00-004, with page reference)
Type 1: Ideal concentration-response relationship. p4-6.

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September 25, 2012

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ALGAE (Selenastrum capricornutum), 1003.0

RE: Definitive static chronic toxicity testing of Boron Reference Toxicant / Algae diluted with DMW Laboratory Control Water Started 09-14-12 16:05 Ended 09-18-12 14:11
The testing method used closely followed EPA-821-R-02-013. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. 4th Edition.

Boron Reference Toxicant / Algae Laboratory # 0912-905 prepared 09-14-12
Dilution/control water was DMW (diluted mineral water: 26% Evian Spring + 74% Arrowhead Distilled) prepared 09-07-12
Sample and dilution water were filtered prior to preparation of test concentrations using cellulose nitrate .45u pore size filters
Selenastrum capricornutum (algae) positively identified to species 03-27-12
Organism age: 7d from Sierra Foothill Laboratory, UTEX 10-19-09, subcultured 09-07-12 to 09-14-12. Unialgal microscopic exam by SFL on 09-14-12
Nutrient spike: 1 mL/100 mL Bolds Basal Medium with EDTA
Test chambers: 250 mL size glass containing 100 mL test solution; continuous light and shaking
Test temperature (25C) did not range more than 3C during the test
Cell density determined by spectrophotometric turbidity method
Four replicates were initiated; one of which was used solely for daily chemistry measurements.

RESULTS:

Treatment	# cells/mL in inoculum	initial # replicates	96h cells/mL (million)
50mg/L Boron in Lab	10000	4	.099*
25mg/L Boron in Lab	10000	4	.724*
12.5mg/L Boron in Lab	10000	4	1.47*
6.25mg/L Boron in Lab	10000	4	1.53
+DMW Lab Control	10000	4	1.62

Data meet EPA criteria for acceptability using DMW lab control.

Growth
IC50 = 23.6mg/L IC25 = 16.8mg/L Linear Interpolation
NOAEC = 6.25mg/L Dunnetts Multiple Comparison PMSD = 8.3
LOAEC = 12.5mg/L
Dose-Response (Growth): Type 1

Note: * Significantly reduced from control
+ Meets EPA criteria for acceptability as control group

Sierra Foothill Laboratory certifies that test results meet all applicable ELAP requirements unless stated otherwise.
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CETIS Summary Report

Report Date: 28 Sep-12 13:34 (p 1 of 2)
Test Code: 091112PC4LRT1 | 15-9328-0017

Fathead Minnow 7-d Larval Surv and Growth (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Batch ID:	01-0594-3230	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	11 Sep-12 15:45	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	18 Sep-12 13:55	**Species:**	Pimephales promelas	**Brine:**	
Duration:	6d 22h	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d

Sample ID:	04-3563-8208	**Code:**	0912-14	**Client:**	Sierra Foothill Laboratory
Sample Date:	10 Sep-12	**Material:**	Potassium chloride	**Project:**	
Receive Date:	10 Sep-12	**Source:**	KCl Reference Toxicant		
Sample Age:	40h	**Station:**			

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
05-5789-2707	7d Survival Rate	0.5	1	0.7071	8.57%		Dunnett Multiple Comparison Test
07-2528-1746	Mean Dry Biomass-mg	0.25	0.5	0.3536	18.4%		Dunnett Multiple Comparison Test

Point Estimate Summary

Analysis ID	Endpoint	Level	gm/L	95% LCL	95% UCL	TU	Method
10-3909-3796	7d Survival Rate	EC50	0.7972	0.7263	0.8751		Trimmed Spearman-Kärber
07-4279-8347	Mean Dry Biomass-mg	IC25	0.4608	0.23	0.616		Linear Interpolation (ICPIN)
		IC50	0.7222	0.6112	0.8467		

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
05-5789-2707	7d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria
10-3909-3796	7d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria
07-2528-1746	Mean Dry Biomass-mg	Control Resp	0.6075	0.25 - NL	Yes	Passes Acceptability Criteria
07-4279-8347	Mean Dry Biomass-mg	Control Resp	0.6075	0.25 - NL	Yes	Passes Acceptability Criteria
07-2528-1746	Mean Dry Biomass-mg	PMSD	0.1842	0.12 - 0.3	Yes	Passes Acceptability Criteria

7d Survival Rate Summary

C-gm/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	4	1	1	1	1	1	0	0	0.0%	0.0%
0.25		4	0.975	0.8954	1	0.9	1	0.025	0.05	5.13%	2.5%
0.5		4	0.9773	0.9049	1	0.9091	1	0.02273	0.04545	4.65%	2.27%
1		4	0.2	0.07008	0.3299	0.1	0.3	0.04082	0.08165	40.82%	80.0%
2		4	0	0	0	0	0	0	0		100.0%

Mean Dry Biomass-mg Summary

C-gm/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	4	0.6075	0.4917	0.7233	0.54	0.68	0.03637	0.07275	11.97%	0.0%
0.25		4	0.525	0.5045	0.5455	0.51	0.54	0.006456	0.01291	2.46%	13.58%
0.5		4	0.4427	0.3671	0.5184	0.3909	0.5	0.02377	0.04754	10.74%	27.12%
1		4	0.13	0.05205	0.208	0.07	0.19	0.02449	0.04899	37.68%	78.6%
2		4	0	0	0	0	0	0	0		100.0%

7d Survival Rate Detail

C-gm/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1	1	1	1
0.25		1	1	1	0.9
0.5		1	1	0.9091	1
1		0.1	0.2	0.3	0.2
2		0	0	0	0

Mean Dry Biomass-mg Detail

C-gm/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	0.66	0.54	0.55	0.68
0.25		0.54	0.51	0.53	0.52
0.5		0.46	0.42	0.3909	0.5
1		0.07	0.13	0.19	0.13
2		0	0	0	0

7d Survival Rate Binomials

C-gm/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	10/10	10/10	10/10	10/10
0.25		10/10	10/10	10/10	9/10
0.5		10/10	10/10	10/11	10/10
1		1/10	2/10	3/10	2/10
2		0/10	0/10	0/10	0/10

CETIS Analytical Report

Report Date: 28 Sep-12 13:34 (p 1 of 4)
Test Code: 091112PC4LRT1 | 15-9328-0017

Fathead Minnow 7-d Larval Surv and Growth (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	05-5789-2707	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 9:28	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes

Batch ID:	01-0594-3230	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	11 Sep-12 15:45	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	18 Sep-12 13:55	**Species:**	Pimephales promelas	**Brine:**	
Duration:	6d 22h	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d

Sample ID:	04-3563-8208	**Code:**	0912-14	**Client:**	Sierra Foothill Laboratory
Sample Date:	10 Sep-12	**Material:**	Potassium chloride	**Project:**	
Receive Date:	10 Sep-12	**Source:**	KCl Reference Toxicant		
Sample Age:	40h	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Power(Y^Z)	1	C > T	NA	NA	8.57%	0.5	1	0.7071	

Dunnett Multiple Comparison Test

Control	vs	C-gm/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
DMW		0.25	0.6672	2.287	0.086	6	0.4725	CDF	Non-Significant Effect
		0.5	0.6065	2.287	0.086	6	0.4990	CDF	Non-Significant Effect
		1*	21.35	2.287	0.086	6	<0.0001	CDF	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1.845925	0.6153082	3	219.1	<0.0001	Significant Effect
Error	0.03369835	0.002808196	12			
Total	1.879623		15			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	0.8466	5.953	0.4946	Equal Variances
Variances	Levene Equality of Variance	1.636	5.953	0.2333	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.8503	0.8408	0.0137	Normal Distribution

7d Survival Rate Summary

C-gm/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	DMW	4	1	1	1	1	1	1	0	0.0%	0.0%
0.25		4	0.975	0.8954	1	1	0.9	1	0.025	5.13%	2.5%
0.5		4	0.9773	0.9049	1	1	0.9091	1	0.02273	4.65%	2.27%
1		4	0.2	0.07008	0.3299	0.2	0.1	0.3	0.04082	40.82%	80.0%
2		4	0	0	0	0	0	0	0		100.0%

Power(Y^Z) Transformed Summary

C-gm/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	DMW	4	1	1	1	1	1	1	0	0.0%	0.0%
0.25		4	0.975	0.8954	1.055	1	0.9	1	0.025	5.13%	2.5%
0.5		4	0.9773	0.9049	1.05	1	0.9091	1	0.02273	4.65%	2.27%
1		4	0.2	0.07008	0.3299	0.2	0.1	0.3	0.04082	40.82%	80.0%
2		4	0	0	0	0	0	0	0		100.0%

Fathead Minnow 7-d Larval Surv and Growth (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	05-5789-2707	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 9:28	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes

7d Survival Rate Detail

C-gm/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1	1	1	1
0.25		1	1	1	0.9
0.5		1	1	0.9091	1
1		0.1	0.2	0.3	0.2
2		0	0	0	0

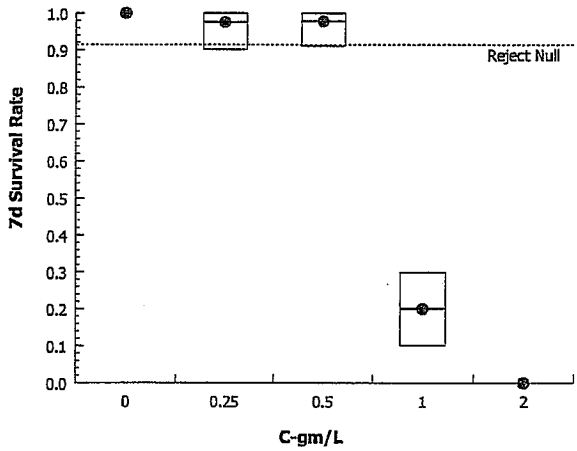
Power(Y^Z) Transformed Detail

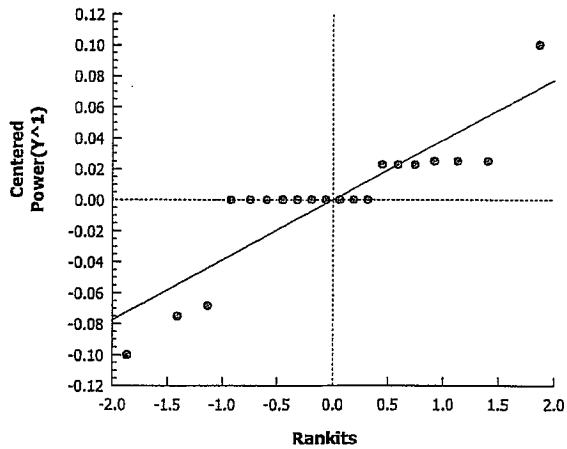
C-gm/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1	1	1	1
0.25		1	1	1	0.9
0.5		1	1	0.9091	1
1		0.1	0.2	0.3	0.2
2		0	0	0	0

7d Survival Rate Binomials

C-gm/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	10/10	10/10	10/10	10/10
0.25		10/10	10/10	10/10	9/10
0.5		10/10	10/10	10/11	10/10
1		1/10	2/10	3/10	2/10
2		0/10	0/10	0/10	0/10

Graphics





Fathead Minnow 7-d Larval Surv and Growth (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	07-2528-1746	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.6
Analyzed:	28 Sep-12 13:28	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes

Batch ID:	01-0594-3230	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	11 Sep-12 15:45	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	18 Sep-12 13:55	**Species:**	Pimephales promelas	**Brine:**	
Duration:	6d 22h	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d

Sample ID:	04-3563-8208	**Code:**	0912-14	**Client:**	Sierra Foothill Laboratory
Sample Date:	10 Sep-12	**Material:**	Potassium chloride	**Project:**	
Receive Date:	10 Sep-12	**Source:**	KCl Reference Toxicant		
Sample Age:	40h	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Power(Y^Z)	0.5	C > T	NA	NA	18.4%	0.25	0.5	0.3536	

Dunnett Multiple Comparison Test

Control	vs	C-gm/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
DMW		0.25	1.656	2.287	0.074	6	0.1392	CDF	Non-Significant Effect
		0.5*	3.497	2.287	0.074	6	0.0058	CDF	Significant Effect
		1*	13.01	2.287	0.074	6	<0.0001	CDF	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.6075	0.25 - NL	Yes	Passes Acceptability Criteria
PMSD	0.1842	0.12 - 0.3	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.4302185	0.1434062	3	67.81	<0.0001	Significant Effect
Error	0.02537745	0.002114787	12			
Total	0.4555959		15			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	7.676	11.34	0.0532	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9775	0.8408	0.9402	Normal Distribution

Mean Dry Biomass-mg Summary

C-gm/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	DMW	4	0.6075	0.4917	0.7233	0.605	0.54	0.68	0.03637	11.97%	0.0%
0.25		4	0.525	0.5045	0.5455	0.525	0.51	0.54	0.006456	2.46%	13.58%
0.5		4	0.4427	0.3671	0.5184	0.44	0.3909	0.5	0.02377	10.74%	27.12%
1		4	0.13	0.05205	0.208	0.13	0.07	0.19	0.02449	37.68%	78.6%
2		4	0	0	0	0	0	0	0		100.0%

Power(Y^Z) Transformed Summary

C-gm/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	DMW	4	0.7784	0.7041	0.8527	0.777	0.7348	0.8246	0.02335	6.0%	0.0%
0.25		4	0.7245	0.7104	0.7387	0.7246	0.7141	0.7349	0.004456	1.23%	6.92%
0.5		4	0.6647	0.6079	0.7214	0.6632	0.6252	0.7071	0.01783	5.37%	14.61%
1		4	0.3554	0.2437	0.4671	0.3606	0.2646	0.4359	0.0351	19.75%	54.34%
2		4	0	0	0	0	0	0	0		100.0%

Fathead Minnow 7-d Larval Surv and Growth (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	07-2528-1746	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.6
Analyzed:	28 Sep-12 13:28	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes

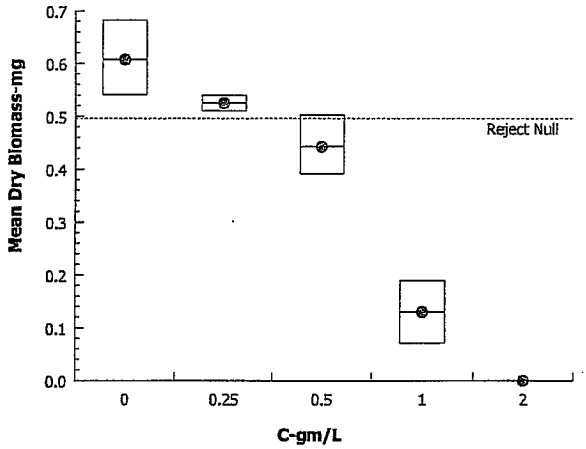
Mean Dry Biomass-mg Detail

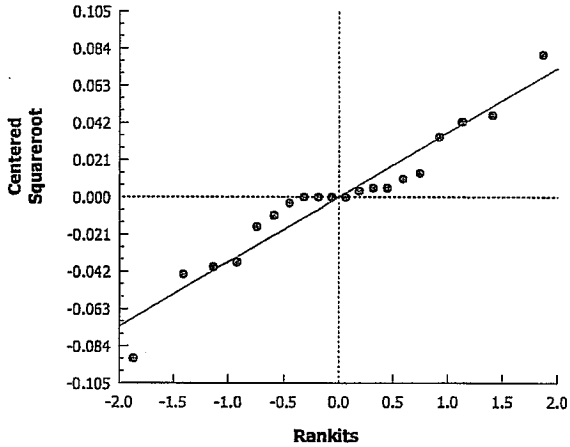
C-gm/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	0.66	0.54	0.55	0.68
0.25		0.54	0.51	0.53	0.52
0.5		0.46	0.42	0.3909	0.5
1		0.07	0.13	0.19	0.13
2		0	0	0	0

Power(Y^Z) Transformed Detail

C-gm/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	0.8124	0.7348	0.7416	0.8246
0.25		0.7349	0.7141	0.728	0.7211
0.5		0.6782	0.6481	0.6252	0.7071
1		0.2646	0.3606	0.4359	0.3606
2		0	0	0	0

Graphics





CETIS Analytical Report

Report Date:	28 Sep-12 13:34 (p 1 of 1)
Test Code:	091112PC4LRT1 | 15-9328-0017

Fathead Minnow 7-d Larval Surv and Growth (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	07-4279-8347	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 9:33	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Batch ID:	01-0594-3230	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	11 Sep-12 15:45	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	18 Sep-12 13:55	**Species:**	Pimephales promelas	**Brine:**	
Duration:	6d 22h	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d

Sample ID:	04-3563-8208	**Code:**	0912-14	**Client:**	Sierra Foothill Laboratory
Sample Date:	10 Sep-12	**Material:**	Potassium chloride	**Project:**	
Receive Date:	10 Sep-12	**Source:**	KCl Reference Toxicant		
Sample Age:	40h	**Station:**			

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1146326	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.6075	0.25 - NL	Yes	Passes Acceptability Criteria

Point Estimates

Level	gm/L	95% LCL	95% UCL
IC25	0.4608	0.23	0.616
IC50	0.7222	0.6112	0.8467

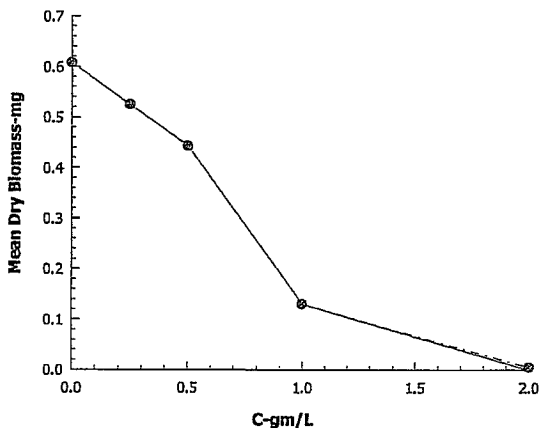
Mean Dry Biomass-mg Summary

			Calculated Variate						
C-gm/L	**Control Type**	**Count**	**Mean**	**Min**	**Max**	**Std Err**	**Std Dev**	**CV%**	**%Effect**
0	DMW	4	0.6075	0.54	0.68	0.03637	0.07275	11.97%	0.0%
0.25		4	0.525	0.51	0.54	0.006456	0.01291	2.46%	13.58%
0.5		4	0.4427	0.3909	0.5	0.02377	0.04754	10.74%	27.12%
1		4	0.13	0.07	0.19	0.02449	0.04899	37.68%	78.6%
2		4	0	0	0	0	0		100.0%

Mean Dry Biomass-mg Detail

C-gm/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	0.66	0.54	0.55	0.68
0.25		0.54	0.51	0.53	0.52
0.5		0.46	0.42	0.3909	0.5
1		0.07	0.13	0.19	0.13
2		0	0	0	0

Graphics



CETIS Analytical Report

Report Date: 28 Sep-12 13:34 (p 1 of 2)
Test Code: 091112PC4LRT1 | 15-9328-0017

Fathead Minnow 7-d Larval Surv and Growth (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	10-3909-3796	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 9:30	**Analysis:**	Trimmed Spearman-Kärber	**Official Results:**	Yes

Batch ID:	01-0594-3230	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	11 Sep-12 15:45	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	18 Sep-12 13:55	**Species:**	Pimephales promelas	**Brine:**	
Duration:	6d 22h	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d

Sample ID:	04-3563-8208	**Code:**	0912-14	**Client:**	Sierra Foothill Laboratory
Sample Date:	10 Sep-12	**Material:**	Potassium chloride	**Project:**	
Receive Date:	10 Sep-12	**Source:**	KCl Reference Toxicant		
Sample Age:	40h	**Station:**			

Trimmed Spearman-Kärber Estimates

Threshold Option	Threshold	Trim	Mu	Sigma	EC50	95% LCL	95% UCL
Control Threshold	0	2.47%	-0.09843	0.02024	0.7972	0.7263	0.8751

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria

7d Survival Rate Summary

			Calculated Variate(A/B)								
C-gm/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	DMW	4	1	1	1	0	0	0.0%	0.0%	40	40
0.25		4	0.975	0.9	1	0.025	0.05	5.13%	2.5%	39	40
0.5		4	0.9773	0.9091	1	0.02273	0.04545	4.65%	2.27%	40	41
1		4	0.2	0.1	0.3	0.04082	0.08165	40.82%	80.0%	8	40
2		4	0	0	0	0	0		100.0%	0	40

7d Survival Rate Detail

C-gm/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1	1	1	1
0.25		1	1	1	0.9
0.5		1	1	0.9091	1
1		0.1	0.2	0.3	0.2
2		0	0	0	0

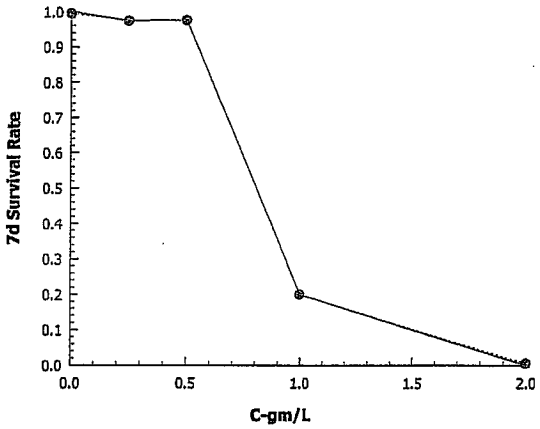
7d Survival Rate Binomials

C-gm/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	10/10	10/10	10/10	10/10
0.25		10/10	10/10	10/10	9/10
0.5		10/10	10/10	10/11	10/10
1		1/10	2/10	3/10	2/10
2		0/10	0/10	0/10	0/10

Fathead Minnow 7-d Larval Surv and Growth (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	10-3909-3796	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 9:30	**Analysis:**	Trimmed Spearman-Kärber	**Official Results:**	Yes

Graphics

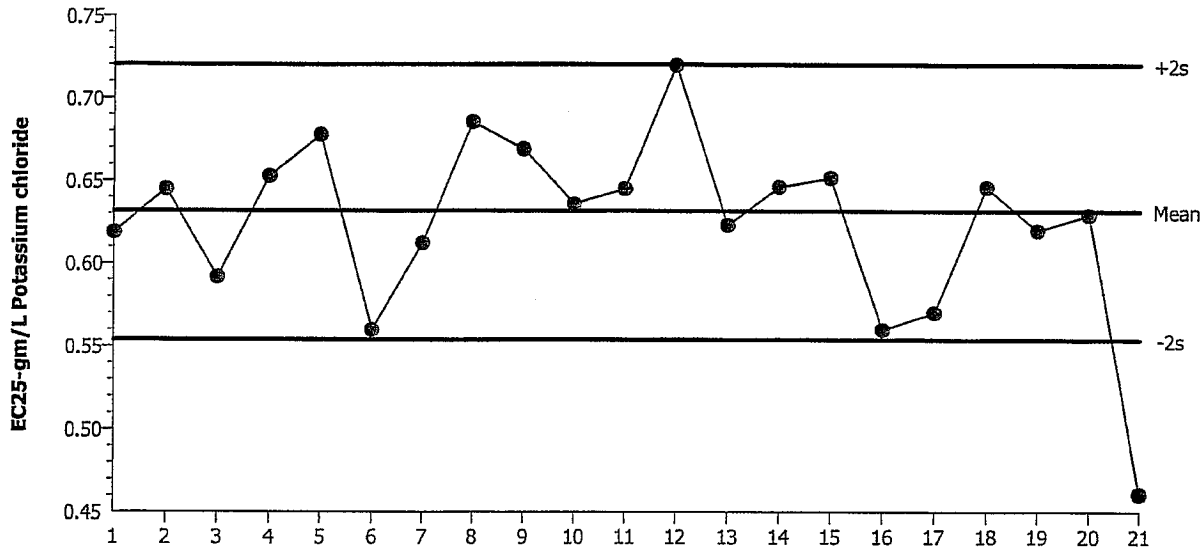


CETIS QC Plot

Report Date: 24 Sep-12 09:38 (1 of 1)

Sierra Foothill Laboratory Inc.

Test Type:	Growth-Survival (7d)	**Organism:**	Pimephales promelas (Fathead Minn	**Material:**	Potassium chloride
Protocol:	EPA/821/R-02-013 (2002)	**Endpoint:**	Mean Dry Biomass-mg	**Source:**	KCl Reference Toxicant-RT1



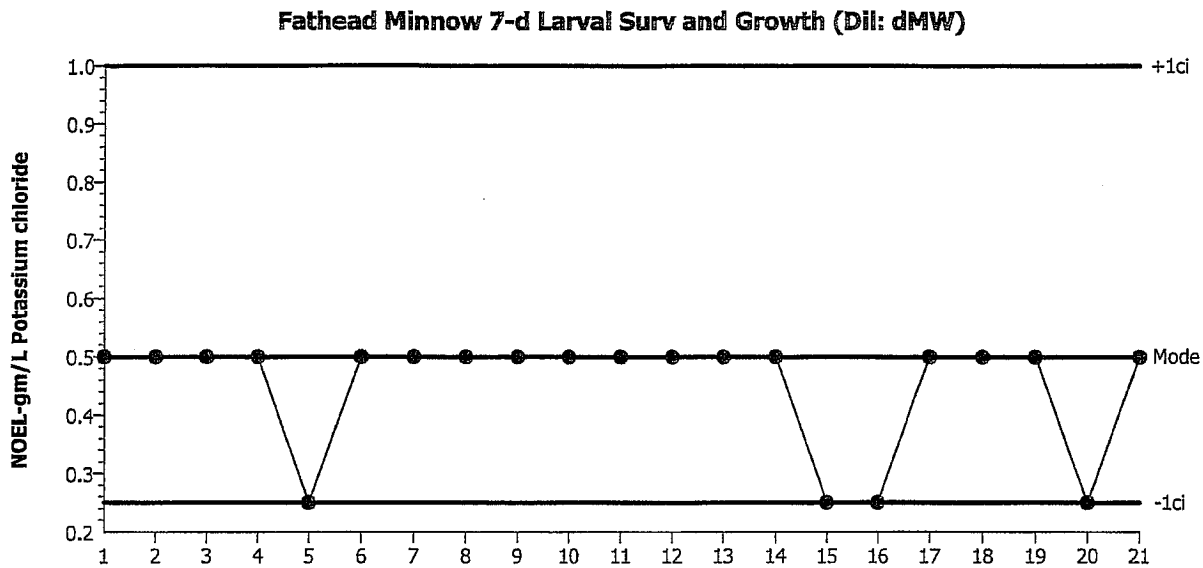
Mean:	0.6317	**Count:**	20	**-2s Warning Limit:**	0.5539	**-2s Action Limit:**	0.5539
Sigma:	NA	**CV:**	6.79%	**+2s Warning Limit:**	0.7203	**+2s Action Limit:**	0.7203

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2011	Oct	11	15:30	0.6187	-0.013	-0.3167			14-3561-8686	07-1265-6330
2			25	16:00	0.6449	0.01324	0.3159			21-1779-8541	04-8792-8225
3		Nov	15	16:00	0.5915	-0.04018	-1.001			08-5057-0076	13-6782-0247
4		Dec	13	16:00	0.6528	0.02111	0.5007			00-8718-6681	09-0985-6811
5	2012	Jan	10	15:15	0.6778	0.0461	1.073			18-4961-2835	09-0672-8892
6			24	15:30	0.5596	-0.07208	-1.845			06-2732-4701	10-6243-9148
7			24	16:00	0.6122	-0.01949	-0.4772			19-9538-5117	10-3799-4291
8		Feb	7	15:30	0.6854	0.05376	1.244			02-8160-8629	16-4269-7089
9			14	12:00	0.669	0.0373	0.8736			02-5234-8057	10-7785-4785
10		Mar	13	15:30	0.6359	0.00421	0.1012			03-9534-3426	01-9617-6134
11		Apr	10	15:00	0.6449	0.01321	0.3152			14-3723-6099	06-5855-4158
12			24	15:30	0.7198	0.08813	1.989			01-6837-9164	07-0688-5695
13		May	15	14:10	0.623	-0.00864	-0.2097			07-7822-7675	02-7907-1717
14		Jun	12	15:50	0.6463	0.01461	0.3481			12-4990-2493	10-8320-7698
15		Jul	10	15:30	0.6516	0.01999	0.4743			05-9241-5693	16-2292-2583
16			24	15:15	0.5599	-0.07175	-1.836			01-9504-7993	01-7189-8651
17		Aug	14	14:45	0.5702	-0.06143	-1.558			16-5184-6717	17-7893-5652
18			21	14:00	0.646	0.01437	0.3426			14-4759-7582	10-1706-7467
19			28	14:20	0.6198	-0.01182	-0.2876			08-4157-6206	14-4461-4604
20		Sep	5	13:25	0.6292	-0.00242	-0.05852			17-1931-7804	00-6750-3492
21			11	15:45	0.4608	-0.1708	-4.802	(-)	(-)	15-9328-0017	07-4279-8347

Fathead Minnow 7-d Larval Surv and Growth (Dil: dMW) **Sierra Foothill Laboratory Inc.**

Test Type:	Growth-Survival (7d)	**Organism:**	Pimephales promelas (Fathead Minn	**Material:**	Potassium chloride
Protocol:	EPA/821/R-02-013 (2002)	**Endpoint:**	Mean Dry Biomass-mg	**Source:**	KCl Reference Toxicant-RT1



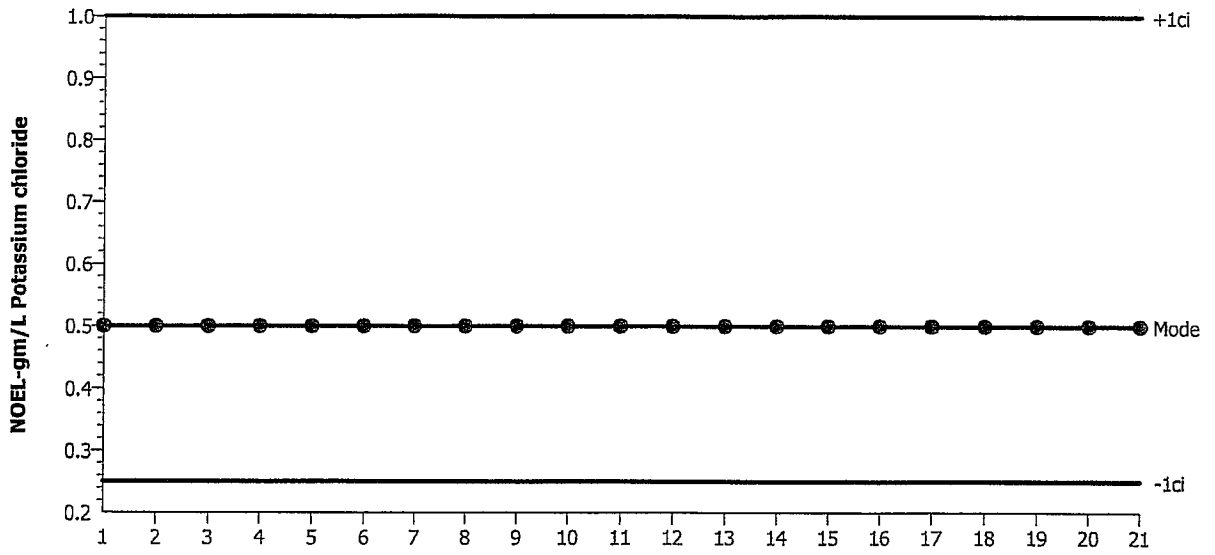
Mode: 0.5 **Count:** 20 **-1ci Action Limit:** 0.25
Dil Fact: 0.5 **+1ci Action Limit:** 1

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2011	Oct	25	16:00	0.5	0				21-1779-8541	21-1289-3096
2		Nov	15	16:00	0.5	0				08-5057-0076	00-8390-9619
3		Dec	13	16:00	0.5	0				00-8718-6681	03-7187-8958
4	2012	Jan	10	15:15	0.5	0				18-4961-2835	13-5866-5208
5			24	15:30	0.25	-0.25				06-2732-4701	13-5238-1213
6			24	16:00	0.5	0				19-9538-5117	01-4728-0815
7		Feb	7	15:30	0.5	0				02-8160-8629	09-9140-4265
8			14	12:00	0.5	0				02-5234-8057	05-2117-6092
9		Mar	13	15:30	0.5	0				03-9534-3426	12-4583-7154
10		Apr	10	15:00	0.5	0				14-3723-6099	04-2255-1594
11			24	15:30	0.5	0				01-6837-9164	11-8497-8179
12		May	15	14:10	0.5	0				07-7822-7675	14-2418-7944
13		Jun	12	15:50	0.5	0				12-4990-2493	15-6607-9889
14		Jul	10	15:30	0.5	0				05-9241-5693	08-9195-4347
15			24	15:15	0.25	-0.25				01-9504-7993	07-6973-9059
16		Aug	14	14:45	0.25	-0.25				16-5184-6717	04-6727-4173
17			21	14:00	0.5	0				14-4759-7582	03-8988-9251
18			28	14:20	0.5	0				08-4157-6206	02-9056-4593
19		Sep	5	13:25	0.5	0				17-1931-7804	01-3339-7076
20			11	15:45	0.25	-0.25				15-9328-0017	07-2528-1746
21			18	11:50	0.5	0				11-0655-0512	06-6822-2323

Sierra Foothill Laboratory Inc.

Test Type:	Growth-Survival (7d)	**Organism:**	Pimephales promelas (Fathead Minn	**Material:**	Potassium chloride
Protocol:	EPA/821/R-02-013 (2002)	**Endpoint:**	7d Survival Rate	**Source:**	KCl Reference Toxicant-RT1



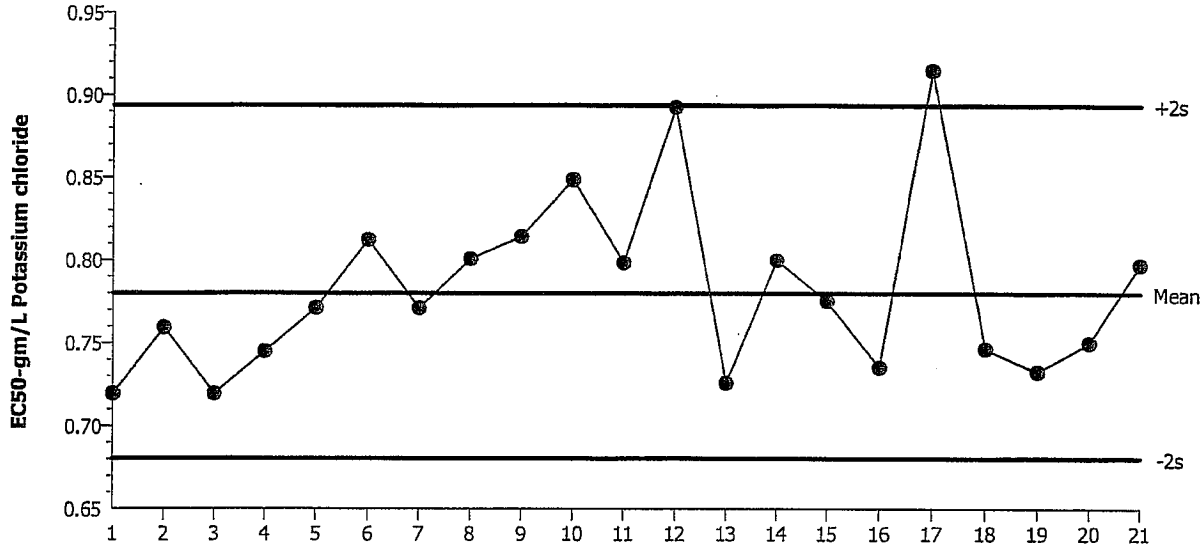
Mode: 0.5 **Count:** 20 **-1ci Action Limit:** 0.25
Dil Fact: 0.5 **+1ci Action Limit:** 1

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2011	Oct	11	15:30	0.5	0				14-3561-8686	04-8932-0500
2			25	16:00	0.5	0				21-1779-8541	15-9688-5806
3		Nov	15	16:00	0.5	0				08-5057-0076	01-6848-2909
4		Dec	13	16:00	0.5	0				00-8718-6681	13-0446-6227
5	2012	Jan	10	15:15	0.5	0				18-4961-2835	00-5662-5905
6			24	15:30	0.5	0				06-2732-4701	05-2386-5240
7			24	16:00	0.5	0				19-9538-5117	04-6678-4882
8		Feb	7	15:30	0.5	0				02-8160-8629	17-2729-8285
9			14	12:00	0.5	0				02-5234-8057	18-5794-4322
10		Mar	13	15:30	0.5	0				03-9534-3426	16-2164-9574
11		Apr	10	15:00	0.5	0				14-3723-6099	00-6547-1579
12			24	15:30	0.5	0				01-6837-9164	12-0908-1957
13		May	15	14:10	0.5	0				07-7822-7675	04-5673-0267
14		Jun	12	15:50	0.5	0				12-4990-2493	09-6115-0820
15		Jul	10	15:30	0.5	0				05-9241-5693	04-8308-3520
16			24	15:15	0.5	0				01-9504-7993	12-0653-5070
17		Aug	14	14:45	0.5	0				16-5184-6717	17-9397-9128
18			21	14:00	0.5	0				14-4759-7582	13-4575-7369
19			28	14:20	0.5	0				08-4157-6206	07-3431-3976
20		Sep	5	13:25	0.5	0				17-1931-7804	02-1091-3674
21			11	15:45	0.5	0				15-9328-0017	05-5789-2707

Sierra Foothill Laboratory Inc.

Test Type:	Growth-Survival (7d)	**Organism:**	Pimephales promelas (Fathead Minn	**Material:**	Potassium chloride
Protocol:	EPA/821/R-02-013 (2002)	**Endpoint:**	7d Survival Rate	**Source:**	KCl Reference Toxicant-RT1



Mean:	0.7799	**Count:**	20	**-2s Warning Limit:**	0.6805	**-2s Action Limit:**	0.6805
Sigma:	NA	**CV:**	7.05%	**+2s Warning Limit:**	0.8938	**+2s Action Limit:**	0.8938

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2011	Oct	11	15:30	0.7196	-0.06032	-1.181			14-3561-8686	05-4202-0317
2			25	16:00	0.7592	-0.02066	-0.3939			21-1779-8541	18-2910-1189
3		Nov	15	16:00	0.7195	-0.06043	-1.183			08-5057-0076	14-6836-3030
4		Dec	13	16:00	0.7448	-0.03505	-0.6746			00-8718-6681	04-1367-4726
5	2012	Jan	10	15:15	0.7711	-0.00879	-0.1662			18-4961-2835	17-7851-3427
6			24	15:30	0.8123	0.03236	0.5964			06-2732-4701	11-0649-8878
7			24	16:00	0.7711	-0.00879	-0.1662			19-9538-5117	02-2621-9429
8		Feb	7	15:30	0.8008	0.02089	0.3878			02-8160-8629	06-3765-7188
9			14	12:00	0.8142	0.03427	0.6309			02-5234-8057	06-5532-0055
10		Mar	13	15:30	0.8486	0.06871	1.239			03-9534-3426	18-9951-2853
11		Apr	10	15:00	0.7983	0.01841	0.3422			14-3723-6099	18-1456-4907
12			24	15:30	0.8927	0.1128	1.981			01-6837-9164	12-3839-9841
13		May	15	14:10	0.726	-0.05393	-1.051			07-7822-7675	07-6315-9221
14		Jun	12	15:50	0.7999	0.02005	0.3724			12-4990-2493	04-9371-1038
15		Jul	10	15:30	0.7753	-0.00464	-0.08747			05-9241-5693	19-5377-9920
16			24	15:15	0.7353	-0.0446	-0.8638			01-9504-7993	14-2912-7927
17		Aug	14	14:45	0.9149	0.135	2.342	(+)	(+)	16-5184-6717	08-1275-3549
18			21	14:00	0.7465	-0.03337	-0.6414			14-4759-7582	04-0135-6013
19			28	14:20	0.7327	-0.0472	-0.9158			08-4157-6206	15-5153-4453
20		Sep	5	13:25	0.75	-0.02989	-0.5733			17-1931-7804	06-5717-6285
21			11	15:45	0.7972	0.01732	0.3221			15-9328-0017	10-3909-3796

CETIS Summary Report

Report Date: 25 Sep-12 09:07 (p 1 of 2)
Test Code: 091112CC4LRT2 | 08-7569-6883

Ceriodaphnia Surv and Reprod Test (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Batch ID:	00-7016-7892	**Test Type:**	Reproduction-Survival (2-8d)	**Analyst:**	
Start Date:	11 Sep-12 16:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	19 Sep-12 13:30	**Species:**	Ceriodaphnia dubia	**Brine:**	
Duration:	7d 21h	**Source:**	In-House Culture	**Age:**	8h

Sample ID:	17-7923-6979	**Code:**	0912-904	**Client:**	Sierra Foothill Laboratory
Sample Date:	10 Sep-12	**Material:**	Zinc sulfate	**Project:**	
Receive Date:	10 Sep-12	**Source:**	ZnSO4.7H2O Reference Toxicant		
Sample Age:	40h	**Station:**			

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
15-8940-0778	6d Survival Rate	0.053	0.11	0.07635	NA		Fisher Exact Test
01-3517-9152	Reproduction	<0.053	0.053	NA	20.4%		Wilcoxon/Bonferroni Adj Test

Point Estimate Summary

Analysis ID	Endpoint	Level	mg/L	95% LCL	95% UCL	TU	Method
08-1765-4853	6d Survival Rate	LC50	0.1419	0.1014	0.1987		Spearman-Kärber
15-9195-1573	Reproduction	EC25	0.02481	0.02194	0.03221		Linear Interpolation (ICPIN)
		EC50	0.04963	0.04387	0.1351		

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
08-1765-4853	6d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria
15-8940-0778	6d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria
01-3517-9152	Reproduction	Control Resp	17	15 - NL	Yes	Passes Acceptability Criteria
15-9195-1573	Reproduction	Control Resp	17	15 - NL	Yes	Passes Acceptability Criteria
01-3517-9152	Reproduction	PMSD	0.2042	0.13 - 0.47	Yes	Passes Acceptability Criteria

6d Survival Rate Summary

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	dMW10	10	1	1	1	1	1	0	0	0.0%	0.0%
0.053		9	1	1	1	1	1	0	0	0.0%	0.0%
0.11		10	0.5	0.123	0.877	0	1	0.1667	0.527	105.4%	50.0%
0.21		10	0	0	0	0	0	0	0		100.0%
0.43		10	0	0	0	0	0	0	0		100.0%
0.85		10	0.4	0.03059	0.7694	0	1	0.1633	0.5164	129.1%	60.0%
1.7		10	0	0	0	0	0	0	0		100.0%

Reproduction Summary

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	dMW10	10	17	13.89	20.11	8	25	1.374	4.346	25.57%	0.0%
0.053		9	7.444	6.665	8.224	6	9	0.3379	1.014	13.62%	56.21%
0.11		10	8.4	4.436	12.36	2	18	1.752	5.542	65.97%	50.59%
0.21		10	3.1	2.389	3.811	2	5	0.3145	0.9944	32.08%	81.76%
0.43		10	1.2	0.6357	1.764	0	2	0.2494	0.7888	65.73%	92.94%
0.85		10	2	-0.2113	4.211	0	8	0.9775	3.091	154.6%	88.24%
1.7		10	0	0	0	0	0	0	0		100.0%

Ceriodaphnia Surv and Reprod Test (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

6d Survival Rate Detail

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	dMW10	1	1	1	1	1	1	1	1	1	1
0.053		1	1	1	1	1	1	1	1	1	
0.11		0	0	1	0	0	0	1	1	1	1
0.21		0	0	0	0	0	0	0	0	0	0
0.43		0	0	0	0	0	0	0	0	0	0
0.85		0	0	0	1	1	0	1	1	0	0
1.7		0	0	0	0	0	0	0	0	0	0

Reproduction Detail

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	dMW10	8	17	16	25	21	16	16	16	16	19
0.053		8	7	6	7	9	8	8	6	8	
0.11		4	6	6	4	5	2	10	18	16	13
0.21		3	3	4	4	2	5	2	2	3	3
0.43		1	2	2	2	0	1	1	1	2	0
0.85		0	0	8	6	1	5	0	0	0	0
1.7		0	0	0	0	0	0	0	0	0	0

6d Survival Rate Binomials

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	dMW10	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
0.053		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	
0.11		0/1	0/1	1/1	0/1	0/1	0/1	1/1	1/1	1/1	1/1
0.21		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
0.43		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
0.85		0/1	0/1	0/1	1/1	1/1	0/1	1/1	1/1	0/1	0/1
1.7		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

CETIS Analytical Report

Report Date: 25 Sep-12 09:06 (p 1 of 2)
Test Code: 091112CC4LRT2 | 08-7569-6883

Ceriodaphnia Surv and Reprod Test (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	01-3517-9152	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.8.6
Analyzed:	25 Sep-12 9:03	**Analysis:**	Nonparametric-Multiple Comparison	**Official Results:**	Yes

Batch ID:	00-7016-7892	**Test Type:**	Reproduction-Survival (2-8d)	**Analyst:**	
Start Date:	11 Sep-12 16:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	19 Sep-12 13:30	**Species:**	Ceriodaphnia dubia	**Brine:**	
Duration:	7d 21h	**Source:**	In-House Culture	**Age:**	8h

Sample ID:	17-7923-6979	**Code:**	0912-904	**Client:**	Sierra Foothill Laboratory
Sample Date:	10 Sep-12	**Material:**	Zinc sulfate	**Project:**	
Receive Date:	10 Sep-12	**Source:**	ZnSO4.7H2O Reference Toxicant		
Sample Age:	40h	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Untransformed	NA	C > T	NA	NA	20.4%	<0.053	0.053	NA	

Wilcoxon/Bonferroni Adj Test

Control	vs	C-mg/L	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
dMW10		0.053*	48	NA	1	17	0.0003	Exact	Significant Effect
		0.11*	67.5	NA	1	18	0.0066	Exact	Significant Effect
		0.21*	55	NA	0	18	<0.0001	Exact	Significant Effect
		0.43*	55	NA	0	18	<0.0001	Exact	Significant Effect
		0.85*	55.5	NA	1	18	<0.0001	Exact	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	17	15 - NL	Yes	Passes Acceptability Criteria
PMSD	0.2042	0.13 - 0.47	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1745.624	349.1247	5	33.33	<0.0001	Significant Effect
Error	555.1222	10.474	53			
Total	2300.746		58			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	48.9	15.09	<0.0001	Unequal Variances
Distribution	Shapiro-Wilk W Normality	0.909	0.9451	0.0003	Non-normal Distribution

Reproduction Summary

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	dMW10	10	17	13.89	20.11	16	8	25	1.374	25.57%	0.0%
0.053		9	7.444	6.665	8.224	8	6	9	0.3379	13.62%	56.21%
0.11		10	8.4	4.436	12.36	6	2	18	1.752	65.97%	50.59%
0.21		10	3.1	2.389	3.811	3	2	5	0.3145	32.08%	81.76%
0.43		10	1.2	0.6357	1.764	1	0	2	0.2494	65.73%	92.94%
0.85		10	2	-0.2113	4.211	0	0	8	0.9775	154.6%	88.24%
1.7		10	0	0	0	0	0	0	0		100.0%

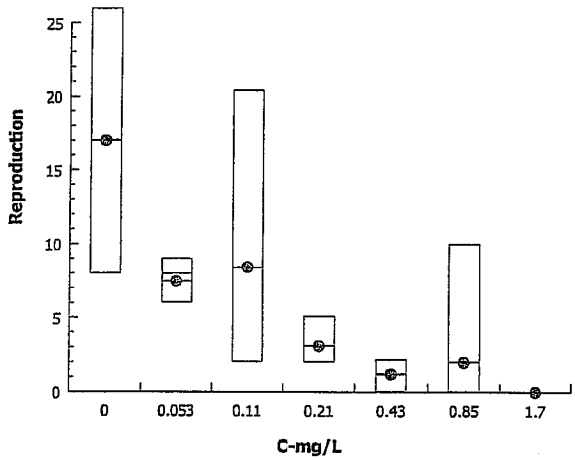
Reproduction Detail

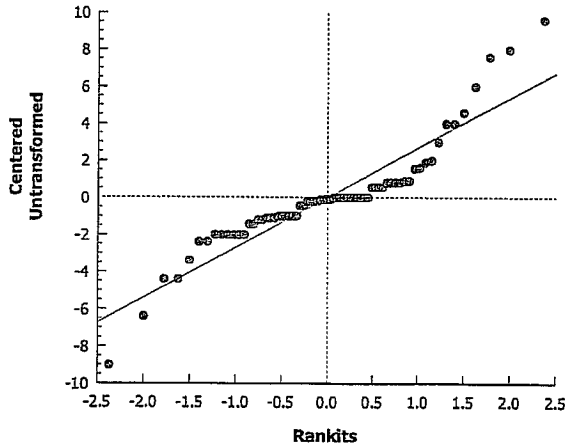
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	dMW10	8	17	16	25	21	16	16	16	16	19
0.053		8	7	6	7	9	8	8	6	8	
0.11		4	6	6	4	5	2	10	18	16	13
0.21		3	3	4	4	2	5	2	2	3	3
0.43		1	2	2	2	0	1	1	1	2	0
0.85		0	0	8	6	1	5	0	0	0	0
1.7		0	0	0	0	0	0	0	0	0	0

Ceriodaphnia Surv and Reprod Test (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	01-3517-9152	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.8.6
Analyzed:	25 Sep-12 9:03	**Analysis:**	Nonparametric-Multiple Comparison	**Official Results:**	Yes

Graphics





CETIS Analytical Report

Report Date: 25 Sep-12 09:06 (p 1 of 2)
Test Code: 091112CC4LRT2 | 08-7569-6883

Ceriodaphnia Surv and Reprod Test (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	15-9195-1573	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.8.6
Analyzed:	25 Sep-12 9:03	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Batch ID:	00-7016-7892	**Test Type:**	Reproduction-Survival (2-8d)	**Analyst:**	
Start Date:	11 Sep-12 16:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	19 Sep-12 13:30	**Species:**	Ceriodaphnia dubia	**Brine:**	
Duration:	7d 21h	**Source:**	In-House Culture	**Age:**	8h

Sample ID:	17-7923-6979	**Code:**	0912-904	**Client:**	Sierra Foothill Laboratory
Sample Date:	10 Sep-12	**Material:**	Zinc sulfate	**Project:**	
Receive Date:	10 Sep-12	**Source:**	ZnSO4.7H2O Reference Toxicant		
Sample Age:	40h	**Station:**			

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1312376	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	17	15 - NL	Yes	Passes Acceptability Criteria

Point Estimates

Level	mg/L	95% LCL	95% UCL
EC25	0.02481	0.02194	0.03221
EC50	0.04963	0.04387	0.1351

Reproduction Summary

			Calculated Variate						
C-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	dMW10	10	17	8	25	1.374	4.346	25.57%	0.0%
0.053		9	7.444	6	9	0.3379	1.014	13.62%	56.21%
0.11		10	8.4	2	18	1.752	5.542	65.97%	50.59%
0.21		10	3.1	2	5	0.3145	0.9944	32.08%	81.76%
0.43		10	1.2	0	2	0.2494	0.7888	65.73%	92.94%
0.85		10	2	0	8	0.9775	3.091	154.6%	88.24%
1.7		10	0	0	0	0	0		100.0%

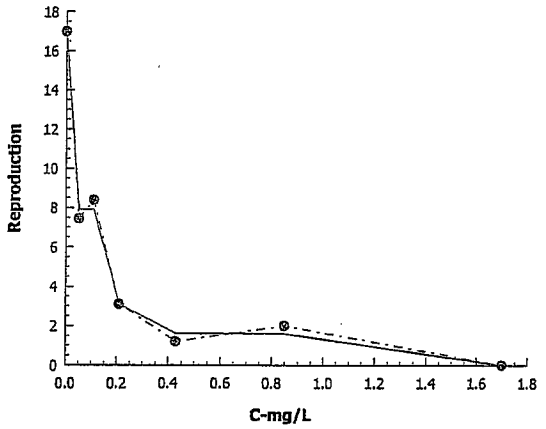
Reproduction Detail

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	dMW10	8	17	16	25	21	16	16	16	16	19
0.053		8	7	6	7	9	8	8	6	8	
0.11		4	6	6	4	5	2	10	18	16	13
0.21		3	3	4	4	2	5	2	2	3	3
0.43		1	2	2	2	0	1	1	1	2	0
0.85		0	0	8	6	1	5	0	0	0	0
1.7		0	0	0	0	0	0	0	0	0	0

Ceriodaphnia Surv and Reprod Test (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	15-9195-1573	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.8.6
Analyzed:	25 Sep-12 9:03	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



Ceriodaphnia Surv and Reprod Test (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	08-1765-4853	**Endpoint:**	6d Survival Rate	**CETIS Version:**	CETISv1.8.6
Analyzed:	25 Sep-12 9:01	**Analysis:**	Untrimmed Spearman-Kärber	**Official Results:**	Yes

Batch ID:	00-7016-7892	**Test Type:**	Reproduction-Survival (2-8d)	**Analyst:**	
Start Date:	11 Sep-12 16:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	19 Sep-12 13:30	**Species:**	Ceriodaphnia dubia	**Brine:**	
Duration:	7d 21h	**Source:**	In-House Culture	**Age:**	8h

Sample ID:	17-7923-6979	**Code:**	0912-904	**Client:**	Sierra Foothill Laboratory
Sample Date:	10 Sep-12	**Material:**	Zinc sulfate	**Project:**	
Receive Date:	10 Sep-12	**Source:**	ZnSO4.7H2O Reference Toxicant		
Sample Age:	40h	**Station:**			

Spearman-Kärber Estimates

Threshold Option	Threshold	Trim	Mu	Sigma	LC50	95% LCL	95% UCL
Control Threshold	0	0.00%	-0.8479	0.07309	0.1419	0.1014	0.1987

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria

6d Survival Rate Summary

			Calculated Variate(A/B)								
C-mg/L	**Control Type**	**Count**	**Mean**	**Min**	**Max**	**Std Err**	**Std Dev**	**CV%**	**%Effect**	**A**	**B**
0	dMW10	10	1	1	1	0	0	0.0%	0.0%	10	10
0.053		9	1	1	1	0	0	0.0%	0.0%	9	9
0.11		10	0.5	0	1	0.1667	0.527	105.4%	50.0%	5	10
0.21		10	0	0	0	0	0		100.0%	0	10
0.43		10	0	0	0	0	0		100.0%	0	10
0.85		10	0.4	0	1	0.1633	0.5164	129.1%	60.0%	4	10
1.7		10	0	0	0	0	0		100.0%	0	10

6d Survival Rate Detail

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	dMW10	1	1	1	1	1	1	1	1	1	1
0.053		1	1	1	1	1	1	1	1	1	
0.11		0	0	1	0	0	0	1	1	1	1
0.21		0	0	0	0	0	0	0	0	0	0
0.43		0	0	0	0	0	0	0	0	0	0
0.85		0	0	0	1	1	0	1	1	0	0
1.7		0	0	0	0	0	0	0	0	0	0

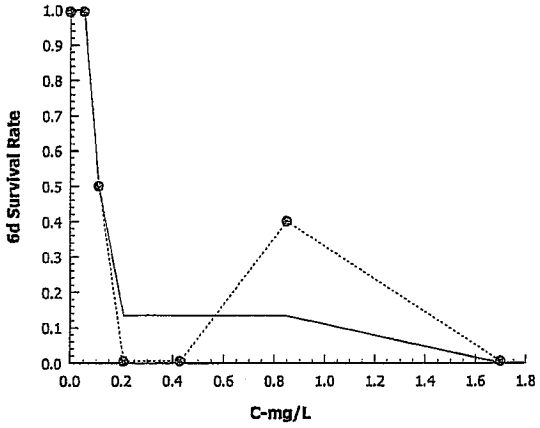
6d Survival Rate Binomials

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	dMW10	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
0.053		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	
0.11		0/1	0/1	1/1	0/1	0/1	0/1	1/1	1/1	1/1	1/1
0.21		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
0.43		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
0.85		0/1	0/1	0/1	1/1	1/1	0/1	1/1	1/1	0/1	0/1
1.7		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Ceriodaphnia Surv and Reprod Test (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	08-1765-4853	**Endpoint:**	6d Survival Rate	**CETIS Version:**	CETISv1.8.6
Analyzed:	25 Sep-12 9:01	**Analysis:**	Untrimmed Spearman-Kärber	**Official Results:**	Yes

Graphics



Ceriodaphnia Surv and Reprod Test (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	15-8940-0778	**Endpoint:**	6d Survival Rate	**CETIS Version:**	CETISv1.8.6
Analyzed:	25 Sep-12 9:00	**Analysis:**	Single 2x2 Contingency Table	**Official Results:**	Yes

Batch ID:	00-7016-7892	**Test Type:**	Reproduction-Survival (2-8d)	**Analyst:**	
Start Date:	11 Sep-12 16:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	19 Sep-12 13:30	**Species:**	Ceriodaphnia dubia	**Brine:**	
Duration:	7d 21h	**Source:**	In-House Culture	**Age:**	8h

Sample ID:	17-7923-6979	**Code:**	0912-904	**Client:**	Sierra Foothill Laboratory
Sample Date:	10 Sep-12	**Material:**	Zinc sulfate	**Project:**	
Receive Date:	10 Sep-12	**Source:**	ZnSO4.7H2O Reference Toxicant		
Sample Age:	40h	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	NOEL	LOEL	TOEL	TU
Untransformed		C > T	NA	NA	0.053	0.11	0.07635	

Fisher Exact Test

Control	vs	C-mg/L	Test Stat	P-Value	P-Type	Decision(α:5%)
dMW10		0.053	1	1.0000	Exact	Non-Significant Effect
		0.11	0.01625	0.0163	Exact	Significant Effect
		0.21	5.41E-06	<0.0001	Exact	Significant Effect
		0.43	5.41E-06	<0.0001	Exact	Significant Effect
		0.85	0.005418	0.0054	Exact	Significant Effect
		1.7	5.41E-06	<0.0001	Exact	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria

Data Summary

C-mg/L	Control Type	NR	R	NR + R	Prop NR	Prop R	%Effect
0	dMW10	10	0	10	1	0	0.0%
0.053		9	0	9	1	0	0.0%
0.11		5	5	10	0.5	0.5	50.0%
0.21		0	10	10	0	1	100.0%
0.43		0	10	10	0	1	100.0%
0.85		4	6	10	0.4	0.6	60.0%
1.7		0	10	10	0	1	100.0%

6d Survival Rate Detail

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	dMW10	1	1	1	1	1	1	1	1	1	1
0.053		1	1	1	1	1	1	1	1	1	
0.11		0	0	1	0	0	0	1	1	1	1
0.21		0	0	0	0	0	0	0	0	0	0
0.43		0	0	0	0	0	0	0	0	0	0
0.85		0	0	0	1	1	0	1	1	0	0
1.7		0	0	0	0	0	0	0	0	0	0

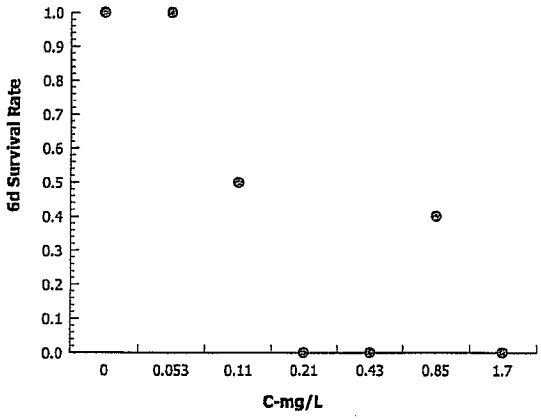
6d Survival Rate Binomials

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	dMW10	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
0.053		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	
0.11		0/1	0/1	1/1	0/1	0/1	0/1	1/1	1/1	1/1	1/1
0.21		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
0.43		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
0.85		0/1	0/1	0/1	1/1	1/1	0/1	1/1	1/1	0/1	0/1
1.7		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Ceriodaphnia Surv and Reprod Test (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	15-8940-0778	**Endpoint:**	6d Survival Rate	**CETIS Version:**	CETISv1.8.6
Analyzed:	25 Sep-12 9:00	**Analysis:**	Single 2x2 Contingency Table	**Official Results:**	Yes

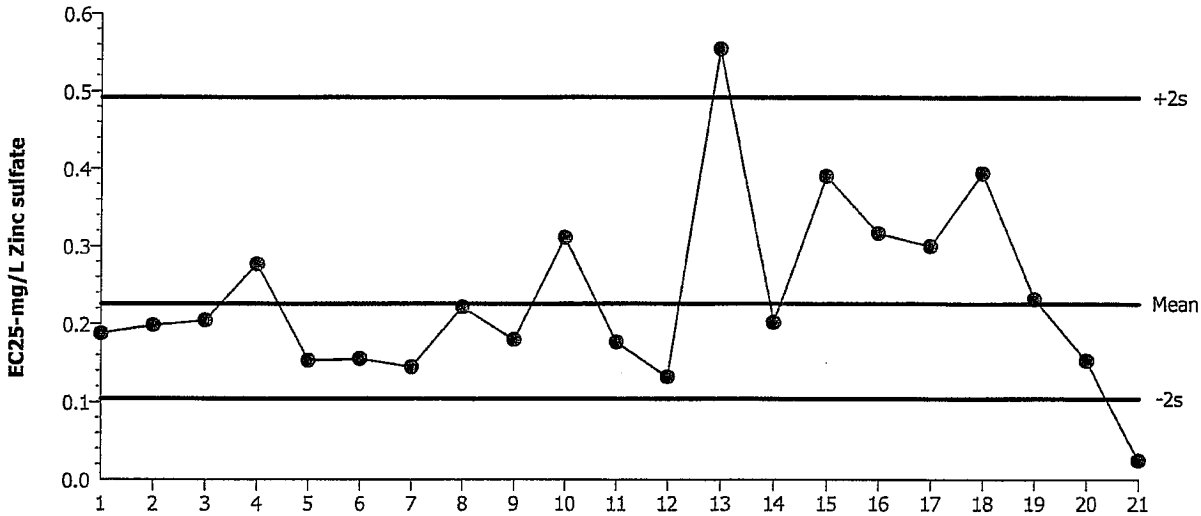
Graphics



Ceriodaphnia Surv and Reprod Test (Dil: dMW) **Sierra Foothill Laboratory Inc.**

Test Type:	Reproduction-Survival (2-8d)	**Organism:**	Ceriodaphnia dubia (Water Flea)	**Material:**	Zinc sulfate
Protocol:	EPA/821/R-02-013 (2002)	**Endpoint:**	Reproduction	**Source:**	ZnSO4.7H2O Reference Toxicant-R

Ceriodaphnia Surv and Reprod Test (Dil: dMW)



Mean:	0.226	**Count:**	20	**-2s Warning Limit:**	0.1039	**-2s Action Limit:**	0.1039
Sigma:	NA	**CV:**	47.50%	**+2s Warning Limit:**	0.4916	**+2s Action Limit:**	0.4916

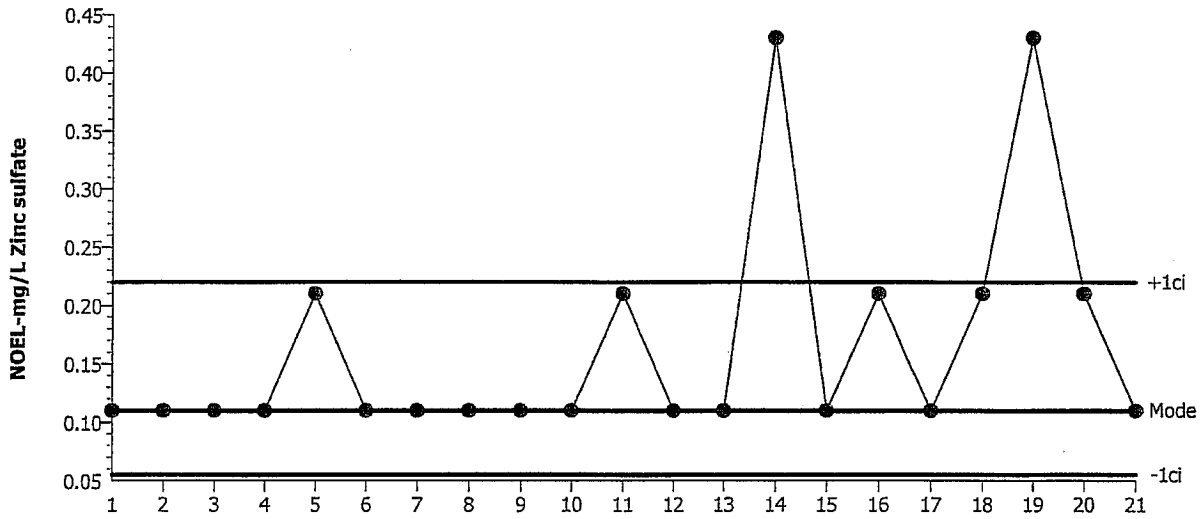
Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2011	Oct	25	16:00	0.1877	-0.03832	-0.4781			00-8961-8731	04-3550-8745
2		Nov	15	15:45	0.1985	-0.02759	-0.335			18-6303-3133	20-2375-3574
3		Dec	13	15:30	0.2044	-0.02164	-0.259			19-5669-8835	03-1026-3055
4	2012	Jan	10	15:30	0.2766	0.05053	0.5193			05-9567-1247	04-1452-8068
5			24	15:45	0.1532	-0.07284	-1.001			14-5713-5561	14-8856-3452
6			24	16:00	0.1554	-0.0707	-0.9654			11-0552-2935	11-1994-7249
7		Feb	7	15:00	0.145	-0.08105	-1.143			15-1414-4364	08-4260-0225
8			14	9:30	0.2214	-0.00466	-0.05361			19-0595-3510	13-3516-5531
9		Mar	13	15:30	0.1798	-0.04627	-0.5895			17-0717-2584	11-0886-7332
10		Apr	10	15:30	0.3111	0.08507	0.8222			20-4874-7878	07-7750-4199
11			24	16:00	0.1769	-0.04913	-0.6307			05-4007-7337	13-8197-4066
12		May	15	14:30	0.1319	-0.09417	-1.387			16-3144-5796	02-0533-2538
13			30	12:45	0.5542	0.3282	2.308	(+)	(+)	02-2512-5857	02-4084-7022
14		Jun	12	16:00	0.2019	-0.02418	-0.2912			08-3175-4450	17-0557-4265
15		Jul	10	15:30	0.39	0.164	1.404			16-7637-8117	01-5250-5504
16			24	15:30	0.3165	0.09046	0.8664			20-0470-0976	08-7997-2464
17		Aug	14	15:00	0.3001	0.07403	0.7292			13-9348-3292	02-5495-2875
18			21	14:15	0.3942	0.1682	1.431			08-4652-8606	20-6099-2886
19			28	15:00	0.232	0.005904	0.06637			06-8148-7743	20-8738-6188
20		Sep	5	14:15	0.153	-0.07307	-1.005			05-6013-7284	17-9798-0085
21			11	16:30	0.02481	-0.2012	-5.687	(-)	(-)	08-7569-6883	15-9195-1573

Ceriodaphnia Surv and Reprod Test (Dil: dMW) **Sierra Foothill Laboratory Inc.**

Test Type:	Reproduction-Survival (2-8d)	**Organism:**	Ceriodaphnia dubia (Water Flea)	**Material:**	Zinc sulfate
Protocol:	EPA/821/R-02-013 (2002)	**Endpoint:**	Reproduction	**Source:**	ZnSO4.7H2O Reference Toxicant-R

Ceriodaphnia Surv and Reprod Test (Dil: dMW)



Mode: 0.11 **Count:** 20 **-1ci Action Limit:** 0.055
Dil Fact: 0.5 **+1ci Action Limit:** 0.22

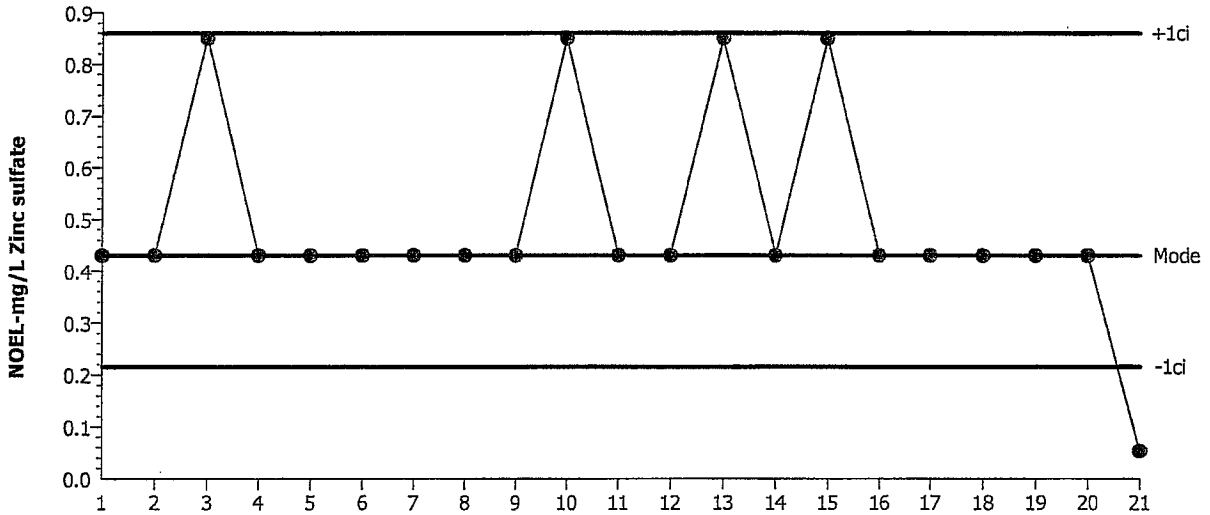
Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2011	Oct	11	17:30	0.11	5.96E-10				02-1350-5745	02-6064-6277
2			25	16:00	0.11	5.96E-10				00-8961-8731	10-4068-0517
3		Nov	15	15:45	0.11	5.96E-10				18-6303-3133	19-0243-4404
4		Dec	13	15:30	0.11	5.96E-10				19-5669-8835	14-4626-0291
5	2012	Jan	10	15:30	0.21	0.100000				05-9567-1247	04-1361-6640
6			24	15:45	0.11	5.96E-10				14-5713-5561	01-4522-1608
7			24	16:00	0.11	5.96E-10				11-0552-2935	05-0059-6199
8		Feb	7	15:00	0.11	5.96E-10				15-1414-4364	17-5500-3744
9			14	9:30	0.11	5.96E-10				19-0595-3510	02-3568-4147
10		Mar	13	15:30	0.11	5.96E-10				17-0717-2584	09-2845-7917
11		Apr	10	15:30	0.21	0.100000				20-4874-7878	14-6979-7962
12			24	16:00	0.11	5.96E-10				05-4007-7337	18-6165-9350
13		May	15	14:30	0.11	5.96E-10				16-3144-5796	18-2638-7532
14			30	12:45	0.43	0.320000			(+)	02-2512-5857	17-1008-3449
15		Jun	12	16:00	0.11	5.96E-10				08-3175-4450	14-4895-0358
16		Jul	10	15:30	0.21	0.100000				16-7637-8117	13-1120-8707
17			24	15:30	0.11	5.96E-10				20-0470-0976	19-6345-9581
18		Aug	14	15:00	0.21	0.100000				13-9348-3292	05-9148-0762
19			21	14:15	0.43	0.320000			(+)	08-4652-8606	03-3989-2836
20			28	15:00	0.21	0.100000				06-8148-7743	10-3043-2938
21		Sep	5	14:15	0.11	5.96E-10				05-6013-7284	08-4050-4806

Ceriodaphnia Surv and Reprod Test (Dil: dMW) **Sierra Foothill Laboratory Inc.**

Test Type:	Reproduction-Survival (2-8d)	**Organism:**	Ceriodaphnia dubia (Water Flea)	**Material:**	Zinc sulfate
Protocol:	EPA/821/R-02-013 (2002)	**Endpoint:**	6d Survival Rate	**Source:**	ZnSO4.7H2O Reference Toxicant-R

Ceriodaphnia Surv and Reprod Test (Dil: dMW)



Mode: 0.43000 **Count:** 20 **-1ci Action Limit:** 0.215
Dil Fact: 0.5 **+1ci Action Limit:** 0.86

Quality Control Data

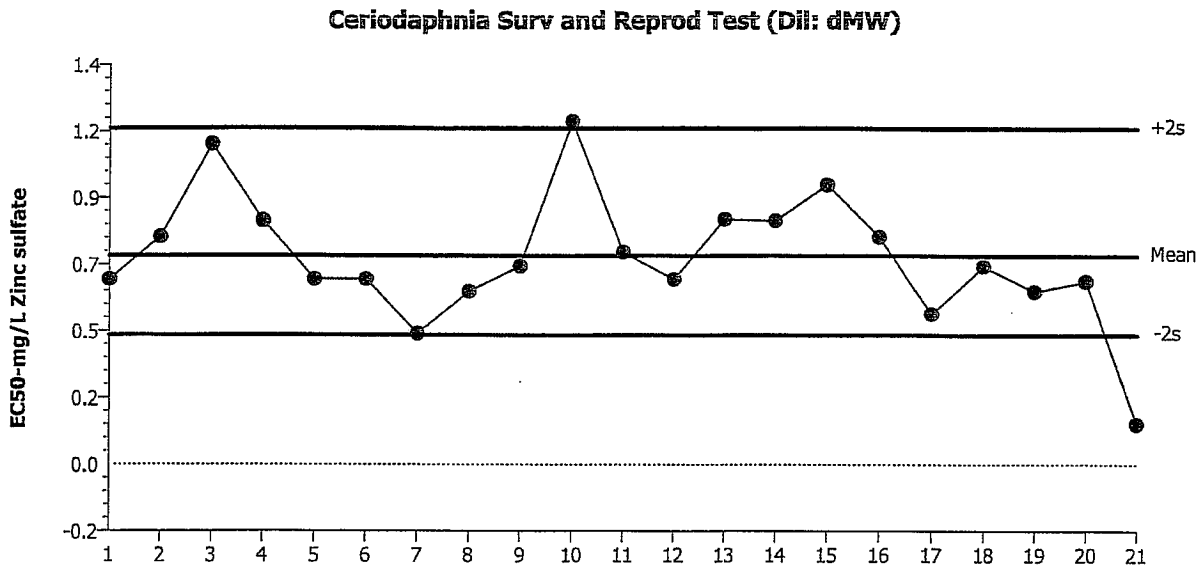
Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2011	Oct	25	16:00	0.43	-7.2E-09				00-8961-8731	02-5685-2080
2		Nov	15	15:45	0.43	-7.2E-09				18-6303-3133	06-4261-6465
3		Dec	13	15:30	0.85	0.42				19-5669-8835	00-3094-6436
4	2012	Jan	10	15:30	0.43	-7.2E-09				05-9567-1247	11-0186-8611
5			24	15:45	0.43	-7.2E-09				14-5713-5561	18-0492-1364
6			24	16:00	0.43	-7.2E-09				11-0552-2935	00-4831-9081
7		Feb	7	15:00	0.43	-7.2E-09				15-1414-4364	21-1817-9700
8			14	9:30	0.43	-7.2E-09				19-0595-3510	06-5091-4902
9		Mar	13	15:30	0.43	-7.2E-09				17-0717-2584	08-4642-8345
10		Apr	10	15:30	0.85	0.42				20-4874-7878	19-9546-2186
11			24	16:00	0.43	-7.2E-09				05-4007-7337	20-6902-6749
12		May	15	14:30	0.43	-7.2E-09				16-3144-5796	16-6679-4274
13			30	12:45	0.85	0.42				02-2512-5857	19-0489-9316
14		Jun	12	16:00	0.43	-7.2E-09				08-3175-4450	10-3992-8692
15		Jul	10	15:30	0.85	0.42				16-7637-8117	16-4299-1707
16			24	15:30	0.43	-7.2E-09				20-0470-0976	08-5981-1254
17		Aug	14	15:00	0.43	-7.2E-09				13-9348-3292	19-7520-4827
18			21	14:15	0.43	-7.2E-09				08-4652-8606	08-9031-0344
19			28	15:00	0.43	-7.2E-09				06-8148-7743	21-1846-2048
20		Sep	5	14:15	0.43	-7.2E-09				05-6013-7284	06-9208-0718
21			11	16:30	0.053	-0.37700			(-)	08-7569-6883	15-8940-0778

CETIS QC Plot

Report Date: 25 Sep-12 09:05 (1 of 1)

Ceriodaphnia Surv and Reprod Test (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Test Type:	Reproduction-Survival (2-8d)	**Organism:**	Ceriodaphnia dubia (Water Flea)	**Material:**	Zinc sulfate
Protocol:	EPA/821/R-02-013 (2002)	**Endpoint:**	6d Survival Rate	**Source:**	ZnSO4.7H2O Reference Toxicant-R



Mean:	0.7299	**Count:**	20	**-2s Warning Limit:**	0.4524	**-2s Action Limit:**	0.4524
Sigma:	NA	**CV:**	27.00%	**+2s Warning Limit:**	1.177	**+2s Action Limit:**	1.177

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2011	Oct	25	16:00	0.6476	-0.08228	-0.5003			00-8961-8731	03-1166-2382
2		Nov	15	15:45	0.7959	0.066	0.3621			18-6303-3133	18-5068-3658
3		Dec	13	15:30	1.122	0.3924	1.799			19-5669-8835	07-1230-1460
4	2012	Jan	10	15:30	0.8525	0.1226	0.6495			05-9567-1247	10-8793-0529
5			24	15:45	0.6476	-0.08228	-0.5003			14-5713-5561	08-3379-8199
6			24	16:00	0.6476	-0.08228	-0.5003			11-0552-2935	02-9860-8285
7		Feb	7	15:00	0.4577	-0.2721	-1.951			15-1414-4364	12-5842-4621
8			14	9:30	0.6039	-0.126	-0.7926			19-0595-3510	17-0353-1120
9		Mar	13	15:30	0.6937	-0.03621	-0.2128			17-0717-2584	14-5244-4575
10		Apr	10	15:30	1.202	0.4722	2.087	(+)	(+)	20-4874-7878	13-1249-8736
11			24	16:00	0.743	0.01314	0.07463			05-4007-7337	16-0164-3081
12		May	15	14:30	0.6474	-0.08244	-0.5013			16-3144-5796	00-9866-2279
13			30	12:45	0.8585	0.1286	0.6789			02-2512-5857	10-9652-9669
14		Jun	12	16:00	0.8525	0.1226	0.6495			08-3175-4450	19-7705-6532
15		Jul	10	15:30	0.9781	0.2482	1.224			16-7637-8117	06-4305-4671
16			24	15:30	0.7959	0.066	0.3621			20-0470-0976	06-9804-6706
17		Aug	14	15:00	0.5257	-0.2042	-1.372			13-9348-3292	16-5298-8881
18			21	14:15	0.6937	-0.03621	-0.2128			08-4652-8606	00-0351-8705
19			28	15:00	0.6039	-0.126	-0.7926			06-8148-7743	20-1074-5108
20		Sep	5	14:15	0.64	-0.08986	-0.5495			05-6013-7284	02-1481-7050
21			11	16:30	0.1419	-0.5879	-6.849	(-)	(-)	08-7569-6883	08-1765-4853

CETIS Summary Report

Report Date: 28 Sep-12 14:16 (p 1 of 1)
Test Code: 091412SC4LRT3 | 20-5833-8424

Selenastrum Growth Test (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Batch ID:	17-2607-0606	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	14 Sep-12 16:05	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	18 Sep-12 14:11	**Species:**	Selenastrum capricornutum	**Brine:**	
Duration:	94h	**Source:**	In-House Culture	**Age:**	7d

Sample ID:	04-7769-4584	**Code:**	0912-905	**Client:**	Sierra Foothill Laboratory
Sample Date:	14 Sep-12	**Material:**	Boron	**Project:**	
Receive Date:	14 Sep-12	**Source:**	Boron Reference Toxicant		
Sample Age:	16h	**Station:**			

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
03-1970-1928	Cell Density	6.25	12.5	8.839	8.27%		Dunnett Multiple Comparison Test

Point Estimate Summary

Analysis ID	Endpoint	Level	mg/L	95% LCL	95% UCL	TU	Method
00-2115-2688	Cell Density	IC25	16.78	15.69	17.79		Linear Interpolation (ICPIN)
		IC50	23.58	23.09	24.08		

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
00-2115-2688	Cell Density	Control CV	0.01326	NL - 0.2	Yes	Passes Acceptability Criteria
03-1970-1928	Cell Density	Control CV	0.01326	NL - 0.2	Yes	Passes Acceptability Criteria
00-2115-2688	Cell Density	Control Resp	1.62E+6	1.00E+6 - NL	Yes	Passes Acceptability Criteria
03-1970-1928	Cell Density	Control Resp	1.62E+6	1.00E+6 - NL	Yes	Passes Acceptability Criteria
03-1970-1928	Cell Density	PMSD	0.08267	0.091 - 0.29	Yes	Below Acceptability Criteria

Cell Density Summary

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	MHSFW Lab Co	4	1.438E+6	1.400E+6	1.476E+6	1.412E+6	1.470E+6	1.190E+4	2.380E+4	1.66%	0.0%
0	DMW	4	1.614E+6	1.584E+6	1.644E+6	1.592E+6	1.629E+6	9.325E+3	1.865E+4	1.16%	-12.2%
6.25		4	1.540E+6	1.507E+6	1.572E+6	1.516E+6	1.560E+6	1.021E+4	2.042E+4	1.33%	-7.04%
12.5		4	1.496E+6	1.385E+6	1.607E+6	1.416E+6	1.583E+6	3.485E+4	6.971E+4	4.66%	-4.01%
25		4	7.128E+5	6.734E+5	7.522E+5	6.796E+5	7.347E+5	1.239E+4	2.478E+4	3.48%	50.44%
50		4	1.032E+5	8.987E+4	1.164E+5	9.871E+4	1.157E+5	4.175E+3	8.350E+3	8.09%	92.83%

Cell Density Detail

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	MHSFW Lab Co	1.435E+6	1.412E+6	1.436E+6	1.470E+6
0	DMW	1.629E+6	1.592E+6	1.629E+6	1.604E+6
6.25		1.529E+6	1.554E+6	1.516E+6	1.560E+6
12.5		1.416E+6	1.510E+6	1.475E+6	1.583E+6
25		7.084E+5	7.347E+5	7.284E+5	6.796E+5
50		9.956E+4	9.871E+4	9.871E+4	1.157E+5

CETIS Analytical Report

Report Date:	24 Sep-12 14:56 (p 1 of 1)
Test Code:	091412SC4LRT3 | 20-5833-8424

Selenastrum Growth Test (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	00-2115-2688	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.8.6
Analyzed:	24 Sep-12 14:54	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Batch ID:	17-2607-0606	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	14 Sep-12 16:05	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	18 Sep-12 14:11	**Species:**	Selenastrum capricornutum	**Brine:**	
Duration:	94h	**Source:**	In-House Culture	**Age:**	7d

Sample ID:	04-7769-4584	**Code:**	0912-905	**Client:**	Sierra Foothill Laboratory
Sample Date:	14 Sep-12	**Material:**	Boron	**Project:**	
Receive Date:	14 Sep-12	**Source:**	Boron Reference Toxicant		
Sample Age:	16h	**Station:**			

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1481668	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control CV	0.01326	NL - 0.2	Yes	Passes Acceptability Criteria
Control Resp	1.62E+6	1.00E+6 - NL	Yes	Passes Acceptability Criteria

Point Estimates

Level	mg/L	95% LCL	95% UCL
IC25	16.78	15.69	17.79
IC50	23.58	23.09	24.08

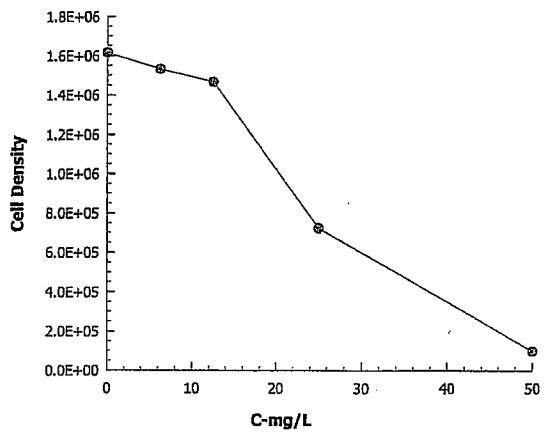
Cell Density Summary

			Calculated Variate						
C-mg/L	**Control Type**	**Count**	**Mean**	**Min**	**Max**	**Std Err**	**Std Dev**	**CV%**	**%Effect**
0	DMW	3	1.617E+6	1.592E+6	1.629E+6	1.238E+4	2.144E+4	1.33%	0.0%
6.25		3	1.533E+6	1.516E+6	1.554E+6	1.095E+4	1.897E+4	1.24%	5.2%
12.5		3	1.467E+6	1.416E+6	1.510E+6	2.757E+4	4.776E+4	3.26%	9.28%
25		3	7.238E+5	7.084E+5	7.347E+5	7.927E+3	1.373E+4	1.9%	55.24%
50		3	9.899E+4	9.871E+4	9.956E+4	2.830E+2	4.902E+2	0.5%	93.88%

Cell Density Detail

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3
0	DMW	1.629E+6	1.592E+6	1.629E+6
6.25		1.529E+6	1.554E+6	1.516E+6
12.5		1.416E+6	1.510E+6	1.475E+6
25		7.084E+5	7.347E+5	7.284E+5
50		9.956E+4	9.871E+4	9.871E+4

Graphics



Selenastrum Growth Test (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	03-1970-1928	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.8.6
Analyzed:	28 Sep-12 14:15	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes

Batch ID:	17-2607-0606	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	14 Sep-12 16:05	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	18 Sep-12 14:11	**Species:**	Selenastrum capricornutum	**Brine:**	
Duration:	94h	**Source:**	In-House Culture	**Age:**	7d

Sample ID:	04-7769-4584	**Code:**	0912-905	**Client:**	Sierra Foothill Laboratory
Sample Date:	14 Sep-12	**Material:**	Boron	**Project:**	
Receive Date:	14 Sep-12	**Source:**	Boron Reference Toxicant		
Sample Age:	16h	**Station:**			

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Power(Y^Z)	-1	C > T	NA	NA	8.27%	6.25	12.5	8.839	

Dunnett Multiple Comparison Test

Control	vs	C-mg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
DMW		6.25	1.503	2.466	6E-08	4	0.2117	CDF	Non-Significant Effect
		12.5*	2.819	2.466	6E-08	4	0.0282	CDF	Significant Effect
		25*	33.82	2.466	6E-08	4	<0.0001	CDF	Significant Effect
		50*	420.1	2.466	6E-08	4	<0.0001	CDF	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control CV	0.01326	NL - 0.2	Yes	Passes Acceptability Criteria
Control Resp	1.62E+6	1.00E+6 - NL	Yes	Passes Acceptability Criteria
PMSD	0.08267	0.091 - 0.29	Yes	Below Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	2.073839E-10	5.184597E-11	4	67840	<0.0001	Significant Effect
Error	7.642868E-15	7.642868E-16	10			
Total	2.073915E-10		14			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	7.025	13.28	0.1346	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9137	0.8328	0.1545	Normal Distribution

Cell Density Summary

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	DMW	3	1.617E+6	1.564E+6	1.670E+6	1629000	1.592E+6	1.629E+6	1.238E+4	1.33%	0.0%
6.25		3	1.533E+6	1.486E+6	1.580E+6	1529000	1.516E+6	1.554E+6	1.095E+4	1.24%	5.2%
12.5		3	1.467E+6	1.348E+6	1.586E+6	1475000	1.416E+6	1.510E+6	2.757E+4	3.26%	9.28%
25		3	7.238E+5	6.897E+5	7.579E+5	728400	7.084E+5	7.347E+5	7.927E+3	1.9%	55.24%
50		3	9.899E+4	9.777E+4	1.002E+5	98710	9.871E+4	9.956E+4	2.830E+2	0.5%	93.88%

Power(Y^Z) Transformed Summary

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	DMW	3	6.19E-07	5.98E-07	6.39E-07	6.14E-07	6.14E-07	6.28E-07	4.77E-09	1.34%	0.0%
6.25		3	6.52E-07	6.32E-07	6.72E-07	6.54E-07	6.44E-07	6.6E-07	4.65E-09	1.23%	-5.49%
12.5		3	6.82E-07	6.27E-07	7.38E-07	6.78E-07	6.62E-07	7.06E-07	1.29E-08	3.28%	-10.29%
25		3	1.38E-06	1.32E-06	1.45E-06	1.37E-06	1.36E-06	1.41E-06	1.53E-08	1.91%	-123.4%
50		3	1.01E-05	9.98E-06	1.02E-05	1.01E-05	1.00E-05	1.01E-05	2.88E-08	0.49%	-1533.0%

Selenastrum Growth Test (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	03-1970-1928	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.8.6
Analyzed:	28 Sep-12 14:15	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes

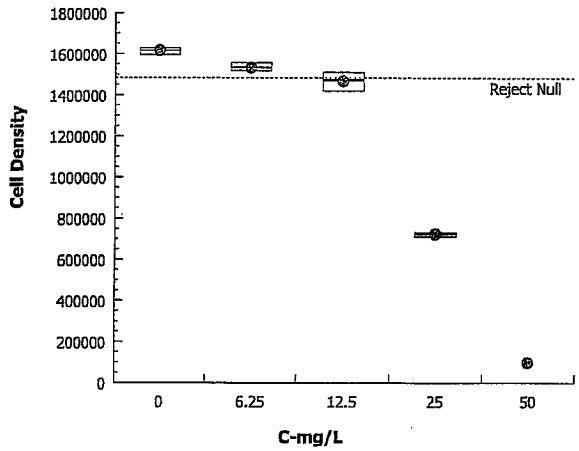
Cell Density Detail

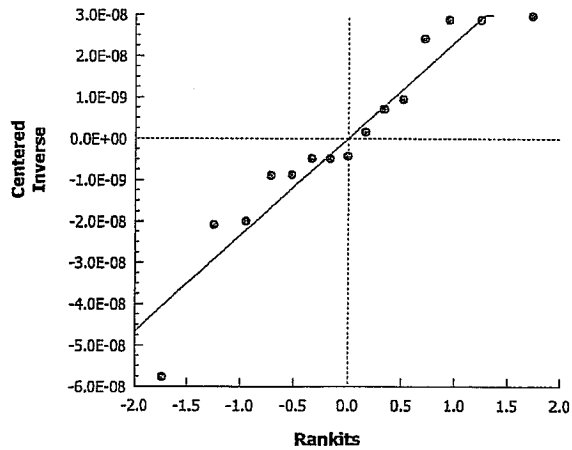
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3
0	DMW	1.629E+6	1.592E+6	1.629E+6
6.25		1.529E+6	1.554E+6	1.516E+6
12.5		1.416E+6	1.510E+6	1.475E+6
25		7.084E+5	7.347E+5	7.284E+5
50		9.956E+4	9.871E+4	9.871E+4

Power(Y^Z) Transformed Detail

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3
0	DMW	6.14E-07	6.28E-07	6.14E-07
6.25		6.54E-07	6.44E-07	6.6E-07
12.5		7.06E-07	6.62E-07	6.78E-07
25		1.41E-06	1.36E-06	1.37E-06
50		1.00E-05	1.01E-05	1.01E-05

Graphics



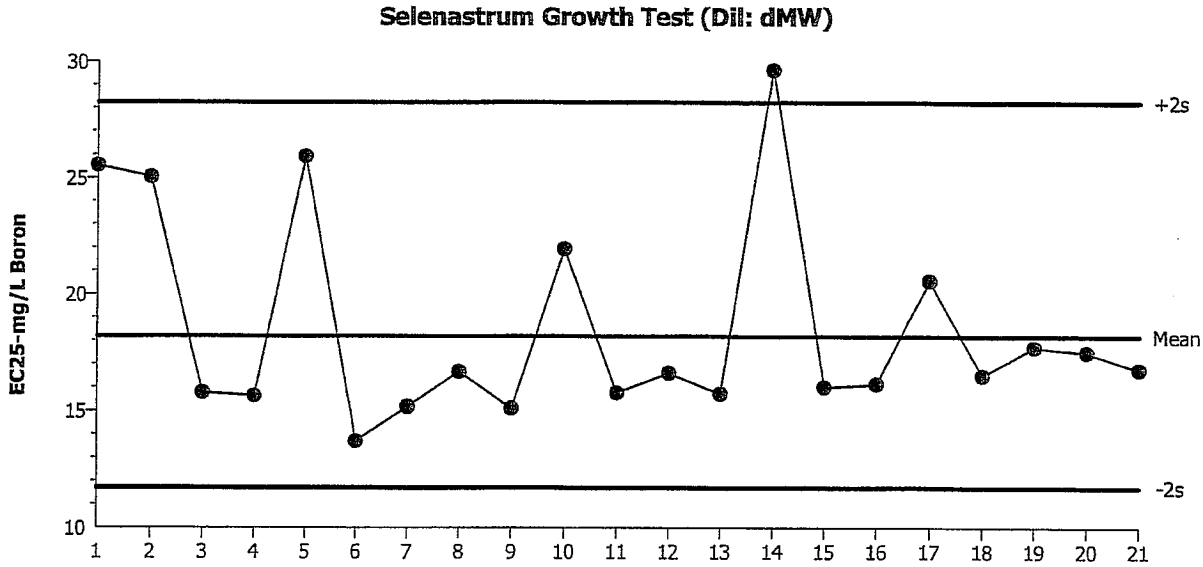


CETIS QC Plot

Report Date: 24 Sep-12 14:55 (1 of 1)

Selenastrum Growth Test (Dil: dMW) — **Sierra Foothill Laboratory Inc.**

Test Type:	Cell Growth	**Organism:**	Selenastrum capricornutum (Green	**Material:**	Boron
Protocol:	EPA/821/R-02-013 (2002)	**Endpoint:**	Cell Density	**Source:**	Boron Reference Toxicant-RT3



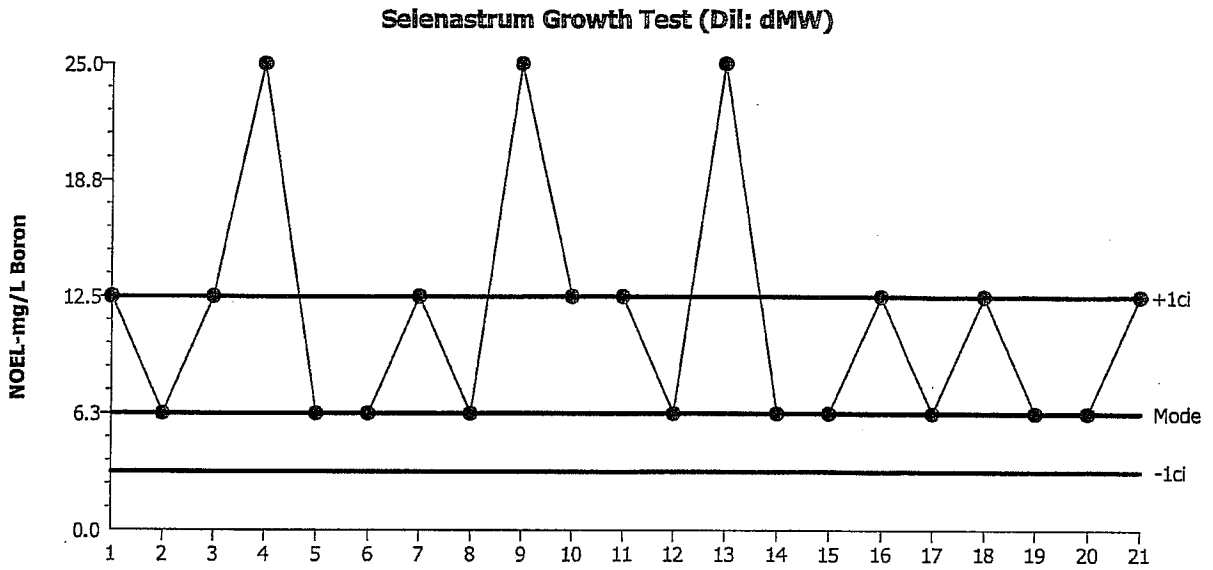
Mean:	18.19	**Count:**	20	**-2s Warning Limit:**	11.72	**-2s Action Limit:**	11.72
Sigma:	NA	**CV:**	24.60%	**+2s Warning Limit:**	28.25	**+2s Action Limit:**	28.25

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2012	Mar	14	15:45	25.53	7.337	1.54			01-8466-8437	06-9520-1873
2			16	15:00	25.03	6.839	1.451			01-7824-4529	16-0627-0649
3		Apr	13	15:15	15.78	-2.411	-0.6463			03-9616-3487	12-6918-8327
4			27	15:30	15.65	-2.542	-0.6842			17-2729-9860	11-1696-8518
5		May	16	13:00	25.91	7.717	1.607			00-3971-7114	14-6681-4294
6			18	14:30	13.7	-4.492	-1.289			12-6346-9185	04-1569-4829
7			25	10:00	15.19	-3.005	-0.8207			08-2148-5843	00-5788-9699
8		Jun	7	14:40	16.67	-1.52	-0.3966			19-8474-2437	18-6847-9663
9			15	14:30	15.11	-3.085	-0.8447			08-8678-3629	11-7808-3621
10			20	13:45	21.94	3.745	0.8508			05-1726-1949	06-6507-8939
11			21	13:00	15.77	-2.418	-0.6483			06-1004-4401	20-4882-1470
12		Jul	5	15:00	16.62	-1.571	-0.4106			16-6396-8003	12-1003-8203
13			13	14:45	15.74	-2.457	-0.6594			15-8351-4393	12-7415-8474
14			18	14:00	29.64	11.45	2.218	(+)	(+)	14-5937-9441	08-9168-0093
15			27	13:00	16.03	-2.166	-0.5762			20-0441-4842	04-8268-2935
16		Aug	17	15:00	16.15	-2.039	-0.5404			03-3576-2595	14-6993-0286
17			22	13:10	20.57	2.378	0.5584			14-5706-6793	18-4263-9181
18			24	13:00	16.51	-1.681	-0.4408			16-1220-9580	05-9590-4857
19			31	13:45	17.73	-0.4633	-0.1173			15-6788-2234	14-2675-3848
20		Sep	7	13:45	17.51	-0.6794	-0.173			15-2523-1298	14-1106-6154
21			14	16:05	16.78	-1.416	-0.3683			20-5833-8424	00-2115-2688

Selenastrum Growth Test (Dil: dMW) **Sierra Foothill Laboratory Inc.**

Test Type:	Cell Growth	**Organism:**	Selenastrum capricornutum (Green	**Material:**	Boron
Protocol:	EPA/821/R-02-013 (2002)	**Endpoint:**	Cell Density	**Source:**	Boron Reference Toxicant-RT3



Mode: 6.25 **Count:** 20 **-1ci Action Limit:** 3.125
Dil Fact: 0.5 **+1ci Action Limit:** 12.5

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2012	Mar	16	15:00	12.5	6.25				01-7824-4529	10-0718-2689
2		Apr	13	15:15	6.25	0				03-9616-3487	11-0351-6670
3			27	15:30	12.5	6.25				17-2729-9860	08-2735-2312
4		May	16	13:00	25	18.75			(+)	00-3971-7114	03-3382-0997
5			18	14:30	6.25	0				12-6346-9185	07-5710-8544
6			25	10:00	6.25	0				08-2148-5843	08-9696-3350
7		Jun	7	14:40	12.5	6.25				19-8474-2437	12-6984-0136
8			15	14:30	6.25	0				08-8678-3629	06-4487-1819
9			20	13:45	25	18.75			(+)	05-1726-1949	17-1227-6383
10			21	13:00	12.5	6.25				06-1004-4401	08-9499-9787
11		Jul	5	15:00	12.5	6.25				16-6396-8003	18-8765-4195
12			13	14:45	6.25	0				15-8351-4393	02-3096-4972
13			18	14:00	25	18.75			(+)	14-5937-9441	02-6180-2868
14			27	13:00	6.25	0				20-0441-4842	17-7021-9443
15		Aug	17	15:00	6.25	0				03-3576-2595	01-0707-0805
16			22	13:10	12.5	6.25				14-5706-6793	05-0512-5036
17			24	13:00	6.25	0				16-1220-9580	05-3557-9936
18			31	13:45	12.5	6.25				15-6788-2234	07-1772-7041
19		Sep	7	13:45	6.25	0				15-2523-1298	10-7585-5642
20			14	16:05	6.25	0				20-5833-8424	03-1970-1928
21			21	11:15	12.5	6.25				18-2645-6189	08-9217-0324