

Effluent Quality Assessment

Florida Atlantic University Sea-Tech Research/Testing Facility (FAU Sea-Tech)

Broward County

NPDES #FL0178870

Sampled June 16, 2008

September 2008

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration

Quality Manual No. 870346G
NELAC Certification No. E31780

Florida Atlantic University Sea-Tech Research/Testing Facility (FAU Sea-Tech), 101 N. Beach Road, Dania, Broward County, Florida, 33305. NPDES #FL0178870. Effluent samples for this facility were collected on June 16, 2008.

Introduction

Florida Atlantic University Sea-Tech Research/Testing Facility (FAU Sea-Tech) is a research institute for ocean engineering practices; primarily testing the effects of seawater on aluminum, steel and concrete building materials. Seawater is taken in from the Atlantic Ocean through a 182.9 m (~ 600 feet), 0.15 m diameter (6 inch) HDPE pipe. Metal and concrete materials are exposed to the seawater within the facility. The seawater is then discharged at a rate of ~ 100 gallons per minute (maximum) to the Class III Marine waters of Whiskey Creek/Intracoastal Waterway through a 0.15 m diameter (6 inch) HDPE pipe (Outfall D001) that has an air gap above mean high water. Outfall D001 is located approximately at latitude 26º 02' 50" N, longitude 80º 07' 11" W. Effluent discharge from the facility is continuous. The facility has a design flow (based on pump running time) of 0.062 million gallons per day (MGD) annual average daily flow (AADF) and a daily maximum flow of 0.144 MGD. The AADF through the facility from June 2007 through May 2008 was 0.020 MGD. The flow during the sampling event was estimated at 0.062 MGD. The flow-through seawater is not treated and no chemical additives are used in the testing process.

The facility has no Administrative Orders, Consent Orders or mixing zones. A review of Discharge Monitoring Report (DMR) data for the past year, showed no violations. (Facility information provided by Lisa Gatch of FDEP Southeast District.)

The facility has no permitted toxicity test requirements; however, in a 48-hour acute screening test of 100% effluent, mortality of <20% provides confidence that the effluent meets the acute toxicity criterion of Florida's Surface Water Quality Standards (Rule 62-302.500 (1)(a)4, F.A.C.).

Methods

Samples were collected from Outfall D001 by Terry Davis (FDEP Southeast District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling. All DEP SOPs are available on the web at: http://www.floridadep.org/labs/qa/sops.htm

See Appendix A for the completed chain of custody form.

The 48-hour screening toxicity tests and algal growth potential test were performed following internal DEP SOPs TA07_03, TA07_04, and TA08_01 through TA08_09. All internal DEP SOPs are available on the web at: http://www.floridadep.org/labs/cgi-bin/sop/biosop.asp.

Toxicity Test Results

Tests were performed June 17 - 18, 2008.

Americamysis bahia 48-hour acute screening bioassay –	LC_{50} > 100%, 5% mortality* in 100% sample at 48 hours
Menidia beryllina 48-hour acute screening bioassay –	LC_{50} > 100%, 15% mortality* in 100% sample at 48 hours

The bioassay samples were not acutely toxic to the test organisms.

See Appendix B for bioassay bench sheets. See Appendix C for results of the last 20 standard reference toxicant (SRT) tests and the bench sheets and statistical analyses of the SRT tests that correspond to these facility tests. See Appendix D for test organism receipts.

*NOTE: In a 48-hour acute screening test of 100% effluent, mortality of <20% provides confidence that the effluent meets the acute toxicity criterion of Florida's Surface Water Quality Standards (Rule 62-302.500 (1)(a)4, F.A.C.). Mortality between 20-50% indicates low to moderate levels of toxicity, and further action may be required. Mortality of >50% indicates that the effluent fails to meet the minimum requirement to discharge to waters of the state (Rule 62-4.244(3)(a), F.A.C.).

Algal Growth Potential

The effluent Algal Growth Potential (AGP) was 3.0 (AU[1]) mg dry wt/L of the saltwater species *Dunaliella tertiolecta.* Raschke and Shultz found that AGP values above 10.0 mg dry weight/L represent a "problem" threshold for marine receiving waters, implying nutrient enrichment (personal communication with Ron Raschke USEPA Region 4, 1987). The analytical chemistry suggests that the effluent is phosphorus-limited (Maloney et al, 1974).

[1]A – Value reported is the mean of two or more determinations.
U – Material was analyzed for but not detected; the value reported in the minimum detection limit.

Due to the salinity of the sample, an AGP test with the freshwater species, *Pseudokirchneriella subcapitata*, was not performed.

See Table 1 for AGP results

Chemistry Results

Total residual chlorine and total ammonia were not detected in the bioassay sample in the laboratory. The total ammonia concentration in the sample collected and preserved for chemical analysis was 0.012 (I) mg/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was < 0.02 mg/L.

I – The reported value is between the laboratory method detection limit (MDL) and the laboratory practical quantitation limit (PQL).

No substances of concern were detected in the effluent at levels that do not comply with Class III Marine water quality criteria (62-302.530, F.A.C.). Arsenic was detected between the (MDL) and the (PQL).

See Table 2 for results of analytes detected in the effluent, and corresponding limits. See Appendix E for a complete list of chemical analyses performed. See Appendix F for bioassay lab equipment.

Conclusion

The effluent sample collected from Outfall D001 for this facility on June 16, 2008, was not acutely toxic to either test species during the 48-hour acute screening bioassays. The effluent AGP result was less than the "problem" threshold for marine receiving waters. Effluent water quality samples did not exceed any applicable water quality standards or violate any permit conditions.

Literature Cited

Maloney, T. E., W. E. Miller, and D. T. Specht. 1974. The Marine Algal Assay Procedure: Bottle Test. National Environmental Research Center Office of Research and Development. U. S. EPA, Corvallis, Oregon. 43 p.

Table 1. Measured algal growth potential (AGP; mg dry weight/L) of the saltwater species *Dunaliella tertiolecta* and ratios of nitrogen to phosphorus for samples collected from the Florida Atlantic University Sea-Tech Research/Testing Facility on June 16, 2008.

Florida Atlantic University Sea-Tech Research/Testing Facility			
Location	AGP (measured)	Inorganic N:P ratio	Total N:P ratio
D-001 Outfall	3.0 AU	219.3	131.0

A - Value reported is the mean of two or more determinations.

U - Material was analyzed for but not detected; the value reported is the minimum detection limit.

Table 2. Effluent limits, Class III Criteria for predominantly marine waters and chemical data for samples collected from the Florida Atlantic University Sea Tech Research/Training Facility on June 16, 2008.

Florida Atlantic University Sea-Tech Research/Testing Facility NPDES# FL0178870	Class III Criteria	Effluent Limits	D001 Outfall
Organic Constituents (µg/L)			
None Detected	-	-	None Detected
Metals (µg/L unless otherwise noted)			
Aluminum	≤ 1,500	≤ 1,500 s	180 U
Arsenic	≤ 50	-	2 I
Cadmium	≤ 8.8	-	0.06 U
Calcium (mg/L)	-	-	428 A
Chromium-III	-	-	3 U
Copper	≤ 3.7	-	1.5 UJ
Iron	≤ 300	≤ 300 s	90 U
Lead	≤ 8.5	-	0.6 U
Magnesium (mg/L)	-	-	1380 A
Nickel	≤ 8.3	-	0.75 U
Selenium	≤ 71	-	1.5 U
Silver	≤ 2.3	-	0.075 U
Zinc	≤ 86	-	15 U
Nutrients (mg/L)			
Ortho-phosphate	-	-	0.011 I
Total Phosphorus	-	-	0.02 U
Total Ammonia	-	-	0.012 I
Un-ionized Ammonia	-	-	≤ 0.02 c
Nitrate and Nitrite	-	-	2.4
Total Kjeldahl Nitrogen	-	-	0.22
Organic Nitrogen	-	-	0.208 c
Total Nitrogen	-	-	2.62 c
General Physical and Chemical Parameters			
Dissolved Oxygen (mg/L)	≥ 4.0	-	5.7
pH (SU)	6.5 - 8.5	6.5 - 8.5 s	7.9
Conductivity (µmhos/cm)	-	-	53,486
Temperature °C	-	-	28.6
Salinity	-	-	32.7 c
Total Residual Chlorine (mg/L)	≤ 0.01	-	< 0.03 £
Chlorophyll a (µg/L) - Corrected	-	-	1 I
Phaeophytin (µg/L)	-	-	0.24 U
CBOD, 5 day (mg/L), N - inhibited	-	-	0.2 U
Flow (MGD)	-	≤ 0.062 a	0.062 a
Hardness (mg $CaCO_3$)	-	-	6,751.556 c

Value exceeds the Class III Water Quality Criteria or permit limits

a - Annual average
c - Value is calculated
s - Single sample
A - Value reported is the mean of two or more determinations
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J - Estimated value
U - Material analyzed for but not detected; value reported is the method detection limit
£ - Analysis performed in bioassay laboratory

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Request Number: RQ-2008-06-16-34
Fau Sea Tech Facility

Event ID *

Requester: Jennifer Paris

Field Report Prepared By: Terry Davis

Customer: SE-DIST

Collected By: Terry Davis

Send Final Report To ~~Todd Brown~~ Terry Davis

Project ID: FYI3

Sampling Agency: Southeast District

PMAS: 1143

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	D-001 - outfall	☐ Comp ☒ Grab	Date 6/16/08 Time 1045 Central	Date Time	A
	Field ID: SJ-FAV-1	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L): 10.32	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc): Water, Salt	Temp (C): 28.57	pH: 7.90	Sample Depth: .01 ☒ m ☐ ft	☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm): 53486
	Latitude d ' "	Longitude o ' "	Comments: 0.31%		NPDES Number

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	Blank	☐ Comp ☒ Grab	Date 6/16/08 Time 1100 Central	Date Time	B
	Field ID: SJ-FAV-2	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc): Water, d. i.	Temp (C)	pH	Sample Depth: .01 ☒ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm) NPDES Number
	Latitude o ' "	Longitude o ' "	Comments		

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
		☐ Comp ☐ Grab	Date Time Central	Date Time	
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc): Temp (C)	pH	Sample Depth: ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number
	Latitude o ' "	Longitude o ' "	Comments		

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
		☐ Comp ☐ Grab	Date Time Central	Date Time	
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc): Temp (C)	pH	Sample Depth: ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number
	Latitude o ' "	Longitude o ' "	Comments: 2 blanks Reading for JD, 957 6.17.08		

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
[illegible]	6/16/08 1245	DHL	ABC	6-17-08 0850				

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

FDEP Biology Laboratory - Acute Screen Bioassay Bench Sheets

Facility: FAU Tech Facility

Address: 101 North Beach Road

City: Dania County: Broward 33305

Contact/District: Terry Davis / Southeast

NPDES Permit #: FL 0178870

LIMS Job #: FLH-2008-06-17-19

LIMS Sample #: 1108360

Lims Data Entry: ~~1108360~~ MF Faulty enter - 7-1-08 MF

Data Entry Verification: 7-1-08 BA

Sample Collection: Date: 6-16-08 Time: 1045

Hold Time Start: Date: 6-16-08 Time: 1045

Comments:

Instructions (for below): Circle appropriate wording. If yes is circled, complete blanks.

Test Type: (Screen) Static / Static Renewal / Flow-through

Test Duration: (48) 96 Hours.

Test 1 validation: Test 1: SOP TA 07_03

Control survival ≥90%: (Yes) No

Temperature Range ≤3°C: (Yes) No

Test 2 validation: Test 2: SOP TA 07_04

Control survival ≥90%: (Yes) No

Temperature Range ≤3°C: (Yes) No

Tests incubated in Incubator #2

Initial sample handling:

PH adjustment: yes (no) Initial pH: ____ NaOH N HCl N ____ Drops mL Final pH: ____

Aeration: yes (no) Initial DO: ____mg/L Final DO: ____mg/L Duration: ____minutes Rate: ~ ____bubbles/min

Salinity adjusted (Test 1): yes (no) Initial Salinity: ____ Final Salinity: ____ Salts Hypersaline brine

Salinity adjusted (Test 2): yes (no) Initial Salinity: ____ Final Salinity: ____ Salts Hypersaline brine

Dechlorination: yes (no) ____mL of 0.025N Sodium Thiosulfate per liter of sample. Final TRC: ____

Light Intensity: 50 - 100 ft. candles

Photoperiod: 16 light 8 dark

Temperature Range °C:

Incubator # 2 min 22.9 max 25.5 mean 24.2

Incubator # — min — max — mean —

Room B246 min 25.8 max 26.6 mean 26.2

Sample Validation:

Temperature: Shipped ≤6°C (Yes) No Hand Delivered: Cooling (received °C < collected °C) Yes No

Holding Time: ≤36 Hours (Yes) No (Composite-end of collection; grab-when collected; 4 in 24 - time last sample collected)

Test 1:% mortality in 100% sample: 5% LC50: >100%

Test 2:% mortality in 100% sample: 15% LC50: >100%

Investigators' Signatures

Marshall Faircloth

James Daniels

Brian Adams

Brittan C. Wolfe

REVIEWER

Water Quality Parameters	20% DMW	Moderately Hard Water/ Well Water	Salt Water (ASW) NSW Test 1	Salt Water (ASW) NSW Test 2	Other:	Original Sample	Method	Measured by	Verified by
Field Total Residual Cl_2 (mg/L):	N/A	N/A	N/A	N/A		—	Not measured	—	MF
Lab Total Residual Cl_2 (mg/L):			<0.03	<0.03		<0.03	HACH	JD	MF
Alkalinity (mg/L as $CaCO_3$):			251	251		157	HACH	BA	MF
Hardness (mg/L as $CaCO_3$):			—	—		—	HACH	—	—
Total Ammonia (mg/L as N):			<0.068	<0.068		<0.068	DENVER	MF	JD
Salinity (ppth):			~35	~35		~37	~~YSI~~/ Mettler	JD	MF

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Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1108360 Test #: 1/2 SOP#:TA 07 03 Test Started: Date 6.17.08 Time: 1200
Organism/Batch/Age: A.bahia/6.17.08/ 5days Test Ended: Date 6.19.08 Time: 1300
Chamber/Test Volume: 1000 / 500 ml Diluent/ Batch: ASW 35‰ / 6.16.08
Food/Batch: YCT____ P.sub____ Artemia 0hr 10-1-08 24hr 10-2-08 48hr____ 72hr____ Artemia Lot# 38438
Feeding: (Prior to Test) Prior to Renewal (Daily)

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Ctrl	A	B1	5	5	5			
	B	B2	5	5	5			
	C	B3	5	5	4			
	D	B4	5	5	5			
100%	A	B5	5	5	5			
	B	B6	5	5	5			
	C	B7	5	5	5			
	D	B8	5	5	4			
Loaded/Verified by: MF/JD		Checked by:	JD	JD	MF			

m = missing d = dead BR/AR = Before/After Renewal

Comments:

Test Results:

Screening Tests: Report LC50 as >100%, =100%, or <100%.
% mortality in 100% sample: 5 LC50: >100%
If Calculated: 95% CI________ Method________

Substitue highest test concentration used if other than 100% (example: Ocean outfall tested at 30% concentration).

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Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1108360 Test #: 2/2 SOP#:TA 07 04 Test Started: Date 6/17/08 Time: 1210

Organism/Batch/Age: A.bahia/6.17.08/ 13days Test Ended: Date 6-19-08 Time: 1300

Chamber/Test Volume: 1000 / 500 ml Diluent/ Batch: ASW 35‰ / 61608

Food/Batch: YCT — P.sub — Artemia 0hr 101-08 24hr____ 48hr____ 72hr____ Artemia Lot# 38438

Feeding: (Prior to Test) Prior to Renewal Daily

Concentration	Replicate	Chamber #	Test Hour: 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
ctrl	A	B9	5	5	5			
	B	B10	5	4/D	4			
	C	B11	5	5	5			
	D	B12	5	5	5			
100%	A	B13	5	5	5			
	B	B14	5	4/D	4			
	C	B15	5	4/D	4			
	D	B16	5	4/D	4			
Loaded/Verified by: mf / JD		Checked by:	JD	JD	mF			

m = missing d = dead BR/AR = Before/After Renewal

Comments:

Test Results:

Screening Tests: Report LC50 as >100%, =100%, or <100%.

% mortality in 100% sample: 15 LC50: >100%

If Calculated: 95% CI________ Method________

Substitue highest test concentration used if other than 100% (example: Ocean outfall tested at 30% concentration).

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FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

IMS Sample # : 1108360 **Test #:** 1 of 2

EST SOP #: TA07_ 03 **Test Species:** *Ceriodaphnia dubia* *Cyprinella leedsi* *Pimephales promelas* (*Americamysis bahia*) *Menidia beryllina* Other:_____

Concentration Ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
eplicate	A	B	C			
H (S.U.)	8.4	8.2	8.2			
emperature °C	24.3	24.3	24.7			
issolved Oxygen mg/L	7.4 (6.0)	5.5	5.4			
onductivity µmhos (mmhos)	52.5	53.4	53.3			
(initials) Measured by:	JJ	SO	MF			
(initials) Recorded by:	JJ	SO	MF			

omments: 48 hour Salinity 35.1

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	8.1	8.1	7.9			
Temperature °C	25.4	24.5	24.7			
Dissolved Oxygen mg/L	7.2 (6.0)	5.2	5.2			
Conductivity µmhos (mmhos)	57.8	58.7	58.0			
(initials) Measured by:	JJ	SO	MF			
(initials) Recorded by:	JJ	SO	MF			

Comments: 48 hour salinity 38.9

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
eplicate						
H (S.U.)						
emperature °C						
issolved Oxygen mg/L						
onductivity µmhos mmhos						
(initials) Measured by:						
(initials) Recorded by:						

omments:

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate						
pH (S.U.)						
Temperature °C						
Dissolved Oxygen mg/L						
Conductivity µmhos mmhos						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

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FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 110 8360 **Test #:** 2 of 2

TEST SOP #: TA07_ 04 **Test Species:** *Ceriodaphnia dubia* *Cyprinella leedsi* *Pimephales promelas* *Americamysis bahia* (*Menidia beryllina*) Other:_____

Concentration Ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	8.4	8.4	8.4			
Temperature °C	24.3	24.3	24.7			
Dissolved Oxygen mg/L	6.0	5.1	5.5			
Conductivity µmhos (mmhos)	52.3	54.2	53.4			
(initials) Measured by:	JD	JD	MF			
(initials) Recorded by:	JD	JD	MF			

Comments: 48 hr Salinity 35.1 ppth

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	8.1	8.1	8.0			
Temperature °C	24.3	24.7	24.5			
Dissolved Oxygen mg/L	6.0	5.3	5.8			
Conductivity µmhos (mmhos)	57.9	58.8	57.9			
(initials) Measured by:	JD	JD	MF			
(initials) Recorded by:	JD	JD	MF			

Comments: 48 hr Salinity 35.6 ppth

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate						
pH (S.U.)						
Temperature °C						
Dissolved Oxygen mg/L						
Conductivity µmhos mmhos						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate						
pH (S.U.)						
Temperature °C						
Dissolved Oxygen mg/L						
Conductivity µmhos mmhos						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

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Appendix C. SRT Bench Sheets and Statistical Analysis

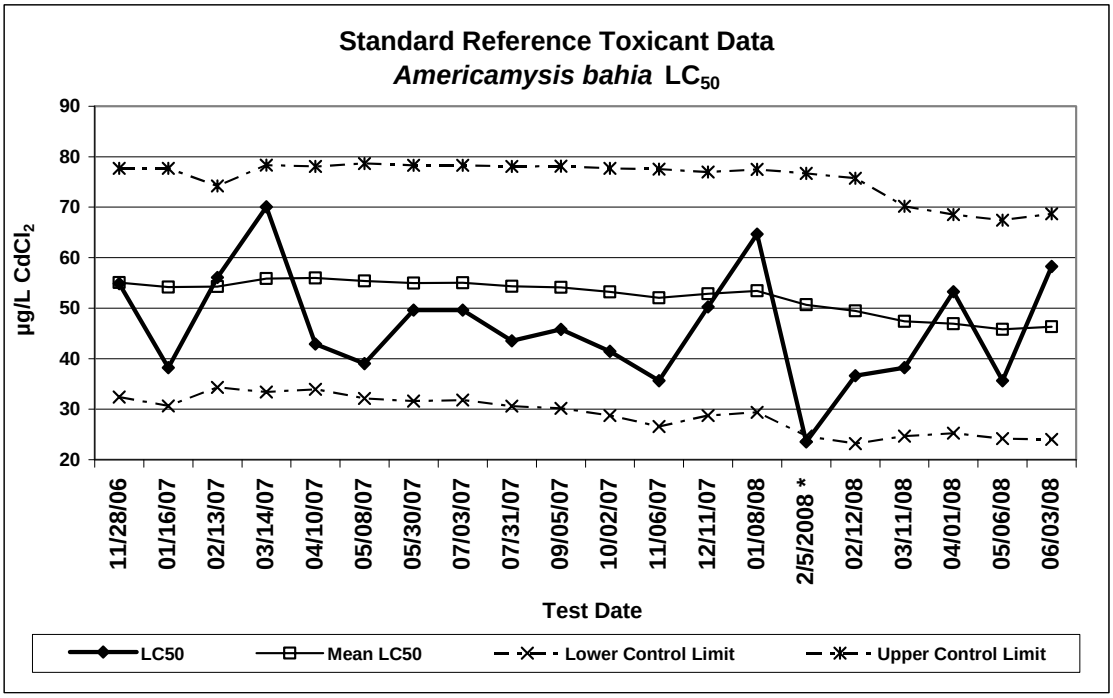
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 48-hour Acute Toxicity
Americamysis bahia (mysid shrimp) - Cadmium Chloride ($CdCl_2$)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
11/28/06	54.87	55.06	11.33	32.41	77.71
01/16/07	38.23	54.18	11.77	30.65	77.71
02/13/07	56.06	54.27	9.97	34.33	74.21
03/14/07	70.07	55.86	11.23	33.40	78.32
04/10/07	42.91	56.00	11.04	33.91	78.08
05/08/07	39.00	55.42	11.63	32.16	78.68
05/30/07	49.64	54.95	11.67	31.62	78.29
07/03/07	49.64	55.04	11.62	31.80	78.27
07/31/07	43.54	54.34	11.88	30.58	78.10
09/05/07	45.79	54.15	11.99	30.17	78.13
10/02/07	41.44	53.25	12.24	28.76	77.73
11/06/07	35.65	52.06	12.76	26.55	77.57
12/11/07	50.27	52.86	12.06	28.75	76.98
01/08/08	64.65	53.42	12.03	29.36	77.48
2/5/2008 *	23.52	50.68	13.02	24.64	76.72
02/12/08	36.63	49.45	13.14	23.17	75.74
03/11/08	38.21	47.42	11.38	24.66	70.19
04/01/08	53.27	46.90	10.82	25.26	68.53
05/06/08	35.65	45.82	10.81	24.19	67.45
06/03/08	58.28	46.36	11.17	24.03	68.69

Lower Confidence Limit = mean - 2 * Std Dev
Upper Confidence Limit = mean + 2 * Std Dev

CV = 24.08
EPA reference 75th quartile CV = 26%



* Test result exceeded control limits on 2/5/2008. Test repeated on 2/12/2008.

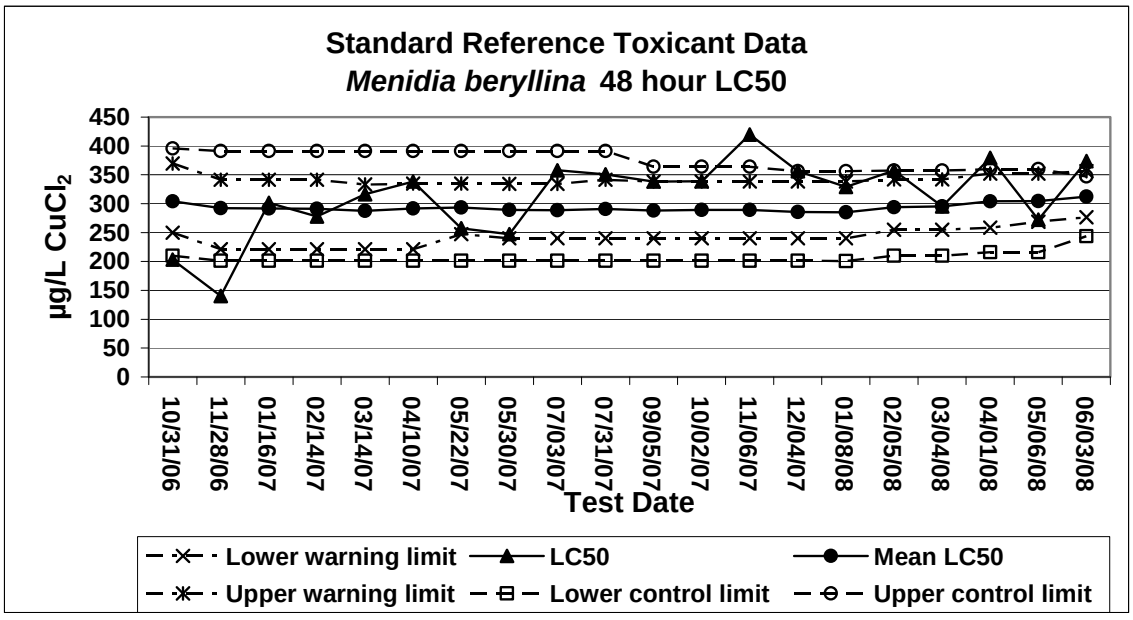
Appendix C. (continued)

Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - Acute Toxicity
Menidia beryllina (Inland silverside) - Copper Chloride ($CuCl_2$)

Date	LC50	Mean LC50	Lower control limit	Lower warning limit	Upper warning limit	Upper control limit
10/31/06	203.06	304.28	210.0	249.7	369.7	395.6
11/28/06	140.31	292.22	201.0	221.3	341.2	391.4
01/16/07	301.29	291.93	201.0	221.3	341.2	391.4
02/14/07	278.00	291.27	201.0	221.3	341.2	391.4
03/14/07	316.16	287.74	201.0	221.3	333.3	391.4
04/10/07	338.35	291.67	201.0	221.3	334.8	391.4
05/22/07	257.44	293.42	201.0	247.5	334.8	391.4
05/30/07	247.36	289.10	201.0	239.9	334.4	391.4
07/03/07	357.65	288.79	201.0	239.9	334.4	391.4
07/31/07	350.68	290.88	201.0	239.9	341.4	391.4
09/05/07	338.18	288.38	201.0	239.9	338.2	363.8
10/02/07	338.90	289.15	201.0	239.9	338.4	363.8
11/06/07	419.55	289.15	201.0	239.9	338.4	363.8
12/04/07	356.07	285.50	201.0	239.9	338.4	356.2
01/08/08	329.03	285.29	200.9	239.9	338.5	356.2
02/05/08	357.47	294.07	210.0	254.9	341.9	357.5
03/04/08	295.52	295.31	210.0	254.9	341.9	357.5
04/01/08	379.50	304.05	216.2	258.5	352.0	359.8
05/06/08	272.50	304.73	216.2	268.7	352.0	359.8
06/03/08	373.47	312.52	243.9	276.6	356.4	347.1

Means are of the last 20 SRT tests.
Upper warning and control limits are the 75th and 90th percentiles, respectively, of the past 20 LC50s.
Lower warning and control limits are the 25th and 10th percentiles, respectively, of the past 20 LC50s.
EPA reference 75th quartile CV = 21% **CV = 20.96**



Appendix C. (continued)

000023

FDEP Biology Laboratory - Acute SRT Bench Sheet

Test Organism: *Americamysis bahia* Method 2007.0 | *Menidia beryllina* Method 2006.0 | *Hyalella azteca* Method 100.1 EPA-600-R-99-064
Ceriodaphnia dubia Method 2002.0 | *Cyprinella leedsi* Method 2000.0 | *Pimephales promelas* Method 2000.0 | Other: _____

Method from EPA-821-R-02-012
Test Type: 48 hour non-renewal / (96 hour renewal)
Test Page 1 of 2

Diluent/ Batch #: ASW / 5.15.08
Toxicant/ Batch#: cdcl2 / 6.2.08

Test Beginning: Date: 6.3.08 Time: 1410
Test Ending: Date: 6.7.08 Time: 1210

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	2403	Hach	JD
Alkalinity (mg/L as $CaCO_3$):	226	Hach	BM
Hardness (mg.L as $CaCO_3$):	—	Hach	—
Total Ammonia (mg/L as N):	20034	Denver	MF
Salinity (ppth):	20	Mettler	JD

Organism Batch #/ Age: 6.3.08 / 1 day, 5
Feeding: (Prior to test) / (Prior to renewal) (Daily)
Food: YCT / P.subcapitata Artemia: Lot # 38438
Food Batch: _____ / _____ 0hr 9:08 24hr 9:08 48hr 9:08 72hr 9:08
Chamber size: 350 mL
Test volume: 250 mL per replicate

Conc. g/L (µg/L) mg/L	Rep.	Chamber #	Number Live 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	pH (SU) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	Temperature (°C) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	D.O. (mg/L) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	Uncorrected Conductivity µmhos/cm mmhos/cm 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr
Control	A	tox1	5	5	5	8.4			24.0		24.0	7.3		5.0	32.5		33.2
	B	tox2	5	5	5		8.1			24.0			4.6			32.3	
	C	tox3	5	5	5			8.0			24.1						33.2
	D	tox4	5	4D	4												
20	A	tox5	5	5	5	8.4			24.0			6.2		5.0	32.8		
	B	tox6	5	4	4		8.1			24.0			4.5			32.9	
	C	tox7	5	4D	4			8.0			24.0						33.5
	D	tox8	5	5	5												
30	A	tox9	5	5	5	8.4			24.0			7.1		4.1	32.9		
	B	tox10	5	5	5		8.2			24.0			4.6			33.0	
	C	tox11	5	5	4D			7.9			24.1						33.6
	D	tox12	5	4D	4												
45	A	tox13	5	3D	1D	8.4			24.0			7.3		4.0	32.8		
	B	tox14	5	5	5		8.0			24.1			4.5			33.1	
	C	tox15	5	5	4D			7.9			24.0						33.6
	D	tox16	5	5	4D												
67	A	tox17	5	3D	1D	8.4			24.0			7.3		4.9	32.3		
	B	tox18	5	4D	3D		8.0			24.0			4.4			32.3	
	C	tox19	5	3D	3			8.0			24.1						33.2
	D	tox20	5	2D	1D												
100	A	tox21	5	0D	—	8.4			24.0			7.3		5.1	32.9		
	B	tox22	5	2D	0D		8.1			24.2			4.4			33.1	
	C	tox23	5	2D	0D			8.0			24.0						33.4
	D	tox24	5	0D	—												
	A																
	B																
	C																
	D																
Loaded / measured by:			MF	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD
Recorded by:			JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD

Investigators' Signatures
Jason Pandy
Bruce
Marshall Faircloth
_____
_____
Loretta C Wolfe
REVIEWER

Concentrations prepared by: JD
Loading verified by: JD
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 23.8 max. 25.6 mean 24.7
Incubator # ___ min. ___ max. ___ mean. ___
Room B248 min. 25.8 max. 26.8 mean 26.3

Comments:

Statistics: Method: Spearman-Karber
48 / 96 hour LC_{50}: 58.28
95% Confidence Interval: lower 50.98 upper 66.62

Appendix C. (continued)

000024

FDEP Biology Laboratory - Acute SRT Bench Sheet

Test Organism: (Americamysis bahia) Method 2007.0 | Menidia beryllina Method 2006.0 | Hyalella azteca Method 100.1 EPA-600-R-99-064
Ceriodaphnia dubia Method 2002.0 | Cyprinella leedsi Method 2000.0 | Pimephales promelas Method 2000.0 | Other: _____

Method from EPA-821-R-02-012
Test Type: 48 hour non-renewal (96 hour renewal)
Test Page 2 of 2

Diluent/ Batch #: ASW 1 5,19.08
Toxicant/ Batch#: CdCl2 1 6.2.07

Test Beginning: Date: 6.3.08 Time: 1710
Test Ending: Date: 6-7-08 Time: 1210

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	0.03	Hach	JD
Alkalinity (mg/L as $CaCO_3$):	226	Hach	BA
Hardness (mg.L as $CaCO_3$):	—	Hach	—
Total Ammonia (mg/L as N):	0.034	Denver	MF
Salinity (ppth):	20	Mettler	JD

Organism Batch #/ Age: 6.3.08 1 5d 5
Feeding: (Prior to test) Prior to renewal / Daily
Food: YCT P.subcapitata Artemia: Lot # 38438
Food Batch: — — 0hr 6.5.08 24hr 6.6.08 48hr 6.7.08 72hr 6.8.08
Chamber size: 350 mL
Test volume: 250 mL per replicate

Conc. g/L (µg/L) mg/L	Rep.	Chamber #	Number Live 0 hr	24 hr	48 hr	pH (SU) 0 hr	24 hr	48 hr	Temperature (°C) 0 hr	24 hr	48 hr	D.O. (mg/L) 0 hr	24 hr	48 hr	Uncorrected Conductivity µmhos/cm (mmhos/cm) 0 hr	24 hr	48 hr
			(0 hr)	(24 hr)	(48 hr)	(0 hr)	(24 hr)	(48 hr)	(0 hr)	(24 hr)	(48 hr)	(0 hr)	(24 hr)	(48 hr)	(0 hr)	(24 hr)	(48 hr)
Control	A	tox1	5	5	5			8.0			24.9			4.7			34.2
	B	tox2	5	5	5												
	C	tox3	5	5	5	8.3			24.0			6.4			326		
	D	tox4	4	4	4		8.0			24.1			4.5			32.8	
20	A	tox5	5	5	2 3D			7.9			25.0			4.4			34.3
	B	tox6	4	4	2 2D												
	C	tox7	4	4	3 1D	8.3			24.0			6.4			33.0		
	D	tox8	5	5	5		8.1			24.2			4.5			32.4	
30	A	tox9	5	5	2 3D			7.9			24.9			4.3			34.4
	B	Tox10	5	3 3D	3												
	C	tox11	4	4	2	8.3			24.0			6.4			32.9		
	D	tox12	4	4	3		8.0			24.3			4.3			32.8	
45	A	tox13	1	1	0 1D			7.9			24.9			4.7			34.4
	B	tox14	5	1 4D	0 1D												
	C	tox15	4	2 2D	0 2D	8.3			24.0			6.4			32.8		
	D	tox16	4	1 3D	1		8.1			24.2			4.8			32.8	
67	A	tox17	1	0 1D													
	B	tox18	3	0 3D													
	C	tox19	3	0 3D		8.3			24.0	25D		6.5			32.4		
	D	tox20	1	0 1D			8.1			24.2			5.0			32.3	
100	A	tox21															
	B	tox22															
	C	tox23															
	D	tox24															
	A																
	B																
	C																
	D																
Loaded / measured by:			JD	JD	MF	JD	JD	MF	JD	JD	MF	JD	JD	MF	JD	JD	MF
Recorded by:			JD	JD	MF	JD	JD	MF	JD	JD	MF	JD	JD	MF	JD	JD	MF

Investigators' Signatures
Bruce Aiken
Marshall Fairbrother
James Daniels

Loretta C. Wolfe
REVIEWER

Concentrations prepared by: JD
Loading verified by: JD
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 9 min. 23.8 max. 25.6 mean 24.7
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 25.8 max. 26.8 mean 26.3

Comments:

Statistics: Method: Spearman-Karber
48 / 96 hour LC_{50}: 28.81
95% Confidence Interval: lower 24.02 upper 34.48

Appendix C. (continued)

000021

FDEP Biology Laboratory - Acute SRT Bench Sheet

Test Organism: *Americamysis bahia* Method 2007.0 / (*Menidia beryllina* Method 2006.0) / *Hyalella azteca* Method 100.1 EPA-600-R-99-064
Ceriodaphnia dubia Method 2002.0 / *Cyprinella leedsi* Method 2000.0 / *Pimephales promelas* Method 2000.0 / Other: _____

Method from EPA-821-R-02-012
Test Type: 48 hour non-renewal / (96) hour renewal
Test Page 1 of 2

Diluent/ Batch #: ASW 1 5,19.08
Toxicant/ Batch#: CuSO4 1 6.2.08

Test Beginning: Date: 6.3.08 Time: 1420
Test Ending: Date: 6.7.08 Time: 1240

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	JD
Alkalinity (mg/L as $CaCO_3$):	226	Hach	BA
Hardness (mg.L as $CaCO_3$):	—	Hach	—
Total Ammonia (mg/L as N):	<0.034	Denver	MF
Salinity (ppth):	20	Mettler	JD

Organism Batch #/ Age: 6.3.08 1 13 days
Feeding: (Prior to test) / (Prior to renewal) / Daily
Food: YCT *P.subcapitata* Artemia: Lot # 38438
Food Batch: — — 0hr 30-0.8 24hr ____ 48hr 72-0.8 72hr ____
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Conc. g/L µg/L mg/L	Rep.	Chamber #	Number Live 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	pH (SU) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	Temperature (° C) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	D.O. (mg/L) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	Uncorrected Conductivity µmhos/cm (mmhos/cm) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr
Control	A	H1	10	10	10	8.4		8.2	24.0		24.1	6.8		5.8	32.1		32.9
	B	H2	10	10	10		8.2			24.4			5.3			32.5	
	C																
	D																
100	A	H3	10	8[2]9	8	8.4		8.2	24.0		24.3	7.4		5.8	32.5		33.1
	B	H4	10	10	10		8.2			24.4			5.3			32.7	
	C																
	D																
200	A	H5	10	9[1]9	9	8.4		8.2	24.0		24.3	7.5		5.8	32.5		33.2
	B	H6	10	10	10		8.2			24.4			5.4			32.9	
	C																
	D																
300	A	H7	10	7[3]7	7	8.4		8.2	24.0		24.2	7.5		5.8	32.7		33.1
	B	H8	10	6[4]9	6		8.2			24.3			5.3			32.8	
	C																
	D																
400	A	H9	10	8[2]9	6[2]5	8.4		8.2	24.0		24.4	7.5		5.9	32.3		33.3
	B	H10	10	9[1]0	8[1]0		8.2			24.4			5.3			32.9	
	C																
	D																
500	A	H11	10	4[6]3	0[4]9	8.4		8.2	24.0		24.3	7.5		6.1	32.8		33.2
	B	H12	10	2[8]0	1[1]0		8.2			24.4			5.2			32.7	
	C																
	D																
	A																
	B																
	C																
	D																
Loaded / measured by:			MF	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD
Recorded by:			JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD

Investigators' Signatures
James Daniel
Brad Abel
Marshall Faircloth
Loretta C. Wolfe
REVIEWER

Concentrations prepared by: JD
Loading verified by: JD
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 23.8 max. 25.0 mean 24.7
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 25.8 max. 26.8 mean 26.3

Comments:

Statistics: Method: Spearman-Karber
48 / 96 hour LC_{50}: 373,47
95% Confidence Interval: lower 334.45 upper 417.04

Appendix C. (continued)

000022

FDEP Biology Laboratory - Acute SRT Bench Sheet

Test Organism: *Americamysis bahia* Method 2007.0 (*Menidia beryllina* Method 2006.0) *Hyalella azteca* Method 100.1 EPA-600-R-99-064
Ceriodaphnia dubia Method 2002.0 *Cyprinella leedsi* Method 2000.0 *Pimephales promelas* Method 2000.0 Other: _____

Method from EPA-821-R-02-012
Test Type: 48 hour non-renewal (48) hour renewal
Test Page 2 of 2

Diluent/ Batch #: ASW 15.1908
Toxicant/ Batch#: CuCl2 102488

Test Beginning: Date: 6.3.08 Time: 1420
Test Ending: Date: 6-7-08 Time: 1250

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	2.03	Hach	JD
Alkalinity (mg/L as $CaCO_3$):	226	Hach	BA
Hardness (mg.L as $CaCO_3$):	—	Hach	—
Total Ammonia (mg/L as N):	2.0034	Denver	MF
Salinity (ppth):	30	Mettler	JD

Organism Batch #/ Age: 6.3.08 / 13 days
Feeding: (Prior to test) / Prior to renewal / Daily
Food: YCT — *P.subcapitata* — Artemia: Lot # 38438
Food Batch: — — 0hr 9.0.08 24hr ____ 48hr 9.2.08 72hr ____
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Conc. g/L µg/L mg/L	Rep.	Chamber #	Number Live 0 hr (48 hr)	24 hr (72 hr)	48 hr (96 hr)	pH (SU) 0 hr (48 hr)	24 hr (72 hr)	48 hr (96 hr)	Temperature (°C) 0 hr (48 hr)	24 hr (72 hr)	48 hr (96 hr)	D.O. (mg/L) 0 hr (48 hr)	24 hr (72 hr)	48 hr (96 hr)	Uncorrected Conductivity µmhos/cm (mmhos/cm) 0 hr (48 hr)	24 hr (72 hr)	48 hr (96 hr)
Control	A	H1	10	10	10	8.3		8.1	24.0		24.9	6.3		5.9	324		32.8
	B	H2	10	10	10		8.2			24.0			5.7			32.6	
	C					8.3											
	D																
100	A	H3	8	8	8	8.4		8.2	24.0		25.1	6.4		5.8	32.2		33.3
	B	H4	10	10	10		8.2			24.3			5.6			32.4	
	C																
	D																
200	A	H5	9	9	9	8.4		8.2	24.0		25.1	6.5		5.9	32.8		33.4
	B	H6	10	10	10		8.2			24.3			5.7			32.6	
	C																
	D																
300	A	H7	7	7	7	8.3		8.2	24.0		25.2	6.5		5.8	32.8		33.4
	B	H8	6	6	6		8.2			24.2			5.5			32.7	
	C																
	D																
400	A	H9	6	6	6	8.3		8.2	24.0		25.3	6.6		5.7	32.8		33.5
	B	H10	8	8	8		8.3			24.2			5.7			32.7	
	C																
	D																
500	A	H11	—	—		8.4			24.0			6.6		5.8 MF	32.7		
	B	H12	1	1	0 10		8.3	8.2		24.0	25.3		6.0	5.8		32.6	33.6
	C																
	D																
	A																
	B																
	C																
	D																
Loaded / measured by:			JD	JD	MF	JD	JD	MF	JD	JD	MF	JD	JD	MF	JD	JD	MF
Recorded by:			JD	JD	MF	JD	JD	MF	JD	JD	MF	JD	JD	MF	JD	JD	MF

Investigators' Signatures
Brad A.
Marshall Faircloth
James Daniel
Rhetta C. Wolfe
REVIEWER

Concentrations prepared by: JD
Loading verified by: JD
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 23.8 max. 25.6 mean 24.7
Incubator # ___ min. ____ max. ____ mean ____
Room B246 min. 25.7 max. 26.4 mean 26.3

Comments:

Statistics: Method: Spearman-Karber
48 / 96 hour LC_{50}: 371.38
95% Confidence Interval: lower 332.84 upper 414.38

Appendix C. (continued)

***Americamysis bahia* Acute Standard Reference Toxicant Test**

DATE: 6-3-08 DURATION: 48 hr TOXICANT: CdCl2
SPECIES: ***Americamysis bahia***

RAW DATA: Concentration (µg/L)	Number Exposed	Mortalities
.00	20	1
20.00	20	2
30.00	20	2
45.00	20	6
67.00	20	12
100.00	20	20

SPEARMAN-KARBER TRIM: 5.26%

SPEARMAN-KARBER ESTIMATES: LC50: 58.28
95% LOWER CONFIDENCE: 50.98
95% UPPER CONFIDENCE: 66.62
NOTE: MORTALITY PROPORTIONS WERE NOT MONOTONICALLY INCREASING. ADJUSTMENTS WERE MADE PRIOR TO SPEARMAN-KARBER ESTIMATION.

***Menidia beryllina* Acute Standard Reference Toxicant Test**

DATE: 6-3-08 DURATION: 48 hr TOXICANT: CuCl2
SPECIES: ***Menidia beryllina***

RAW DATA: Concentration (µg/L)	Number Exposed	Mortalities
.00	20	0
100.00	20	2
200.00	20	1
300.00	20	7
400.00	20	6
500.00	20	19

SPEARMAN-KARBER TRIM: 7.50%

SPEARMAN-KARBER ESTIMATES: LC50: 373.47
95% LOWER CONFIDENCE: 334.45
95% UPPER CONFIDENCE: 417.04
NOTE: MORTALITY PROPORTIONS WERE NOT MONOTONICALLY INCREASING. ADJUSTMENTS WERE MADE PRIOR TO SPEARMAN-KARBER ESTIMATION.

Appendix D. Test Organism Receipt(s)

MBL Aquaculture
4569 Samuel Street
Sarasota, Florida 34233
TEL: (800) 889-0384
FAX: (941) 922-3874
EMAIL: sales@mblaquaculture.com
WEB: www.MBLAquaculture.com

NELAC Accredited

Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 06/02/08

Shipped to: FDEP

P.O. No: _____

Species	Quantity	Age	Brood Number	Temperature	Salinity
Mysidopsis bahia	150	4 days	MS080530	27°C	15ppt
Menidia beryllina	150	12 day	SS080522	27°C	20ppt
Cyprinella leedsi	250	11 days	CL080523	27°C	
Pimephales promelas	150	9 days	FM080525-bio	27°C	

Packed by: MP

Shipped Via: FedEx

Notes: _____

Thank you for your order.

Appendix D. (continued)

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 6/16/08

Shipped to: FDEP

P.O. No: N/A

Species	Quantity	Age	Brood Number	Temp.	pH	Salinity
Mysidopsis bahia	100	4 DAYS	MS080612	25°C	7.8 s.u.	26 °/oo
Menidia beryllina	100	12 DAYS	SS080604	25°C	7.8 s.u	26 °/oo
						Hardness
Cyprinella leedsi						
Pimephales promelas	350	< 24 HRS	FM 080615-1620	25°C	7.9 s.u.	80 mg/L
	150	8 DAYS	FM080608	25°C	7.9 s.u	80 mg/L

Packed by: [signature]

Shipped Via: FedEx

Notes:

Thank you for your order.

4569 Samuel Street · Sarasota, FL 34233 · Tel: 941-925-3594 · Fax: 941-922-3874 · Web: www.biologylab.com

Appendix E. Chemical Analyses performed on the effluent from the Florida Atlantic University Sea-Tech Research/Testing Facility Outfall D001, sampled on June 16, 2008.

Date Sampled	Field ID	Analyses	Component	Result	Remark	Units	MDL	PQL
6/16/2008 10:45	D001 Outfall	AGP/LN	Algal Growth Potential	3	A U	mg DryWt/L	3	3
6/16/2008 10:45	D001 Outfall	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	1	I	ug/L	0.55	1.7
6/16/2008 10:45	D001 Outfall	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.24	U	ug/L	0.24	0.71
6/16/2008 10:45	D001 Outfall	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	0.2	U	mg/L	0.2	2
6/16/2008 10:45	D001 Outfall	Toxicology	Bioassay-Acute-Screen-SW-Mysid, LC50	100	L	LC50		
6/16/2008 10:45	D001 Outfall	Toxicology	Bioassay-Acute-Screen-SW-Fish, LC50	100	L	LC50		
6/16/2008 10:45	D001 Outfall	Metals	Beryllium	0.13	UJ	ug/L	0.13	0.5
6/16/2008 10:45	D001 Outfall	Metals	Antimony	1.5	U	ug/L	1.5	6
6/16/2008 10:45	D001 Outfall	Metals	Lead	0.6	U	ug/L	0.6	2.4
6/16/2008 10:45	D001 Outfall	Metals	Copper	1.5	UJ	ug/L	1.5	6
6/16/2008 10:45	D001 Outfall	Metals	Silver	0.075	U	ug/L	0.075	0.3
6/16/2008 10:45	D001 Outfall	Metals	Zinc	15	U	ug/L	15	60
6/16/2008 10:45	D001 Outfall	Metals	Aluminum	180	U	ug/L	180	720
6/16/2008 10:45	D001 Outfall	Metals	Cadmium	0.06	U	ug/L	0.06	0.24
6/16/2008 10:45	D001 Outfall	Metals	Calcium	428	A	mg/L	3.7	15
6/16/2008 10:45	D001 Outfall	Metals	Selenium	1.5	U	ug/L	1.5	6
6/16/2008 10:45	D001 Outfall	Metals	Chromium	3	U	ug/L	3	12
6/16/2008 10:45	D001 Outfall	Metals	Magnesium	1380	A	mg/L	2	8
6/16/2008 10:45	D001 Outfall	Metals	Arsenic	2	I	ug/L	1.5	6
6/16/2008 10:45	D001 Outfall	Metals	Iron	90	U	ug/L	90	360
6/16/2008 10:45	D001 Outfall	Metals	Nickel	0.75	U	ug/L	0.75	3
6/16/2008 10:45	D001 Outfall	Nutrients	Ammonia-N	0.012	I	mg N/L	0.01	0.02
6/16/2008 10:45	D001 Outfall	Nutrients	O-Phosphate-P	0.011	I	mg P/L	0.008	0.02
6/16/2008 10:45	D001 Outfall	Nutrients	Kjeldahl Nitrogen	0.22		mg N/L	0.08	0.2
6/16/2008 10:45	D001 Outfall	Nutrients	Total-P	0.02	U	mg P/L	0.02	0.06
6/16/2008 10:45	D001 Outfall	Nutrients	NO2NO3-N	2.4		mg N/L	0.04	0.1
6/16/2008 10:45	D001 Outfall	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
6/16/2008 10:45	D001 Outfall	Pesticides	Naled	0.8	U	ug/L	0.8	3.2
6/16/2008 10:45	D001 Outfall	Pesticides	Ethoprop	0.1	U	ug/L	0.1	0.4
6/16/2008 10:45	D001 Outfall	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
6/16/2008 10:45	D001 Outfall	Pesticides	Butylate	0.2	U	ug/L	0.2	0.8
6/16/2008 10:45	D001 Outfall	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
6/16/2008 10:45	D001 Outfall	Pesticides	Alachlor	0.6	U	ug/L	0.6	2.4

Appendix E. (continued)

Date Sampled	Field ID	Analyses	Component	Result	Remark	Units	MDL	PQL
6/16/2008 10:45	D001 Outfall	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1
6/16/2008 10:45	D001 Outfall	Pesticides	Phorate	0.05	U	ug/L	0.05	0.2
6/16/2008 10:45	D001 Outfall	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
6/16/2008 10:45	D001 Outfall	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
6/16/2008 10:45	D001 Outfall	Pesticides	Chlorpyrifos Methyl	0.1	U	ug/L	0.1	0.4
6/16/2008 10:45	D001 Outfall	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
6/16/2008 10:45	D001 Outfall	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8
6/16/2008 10:45	D001 Outfall	Pesticides	Metolachlor	0.5	U	ug/L	0.5	2
6/16/2008 10:45	D001 Outfall	Pesticides	Diazinon	0.05	U	ug/L	0.05	0.2
6/16/2008 10:45	D001 Outfall	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.8
6/16/2008 10:45	D001 Outfall	Pesticides	Atrazine	0.05	U	ug/L	0.05	0.2
6/16/2008 10:45	D001 Outfall	Pesticides	Parathion Methyl	0.1	U	ug/L	0.1	0.4
6/16/2008 10:45	D001 Outfall	Pesticides	Fonofos	0.1	U	ug/L	0.1	0.4
6/16/2008 10:45	D001 Outfall	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
6/16/2008 10:45	D001 Outfall	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
6/16/2008 10:45	D001 Outfall	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
6/16/2008 10:45	D001 Outfall	Pesticides	Hexazinone	0.1	U	ug/L	0.1	0.4
6/16/2008 10:45	D001 Outfall	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
6/16/2008 10:45	D001 Outfall	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	U	ug/L	2.9	12
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	4,4'-DDD	1.4	U	ug/L	1.4	5.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Acenaphthylene	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Hexachlorobenzene	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.7
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	gamma-BHC	1.4	U	ug/L	1.4	5.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	4-Nitrophenol	14	U	ug/L	14	58
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Endosulfan sulfate	1.4	U	ug/L	1.4	5.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Endrin	1.4	U	ug/L	1.4	5.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Hexachlorobutadiene	2.9	U	ug/L	2.9	12
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	delta-BHC	1.4	U	ug/L	1.4	5.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	2-Chloronaphthalene	0.96	U	ug/L	0.96	3.8

Appendix E. (continued)

Date Sampled	Field ID	Analyses	Component	Result	Remark	Units	MDL	PQL
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	4,4'-DDE	1.4	U	ug/L	1.4	5.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Di-n-octyl phthalate	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Endrin aldehyde	3.8	U	ug/L	3.8	15
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Heptachlor	1.4	U	ug/L	1.4	5.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Pyrene	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	beta-BHC	1.4	U	ug/L	1.4	5.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	4,4'-DDT	1.4	U	ug/L	1.4	5.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Acenaphthene	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Benzo(b)fluoranthene	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Chrysene	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Heptachlor epoxide	1.4	U	ug/L	1.4	5.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	U	ug/L	2.9	12
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.7
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Phenol	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Di-n-butyl phthalate	4.8	U	ug/L	4.8	19
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Dieldrin	1.4	U	ug/L	1.4	5.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Diethyl phthalate	2.8	U	ug/L	2.8	11
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Endosulfan II	3.8	U	ug/L	3.8	15
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Hexachloroethane	2.9	U	ug/L	2.9	12
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Phenanthrene	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	2,4-Dimethylphenol	9.6	U	ug/L	9.6	38
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	2,4-Dinitrophenol	14	U	ug/L	14	58
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38	U	ug/L	38	150
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.7
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Aldrin	1.4	U	ug/L	1.4	5.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Anthracene	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	U	ug/L	2.9	12
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	14	U	ug/L	14	58
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Butyl benzyl phthalate	4.8	U	ug/L	4.8	19

Appendix E. (continued)

Date Sampled	Field ID	Analyses	Component	Result	Remark	Units	MDL	PQL
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Dimethyl phthalate	9.6	UJ	ug/L	9.6	38
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Endosulfan I	3.8	U	ug/L	3.8	15
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Fluoranthene	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	alpha-BHC	1.4	U	ug/L	1.4	5.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	2,4-Dichlorophenol	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	2,6-Dinitrotoluene	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Benzo(a)pyrene	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Benzo(k)fluoranthene	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Fluorene	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Isophorone	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.7
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	2,4-Dinitrotoluene	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	2-Chlorophenol	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	2-Nitrophenol	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Benzidine	96	U	ug/L	96	380
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Benzo(a)anthracene	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Naphthalene	0.96	U	ug/L	0.96	3.8
6/16/2008 10:45	D001 Outfall	Priority Organic Pollutants	Pentachlorophenol	2.9	U	ug/L	2.9	12
6/16/2008 10:45	D001 Outfall	Field Parameter	Specific Conductance	53486		umhos/cm		
6/16/2008 10:45	D001 Outfall	Field Parameter	pH	7.9				
6/16/2008 10:45	D001 Outfall	Field Parameter	Temperature	28.57		C		
6/16/2008 10:45	D001 Outfall	Field Parameter	Sample Depth	0.01		m		
6/16/2008 11:00	Blank	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	0.2	U	mg/L	0.2	2
6/16/2008 11:00	Blank	Metals	Aluminum	60	U	ug/L	60	240
6/16/2008 11:00	Blank	Metals	Selenium	0.5	U	ug/L	0.5	2
6/16/2008 11:00	Blank	Metals	Chromium	1	U	ug/L	1	4
6/16/2008 11:00	Blank	Metals	Antimony	0.5	U	ug/L	0.5	2
6/16/2008 11:00	Blank	Metals	Cadmium	0.02	U	ug/L	0.02	0.08
6/16/2008 11:00	Blank	Metals	Nickel	0.25	U	ug/L	0.25	1
6/16/2008 11:00	Blank	Metals	Silver	0.025	U	ug/L	0.025	0.1
6/16/2008 11:00	Blank	Metals	Lead	0.2	U	ug/L	0.2	0.8
6/16/2008 11:00	Blank	Metals	Iron	30	U	ug/L	30	120
6/16/2008 11:00	Blank	Metals	Calcium	0.075	U	mg/L	0.075	0.3

Appendix E. (continued)

Date Sampled	Field ID	Analyses	Component	Result	Remark	Units	MDL	PQL
6/16/2008 11:00	Blank	Metals	Copper	0.5	U	ug/L	0.5	2
6/16/2008 11:00	Blank	Metals	Arsenic	0.5	U	ug/L	0.5	2
6/16/2008 11:00	Blank	Metals	Beryllium	0.025	U	ug/L	0.025	0.1
6/16/2008 11:00	Blank	Metals	Magnesium	0.04	U	mg/L	0.04	0.16
6/16/2008 11:00	Blank	Metals	Zinc	5	U	ug/L	5	20
6/16/2008 11:00	Blank	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
6/16/2008 11:00	Blank	Nutrients	NO2NO3-N	2.2		mg N/L	0.04	0.1
6/16/2008 11:00	Blank	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
6/16/2008 11:00	Blank	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
6/16/2008 11:00	Blank	Nutrients	Total-P	0.02	U	mg P/L	0.02	0.06
6/16/2008 11:00	Blank	Pesticides	Chlorpyrifos Ethyl	0.048	U	ug/L	0.048	0.19
6/16/2008 11:00	Blank	Pesticides	Chlorpyrifos Methyl	0.096	U	ug/L	0.096	0.38
6/16/2008 11:00	Blank	Pesticides	Fenamiphos	0.19	U	ug/L	0.19	0.76
6/16/2008 11:00	Blank	Pesticides	Metalaxyl	0.24	U	ug/L	0.24	0.96
6/16/2008 11:00	Blank	Pesticides	Naled	0.77	U	ug/L	0.77	3.1
6/16/2008 11:00	Blank	Pesticides	Ametryn	0.048	U	ug/L	0.048	0.19
6/16/2008 11:00	Blank	Pesticides	Norflurazon	0.14	U	ug/L	0.14	0.56
6/16/2008 11:00	Blank	Pesticides	Bromacil	0.19	U	ug/L	0.19	0.76
6/16/2008 11:00	Blank	Pesticides	Azinphos Methyl	0.19	U	ug/L	0.19	0.76
6/16/2008 11:00	Blank	Pesticides	Alachlor	0.58	U	ug/L	0.58	2.3
6/16/2008 11:00	Blank	Pesticides	Prometryn	0.14	U	ug/L	0.14	0.56
6/16/2008 11:00	Blank	Pesticides	Phorate	0.048	U	ug/L	0.048	0.19
6/16/2008 11:00	Blank	Pesticides	Parathion Methyl	0.096	U	ug/L	0.096	0.38
6/16/2008 11:00	Blank	Pesticides	Fonofos	0.096	U	ug/L	0.096	0.38
6/16/2008 11:00	Blank	Pesticides	Ethion	0.048	U	ug/L	0.048	0.19
6/16/2008 11:00	Blank	Pesticides	Metribuzin	0.096	U	ug/L	0.096	0.38
6/16/2008 11:00	Blank	Pesticides	Ethoprop	0.096	U	ug/L	0.096	0.38
6/16/2008 11:00	Blank	Pesticides	Butylate	0.19	U	ug/L	0.19	0.76
6/16/2008 11:00	Blank	Pesticides	Atrazine	0.048	U	ug/L	0.048	0.19
6/16/2008 11:00	Blank	Pesticides	Simazine	0.048	U	ug/L	0.048	0.19
6/16/2008 11:00	Blank	Pesticides	Metolachlor	0.48	U	ug/L	0.48	1.9
6/16/2008 11:00	Blank	Pesticides	Mevinphos	0.19	U	ug/L	0.19	0.76
6/16/2008 11:00	Blank	Pesticides	Malathion	0.14	U	ug/L	0.14	0.56
6/16/2008 11:00	Blank	Pesticides	Hexazinone	0.096	U	ug/L	0.096	0.38

Appendix E. (continued)

Date Sampled	Field ID	Analyses	Component	Result	Remark	Units	MDL	PQL
6/16/2008 11:00	Blank	Pesticides	Diazinon	0.048	U	ug/L	0.048	0.19
6/16/2008 11:00	Blank	Pesticides	Parathion Ethyl	0.14	U	ug/L	0.14	0.56
6/16/2008 11:00	Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	U	ug/L	2.9	11
6/16/2008 11:00	Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.6
6/16/2008 11:00	Blank	Priority Organic Pollutants	Acenaphthene	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	Anthracene	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	Di-n-octyl phthalate	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	Hexachlorobenzene	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	Dieldrin	1.4	U	ug/L	1.4	5.7
6/16/2008 11:00	Blank	Priority Organic Pollutants	Endosulfan I	3.8	U	ug/L	3.8	15
6/16/2008 11:00	Blank	Priority Organic Pollutants	Endosulfan sulfate	1.4	U	ug/L	1.4	5.7
6/16/2008 11:00	Blank	Priority Organic Pollutants	Heptachlor	1.4	U	ug/L	1.4	5.7
6/16/2008 11:00	Blank	Priority Organic Pollutants	2,4-Dimethylphenol	9.5	U	ug/L	9.5	38
6/16/2008 11:00	Blank	Priority Organic Pollutants	2,4-Dinitrophenol	14	U	ug/L	14	57
6/16/2008 11:00	Blank	Priority Organic Pollutants	Acenaphthylene	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	Butyl benzyl phthalate	4.8	U	ug/L	4.8	19
6/16/2008 11:00	Blank	Priority Organic Pollutants	Dimethyl phthalate	9.5	UJ	ug/L	9.5	38
6/16/2008 11:00	Blank	Priority Organic Pollutants	Heptachlor epoxide	1.4	U	ug/L	1.4	5.7
6/16/2008 11:00	Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	delta-BHC	1.4	U	ug/L	1.4	5.7
6/16/2008 11:00	Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	2-Nitrophenol	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	Di-n-butyl phthalate	4.8	U	ug/L	4.8	19
6/16/2008 11:00	Blank	Priority Organic Pollutants	Diethyl phthalate	2.8	U	ug/L	2.8	11
6/16/2008 11:00	Blank	Priority Organic Pollutants	Hexachloroethane	2.9	U	ug/L	2.9	11
6/16/2008 11:00	Blank	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.6
6/16/2008 11:00	Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	2-Chloronaphthalene	0.95	U	ug/L	0.95	3.8

Appendix E. (continued)

Date Sampled	Field ID	Analyses	Component	Result	Remark	Units	MDL	PQL
6/16/2008 11:00	Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38	U	ug/L	38	150
6/16/2008 11:00	Blank	Priority Organic Pollutants	Aldrin	1.4	U	ug/L	1.4	5.7
6/16/2008 11:00	Blank	Priority Organic Pollutants	Benzidine	95	U	ug/L	95	380
6/16/2008 11:00	Blank	Priority Organic Pollutants	Chrysene	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	Endosulfan II	3.8	U	ug/L	3.8	15
6/16/2008 11:00	Blank	Priority Organic Pollutants	Endrin aldehyde	3.8	U	ug/L	3.8	15
6/16/2008 11:00	Blank	Priority Organic Pollutants	Naphthalene	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	Phenanthrene	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	Pyrene	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	14	U	ug/L	14	57
6/16/2008 11:00	Blank	Priority Organic Pollutants	Fluorene	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	Isophorone	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	4,4'-DDD	1.4	U	ug/L	1.4	5.7
6/16/2008 11:00	Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	Endrin	1.4	U	ug/L	1.4	5.7
6/16/2008 11:00	Blank	Priority Organic Pollutants	Hexachlorobutadiene	2.9	U	ug/L	2.9	11
6/16/2008 11:00	Blank	Priority Organic Pollutants	Pentachlorophenol	2.9	U	ug/L	2.9	11
6/16/2008 11:00	Blank	Priority Organic Pollutants	Phenol	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	beta-BHC	1.4	U	ug/L	1.4	5.7
6/16/2008 11:00	Blank	Priority Organic Pollutants	gamma-BHC	1.4	U	ug/L	1.4	5.7
6/16/2008 11:00	Blank	Priority Organic Pollutants	2,4-Dichlorophenol	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	2-Chlorophenol	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	4,4'-DDE	1.4	U	ug/L	1.4	5.7
6/16/2008 11:00	Blank	Priority Organic Pollutants	4,4'-DDT	1.4	U	ug/L	1.4	5.7
6/16/2008 11:00	Blank	Priority Organic Pollutants	4-Nitrophenol	14	U	ug/L	14	57
6/16/2008 11:00	Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	U	ug/L	2.9	11
6/16/2008 11:00	Blank	Priority Organic Pollutants	Fluoranthene	0.95	U	ug/L	0.95	3.8
6/16/2008 11:00	Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	U	ug/L	2.9	11
6/16/2008 11:00	Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.6

Appendix E. (continued)

Date Sampled	Field ID	Analyses	Component	Result	Remark	Units	MDL	PQL
6/16/2008 11:00	Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.6
6/16/2008 11:00	Blank	Priority Organic Pollutants	alpha-BHC	1.4	U	ug/L	1.4	5.7

Appendix F. Bioassay Laboratory Instruments

Facility ID: Florida Atlantic University Sea-Tech Research/Testing Facility

Test Dates: June 17-19, 2008
SRT Dates: June 3-7, 2008

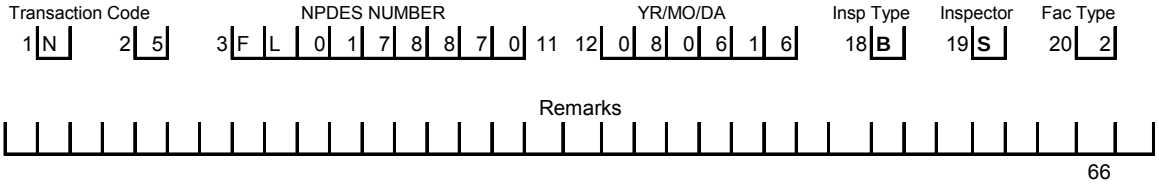
METER / DEVICE	ID	SOP	Parameter	Method	√ used
YSI Model 58 Dissolved Oxygen Meter	90H018262	TA06_04	Dissolved Oxygen	SM 4500 O G	√
Accumet AR-10 pH Meter	93312105	TA06_23	pH	SM 4500 H^+	√
Mettler-Toledo SevenMulti Conductivity Meter	SN 1225117049 Probe H04257	TA06_25	Conductivity	SM 2510 B	√
			Salinity	SM 2520 B	√
Denver Model 225 ISE with ammonia probe	SN K01377	TA06_17	Ammonia	SM 4500 NH3 F	√
Thermometer (DO probe)	YSI 5750 SN 05J1720	TA06_05	Temperature	SM-2530B modified DEP SOP-001/01 FT1400	√
Hach Pocket Colorimeter II	05050C026378	TA06_22	Total Residual Chlorine	EPA 330.5 SM 4500 CL G	√
Alkalinity (Hach Kit)	No SN	TA06_08	Alkalinity	SM 2320 B	√
Hardness (Hach Kit)	No SN	TA06_09	Hardness	SM 2340 C	√
OHAUS Balance 250D	1125481084	TA06_21 TA06_27	Weight	-	
S-Weights	BIO-S-WEIGHTS-01	NA	Balance check	-	

SM-2530B modified to allow use electronic and non-mercury filled thermometers.
Insert other device information in blank spaces(if used). Test ID = Facility or SRTs (acute SRT--Chronic SRT)

Comments:

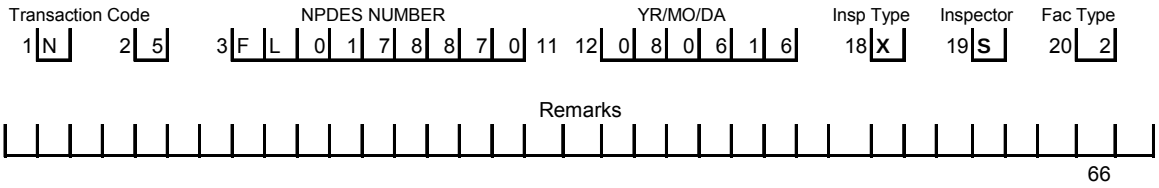
The Bioassay of the Florida Atlantic University Sea-Tech Research/Testing Facility effluent sampled on June 16, 2008. NPDES #FL0178870.

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)



The Priority Pollutants Analysis of the Florida Atlantic University Sea-Tech Research/Testing Facility effluent sampled on June 16, 2008. NPDES #FL0178870.

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)



Biological Analyses of the Florida Atlantic University Sea-Tech Research/Testing Facility effluent sampled on June 16, 2008. NPDES #FL0178870.

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)

