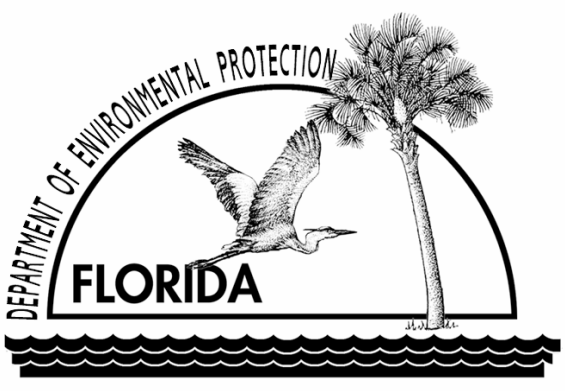


Effluent Quality Assessment

Blacks Ford Water Reclamation Facility

St. Johns County

NPDES #FL0174441

Sampled July 21, 2008

December 2008

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration

Quality Manual No. 870346G
NELAC Certification No. E31780

Blacks Ford Water Reclamations Facility, 1310-100 Roberts Road, Jacksonville, St. Johns County, Florida 32259, NPDES #FL0174441. Effluent samples for this facility were collected on July 21, 2008.

Introduction

Blacks Ford Water Reclamations Facility is a wastewater treatment facility which uses a sequential batch reactor (SBR) activated-sludge process to treat domestic wastewater. The facility has a permitted capacity of 3.0 million gallons per day (MGD) annual average daily flow (AADF). From July 2007 through June 2008, the AADF discharged to surface water was 1.39 MGD and the AADF discharged via reuse was 0.382 MGD. The wastewater treatment system consists of:

- influent equalization tank;
- biological odor control system;
- mechanical step screen;
- four sequential batch reactors including mixing for nitrogen removal, aeration and sedimentation;
- five process air blowers;
- an effluent equalization tank;
- four automatic backwash cloth-media disk filters;
- an ultraviolet disinfection system;
- a reclaimed water transfer station;
- a 2.0 million gallon reuse storage tank;
- a reclaimed water pumping station for transmission and distribution;
- chemical storage;
- a chlorination system; and,
- chemical feed facilities.

Ultraviolet light is used for disinfection. Domestic residuals are transported to the JEA – Buckman residuals treatment facility for further treatment and disposal; or, are treated on-site to meet Class B requirements and then land applied.

Effluent is primarily disposed through the spray-irrigation public-access Reuse System, R-001, which has a capacity of 3.0 MGD. Effluent can be discharged at discharge location D-001 to the Class III Freshwaters of the Blacks Ford Wetland as an alternative method of disposal. D-001 includes five distribution boxes covering 304 m (~1000 feet) of perforated pipe. The point of discharge for Outfall D-001 is located approximately at latitude 30º 04’ 20” N, longitude 81º 34’ 33” W.

The facility has no Administrative Orders or mixing zones. The facility was under a Consent Order (CO) (CO OGC file # 06-0233) closed circa September 30, 2008 for part of the review period. The CO addressed and set interim limits for the total nitrogen discharge to the wetlands. A review of Discharge Monitoring Report (DMR) data for 2007 and 2008 revealed several permit violations:

D-OO1 FINAL DISCHARGE TO BLACKS FORD WETLANDS

Feb. 2008:	CBOD5	Monthly Average:	6.8 mg/L	Limit 6.25 mg/L
	CBOD5	Maximum:	11.0mg/L	Limit 10.0 mg/L
	TSS	Monthly Average:	11.8 mg/L	Limit 6.25 mg/L
	TSS	Maximum:	23.0 mg/L	Limit 6.25 mg/L
	TN	Maximum:	16.83 mg/L	Limit 6.0 mg/L
	Ammonia	Monthly Avg.	6.524 mg/L	Limit 2.0 mg/L
Apr 2007:	CBOD5	Monthly Average:	6.5 mg/L	Limit 6.25 mg/L
	CBOD5	Maximum:	14.0 mg/L	Limit 10.0 mg/L
	TN	Maximum:	18.40 mg/L	Limit 6.0 mg/L
Mar 2007:	Ammonia	Monthly Avg.	2.314 mg/L	Limit 2.0 mg/L

FOR DISCHARGE TO THE REUSE SYSTEM (R-OO1)

Jun 2008:	Fecal coliforms (EFA-2):	220 no./100 mL	Limit 200 no./100 mL
	UV Dosage (EFF-1):	80,494	Limit 100 MWS/cm2

(Facility information provided by Kathleen Gerard of FDEP Northeast District.)

Methods

Samples were collected from the EFF-1 NPDES sampling point for Outfall D-001 by Eesa Ali and Lisa Crespo FDEP Northeast 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 acute screening toxicity tests and algal growth potential test were performed following internal DEP SOPs TA07_01, TA07_02, 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. Although the 48-hour acute screening toxicity test does not reflect the required permit conditions, passing test results provide confidence that the required permit conditions would likely be met.

Toxicity Test Results

Tests were performed July 22 - 24, 2008.

Ceriodaphnia dubia 48-hour acute screening bioassay –	LC_{50} > 100%, 0% mortality* in 100% sample at 48 hours
Cyprinella leedsi 48-hour acute screening bioassay –	LC_{50} > 100%, 0% 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 12.5 mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. Raschke and Shultz (1987) found that AGP values above 5.0 mg dry weight/L represent a "problem" threshold for fresh receiving waters, implying nutrient enrichment. The analytical chemistry suggests that the effluent is nitrogen-limited. The predicted AGP based on inorganic nitrogen concentrations was 6.5 (±20%) mg dry wt/L (Table 1; Miller et al. 1978).

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 0.06 mg/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was < 0.02 mg/L.

The effluent dissolved oxygen (DO) (4.76 mg/L) as measured in the field violated the DO criterion for Class III freshwaters of (≥ 5.0 mg/L; 62-302.530(30), F.A.C.), but did not violate permit conditions since the permit has no DO limit.

A determination could not be made as to whether the effluent conductivity (1,378 µmhos-cm) as measured in the field was in violation of the Class III freshwater criterion for conductivity (≤ 1,275 or ≤ background + 50% whichever is greater in µmhos-cm; 62-302.530(23), F.A.C.) due to the absence of concurrent background conductivity data.

Nickel and zinc were detected in the effluent at levels that comply with Class III fresh water quality criteria (62-302.530, F.A.C.). Copper and iron were detected between the laboratory method detection limits (MDL) and practical quantitation limits (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.

Conclusion

The effluent sample collected from the EFF-1 NPDES sampling point for this facility on July 21, 2008, was not acutely toxic to either test species during the 48-hour acute screening bioassays. The effluent AGP result exceeded the "problem" threshold for fresh receiving waters. The effluent dissolved oxygen (DO) (4.76 mg/L) as measured in the field violated the DO criterion for Class III freshwaters of (≥ 5.0 mg/L; 62-302.530(30), F.A.C.), but did not violate permit conditions since the permit has no DO limit. Effluent water quality samples analyzed in the laboratory did not violate any additional applicable water quality standards or permit conditions.

Literature Cited

Miller, W. E., T. E. Maloney, and J. C. Greene. 1978. The *Selenastrum capricornutum* Printz algal assay bottle test. EPA-600/9-78-018. U. S. EPA, Cincinnati, Ohio. 126 p.

Raschke, R. L. and D. A. Schultz. 1987. The use of the algal growth potential test for data assessment. J. Wat. Poll. Cont. Fed. 59(4): 222-227.

Table 1. Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN) and total nitrogen (TN) limitation of the freshwater species *Pseudokirchneriella subcapitata* and ratios of nitrogen to phosphorus for samples collected from the Blacks Ford Water Reclamations Facility on July 21, 2008.

Blacks Ford Water Reclamations Facility					
Location	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (TN) ± 20%	Inorganic N:P ratio	Total N:P ratio
Effluent	12.5	6.5 ± 1.3	46.0 ± 9.2	0.0	0.3

Table 2. Effluent limits, Class III Freshwater Criteria and chemical and microbiological data for samples collected fom the Blacks Ford Water Reclamations Facility on July 21, 2008.

Blacks Ford Water Reclamations Facility NPDES# FL0174441	Class III Criteria	Effluent Limits	Effluent	
Metals (µg/L unless otherwise noted)				
Aluminum	-	-	60	U
Arsenic	≤ 50	-	0.5	U
Cadmium	≤ 0.7 b	-	0.02	U
Calcium (mg/L)	-	-	79.2	
Chromium-III	≤ 237.0 b	-	0.5	U
Copper	≤ 26.8 b	-	0.71	I
Iron	≤ 1,000	-	64	I
Lead	≤ 15.3 b	-	0.2	U
Magnesium (mg/L)	-	-	35.5	
Nickel	≤ 148.3 b	-	1.38	
Selenium	≤ 5.0	-	0.5	U
Silver	≤ 0.07	-	0.025	U
Zinc	≤ 341.3 b	-	28	
Nutrients (mg/L)				
Ortho-phosphate	-	-	3.9	
Total Phosphorus	-	Report p	4	
Total Ammonia	-	Report p	0.06	
Un-ionized Ammonia	≤ 0.02 s	-	≤ 0.02	c
Nitrate and Nitrite	-	-	0.11	
Total Kjeldahl Nitrogen	-	-	1.1	
Organic Nitrogen	-	-	1.04	c
Total Nitrogen	-	≤ 6 s p	1.21	c
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 5.0 s	-	4.8	
pH (SU)	6.0 - 8.5 s	6.0 - 8.5 s	7.0	
Conductivity (µmhos/cm)	≤ 1,275	-	1,379	
Temperature °C	-	-	29.9	
Sample Depth (m)	-	-	0.4	
Total Residual Chlorine (mg/L)	≤ 0.01	-	0.03	U£
Chlorophyll a (µg/L) - Corrected	-	-	1.3	I
Phaeophytin (µg/L)	-	-	0.24	U
Total Suspended Solids (mg/L)	-	≤ 10 s p	4	U
CBOD, 5 day (mg/L), N - inhibited	-	≤ 10 s p	1.6	I
Sulfate (mg/L)	-	-	160	
Flow (MGD)	-	≤ 3 a	1.33	a
Hardness (mg $CaCO_3$)	-	-	343.95	c
Microbiology (Number of colony forming units/100ml)				
Fecal Coliforms	≤ 400s #	-	2	U

Value exceeds the Class III Water Quality Criteria or permit limits

a - Annual average
b - Value is calculated based on hardness
c - Value is calculated
p - Permit limit is based on a 24-hour flow proportioned composite sample
s - Single sample
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
U - Material analyzed for but not detected; value reported is the method detection limit
£ - Analysis performed in bioassay laboratory
- If 10 or fewer samples are taken within a month, the single sample limit is 400 CFU (62-302.530(6), F.A.C.)

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Request Number: RQ-2008-07-21-38
Blacks Ford WWTP

Event ID *

Requester: Jennifer Paris
Field Report Prepared By: Lisa Crespo

Customer: NE-DIST
Collected By: Eesa Ali/ Lisa Crespo
Send Final Report To Tom Kallemeyn

Project ID: FYI3
Sampling Agency: DEP-NED

PMAS: 1143

Lab ID *	Location: Blacks Ford Final eff.			☐ Comp ☑ Grab	Collection (begin) Date 7/21/08 Time 1150	Eastern Central	Collection (end) Date Time	Eastern Central	Bottle Group(s)**	A
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L) 4.76		Storet Station Number			
	Matrix (Include type e.g. Salt, Fresh, etc	Temp (C) 29.91	pH 7.01	Sample Depth ☑ m ☐ ft 0.4	0.68 1379	☑ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number			
	Latitude o ' "	Longitude o ' "		Comments						
Lab ID *	Location: Blank			☐ Comp ☑ Grab	Collection (begin) Date 7/21/08 Time 1200	Eastern Central	Collection (end) Date Time	Eastern Central	Bottle Group(s)**	B
	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)**	
	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 ~~25~~						
Lab ID *	Location			☐ Comp ☐ Grab	Collection (begin) Date Time	Eastern Central	Collection (end) Date Time	Eastern Central	Bottle Group(s)**	
	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 biossy Reid in for by JD. 1010 7.22.08						

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	7/24/08 1300	DHL	Tahmoures Ebrahimi	07/22/08 8:50				

* 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: Blacks Ford WRF

Address: 1310-100 Roberts Road

City: Jacksonville County: St. Johns County ZIP 32259

Contact/District: Kathleen Gerard / Northeast

NPDES Permit #: FL 0174441

LIMS Job #: TLH-2008-07-22-89 LIMS Sample #: 116600

Lims Data Entry: 8-1-08 MF Data Entry Verification: BA 8-1-08

Sample Collection: Date: 7-21-08 Time: 1150

Hold Time Start: Date: 7-21-08 Time: 1150

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_01

Control survival ≥90%: (Yes) No

Temperature Range ≤3°C: (Yes) No

Test 2 validation: Test 2: SOP TA 07_02

Control survival ≥90%: (Yes) No

Temperature Range ≤3°C: (Yes) No

(√one)

Test 1 incubated in: ☑ Incubator #: 2 ☐ Waterbath #:_____

Test 2 incubated in: ☑ Incubator #: 2 ☐ Waterbath #:_____

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: (If used)

Incubator # 2 min. 25.4 max. 26.8 mean 26.4

Incubator # ____ min.____ max.____ mean____

Waterbath # ____ min.____ max.____ mean____

Room B246 min. 25.0 max. 25.5 mean 25.3

Sample Validation:

Temperature: Shipped ≤6°C (Yes) No — IF 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)

Investigators' Signatures

James Daniel

Marshall Faircloth

Bruce Atkinson

Loretta C. Wolfe

REVIEWER

Batch #	7-19-08	7-22-08							
Water Quality Parameters	20% DMW	Well Water	Moderately Hard Water	Salt Water ASW NSW Test 1	Salt Water ASW NSW Test 2	Other:	Original Sample	Measured by	Verified by
Field Total Residual Cl_2 (mg/L):	N/A	N/A	N/A	N/A	N/A	—	Brk Not M	2 ASW 23	MF
Lab Total Residual Cl_2 (mg/L):	<0.03	<0.03					<0.03	JD	MF
Alkalinity (mg/L as $CaCO_3$):	85	152					234	BA	MF
Hardness (mg/L as $CaCO_3$):	81	137					348	BA	MF
Total Ammonia (mg/L as N):	<0.017	<0.017					<0.017	MF	JD
Conductivity: (µmhos) mmhos	180	271					1378	JD	MF
Salinity (ppth):							0.64	JD	MF

V 1.6 7/8/08

Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 116600 Test #: 1/2 SOP#:TA 07 01 Test Started: Date 7-22-08 Time: 12:20

Organism/Batch/Age: c. dubia / 7-22-08 / <24 hours Test Ended: Date 7-24-08 Time: 11:30

Chamber/Test Volume: 30 / 20 ml Diluent/ Batch: 20% DMW / 7-19-08 Test Duration: (48 hr) 96 hr

Food/Batch: [✓] YCT 6-18-08 [✓] P.sub 7-18-08

[ ] Artemia: 0hr____ 24hr____ 48hr____ 72hr____ Artemia Lot#____

Feeding: [✓] Prior to Test [ ] Prior to Renewal [ ] 0 hr [ ] 24 hr [ ] 48 hr [ ] 72 hr

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Ctrl	A	CTrL - A	5	5	5			
	B	CTrL - B	5	5	5			
	C	CTrL - C	5	5	5			
	D	CTrL - D	5	5	5			
100%	A	100% - A	5	5	5			
	B	100% - B	5	5	5			
	C	100% - C	5	5	5			
	D	100% - D	5	5	5			
Loaded/Verified by: BA / JD		Checked by:	JD	BA	BA			

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: 0% LC50: >100%

If Calculated: 95% CI________ Method________

V 2.3 7/15/2008

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 #: 1116600 Test #: 2/2 SOP#:TA 07 02 Test Started: Date 7-22-08 Time: 1230
Organism/Batch/Age: C.leodsi / 7-22-08 / 11 days Test Ended: Date 7-24-08 Time: 1250
Chamber/Test Volume: 1000 / 500 ml Diluent/ Batch: Well / 7-22-08 Test Duration: (48 hr) 96 hr
Food/Batch: ☐ YCT____ ☐ P.sub____
☑ Artemia: 0hr 117 24hr____ 48hr____ 72hr____ Artemia Lot# 38438
Feeding: ☑ Prior to Test ☐ Prior to Renewal ☑ 0 hr ☐ 24 hr ☐ 48 hr ☐ 72 hr

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	4/1D	4			
	C	B3	5	5	5			
	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	5			
Loaded/Verified by: JD / RA		Checked by:	JD	JD	JD			

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: Ø % LC50: >100%
If Calculated: 95% CI________ Method________

V 2.3 7/15/2008

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

Page

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FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 111600 Blackford **Test #:** 1 of 2

TEST SOP #: TA07_01 **Test Species:** ☑ *Ceriodaphnia dubia* ☐ *Cyprinella leedsi* ☐ *Pimephales promelas*

Test aerated: yes no (circle one) Check 1: ☐ *Americamysis bahia* ☐ *Menidia beryllina* ☐ Other:_____

Concentration Ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		M			
pH (S.U.)	8.1		8.0			
Temperature °C	24.2		24.2			
Dissolved Oxygen mg/L aerate if < 4	7.8		~~6.4~~ 7.4 BA			
Conductivity ~~µmhos~~ mmhos	180		202			
Salinity ppth	<1		<1			
(initials) Measured by:	BA		BA			
(initials) Recorded by:	BA		BA			

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		BA ~~M~~			
pH (S.U.)	7.2		8.7			
Temperature °C	26.0		29.1			
Dissolved Oxygen mg/L aerate if < 4	7.9		7.7 BA ~~6.5~~			
Conductivity ~~µmhos~~ mmhos	1346		1421			
Salinity ppth	<1		<1			
(initials) Measured by:	BA		BA			
(initials) Recorded by:	BA		BA			

Comments:

Salinity only needs measuring if saltwater.

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 aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(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 aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(initials) Measured by:						
(initials) Recorded by:						

Comments: 00034

FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 1116600 Test #: 2 of 2

TEST SOP #: TA07_02_ Test Species: ☐ *Ceriodaphnia dubia* ☑ *Cyprinella leedsi* ☐ *Pimephales promelas*

Test aerated: yes no (circle one) Check 1: ☐ *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.)	7.1	8.1	8.3			
Temperature °C	25.0	24.3	24.3			
Dissolved Oxygen mg/L aerate if < 4	7.6	6.8	7.0			
Conductivity (µmhos) mmhos	271	285	299			
Salinity ppth						
(initials) Measured by:	JD	JD	JD			
(initials) Recorded by:	JD	JD	JD			

Comments:

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.)	7.2	8.0	8.4			
Temperature °C	25.9	24.5	24.4			
Dissolved Oxygen mg/L aerate if < 4	7.9	6.8	6.8			
Conductivity (µmhos) mmhos	1354	1334	1379			
Salinity ppth						
(initials) Measured by:	JD	JD	JD			
(initials) Recorded by:	JD	JD	JD			

Comments:

Salinity only needs measuring if saltwater.

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 aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(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 aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

Bioassay Instrument ID

Test ID: Blacks Ford WRF Dates: July 22-24, 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 of electronic and non-mercury filled thermometers.
Insert other device information in blank spaces(if used). Test ID = Facility or SRTs (acute SRT–Chronic SRT)

V 1.1 6/12/08 MF

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PAGE

Appendix C. SRT Bench Sheets and Statistical Analysis

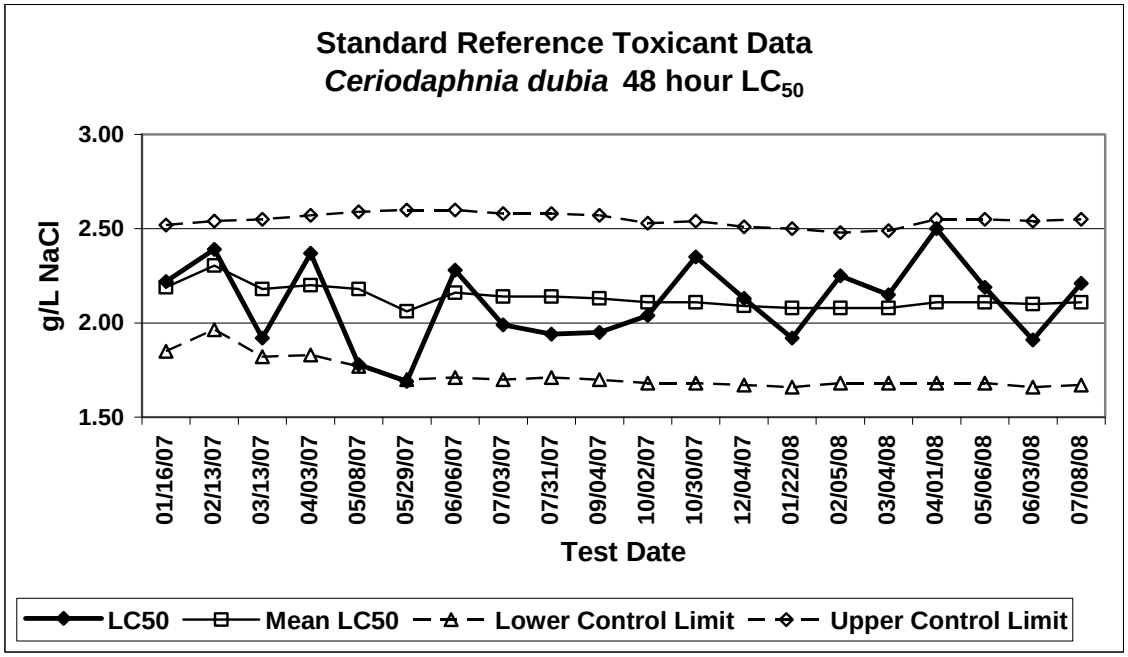
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 48-hour Acute Toxicity
Ceriodaphnia dubia (water flea) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
01/16/07	2.22	2.19	0.17	1.85	2.52
02/13/07	2.39	2.31	0.17	1.97	2.54
03/13/07	1.92	2.18	0.18	1.82	2.55
04/03/07	2.37	2.20	0.18	1.83	2.57
05/08/07	1.78	2.18	0.21	1.77	2.59
05/29/07	1.69	2.06	0.23	1.70	2.60
06/06/07	2.28	2.16	0.22	1.71	2.60
07/03/07	1.99	2.14	0.22	1.70	2.58
07/31/07	1.94	2.14	0.22	1.71	2.58
09/04/07	1.95	2.13	0.22	1.70	2.57
10/02/07	2.04	2.11	0.21	1.68	2.53
10/30/07	2.35	2.11	0.21	1.68	2.54
12/04/07	2.13	2.09	0.20	1.67	2.51
01/22/08	1.92	2.08	0.20	1.66	2.50
02/05/08	2.25	2.08	0.20	1.68	2.48
03/04/08	2.15	2.08	0.20	1.68	2.49
04/01/08	2.50	2.11	0.22	1.68	2.55
05/06/08	2.19	2.11	0.22	1.68	2.55
06/03/08	1.91	2.10	0.22	1.66	2.54
07/08/08	2.21	2.11	0.22	1.67	2.55

Means are of the last 20 SRT tests.
Lower Control Limit = mean - 2 * Std Dev
Upper Control Limit = mean + 2 * Std Dev

CV = 10.35
EPA reference 75th quartile CV = 29%



Appendix C. (continued)

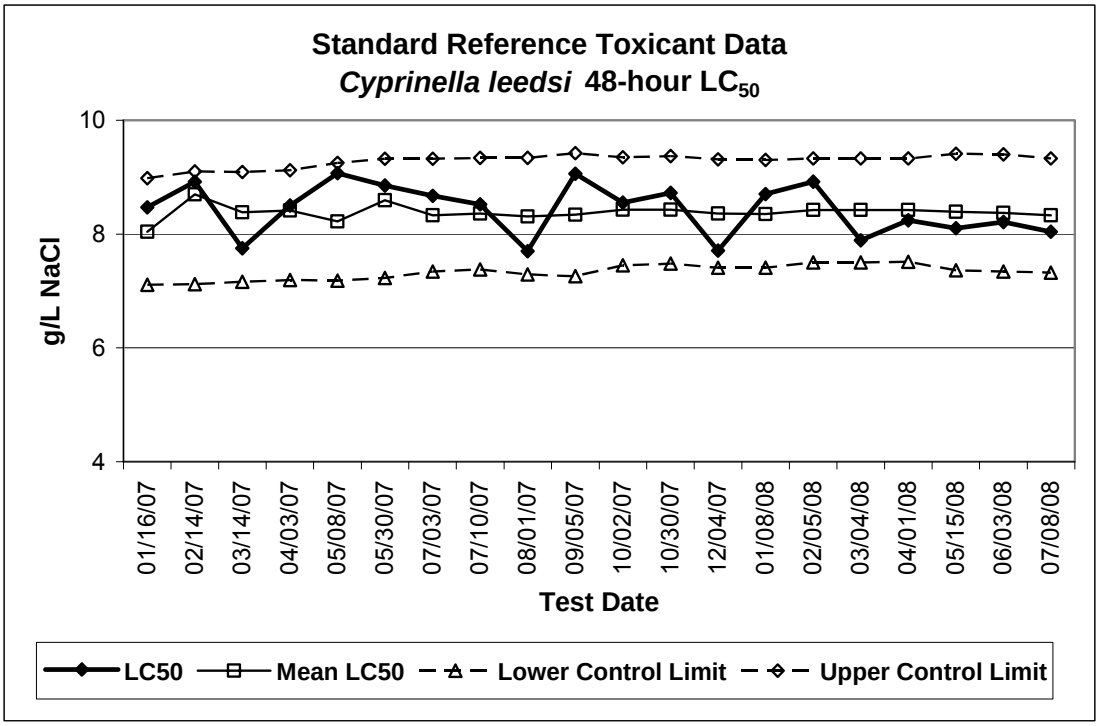
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 48-hour Acute Toxicity
Cyprinella leedsi (bannerfin shiner) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
01/16/07	8.47	8.04	0.47	7.11	8.98
02/14/07	8.92	8.70	0.32	7.12	9.10
03/14/07	7.75	8.38	0.59	7.16	9.09
04/03/07	8.50	8.41	0.49	7.19	9.12
05/08/07	9.07	8.22	0.52	7.18	9.25
05/30/07	8.85	8.59	0.48	7.23	9.32
07/03/07	8.67	8.33	0.50	7.34	9.32
07/10/07	8.52	8.36	0.49	7.38	9.34
08/01/07	7.7	8.31	0.51	7.29	9.34
09/05/07	9.06	8.34	0.54	7.26	9.42
10/02/07	8.55	8.43	0.47	7.45	9.35
10/30/07	8.72	8.43	0.47	7.48	9.37
12/04/07	7.71	8.36	0.47	7.41	9.31
01/08/08	8.7	8.35	0.47	7.41	9.30
02/05/08	8.92	8.42	0.46	7.50	9.33
03/04/08	7.89	8.42	0.46	7.50	9.33
04/01/08	8.24	8.42	0.45	7.51	9.33
05/15/08	8.1	8.39	0.51	7.36	9.41
06/03/08	8.21	8.37	0.51	7.34	9.40
07/08/08	8.04	8.33	0.50	7.32	9.33

Means are of the last 20 SRT tests.
Lower Confidence Limit = mean - 2 * Std Dev
Upper Confidence Limit = mean + 2 * Std Dev

CV = 6.03
EPA reference 75th quartile CV = 19%



Appendix C. (continued)

000031

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 #: DMW / 6.3.08
Toxicant/ Batch#: NaCl / 7.8 7.7.08 JD

Test Beginning: Date: 7.8.08 Time: 1440
Test Ending: Date: 7-12-08 Time: 1140

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	JD
Alkalinity (mg/L as $CaCO_3$):	90	Hach	90 BA (A)
Hardness (mg/L as $CaCO_3$):	86	Hach	86 BA
Total Ammonia (mg/L as N):	<0.5	Denver	MF
Salinity (ppth):	21	Mettler	JD

Organism Batch #/ Age: 24-08 / <24 hours
Feeding: (Prior to test) (Prior to renewal) / Daily
Food: (YCT) (S.subcapitata) Artemia: Lot #_____
Food Batch: 7.21.07 / 1-31-08 0hr____ 24hr____ 48hr____ 72hr____
Chamber size: 30 mL
Test volume: 20 mL per replicate

Conc.	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
µg/L mg/L			48 hr / 72 hr / 96 hr	48 hr / 72 hr / 96 hr	48 hr / 72 hr / 96 hr	48 hr / 72 hr / 96 hr	48 hr / 72 hr / 96 hr
Control	A	A	5 / 5 / 5	8.1 / / 8.1	25.6 / / 24.4	7.7 / / 7.4	0.81 / / 0.195
	B	B	5 / 5 / 5				
	C	C	5 / 5 / 5				
	D	D	5 / 5 / 5				
1.5	A	A	5 / 5 / 5	8.0 / / 8.1	24.9 / / 24.3	7.6 / / 7.7	2.58 / / 2.88
	B	B	5 / 5 / 5				
	C	C	5 / 5 / 5				
	D	D	5 / 5 / 5				
2.0	A	A	5 / 5 / 5	8.1 / / 8.1	24.7 / / 24.4	7.5 / / 7.5	3.73 / / 3.81
	B	B	5 / 5 / 5				
	C	C	5 / 5 / 5				
	D	D	5 / 5 / 4 (D)				
2.5	A	A	5 / 3 (2D) / 0 (3D)	8.1 / / 8.1	24.6 / / 24.4	7.5 / / 7.4	4.66 / / 4.83
	B	B	5 / 5 / 0 (3D)				
	C	C	5 / 3 (2D) / 0 (3D)				
	D	D	5 / 2 (3D) / 0 (2D)				
3.0	A	A	5 / 2 (3D) / 0 (2D)	8.1 / / 8.1	24.5 / / 24.4	7.4 / / 7.4	5.58 / / 5.77
	B	B	5 / 3 (2D) / 0 (3D)				
	C	C	5 / 1 (4D) / 0 (1D)				
	D	D	5 / 1 (4D) / 0 (1D)				
4.0	A	A	5 / 0 (5D) / —	8.1 / / —	24.4 / / —	7.3 / / —	7.29 / / —
	B	B	5 / 0 (5D) / —	/ 8.0 /	/ 24.0 /	/ 20 /	/ 7.49 /
	C	C	5 / 0 (5D) / —				
	D	D	5 / 0 (5D) / —				
	A						
	B						
	C						
	D						
Loaded / measured by:			BA / MF / MF	BA / JD / MF	BA / JD / MF	BA / JD / MF	BA / JD / MC
Recorded by:			BA / MF / MF	BA / JD / MF	BA / JD / MF	BA / JD / MF	BA / JD / ML

Investigators' Signatures
Agnes Daneb
Brad
Marshall Faircloth

Carlton C. Wolfe
REVIEWER

Concentrations prepared by: BA
Loading verified by: JD
Light Intensity: 50-100 Ft candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min 25.7 max 26.7 mean 26.2
Incubator # ___ min _____ max _____ mean _____
Room B246 min 22.7 max 25.7 mean 24.2

Comments: (A) Parameters written in wrong space Measured by BA

Statistics: Method: Spearman-Karber
(B) 96 hour LC_{50}: 2.21
95% Confidence Interval: lower 2.15 upper 2.26

Appendix C. (continued)

000032

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 #: DMW / 6.30.08
Toxicant/ Batch#: NaCl / ~~7.6.08~~ 7.7.08 JD

Test Beginning: Date: 7.8.08 Time: 1300
Test Ending: Date: 7-12-08 Time: 1140

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	~~0.03~~	Hach	JD
Alkalinity (mg/L as $CaCO_3$):	90	Hach	~~BM~~ BA
Hardness (mg.L as $CaCO_3$):	86	Hach	~~B~~ BA
Total Ammonia (mg/L as N):	~~0.07~~	Denver	MF
Salinity (ppth):	~~1~~	Mettler	JD

Organism Batch #/ Age: 24-08 / <24 hours
Feeding: (Prior to test) (Prior to renewal) / Daily
Food: (YCT) (S.subcapitata) Artemia: Lot #_____
Food Batch: 7-26-07 / 1-31-08 0hr____ 24hr____ 48hr____ 72hr____
Chamber size: 30 mL
Test volume: 20 mL per replicate

Conc. (%) 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	A	5	5	5	8.2		8.1 MF	24.1		25.0	7.8		7.7	0.190		0.190
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
1.5	A	A	5	5	5	8.1		8.1	24.1		25.0	7.7		7.5	2.82		2.88
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
2.0	A	A	5	5	4 1D	8.1		8.1	24.1		24.8	7.7		7.4	3.68		3.81
	B	B	5	4 1D	4												
	C	C	5	5	5												
	D	D	4	3 1D	3												
2.5	A	A	—	—	—												
	B	B	—	—	—												
	C	C	—	—	—												
	D	D	—	—	—												
3.0	A	A	—	—	—												
	B	B	—	—	—												
	C	C	—	—	—												
	D	D	—	—	—												
4.0	A	A	—	—	—												
	B	B	—	—	—												
	C	C	—	—	—												
	D	D	—	—	—												
	A																
	B																
	C																
	D																
Loaded / measured by:			MF	MF	MF	MF		MF	MF		MF	MF		MF	MF		MF
Recorded by:			MF	MF	MF	MF		MF	MF		MF	MF		MF	MF		MF

Investigators' Signatures
James Daniels
Brad Hanks
Marshall Faircloth
Loretta Culotta
REVIEWER

Concentrations prepared by: MF
Loading verified by: JP
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 25.7 max. 26.7 mean 26.2
Incubator # ___ min.____ max.____ mean____
Room B246 min. 22.7 max. 25.7 mean 24.2

Comments: (A) Parameters written in wrong space. Measured by BA

Statistics: Method: Spearman-Karber
48 (96) hour LC_{50}: 2.12
95% Confidence Interval: lower 2.03 upper 2.22

Appendix C. (continued)

000033

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 #: Well H2O / 7.7.08
Toxicant/ Batch#: NaCl / 7.7.08

Test Beginning: Date: 7.8.08 Time: 1320
Test Ending: Date: 7-12-08 Time: 1150

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<.05	Hach	JD
Alkalinity (mg/L as $CaCO_3$):	152	Hach	BA
Hardness (mg.L as $CaCO_3$):	139	Hach	BA
Total Ammonia (mg/L as N):	0.017	Denver	MF
Salinity (ppth):	21	Mettler	JD

Organism Batch #/ Age: 7.8.08 / 1 day 5
Feeding: (Prior to test) (Prior to renewal) / Daily
Food: YCT *P.subcapitata* (Artemia) Lot # 38438
Food Batch: \ \ 0hr 113 24hr – 48hr 115 72hr –
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Conc.	Rep.	Chamber #	Number Live 0hr / 24hr / 48hr	pH (SU) 0hr / 24hr / 48hr	Temperature (°C) 0hr / 24hr / 48hr	D.O. (mg/L) 0hr / 24hr / 48hr	Uncorrected Conductivity µmhos/cm mmhos/cm 0hr / 24hr / 48hr
µg/L mg/L			48 hr / 72 hr / 96 hr	48 hr / 72 hr / 96 hr	48 hr / 72 hr / 96 hr	48 hr / 72 hr / 96 hr	48 hr / 72 hr / 96 hr
Control	A	C1	10 / 10 / 10	7.9 / / 8.2	24.3 / / 24.8	7.4 / / 6.8	0.279 / / 0.317
	B	C2	10 / 10 / 10	/ 8.1 /	/ 24.1 /	/ 7.5 /	/ 0.480 /
	C						
	D						
6	A	C3	10 / 10 / 9	7.9 / / 8.2	24.3 / / 24.6	7.0 / / 6.6	9.94 / / 10.7
	B	C4	10 / 10 / 9	/ 8.0 /	/ 24.1 /	/ 6.9 /	/ 11.3 /
	C						
	D						
7	A	C5	10 / 10 / 9	7.9 / / 8.2	24.2 / / 24.6	7.3 / / 6.6	12.5 / / 13.2
	B	C6	10 / 10 / 8	/ 8.0 /	/ 24.2 /	/ 6.8 /	/ 12.3 /
	C						
	D						
8	A	C7	10 / 10 / 7	7.9 / / 8.1	24.2 / / 24.3	7.3 / / 6.7	14.4 / / 14.8
	B	C8	10 / 9 / 9	/ 8.0 /	/ 24.3 /	/ 6.6 /	/ 14.9 /
	C						
	D						
9	A	C9	10 / 10 / 10	7.9 / / 8.1	24.1 / / 24.5	7.3 / / 6.6	15.72 / / 16.3
	B	C10	10 / 10 / 1	/ 8.0 /	/ 24.3 /	/ 6.5 /	/ 16.3 /
	C						
	D						
10	A	C11	10 / 10 / –	7.8 / /	24.1 / /	7.3 / /	17.8 / /
	B	C12	10 / 10 / –	/ 8.0 /	/ 24.2 /	/ 6.3 /	/ 18.2 /
	C						
	D						
	A						
	B						
	C						
	D						
Loaded / measured by:			BA / 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
Thomas David
Bill Pitt
Marshall Faircloth
Mette Custafe
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. 25.7 max. 26.1 mean 26.2
Incubator # ___ min. ___ max. ___ mean ___
Room B248 min. 22.7 max. 25.1 mean 24.2

Comments:

Statistics: Method: Spearman-Karber
(48) / 96 hour LC_{50}: 8.04
95% Confidence Interval: lower 7.44 upper 8.47

Appendix C. (continued)

000034

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 #: Well H2O / 7.708
Toxicant/ Batch#: NaCl / 7708

Test Beginning: Date: 7.8.08 Time: 1320
Test Ending: Date: 7-12-08 Time: 1150

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	JD
Alkalinity (mg/L as $CaCO_3$):	152	Hach	BA
Hardness (mg.L as $CaCO_3$):	134	Hach	BA
Total Ammonia (mg/L as N):	<0.017	Denver	MF
Salinity (ppth):	21	Mettler	JD

Organism Batch #/ Age: 7.8.08 / 1104/5
Feeding: (Prior to test) / (Prior to renewal) Daily
Food: YCT P.subcapitata (Artemia) Lot # 38438
Food Batch: ___ / ___ 0hr 113 24hr — 48hr 115 72hr —
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Conc.	Rep.	Chamber #	Number Live 0 hr / 24 hr / 48 hr (48 hr / 72 hr / 96 hr)	pH (SU) 0 hr / 24 hr / 48 hr (48 hr / 72 hr / 96 hr)	Temperature (°C) 0 hr / 24 hr / 48 hr (48 hr / 72 hr / 96 hr)	D.O. (mg/L) 0 hr / 24 hr / 48 hr (48 hr / 72 hr / 96 hr)	Uncorrected Conductivity µmhos/cm (mmhos/cm) 0 hr / 24 hr / 48 hr (48 hr / 72 hr / 96 hr)
Control	A	C1	10 / 10 / —	8.1 / — / 8.1	24.0 / — / 25.2	7.7 / — / 6.1	0.615 / — / 0.292
	B	C2	10 / 10 / —	— / 7.9 / —	— / 24.2 / —	— / 7.0 / —	— / 0.287 / —
	C						
	D						
6	A	C3	9 / 9 / —	8.1 / — / 8.0	24.0 / — / 25.4	7.4 / — / 6.1	10.9 / — / 11.1
	B	C4	9 / 9 / —	— / 7.9 / —	— / 24.7 / —	— / 5.8 / —	— / 10.9 / —
	C						
	D						
7	A	C5	9 / 9 / —	8.1 / — / 8.0	24.0 / — / 25.2	7.4 / — / 5.9	13.4 / — / 13.2
	B	C6	8 / 8 / —	— / 8.0 / —	— / 24.5 / —	— / 6.4 / —	— / 13.2 / —
	C						
	D						
8	A	C7	7 / 6 D / 5 1D	8.0 / — / 8.1	24.0 / — / 25.3	7.4 / — / 6.1	15.0 / — / 14.8
	B	C8	7 / 7 / 3 1D	— / 8.0 / —	— / 24.4 / —	— / 6.5 / —	— / 14.8 / —
	C						
	D						
9	A	C9	3 / 3 / 3	8.0 / — / 8.1	24.0 / — / 25.0	7.3 / — / 6.4	16.8 / — / 16.5
	B	C10	1 / 1 / 0 1D	— / 8.1 / —	— / 24.5 / —	— / 6.5 / —	— / 16.5 / —
	C						
	D						
10	A	C11					
	B	C12					
	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
Mandy Fairchild
Lorette 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. 25.7 max. 26.7 mean 26.2
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 22.7 max. 25.7 mean 24.2

Comments:

Statistics: Method: Spearman-Karber
48 (96) hour LC_{50}: 7.81
95% Confidence Interval: lower 7.43 upper 8.21

Appendix C. (continued)

***Ceriodaphnia dubia* Acute Standard Reference Toxicant Test**

DATE: 7-8-08 DURATION: 48 hr TOXICANT : NaCl
SPECIES: *Ceriodaphnia dubia*

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
.00	20	0
1.50	20	0
2.00	20	1
2.50	20	20
3.00	20	20
4.00	20	20

SPEARMAN-KARBER TRIM: .00%

SPEARMAN-KARBER ESTIMATES: **LC50: 2.21**
95% LOWER CONFIDENCE: 2.15
95% UPPER CONFIDENCE: 2.26

***Cyprinella leedsi* Acute Standard Reference Toxicant Test**

DATE: 7-8-08 DURATION: 48 hr TOXICANT : NaCl
SPECIES: *Cyprinella leedsi*

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
0.00	20	0
6.00	20	2
7.00	20	3
8.00	20	9
9.00	20	16
10.00	20	20

SPEARMAN-KARBER TRIM: 0.00%

SPEARMAN-KARBER ESTIMATES: **LC50: 8.04**
95% LOWER CONFIDENCE: 7.64
95% UPPER CONFIDENCE: 8.47

Appendix D. Test Organism Receipt(s)

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 7/7/08

Shipped to: FDEP

P.O. No: N/A

Species	Quantity	Age	Brood Number	Temp.	pH	Salinity
Mysidopsis bahia	150	4 DAYS	MS 080703	26°C	8.1 S.U	20‰
Menidia beryllina	150	12 DAYS	SS 080625	25°C	8.0 S.U	20‰
						Hardness
Cyprinella leedsi	150	10 DAYS	CL 080627	26°C	7.9	90mg/L
Pimephales promelas	150	8 DAYS	FM 080629	25°C	7.8	86mg/L

Packed by: JU

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 D. (continued)

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 7/21/08

Shipped to: FDEP

P.O. No: N/A

Species	Quantity	Age	Brood Number	Temp.	pH	Salinity
Mysidopsis bahia	250 acute	4 DAYS	MS080717	25°C	8.0	20‰
Menidia beryllina	250 acute	12 DAYS	SS080709	26°C	7.9	20‰
						Hardness
Cyprinella leedsi	150 acute	10 DAYS	CL080711	25°C	7.8	88 mg/L
Pimephales promelas						

Packed by:

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 EFF-1 NPDES sampling point for Blacks Ford Water Reclamations Facility Outfall D-001, sampled on July 21, 2008.

Date Sampled	ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/21/2008 11:50	Effluent	AGP/LN	Algal Growth Potential	12.5		mg DryWt/L	0.3	0.9
7/21/2008 11:50	Effluent	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.24	U	ug/L	0.24	0.71
7/21/2008 11:50	Effluent	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	1.6	I	mg/L	0.2	2
7/21/2008 11:50	Effluent	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	1.3	I	ug/L	0.55	1.7
7/21/2008 11:50	Effluent	Overflow	Fecal Coliforms-Membrane Filter	2	U	#/100 mL	2	
7/21/2008 11:50	Effluent	Toxicology	Bioassay-Acute-Screen-FW-C.dubia, LC50	100	L	LC50		
7/21/2008 11:50	Effluent	Toxicology	Bioassay-Acute-Screen-FW-Fish, LC50	100	L	LC50		
7/21/2008 11:50	Effluent	Metals	Lead	0.2	U	ug/L	0.2	0.8
7/21/2008 11:50	Effluent	Metals	Iron	64	I	ug/L	30	120
7/21/2008 11:50	Effluent	Metals	Silver	0.025	U	ug/L	0.025	0.1
7/21/2008 11:50	Effluent	Metals	Cadmium	0.02	U	ug/L	0.02	0.08
7/21/2008 11:50	Effluent	Metals	Arsenic	0.5	U	ug/L	0.5	2
7/21/2008 11:50	Effluent	Metals	Selenium	0.5	U	ug/L	0.5	2
7/21/2008 11:50	Effluent	Metals	Zinc	28		ug/L	5	20
7/21/2008 11:50	Effluent	Metals	Nickel	1.38		ug/L	0.25	1
7/21/2008 11:50	Effluent	Metals	Copper	0.71	I	ug/L	0.5	2
7/21/2008 11:50	Effluent	Metals	Calcium	79.2		mg/L	0.075	0.3
7/21/2008 11:50	Effluent	Metals	Chromium	0.5	U	ug/L	0.5	2
7/21/2008 11:50	Effluent	Metals	Magnesium	35.5		mg/L	0.04	0.16
7/21/2008 11:50	Effluent	Metals	Aluminum	60	U	ug/L	60	240
7/21/2008 11:50	Effluent	Nutrients	Ammonia-N	0.06		mg N/L	0.01	0.02
7/21/2008 11:50	Effluent	Nutrients	TSS	4	U	mg/L	4	16
7/21/2008 11:50	Effluent	Nutrients	NO2NO3-N	0.11		mg N/L	0.004	0.01
7/21/2008 11:50	Effluent	Nutrients	O-Phosphate-P	3.9		mg P/L	0.16	0.4
7/21/2008 11:50	Effluent	Nutrients	Sulfate	160		mg SO4/L	2	5
7/21/2008 11:50	Effluent	Nutrients	Sulfide	0.05	U	mg S/L	0.05	0.2
7/21/2008 11:50	Effluent	Nutrients	Total-P	4		mg P/L	0.1	0.3
7/21/2008 11:50	Effluent	Nutrients	Kjeldahl Nitrogen	1.1		mg N/L	0.08	0.2
7/21/2008 11:50	Effluent	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.8
7/21/2008 11:50	Effluent	Pesticides	Alachlor	0.6	U	ug/L	0.6	2.4
7/21/2008 11:50	Effluent	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
7/21/2008 11:50	Effluent	Pesticides	Chlorpyrifos Methyl	0.1	U	ug/L	0.1	0.4
7/21/2008 11:50	Effluent	Pesticides	Mevinphos	0.2	UJ	ug/L	0.2	0.8

Appendix E. (continued)

Date Sampled	ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/21/2008 11:50	Effluent	Pesticides	Bromacil	0.2	UJ	ug/L	0.2	0.8
7/21/2008 11:50	Effluent	Pesticides	Diazinon	0.05	U	ug/L	0.05	0.2
7/21/2008 11:50	Effluent	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
7/21/2008 11:50	Effluent	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1
7/21/2008 11:50	Effluent	Pesticides	Phorate	0.05	UJ	ug/L	0.05	0.2
7/21/2008 11:50	Effluent	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
7/21/2008 11:50	Effluent	Pesticides	Ethoprop	0.1	UJ	ug/L	0.1	0.4
7/21/2008 11:50	Effluent	Pesticides	Naled	0.8	U	ug/L	0.8	3.2
7/21/2008 11:50	Effluent	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
7/21/2008 11:50	Effluent	Pesticides	Fonofos	0.1	U	ug/L	0.1	0.4
7/21/2008 11:50	Effluent	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
7/21/2008 11:50	Effluent	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
7/21/2008 11:50	Effluent	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
7/21/2008 11:50	Effluent	Pesticides	Butylate	0.2	U	ug/L	0.2	0.8
7/21/2008 11:50	Effluent	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
7/21/2008 11:50	Effluent	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
7/21/2008 11:50	Effluent	Pesticides	Metolachlor	0.5	U	ug/L	0.5	2
7/21/2008 11:50	Effluent	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
7/21/2008 11:50	Effluent	Pesticides	Hexazinone	0.1	U	ug/L	0.1	0.4
7/21/2008 11:50	Effluent	Pesticides	Parathion Methyl	0.1	U	ug/L	0.1	0.4
7/21/2008 11:50	Effluent	Pesticides	Atrazine	0.075	U	ug/L	0.075	0.3
7/21/2008 11:50	Effluent	Priority Organic Pollutants	2-Chlorophenol	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	4,4'-DDE	1.5	U	ug/L	1.5	5.9
7/21/2008 11:50	Effluent	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2	U	ug/L	2	7.9
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Benzo(a)pyrene	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Dieldrin	1.5	U	ug/L	1.5	5.9
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Hexachlorobenzene	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Nitrobenzene	2	U	ug/L	2	7.9
7/21/2008 11:50	Effluent	Priority Organic Pollutants	2,4-Dimethylphenol	9.9	U	ug/L	9.9	40
7/21/2008 11:50	Effluent	Priority Organic Pollutants	2,6-Dinitrotoluene	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3	U	ug/L	3	12
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Acenaphthylene	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Benzo(a)anthracene	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3	U	ug/L	3	12

Appendix E. (continued)

Date Sampled	ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Di-n-octyl phthalate	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Endosulfan I	4	U	ug/L	4	16
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Endrin	1.5	U	ug/L	1.5	5.9
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Pyrene	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	4,4'-DDT	1.5	U	ug/L	1.5	5.9
7/21/2008 11:50	Effluent	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Chrysene	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Di-n-butyl phthalate	5	U	ug/L	5	20
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Dimethyl phthalate	9.9	UJ	ug/L	9.9	40
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Fluorene	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Heptachlor	1.5	U	ug/L	1.5	5.9
7/21/2008 11:50	Effluent	Priority Organic Pollutants	2,4-Dichlorophenol	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	2,4-Dinitrotoluene	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	2-Nitrophenol	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	3,3'-Dichlorobenzidine	40	U	ug/L	40	160
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Diethyl phthalate	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	59
7/21/2008 11:50	Effluent	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Acenaphthene	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Aldrin	1.5	U	ug/L	1.5	5.9
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Benzo(b)fluoranthene	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Endosulfan II	4	U	ug/L	4	16
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Heptachlor epoxide	1.5	U	ug/L	1.5	5.9
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Hexachloroethane	3	U	ug/L	3	12
7/21/2008 11:50	Effluent	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2	U	ug/L	2	7.9
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Naphthalene	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Phenanthrene	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	alpha-BHC	1.5	U	ug/L	1.5	5.9
7/21/2008 11:50	Effluent	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	4,4'-DDD	1.5	U	ug/L	1.5	5.9

Appendix E. (continued)

Date Sampled	ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Benzidine	99	U	ug/L	99	400
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Hexachlorobutadiene	3	U	ug/L	3	12
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Pentachlorophenol	3	UJ	ug/L	3	12
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Phenol	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	beta-BHC	1.5	U	ug/L	1.5	5.9
7/21/2008 11:50	Effluent	Priority Organic Pollutants	delta-BHC	1.5	U	ug/L	1.5	5.9
7/21/2008 11:50	Effluent	Priority Organic Pollutants	2-Chloronaphthalene	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Anthracene	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	U	ug/L	15	59
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Butyl benzyl phthalate	5	U	ug/L	5	20
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Endosulfan sulfate	1.5	U	ug/L	1.5	5.9
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Endrin aldehyde	4	U	ug/L	4	16
7/21/2008 11:50	Effluent	Priority Organic Pollutants	N-Nitrosodimethylamine	2	U	ug/L	2	7.9
7/21/2008 11:50	Effluent	Priority Organic Pollutants	gamma-BHC	1.5	U	ug/L	1.5	5.9
7/21/2008 11:50	Effluent	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	59
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Benzo(k)fluoranthene	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Fluoranthene	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Hexachlorocyclopentadiene	3	U	ug/L	3	12
7/21/2008 11:50	Effluent	Priority Organic Pollutants	Isophorone	0.99	U	ug/L	0.99	4
7/21/2008 11:50	Effluent	Field Parameter	Sample Depth	0.4		m		
7/21/2008 11:50	Effluent	Field Parameter	Specific Conductance	1379		umhos/cm		
7/21/2008 11:50	Effluent	Field Parameter	Dissolved Oxygen	4.76		mg/L		
7/21/2008 11:50	Effluent	Field Parameter	pH	7.01				
7/21/2008 11:50	Effluent	Field Parameter	Temperature	29.91		C		
7/21/2008 12:00	Blank	Metals	Iron	30	U	ug/L	30	120
7/21/2008 12:00	Blank	Metals	Zinc	5	U	ug/L	5	20
7/21/2008 12:00	Blank	Metals	Calcium	0.075	U	mg/L	0.075	0.3
7/21/2008 12:00	Blank	Metals	Chromium	0.5	U	ug/L	0.5	2
7/21/2008 12:00	Blank	Metals	Cadmium	0.02	U	ug/L	0.02	0.08
7/21/2008 12:00	Blank	Metals	Arsenic	0.5	U	ug/L	0.5	2
7/21/2008 12:00	Blank	Metals	Lead	0.2	U	ug/L	0.2	0.8
7/21/2008 12:00	Blank	Metals	Copper	0.5	U	ug/L	0.5	2

Appendix E. (continued)

Date Sampled	ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/21/2008 12:00	Blank	Metals	Nickel	0.25	U	ug/L	0.25	1
7/21/2008 12:00	Blank	Metals	Magnesium	0.04	U	mg/L	0.04	0.16
7/21/2008 12:00	Blank	Metals	Selenium	0.5	U	ug/L	0.5	2
7/21/2008 12:00	Blank	Metals	Aluminum	60	U	ug/L	60	240
7/21/2008 12:00	Blank	Metals	Silver	0.025	U	ug/L	0.025	0.1
7/21/2008 12:00	Blank	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
7/21/2008 12:00	Blank	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
7/21/2008 12:00	Blank	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
7/21/2008 12:00	Blank	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
7/21/2008 12:00	Blank	Nutrients	Total-P	0.02	U	mg P/L	0.02	0.06
7/21/2008 12:00	Blank	Nutrients	Sulfate	0.2	U	mg SO4/L	0.2	0.5
7/21/2008 12:00	Blank	Nutrients	Sulfide	0.05	U	mg S/L	0.05	0.2
7/21/2008 12:00	Blank	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
7/21/2008 12:00	Blank	Pesticides	Mevinphos	0.2	UJ	ug/L	0.2	0.8
7/21/2008 12:00	Blank	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1
7/21/2008 12:00	Blank	Pesticides	Alachlor	0.59	U	ug/L	0.59	2.4
7/21/2008 12:00	Blank	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.8
7/21/2008 12:00	Blank	Pesticides	Butylate	0.2	U	ug/L	0.2	0.8
7/21/2008 12:00	Blank	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
7/21/2008 12:00	Blank	Pesticides	Diazinon	0.05	U	ug/L	0.05	0.2
7/21/2008 12:00	Blank	Pesticides	Hexazinone	0.099	U	ug/L	0.099	0.4
7/21/2008 12:00	Blank	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
7/21/2008 12:00	Blank	Pesticides	Metolachlor	0.5	U	ug/L	0.5	2
7/21/2008 12:00	Blank	Pesticides	Bromacil	0.2	UJ	ug/L	0.2	0.8
7/21/2008 12:00	Blank	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
7/21/2008 12:00	Blank	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
7/21/2008 12:00	Blank	Pesticides	Ethoprop	0.099	UJ	ug/L	0.099	0.4
7/21/2008 12:00	Blank	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
7/21/2008 12:00	Blank	Pesticides	Fonofos	0.099	U	ug/L	0.099	0.4
7/21/2008 12:00	Blank	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
7/21/2008 12:00	Blank	Pesticides	Parathion Methyl	0.099	U	ug/L	0.099	0.4
7/21/2008 12:00	Blank	Pesticides	Atrazine	0.05	U	ug/L	0.05	0.2
7/21/2008 12:00	Blank	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
7/21/2008 12:00	Blank	Pesticides	Chlorpyrifos Methyl	0.099	U	ug/L	0.099	0.4

Appendix E. (continued)

Date Sampled	ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/21/2008 12:00	Blank	Pesticides	Metribuzin	0.099	U	ug/L	0.099	0.4
7/21/2008 12:00	Blank	Pesticides	Phorate	0.05	UJ	ug/L	0.05	0.2
7/21/2008 12:00	Blank	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
7/21/2008 12:00	Blank	Pesticides	Naled	0.79	U	ug/L	0.79	3.2
7/21/2008 12:00	Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38	U	ug/L	38	150
7/21/2008 12:00	Blank	Priority Organic Pollutants	4,4'-DDD	1.4	U	ug/L	1.4	5.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	4-Nitrophenol	14	U	ug/L	14	58
7/21/2008 12:00	Blank	Priority Organic Pollutants	Chrysene	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Endosulfan II	3.8	U	ug/L	3.8	15
7/21/2008 12:00	Blank	Priority Organic Pollutants	Endosulfan sulfate	1.4	U	ug/L	1.4	5.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.7
7/21/2008 12:00	Blank	Priority Organic Pollutants	2-Nitrophenol	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Anthracene	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Diethyl phthalate	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Dimethyl phthalate	9.6	UJ	ug/L	9.6	38
7/21/2008 12:00	Blank	Priority Organic Pollutants	Hexachlorobenzene	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Pentachlorophenol	2.9	U	ug/L	2.9	12
7/21/2008 12:00	Blank	Priority Organic Pollutants	gamma-BHC	1.4	U	ug/L	1.4	5.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	U	ug/L	2.9	12
7/21/2008 12:00	Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.7
7/21/2008 12:00	Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	U	ug/L	2.9	12
7/21/2008 12:00	Blank	Priority Organic Pollutants	Di-n-butyl phthalate	4.8	U	ug/L	4.8	19
7/21/2008 12:00	Blank	Priority Organic Pollutants	Di-n-octyl phthalate	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Dieldrin	1.4	U	ug/L	1.4	5.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Endrin	1.4	U	ug/L	1.4	5.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Naphthalene	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Phenanthrene	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	4,4'-DDT	1.4	U	ug/L	1.4	5.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.96	U	ug/L	0.96	3.8

Appendix E. (continued)

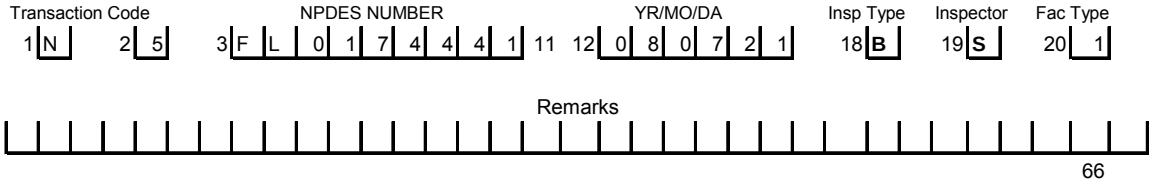
Date Sampled	ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/21/2008 12:00	Blank	Priority Organic Pollutants	Fluorene	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Phenol	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	beta-BHC	1.4	U	ug/L	1.4	5.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Butyl benzyl phthalate	4.8	U	ug/L	4.8	19
7/21/2008 12:00	Blank	Priority Organic Pollutants	Fluoranthene	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Heptachlor epoxide	1.4	U	ug/L	1.4	5.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	delta-BHC	1.4	U	ug/L	1.4	5.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	2,4-Dichlorophenol	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	2-Chloronaphthalene	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Aldrin	1.4	U	ug/L	1.4	5.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Benzidine	96	U	ug/L	96	380
7/21/2008 12:00	Blank	Priority Organic Pollutants	Endosulfan I	3.8	U	ug/L	3.8	15
7/21/2008 12:00	Blank	Priority Organic Pollutants	Heptachlor	1.4	U	ug/L	1.4	5.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Hexachlorobutadiene	2.9	U	ug/L	2.9	12
7/21/2008 12:00	Blank	Priority Organic Pollutants	2,4-Dimethylphenol	9.6	U	ug/L	9.6	38
7/21/2008 12:00	Blank	Priority Organic Pollutants	2,4-Dinitrophenol	14	U	ug/L	14	58
7/21/2008 12:00	Blank	Priority Organic Pollutants	4,4'-DDE	1.4	U	ug/L	1.4	5.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Acenaphthylene	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Endrin aldehyde	3.8	U	ug/L	3.8	15
7/21/2008 12:00	Blank	Priority Organic Pollutants	Isophorone	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.7
7/21/2008 12:00	Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	2-Chlorophenol	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Acenaphthene	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	14	U	ug/L	14	58
7/21/2008 12:00	Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	U	ug/L	2.9	12

Appendix E. (continued)

Date Sampled	ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/21/2008 12:00	Blank	Priority Organic Pollutants	Hexachloroethane	2.9	U	ug/L	2.9	12
7/21/2008 12:00	Blank	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.7
7/21/2008 12:00	Blank	Priority Organic Pollutants	Pyrene	0.96	U	ug/L	0.96	3.8
7/21/2008 12:00	Blank	Priority Organic Pollutants	alpha-BHC	1.4	U	ug/L	1.4	5.8

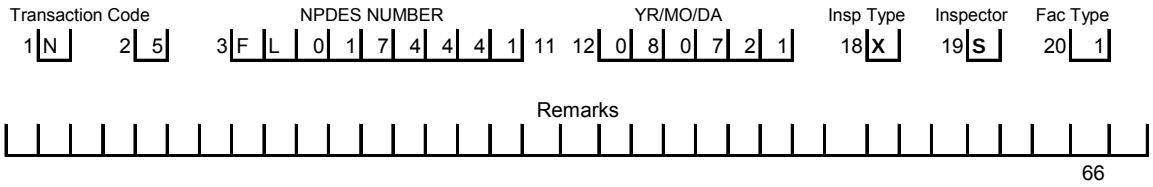
The Bioassay of the Blacks Ford Water Reclamations Facility effluent sampled on July 21, 2008. NPDES #FL0174441.

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



The Priority Pollutants Analysis of the Blacks Ford Water Reclamations Facility effluent sampled on July 21, 2008. NPDES #FL0174441.

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



Biological Analyses of the Blacks Ford Water Reclamations Facility effluent sampled on July 21, 2008. NPDES #FL0174441.

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

