

Effluent Quality Assessment

Julington Creek WRF

St. Johns County

NPDES #FL0043591

Sampled December 17, 2007

April 2008

Biology Section
Bureau of Laboratories
Division of Resource Assessment and Management

Quality Manual No. 870346G
NELAC Certification No. E31780

Julington Creek WRF, 1638 Davis Pond Boulevard, Jacksonville, St. Johns County, Florida, 32259. NPDES #FL0043591. Effluent samples for this facility were collected on December 17, 2007.

Introduction

Julington Creek wastewater reclamation facility (WRF) is an advanced secondary wastewater treatment facility which uses the activated-sludge treatment process to treat domestic wastewater. Effluent discharge from the facility is intermittent and rainfall dependent. The facility has a design capacity of 1.5 million gallons per day (MGD) annual average daily flow (AADF). The AADF through the facility from December 2006 through November 2007 was 0.950 MGD. The AADF discharged to surface water was 0.326 MGD and the AADF discharged via reuse was 0.601 MGD. The wastewater treatment system consists of:

- two automatically cleaned bar screens;
- two alum storage tanks with a pump feed system for phosphorus removal,
- one 1.5 million gallon reuse storage tank;
- three modified Ludzack-Ettinger basins, weirs and channels leading from the basins to the clarifiers;
- six tertiary filter cells;
- one chlorine contact chamber;
- one dechlorination unit;
- one aerobic digester;
- one sludge holding basin;
- one hydro-pneumatic tank;
- one 1 MG reject water holding tank; and
- one gravity belt residuals thickener.

Sodium hypochlorite is used for chlorination. Sulfur dioxide is used for dechlorination. Dewatered residuals are transported to the JEA – Buckman residuals treatment facility for further treatment and disposal.

The primary method of effluent disposal from the facility is through a slow rate public access irrigation system (R-001). Discharge limited to ≤1.537 MGD is applied via irrigation to a golf course and to the median and landscaped areas on road right-of-ways. A second land application system (R-002) is a 0.048 MGD AADF permitted capacity rapid infiltration basin (RIB) system. The RIB system consists of one 0.46 hectare (1.16 acre) percolation pond which is located approximately at latitude 30º 06’ 17”N, longitude 81º 20’ 36 W.

Surface water discharges are the alternative to land application. There are two surface water discharges. One is an existing permitted 0.476 MGD AADF APRICOT Act discharge through Outfall D-001 to the Class III freshwaters of the St. Johns River. The other is an existing limited wet weather discharge through Outfall D-002 to the Class III freshwaters of the St. Johns River. The Outfalls (D-001 and D-002) share a discharge pipe which is approximately 670.7 m (2200 feet) in length and discharges at a depth of approximately 2.4 m. The point of discharge for both Outfalls (D-001 and D-002) is located approximately at latitude 30º 05’ 48” N, longitude 81º 38’ 32” W.

The facility has no administrative orders. The facility is operating under Consent Order OGC File NO: 06-1796 which is a blanket consent order covering all of Jacksonville’s wastewater treatment facilities. The facility has no mixing zone. A review of Discharge Monitoring Report (DMR) data from September 2006 – September 2007 revealed violations of permit limits for Total Phosphorus (limit 3 mg/L maximum) in November 2006 (4.56 mg/L) and December 2006 (6.79 mg/L). (Facility information provided by Edward Jamro FDEP Northeast District.)

Methods

Samples were collected from the EFD-1 NPDES sampling point for Outfall D-001 by Eesa Ali, Lisa Crespo, and Edward Jamro (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 96 - 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. The bioassay tests were performed in accordance with the facility's permit requirements.

Toxicity Test Results

Tests were performed December 18 - 22, 2007.

Ceriodaphnia dubia 96-hour acute screening bioassay –	LC_{50} > 100%, 0% mortality in 100% sample at 96 hours
Cyprinella leedsi 96-hour acute screening bioassay –	LC_{50} > 100%, 0% mortality in 100% sample at 96 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.

Algal Growth Potential

The effluent Algal Growth Potential (AGP) was 135 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 77.9 (±20%) mg dry wt/L (Table 1; Miller et al. 1978).

See Table 1 for AGP results.

Chemistry Results

Total residual chlorine (TRC) and total ammonia were not detected in the bioassay sample in the laboratory. TRC was not detected in the effluent at the time of sample collection. The total ammonia concentration in the sample collected and preserved for chemical analysis was 0.051 mg/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was < 0.02 mg/L.

Atrazine, 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.). Aluminum, 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 EFD-1 NPDES sample collection point for Outfall D-001 for this facility on December 17, 2007, was not acutely toxic to either test species during the 96-hour acute screening bioassays. The effluent AGP result exceeded the "problem" threshold for fresh receiving waters. Effluent water quality samples did not exceed any applicable water quality standards or violate any 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 limitation of the freshwater species *Pseudokirchneriella subcapitata* and ratios of nitrogen to phosphorus for samples from the Julington Creek WRF collected on December 17, 2007.

Julington Creek WRF					
Location	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (TN) ± 20%	Inorganic N:P ratio	Total N:P ratio
Effluent	135	77.9 ± 15.6	129 ± 25.8	1.6	2.4

Table 2. Effluent limits, Class III Freshwater Criteria, chemical and microbiological data for samples from Julington Creek WRF collected on December 17, 2007.

Julington Creek WRF NPDES #FL0043591	Class III Standards	Effluent Limits D-001	Effluent	
Organic Constituents (µg/L)				
Atrazine	-	-	1.1	
Metals (µg/L unless otherwise noted)				
Aluminum	-	-	100	I
Arsenic	≤ 50	-	0.5	U
Cadmium	≤ 0.50 b	-	0.02	U
Calcium (mg/L)	-	-	49.4	A
Chromium-III	≤ 168.5 b	-	1	U
Copper	≤ 18.8 b	-	0.79	I
Iron	≤ 1,000	-	56	I
Lead	≤ 9.02 b	-	0.2	U
Magnesium (mg/L)	-	-	25.1	A
Nickel	≤ 104.3 b	-	1.15	A
Selenium	≤ 5.0	-	0.5	U
Silver	≤ 0.07	≤ 0.07 s	0.025	U
Zinc	≤ 239.7 b	-	37	A
Nutrients (mg/L)				
Ortho-phosphate	-	-	1.3	
Total Phosphorus	-	≤ 3 s	1.4	
Total Ammonia	-	Report	0.051	
Un-ionized Ammonia	≤ 0.02 s	≤ 0.02 s	≤ 0.02	c
Nitrate and Nitrite	-	-	2	
Total Kjeldahl Nitrogen	-	-	1.4	
Organic Nitrogen	-	-	1.349	c
Total Nitrogen	-	≤ 24 s	3.4	c
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 5.0	≥ 5.0 s	8.4	
pH (SU)	6.0 - 8.5	6.0 - 8.5 s	7.0	
Conductivity (µmhos/cm)	≤ 1,275	-	1,086	
Total Suspended Solids (mg/L)	-	≤ 10 s	-	
CBOD, 5 day (mg/L), N - inhibited	-	≤ 10 s	-	
Temperature °C	-	Report	23.0	
Sample Depth (m)	-	-	0.1	
Total Residual Chlorine (mg/L)	≤ 0.01	≤ 0.01 s	≤ 0.02	U
Flow (MGD)	-	≤ 1.5 a	0.326	a
Hardness (mg $CaCO_3$)	-	-	226.71	c
Microbiology (Number of colony forming units/100ml)				
Fecal Coliforms	≤ 800	≤ 86	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

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

U - Material analyzed for but not detected; value reported is the method detection limit

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Request Number: RQ-2007-12-17-25
Julington Creek WRF

Event ID *

Requester: Michael Tanski

Field Report Prepared By: Lisa Crespo / E.A.

Customer: NE-DIST

Collected By: Eesa Ali / Lisa Crespo / ET

Send Final Report To Tom Kallemeyn

Project ID: FYI5

Sampling Agency: DEP NED

PMAS: 1143

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	Julington Cr WRF	☐ Comp ☑ Grab	Date 12/17/07 Time 940 Central		
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
		0.0	8.44		
	Matrix (Include type e.g. Salt, Fresh, etc) Temp (C) pH	Sample Depth ☑ m ☐ ft	0.54	☑ Salinity (PPTh) ☑ Sp Conductance (umho/cm)	NPDES Number
	Domestic / Fresh 22.95 7.01	0.1	1086		A
	Latitude o ' " Longitude o ' "	Comments	DR 2010 (1 meter (bench)		

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	Blank	☐ Comp ☑ Grab	Date 12/17/07 Time 1040 Central		
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Blank,				
	Matrix (Include type e.g. Salt, Fresh, etc) Temp (C) pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number
					D
	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		
	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		
	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			

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
	12/17/07 1010	DTR						12-18-07 9:20am

* 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: Julington Creek WRF

Address: 1638 Davis Pond Blvd

City: Jacksonville County: St. Johns

Contact/District: Tom Kallemeyn / NF Dist

NPDES Permit #: FL 0043591

LIMS Job #: TIH-2007-12-18.41.01 LIMS Sample #: 1072710

Lims Data Entry: 12-26-07 MF Data Entry Verification: 12.26.07 JD

Sample Collection: Date: 12-17-07 Time: 9:40

Hold Time Start: Date: 12-17-07 Time: 9:40

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

Initial sample handling:

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

Aeration : (yes) no Initial DO: 9.8 mg/L Final DO: 8.1 mg/L Duration: 60 minutes Rate: ~ 100 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. 24.1 max. 25.0 mean 24.5

Incubator # ____ min. ____ max. ____ mean ____

Room B246 min. 23.4 max. 25.4 mean 24.4

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)

Investigators' Signatures

Bruce Shuler

Marshall Faircloth

Jason Davis

Loretta L. 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	—	0.0	DR 2010 Clarity	EA/LC	MF
Lab Total Residual Cl_2 (mg/L):	<0.03	<0.03	—	—	—	<0.03	HACH	JD	BA
Alkalinity (mg/L as $CaCO_3$):	98	153	—	—	—	128	HACH	BA	JD
Hardness (mg/L as $CaCO_3$):	108	150	—	—	—	250	HACH	BA	JD
Total Ammonia (mg/L as N):	<0.017	<0.017	—	—	—	<0.017	DENVER	MF	BA
Salinity (ppth):	<1	<1	—	—	—	0.47	YSI / Mettler	BA	JD

V 1.4 9/12/05

Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1072710 Test #: 1 SOP#:TA 07 01 Test Started: Date 12-18-07 Time: 13:35
Organism/Batch/Age: C dubia / 4hour / neonates Test Ended: Date 12-22-07 Time: 1100
Chamber/Test Volume: 30 / 20 ml Diluent/ Batch: DMW / 12.12.07
Food/Batch: YCT 7-20-07 / 90 P.sub 7-26-07 / 2nd Artemia 0hr — 24hr — 48hr — 72hr — Artemia Lot# —
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	BA 5 A	5	5	5	5	5	5
	B	5 B	5	5	5	5	5	5
	C	5 C	5	5	5	5	5	5
	D	5 D	5	5	5	5	5	5
100%	A	5 A	5	5	5	5	5	5
	B	5 B	5	5	5	5	5	5
	C	5 C	5	5	5	5	5	5
	D	V 5 D	5	5	5	5	5	5
		Record Organism in Chemtech space 12-19-07						

Loaded/Verified by: BA / SD Checked by: SD SD SD SD DD mF
m = missing d = dead BR/AR = Before/After Renewal
Test Results:
Screening Tests: Report LC50 as >100%, =100%, or <100%.
% mortality in 100% sample: 0 % LC50: >100 %
If Calculated: 95% CI_____ Method_____
Substitue highest test concentration used if other than 100% (example: Ocean outfall tested at 30% concentration).

Comments:

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Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1072710 Test #: 2 SOP#:TA 07 02 Test Started: Date 12-18-07 Time: 13:25
Organism/Batch/Age: C. leedsi / 12-18-07 / 11 days Test Ended: Date 12-22-07 Time: 1110
Chamber/Test Volume: 1000 / 500 ml Diluent/ Batch: Lell / 12.17.07
Food/Batch: YCT — P.sub — Artemia 0hr 12-18-07 24hr ____ 48hr 12-20-07 72hr ____ Artemia Lot# 44-536-90
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	5	5	5
	B	B2	5	5	5	5	5	5
	C	B3	5	5	5	5	5	5
	D	B4	5	5	5	5	5	5
100%	A	B5	5	5	5	5	5	5
	B	B6	5	5	5	5	5	5
	C	B7	5	5	5	5	5	5
	D	B8	5	5	5	5	5	5
Loaded/Verified by: MA / JD		Checked by:	JD	JD	JD	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: Ø % 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

LIMS Sample # : 107210 Test #: 1 of 2

TEST SOP #: TA07_ 0 7 M F / 1 Test Species: (*Ceriodaphnia dubia*) *Cyprinella leedsi* *Pimephales promelas* *Americamysis bahia* *Menidia beryllina* Other:_____

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		M	M		M
pH (S.U.)	8.0		8.1	7.7		8.2
Temperature °C	24.1		24.0	24.0		24.8
Dissolved Oxygen mg/L	8.2		7.9	7.9		7.5
Conductivity (µmhos / mmhos)	170.1		183.4	168.3		190
(initials) Measured by:	BA		JJ	JJ		MF
(initials) Recorded by:	BA		JJ	JJ		MF

Comments:

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		M	M		M
pH (S.U.)	7.3		8.2	6.9		8.2
Temperature °C	24.0		24.0	25.4		25.3
Dissolved Oxygen mg/L	8.1		7.7	8.9		7.7
Conductivity (µmhos / mmhos)	1087		1154 stirring mark	1101		1100
(initials) Measured by:	BA		JJ	JJ		MF
(initials) Recorded by:	BA		JJ	JJ		MF

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:

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:

000009

V 2.0 2/24/04

FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 107270 **Test #:** 2 of 2

TEST SOP #: TA07_02 **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	C	D	A
pH (S.U.)	7.8	7.8 (8.2 @)	8.2	8.3	8.1	8.1
Temperature °C	24.0	24.2	24.0	24.5	24.0	24.7
Dissolved Oxygen mg/L	7.6	8.1 (@)	7.9	7.8	6.7	7.5
Conductivity (µmhos) mmhos	268	274	277	270	271	283
(initials) Measured by:	BA	JD	JD	JD	JD	MF
(initials) Recorded by:	BA	JD	JD	JD	JD	MF

Comments: @ Recorded D.O. in PH blank @ 24hr. J.D. 11-19-07 Correct initials MF 11-21-07

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C	C	D	A
pH (S.U.)	7.3	7.8 (6.7 @)	8.1	8.0 (7.1 @)	7.6	8.0
Temperature °C	24.1	24.9	24.2	25.9	24.4	24.9
Dissolved Oxygen mg/L	7.9	6.7	7.4	8.2	5.6	7.7
Conductivity (µmhos) mmhos	1064	1090	1120	1100	1114	1138
(initials) Measured by:	BA	JD	JD	JD	JD	MF
(initials) Recorded by:	BA	JD	JD	JD	JD	MF

Comments: @ Recorded D.O. in PH blank @ 24hr J.D.

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:

Appendix C. SRT Bench Sheets and Statistical Analysis

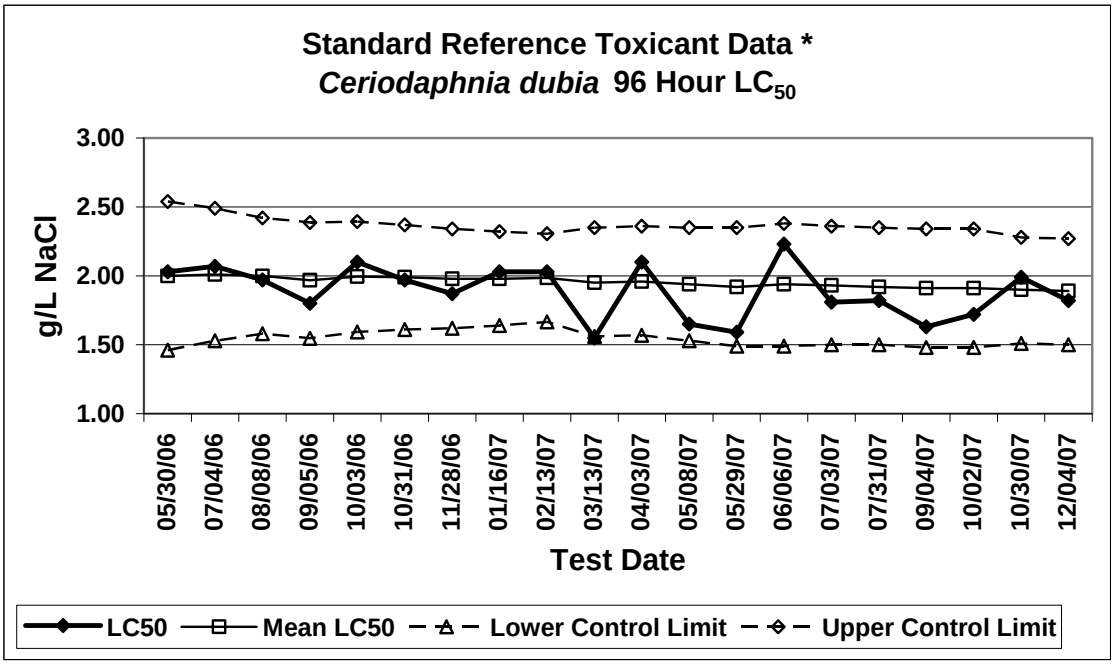
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 96-hour Acute Toxicity
Ceriodaphnia dubia (water flea) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
05/30/06	2.03	2.00	0.27	1.46	2.54
07/04/06	2.07	2.01	0.24	1.53	2.49
08/08/06	1.97	2.00	0.21	1.58	2.42
09/05/06	1.80	1.97	0.21	1.55	2.39
10/03/06	2.10	1.99	0.20	1.59	2.39
10/31/06	1.97	1.99	0.19	1.61	2.37
11/28/06	1.87	1.98	0.18	1.62	2.34
01/16/07	2.03	1.98	0.17	1.64	2.32
02/13/07	2.03	1.99	0.16	1.67	2.31
03/13/07	1.55	1.95	0.20	1.56	2.35
04/03/07	2.10	1.96	0.19	1.57	2.36
05/08/07	1.65	1.94	0.20	1.53	2.35
05/29/07	1.59	1.92	0.22	1.49	2.35
06/06/07	2.23	1.94	0.22	1.49	2.38
07/03/07	1.81	1.93	0.22	1.50	2.36
07/31/07	1.82	1.92	0.21	1.50	2.35
09/04/07	1.63	1.91	0.22	1.48	2.34
10/02/07	1.72	1.91	0.21	1.48	2.34
10/30/07	1.99	1.90	0.19	1.51	2.28
12/04/07	1.82	1.89	0.19	1.50	2.27

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

CV = 10.18
EPA reference 75th quartile CV = 29%



Appendix C. (continued)

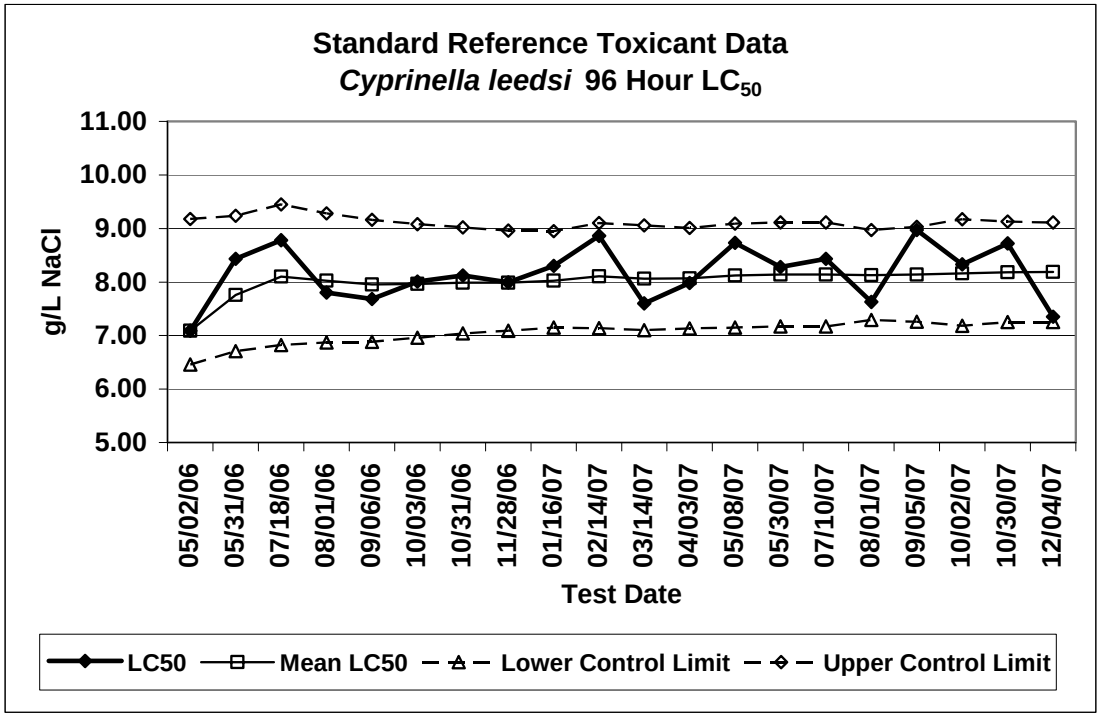
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 96-hour Acute Toxicity
Cyprinella leedsi (bannerfin shiner) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
05/02/06	7.09	7.09	0.68	6.46	9.18
05/31/06	8.43	7.76	0.95	6.71	9.24
07/18/06	8.78	8.10	0.89	6.82	9.45
08/01/06	7.80	8.03	0.74	6.87	9.28
09/06/06	7.68	7.96	0.66	6.88	9.16
10/03/06	8.01	7.97	0.59	6.96	9.08
10/31/06	8.12	7.99	0.54	7.04	9.02
11/28/06	7.99	7.99	0.50	7.09	8.96
01/16/07	8.30	8.02	0.48	7.15	8.95
02/14/07	8.86	8.11	0.53	7.14	9.10
03/14/07	7.60	8.06	0.52	7.10	9.06
04/03/07	7.98	8.07	0.47	7.13	9.01
05/08/07	8.73	8.12	0.48	7.15	9.09
05/30/07	8.28	8.14	0.48	7.17	9.11
07/10/07	8.43	8.14	0.48	7.17	9.11
08/01/07	7.63	8.13	0.42	7.29	8.97
09/05/07	8.97	8.14	0.44	7.26	9.03
10/02/07	8.33	8.16	0.50	7.18	9.17
10/30/07	8.72	8.18	0.47	7.25	9.13
12/04/07	7.35	8.19	0.47	7.25	9.11

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

CV = 5.74
EPA reference 75th quartile CV = 19%



Appendix C. (continued)

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 111-28-07
Toxicant/ Batch#: NaCl 112-3-07

Test Beginning: Date: 12-5-07 Time: 15:10
Test Ending: Date: 12-9-07 Time: 7:15

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	JD
Alkalinity (mg/L as $CaCO_3$):	82	Hach	BA
Hardness (mg.L as $CaCO_3$):	91	Hach	BA
Total Ammonia (mg/L as N):	<0.97	Denver	MF
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 46-07 / <24hrs
Feeding: (Prior to test) / (Prior to renewal) / Daily
Food: (YCT) (P.subcapitata) Artemia: Lot # —
Food Batch: 7-26-06 7-26-06 0hr — 24hr — 48hr — 72hr —
Chamber size: 30 mL
Test volume: 20 mL per replicate

Conc. (g/L or 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 or mmhos/cm) 0 hr / 24 hr / 48 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	48 hr / 72 hr / 96 hr
Control	A	A	5 / 5 / 5	8.0 / / 8.2	24.0 / / 24.0	7.6 / / 7.7	0.168 / / 0.210
	B	B	5 / 5 / 5				
	C	C	5 / 5 / 5				
	D	D	5 / 5 / 5				
1.5	A	A	5 / 5 / 5	7.9 / / 8.1	24.1 / / 24.0	7.6 / / 7.7	2.89 / / 3.59
	B	B	5 / 5 / 4 1D				
	C	C	5 / 5 / 5				
	D	D	5 / 5 / 5				
2.0	A	A	5 / 5 / 4 1D	7.9 / / 8.1	24.4 / / 24.0	7.5 / / 7.5	3.66 / / 4.19
	B	B	5 / 5 / 2 3D				
	C	C	5 / 5 / 4 + 1D 5HR				
	D	D	5 / 5 / 4 1D				
2.5	A	A	5 / 3 2D / 0 3D	8.0 / / 8.1	24.3 / / 24.0	7.5 / / 7.5	4.58 / / 5.47
	B	B	5 / 4 1D / 2 2D				
	C	C	5 / 5 / 0 3D				
	D	D	5 / 4 1D / 0 4D				
30	A	A	5 / 2 3D / 0 2D	8.0 / / 8.1	24.7 / / 24.0	7.4 / / 7.5	5.45 / / 6.60
	B	B	5 / 3 2D / 0 3D				
	C	C	5 / 3 2D / 0 3D				
	D	D	5 / 2 2D / 0 2D				
40	A	A	5 / 0 5D / —	8.0 / 8.1 / —	24.0 / 24.0 / —	7.2 / 7.3 / —	7.01 / 7.53 / —
	B	B	5 / 0 5D / —				
	C	C	5 / 0 5D / —				
	D	D	5 / 0 4D / —				
	A						
	B						
	C						
	D						
Loaded / measured by:			GA JD BA	BA JD BA	MA JD BA	BA JD BA	BA JD BA
Recorded by:			BA JD BA	BA JD BA	BA JD BA	BA JD BA	BA JD BA

Investigators' Signatures
Tonya Daniels
Barb Albee
Marshall Faircloth
Loretta 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 25.5 max 26.6 mean 26.1
Incubator # ___ min ___ max ___ mean ___
Room B246 min 24.0 max 25.8 (25.7) mean 24.9

Comments:

Statistics: Method: Spearman-Karber
48 / 96 hour LC_{50}: 2.13
95% Confidence Interval: lower 2.00 upper ~~2.27~~ BA 2.27

PAGE 000001

revised 08/24/06 SP

Appendix C. (continued)

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 #: DMW 111-28-07
Toxicant/ Batch#: NaCl 112-3-07

Test Beginning: Date: 12-5-07 Time: 13:10
Test Ending: Date: 12-9-07 Time: 7:15

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	JD
Alkalinity (mg/L as $CaCO_3$):	82	Hach	BA
Hardness (mg.L as $CaCO_3$):	91	Hach	BA
Total Ammonia (mg/L as N):	<0.07	Denver	MF
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 46-071 24hrs
Feeding: (Prior to test) X (Prior to renewal) Daily
Food: (YCT) (P.subcapitata) Artemia: Lot #: —
Food Batch: 7-26-06 7-26-06 0hr — 24hr — 48hr — 72hr —
Chamber size: 30 mL
Test volume: 20 mL per replicate

Conc. (ug/L mg/L)	Rep.	Chamber #	Number Live 0 hr (48 hr)	Number Live 24 hr (72 hr)	Number Live 48 hr (96 hr)	pH (SU) 0 hr (48 hr)	pH (SU) 24 hr (72 hr)	pH (SU) 48 hr (96 hr)	Temperature (°C) 0 hr (48 hr)	Temperature (°C) 24 hr (72 hr)	Temperature (°C) 48 hr (96 hr)	D.O. (mg/L) 0 hr (48 hr)	D.O. (mg/L) 24 hr (72 hr)	D.O. (mg/L) 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	7.9		7.9	24.0		24.5	7.6		7.4	0.163		0.172
	B	B	5	5	5		—			—			—			—	
	C	C	5	5	5												
	D	D	5	5	5												
1.5	A	A	5	5	4 [1D]	7.9		7.8	24.0		24.4	7.6		7.4	2.78		3.1
	B	B	4	2 [2D]	2		—			—			—			—	
	C	C	5	5	5												
	D	D	5	5	5												
2.0	A	A	4	3 [1D]	3	8.0		7.1	24.0		24.8	7.6		7.5	3.67		3.72
	B	B	2	0 [4D]	—		7.9			24.0			7.8			3.71	—
	C	C	5	2 [3D]	[2 3D]												
	D	D	4	2 [2D]	2												
2.5	A	A	—	—	—	8.0		—	24.0			7.7		—	4.44		—
	B	B	2	0 [2D]	—		7.9			24.1			8.0			4.54	
	C	C	—	—	—												
	D	D	—	—	—												
3.0	A	A	—	—	—	8.0		—	24.0			7.7		—	5.33		—
	B	B	—	—	—		—			—			—			—	
	C	C	—	—	—												
	D	D	—	—	—												
4.0	A	A	—	—	—	—		—	—		—	—		—	—		—
	B	B	—	—	—		—			—			—			—	
	C	C	—	—	—												
	D	D	—	—	—												
	A																
	B																
	C																
	D																
Loaded / measured by:			BA	MF	BA	BA	MF	BA	BA	MF	BA	BA	MF	BA	BA	MF	BA
Recorded by:			BA	MF	BA	BA	MF	BA	BA	MF	BA	BA	MF	BA	BA	MF	BA

Investigators' Signatures
James Daniel
Bruce Adams
Marshall Faircloth

Loretta 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 25.5 max 26.0 mean 26.1
Incubator # ___ min ___ max ___ mean ___
Room B246 min 24.0 max 25.7 mean 24.9

000002

Comments:

Statistics: Method: Spearman-Karber
48 / (96) hour LC_{50}: 1.82
95% Confidence Interval: lower 1.66 upper 1.99

Appendix C. (continued)

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 / 12.4.07
Toxicant/ Batch#: NaCl / 12.3.07

Test Beginning: Date: 12.4.07 Time: 1210
Test Ending: Date: 12.8.07 Time: 1040

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	JD
Alkalinity (mg/L as $CaCO_3$):	139	Hach	BA
Hardness (mg.L as $CaCO_3$):	144	Hach	BA
Total Ammonia (mg/L as N):	<0.017	Denver	MA
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 12.4.07 / 1 day 5
Feeding: ~~Prior to test~~ / Prior to renewal / Daily
Food: YCT *P.subcapitata* (Artemia) Lot # 651-531-40
Food Batch: — / — 0hr 12.3.07 24hr / 48hr 12.5.07 72hr /
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Conc.			Number Live			pH (SU)			Temperature (°C)			D.O. (mg/L)			Uncorrected Conductivity (24) umhos/cm (mmhos/cm)		
(%) µg/L mg/L	Rep.	Chamber #	0hr 48 hr	24hr 72 hr	48hr 96 hr	0hr 48 hr	24hr 72 hr	48hr 96 hr	0hr 48 hr	24hr 72 hr	48hr 96 hr	0hr 48 hr	24hr 72 hr	48hr 96 hr	0 hr 48 hr	24 hr 72 hr	48 hr 96 hr
Control	A	B1	15	10	9D	7.8		7.9	24.0		24.9	7.7		5.1	0.215		0.300
	B	B2	15	10	6D		8.0			24.0			6.3			0.284	
	C																
	D																
6	A	B3	10	10	10	7.8		7.8	24.0		24.9	7.5		5.1	10.8		10.3
	B	B4	10	10	8D		7.9			24.0			6.2			10.1	
	C																
	D																
7	A	B5	10	9D	6D	7.8		7.8	24.0		24.8	7.6		5.1	13.2		12.7
	B	B6	10	9D	4		7.9			24.0			6.3			12.5	
	C																
	D																
8	A	B7	10	5D	4D	7.8		7.8	24.1		24.8	7.6		5.3	14.5		13.8
	B	B8	10	3D	1D		7.9			24.0			6.1			13.6	
	C																
	D																
9	A	B9	10	1D	1	7.8		7.8	24.0		24.8	7.6		5.2	17.1		16.4
	B	B10	10	0D	2		8.0			24.0			6.0			16.0	
	C																
	D																
10	A	B11	10	0D	—	7.8		—	24.1		—	7.4		—	17.9		—
	B	B12	10	0D	—		7.9			24.0			5.9			17.3	
	C																
	D																
	A																
	B																
	C																
	D																
Loaded / measured by:			JD	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 Daniels
Marshall Faircloth
Roberta C. Wolfe
REVIEWER

Concentrations prepared by: JD
Loading verified by: [illegible]
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 23.5 max. 26.6 mean 26.1
Incubator # ___ min. _____ max. _____ mean _____
Room B248 min. 24.0 max. 25.1 mean 24.9

Comments:

Statistics: Method: Spearman-Karber
(48) 96 hour LC_{50}: 7.71
95% Confidence Interval: lower 7.41 upper 8.02

000003

Appendix C. (continued)

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 H_2O 1 12.4.07
Toxicant/ Batch#: NaCl 1.123.07

Test Beginning: Date: 12.4.07 Time: 1210
Test Ending: Date: 12.8.07 Time: 1040

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<40	Hach	JD
Alkalinity (mg/L as $CaCO_3$):	134	Hach	BA
Hardness (mg.L as $CaCO_3$):	144	Hach	BA
Total Ammonia (mg/L as N):	<0.017	Denver	MF
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 12.4.07 1 1day 5
Feeding: ~~Prior to test~~ / Prior to renewal / Daily
Food: YCT — *P.subcapitata* — (Artemia) Lot # 651-531-9P
Food Batch: _____ _____ 0hr 1630 24hr ✓ 48hr 1650 72hr ✓
Chamber size: 1000 mL
Test volume: 800 mL per replicate

Conc. (g/L) µg/L mg/L	Rep.	Chamber #	Number Live 0 hr (0 hr)	24 hr (72 hr)	48 hr (96 hr)	pH (SU) 0 hr (0 hr)	24 hr (72 hr)	48 hr (96 hr)	Temperature (° C) 0 hr (0 hr)	24 hr (72 hr)	48 hr (96 hr)	D.O. (mg/L) 0 hr (0 hr)	24 hr (72 hr)	48 hr (96 hr)	Uncorrected Conductivity µmhos/cm (mmhos/cm) 0 hr (0 hr)	24 hr (72 hr)	48 hr (96 hr)
Control	A	B1	9	9	9	8.1		8.0	24.0		24.9	7.4		6.6	0.345		0.272
	B	B2	9	9	9		8.2			24.1			6.4			0.270	
	C																
	D																
6	A	B3	10	730	5	7.9		7.7	24.1		25.1	7.0		6.2	10.7		10.8
	B	B4	8	8	8		8.0			24.1			6.3			10.60	
	C																
	D																
7	A	B5	6	4+0	4	8.0		7.7	24.0		25.1	6.9		6.1	12.8		12.8
	B	B6	9	9	8		7.9			24.2			6.3			12.7	
	C																
	D																
8	A	B7	4	4	4	7.9		7.8	24.0		25.2	7.0		6.3	14.3		14.4
	B	B8	1	1	1		7.9			24.2			6.1			14.3	
	C																
	D																
9	A	B9	1	1	1	7.9		7.8	24.0		24.9	7.1		6.3	16.1		16.1
	B	B10	2	2	2		7.9			24.4			6.0			16.2	
	C																
	D																
10	A	B11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	B	B12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	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
James Daniels
Marshall Faircloth
Loretta C. Wolfe
REVIEWER

Concentrations prepared by: JD
Loading verified by: BA
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator #2 min 25.5 max 26.6 mean 26.1
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 24.0 max. 25.1 mean 24.9

Comments:

Statistics: Method: Spearman-Karber
48 / (96) hour LC_{50}: 7.35
95% Confidence Interval: lower 6.77 upper 7.98

000004

Appendix C. (continued)

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

DATE: 12-5-07 DURATION: 96 h TOXICANT : NaCl
SPECIES: *Ceriodaphnia dubia*

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
0.00	20	0
1.50	20	4
2.00	20	13
2.50	20	20
3.00	20	20
4.00	20	20

SPEARMAN-KARBER TRIM: 20.00%

SPEARMAN-KARBER ESTIMATES: LC50: **1.82**
95% LOWER CONFIDENCE: 1.66
95% UPPER CONFIDENCE: 1.99

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

DATE: 12-4-07 DURATION: 96 h TOXICANT : NaCl
SPECIES: *Cyprinella leedsi*

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
0.00	20	2
6.00	20	2
7.00	20	5
8.00	20	15
9.00	20	17
10.00	20	20

SPEARMAN-KARBER TRIM: 0.00%

SPEARMAN-KARBER ESTIMATES: LC50: **7.71**
95% LOWER CONFIDENCE: 7.41
95% UPPER CONFIDENCE: 8.02

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: 12/3/07

Shipped to: FDEP

P.O. No: N/A

Species	Quantity	Age	Brood Number	Temperature	Salinity
Mysidopsis bahia	200	4 DAYS	MS071129	25°C	20‰
Menidia beryllina	200	11 DAYS	SS071127	25°C	20‰
Cyprinella leedsi	150	10 DAYS	CL071123		
Pimephales promelas	150	7 DAYS	FM071126	25°C	

Packed by:

Shipped Via: FedEx

Notes:

Thank you for your order.

Appendix D. (continued)

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: 12/17/07

Shipped to: FDEP

P.O. No: N/A

Species	Quantity	Age	Brood Number	Temperature	Salinity
Mysidopsis bahia					
Menidia beryllina					
Cyprinella leedsi	100	10 DAYS	CL071207	25°C	
Pimephales promelas					

Packed by: OV

Shipped Via: FedEx

Notes: _____

Thank you for your order.

Appendix E. Chemical Analyses performed on the effluent from the Julington Creek Water Reclamation Facility Outfall D-001, sampled on December 17, 2007.

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
12/17/2007 9:40	Effluent	AGP/LN	Algal Growth Potential	135		mg DryWt/L	0.3	0.9
12/17/2007 9:40	Effluent	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.24	U	ug/L	0.24	0.71
12/17/2007 9:40	Effluent	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.55	U	ug/L	0.55	1.7
12/17/2007 9:40	Effluent	Toxicology	Bioassay-Acute-Screen-FW-Fish, LC50	100	L	LC50		
12/17/2007 9:40	Effluent	Toxicology	Bioassay-Acute-Screen-FW-C.dubia, LC50	100	L	LC50		
12/17/2007 9:40	Effluent	Metals	Calcium	49.4	A	mg/L	0.075	0.3
12/17/2007 9:40	Effluent	Metals	Selenium	0.5	U	ug/L	0.5	2
12/17/2007 9:40	Effluent	Metals	Magnesium	25.1	A	mg/L	0.04	0.16
12/17/2007 9:40	Effluent	Metals	Iron	56	I	ug/L	30	120
12/17/2007 9:40	Effluent	Metals	Zinc	37	A	ug/L	5	20
12/17/2007 9:40	Effluent	Metals	Copper	0.79	I	ug/L	0.5	2
12/17/2007 9:40	Effluent	Metals	Arsenic	0.5	U	ug/L	0.5	2
12/17/2007 9:40	Effluent	Metals	Aluminum	100	I	ug/L	60	240
12/17/2007 9:40	Effluent	Metals	Nickel	1.15	A	ug/L	0.25	1
12/17/2007 9:40	Effluent	Metals	Silver	0.025	U	ug/L	0.025	0.1
12/17/2007 9:40	Effluent	Metals	Lead	0.2	U	ug/L	0.2	0.8
12/17/2007 9:40	Effluent	Metals	Chromium	1	U	ug/L	1	4
12/17/2007 9:40	Effluent	Metals	Cadmium	0.02	U	ug/L	0.02	0.08
12/17/2007 9:40	Effluent	Nutrients	Kjeldahl Nitrogen	1.4		mg N/L	0.08	0.2
12/17/2007 9:40	Effluent	Nutrients	Ammonia-N	0.051		mg N/L	0.01	0.02
12/17/2007 9:40	Effluent	Nutrients	O-Phosphate-P	1.3		mg P/L	0.08	0.2
12/17/2007 9:40	Effluent	Nutrients	Total-P	1.4		mg P/L	0.04	0.12
12/17/2007 9:40	Effluent	Nutrients	NO2NO3-N	2		mg N/L	0.04	0.1
12/17/2007 9:40	Effluent	Pesticides	Alachlor	0.6	U	ug/L	0.6	2.4
12/17/2007 9:40	Effluent	Pesticides	Fonofos	0.1	U	ug/L	0.1	0.4
12/17/2007 9:40	Effluent	Pesticides	Naled	0.8	U	ug/L	0.8	3.2
12/17/2007 9:40	Effluent	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
12/17/2007 9:40	Effluent	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
12/17/2007 9:40	Effluent	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
12/17/2007 9:40	Effluent	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
12/17/2007 9:40	Effluent	Pesticides	Diazinon	0.05	U	ug/L	0.05	0.2
12/17/2007 9:40	Effluent	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
12/17/2007 9:40	Effluent	Pesticides	Ethoprop	0.1	U	ug/L	0.1	0.4
12/17/2007 9:40	Effluent	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1
12/17/2007 9:40	Effluent	Pesticides	Butylate	0.2	U	ug/L	0.2	0.8
12/17/2007 9:40	Effluent	Pesticides	Atrazine	1.1		ug/L	0.05	0.2
12/17/2007 9:40	Effluent	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
12/17/2007 9:40	Effluent	Pesticides	Phorate	0.05	U	ug/L	0.05	0.2
12/17/2007 9:40	Effluent	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
12/17/2007 9:40	Effluent	Pesticides	Hexazinone	0.1	U	ug/L	0.1	0.4
12/17/2007 9:40	Effluent	Pesticides	Chlorpyrifos Methyl	0.1	U	ug/L	0.1	0.4
12/17/2007 9:40	Effluent	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
12/17/2007 9:40	Effluent	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8
12/17/2007 9:40	Effluent	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
12/17/2007 9:40	Effluent	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.8
12/17/2007 9:40	Effluent	Pesticides	Parathion Methyl	0.1	U	ug/L	0.1	0.4
12/17/2007 9:40	Effluent	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
12/17/2007 9:40	Effluent	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
12/17/2007 9:40	Effluent	Pesticides	Metolachlor	0.5	U	ug/L	0.5	2
12/17/2007 9:40	Effluent	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Benzidine	110	U	ug/L	110	430
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Chrysene	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Di-n-octyl phthalate	1.1	UJ	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Endosulfan II	4.3	U	ug/L	4.3	17
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Fluoranthene	1.1	UJ	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Pentachlorophenol	3.3	U	ug/L	3.3	13
12/17/2007 9:40	Effluent	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.1	UJ	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	2-Chlorophenol	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Benzo(b)fluoranthene	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Heptachlor	1.6	U	ug/L	1.6	6.5
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Heptachlor epoxide	1.6	U	ug/L	1.6	6.5
12/17/2007 9:40	Effluent	Priority Organic Pollutants	alpha-BHC	1.6	U	ug/L	1.6	6.5
12/17/2007 9:40	Effluent	Priority Organic Pollutants	gamma-BHC	1.6	U	ug/L	1.6	6.5
12/17/2007 9:40	Effluent	Priority Organic Pollutants	2,4-Dimethylphenol	11	U	ug/L	11	43

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
12/17/2007 9:40	Effluent	Priority Organic Pollutants	2,4-Dinitrophenol	16	U	ug/L	16	65
12/17/2007 9:40	Effluent	Priority Organic Pollutants	2,6-Dinitrotoluene	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	3,3'-Dichlorobenzidine	43	U	ug/L	43	170
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Diethyl phthalate	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Hexachlorobutadiene	3.3	UJ	ug/L	3.3	13
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Naphthalene	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	2-Nitrophenol	1.1	UJ	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Acenaphthene	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Benzo(a)pyrene	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Butyl benzyl phthalate	5.4	UJ	ug/L	5.4	22
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.3	UJ	ug/L	3.3	13
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Isophorone	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.2	U	ug/L	2.2	8.7
12/17/2007 9:40	Effluent	Priority Organic Pollutants	N-Nitrosodimethylamine	2.2	U	ug/L	2.2	8.7
12/17/2007 9:40	Effluent	Priority Organic Pollutants	2,4-Dichlorophenol	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	4,4'-DDT	1.6	U	ug/L	1.6	6.5
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Aldrin	1.6	U	ug/L	1.6	6.5
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Anthracene	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Benzo(a)anthracene	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	16	U	ug/L	16	65
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Dibenzo(a,h)anthracene	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Endosulfan I	4.3	U	ug/L	4.3	17
12/17/2007 9:40	Effluent	Priority Organic Pollutants	2-Chloronaphthalene	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	4,4'-DDD	1.6	U	ug/L	1.6	6.5
12/17/2007 9:40	Effluent	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	4-Nitrophenol	16	U	ug/L	16	65
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Benzo(k)fluoranthene	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.3	U	ug/L	3.3	13
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Dieldrin	1.6	U	ug/L	1.6	6.5
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Dimethyl phthalate	11	U	ug/L	11	43
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.3	U	ug/L	3.3	13
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Phenanthrene	1.1	U	ug/L	1.1	4.3

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
12/17/2007 9:40	Effluent	Priority Organic Pollutants	2,4-Dinitrotoluene	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	4,4'-DDE	1.6	U	ug/L	1.6	6.5
12/17/2007 9:40	Effluent	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.2	U	ug/L	2.2	8.7
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Di-n-butyl phthalate	5.4	U	ug/L	5.4	22
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Endosulfan sulfate	1.6	U	ug/L	1.6	6.5
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Endrin	1.6	U	ug/L	1.6	6.5
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Nitrobenzene	2.2	U	ug/L	2.2	8.7
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Phenol	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Pyrene	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.3	U	ug/L	3.3	13
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Acenaphthylene	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Benzo(g,h,i)perylene	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Endrin aldehyde	4.3	U	ug/L	4.3	17
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Fluorene	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Hexachlorobenzene	1.1	U	ug/L	1.1	4.3
12/17/2007 9:40	Effluent	Priority Organic Pollutants	Hexachloroethane	3.3	U	ug/L	3.3	13
12/17/2007 9:40	Effluent	Priority Organic Pollutants	beta-BHC	1.6	U	ug/L	1.6	6.5
12/17/2007 9:40	Effluent	Priority Organic Pollutants	delta-BHC	1.6	U	ug/L	1.6	6.5
12/17/2007 9:40	Effluent	Field Parameter	Salinity	0.54		PPTh		
12/17/2007 9:40	Effluent	Field Parameter	Sample Depth	0.1		m		
12/17/2007 9:40	Effluent	Field Parameter	Total Residual Chlorine	0.02	U	mg/L		
12/17/2007 9:40	Effluent	Field Parameter	pH	7.01				
12/17/2007 9:40	Effluent	Field Parameter	Dissolved Oxygen	8.44		mg/L		
12/17/2007 9:40	Effluent	Field Parameter	Specific Conductance	1086		umhos/cm		
12/17/2007 9:40	Effluent	Field Parameter	Temperature	22.95		C		
12/17/2007 10:40	Blank	Metals	Copper	0.5	U	ug/L	0.5	2
12/17/2007 10:40	Blank	Metals	Silver	0.025	U	ug/L	0.025	0.1
12/17/2007 10:40	Blank	Metals	Chromium	1	U	ug/L	1	4
12/17/2007 10:40	Blank	Metals	Calcium	0.075	U	mg/L	0.075	0.3
12/17/2007 10:40	Blank	Metals	Magnesium	0.04	U	mg/L	0.04	0.16
12/17/2007 10:40	Blank	Metals	Lead	0.2	U	ug/L	0.2	0.8
12/17/2007 10:40	Blank	Metals	Selenium	0.5	U	ug/L	0.5	2
12/17/2007 10:40	Blank	Metals	Cadmium	0.02	U	ug/L	0.02	0.08
12/17/2007 10:40	Blank	Metals	Aluminum	60	U	ug/L	60	240

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
12/17/2007 10:40	Blank	Metals	Zinc	5	U	ug/L	5	20
12/17/2007 10:40	Blank	Metals	Arsenic	0.5	U	ug/L	0.5	2
12/17/2007 10:40	Blank	Metals	Iron	30	U	ug/L	30	120
12/17/2007 10:40	Blank	Metals	Nickel	0.25	U	ug/L	0.25	1
12/17/2007 10:40	Blank	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
12/17/2007 10:40	Blank	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
12/17/2007 10:40	Blank	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
12/17/2007 10:40	Blank	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
12/17/2007 10:40	Blank	Nutrients	Total-P	0.02	U	mg P/L	0.02	0.06
12/17/2007 10:40	Blank	Pesticides	Naled	0.98	U	ug/L	0.98	3.9
12/17/2007 10:40	Blank	Pesticides	Simazine	0.061	U	ug/L	0.061	0.24
12/17/2007 10:40	Blank	Pesticides	Chlorpyrifos Ethyl	0.061	U	ug/L	0.061	0.24
12/17/2007 10:40	Blank	Pesticides	Parathion Ethyl	0.18	U	ug/L	0.18	0.72
12/17/2007 10:40	Blank	Pesticides	Phorate	0.061	U	ug/L	0.061	0.24
12/17/2007 10:40	Blank	Pesticides	Alachlor	0.73	U	ug/L	0.73	2.9
12/17/2007 10:40	Blank	Pesticides	Mevinphos	0.24	U	ug/L	0.24	0.96
12/17/2007 10:40	Blank	Pesticides	Metolachlor	0.61	U	ug/L	0.61	2.4
12/17/2007 10:40	Blank	Pesticides	Malathion	0.18	U	ug/L	0.18	0.72
12/17/2007 10:40	Blank	Pesticides	Ametryn	0.061	U	ug/L	0.061	0.24
12/17/2007 10:40	Blank	Pesticides	Parathion Methyl	0.12	U	ug/L	0.12	0.48
12/17/2007 10:40	Blank	Pesticides	Metalaxyl	0.3	U	ug/L	0.3	1.2
12/17/2007 10:40	Blank	Pesticides	Fonofos	0.12	U	ug/L	0.12	0.48
12/17/2007 10:40	Blank	Pesticides	Prometryn	0.18	U	ug/L	0.18	0.72
12/17/2007 10:40	Blank	Pesticides	Chlorpyrifos Methyl	0.12	U	ug/L	0.12	0.48
12/17/2007 10:40	Blank	Pesticides	Bromacil	0.24	U	ug/L	0.24	0.96
12/17/2007 10:40	Blank	Pesticides	Atrazine	0.061	U	ug/L	0.061	0.24
12/17/2007 10:40	Blank	Pesticides	Norflurazon	0.18	U	ug/L	0.18	0.72
12/17/2007 10:40	Blank	Pesticides	Metribuzin	0.12	U	ug/L	0.12	0.48
12/17/2007 10:40	Blank	Pesticides	Hexazinone	0.12	U	ug/L	0.12	0.48
12/17/2007 10:40	Blank	Pesticides	Fenamiphos	0.24	U	ug/L	0.24	0.96
12/17/2007 10:40	Blank	Pesticides	Ethoprop	0.12	U	ug/L	0.12	0.48
12/17/2007 10:40	Blank	Pesticides	Diazinon	0.061	U	ug/L	0.061	0.24
12/17/2007 10:40	Blank	Pesticides	Butylate	0.24	U	ug/L	0.24	0.96
12/17/2007 10:40	Blank	Pesticides	Azinphos Methyl	0.24	U	ug/L	0.24	0.96

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
12/17/2007 10:40	Blank	Pesticides	Ethion	0.061	U	ug/L	0.061	0.24
12/17/2007 10:40	Blank	Priority Organic Pollutants	4,4'-DDD	1.7	U	ug/L	1.7	7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Endosulfan I	4.7	U	ug/L	4.7	19
12/17/2007 10:40	Blank	Priority Organic Pollutants	Fluoranthene	1.2	UJ	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	2.3	U	ug/L	2.3	9.3
12/17/2007 10:40	Blank	Priority Organic Pollutants	Nitrobenzene	2.3	U	ug/L	2.3	9.3
12/17/2007 10:40	Blank	Priority Organic Pollutants	Pentachlorophenol	3.5	U	ug/L	3.5	14
12/17/2007 10:40	Blank	Priority Organic Pollutants	Pyrene	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	gamma-BHC	1.7	U	ug/L	1.7	7
12/17/2007 10:40	Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.2	UJ	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	2-Chlorophenol	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.3	U	ug/L	2.3	9.3
12/17/2007 10:40	Blank	Priority Organic Pollutants	Acenaphthene	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Anthracene	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.5	U	ug/L	3.5	14
12/17/2007 10:40	Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Dieldrin	1.7	U	ug/L	1.7	7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Endosulfan II	4.7	U	ug/L	4.7	19
12/17/2007 10:40	Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	17	U	ug/L	17	70
12/17/2007 10:40	Blank	Priority Organic Pollutants	Butyl benzyl phthalate	5.8	UJ	ug/L	5.8	23
12/17/2007 10:40	Blank	Priority Organic Pollutants	Di-n-butyl phthalate	5.8	U	ug/L	5.8	23
12/17/2007 10:40	Blank	Priority Organic Pollutants	Fluorene	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Phenol	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Acenaphthylene	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Chrysene	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Di-n-octyl phthalate	1.2	UJ	ug/L	1.2	4.7

Appendix E. (continued)

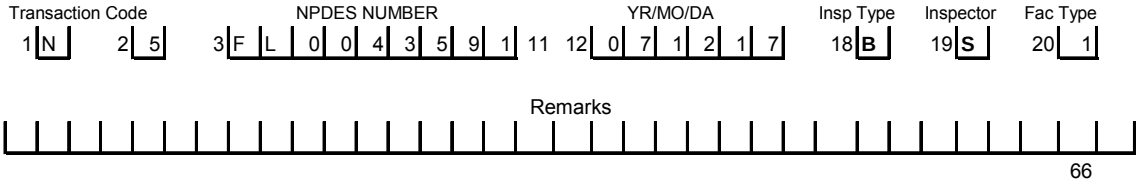
Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
12/17/2007 10:40	Blank	Priority Organic Pollutants	Diethyl phthalate	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Hexachlorobutadiene	3.5	UJ	ug/L	3.5	14
12/17/2007 10:40	Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.5	UJ	ug/L	3.5	14
12/17/2007 10:40	Blank	Priority Organic Pollutants	Hexachloroethane	3.5	U	ug/L	3.5	14
12/17/2007 10:40	Blank	Priority Organic Pollutants	Phenanthrene	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	2,4-Dinitrophenol	17	U	ug/L	17	70
12/17/2007 10:40	Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	2-Nitrophenol	1.2	UJ	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	4,4'-DDT	1.7	U	ug/L	1.7	7
12/17/2007 10:40	Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Endrin	1.7	U	ug/L	1.7	7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Hexachlorobenzene	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	delta-BHC	1.7	U	ug/L	1.7	7
12/17/2007 10:40	Blank	Priority Organic Pollutants	2,4-Dichlorophenol	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	4,4'-DDE	1.7	U	ug/L	1.7	7
12/17/2007 10:40	Blank	Priority Organic Pollutants	4-Nitrophenol	17	U	ug/L	17	70
12/17/2007 10:40	Blank	Priority Organic Pollutants	Aldrin	1.7	U	ug/L	1.7	7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Benzidine	120	U	ug/L	120	470
12/17/2007 10:40	Blank	Priority Organic Pollutants	Benzo(a)anthracene	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Benzo(a)pyrene	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Endrin aldehyde	4.7	U	ug/L	4.7	19
12/17/2007 10:40	Blank	Priority Organic Pollutants	Heptachlor	1.7	U	ug/L	1.7	7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Heptachlor epoxide	1.7	U	ug/L	1.7	7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Isophorone	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	2-Chloronaphthalene	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	Dimethyl phthalate	12	U	ug/L	12	47
12/17/2007 10:40	Blank	Priority Organic Pollutants	Endosulfan sulfate	1.7	U	ug/L	1.7	7
12/17/2007 10:40	Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.3	U	ug/L	2.3	9.3
12/17/2007 10:40	Blank	Priority Organic Pollutants	Naphthalene	1.2	U	ug/L	1.2	4.7
12/17/2007 10:40	Blank	Priority Organic Pollutants	beta-BHC	1.7	U	ug/L	1.7	7
12/17/2007 10:40	Blank	Priority Organic Pollutants	2,4-Dimethylphenol	12	U	ug/L	12	47
12/17/2007 10:40	Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.5	U	ug/L	3.5	14
12/17/2007 10:40	Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	47	U	ug/L	47	190

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
12/17/2007 10:40	Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.5	U	ug/L	3.5	14
12/17/2007 10:40	Blank	Priority Organic Pollutants	alpha-BHC	1.7	U	ug/L	1.7	7

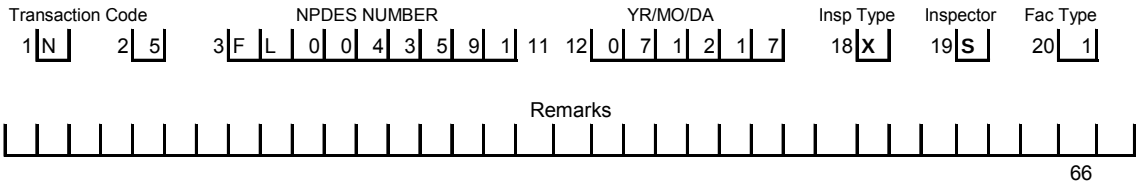
The Bioassay of Julington Creek Wastewater Reclamation Facility effluent sampled on December 17, 2007. NPDES #FL0043591.

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



The Priority Pollutants Analysis of Julington Creek Wastewater Reclamation Facility effluent sampled on December 17, 2007. NPDES #FL0043591.

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



Biological Analyses of Julington Creek Wastewater Reclamation Facility effluent sampled on December 17, 2007. NPDES #FL0043591.

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

