

Bioassays of the City of

Homestead Municipal Power Plant

Miami-Dade County

NPDES #FL0002721

Sampled February 13, 2006

April 2006

Biology Section
Bureau of Laboratories
Division of Resource Assessment and Management

Quality Manual No. 870346G
NELAC Certification No. E31780

City of Homestead Municipal Power Plant, 675 N. Flagler Avenue, Homestead, Miami-Dade County, Florida, NPDES #FL0002721. Effluent samples for this facility were collected on February 13, 2006.

Introduction

The City of Homestead Municipal Power Plant is an electric power generating plant having a peak electric power generating capacity of 53 megawatts. The facility has a design flow of 4.11 million gallons per day (MGD). The facility had an average annual daily flow (AADF) of 1.35 MGD from February 2005 through January 2006. The facility has 16 generating units, of which two units are cooled by an air cooling system, two units are cooled by a mechanical-draft cooling tower system and 12 units are cooled by once-through cooling water supplied from on-site wells. Chemical additives are not added to this cooling water. This once-through cooling water is passed through an on-site double oil-water separator treatment system prior to discharge through Outfall D-001 to a pipe (approximately 624 m [2050 feet] long) which discharges into the Class III freshwaters of an unnamed drainage ditch that runs into the C-103S Canal, thence into Biscayne Bay. The origin of the outfall pipeline, or D-001, is located approximately at latitude 25º 28' 27" N, longitude 80º 28' 12" W. The point where the pipeline ends at the unnamed ditch is located approximately at latitude 25º 28' 08" N, longitude 80º 28' 11" W.

The facility is not currently under any Administrative Orders (AO) or Consent Orders (CO). The facility has no toxicity testing requirements or mixing zones. During the past year, the facility had no permit violations. (Facility information provided by Terry Davis of FDEP Southeast District).

Methods

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

See Appendix 1 for the completed chain of custody form.

The 48-hour acute screening toxicity tests and algal growth potential test were performed following internal DEP SOP's TA07_01, TA07_02, and TA08_01 through TA08_09. All internal DEP SOP's are available on the web at: http://www.floridadep.org/labs/cgi-bin/sop/biosop.asp. The Department uses the 48-hour acute screening toxicity test to provide reasonable assurance that the facility does not adversely affect waters of the state.

Toxicity Test Results

Tests were performed February 14 - 16, 2006.

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 sample was not acutely toxic to the test organisms *Ceriodaphnia dubia* and *Cyprinella leedsi*.

See Appendix 2 for bioassay bench sheets.

See Appendix 3 for results of the last 20 standard reference toxicant (SRT) tests and bench sheets and statistical analyses of the SRT test that corresponds to this facility test. See Appendix 4 for test organism receipts.

*NOTE: In a 48-hour acute screening test of 100% effluent, mortality of <20% provides reasonable assurance 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% mortality indicates low to moderate levels of toxicity, and further action may be required. Mortality of >50% provides reasonable assurance 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 less than the laboratory method detection limit (MDL) of 0.300 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 phosphorus-limited. The predicted AGP based on inorganic phosphorus concentrations was 2.58 (±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. Total ammonia was not detected in the sample collected and preserved for chemical analysis; thus the unionized ammonia concentration was < 0.02 mg/L.

The effluent dissolved oxygen (DO) concentration (4.9 mg/L, converted from the field measurement of 60% saturation at 25.38º C) violated the Class III freshwater quality criterion of ≥ 5 mg/L (62-302.530(31), F.A.C.). The DO of the bioassay sample as received in the laboratory was 6.6 mg/L at 25.1º C.

Copper and zinc were detected in the effluent at levels that comply with Class III freshwater quality criteria. Nickel was detected between the laboratory method detection limit (MDL) and practical quantitation limit (PQL).

See Table 2 for results of analytes detected in the effluent, and corresponding limits.

See Appendix 5 for a complete list of chemical analyses performed.

Conclusion

The effluent sample collected from D-001 for this facility on February 13, 2006, was not acutely toxic to either test species during the acute screen 48-hour bioassays. The effluent AGP result was less than the "problem" threshold for fresh receiving waters. The effluent dissolved oxygen concentration measured in the field did not meet the Class III freshwater water quality standard.

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) of the freshwater species Pseudokirchneriella subcapitata *for ortho phosphate (OP) limitation and ratios of nitrogen to phosphorus for samples collected from City of Homestead Municipal Power Plant Once-Through Non-Contact Cooling Water Discharge on February 13, 2006.*

Location	AGP (measured)	Predicted AGP (OP) ± 20%	Inorganic N:P ratio	Total N:P ratio
Effluent Samples	0.300 U	2.58 ± 0.516	383.33	*

U - Material analyzed for but not detected; value reported is the minimum detection limit
* - N:P ratios could not be calculated because total phosphorus was not detected in the effluent sample

Table 2. Effluent limits, Class III Freshwater Criteria, and chemical data for samples collected from City of Homestead Municipal Power Plant Once-Through Non-Contact Cooling Water Discharge on February 13, 2006.

City of Homestead Municipal Power Plant NPDES# FL0002721	Class III Freshwater Stds	Effluent Limits	Effluent Samples
Organic Constituents (µg/L)			
None Detected	-	-	-
Metals (µg/L unless otherwise noted)			
Aluminum	-	-	5 U
Arsenic	≤ 50	-	4 U
Cadmium	≤ 2.3 b	-	0.05 U
Calcium (mg/L)	-	-	86.5 A
Chromium-III	≤ 176.4 b	-	2 U
Copper	≤ 19.7 b	≤ 19.7 b	13.1 A
Iron	≤ 1,000	≤ 1,000	10 U
Lead	≤ 9.7 b	-	0.075 U
Magnesium (mg/L)	-	-	5.8 A
Nickel	≤ 109.4 b	-	1.9 I
Selenium	≤ 5	-	0.5 U
Silver	≤ 0.07	-	0.025 U
Zinc	≤ 251.5 b	≤ 251.5 b	14 A
Nutrients (mg/L)			
Ortho-phosphate	-	-	0.006 I
Total Phosphorus	-	-	0.02 U
Ammonia	-	-	0.01 U
Unionized Ammonia	≤ 0.02	-	< 0.02 c
Nitrate+Nitrite	-	-	2.3
Total Kjeldahl Nitrogen	-	-	0.24
Organic Nitrogen	-	-	0.24 c
Total Nitrogen	-	-	2.54 c
General Physical and Chemical Parameters			
pH (S.U.)	6-8.5	6.5-8.5	7.3
Conductivity (umhos/cm)	≤ 1,275	-	590
Temperature (C)	-	≤ 32.2 c	25.4
Dissolved Oxygen (mg/L)	≥ 5	-	4.9 c
Oil and Grease (mg/L)	≤ 5	≤ 5	1.7 U
Flow (MGD)	-	4.11 a	1.35 a
Chlorophyll *a* (µg/L)	-	-	0.85 U
Phaeophytin *a* (µg/L)	-	-	1.5 U
Alkalinity (mg/L)	≥ 20	-	214
Hardness (mg/L)	-	Report	239.9 c

Value exceeds the Class III Fresh Water Quality Criteria (62-302, F.A.C.) and/or Effluent Limits

a - Annual average

b - Value is calculated based on hardness

c - Calculated value

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 minimum detection limit

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID * Andrew

Request Number: RQ-2006-02-13-16
Homestead Municipal Power Plant

Requester: Shannan Bogdanov
Field Report Prepared By: T. Davis

Customer: SE-DIST
Collected By: T. Davis
Send Final Report To Terry Davis or Bill Theil

Project ID: FYI3
Sampling Agency: SED

PMAS: 1143

Lab ID *	Location EFF-01-D-0010/W separator drain			☐ Comp ☒ Grab	Collection (begin) Date 13 Feb, 06 Time 1000 Eastern Central	Collection (end) Date Time Eastern Central		Bottle Group(s)**	
	Field ID 51-HPP-1			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L) 6.02	Storet Station Number			
	Matrix (Include type e.g. Salt, Fresh, etc) Water, fresh	Temp (C) 25.38	pH 7.30	Sample Depth .01 ☒ m ☐ ft		☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm) 590	NPDES Number		
	Latitude o ' "	Longitude o ' "		Comments					
Lab ID *	Location Blank			☐ Comp ☒ Grab	Collection (begin) Date 13 Feb, 06 Time 1015 Eastern Central	Collection (end) Date Time Eastern Central		Bottle Group(s)**	
	Field ID 51-HPP2			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number			
	Matrix (Include type e.g. Salt, Fresh, etc) Water, d.i.	Temp (C)	pH	Sample Depth .01 ☒ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number		
	Latitude o ' "	Longitude o ' "		Comments					
Lab ID *	Location			☐ Comp ☐ Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central		Bottle Group(s)**	
	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					

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
T. Davis	2/13/06 1350	DHL	Tom E	2/14/06 9:45				2/14/06 10:50

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

IAGP 1131 2-14-06

FDEP Biology Section - Acute Screen Bioassay Bench Sheets

Facility: (City of) Homestead Municipal Power Plant

Address: 675 N. Flagler Ave.

City: Homestead County: Miami-Dade

Contact/District: Terry Davis / Southeast District

NPDES Permit #: FL 0002721

LIMS Job # TLH-20060214-L4 LIMS Sample #: 899830

Lims Data Entry: 2/23/06 MF Data Entry Verification: 2/23/06 SP

Sample Collection: Date: 2-13-06 Time: 1000

Hold Time Start: Date: 2-13-06 Time: 1000

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.

Light Intensity : 50 - 100 ft. candles.

Photoperiod : 16 hours light 8 hours dark.

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: ____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: ____

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)

Temperature Range °C

Incubator # 2 Range 24.4 - 26.2

Room B246: 24.8 - 25.4

Waterbath: N/A

Investigators' Signatures

Sarah Fincher

Marshall Faircloth

Bruce Alexander

Tracy Hall

James Daniel

Nicole Wellendorf

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 Cl2 (mg/L)	N/A	N/A	N/A	N/A		not measured	–	SP	SP
Lab Total Residual Cl2 (mg/L)	<0.03	<0.03				<0.03	HACH	SP/BA	CW
Alkalinity (mg/L as $CaCO_3$)	84	140				226	HACH	SA	SP
Hardness (mg/L as $CaCO_3$)	83	147				206	HACH	SA/BA	SP
Total Ammonia (mg/L as N)	<0.017	<0.017				<0.017	DENVER	MF	SP
Salinity (ppth)	<1	<1				<1	YSI / Mettler	MF	SP

V 1.4 9/12/05

Appendix 2. Bench Sheets (continued)

FDEP Biology Section - Bioassay Survival Sheet

LIMS Sample #: 899530 Test #: 1 Test Started: Date 2-14-06 Time: 1415

Organism: C. dubia SOP #: TA 07_01 Test Ended: Date 2-16-06 Time: 1230

Organism Batch: 8-06 Diluent/ Batch: DMW / 4-06

Organism Age: <24 hrs Food: (YCT) (P. subcapitata) Artemia

Chamber Size: 30 mL Batch: 5-05 8-05 ______

Test Volume: 20 mL 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	A	5	5	5			
	B	B	5	5	5			
	C	C	5	5	5			
	D	D	5	5	5			
100%	A	A	5	5	5			
	B	B	5	5	5			
	C	C	5	5	5			
	D	D	5	5	5			
Organisms loaded by: BA		Checked by:	[redacted]	JD	JD			

Loading Verified by: MF

Comments:

m = missing d = dead BR = before renewal AR = after renewal

Test Results:

% mortality in 100% sample: 0

LC_{50}: >100 If Calculated: 95% CI__________ Method:__________

Screening Tests:

Report LC50 as >100%, =100%, or <100%.

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

V 2.1 11/01/2005

Page 000077

FDEP Biology Section - Bioassay Survival Sheet

LIMS Sample #: 899830
Organism: C.leedsi
Organism Batch: 4-06
Organism Age: 13days
Chamber Size: 1000 mL
Test Volume: 500 mL

Test #: 2
SOP #: TA 07_02
Diluent/ Batch: Well H2O 2-14-06
Food: YCT P. subcapitata (Artemia)
Batch: - - GSL536-90
Feeding: (Prior to test) - Prior to renewal - Daily

Test Started: Date 2-14-06 Time: 1420
Test Ended: Date 2-16-06 Time: 1240

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
CTRL	A	D1	5	5	5			
	B	D2	5	5	5			
	C	D3	5	5	5			
	D	D4	5	5	5			
100%	A	D5	5	5	5			
	B	D6	5	5	5			
	C	D7	5	5	5			
	D	D8	5	5	5			
Organisms loaded by: 8P		Checked by:	[redacted]	JJ	JJ			

Loading Verified by: BA

m = missing d = dead BR = before renewal AR = after renewal

Comments:

Test Results:
% mortality in 100% sample: 0
LC_{50}: >100 If Calculated: 95% CI______ Method:______

Screening Tests:
Report LC50 as >100%, =100%, or <100%.
Substitue highest test concentration used if other than 100% (example: Ocean outfall tested at 30% concentration).

V 2.1 11/01/2005

Page 000078

FDEP Biology Section - Bioassay Parameter Sheet

LIMS Sample # : 899830 Test #: 1 of 2

TEST SOP #: TA07_01 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			
pH (S.U.)	8.2		8.0			
Temperature °C	25.0		24.6			
Dissolved Oxygen mg/L	7.6		7.1			
Conductivity (µmhos) mmhos	185		197			
(initials) Measured by:	mf		JD			
(initials) Recorded by:	mf		JD			

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A		B			
pH (S.U.)	7.7		8.2			
Temperature °C	24.5		24.6			
Dissolved Oxygen mg/L	6.3		7.4			
Conductivity (µmhos) mmhos	585		555			
(initials) Measured by:	mf		JD			
(initials) Recorded by:	mf		JD			

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:

000079

V 2.0 2/24/04

FDEP Biology Section - Bioassay Parameter Sheet

LIMS Sample # : 899830 **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			
pH (S.U.)	8.0	8.1	8.1			
Temperature °C	24.8	24.7	24.7			
Dissolved Oxygen mg/L	7.6	6.0	7.4			
Conductivity ~~µmhos~~ mmhos	265	297	289			
(initials) Measured by:	MF	BA	JD			
(initials) Recorded by:	MF	BA	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.)	7.7	8.2	8.3			
Temperature °C	24.5	24.6	24.7			
Dissolved Oxygen mg/L	6.4	6.0	7.3			
Conductivity ~~µmhos~~ mmhos	585	584	599			
(initials) Measured by:	MF	BA	JD			
(initials) Recorded by:	MF	BA	JD			

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:

V 2.0 2/24/04

Appendix 3. SRT Bench Sheets and Statistical Analysis

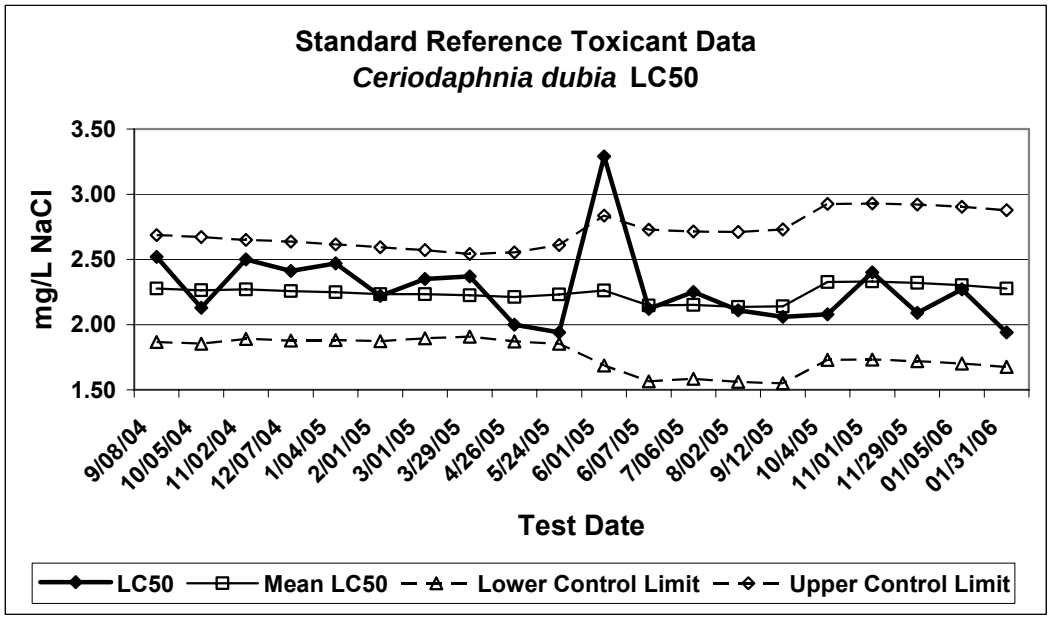
Florida Department of Environmental Protection
Bureau of Laboratories

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

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
7/20/04	2.60	2.30	0.20	1.90	2.69
8/10/04	2.47	2.29	0.20	1.89	2.69
9/08/04	2.52	2.28	0.21	1.87	2.69
10/05/04	2.13	2.26	0.20	1.85	2.67
11/02/04	2.50	2.27	0.19	1.89	2.65
12/07/04	2.41	2.26	0.19	1.88	2.64
1/04/05	2.47	2.25	0.18	1.88	2.61
2/01/05	2.22	2.23	0.18	1.87	2.59
3/01/05	2.35	2.23	0.17	1.89	2.57
3/29/05	2.37	2.22	0.16	1.91	2.54
4/26/05	2.00	2.21	0.17	1.87	2.55
5/24/05	1.94	2.23	0.19	1.85	2.61
6/01/05	3.29	2.26	0.29	1.69	2.84
6/07/05	2.12	2.15	0.29	1.57	2.73
7/06/05	2.25	2.15	0.28	1.58	2.72
8/02/05	2.11	2.14	0.29	1.56	2.71
9/12/05	2.06	2.14	0.29	1.55	2.73
10/4/05	2.08	2.33	0.30	1.73	2.93
11/01/05	2.40	2.33	0.30	1.73	2.93
11/29/05	2.09	2.32	0.30	1.72	2.92
01/05/06	2.27	2.30	0.30	1.70	2.90
01/31/06	1.94	2.28	0.30	1.68	2.88

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

CV = 13.20
EPA reference 75th quartile CV = 29%



Appendix 3. (continued)

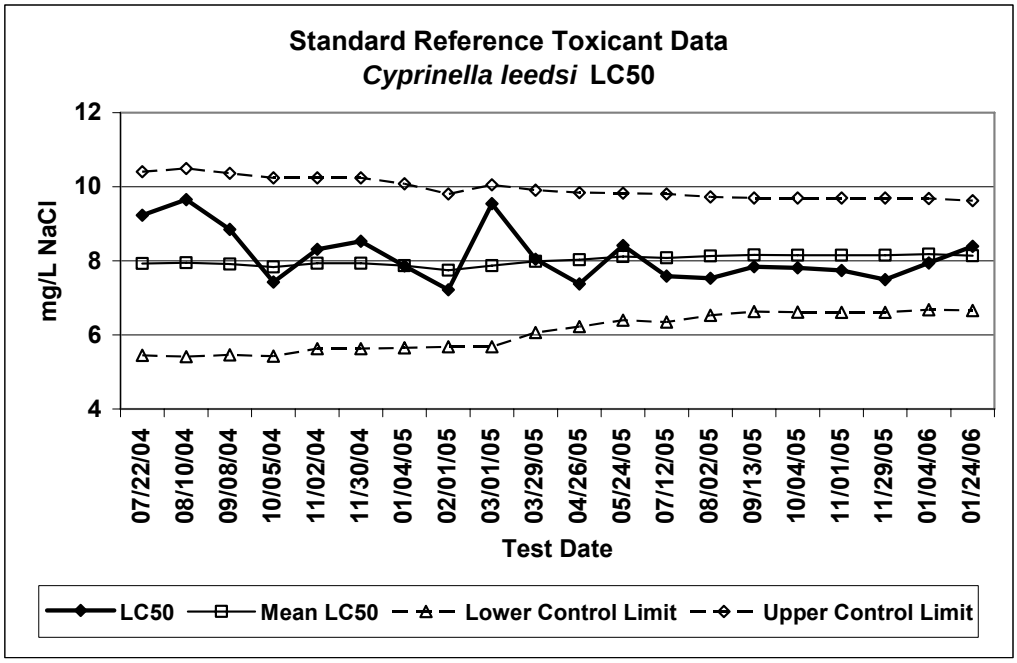
Florida Department of Environmental Protection
Bureau of Laboratories

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

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
05/24/04	7.42	7.88	1.20	5.49	10.27
06/22/04	9.19	7.91	1.23	5.46	10.36
07/22/04	9.23	7.93	1.24	5.45	10.41
08/10/04	9.65	7.95	1.27	5.41	10.49
09/08/04	8.85	7.91	1.22	5.46	10.36
10/05/04	7.43	7.83	1.20	5.43	10.24
11/02/04	8.31	7.93	1.15	5.63	10.24
11/30/04	8.53	7.94	1.15	5.63	10.24
01/04/05	7.86	7.87	1.11	5.65	10.08
02/01/05	7.22	7.74	1.03	5.68	9.80
03/01/05	9.54	7.87	1.09	5.68	10.05
03/29/05	8.04	7.99	0.96	6.07	9.91
04/26/05	7.38	8.03	0.90	6.22	9.84
05/24/05	8.41	8.11	0.86	6.40	9.83
07/12/05	7.59	8.08	0.86	6.35	9.81
08/02/05	7.53	8.13	0.80	6.53	9.72
09/13/05	7.84	8.16	0.77	6.63	9.70
10/04/05	7.81	8.16	0.77	6.62	9.69
11/01/05	7.74	8.15	0.77	6.61	9.69
11/29/05	7.49	8.15	0.77	6.61	9.69
01/04/06	7.94	8.18	0.75	6.68	9.68
01/24/06	8.39	8.14	0.74	6.66	9.62

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

CV = 9.09
EPA reference 75th quartile CV = 19%



Appendix 3. (continued)



FDEP Biology Section - 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: Screening / Definitive
Static / Static Renewal

Diluent/ Batch#: DMW 12-06
Toxicant/ Batch# NaCl 12-06

Test Beginning: Date: 1-31-06 Time: 1220
Test Ending: Date: 2-4-06 Time: 1200

Water Quality Parameters:	Diluent	Method
Total Residual Cl_2 (mg/L):	40.03	Hach
Alkalinity (mg/L as $CaCO_3$):	84	Hach
Hardness (mg/L as CaCO3):	85.5	Hach
Total Ammonia (mg/L as N):	40.17	Denver
Salinity (ppth):	21	Mettler

Organism Batch #/ Age: 6-06 / <24hrs
Feeding: Prior to test / Prior to renewal / Daily
Food: YCT P.*subcapitata* Artemia
Food Batch: 5-05 8.05 -
Chamber size: 30 mL
Test volume: 20 mL per replicate

Page 1 of 2

Conc. µg/L (g/L)	Rep.	Chamber#	Number Live 0 hr / 48 hr / 72 hr / 96 hr	pH (SU) 0 hr / 48 hr / 72 hr / 96 hr	Temperature (° C) 0 hr / 48 hr / 72 hr / 96 hr	D.O. (mg/l) 0 hr / 48 hr / 72 hr / 96 hr	UNCORRECTED Cond. (mmhos/cm) Cond. (µmhom/cm) 0 hr / 48 hr / 72 hr / 96 hr
Control	A	A	5 / 5 / 5	8.1 / 8.0	24.5 / 24.8	7.8 / 7.3	0.178 / 0.192
	B	B	5 / 5 / 5				
	C	C	5 / 5 / 5				
	D	D	5 / 5 / 5				
1.5	A	A	5 / 5 / 5	8.0 / 8.0	24.8 / 24.6	7.7 / 7.4	2.97 / 3.33
	B	B	5 / 5 / 5				
	C	C	5 / 5 / 5				
	D	D	5 / 5 / 5				
2.0	A	A	5 / 5 / 4 [1D]	8.0 / 8.0	24.8 / 24.6	7.6 / 7.4	3.93 / 4.03
	B	B	5 / 5 / 0 [5D]				
	C	C	5 / 5 / 2 [7D]				
	D	D	5 / 5 / 3 [2D]				
2.5	A	A	5 / 5 / 0 [5D]	8.0 / 8.0	24.7 / 24.5	7.7 / 7.4	4.74 / 5.48
	B	B	5 / 4 [1D] / 0 [4D]				
	C	C	5 / 4 [1D] / 0 [4D]				
	D	D	5 / 4 [1D] / 0 [4D]				
3.0	A	A	5 / 4 [1D] / 0 [4D]	8.0 / 8.0	24.5 / 24.4	7.7 / 7.2	5.62 / 6.33
	B	B	5 / 5 / 0 [5D]				
	C	C	5 / 4 [1D] / 0 [4D]				
	D	D	5 / 4 [1D] / 0 [5D]				
4.0	A	A	5 / 0 [5D] / -	8.0 /	24.4 /	7.6 /	7.39 / -
	B	B	5 / 0 [5D] / -	7.9 /	24.6 /	7.9 /	8.10 /
	C	C	5 / 0 [5D] / -				
	D	D	5 / 0 [5D] / -				
	A						
	B						
	C						
	D						
Loaded / measured by:			MF / SP / SP/MF	MF / SP / MF	MF / SP / MF	MF / SP / MF	MF / SP / MF
Recorded by:			SP / SP / MF	MF / SP / MF	MF / SP / MF	MF / SP / MF	MF / SP / MF

Investigators' Signatures
Sarah Pinkerton
Mark Hill Fairchild
Justin Turner
Brian Robertson
REVIEWER

Concentrations prepared by: MF
Loading verified by: SP
Light Intensity: 50-100 Ft. candles (yes) no)
Photoperiod: 16 hours Light / 8 hours dark (yes, no)
Temperature Range °C:
Incubator # 2 min. 24.2 max. 24.9 mean 24.5
Incubator # ____ min. ____ max. ____ mean ____
Room B246 min. 23.1 max. 25.0 mean 24.4

Remarks: Test run for 96 hours to match duration of environmental sample test. 48 hour results placed in SRT data file - MF 2/21/06

Statistical Results: Method: Spearman-Karber
48 ~~96~~ hour LC50: 1.94
95% Confidence Interval: lower 1.84 upper 2.06

Revised 01/23/06

Page 000026

Appendix 3. (continued)

FDEP Biology Section - 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: Screening / Definitive
Static / Static Renewal

Diluent/ Batch#: DMW 12-06
Toxicant/ Batch#: NaCl 1-06

Test Beginning: Date: 1-31-06 Time: 1220
Test Ending: Date: 2-4-06 Time: 1200

Water Quality Parameters:	Diluent	Method
Total Residual Cl_2 (mg/L):	<0.03	Hach
Alkalinity (mg/L as $CaCO_3$):	84	Hach
Hardness (mg/L as CaCO3):	85.5	Hach
Total Ammonia (mg/L as N):	<0.097	Denver
Salinity (ppth):	<1	Mettler

Organism Batch #/ Age: 6-06 / <24hrs
Feeding: Prior to test / Prior to renewals / Daily
Food: YCT, *P.subcapitata*, Artemia
Food Batch: 5-05, 8-05, –
Chamber size: 30 mL
Test volume: 20 mL per replicate

Page 2 of 2

Conc. µg/L (ppb)	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 Cond. (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	Cond. (µmhos/cm) 48 hr	72 hr	96 hr
Control	A	A	5	5	5	8.2		8.2	24.0		25.5	7.7		7.5	0.178		0.197
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
1.5	A	A	5	5	4	8.1		8.1	24.3		25.7	7.7		7.0	2.92		3.27
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	0	0												
2.0	A	A	4	0	0	8.0		8.2	24.7		25.6	7.6		7.2	3.85		5.30
	B	B	0	0	0												
	C	C	2	0	0												
	D	D	3	3	3												
2.5	A	A	–	–	–	8.0		–	24.8		–	7.5		–	4.74		–
	B	B	–	–	–												
	C	C	–	–	–												
	D	D	–	–	–												
3.0	A	A	–	–	–	8.0		–	25.0		–	7.6		–	5.63		–
	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	SP		MF	SP		MF	SP		MF	SP		MF
Recorded by:			MF	MF	MF	SP		MF	SP		MF	SP		MF	SP		MF

Investigators' Signatures
Jarad Pinchard
Marshall Faircloth
Neil Nichols
Nicole Wellenstein
REVIEWER

Concentrations prepared by: SP
Loading verified by: MF for 30 mL test vessels 2/2/06
Light Intensity: 50-100 Ft. candles (yes) no)
Photoperiod: 16 hours Light / 8 hours dark (yes) no)
Temperature Range °C:
Incubator # 2 min. 24.7 max. 24.8 mean 24.5
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 23.7 max. 25.2 mean 24.4

Remarks: TAT run for 96 hours to match duration of environmental sample TAT. 48 hour results placed in SRT Data file MF 2/21/06

Statistical Results: Method: Spearman-Karber
48 / 96 hour LC50: 1.67
95% Confidence Interval: lower 1.55 upper 1.79

Revised 01/23/06

Page 000027

Appendix 3. (continued)

[redacted]

FDEP Biology Section - 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: Screening / Definitive
Static / Static Renewal

Diluent/ Batch#: Well H2O 1-23-06
Toxicant/ Batch#: NaCl 1-2-06

Test Beginning: Date: 1-24-06 Time: ~~8~~ 12:15
Test Ending: Date: 1-28-06 Time: 1230

Water Quality Parameters:	Diluent	Method
Total Residual Cl (mg/L):	<0.03	Hach
Alkalinity (mg/L as $CaCO_3$):	143	Hach
Hardness (mg/L as CaCO3):	133	Hach
Total Ammonia (mg/L as N):	<0.017	Denver
Salinity (ppth): 21	~~<0.019~~	Mettler

MF Mixing Water 1-24-06

Organism Batch #/ Age: 2-06 / 3 days
Feedings: ~~Prior to test~~ / Prior to renewal / Daily
Food: YCT P. *subcapitata* Artemia
Food Batch: — — GSL 536-90
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Page 1 of 2

Conc. µg/L (A)	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 Cond. (mmhos/cm) 0 hr ~~48 hr~~	24 hr ~~72 hr~~	48 hr 96 hr
Control	A	F13	10	10	10	8.0		8.3	24.6		24.1	8.4		6.5	0.272		2.309
	B	F14	10	10	10		8.1			24.7			7.3			0.323	
	C																
	D																
6.0	A	F15	10	10	10	7.8		8.1	24.6		24.0	8.2		5.9	10.7		11.01
	B	F16	10	9 (D)	9		8.0			24.8			7.3			~~11.0~~	
	C																
	D																
7.0	A	F17	10	10	10	7.9		8.1	24.7		24.1	8.4		6.0	12.5		12.61
	B	F18	10	9 (D)	9		8.0			24.7			7.2			12.5	
	C																
	D																
8.0	A	F19	10	9 (D)	6 (D)	7.9		8.1	24.8		24.7	8.4		6.9	14.2		~~14.51~~ 14.9
	B	F20	10	7 (D)	7		8.0			24.8			7.1			14.0	
	C																
	D																
9.0	A	F21	10	9 (D)	~~4 (D)~~ (A)	7.9		8.1	24.8		24.5	8.3		6.1	15.7		15.27
	B	F22	10	8 (D)	3 (D)		8.0			24.4			7.3			15.7	
	C																
	D																
10.0	A	F23	10	~~8 (D)~~ 7 (D)	0 (D)	7.8		8.1	24.8		24.1	8.4		6.3	17.3		17.09
	B	F24	10	8 (D)	1 (D)		8.0			24.5			7.3			16.9	
	C																
	D																
	A																
	B																
	C																
	D																
Loaded / measured by:			SP	B	SP	SP	SP	B	SP	B	B	SP	SP	B	SP	SP	B
Recorded by:			B	B	SP	SP	SP	B	SP	B	SP	SP	SP	B	SP	SP	B

Investigators' Signatures
Bruce Anderson
Joseph Richard
Jason Dandi
Marshall Faircloth

Concentrations prepared by: MF
Loading verified by: B
Light Intensity: 50-100 Ft. candles (yes) no)
Photoperiod: 16 hours Light / 8 hours dark (yes) no)
Temperature Range °C:
Incubator 2 min. 24.5 max. 25.1 mean 24.8
Incubator ___ min. ___ max. ___ mean ___
Room B246 min. 22.9 max. 25.1 mean 24.0

Remarks:
(A) transmission error 360 58
48 hr LC50 8.39 95% upper 8.71
95% Confidence Lower 8.06

Statistical Results: Method: Spearman-Karber
48 / (96) hour LC50: 7.94
95% Confidence Interval: lower 7.63 upper 8.27

Nicki Willoughby
REVIEWER

Revised 01/23/06

Page 000024

Appendix 3. (continued)

FDEP Biology Section - 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: Screening / Definitive
Static / Static Renewal

Diluent/ Batch#: Well H2O 1-23-06
Toxicant/ Batch# NaCl 1-2-06

Test Beginning: Date: 1-24-06 Time: 1215
Test Ending: Date: 1-28-06 Time: 1230

Water Quality Parameters:	Diluent	Method
Total Residual Cl$_2$ (mg/L):	<0.03	Hach
Alkalinity (mg/L as $CaCO_3$):	143	Hach
Hardness (mg/L as CaCO3):	133	Hach
Total Ammonia (mg/L as N):	<0.017	Denver
Salinity (ppth):	<1	Mettler

Organism Batch #/ Age: 2-06 / 3days
Feeding: Prior to test / Prior to renewal / Daily
Food: YCT – P.*subcapitata* – Artemia GSL536-90
Food Batch:
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Page 2 of 2

Conc. µg/L	Rep.	Chamber#	Number Live 0 hr	Number Live 24 hr	Number Live 48 hr	pH (SU) 0 hr	pH (SU) 24 hr	pH (SU) 48 hr	Temperature (° C) 0 hr	Temperature (° C) 24 hr	Temperature (° C) 48 hr	D.O. (mg/l) 0 hr	D.O. (mg/l) 24 hr	D.O. (mg/l) 48 hr	UNCORRECTED Cond. (mmhos/cm) 0 hr	UNCORRECTED Cond. (µmhos/cm) 24 hr	UNCORRECTED Cond. (µmhos/cm) 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	F13	10	10	10		8.1			24.2			6.1			0.238	
	B	F14	10	10	10	8.2		8.3	24.1		24.4	8.0		7.5	0.285		0.290
	C																
	D																
60	A	F15	10	10	10		8.1			24.3			6.4			10.3	
	B	F16	8[1M]	8	8	8.0		8.1	24.1		24.4	7.8		7.2	10.9		11.3
	C																
	D																
70	A	F17	10	10	9[1D]		8.1			24.2			6.8			12.7	
	B	F18	9	9	9	8.0		8.1	24.0		24.4	7.7		7.1	12.6		13.2
	C																
	D																
80	A	F19	6	6	2[4D]		8.0			24.2			6.9			14.3	
	B	F20	7	7	7	8.0		7.9	24.0		24.4	7.5		6.7	14.1		14.5
	C																
	D																
90	A	F21	3[4D]	3[1D]	1[1D]		8.1			24.3			6.6			15.5	
	B	F22	3	2[1D]	2	8.2		8.3	24.1		24.4	7.7		7.4	15.2		15.7
	C																
	D																
100	A	F23	–	–	–		8.1			24.7			6.7			17.4	
	B	F24	1	0[1D]	–	8.1		–	24.1		–	7.4		–	17.1		–
	C																
	D																
	A																
	B																
	C																
	D																
Loaded / measured by:			SP	JD	JD	SP	JD	JD	SP	JD	JD	SP	JD	JD	SP	JD	JD
Recorded by:			SP	JD	JD	SP	JD	JD	SP	JD	JD	SP	JD	JD	SP	JD	JD

Investigators' Signatures
Brian Peterson
Sarah Pinchard
Marshall Faircloth
Jason Jones
Mark Wetherby
REVIEWER

Renewal
Concentrations prepared by: ME
Loading verified by: ME
Light Intensity: 50-100 FL candles (yes) no)
Photoperiod: 16 hours Light / 8 hours dark (yes) no)
Temperature Range °C:
Incubator # 2 min. 24.5 max. 25.1 mean 24.8
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 22.8 max. 25.1 mean 24.0

Remarks:
(D) transcription error 3 SP
48 hour results placed in SRT data file SP
48 hour LC50 8.37
95% Confidence level: lower 8.06, upper 8.74

Statistical Results: Method: Spearman-Karber
48 / (96) hour LC50: 7.94
95% Confidence Interval: lower 7.63 upper 8.27

Revised 01/23/06

Page
000025

Appendix 3. (continued)

Ceriodaphnia dubia Acute Standard Reference Toxicant Test
START DATE: 01/31/06 END DATE: 02/04/06 DURATION: 96 H
TOXICANT : NaCl

RAW DATA: Concentration (ug/L)	Number Exposed	Mortalities
0.00	20	0
1.50	20	0
2.00	20	11
2.50	20	20
3.00	20	20
4.00	20	20

SPEARMAN-KARBER TRIM: .00%

SPEARMAN-KARBER ESTIMATES: LC50: 1.94*
95% LOWER CONFIDENCE: 1.84
95% UPPER CONFIDENCE: 2.06

Cyprinella leedsi Acute Standard Reference Toxicant Test

START DATE: 01/24/06 END DATE: 01/28/06 DURATION: 96 H
TOXICANT : NaCl

RAW DATA: Concentration (ug/L)	Number Exposed	Mortalities
0.00	20	0
6.00	20	1
7.00	20	1
8.00	20	7
9.00	20	14
10.00	20	19

SPEARMAN-KARBER TRIM: 5.00%

SPEARMAN-KARBER ESTIMATES: LC50: 8.39*
95% LOWER CONFIDENCE: 8.06
95% UPPER CONFIDENCE: 8.74

***LC50 calculated at 48 hours to match environmental test duration**

Appendix 4. Test Organism Receipts

11842 Research Circle
Alachua, FL 32615
T: (386) 462-7889
F: (386) 462-7264
www.hydrosphere.net

HYDROSPHERE
research

Packaging List

Date	Customer Number	Order Shipped Via
1/24/2006	NA	Hydrosphere Research
Customer		**Order Prepared By**
FDEP Marshall Faircloth Biology Mail Stop 6515 2600 Blair Stone Road Tallahassee, Fl 32399-2400		Dustin Onash

Quantity	Description
200	M. bahia from Aquatic Indicators
300	M. beryllina from Aquatic Indicators
120	C. leedsi, #CL 1001, Hatched 1/21/2006

Appendix 4. (continued)

4569 Samuel Street
Sarasota, Florida
34233

NELAC Accredited

MBL
MARINCO
BIOASSAY
LABORATORY

TEL: (941) 925-3594
TEL: (800) 889-0384
FAX: (941) 922-3874
Email: lab@biologylab.com
Internet: biologylab.com

Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 3/13/06

Shipped to: FDEP - Attn: Marshall Faircloth

P.O. No: _____

Species	Quantity	Age	Brood Number	Temperature	Salinity
Mysidopsis bahia					
Menidia beryllina					
Cyprinella leedsi	130+	12 Days	[illegible]	25°C	
Pimephales promelas					

Packed by: Frank Gary

Shipped Via: FedEx

Notes: _____

Thank you for your order.

Appendix 5. Chemical Analyses performed on the effluent from the City of Homestead Municipal Power Plant Once-Through Non-Contact Cooling Water Discharge Outfall D-001, sampled on February 13, 2006.

Date Sampled	Field ID	Analysis	Component	Result	Units	Remark	MDL	PQL
2/13/2006 10:00	51-HPP-1	Bio-AGP/LimNut	Algal Growth Potential	0.3	mg DryWt/L	U	0.3	0.9
2/13/2006 10:00	51-HPP-1	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	0.85	ug/L	U	0.85	2.6
2/13/2006 10:00	51-HPP-1	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	1.5	ug/L	U	1.5	4.5
2/13/2006 10:00	51-HPP-1	Bio-Toxicology	Bioassay-Acute-Screen-FW-C.dubia, LC50	100	LC50	L		
2/13/2006 10:00	51-HPP-1	Bio-Toxicology	Bioassay-Acute-Screen-FW-Fish, LC50	100	LC50	L		
2/13/2006 10:00	51-HPP-1	BNA-Water	1,2,4-Trichlorobenzene	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	1,2-Dichlorobenzene	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	1,3-Dichlorobenzene	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	1,4-Dichlorobenzene	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	2,4,6-Trichlorophenol	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	2,4-Dichlorophenol	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	2,4-Dimethylphenol	48	ug/L	U	48	190
2/13/2006 10:00	51-HPP-1	BNA-Water	2,4-Dinitrophenol	14	ug/L	U	14	58
2/13/2006 10:00	51-HPP-1	BNA-Water	2,4-Dinitrotoluene	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	2,6-Dinitrotoluene	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	2-Chloronaphthalene	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	2-Chlorophenol	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	12
2/13/2006 10:00	51-HPP-1	BNA-Water	2-Nitrophenol	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	3,3'-Dichlorobenzidine	38	ug/L	U	38	150
2/13/2006 10:00	51-HPP-1	BNA-Water	4,4'-DDD	1.4	ug/L	U	1.4	5.8
2/13/2006 10:00	51-HPP-1	BNA-Water	4,4'-DDE	1.4	ug/L	U	1.4	5.8
2/13/2006 10:00	51-HPP-1	BNA-Water	4,4'-DDT	1.4	ug/L	U	1.4	5.8
2/13/2006 10:00	51-HPP-1	BNA-Water	4-Bromophenyl phenyl ether	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	4-Chloro-3-methylphenol	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.7
2/13/2006 10:00	51-HPP-1	BNA-Water	4-Nitrophenol	14	ug/L	U	14	58
2/13/2006 10:00	51-HPP-1	BNA-Water	Acenaphthene	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Acenaphthylene	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Aldrin	1.4	ug/L	U	1.4	5.8
2/13/2006 10:00	51-HPP-1	BNA-Water	alpha-BHC	1.4	ug/L	U	1.4	5.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Anthracene	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Benzidine	96	ug/L	U	96	380
2/13/2006 10:00	51-HPP-1	BNA-Water	Benzo(a)anthracene	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Benzo(a)pyrene	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Benzo(b)fluoranthene	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Benzo(g,h,i)perylene	0.96	ug/L	U	0.96	3.8

Appendix 5. Chemical Analyses (continued)

Date Sampled	Field ID	Analysis	Component	Result	Units	Remark	MDL	PQL
2/13/2006 10:00	51-HPP-1	BNA-Water	Benzo(k)fluoranthene	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	beta-BHC	1.4	ug/L	U	1.4	5.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Bis(2-chloroethoxy)methane	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Bis(2-chloroethyl)ether	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	12
2/13/2006 10:00	51-HPP-1	BNA-Water	Bis(2-ethylhexyl)phthalate	14	ug/L	UJ	14	58
2/13/2006 10:00	51-HPP-1	BNA-Water	Butyl benzyl phthalate	4.8	ug/L	U	4.8	19
2/13/2006 10:00	51-HPP-1	BNA-Water	Chrysene	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	delta-BHC	1.4	ug/L	U	1.4	5.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Dibenzo(a,h)anthracene	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Dieldrin	1.4	ug/L	U	1.4	5.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Diethyl phthalate	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Dimethyl phthalate	48	ug/L	U	48	190
2/13/2006 10:00	51-HPP-1	BNA-Water	Di-n-butyl phthalate	4.8	ug/L	U	4.8	19
2/13/2006 10:00	51-HPP-1	BNA-Water	Di-n-octyl phthalate	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Endosulfan I	3.8	ug/L	U	3.8	15
2/13/2006 10:00	51-HPP-1	BNA-Water	Endosulfan II	3.8	ug/L	U	3.8	15
2/13/2006 10:00	51-HPP-1	BNA-Water	Endosulfan sulfate	1.4	ug/L	U	1.4	5.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Endrin	1.4	ug/L	U	1.4	5.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Endrin aldehyde	3.8	ug/L	U	3.8	15
2/13/2006 10:00	51-HPP-1	BNA-Water	Fluoranthene	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Fluorene	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	gamma-BHC	1.4	ug/L	U	1.4	5.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Heptachlor	1.4	ug/L	U	1.4	5.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Heptachlor epoxide	1.4	ug/L	U	1.4	5.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Hexachlorobenzene	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	12
2/13/2006 10:00	51-HPP-1	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	U	2.9	12
2/13/2006 10:00	51-HPP-1	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	12
2/13/2006 10:00	51-HPP-1	BNA-Water	Indeno(1,2,3-cd)pyrene	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Isophorone	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Naphthalene	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.7
2/13/2006 10:00	51-HPP-1	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	U	1.9	7.7
2/13/2006 10:00	51-HPP-1	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	U	1.9	7.7
2/13/2006 10:00	51-HPP-1	BNA-Water	N-Nitrosodiphenylamine	2.9	ug/L	U	2.9	12
2/13/2006 10:00	51-HPP-1	BNA-Water	Pentachlorophenol	2.9	ug/L	U	2.9	12
2/13/2006 10:00	51-HPP-1	BNA-Water	Phenanthrene	0.96	ug/L	U	0.96	3.8

Appendix 5. Chemical Analyses (continued)

Date Sampled	Field ID	Analysis	Component	Result	Units	Remark	MDL	PQL
2/13/2006 10:00	51-HPP-1	BNA-Water	Phenol	0.96	ug/L	U	0.96	3.8
2/13/2006 10:00	51-HPP-1	BNA-Water	Pyrene	0.96	ug/L	U	0.96	3.8
2/13/2006 10:15	BLANK	BNA-Water	1,2,4-Trichlorobenzene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	1,2-Dichlorobenzene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	1,3-Dichlorobenzene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	1,4-Dichlorobenzene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	2,4,6-Trichlorophenol	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	2,4-Dichlorophenol	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	2,4-Dimethylphenol	49	ug/L	U	49	190
2/13/2006 10:15	BLANK	BNA-Water	2,4-Dinitrophenol	15	ug/L	U	15	58
2/13/2006 10:15	BLANK	BNA-Water	2,4-Dinitrotoluene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	2,6-Dinitrotoluene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	2-Chloronaphthalene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	2-Chlorophenol	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	12
2/13/2006 10:15	BLANK	BNA-Water	2-Nitrophenol	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	3,3'-Dichlorobenzidine	39	ug/L	U	39	160
2/13/2006 10:15	BLANK	BNA-Water	4,4'-DDD	1.5	ug/L	U	1.5	5.8
2/13/2006 10:15	BLANK	BNA-Water	4,4'-DDE	1.5	ug/L	U	1.5	5.8
2/13/2006 10:15	BLANK	BNA-Water	4,4'-DDT	1.5	ug/L	U	1.5	5.8
2/13/2006 10:15	BLANK	BNA-Water	4-Bromophenyl phenyl ether	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	4-Chloro-3-methylphenol	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.8
2/13/2006 10:15	BLANK	BNA-Water	4-Nitrophenol	15	ug/L	U	15	58
2/13/2006 10:15	BLANK	BNA-Water	Acenaphthene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	Acenaphthylene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	Aldrin	1.5	ug/L	U	1.5	5.8
2/13/2006 10:15	BLANK	BNA-Water	alpha-BHC	1.5	ug/L	U	1.5	5.8
2/13/2006 10:15	BLANK	BNA-Water	Anthracene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	Benzidine	97	ug/L	U	97	390
2/13/2006 10:15	BLANK	BNA-Water	Benzo(a)anthracene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	Benzo(a)pyrene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	Benzo(b)fluoranthene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	Benzo(g,h,i)perylene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	Benzo(k)fluoranthene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	beta-BHC	1.5	ug/L	U	1.5	5.8
2/13/2006 10:15	BLANK	BNA-Water	Bis(2-chloroethoxy)methane	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	Bis(2-chloroethyl)ether	0.97	ug/L	U	0.97	3.9

Appendix 5. Chemical Analyses (continued)

Date Sampled	Field ID	Analysis	Component	Result	Units	Remark	MDL	PQL
2/13/2006 10:15	BLANK	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	12
2/13/2006 10:15	BLANK	BNA-Water	Bis(2-ethylhexyl)phthalate	15	ug/L	UJ	15	58
2/13/2006 10:15	BLANK	BNA-Water	Butyl benzyl phthalate	4.9	ug/L	U	4.9	19
2/13/2006 10:15	BLANK	BNA-Water	Chrysene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	delta-BHC	1.5	ug/L	U	1.5	5.8
2/13/2006 10:15	BLANK	BNA-Water	Dibenzo(a,h)anthracene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	Dieldrin	1.5	ug/L	U	1.5	5.8
2/13/2006 10:15	BLANK	BNA-Water	Diethyl phthalate	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	Dimethyl phthalate	49	ug/L	U	49	190
2/13/2006 10:15	BLANK	BNA-Water	Di-n-butyl phthalate	4.9	ug/L	U	4.9	19
2/13/2006 10:15	BLANK	BNA-Water	Di-n-octyl phthalate	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	Endosulfan I	3.9	ug/L	U	3.9	16
2/13/2006 10:15	BLANK	BNA-Water	Endosulfan II	3.9	ug/L	U	3.9	16
2/13/2006 10:15	BLANK	BNA-Water	Endosulfan sulfate	1.5	ug/L	U	1.5	5.8
2/13/2006 10:15	BLANK	BNA-Water	Endrin	1.5	ug/L	U	1.5	5.8
2/13/2006 10:15	BLANK	BNA-Water	Endrin aldehyde	3.9	ug/L	U	3.9	16
2/13/2006 10:15	BLANK	BNA-Water	Fluoranthene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	Fluorene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	gamma-BHC	1.5	ug/L	U	1.5	5.8
2/13/2006 10:15	BLANK	BNA-Water	Heptachlor	1.5	ug/L	U	1.5	5.8
2/13/2006 10:15	BLANK	BNA-Water	Heptachlor epoxide	1.5	ug/L	U	1.5	5.8
2/13/2006 10:15	BLANK	BNA-Water	Hexachlorobenzene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	12
2/13/2006 10:15	BLANK	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	U	2.9	12
2/13/2006 10:15	BLANK	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	12
2/13/2006 10:15	BLANK	BNA-Water	Indeno(1,2,3-cd)pyrene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	Isophorone	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	Naphthalene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.8
2/13/2006 10:15	BLANK	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	U	1.9	7.8
2/13/2006 10:15	BLANK	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	U	1.9	7.8
2/13/2006 10:15	BLANK	BNA-Water	N-Nitrosodiphenylamine	2.9	ug/L	U	2.9	12
2/13/2006 10:15	BLANK	BNA-Water	Pentachlorophenol	2.9	ug/L	U	2.9	12
2/13/2006 10:15	BLANK	BNA-Water	Phenanthrene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	Phenol	0.97	ug/L	U	0.97	3.9
2/13/2006 10:15	BLANK	BNA-Water	Pyrene	0.97	ug/L	U	0.97	3.9
2/13/2006 10:00	51-HPP-1	GC-Water	Alachlor	0.6	ug/L	U	0.6	2.4
2/13/2006 10:00	51-HPP-1	GC-Water	Ametryn	0.05	ug/L	U	0.05	0.2

Appendix 5. Chemical Analyses (continued)

Date Sampled	Field ID	Analysis	Component	Result	Units	Remark	MDL	PQL
2/13/2006 10:00	51-HPP-1	GC-Water	Atrazine	0.05	ug/L	U	0.05	0.2
2/13/2006 10:00	51-HPP-1	GC-Water	Azinphos Methyl	0.2	ug/L	U	0.2	0.8
2/13/2006 10:00	51-HPP-1	GC-Water	Bromacil	0.2	ug/L	U	0.2	0.8
2/13/2006 10:00	51-HPP-1	GC-Water	Butylate	0.2	ug/L	U	0.2	0.8
2/13/2006 10:00	51-HPP-1	GC-Water	Chlorpyrifos Ethyl	0.05	ug/L	U	0.05	0.2
2/13/2006 10:00	51-HPP-1	GC-Water	Chlorpyrifos Methyl	0.1	ug/L	U	0.1	0.4
2/13/2006 10:00	51-HPP-1	GC-Water	Diazinon	0.05	ug/L	U	0.05	0.2
2/13/2006 10:00	51-HPP-1	GC-Water	Ethion	0.05	ug/L	U	0.05	0.2
2/13/2006 10:00	51-HPP-1	GC-Water	Ethoprop	0.1	ug/L	U	0.1	0.4
2/13/2006 10:00	51-HPP-1	GC-Water	Fenamiphos	0.2	ug/L	U	0.2	0.8
2/13/2006 10:00	51-HPP-1	GC-Water	Fonofos	0.1	ug/L	U	0.1	0.4
2/13/2006 10:00	51-HPP-1	GC-Water	Hexazinone	0.1	ug/L	U	0.1	0.4
2/13/2006 10:00	51-HPP-1	GC-Water	Malathion	0.15	ug/L	UJ	0.15	0.6
2/13/2006 10:00	51-HPP-1	GC-Water	Metalaxyl	0.25	ug/L	U	0.25	1
2/13/2006 10:00	51-HPP-1	GC-Water	Metolachlor	0.5	ug/L	U	0.5	2
2/13/2006 10:00	51-HPP-1	GC-Water	Metribuzin	0.1	ug/L	U	0.1	0.4
2/13/2006 10:00	51-HPP-1	GC-Water	Mevinphos	0.2	ug/L	U	0.2	0.8
2/13/2006 10:00	51-HPP-1	GC-Water	Naled	0.8	ug/L	U	0.8	3.2
2/13/2006 10:00	51-HPP-1	GC-Water	Norflurazon	0.15	ug/L	U	0.15	0.6
2/13/2006 10:00	51-HPP-1	GC-Water	Parathion Ethyl	0.15	ug/L	U	0.15	0.6
2/13/2006 10:00	51-HPP-1	GC-Water	Parathion Methyl	0.1	ug/L	U	0.1	0.4
2/13/2006 10:00	51-HPP-1	GC-Water	Phorate	0.05	ug/L	U	0.05	0.2
2/13/2006 10:00	51-HPP-1	GC-Water	Prometryn	0.15	ug/L	U	0.15	0.6
2/13/2006 10:00	51-HPP-1	GC-Water	Simazine	0.05	ug/L	U	0.05	0.2
2/13/2006 10:15	BLANK	GC-Water	Alachlor	0.58	ug/L	U	0.58	2.3
2/13/2006 10:15	BLANK	GC-Water	Ametryn	0.048	ug/L	U	0.048	0.19
2/13/2006 10:15	BLANK	GC-Water	Atrazine	0.048	ug/L	U	0.048	0.19
2/13/2006 10:15	BLANK	GC-Water	Azinphos Methyl	0.19	ug/L	U	0.19	0.76
2/13/2006 10:15	BLANK	GC-Water	Bromacil	0.19	ug/L	U	0.19	0.76
2/13/2006 10:15	BLANK	GC-Water	Butylate	0.19	ug/L	U	0.19	0.76
2/13/2006 10:15	BLANK	GC-Water	Chlorpyrifos Ethyl	0.048	ug/L	U	0.048	0.19
2/13/2006 10:15	BLANK	GC-Water	Chlorpyrifos Methyl	0.096	ug/L	U	0.096	0.38
2/13/2006 10:15	BLANK	GC-Water	Diazinon	0.048	ug/L	U	0.048	0.19
2/13/2006 10:15	BLANK	GC-Water	Ethion	0.048	ug/L	U	0.048	0.19
2/13/2006 10:15	BLANK	GC-Water	Ethoprop	0.096	ug/L	U	0.096	0.38
2/13/2006 10:15	BLANK	GC-Water	Fenamiphos	0.19	ug/L	U	0.19	0.76
2/13/2006 10:15	BLANK	GC-Water	Fonofos	0.096	ug/L	U	0.096	0.38
2/13/2006 10:15	BLANK	GC-Water	Hexazinone	0.096	ug/L	U	0.096	0.38

Appendix 5. Chemical Analyses (continued)

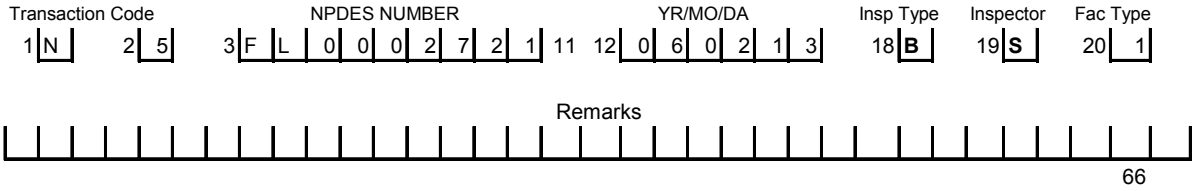
Date Sampled	Field ID	Analysis	Component	Result	Units	Remark	MDL	PQL
2/13/2006 10:15	BLANK	GC-Water	Malathion	0.14	ug/L	UJ	0.14	0.56
2/13/2006 10:15	BLANK	GC-Water	Metalaxyl	0.24	ug/L	U	0.24	0.96
2/13/2006 10:15	BLANK	GC-Water	Metolachlor	0.48	ug/L	U	0.48	1.9
2/13/2006 10:15	BLANK	GC-Water	Metribuzin	0.096	ug/L	U	0.096	0.38
2/13/2006 10:15	BLANK	GC-Water	Mevinphos	0.19	ug/L	U	0.19	0.76
2/13/2006 10:15	BLANK	GC-Water	Naled	0.77	ug/L	U	0.77	3.1
2/13/2006 10:15	BLANK	GC-Water	Norflurazon	0.14	ug/L	U	0.14	0.56
2/13/2006 10:15	BLANK	GC-Water	Parathion Ethyl	0.14	ug/L	U	0.14	0.56
2/13/2006 10:15	BLANK	GC-Water	Parathion Methyl	0.096	ug/L	U	0.096	0.38
2/13/2006 10:15	BLANK	GC-Water	Phorate	0.048	ug/L	U	0.048	0.19
2/13/2006 10:15	BLANK	GC-Water	Prometryn	0.14	ug/L	U	0.14	0.56
2/13/2006 10:15	BLANK	GC-Water	Simazine	0.048	ug/L	U	0.048	0.19
2/13/2006 10:00	51-HPP-1	Metals-Water	Aluminum	5	ug/L	U	5	20
2/13/2006 10:00	51-HPP-1	Metals-Water	Arsenic	4	ug/L	U	4	16
2/13/2006 10:00	51-HPP-1	Metals-Water	Cadmium	0.05	ug/L	U	0.05	0.2
2/13/2006 10:00	51-HPP-1	Metals-Water	Calcium	86.5	mg/L	A	0.05	0.2
2/13/2006 10:00	51-HPP-1	Metals-Water	Chromium	2	ug/L	U	2	8
2/13/2006 10:00	51-HPP-1	Metals-Water	Copper	13.1	ug/L	A	0.25	1
2/13/2006 10:00	51-HPP-1	Metals-Water	Iron	10	ug/L	U	10	40
2/13/2006 10:00	51-HPP-1	Metals-Water	Lead	0.075	ug/L	U	0.075	0.3
2/13/2006 10:00	51-HPP-1	Metals-Water	Magnesium	5.8	mg/L	A	0.01	0.04
2/13/2006 10:00	51-HPP-1	Metals-Water	Nickel	1.9	ug/L	I	1	4
2/13/2006 10:00	51-HPP-1	Metals-Water	Selenium	0.5	ug/L	U	0.5	2
2/13/2006 10:00	51-HPP-1	Metals-Water	Silver	0.025	ug/L	U	0.025	0.1
2/13/2006 10:00	51-HPP-1	Metals-Water	Zinc	14	ug/L	A	3	12
2/13/2006 10:15	BLANK	Metals-Water	Aluminum	5	ug/L	U	5	20
2/13/2006 10:15	BLANK	Metals-Water	Arsenic	4	ug/L	U	4	16
2/13/2006 10:15	BLANK	Metals-Water	Cadmium	0.05	ug/L	U	0.05	0.2
2/13/2006 10:15	BLANK	Metals-Water	Calcium	0.05	mg/L	U	0.05	0.2
2/13/2006 10:15	BLANK	Metals-Water	Chromium	2	ug/L	U	2	8
2/13/2006 10:15	BLANK	Metals-Water	Copper	0.25	ug/L	U	0.25	1
2/13/2006 10:15	BLANK	Metals-Water	Iron	10	ug/L	U	10	40
2/13/2006 10:15	BLANK	Metals-Water	Lead	0.075	ug/L	U	0.075	0.3
2/13/2006 10:15	BLANK	Metals-Water	Magnesium	0.01	mg/L	U	0.01	0.04
2/13/2006 10:15	BLANK	Metals-Water	Nickel	1	ug/L	U	1	4
2/13/2006 10:15	BLANK	Metals-Water	Selenium	0.5	ug/L	U	0.5	2
2/13/2006 10:15	BLANK	Metals-Water	Silver	0.025	ug/L	U	0.025	0.1
2/13/2006 10:15	BLANK	Metals-Water	Zinc	3	ug/L	U	3	12

Appendix 5. Chemical Analyses (continued)

Date Sampled	Field ID	Analysis	Component	Result	Units	Remark	MDL	PQL
2/13/2006 10:00	51-HPP-1	Nutrients-Liquid	Alkalinity	214	mg CaCO3/L		0.65	2.5
2/13/2006 10:00	51-HPP-1	Nutrients-Liquid	Ammonia-N	0.01	mg N/L	U	0.01	0.02
2/13/2006 10:00	51-HPP-1	Nutrients-Liquid	Kjeldahl Nitrogen	0.24	mg N/L		0.08	0.2
2/13/2006 10:00	51-HPP-1	Nutrients-Liquid	NO2NO3-N	2.3	mg N/L		0.04	0.1
2/13/2006 10:00	51-HPP-1	Nutrients-Liquid	O-Phosphate-P	0.006	mg P/L	I	0.004	0.01
2/13/2006 10:00	51-HPP-1	Nutrients-Liquid	Total-P	0.02	mg P/L	U	0.02	0.06
2/13/2006 10:15	BLANK	Nutrients-Liquid	Ammonia-N	0.01	mg N/L	U	0.01	0.02
2/13/2006 10:15	BLANK	Nutrients-Liquid	Kjeldahl Nitrogen	0.08	mg N/L	U	0.08	0.2
2/13/2006 10:15	BLANK	Nutrients-Liquid	NO2NO3-N	0.005	mg N/L	I	0.004	0.01
2/13/2006 10:15	BLANK	Nutrients-Liquid	O-Phosphate-P	0.004	mg P/L	U	0.004	0.01
2/13/2006 10:15	BLANK	Nutrients-Liquid	Total-P	0.02	mg P/L	U	0.02	0.06
2/13/2006 10:00	51-HPP-1	Overflow	Oil and Grease	1.7	mg/L	U		
2/13/2006 10:15	BLANK	Overflow	Oil and Grease	1.7	mg/L	U		

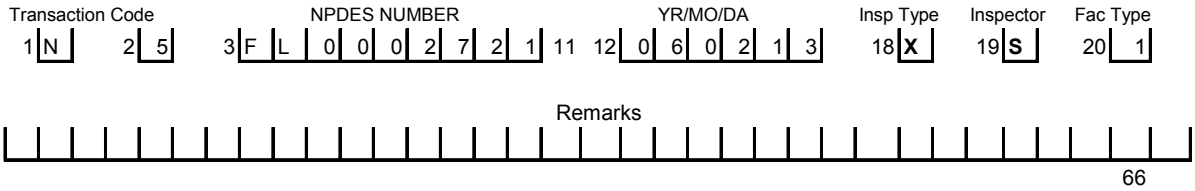
The Bioassay of City of Homestead Municipal Power Plant Once-Through Non-Contact Cooling Water Discharge effluent sampled on February 13, 2006. NPDES #FL0002721.

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



The Priority Pollutants Analysis of City of Homestead Municipal Power Plant Once-Through Non-Contact Cooling Water Discharge effluent sampled on February 13, 2006. NPDES #FL0002721.

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



Biological Analyses of City of Homestead Municipal Power Plant Once-Through Non-Contact Cooling Water Discharge effluent sampled on February 13, 2006. NPDES #FL0002721.

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

