

Bioassays of

Florida Distillers Company- Auburndale

Polk County

NPDES #FL0003051

Sampled May 15, 2006

July 2006

Biology Section
Bureau of Laboratories
Division of Resource Assessment and Management

Quality Manual No. 870346G
NELAC Certification No. E31780

Florida Distillers Company - Auburndale, 425 Recker Highway, Auburndale, Polk County, Florida, NPDES #FL0003051. Effluent samples for this facility were collected on May 15, 2006.

Introduction

Florida Distillers Company – Auburndale produces distilled and blended alcoholic beverages. The facility has a design flow of 0.283 million gallons per day (MGD). The facility had an average annual daily flow (AADF) of 0.217 MGD from April 2005 – March 2006. Wastewater at the facility consists of evaporator condensate, boiler blowdown, cooling tower blowdown, wash-ups, and spills from fermenters, winery and brewing processes, cooling water from blending and bottling operations, and sanitary wastewater. Wastewater is equalized in a lined pond. The equalized wastewater receives biological treatment in two sequencing batch reactors followed by clarification, disinfection by ultraviolet (UV) light and discharge into an unlined polishing-pond where it is mixed with once-through cooling water. Chlorination with liquid chlorine is available for disinfection in the event of an UV system failure. Effluent from the polishing pond is discharged to the Class III fresh waters of Lake Lena Run through Outfall D-002. Outfall D-002, located approximately at latitude 28º 03' 30" N, longitude 81º 48' 10" W, consists of a concrete trough with a 0.71 m (28 inch) rectangular weir.

There are no Administrative Orders (AO) or Consent Orders (CO) for this facility. The facility has no mixing zones. During the last year, the facility had one permit limit violation for unionized ammonia (July 2005, concentration 0.05 mg/L—permitted limit 0.02 mg/L). (Facility information provided by Lori Pillsbury and Gitta Schmitt of FDEP Southwest District)

Methods

Samples were collected from the EFF-2 NPDES sampling point for Outfall D-002 by Lori Pillsbury and Peter Wenner (FDEP Southwest 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 A for the completed chain of custody form.

The 48-hour acute screening toxicity tests and algal growth potential test were performed following internal DEP 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. While the 48-hour acute screening toxicity test does not reflect the permit required conditions, the Department uses it to provide reasonable assurance that the facility does not adversely affect waters of the state.

Toxicity Test Results

Tests were performed May 16 - 18, 2006.

Ceriodaphnia dubia 48-hour acute screening bioassay –	LC_{50} > 100%, 0% mortality* in 100% sample at 48 hours
Pimephales promelas 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.

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

*NOTE: In a 48-hour acute screening test of 100% effluent, mortality of < 20% provides 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% 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 13.3 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 co-limited by both nitrogen and phosphorus.

See Table 1 for AGP results.

Chemistry Results

Total residual chlorine and total ammonia were not detected in the bioassay sample in the laboratory. The total ammonia concentration in the sample collected and preserved for chemical analysis was 0.017 mg/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was < 0.02 mg/L.

Chromium III, copper, iron, lead, nickel, and zinc were detected in the effluent at levels that comply with Class III fresh water quality criteria. Arsenic was detected between the laboratory method detection limit (MDL) and practical quantitation limit (PQL). Aluminum and sodium were also detected in the effluent.

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 Outfall D-002 for this facility on Month 15, 2006 was not acutely toxic to either test species during the 48-hour acute screen 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

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 total soluble nitrogen (TSIN), total nitrogen (TN), and total phosphorus (TP) limitation and ratios of nitrogen to phosphorus for samples collected from Florida Distillers Company- Auburndale on May 15, 2006.*

Location	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (TN) ± 20%	Predicted AGP (TP) ± 20%	Inorganic N:P ratio	Total N:P ratio
Effluent Samples	13.3	0.65 ± 0.13	53.2 ± 10.64	51.6 ± 10.32	NC	11.67

NC- Not calculable because orthophosphate was not detected in the sample

Table 2. Effluent limits, Class III Freshwater Criteria and chemical and microbiological data for samples collected from Florida Distillers Company-Auburndale on May 15, 2006.

Florida Distillers Company-Auburndale NPDES# FL0003051	Class III Freshwater Stds	Effluent Limits	Effluent Samples
Organic Constituents (µg/L)			
None Detected	-	-	-
Metals (µg/L unless otherwise noted)			
Aluminum	-	-	174
Arsenic	≤ 50	-	1.1 I
Cadmium	≤ 1 b	-	0.05 U
Calcium (mg/L)	-	-	26.5
Chromium-III	≤ 77.6 b	-	1.57
Copper	≤ 8.4 b	-	6.93
Iron	≤ 1,000	-	83
Lead	≤ 2.7 b	-	0.41
Magnesium (mg/L)	-	-	5.3
Nickel	≤ 46.8 b	-	1.16
Selenium	≤ 5	-	0.5 U
Silver	≤ 0.07	-	0.025 U
Sodium	-	Report	84.1
Zinc	≤ 107.5 b	≤ 107.5 b	22.5
Nutrients (mg/L)			
Ortho-phosphate	-	-	0.004 U
Total Phosphorus	-	Report	0.12
Ammonia	-	≤ 2.0	0.017 I
Unionized Ammonia	≤ 0.02	≤ 0.02	< 0.02 c
Nitrate+Nitrite	-	-	0.004 U
Total Kjeldahl Nitrogen	-	-	1.4
Organic Nitrogen	-	-	1.38 c
Total Nitrogen	-	≤ 4.4	1.4 c
General Physical and Chemical Parameters			
Dissolved Oxygen (mg/L)	≥ 5	≥ 5	8.4
pH (S.U.)	6 - 8.5	6 - 8.5	8.1
Conductivity (umhos/cm)	≤ 1,275	-	573
Temperature (C)	-	Report	25.5
CBOD (mg/L)	-	≤ 26	2.3
Chlorophyll-A (µg/L)	-	-	42 A
Phaeophytin-A (µg/L)			1.5 U
TSS (mg/L)	-	≤ 30	16 I
Turbidity (NTU)	≤ 29 t	-	6.5
Alkalinity (mg/L)	≥ 20	-	212
Hardness (mg/L)	-	Report	88 c
Total residual chlorine (mg/L)	≤ 0.01	≤ 0.01	< 0.03 U*
Flow (MGD)	-	0.5 m	0.217 a
Microbiology (# counts/100ml)			
Fecal Coliforms-Membrane Filter	≤ 800 s	≤ 800 s	10 f

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
f - Data provided to the SW district by Advanced Environmental Laboratories, Inc. (DOH cert # E84589, FL NELAC certified)
m - Monthly average
s - Single sample
t - Shall not exceed 29 NTUs above background
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 *

Request Number: RQ-2006-05-15-23
Florida Distillers Co @ Auburndale

Requester: Shannan Bogdanov
Field Report Prepared By: L Pillsbury

Customer: SW-DIST
Collected By: L Pillsbury, P Wenner
Send Final Report To Ilia Balcom

Project ID: FYI3
Sampling Agency: FDEP

PMAS: 1163

Lab ID *	Location	Comp / Grab	Collection (begin) Date	Time	Eastern Central	Collection (end) Date	Time	Eastern Central	Bottle Group(s)**
	OUTFALL D002	✓ Grab	5/15/06	0950	Eastern				A
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L) 8.42		Storet Station Number				
	Matrix (Include type e.g. Salt, Fresh, etc) Fresh	Temp (C) 25.53	pH 8.11	Sample Depth OUTFALL m / ft	0.28/573	✓ Salinity (PPTh) / Sp Conductance (umho/cm)	NPDES Number FL0003051		
	Latitude N 28° 03' 12.7	Longitude W 081° 48' 03.0		Comments					

1854 5-16-06 10:30 SB

Lab ID *	Location	Comp / Grab	Collection (begin) Date	Time	Eastern Central	Collection (end) Date	Time	Eastern Central	Bottle Group(s)**
	Field Blank	✓ Grab	5/15/06	0930	Eastern				B
	Field ID	Tot Res Chlorine (mg/L) —	Diss Oxygen (mg/L) —		Storet Station Number				
	Matrix (Include type e.g. Salt, Fresh, etc) Fresh	Temp (C) —	pH —	Sample Depth — m / ft	—	Salinity (PPTh) / Sp Conductance (umho/cm)	NPDES Number		
	Latitude ° ' "	Longitude ° ' "		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 ° ' "	Longitude ° ' "		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 ° ' "	Longitude ° ' "		Comments					

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	5/15/06 1405	DHL	Tom E	5/16/06 8:30				

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

1 CHI-W EW 5/16/06 1600

PO4 (2) PINE 5/16/06 4:07

FDEP Biology Section - Acute Screen Bioassay Bench Sheets

Facility: Florida Distillers Company - Auburndale
Address: 425 Recker Highway
City: Auburndale County: Polk
Contact/District: Lori Pillsbury / Southwest District
NPDES Permit #: FL 0003051
LIMS Job #: TLH-2006-05-16-78 LIMS Sample #: 922796
Lims Data Entry: 5-18-06 SP Data Entry Verification: 5-18-06 MF

Sample Collection: Date: 5-15-06 Time: 0950
Hold Time Start: Date: 5-15-06 Time: 0950

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: ____

Temperature Range °C
Incubator # 2 Range 24.1-26.1
Room B246: 23.7 - 25.1
Waterbath: N/A

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
Jacob Pinkerton
Eric Dunn
Marshall Fairbanks
Erin Trip
Jason Davis
Nigel 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 meas	trad	MF
Lab Total Residual Cl2 (mg/L):	<0.03	<0.03				<0.03	HACH	BA, SP, MF	MF
Alkalinity (mg/L as $CaCO_3$):	94	83				228	HACH	SW/BA	SP
Hardness (mg/L as $CaCO_3$):	104	100				91	HACH	SW/BA	SP
Total Ammonia (mg/L as N):	<0.017	<0.317				0.076	DENVER	MF/SP	BA
Salinity (ppth)	<1	<1				<1	YSI / (Mettler)	SP	BA

V 1.4 9/12/05

Appendix B. (continued)

FDEP Biology Section - Bioassay Survival Sheet

LIMS Sample #: 9327960 | Test #: 1 | Test Started: Date 5-16-06 Time: 1130
Organism: C. dubia | SOP #: TA 07_01 | Test Ended: Date 5-18-06 Time: 1120
Organism Batch: 21-06 | Diluent/ Batch: DMW 1-12-06
Organism Age: <24 hrs | Food: YCT *P. subcapitata* *Artemia*
Chamber Size: 30 mL | Batch: 5-05 2-06 —
Test Volume: 20 mL | Feeding: (Prior to test) - Prior to renewal - Daily

Concentration	Replicate	Chamber #	0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
			Test Hour					
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]	SP	SP			

Loading Verified by: mf

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

Comments:

Test Results:
% mortality in 100% sample: Ø
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 000027

Appendix B. (continued)

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FDEP Biology Section - Bioassay Survival Sheet

LIMS Sample #: 922796 Test #: 2 Test Started: Date 5-16-06 Time: 11:35
Organism: P. promelas SOP #: TA 07_02 Test Ended: Date 5-18-06 Time: 11:35
Organism Batch: 8-06 Diluent/ Batch: MHW / 7-06
Organism Age: 8 days Food: YCT P. subcapitata Artemia
Chamber Size: 1000 mL Batch: — — GSL 536-90
Test Volume: 500 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	C6	5	5	5			
	B	C7	5	5	5			
	C	C8	5	5	5			
	D	C9	5	5	5			
100%	A	C21	5	5	5			
	B	C22	5	5	5			
	C	C23	5	5	5			
	D	C24	5	5	5			
Organisms loaded by: [illegible]		Checked by:	[redacted]	JD	SP			

Loading Verified by: BA

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

Comments:

Test Results:

% mortality in 100% sample: Ø

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 000028

Appendix B. (continued)

FDEP Biology Section - Bioassay Parameter Sheet

LIMS Sample # : 923796 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.)	8.3		8.1			
Temperature °C	25.3		25.0			
Dissolved Oxygen mg/L	6.8		7.8			
Conductivity ~~µmhos~~ mmhos	328		244			
(initials) Measured by:						
(initials) Recorded by:						

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.)	8.5		8.8			
Temperature °C	25.0		24.5			
Dissolved Oxygen mg/L	6.9		8.0			
Conductivity ~~µmhos~~ mmhos	639		700			
(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:

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:

V2.0 2/24/04

Page 000129

FDEP Biology Section - Bioassay Parameter Sheet

LIMS Sample # : 922796 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.)	8.3	7.8	7.8			
Temperature °C	25.2	24.7	25.3			
Dissolved Oxygen mg/L	7.7	7.2	7.1			
Conductivity (µmhos) mmhos	342	350	361			
(initials) Measured by:	[illegible]	[illegible]	[illegible]			
(initials) Recorded by:	[illegible]	[illegible]	[illegible]			

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.)	8.5	8.5	8.6			
Temperature °C	25.8	24.6	24.8			
Dissolved Oxygen mg/L	7.9	7.8	7.4			
Conductivity (µmhos) mmhos	608	599	615			
(initials) Measured by:	[illegible]	[illegible]	[illegible]			
(initials) Recorded by:	[illegible]	[illegible]	[illegible]			

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

[redacted]

Appendix C. SRT Bench Sheets and Statistical Analysis

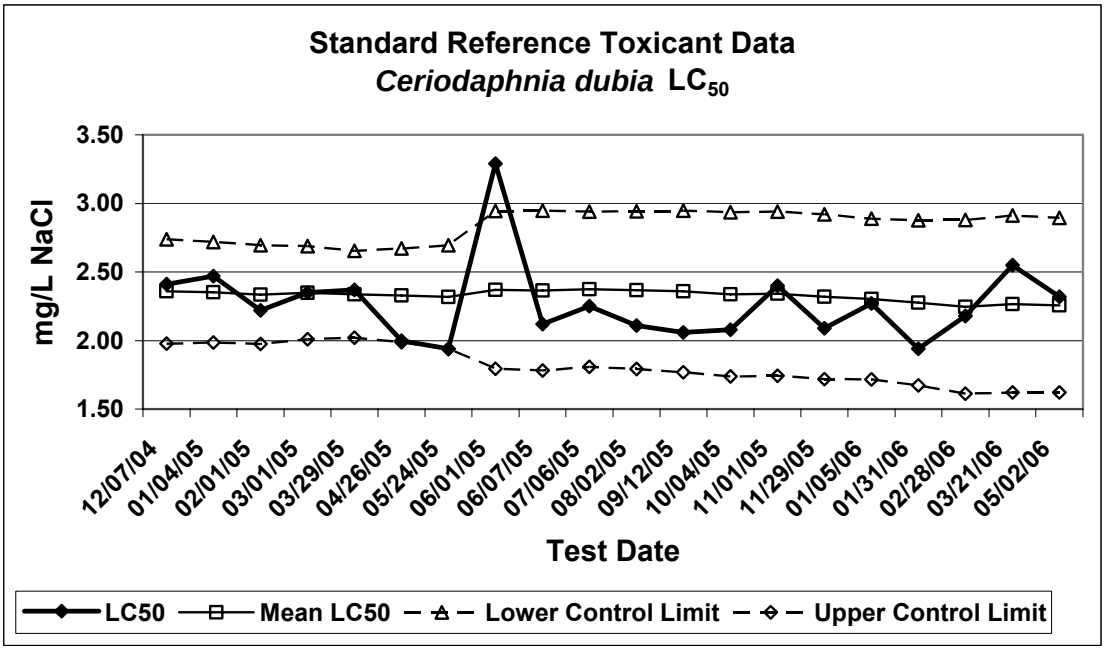
Florida Department of Environmental Protection
Bureau of Laboratories

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

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
12/07/04	2.41	2.36	0.19	1.98	2.74
01/04/05	2.47	2.35	0.18	1.98	2.72
02/01/05	2.22	2.34	0.18	1.98	2.70
03/01/05	2.35	2.35	0.17	2.01	2.69
03/29/05	2.37	2.34	0.16	2.02	2.65
04/26/05	2.00	2.33	0.17	1.99	2.67
05/24/05	1.94	2.32	0.19	1.94	2.70
06/01/05	3.29	2.37	0.29	1.79	2.94
06/07/05	2.12	2.36	0.29	1.78	2.95
07/06/05	2.25	2.37	0.28	1.81	2.94
08/02/05	2.11	2.37	0.29	1.79	2.94
09/12/05	2.06	2.36	0.29	1.77	2.95
10/04/05	2.08	2.34	0.30	1.74	2.94
11/01/05	2.40	2.34	0.30	1.74	2.94
11/29/05	2.09	2.32	0.30	1.72	2.92
01/05/06	2.27	2.30	0.29	1.72	2.89
01/31/06	1.94	2.28	0.30	1.67	2.88
02/28/06	2.18	2.25	0.32	1.61	2.88
03/21/06	2.55	2.27	0.32	1.62	2.91
05/02/06	2.32	2.26	0.32	1.62	2.89

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

CV = 14.10
EPA reference 75th quartile CV = 29%



Appendix C. (continued)

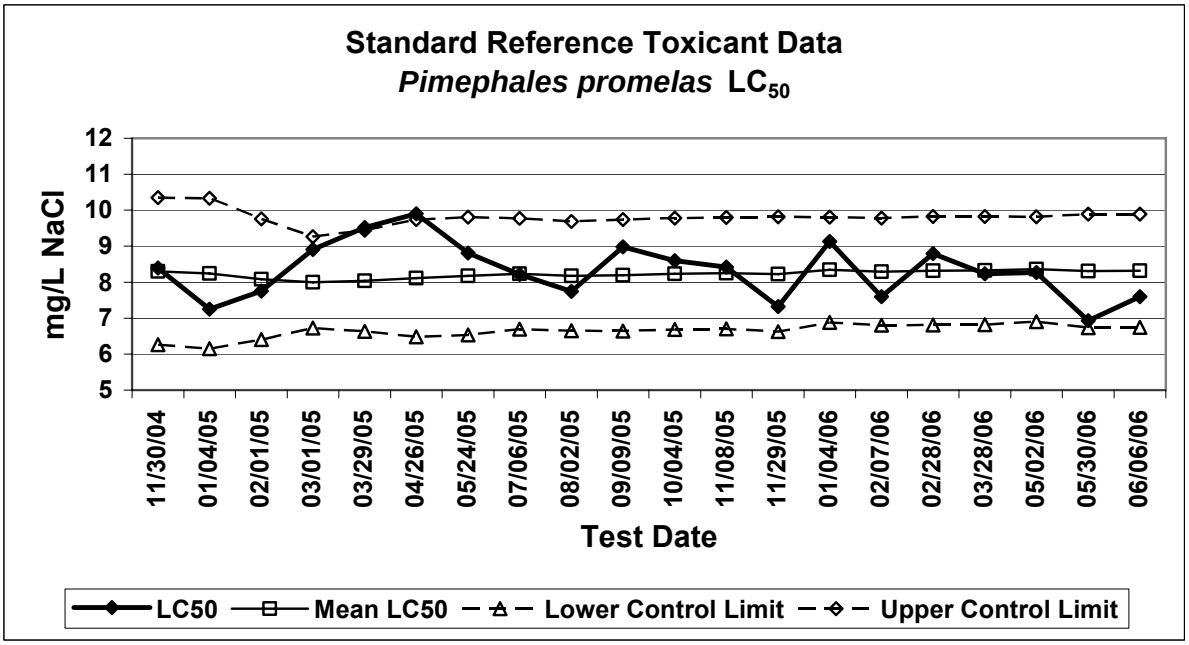
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 48-hour Acute Toxicity
Pimephales promelas (fathead minnow) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
11/30/04	8.39	8.30	1.02	6.26	10.35
01/04/05	7.25	8.24	1.05	6.15	10.33
02/01/05	7.75	8.08	0.84	6.41	9.75
03/01/05	8.91	8.00	0.63	6.73	9.27
03/29/05	9.52	8.04	0.70	6.63	9.45
04/26/05	9.90	8.11	0.81	6.48	9.74
05/24/05	8.81	8.17	0.82	6.53	9.81
07/06/05	8.22	8.23	0.77	6.69	9.78
08/02/05	7.74	8.17	0.76	6.65	9.69
09/09/05	8.98	8.19	0.78	6.64	9.74
10/04/05	8.60	8.23	0.77	6.69	9.78
11/08/05	8.42	8.25	0.77	6.70	9.80
11/29/05	7.32	8.22	0.80	6.63	9.82
01/04/06	9.13	8.35	0.73	6.88	9.81
02/07/06	7.60	8.29	0.75	6.80	9.78
02/28/06	8.79	8.32	0.75	6.81	9.82
03/28/06	8.23	8.32	0.75	6.82	9.83
05/02/06	8.27	8.36	0.73	6.90	9.82
05/30/06	6.93	8.31	0.79	6.73	9.89
06/06/06	7.60	8.32	0.79	6.75	9.89

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

CV = 9.45
EPA reference 75th quartile CV = 19%



Appendix C. (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: Definitive
Static / Static Renewal
Test Page 1 of 2

Diluent/ Batch#: DMW / 11-06
Toxicant/ Batch# NaCl / 5-06

Test Beginning: Date: 5-2-06 Time: 1230
Test Ending: Date: 5-6-06 Time: 0800

Water Quality Parameters:	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	BP
Alkalinity (mg/L as $CaCO_3$):	87	Hach	EW
Hardness (mg/L as CaCO3):	93	Hach	EW
Total Ammonia (mg/L as N):	<0.07	Denver	MF
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 20-06 / <24hrs
Feeding: ~~Prior to test~~/ ~~Prior to renewal~~ /Daily
Food: YCT P.*subcapitata* Artemia
Food Batch: 5-05 2-06 -
Chamber size: 30 mL
Test volume: 20 mL per replicate

Conc. µg/L (Cu)	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 Cond. (mmhos/cm) 0 hr / ~~48 hr~~	UNCORRECTED Cond. (mmhos/cm) 24 hr / ~~72 hr~~	UNCORRECTED Cond. (mmhos/cm) 48 hr / ~~96 hr~~
Control	A	A	5	5	5	7.7		8.1	24.0		24.0	6.5		7.3	0.190		0.205
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
1.5	A	A	5	5	5	7.7		8.0	24.5		24.3	7.1		7.1	~~4.35~~ (A)		~~3.85~~
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
2.0	A	A	5	5	4 10	7.8		8.1	24.8		24.34	7.3		7.2	~~4.78~~ (B)		5.08
	B	B	5	5	4 10												
	C	C	5	5	5												
	D	D	5	5	5												
2.5	A	A	5	5	3 20	7.9		8.1	24.6		24.3	7.2		7.0	4.32		5.34
	B	B	5	5	2 30												
	C	C	5	5	1 10												
	D	D	5	5	0 50												
3.0	A	A	5	4 10	0 [illegible]	8.0		8.2	24.3		24.2	7.3		6.9	5.41		6.96
	B	B	5	5	0 [illegible]												
	C	C	5	4 10	0 [illegible]												
	D	D	5	3 20	0 [illegible]												
4.0	A	A	5	0 50	–	8.0		–	24.3		–	7.4		–	7.32		–
	B	B	5	0 50	–		8.0			24.0			7.6			8.2	
	C	C	5	0 50	–												
	D	D	5	0 50	–												
	A																
	B																
	C																
	D																
Loaded / measured by:			BA	BA/SP	MF	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA
Recorded by:			SP	BA/SP	MF	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA

Investigators' Signatures
Scott Pickard
Eric Hunt
Marshall Faircloth
Daniel Acuilar
Nicole Wellenhoff
REVIEWER

Concentrations prepared by: BA
Loading verified by: EW
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 25.1 max. 26.9 mean 26.2
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 24.2 max. 25.1 mean 24.5

Remarks: (A) 2.2345 BA
(B) 3.2545 BA

Statistical Results: Method: Spearman-Karber
(A)/ 96 hour LC50: 2.32
95% Confidence Interval: lower 2.19 upper 2.44

Revised 02/21/06

Page 000056

Appendix C. (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: Definitive
Static / Static Renewal
Test Page 2 of 2

Diluent/ Batch#: DMW / 11-06
Toxicant/ Batch#: NaCl / 6-06

Test Beginning: Date: 5-2-06 Time: 1230
Test Ending: Date: 5-6-06 Time: 0820

Water Quality Parameters:	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	SP
Alkalinity (mg/L as $CaCO_3$):	87	Hach	EW
Hardness (mg/L as CaCO3):	93	Hach	EW
Total Ammonia (mg/L as N):	<0.01	Denver	MF
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 20-06 / <24 hrs
Feeding: (Prior to test) / (Prior to renewal) / Daily
Food: YCT P.subcapitata Artemia
Food Batch: 5-05 2-06 –
Chamber size: 30 mL
Test volume: 20 mL per replicate

Conc. ug/L (A)	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 Cond. (mmhos/cm) 0 hr / 48 hr	UNCORRECTED Cond. (mmhos/cm) 24 hr / 72 hr	UNCORRECTED Cond. (mmhos/cm) 48 hr / 96 hr
Control	A	A	~~24~~ 5	5	5	24.1 (B)		8.1	8.0 (B)		24.2	6.7		7.6	0.238		0.220
	B	B	5	5	5												
	C	C	5	5	4 1D												
	D	D	5	5	5												
1.5	A	A	~~25~~ 2	4 1D	3 1D	25.2		8.1	7.9		24.5	6.9		7.6	2.92		3.35
	B	B	5	4 1D	4												
	C	C	5	5	5												
	D	D	5	4 1D	4												
2.0	A	A	~~25~~ 2	0 4 1D	—	25.2		8.2	8.0		24.8	7.1		7.6	0.66		4.31
	B	B	4	3 1D	1 2D												
	C	C	5	5	4 1D												
	D	D	5	5	5												
2.5	A	A	3 2 5.1	0 3 1D	–	25.1		–	8.0		–	7.0		–	4.6		–
	B	B	2	0 2 1D	–		8.0			24.5			7.8			4.79	
	C	C	1	0 1D	–												
	D	D	0	–	–												
3.0	A	A	~~24~~ 0	–	–	24.1		–	8.1		–	6.8		–	5.38		–
	B	B	0	–	–												
	C	C	0	–	–												
	D	D	0	–	–												
4.0	A	A	–	–	–	–		–	–		–	–		–	–		–
	B	B	–	–	–												
	C	C	–	–	–												
	D	D	–	–	–												
	A																
	B																
	C																
	D																
Loaded / measured by:			MF	BA	MF	BA	BA	MF	BA	BA	MF	BA	BA	MF	BA	BA	MF
Recorded by:			MF	BA	MF	BA	BA	MF	BA	BA	MF	BA	BA	MF	BA	BA	MF

(A) (B)

Investigators' Signatures
Laval Pritchard
EW MF
Marshall Faircloth
Brian Anson
Nigel Willoughby
REVIEWER

Concentrations prepared by: BA
Loading verified by: EW
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 25.1 max. 26.9 mean 26.2
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 24.2 max. 25.1 mean 24.5

Remarks: (A) Transcription error: Number live (48hr) in Rep A: Ctrl: 5, 1.5% 5, 2.0% 4, 2.5% 3, 3.0% 0 BA
(B) pH & temp switched @ 48 hr, rep A BA

Statistical Results: Method: Spearman-Karber
48 / 96 hour LC50: 1.95
95% Confidence Interval: lower 1.79 upper 2.13

Revised 02/21/06

Page 000057

Appendix C. (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: Definitive
Static / Static Renewal
Test Page 1 of 2

Diluent/ Batch#: MHW / 706
Toxicant/ Batch# NaCl / 4-06

Test Beginning: Date: 5-2-06 Time: 1250
Test Ending: Date: 5-6-06 Time: 0840

Water Quality Parameters:	Diluent	Method	Initials
Total Residual Cl: (mg/L):	<0.03	Hach	SP
Alkalinity (mg/L as $CaCO_3$):	80	Hach	SW
Hardness (mg/L as CaCO3):	91	Hach	SW
Total Ammonia (mg/L as N):	<0.07	Denver	MF
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 7-06 / 5 days
Feeding: 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

Conc µg/L (g/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 Cond. (mmhos/cm) 0 hr / ~~48 hr~~	UNCORRECTED Cond. (mmhos/cm) 24 hr / ~~72 hr~~	UNCORRECTED Cond. (mmhos/cm) 48 hr / ~~96 hr~~
Control	A	A1	10	10	10	8.1		7.9	24.0		24.8	7.6		6.3	0.338		0.419
	B	A2	10	10	10		7.8			25.3			6.9			0.369	
	C																
	D																
7.0	A	A3	10	9 10D	9	7.9		7.8	24.4		24.8	6.8		6.2	12.17		12.26
	B	A4	10	10	10		7.7			25.2			6.5			11.9	
	C																
	D																
8.0	A	A5	10	5 5D	4 4D	8.0		7.8	24.7		24.8	7.1		6.1	14.24		14.26
	B	A6	10	9 9D	9		7.7			25.1			6.5			14.1	
	C																
	D																
9.0	A	A7	10	2 8D	1 1D	8.0		7.8	24.8		25.0	7.2		6.1	15.84		15.72
	B	A8	10	~~4 4D~~ 3 7D BA	3		7.7			25.2			6.2			15.6	
	C																
	D																
10.0	A	A9	10	0 10D	—	8.0		—	25.0		—	7.1		—	17.51		—
	B	A10	10	0 10D	—		7.7			25.0			6.2			17.1	
	C																
	D																
12.0	A	A11	10	0 10D	—	8.0		—	25.0		—	7.2		—	20.4		—
	B	A12	10	0 10D	—		7.6			25.1			6.1			19.9	
	C																
	D																
	A																
	B																
	C																
	D																
Loaded / measured by:			JD	BA JD	JD	BA	JD	BA	BA	JD	BA	BA	JD	BA	UA	JD	RA
Recorded by:			SP	BA JD	JD	BA	JD	BA	BA	JD	BA	BA	JD	BA	BA	JD	BA

Investigators' Signatures
Jorge Daniel
Sarah Fiedorek
Ann Mirp
Marshall Faircloth
Brent Ambler
Nicole Wellenhoff
REVIEWER

Concentrations prepared by: BA/JD
Loading verified by: SP
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 3 min. 24.9 max. 25.6 mean 25.3
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 24.7 max. 25.1 mean 24.5

Remarks:

Statistical Results: Method: Spearman-Karber
(95) 96 hour LC50: 8.27
95% Confidence Interval: lower 7.97 upper 8.59
Revised 02/21/06

Page 0000048

Appendix C. (continued)

FDEP Biology Section - Acute SRT Bench Sheet

Test Organism: *Americamysis bahia* (Method 2007.0) *Menidia beryllina* (Method 2006.0) *Hyalella azteca* (Method 109.1 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: Definitive
Static / Static Renewal
Test Page 2 of 2

Diluent/ Batch#: MH 1706
Toxicant/ Batch# NaCl 14-06

Test Beginning: Date: 5-2-06 Time: 1250
Test Ending: Date: 5-6-06 Time: 0810

Water Quality Parameters:	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	SP
Alkalinity (mg/L as $CaCO_3$):	80	Hach	EW
Hardness (mg/L as CaCO3):	91	Hach	EW
Total Ammonia (mg/L as N):	<0.017	Denver	MF
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 7-06 / 5days
Feedings: Prior to test / Prior to renewal / Daily
Food: YCT — P.subcapitata — Artemia
Food Batch: — — GSL-536-90
Chamber size: 1600 mL
Test volume: 500 mL per replicate

Conc µg/L (B/A)	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 Cond. (µmhos/cm) 0 hr / 48 hr	UNCORRECTED Cond. (µmhos/cm) 24 hr / 72 hr	UNCORRECTED Cond. (µmhos/cm) 48 hr / 96 hr
Control	A	A1	10	10	10	7.8		8.1	24.6		25.5	6.9		7.3	8330		0.346
	B	A2	10	10	10		7.6			25.4			7.0			6.335	
	C																
	D																
7.0	A	A3	9	9	9	7.7		7.9	25.1		25.3	6.7		7.2	12.03		12.6
	B	A4	10	10	10		7.7			25.3			7.0			12.1	
	C																
	D																
8.0	A	A5	4 / 10	4	4	7.8		7.9	25.3		26.1	6.9		6.8	13.86		14.4
	B	A6	9	9	9		7.7			25.3			6.9			14.6	
	C																
	D																
9.0	A	A7	1 / 10	1	1	7.8		7.9	25.4		25.7	6.7		6.9	15.28		15.7
	B	A8	3	3	3		7.8			25.3			6.9			15.5	
	C																
	D																
10.0	A	A9	—	—	—	—		—	—		—	—		—	—		—
	B	A10	—	—	—		—			—			—			—	
	C																
	D																
12.0	A	A11	—	—	—	—		—	—		—	—		—	—		—
	B	A12	—	—	—		—			—			—			—	
	C																
	D																
	A										J	J					
	B																
	C																
	D																
Loaded / measured by:			BA	JD	MF	BA	SP	MF	BA	SP	MF	BA	SP	MF	BA	SP	MF
Recorded by:			BA	JD	MF	BA	SP	MF	BA	SP	MF	BA	SP	MF	BA	SP	MF

Investigators' Signatures
Samuel Pritchard
Eric Mix
Marshall Faircloth
Bruce Summers
James Stamath
Krista Wetherington
REVIEWER

Concentrations prepared by: BA/SP
Loading verified by: SP
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 3 min. 24.9 max. 25.6 mean 25.2
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 24.2 max. 25.1 mean 24.5

Remarks:

Statistical Results: Method: Spearman-Karber
48 / 96 hour LC50: 8.27
95% Confidence Interval: lower 7.17 upper 8.59

Revised 02/21/06

Page 000049

Appendix C. (continued)

Ceriodaphnia dubia Acute Standard Reference Toxicant Test

DATE: 5/2/06 DURATION: 48 h TOXICANT : NaCl
SPECIES: *C. dubia*

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
.00	20	0
1.50	20	0
2.00	20	2
2.50	20	14
3.00	20	20
4.00	20	20

SPEARMAN-KARBER TRIM: .00%

SPEARMAN-KARBER ESTIMATES: LC50: 2.32
95% LOWER CONFIDENCE: 2.19
95% UPPER CONFIDENCE: 2.44

Pimephales promelas Acute Standard Reference Toxicant Test

DATE: 5/2/06 DURATION: 48 H TOXICANT : NaCl
SPECIES: *P. promelas*

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
.00	20	0
7.00	20	1
8.00	20	7
9.00	20	16
10.00	20	20
12.00	20	20

SPEARMAN-KARBER TRIM: 5.00%

SPEARMAN-KARBER ESTIMATES: LC50: 8.27
95% LOWER CONFIDENCE: 7.97
95% UPPER CONFIDENCE: 8.59

Appendix D. 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
5/1/2006	NA	Hydrosphere Research
Customer		**Order Prepared By**
FDEP Marshall Faircloth Biology Mail Stop 6515 2600 Blair Stone Road Tallahassee, Fl 32399-2400		D. Chash

Quantity	Description
150	C. leedsi, CL#1098, Hatched 4/28/2006
150	P. promelas, FM#1023, Hatched 4/27/2006
150	M. bahia from Aquatic Indicators
150	M. beryllina from Aquatic Indicators

Appendix D. (continued)

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
5/15/2006	NA	Hydrosphere Research
Customer		**Order Prepared By**
FDEP Marshall Faircloth Biology Mail Stop 6515 2600 Blair Stone Road Tallahassee, Fl 32399-2400		D. Onash

Quantity	Description
100	P. promelas hatch date 05/08/06

Appendix E. Chemical Analyses performed on the effluent from the Florida Distillers Company- Auburndale Outfall D-002, sampled on May 15, 2006.

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
5/15/2006 9:50	OUTFALL D002	Bio-AGP/LimNut	Algal Growth Potential	13.3	mg DryWt/L		0.3	0.9
5/15/2006 9:50	OUTFALL D002	Bio-BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	2.3	mg/L		0.2	2.0
5/15/2006 9:50	OUTFALL D002	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	42	ug/L	A	0.85	2.6
5/15/2006 9:50	OUTFALL D002	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	1.5	ug/L	U	1.5	4.5
5/15/2006 9:50	OUTFALL D002	Bio-Toxicology	Bioassay-Acute-Screen-FW-C.dubia, LC50	100	LC50	L		
5/15/2006 9:50	OUTFALL D002	Bio-Toxicology	Bioassay-Acute-Screen-FW-Fish, LC50	100	LC50	L		
5/15/2006 9:50	OUTFALL D002	BNA-Water	1,2,4-Trichlorobenzene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	1,2-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	1,3-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	1,4-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	2,4,6-Trichlorophenol	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	2,4-Dichlorophenol	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	2,4-Dimethylphenol	48	ug/L	U	48	190
5/15/2006 9:50	OUTFALL D002	BNA-Water	2,4-Dinitrophenol	14	ug/L	UJ	14	57
5/15/2006 9:50	OUTFALL D002	BNA-Water	2,4-Dinitrotoluene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	2,6-Dinitrotoluene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	2-Chloronaphthalene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	2-Chlorophenol	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	11
5/15/2006 9:50	OUTFALL D002	BNA-Water	2-Nitrophenol	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	3,3'-Dichlorobenzidine	38	ug/L	U	38	150
5/15/2006 9:50	OUTFALL D002	BNA-Water	4,4'-DDD	1.4	ug/L	U	1.4	5.7
5/15/2006 9:50	OUTFALL D002	BNA-Water	4,4'-DDE	1.4	ug/L	U	1.4	5.7
5/15/2006 9:50	OUTFALL D002	BNA-Water	4,4'-DDT	1.4	ug/L	U	1.4	5.7
5/15/2006 9:50	OUTFALL D002	BNA-Water	4-Bromophenyl phenyl ether	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	4-Chloro-3-methylphenol	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.6
5/15/2006 9:50	OUTFALL D002	BNA-Water	4-Nitrophenol	14	ug/L	U	14	57
5/15/2006 9:50	OUTFALL D002	BNA-Water	Acenaphthene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	Acenaphthylene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	Aldrin	1.4	ug/L	U	1.4	5.7
5/15/2006 9:50	OUTFALL D002	BNA-Water	alpha-BHC	1.4	ug/L	U	1.4	5.7
5/15/2006 9:50	OUTFALL D002	BNA-Water	Anthracene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	Benzidine	95	ug/L	U	95	380
5/15/2006 9:50	OUTFALL D002	BNA-Water	Benzo(a)anthracene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	Benzo(a)pyrene	0.95	ug/L	U	0.95	3.8

Appendix 5. (continued)

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
5/15/2006 9:50	OUTFALL D002	BNA-Water	Benzo(b)fluoranthene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	Benzo(g,h,i)perylene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	Benzo(k)fluoranthene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	beta-BHC	1.4	ug/L	U	1.4	5.7
5/15/2006 9:50	OUTFALL D002	BNA-Water	Bis(2-chloroethoxy)methane	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	Bis(2-chloroethyl)ether	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	11
5/15/2006 9:50	OUTFALL D002	BNA-Water	Bis(2-ethylhexyl)phthalate	14	ug/L	U	14	57
5/15/2006 9:50	OUTFALL D002	BNA-Water	Butyl benzyl phthalate	4.8	ug/L	U	4.8	19
5/15/2006 9:50	OUTFALL D002	BNA-Water	Chrysene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	delta-BHC	1.4	ug/L	U	1.4	5.7
5/15/2006 9:50	OUTFALL D002	BNA-Water	Dibenzo(a,h)anthracene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	Dieldrin	1.4	ug/L	U	1.4	5.7
5/15/2006 9:50	OUTFALL D002	BNA-Water	Diethyl phthalate	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	Dimethyl phthalate	48	ug/L	U	48	190
5/15/2006 9:50	OUTFALL D002	BNA-Water	Di-n-butyl phthalate	4.8	ug/L	U	4.8	19
5/15/2006 9:50	OUTFALL D002	BNA-Water	Di-n-octyl phthalate	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	Endosulfan I	3.8	ug/L	U	3.8	15
5/15/2006 9:50	OUTFALL D002	BNA-Water	Endosulfan II	3.8	ug/L	U	3.8	15
5/15/2006 9:50	OUTFALL D002	BNA-Water	Endosulfan sulfate	1.4	ug/L	U	1.4	5.7
5/15/2006 9:50	OUTFALL D002	BNA-Water	Endrin	1.4	ug/L	U	1.4	5.7
5/15/2006 9:50	OUTFALL D002	BNA-Water	Endrin aldehyde	3.8	ug/L	U	3.8	15
5/15/2006 9:50	OUTFALL D002	BNA-Water	Fluoranthene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	Fluorene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	gamma-BHC	1.4	ug/L	U	1.4	5.7
5/15/2006 9:50	OUTFALL D002	BNA-Water	Heptachlor	1.4	ug/L	U	1.4	5.7
5/15/2006 9:50	OUTFALL D002	BNA-Water	Heptachlor epoxide	1.4	ug/L	U	1.4	5.7
5/15/2006 9:50	OUTFALL D002	BNA-Water	Hexachlorobenzene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	11
5/15/2006 9:50	OUTFALL D002	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	U	2.9	11
5/15/2006 9:50	OUTFALL D002	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	11
5/15/2006 9:50	OUTFALL D002	BNA-Water	Indeno(1,2,3-cd)pyrene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	Isophorone	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	Naphthalene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.6
5/15/2006 9:50	OUTFALL D002	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	U	1.9	7.6
5/15/2006 9:50	OUTFALL D002	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	U	1.9	7.6

Appendix 5. (continued)

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
5/15/2006 9:50	OUTFALL D002	BNA-Water	N-Nitrosodiphenylamine	2.9	ug/L	UJ	2.9	11
5/15/2006 9:50	OUTFALL D002	BNA-Water	Pentachlorophenol	2.9	ug/L	UJ	2.9	11
5/15/2006 9:50	OUTFALL D002	BNA-Water	Phenanthrene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	Phenol	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	BNA-Water	Pyrene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	1,2,4-Trichlorobenzene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	1,2-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	1,3-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	1,4-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	2,4,6-Trichlorophenol	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	2,4-Dichlorophenol	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	2,4-Dimethylphenol	48	ug/L	U	48	190
5/15/2006 9:30	FIELD BLANK	BNA-Water	2,4-Dinitrophenol	14	ug/L	UJ	14	57
5/15/2006 9:30	FIELD BLANK	BNA-Water	2,4-Dinitrotoluene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	2,6-Dinitrotoluene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	2-Chloronaphthalene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	2-Chlorophenol	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	11
5/15/2006 9:30	FIELD BLANK	BNA-Water	2-Nitrophenol	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	3,3'-Dichlorobenzidine	38	ug/L	U	38	150
5/15/2006 9:30	FIELD BLANK	BNA-Water	4,4'-DDD	1.4	ug/L	U	1.4	5.7
5/15/2006 9:30	FIELD BLANK	BNA-Water	4,4'-DDE	1.4	ug/L	U	1.4	5.7
5/15/2006 9:30	FIELD BLANK	BNA-Water	4,4'-DDT	1.4	ug/L	U	1.4	5.7
5/15/2006 9:30	FIELD BLANK	BNA-Water	4-Bromophenyl phenyl ether	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	4-Chloro-3-methylphenol	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.6
5/15/2006 9:30	FIELD BLANK	BNA-Water	4-Nitrophenol	14	ug/L	U	14	57
5/15/2006 9:30	FIELD BLANK	BNA-Water	Acenaphthene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	Acenaphthylene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	Aldrin	1.4	ug/L	U	1.4	5.7
5/15/2006 9:30	FIELD BLANK	BNA-Water	alpha-BHC	1.4	ug/L	U	1.4	5.7
5/15/2006 9:30	FIELD BLANK	BNA-Water	Anthracene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	Benzidine	95	ug/L	U	95	380
5/15/2006 9:30	FIELD BLANK	BNA-Water	Benzo(a)anthracene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	Benzo(a)pyrene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	Benzo(b)fluoranthene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	Benzo(g,h,i)perylene	0.95	ug/L	U	0.95	3.8

Appendix 5. (continued)

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
5/15/2006 9:30	FIELD BLANK	BNA-Water	Benzo(k)fluoranthene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	beta-BHC	1.4	ug/L	U	1.4	5.7
5/15/2006 9:30	FIELD BLANK	BNA-Water	Bis(2-chloroethoxy)methane	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	Bis(2-chloroethyl)ether	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	11
5/15/2006 9:30	FIELD BLANK	BNA-Water	Bis(2-ethylhexyl)phthalate	14	ug/L	U	14	57
5/15/2006 9:30	FIELD BLANK	BNA-Water	Butyl benzyl phthalate	4.8	ug/L	U	4.8	19
5/15/2006 9:30	FIELD BLANK	BNA-Water	Chrysene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	delta-BHC	1.4	ug/L	U	1.4	5.7
5/15/2006 9:30	FIELD BLANK	BNA-Water	Dibenzo(a,h)anthracene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	Dieldrin	1.4	ug/L	U	1.4	5.7
5/15/2006 9:30	FIELD BLANK	BNA-Water	Diethyl phthalate	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	Dimethyl phthalate	48	ug/L	U	48	190
5/15/2006 9:30	FIELD BLANK	BNA-Water	Di-n-butyl phthalate	4.8	ug/L	U	4.8	19
5/15/2006 9:30	FIELD BLANK	BNA-Water	Di-n-octyl phthalate	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	Endosulfan I	3.8	ug/L	U	3.8	15
5/15/2006 9:30	FIELD BLANK	BNA-Water	Endosulfan II	3.8	ug/L	U	3.8	15
5/15/2006 9:30	FIELD BLANK	BNA-Water	Endosulfan sulfate	1.4	ug/L	U	1.4	5.7
5/15/2006 9:30	FIELD BLANK	BNA-Water	Endrin	1.4	ug/L	U	1.4	5.7
5/15/2006 9:30	FIELD BLANK	BNA-Water	Endrin aldehyde	3.8	ug/L	U	3.8	15
5/15/2006 9:30	FIELD BLANK	BNA-Water	Fluoranthene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	Fluorene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	gamma-BHC	1.4	ug/L	U	1.4	5.7
5/15/2006 9:30	FIELD BLANK	BNA-Water	Heptachlor	1.4	ug/L	U	1.4	5.7
5/15/2006 9:30	FIELD BLANK	BNA-Water	Heptachlor epoxide	1.4	ug/L	U	1.4	5.7
5/15/2006 9:30	FIELD BLANK	BNA-Water	Hexachlorobenzene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	11
5/15/2006 9:30	FIELD BLANK	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	U	2.9	11
5/15/2006 9:30	FIELD BLANK	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	11
5/15/2006 9:30	FIELD BLANK	BNA-Water	Indeno(1,2,3-cd)pyrene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	Isophorone	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	Naphthalene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.6
5/15/2006 9:30	FIELD BLANK	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	U	1.9	7.6
5/15/2006 9:30	FIELD BLANK	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	U	1.9	7.6
5/15/2006 9:30	FIELD BLANK	BNA-Water	N-Nitrosodiphenylamine	2.9	ug/L	UJ	2.9	11
5/15/2006 9:30	FIELD BLANK	BNA-Water	Pentachlorophenol	2.9	ug/L	UJ	2.9	11

Appendix 5. (continued)

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
5/15/2006 9:30	FIELD BLANK	BNA-Water	Phenanthrene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	Phenol	0.95	ug/L	U	0.95	3.8
5/15/2006 9:30	FIELD BLANK	BNA-Water	Pyrene	0.95	ug/L	U	0.95	3.8
5/15/2006 9:50	OUTFALL D002	GC-Water	Alachlor	0.57	ug/L	U	0.57	2.3
5/15/2006 9:50	OUTFALL D002	GC-Water	Ametryn	0.048	ug/L	U	0.048	0.19
5/15/2006 9:50	OUTFALL D002	GC-Water	Atrazine	0.048	ug/L	U	0.048	0.19
5/15/2006 9:50	OUTFALL D002	GC-Water	Azinphos Methyl	0.19	ug/L	U	0.19	0.76
5/15/2006 9:50	OUTFALL D002	GC-Water	Bromacil	0.19	ug/L	U	0.19	0.76
5/15/2006 9:50	OUTFALL D002	GC-Water	Butylate	0.19	ug/L	U	0.19	0.76
5/15/2006 9:50	OUTFALL D002	GC-Water	Chlorpyrifos Ethyl	0.048	ug/L	U	0.048	0.19
5/15/2006 9:50	OUTFALL D002	GC-Water	Chlorpyrifos Methyl	0.095	ug/L	U	0.095	0.38
5/15/2006 9:50	OUTFALL D002	GC-Water	Diazinon	0.048	ug/L	UJ	0.048	0.19
5/15/2006 9:50	OUTFALL D002	GC-Water	Ethion	0.048	ug/L	U	0.048	0.19
5/15/2006 9:50	OUTFALL D002	GC-Water	Ethoprop	0.095	ug/L	U	0.095	0.38
5/15/2006 9:50	OUTFALL D002	GC-Water	Fenamiphos	0.19	ug/L	U	0.19	0.76
5/15/2006 9:50	OUTFALL D002	GC-Water	Fonofos	0.095	ug/L	U	0.095	0.38
5/15/2006 9:50	OUTFALL D002	GC-Water	Hexazinone	0.095	ug/L	U	0.095	0.38
5/15/2006 9:50	OUTFALL D002	GC-Water	Malathion	0.14	ug/L	U	0.14	0.56
5/15/2006 9:50	OUTFALL D002	GC-Water	Metalaxyl	0.24	ug/L	U	0.24	0.96
5/15/2006 9:50	OUTFALL D002	GC-Water	Metolachlor	0.48	ug/L	U	0.48	1.9
5/15/2006 9:50	OUTFALL D002	GC-Water	Metribuzin	0.095	ug/L	U	0.095	0.38
5/15/2006 9:50	OUTFALL D002	GC-Water	Mevinphos	0.19	ug/L	U	0.19	0.76
5/15/2006 9:50	OUTFALL D002	GC-Water	Naled	0.76	ug/L	U	0.76	3
5/15/2006 9:50	OUTFALL D002	GC-Water	Norflurazon	0.14	ug/L	UJ	0.14	0.56
5/15/2006 9:50	OUTFALL D002	GC-Water	Parathion Ethyl	0.14	ug/L	U	0.14	0.56
5/15/2006 9:50	OUTFALL D002	GC-Water	Parathion Methyl	0.095	ug/L	U	0.095	0.38
5/15/2006 9:50	OUTFALL D002	GC-Water	Phorate	0.048	ug/L	U	0.048	0.19
5/15/2006 9:50	OUTFALL D002	GC-Water	Prometryn	0.14	ug/L	U	0.14	0.56
5/15/2006 9:50	OUTFALL D002	GC-Water	Simazine	0.048	ug/L	U	0.048	0.19
5/15/2006 9:30	FIELD BLANK	GC-Water	Alachlor	0.57	ug/L	U	0.57	2.3
5/15/2006 9:30	FIELD BLANK	GC-Water	Ametryn	0.048	ug/L	U	0.048	0.19
5/15/2006 9:30	FIELD BLANK	GC-Water	Atrazine	0.048	ug/L	U	0.048	0.19
5/15/2006 9:30	FIELD BLANK	GC-Water	Azinphos Methyl	0.19	ug/L	U	0.19	0.76
5/15/2006 9:30	FIELD BLANK	GC-Water	Bromacil	0.19	ug/L	U	0.19	0.76
5/15/2006 9:30	FIELD BLANK	GC-Water	Butylate	0.19	ug/L	U	0.19	0.76
5/15/2006 9:30	FIELD BLANK	GC-Water	Chlorpyrifos Ethyl	0.048	ug/L	U	0.048	0.19
5/15/2006 9:30	FIELD BLANK	GC-Water	Chlorpyrifos Methyl	0.095	ug/L	U	0.095	0.38

Appendix 5. (continued)

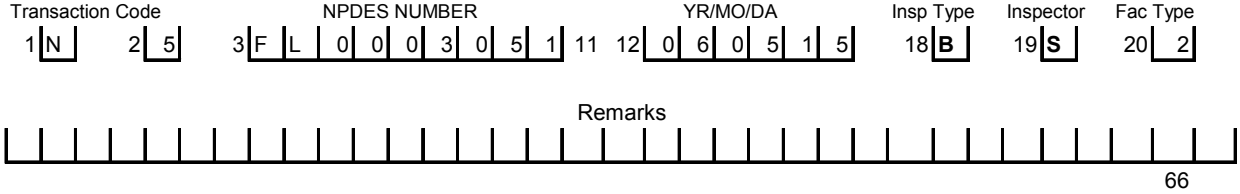
Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
5/15/2006 9:30	FIELD BLANK	GC-Water	Diazinon	0.048	ug/L	UJ	0.048	0.19
5/15/2006 9:30	FIELD BLANK	GC-Water	Ethion	0.048	ug/L	U	0.048	0.19
5/15/2006 9:30	FIELD BLANK	GC-Water	Ethoprop	0.095	ug/L	U	0.095	0.38
5/15/2006 9:30	FIELD BLANK	GC-Water	Fenamiphos	0.19	ug/L	U	0.19	0.76
5/15/2006 9:30	FIELD BLANK	GC-Water	Fonofos	0.095	ug/L	U	0.095	0.38
5/15/2006 9:30	FIELD BLANK	GC-Water	Hexazinone	0.095	ug/L	U	0.095	0.38
5/15/2006 9:30	FIELD BLANK	GC-Water	Malathion	0.14	ug/L	U	0.14	0.56
5/15/2006 9:30	FIELD BLANK	GC-Water	Metalaxyl	0.24	ug/L	U	0.24	0.96
5/15/2006 9:30	FIELD BLANK	GC-Water	Metolachlor	0.48	ug/L	U	0.48	1.9
5/15/2006 9:30	FIELD BLANK	GC-Water	Metribuzin	0.095	ug/L	U	0.095	0.38
5/15/2006 9:30	FIELD BLANK	GC-Water	Mevinphos	0.19	ug/L	U	0.19	0.76
5/15/2006 9:30	FIELD BLANK	GC-Water	Naled	0.76	ug/L	U	0.76	3
5/15/2006 9:30	FIELD BLANK	GC-Water	Norflurazon	0.14	ug/L	UJ	0.14	0.56
5/15/2006 9:30	FIELD BLANK	GC-Water	Parathion Ethyl	0.14	ug/L	U	0.14	0.56
5/15/2006 9:30	FIELD BLANK	GC-Water	Parathion Methyl	0.095	ug/L	U	0.095	0.38
5/15/2006 9:30	FIELD BLANK	GC-Water	Phorate	0.048	ug/L	U	0.048	0.19
5/15/2006 9:30	FIELD BLANK	GC-Water	Prometryn	0.14	ug/L	U	0.14	0.56
5/15/2006 9:30	FIELD BLANK	GC-Water	Simazine	0.048	ug/L	U	0.048	0.19
5/15/2006 9:50	OUTFALL D002	Metals-Water	Aluminum	174	ug/L		4	15
5/15/2006 9:50	OUTFALL D002	Metals-Water	Arsenic	1.1	ug/L	I	0.5	2
5/15/2006 9:50	OUTFALL D002	Metals-Water	Cadmium	0.05	ug/L	U	0.05	0.2
5/15/2006 9:50	OUTFALL D002	Metals-Water	Calcium	26.5	mg/L		0.02	0.08
5/15/2006 9:50	OUTFALL D002	Metals-Water	Chromium	1.57	ug/L		0.3	1
5/15/2006 9:50	OUTFALL D002	Metals-Water	Copper	6.93	ug/L		0.25	1
5/15/2006 9:50	OUTFALL D002	Metals-Water	Iron	83	ug/L		5	20
5/15/2006 9:50	OUTFALL D002	Metals-Water	Lead	0.41	ug/L		0.075	0.3
5/15/2006 9:50	OUTFALL D002	Metals-Water	Magnesium	5.3	mg/L		0.005	0.02
5/15/2006 9:50	OUTFALL D002	Metals-Water	Nickel	1.16	ug/L		0.25	1
5/15/2006 9:50	OUTFALL D002	Metals-Water	Selenium	0.5	ug/L	U	0.5	2
5/15/2006 9:50	OUTFALL D002	Metals-Water	Silver	0.025	ug/L	U	0.025	0.1
5/15/2006 9:50	OUTFALL D002	Metals-Water	Sodium	84.1	mg/L		0.4	1.6
5/15/2006 9:50	OUTFALL D002	Metals-Water	Zinc	22.5	ug/L		1.5	5
5/15/2006 9:30	FIELD BLANK	Metals-Water	Aluminum	4	ug/L	U	4	15
5/15/2006 9:30	FIELD BLANK	Metals-Water	Arsenic	0.5	ug/L	U	0.5	2
5/15/2006 9:30	FIELD BLANK	Metals-Water	Cadmium	0.05	ug/L	U	0.05	0.2
5/15/2006 9:30	FIELD BLANK	Metals-Water	Calcium	0.02	mg/L	U	0.02	0.08
5/15/2006 9:30	FIELD BLANK	Metals-Water	Chromium	0.3	ug/L	U	0.3	1

Appendix 5. (continued)

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
5/15/2006 9:30	FIELD BLANK	Metals-Water	Copper	0.25	ug/L	U	0.25	1
5/15/2006 9:30	FIELD BLANK	Metals-Water	Iron	5	ug/L	U	5	20
5/15/2006 9:30	FIELD BLANK	Metals-Water	Lead	0.075	ug/L	U	0.075	0.3
5/15/2006 9:30	FIELD BLANK	Metals-Water	Magnesium	0.005	mg/L	U	0.005	0.02
5/15/2006 9:30	FIELD BLANK	Metals-Water	Nickel	0.25	ug/L	U	0.25	1
5/15/2006 9:30	FIELD BLANK	Metals-Water	Selenium	0.5	ug/L	U	0.5	2
5/15/2006 9:30	FIELD BLANK	Metals-Water	Silver	0.025	ug/L	U	0.025	0.1
5/15/2006 9:30	FIELD BLANK	Metals-Water	Sodium	0.4	mg/L	U	0.4	1.6
5/15/2006 9:30	FIELD BLANK	Metals-Water	Zinc	1.5	ug/L	U	1.5	5
5/15/2006 9:50	OUTFALL D002	Nutrients-Liquid	Alkalinity	212	mg CaCO3/L		0.65	2.5
5/15/2006 9:50	OUTFALL D002	Nutrients-Liquid	Ammonia-N	0.017	mg N/L	I	0.01	0.02
5/15/2006 9:50	OUTFALL D002	Nutrients-Liquid	Kjeldahl Nitrogen	1.4	mg N/L		0.08	0.2
5/15/2006 9:50	OUTFALL D002	Nutrients-Liquid	NO2NO3-N	0.004	mg N/L	U	0.004	0.01
5/15/2006 9:50	OUTFALL D002	Nutrients-Liquid	O-Phosphate-P	0.004	mg P/L	U	0.004	0.01
5/15/2006 9:50	OUTFALL D002	Nutrients-Liquid	Total-P	0.12	mg P/L		0.02	0.06
5/15/2006 9:50	OUTFALL D002	Nutrients-Liquid	TSS	16	mg/L	I	4	16
5/15/2006 9:50	OUTFALL D002	Nutrients-Liquid	Turbidity	6.5	NTU		0.05	0.05
5/15/2006 9:30	FIELD BLANK	Nutrients-Liquid	Ammonia-N	0.01	mg N/L	U	0.01	0.02
5/15/2006 9:30	FIELD BLANK	Nutrients-Liquid	Kjeldahl Nitrogen	0.08	mg N/L	U	0.08	0.2
5/15/2006 9:30	FIELD BLANK	Nutrients-Liquid	NO2NO3-N	0.004	mg N/L	U	0.004	0.01
5/15/2006 9:30	FIELD BLANK	Nutrients-Liquid	O-Phosphate-P	0.004	mg P/L	U	0.004	0.01
5/15/2006 9:30	FIELD BLANK	Nutrients-Liquid	Total-P	0.02	mg P/L	U	0.02	0.06

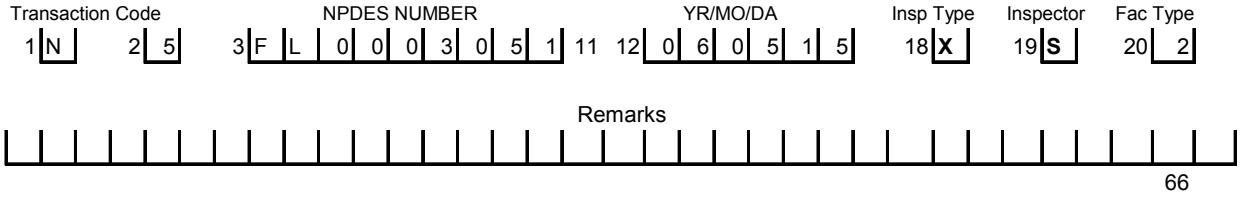
The Bioassay of Florida Distillers Company Auburndale effluent sampled on May 15, 2006. NPDES #FL0003051.

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



The Priority Pollutants Analysis of Florida Distillers Company Auburndale effluent sampled on May 15, 2006. NPDES #FL0003051.

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



Biological Analyses of Florida Distillers Company Auburndale effluent sampled on May 15, 2006. NPDES #FL0003051.

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

