

Effluent Quality Assessment of the

Southwest District WWTF

Duval County

NPDES #FL0026468

Sampled June 11, 2007

August 2007

Biology Section
Bureau of Laboratories
Division of Resource Assessment and Management

Quality Manual No. 870346G
NELAC Certification No. E31780

Southwest District WWTF, 5420 118th Street, Jacksonville, Duval County, Florida, 32244, NPDES #FL0026468. Effluent samples for this facility were collected on June 11, 2007.

Introduction

The Southwest District WWTF is a conventional (complete mix) activated-sludge domestic wastewater treatment facility. The facility has a design flow of 10.0 million gallons per day (MGD) annual average daily flow. The annual average daily flow from June 1, 2006, through May 31, 2007, was 8.41 MGD. The facility and treatment process consists of influent screens, grit removal, aeration basins, secondary clarification, ultraviolet disinfection, and post aeration. The aeration basins can be operated in complete-mix or plug-flow modes with anoxic zones and recycle lines for nutrient removal. Treated effluent is discharged through Outfall D-001 to the Class III marine waters of the St. Johns River. Outfall D-001 is approximately 307.2 m (1008 feet) in length and discharges at a depth of approximately 4.57 m (15 feet). The point of discharge is located approximately at latitude 30º 14' 50" N, longitude 81º 40' 45" W. Domestic wastewater residuals are stabilized by aerobic digestion, gravity thickened, and hauled to the Buckman Biosolids Disposal Facility (BDF) for disposal.

The facility has no Administrative Orders. The facility has two Consent Orders (CO). CO (06-1796) is a blanket CO for all JEA facilities in which penalties are assessed for Sanitary Sewer Overflows. CO (04-0422) concerns a leak in the effluent line that impacted the Ortega River. This CO is being tracked: a $201,000 monetary fine was paid and an in-kind project (wetland restoration) has been implemented. The facility has a mixing zone for copper. The mixing zone is a rectangle with rounded ends having a radius of 155 m, centered on the diffuser, with a total area of 122,624 m^2. A review of Discharge Monitoring Report (DMR) data from January 2006 – April 2007 revealed no permit violations. The influent biochemical oxygen demand (CBOD) shows an increasing trend, but the effluent CBOD is still very low. (Facility information provided by Edward Jamro of FDEP Northeast District.)

Methods

Samples were collected from the EFF-1 NPDES sampling point (immediately following post aeration) and the EFA-1(fecal coliforms sample only) NPDES sampling point (immediately after disinfection but before post aeration) for Outfall D-001 by Joseph Emery, Edward Jamro, and James Lucas (FDEP Northeast District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling. All DEP SOPs are available on the web at: http://www.floridadep.org/labs/qa/sops.htm.

See Appendix A for the completed chain of custody form.

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

The bioassay sample salinity was adjusted from an apparent salinity of approximately 0.3 parts per thousand (ppth) to approximately 20 ppth using 40 Fathoms® artificial sea salts. The salt controls used for these tests were prepared by diluting 20 ppth artificial sea water to the apparent salinity of the original sample then adding sea salts to adjust the salinity to approximately 20 ppth. The purpose of the salt controls was to confirm that there was no effect of adding artificial sea salts to the sample. There was no mortality in the salt controls of either test species.

An aliquot of the AGP sample was salinity adjusted to meet the minimum salinity requirements of the marine test species.

Toxicity Test Results

Tests were performed June 12 - 14, 2007.

Americamysis bahia 48-hour acute screening bioassay –	LC_{50} > 100%, 0% mortality* in 100% sample at 48 hours
Menidia beryllina 48-hour acute screening bioassay –	LC_{50} > 100%, 25% mortality* in 100% sample at 48 hours

The bioassay sample was not acutely toxic to the *Americamysis bahia* test organisms, but showed low levels of toxicity to the *Menidia beryllina* test organisms.

The unionized ammonia concentration in the bioassay sample (1.32 mg/L) exceeded the concentrations reported to have produced 50% mortality at 48 hours in *Americamysis bahia* (~1.0 mg/L) and *Menidia beryllina* (~0.9 mg/L) (Miller et al, 1990).

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

*NOTE: In a 48-hour acute screening test of 100% effluent, mortality of <20% provides 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 294 mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. Raschke and Shultz (1987) found that AGP values above 5.0 mg dry weight/L represent a "problem" threshold for fresh receiving waters, implying nutrient enrichment. The analytical chemistry suggests that the effluent is nitrogen -limited. The predicted AGP based on inorganic nitrogen concentrations was 541.1 (±20%) mg dry wt/L (Table 1; Miller et al. 1978).

The salinity-adjusted effluent Algal Growth Potential (AGP) was 626 mg dry wt/L of the saltwater species *Dunaliella tertiolecta.* Raschke and Shultz found that AGP values above 10.0 mg dry wt/L represent a "problem" threshold for marine receiving waters, implying nutrient enrichment (personal communication with Ron Raschke USEPA Region 4, 1987). The greater dry weight obtained in the saltwater AGP test can be partially attributed to greater weight production per unit of nutrient in the saltwater test species (Maloney et al, 1974) when compared to the freshwater test species.

See Table 1 for AGP results.

Chemistry Results

Total residual chlorine was not detected in the bioassay sample in the laboratory. Total ammonia was detected in the bioassay sample in the laboratory at a concentration of 14.95 mg/L. Based on the pH, salinity, and temperature of the bioassay sample, the calculated unionized ammonia concentration was 1.32 mg/L. The total ammonia concentration in the sample collected and

preserved for chemical analysis was 14 mg/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was 0.41 mg/L.

Aluminum, copper, iron, and nickel were detected in the effluent at levels that comply with Class III marine water quality criteria (62-302.530, F.A.C.). Chromium-III, lead, silver, and zinc were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL).

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

Conclusion

The effluent sample collected from the EFF-1 sampling point for outfall D-001 of this facility on June 11, 2007, was not acutely toxic to the *Americamysis bahia* test organisms but showed low level toxicity to the *Menidia beryllina* test organisms during the 48-hour acute screening bioassays. The effluent AGP results greatly exceeded the "problem" thresholds for both fresh and marine receiving waters, suggesting nutrient enrichment may be an issue. Effluent water quality samples did not exceed any applicable water quality standards or violate any permit conditions.

Literature Cited

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

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.

Miller, D.C., S. Poucher, J.A. Cardin, and D. Hansen. 1990. The Acute and Chronic Toxicity of Ammonia to Marine Fish and Invertebrates. *Archives of Environmental Contamination and Toxicology* 19: 40-48.

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 inorganic nitrogen (TSIN) and total nitrogen (TN) limitation, the AGP (salinity adjusted) of the saltwater species *Dunaliella tertiolecta*, and ratios of nitrogen to phosphorus for samples collected from the Southwest District Wastewater Treatment Facility on June 11, 2007.

Location	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (TN) ± 20%	AGP (salinity adjusted)	Inorganic N:P ratio	Total N:P ratio
Effluent	294	541.1 ± 108.2	541.1 ± 108.2	626	7.5	6.5

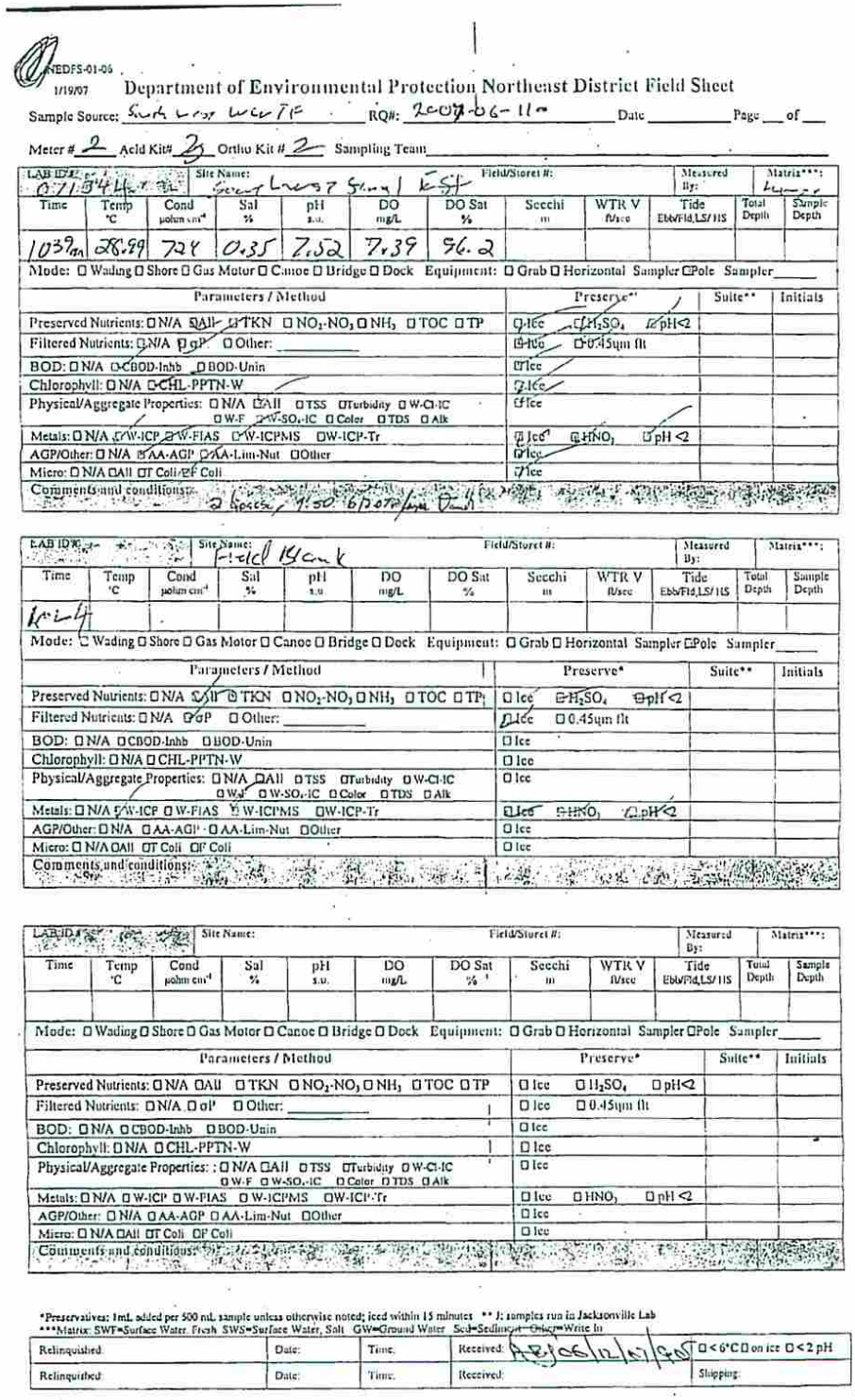
Table 2. Effluent limits, Class III marine water quality criteria, and chemical and microbiological data for samples collected from Southwest District Wastewater Treatment Facility on June 11, 2007.

Southwest District Wastewater Treatment Facility NPDES# FL0026468	**Class III Marine Stds**	**Effluent Limits**	**Effluent**	
Organic Constituents (µg/L)				
None Detected	-	-	-	
Metals (µg/L unless otherwise noted)				
Aluminum	≤ 1500	-	40	
Arsenic	≤ 50	-	0.5	U
Cadmium	≤ 8.8	-	0.02	U
Calcium (mg/L)	-	-	40.3	
Chromium-III	-	-	1.5	I
Copper	≤ 3.7	≤ 22 s	1.84	
Iron	≤ 300	-	233	
Lead	≤ 8.5	-	0.21	I
Magnesium (mg/L)	-	-	14.5	
Nickel	≤ 8.3	-	2.99	
Selenium	≤ 71	-	0.5	U
Silver	≤ 2.3	-	0.028	I
Zinc	≤ 86	-	11	I
Nutrients (mg/L)				
Ortho-phosphate	-	Report p	1.9	A
Total Phosphorus	-	Report p	2.2	
Total Ammonia	-	Report p	14	
Un-ionized Ammonia	-	-	0.41	c
Nitrate and Nitrite	-	Report p	0.24	
Total Kjeldahl Nitrogen	-	Report p	14	
Organic Nitrogen	-	Report p	0	c
Total Nitrogen	-	Report p	14.24	c
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 4.0	≥ 4.0 s	7.4	
pH (SU)	6.5 - 8.5	6.5 - 8.5	7.5	
Conductivity (µmhos/cm)	-	-	724	
Temperature °C	-	-	29.0	
Salinity	-	-	0.35	
Total Residual Chlorine (mg/L)	≤ 0.01	-	< 0.03	U £
Chlorophyll a, Corrected (µg/L)	-	-	1.2	I
Phaeophytin (µg/L)	-	-	0.24	U
Total Suspended Solids (mg/L)	-	≤ 60 sp	5	I
CBOD, 5 day (mg/L), N - inhibited	-	≤ 60 sp	3.8	
Flow (MGD)	-	10 a	8.41	a
Hardness (mg $CaCO_3$)	-	-	160.34	c
Microbiology (Number of counts/100ml)				
Fecal Coliforms	≤ 800 s	≤ 800 s *	5	AB

Value exceeds the Class III Water Quality Criteria or permit limits

a - Annual average
c - Value is calculated
p - Limit based on 24-hour flow proportioned composite sample
s - Single sample
A - Value reported is the mean of two or more determinations
B - Results based on colony counts outside the acceptance range
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
U - Material analyzed for but not detected; value reported is the method detection limit
£ - Measured in FDEP bioassay laboratory
* - Limit for sampling location EFA-1

Appendix A. Chain of Custody Form



REDFS-01-06
1/19/07

Department of Environmental Protection Northeast District Field Sheet

Sample Source: Sun Loop WWTF RQ#: 2007-06-110 Date _____ Page ___ of ___

Meter # 2 Acid Kit# 2 Ortho Kit # 2 Sampling Team _____

LAB ID#	Site Name:	Field/Stored #:	Measured By:	Matrix***:
07154	Sun Loop WWTF			

Time	Temp °C	Cond µohm cm⁻¹	Sal ‰	pH s.u.	DO mg/L	DO Sat %	Secchi m	WTR V ft/sec	Tide Ebb/Fld,LS/HS	Total Depth	Sample Depth
1039	28.99	724	0.35	7.52	7.39	96.2					

Mode: ☐ Wading ☐ Shore ☐ Gas Motor ☐ Canoe ☐ Bridge ☐ Dock Equipment: ☐ Grab ☐ Horizontal Sampler ☐ Pole Sampler _____

Parameters / Method	Preserve*	Suite**	Initials
Preserved Nutrients: ☐ N/A ☐ All ☐ TKN ☐ NO_2-NO_3 ☐ NH_3 ☐ TOC ☐ TP	☐ Ice ☐ H_2SO_4 ☐ pH<2		
Filtered Nutrients: ☐ N/A ☐ oP ☐ Other: _____	☐ Ice ☐ 0.45µm flt		
BOD: ☐ N/A ☐ CBOD-Inhb ☐ BOD-Unin	☐ Ice		
Chlorophyll: ☐ N/A ☐ CHL-PPTN-W	☐ Ice		
Physical/Aggregate Properties: ☐ N/A ☐ All ☐ TSS ☐ Turbidity ☐ W-Cl-IC ☐ W-F ☐ W-SO_4-IC ☐ Color ☐ TDS ☐ Alk	☐ Ice		
Metals: ☐ N/A ☐ W-ICP ☐ W-FIAS ☐ W-ICPMS ☐ W-ICP-Tr	☐ Ice ☐ HNO_3 ☐ pH <2		
AGP/Other: ☐ N/A ☐ AA-AGP ☐ AA-Lim-Nut ☐ Other	☐ Ice		
Micro: ☐ N/A ☐ All ☐ T Coli ☐ F Coli	☐ Ice		

Comments and conditions: 2 bottles, 9:50, 61.0 m/ml Dark

LAB ID#	Site Name:	Field/Stored #:	Measured By:	Matrix***:
	Field Blank			

Time	Temp °C	Cond µohm cm⁻¹	Sal ‰	pH s.u.	DO mg/L	DO Sat %	Secchi m	WTR V ft/sec	Tide Ebb/Fld,LS/HS	Total Depth	Sample Depth
Field Blank											

Mode: ☐ Wading ☐ Shore ☐ Gas Motor ☐ Canoe ☐ Bridge ☐ Dock Equipment: ☐ Grab ☐ Horizontal Sampler ☐ Pole Sampler _____

Parameters / Method	Preserve*	Suite**	Initials
Preserved Nutrients: ☐ N/A ☐ All ☐ TKN ☐ NO_2-NO_3 ☐ NH_3 ☐ TOC ☐ TP	☐ Ice ☐ H_2SO_4 ☐ pH<2		
Filtered Nutrients: ☐ N/A ☐ oP ☐ Other: _____	☐ Ice ☐ 0.45µm flt		
BOD: ☐ N/A ☐ CBOD-Inhb ☐ BOD-Unin	☐ Ice		
Chlorophyll: ☐ N/A ☐ CHL-PPTN-W	☐ Ice		
Physical/Aggregate Properties: ☐ N/A ☐ All ☐ TSS ☐ Turbidity ☐ W-Cl-IC ☐ W-F ☐ W-SO_4-IC ☐ Color ☐ TDS ☐ Alk	☐ Ice		
Metals: ☐ N/A ☐ W-ICP ☐ W-FIAS ☐ W-ICPMS ☐ W-ICP-Tr	☐ Ice ☐ HNO_3 ☐ pH <2		
AGP/Other: ☐ N/A ☐ AA-AGP ☐ AA-Lim-Nut ☐ Other	☐ Ice		
Micro: ☐ N/A ☐ All ☐ T Coli ☐ F Coli	☐ Ice		

Comments and conditions:

LAB ID#	Site Name:	Field/Stored #:	Measured By:	Matrix***:

Time	Temp °C	Cond µohm cm⁻¹	Sal ‰	pH s.u.	DO mg/L	DO Sat %	Secchi m	WTR V ft/sec	Tide Ebb/Fld,LS/HS	Total Depth	Sample Depth

Mode: ☐ Wading ☐ Shore ☐ Gas Motor ☐ Canoe ☐ Bridge ☐ Dock Equipment: ☐ Grab ☐ Horizontal Sampler ☐ Pole Sampler _____

Parameters / Method	Preserve*	Suite**	Initials
Preserved Nutrients: ☐ N/A ☐ All ☐ TKN ☐ NO_2-NO_3 ☐ NH_3 ☐ TOC ☐ TP	☐ Ice ☐ H_2SO_4 ☐ pH<2		
Filtered Nutrients: ☐ N/A ☐ oP ☐ Other: _____	☐ Ice ☐ 0.45µm flt		
BOD: ☐ N/A ☐ CBOD-Inhb ☐ BOD-Unin	☐ Ice		
Chlorophyll: ☐ N/A ☐ CHL-PPTN-W	☐ Ice		
Physical/Aggregate Properties: ☐ N/A ☐ All ☐ TSS ☐ Turbidity ☐ W-Cl-IC ☐ W-F ☐ W-SO_4-IC ☐ Color ☐ TDS ☐ Alk	☐ Ice		
Metals: ☐ N/A ☐ W-ICP ☐ W-FIAS ☐ W-ICPMS ☐ W-ICP-Tr	☐ Ice ☐ HNO_3 ☐ pH <2		
AGP/Other: ☐ N/A ☐ AA-AGP ☐ AA-Lim-Nut ☐ Other	☐ Ice		
Micro: ☐ N/A ☐ All ☐ T Coli ☐ F Coli	☐ Ice		

Comments and conditions:

*Preservatives: 1mL added per 500 mL sample unless otherwise noted; iced within 15 minutes ** J: samples run in Jacksonville Lab
***Matrix: SWF=Surface Water Fresh SWS=Surface Water Salt GW=Ground Water Sed=Sediment Other=Write In

Relinquished:	Date:	Time:	Received:	☐ < 6°C ☐ on ice ☐ < 2 pH
Relinquished:	Date:	Time:	Received:	Shipping:

FDEP Biology Laboratory - Acute Screen Bioassay Bench Sheets

Facility: SouthWest District WWTF

Address: 5420 118TH Street

City: Jacksonville County: Duval

Contact/District: Joseph Emery / Northeast

NPDES Permit #: FL 0026468

LIMS Job #: TLH-2007-06-12-44-01 LIMS Sample #: 1016994

Lims Data Entry: 6-14-07 MF Data Entry Verification: JD 6/14/07

Sample Collection: Date: 6/11/07 Time: 1039

Hold Time Start: Date: 6/11/07 Time: 1039

Comments: Sample salinity adjusted from <1ppth to approximately 20ppth by the addition of artificial seasalts per permit requirements. Settled control water prepared by adding seasalts to well water to match the test salinity. MF 6-14-07

NO TRC measured in field because facility uses UV for disinfection. MF 6-14-07

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

Test Type: Screen

(Static) / Static Renewal / Flow-through

Test Duration: (48) 96 Hours.

Test 1 validation: Test 1: SOP TA 07_03

Control survival ≥90%: (Yes) No

Temperature Range ≤3°C: (Yes) No

Test 2 validation: Test 2: SOP TA 07_04

Control survival ≥90%: (Yes) No

Temperature Range ≤3°C: (Yes) No

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: 0.3 Final Salinity: ~20 (Salts) Hypersaline brine

Salinity adjusted (Test 2): (yes) no Initial Salinity: 0.3 Final Salinity: ~20 (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)

Light Intensity: 50 - 100 ft. candles

Photoperiod: 16 light, 8 dark

Temperature Range °C:

Incubator # 2 min. 25.0 max. 25.9 mean 25.8

Incubator # ____ min. ____ max. ____ mean ____

Room B246 min. 24.9 max. 26.4 mean 25.6

Investigators' Signatures

James Daniel

Bruce Alpha

Tasha Wilkins

Marshall Faircloth

Nigel Wollenhaupt

REVIEWER

Water Quality Parameters	20% DMW	Moderately Hard Water/ Well Water	Salt Water (ASW) NSW Test 1	Salt Water ASW NSW Test 2	Other:	Original Sample	Method	Measured by	Verified by
Field Total Residual Cl_2 (mg/L):	N/A	N/A	N/A	N/A		—	Not measured		MF
Lab Total Residual Cl_2 (mg/L):			<0.03			<0.03	HACH	~~PPV~~/BA	MF
Alkalinity (mg/L as $CaCO_3$):			234			216	HACH	~~PPV~~	BA
Hardness (mg/L as $CaCO_3$):			—			—	HACH	~~PPV~~	BA
Total Ammonia (mg/L as N):			<0.034			14.95	DENVER	MF	BA
Salinity (ppth):			~20ppth			0.3	YSI (Mettler)	TD	MF

V 1.4 9/12/05

Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1016994 Test #: 1/2 SOP#:TA 07 03 Test Started: Date 6/12/07 Time: 1315

Organism/Batch/Age: Americamysis bahia / 6-12-07 / 5 days Test Ended: Date 6-14-07 Time: 1230

Chamber/Test Volume: 1000 / 500 ml Diluent/ Batch: ASW / 5-29-07

Food/Batch: YCT — P.sub — Artemia 0hr ~~6-11-07~~ JD 83-07 24hr ~~6-12-07~~ JD 84-07 48hr ~~6-13-07~~ JD 85-07 72hr — Artemia Lot# GSL-536 90F

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
Ctrl	A	B1	5	5	5			
	B	B2	5	5	5			
	C	B3	5	5	5			
	D	B4	5	5	5			
100%	A	B5	5	5	5			
	B	B6	5	5	5			
	C	B7	5	5	5			
	D	B8	5	5	5			
Salt Ctrl	A	B9	5	5	5			
	B	B10	5	5	5			
	C	B11	5	5	5			
	D	B12	5	5	5			
Loaded/Verified by: JD / BA		Checked by:	JD	JD	JD			

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

Comments:

Test Results:

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

% mortality in 100% sample: 0 LC50: >100%

If Calculated: 95% CI______ Method______

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

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Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1016994 Test #: 2/2 SOP#:TA 07 04 Test Started: Date 6-12-07 Time: 1330

Organism/Batch/Age: M.bahia / 6-12-07 / 13 Days Test Ended: Date 6-14-07 Time: 1230

Chamber/Test Volume: 1000 / 500 ml Diluent/ Batch: ASW / 5-29-07

Food/Batch: YCT — P.sub — Artemia 0hr ~~5-29-07~~ 83-07 24hr — 48hr — 72hr — Artemia Lot# GSL-S36-90F

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	E1	5	5	5			
	B	E2	5	5	5			
	C	E3	5	5	5			
	D	E4	5	5	5			
100%	A	E5	5	4 1D	4			
	B	E6	5	5	2 3D			
	C	E7	5	5	4 1D			
	D	E8	5	5	5			
Salt Ctrl	A	E9	5	5	5			
	B	E10	5	5	5			
	C	E11	5	5	5			
	D	E12	5	5	5			
Loaded/Verified by: JD / BA		Checked by:	JD	JD	JD			

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

Comments:

Test Results:

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

% mortality in 100% sample: 25% LC50: >100%

If Calculated: 95% CI______ Method______

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

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FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 1016994 Test #: 1 of 2

TEST SOP #: TA07_03 Test Species: *Ceriodaphnia dubia* *Cyprinella leedsi* *Pimephales promelas* *Americamysis bahia* *Menidia beryllina* Other:_____

Concentration Ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	8.3	8.3	8.2			
Temperature °C	24.9	24.8	24.8			
Dissolved Oxygen mg/L	6.6	5.6	5.3			
Conductivity µmhos (mmhos)	32.6	33.0	34.0			
(initials) Measured by:	JD	JD	JD			
(initials) Recorded by:	JD	JD	JD			

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	8.2	8.2	8.1			
Temperature °C	25.1	24.9	24.9			
Dissolved Oxygen mg/L	7.2	4.5	4.3			
Conductivity µmhos (mmhos)	32.0	31.6	32.3			
(initials) Measured by:	JD	JD	JD			
(initials) Recorded by:	JD	JD	JD			

Comments:

Concentration Salt ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	8.4	8.2	8.1			
Temperature °C	25.0	24.7	24.9			
Dissolved Oxygen mg/L	7.1	5.0	4.8			
Conductivity µmhos (mmhos)	31.5	32.1	32.9			
(initials) Measured by:	JD	JD	JD			
(initials) Recorded by:	JD	JD	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:

000009

V 2.0 2/24/04

FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 10160994 **Test #:** 2 of 2

TEST SOP #: TA07_ CH **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	8.3	8.3			
Temperature °C	24.8	24.5	24.8			
Dissolved Oxygen mg/L	6.9	5.8	6.2			
Conductivity µmhos (mmhos)	32.9	32.7	34.0			
(initials) Measured by:	JD	JD	JD			
(initials) Recorded by:	JD	JD	JD			

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	8.2	8.2	8.2			
Temperature °C	25.0	24.6	25.0			
Dissolved Oxygen mg/L	7.2	6.0	6.2			
Conductivity µmhos (mmhos)	31.5	31.5	32.4			
(initials) Measured by:	JD	JD	JD			
(initials) Recorded by:	JD	JD	JD			

Comments:

Concentration Salt Ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	8.4	8.3	8.2			
Temperature °C	25.0	24.5	24.8			
Dissolved Oxygen mg/L	7.1	6.0	6.3			
Conductivity µmhos (mmhos)	32.0	32.2	32.8			
(initials) Measured by:	JD	JD	JD			
(initials) Recorded by:	JD	JD	JD			

Comments:

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	JD A - wrong					
pH (S.U.)		5 out(s)				
Temperature °C	JD ~~25.0~~					
Dissolved Oxygen mg/L						
Conductivity µmhos (mmhos)	JD ~~31.5~~					
(initials) Measured by:						
(initials) Recorded by:						

Comments:

V 2.0 2/24/04

Appendix C. SRT Bench Sheets and Statistical Analysis

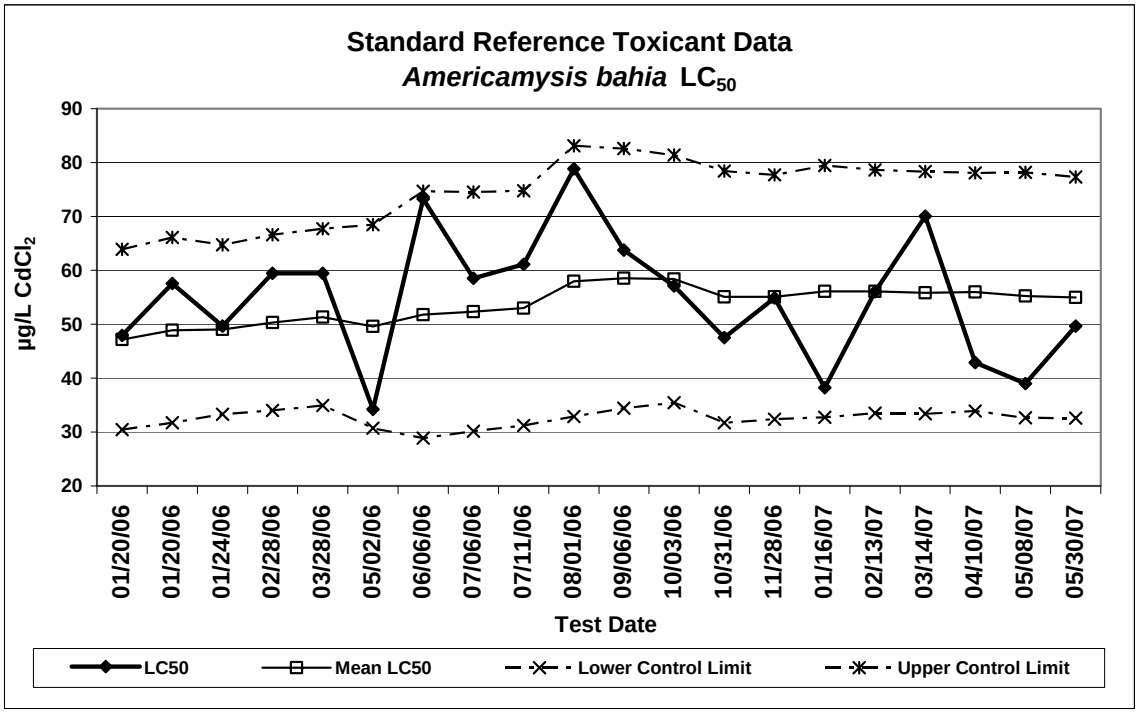
Florida Department of Environmental Protection
Bureau of Laboratories

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

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
01/20/06	47.91	47.18	8.36	30.47	63.89
01/20/06	57.54	48.91	8.59	31.73	66.08
01/24/06	49.65	49.01	7.84	33.32	64.70
02/28/06	59.45	50.32	8.15	34.03	66.61
03/28/06	59.42	51.33	8.20	34.93	67.73
05/02/06	34.19	49.62	9.44	30.73	68.50
06/06/06	73.23	51.76	11.44	28.88	74.65
07/06/06	58.53	52.33	11.08	30.16	74.49
07/11/06	61.12	53.00	10.89	31.22	74.78
08/01/06	78.84	57.99	12.56	32.87	83.10
09/06/06	63.78	58.51	12.04	34.44	82.59
10/03/06	57.10	58.40	11.49	35.42	81.37
10/31/06	47.52	55.07	11.67	31.73	78.42
11/28/06	54.87	55.06	11.33	32.41	77.71
01/16/07	38.23	56.09	11.68	32.74	79.45
02/13/07	56.06	56.09	11.28	33.53	78.65
03/14/07	70.07	55.86	11.23	33.40	78.32
04/10/07	42.91	56.00	11.04	33.91	78.08
05/08/07	39.00	55.23	11.38	32.65	78.19
05/30/07	49.64	54.95	11.17	32.61	77.30

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

CV = 20.32
EPA reference 75th quartile CV = 26%



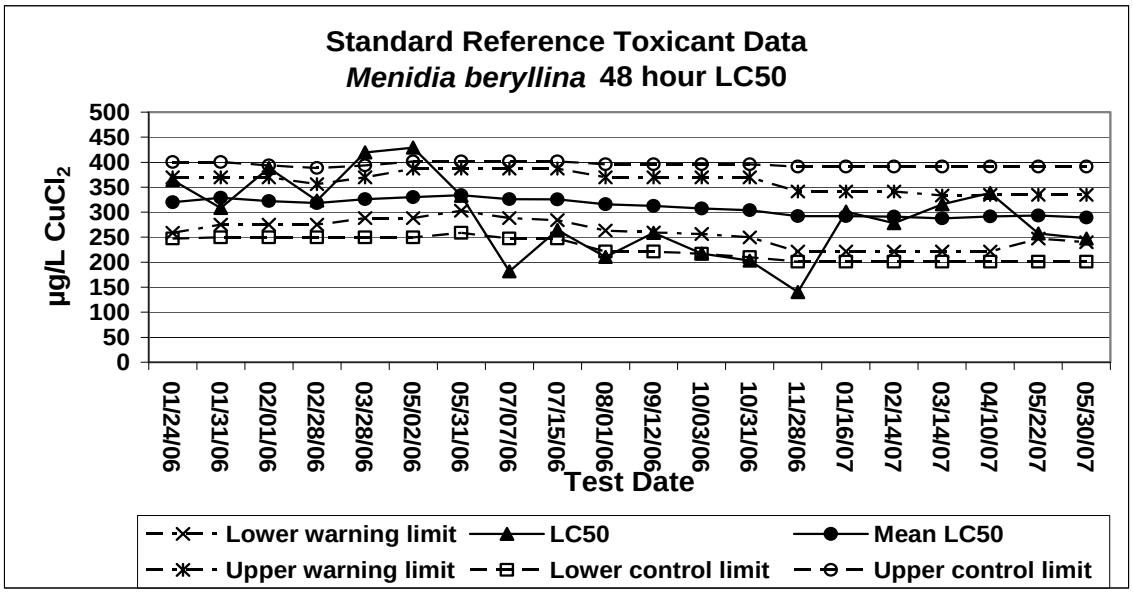
Appendix C. (continued)

Florida Department of Environmental Protection
Bureau of Laboratories

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

Date	LC50	Mean LC50	Lower control limit	Lower warning limit	Upper warning limit	Upper control limit
01/24/06	363.93	319.79	247.2	258.7	369.7	400.4
01/31/06	308.77	328.86	250.0	275.4	369.7	400.4
02/01/06	388.25	322.40	250.0	275.4	369.7	393.6
02/28/06	323.38	318.11	250.0	275.4	356.1	388.7
03/28/06	419.55	326.32	250.0	288.5	369.7	393.6
05/02/06	429.19	330.10	250.0	288.5	387.2	401.5
05/31/06	333.13	334.26	258.8	303.2	387.2	401.5
07/07/06	181.98	326.28	247.2	288.5	387.2	401.5
07/15/06	264.59	325.48	247.2	284.4	387.2	401.5
08/01/06	210.80	316.05	221.3	263.4	369.7	395.6
09/12/06	258.82	312.50	221.3	259.6	369.7	395.6
10/03/06	217.64	307.20	217.0	256.6	369.7	395.6
10/31/06	203.06	304.28	210.0	249.7	369.7	395.6
11/28/06	140.31	292.22	201.0	221.3	341.2	391.4
01/16/07	301.29	291.93	201.0	221.3	341.2	391.4
02/14/07	278.00	291.27	201.0	221.3	341.2	391.4
03/14/07	316.16	287.74	201.0	221.3	333.3	391.4
04/10/07	338.35	291.67	201.0	221.3	334.8	391.4
05/22/07	257.44	293.42	201.0	247.5	334.8	391.4
05/30/07	247.36	289.10	201.0	239.9	334.4	391.4

Means are of the last 20 SRT tests.
Upper warning and control limits are the 75th and 90th percentiles, respectively, of the past 20 LC50s.
Lower warning and control limits are the 25th and 10th percentiles, respectively, of the past 20 LC50s.
EPA reference 75th quartile CV = 21% **CV = 26.97***



* High variability due to change in fish supplier beginning 7/7/06.

Appendix C. (continued)

[redacted]

FDEP Biology Laboratory - Acute SRT Bench Sheet

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

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

Diluent/ Batch #: ASW / 5-7-07
Toxicant/ Batch#: $CdCl_2$ / 5-29-07

Test Beginning: Date: 5/30/07 Time: 12:50
Test Ending: Date: 6-3-07 Time: 1015

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	0.03	Hach	PPV
Alkalinity (mg/L as $CaCO_3$):	214	Hach	PPV
Hardness (mg.L as $CaCO_3$):	—	Hach	PPV
Total Ammonia (mg/L as N):	0.031	Denver	MF
Salinity (ppth):	~30	Mettler	MF

Organism Batch #/ Age: 5-30-07 / 5 Days
Feeding: Prior to test / Prior to renewal / (Daily)
Food: YCT P.subcapitata Artemia: Lot # GSL-S36-90F
Food Batch: _____ _____ 0hr 7:07 24hr 7:07 48hr 7:07 72hr 7:07
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Conc. µg/L mg/L	Rep.	Chamber #	Number Live 0 hr / 24 hr / 48 hr	pH (SU) 0 hr / 24 hr / 48 hr	Temperature (° C) 0 hr / 24 hr / 48 hr	D.O. (mg/L) 0 hr / 24 hr / 48 hr	Uncorrected Conductivity µmhom/cm (mmhos/cm) 0 hr / 24 hr / 48 hr
Control	A	Tox 1	5 / 5 / 5	8.4 / /	24.3 / / 24.6	6.4 / / 4.3	31.8 / / 32.6
	B	Tox 2	5 / 5 / 5	/ 8.1 /	/ 24.5 /	/ 5.1 /	/ 32.6 /
	C	Tox 3	5 / 5 / 5	/ / 8.2	/ /	/ /	/ /
	D	Tox 4	5 / 5 / 5	/ /	/ /	/ /	/ /
20	A	Tox 5	5 / 5 / 5	8.3 / /	24.5 / 24.7	6.6 / / 4.2	32.8 / / 33.5
	B	Tox 6	5 / 5 / 5	/ 8.1 /	/ 24.5 /	/ 4.9 /	/ 33.3 /
	C	Tox 7	5 / 5 / 5	/ / 8.2	/ /	/ /	/ /
	D	Tox 8	5 / 5 / 5	/ /	/ /	/ /	/ /
30	A	Tox 9	5 / 5 / 5	8.3 / /	24.6 / 24.6	6.8 / / 4.8	32.7 / / 33.3
	B	Tox 10	5 / 5 / 5	/ 8.1 /	/ 24.5 /	/ 4.8 /	/ 33.2 /
	C	Tox 11	5 / 5 / 5	/ / 8.1	/ /	/ /	/ /
	D	Tox 12	5 / 5 / 5	/ /	/ /	/ /	/ /
45	A	Tox 13	5 / 5 / 320	8.4 / /	24.6 / 24.6	6.8 / / 4.8	32.6 / / 33.5
	B	Tox 14	5 / 5 / 410	/ 8.1 /	/ 24.6 /	/ 4.6 /	/ 33.5 /
	C	Tox 15	5 / 5 / 230	/ / 8.2	/ /	/ /	/ /
	D	Tox 16	5 / 5 / 320	/ /	/ /	/ /	/ /
67	A	Tox 17	5 / 5 / 140	8.4 / /	24.6 / 24.4	6.9 / / 4.8	32.2 / / 33.1
	B	Tox 18	5 / 5 / 140	/ 8.1 /	/ 24.5 /	/ 4.6 /	/ 32.8 /
	C	Tox 19	5 / 410 / 040	/ / 8.2	/ /	/ /	/ /
	D	Tox 20	5 / 410 / 130	/ /	/ /	/ /	/ /
100	A	Tox 21	5 / 5 / 050	8.4 / /	24.6 / 24.4	6.8 / / 5.0	32.4 / / 33.4
	B	Tox 22	5 / 410 / 040	/ 8.1 /	/ 24.6 /	/ 4.6 /	/ 33.4 /
	C	Tox 23	5 / 320 / 030	/ / 8.2	/ /	/ /	/ /
	D	Tox 24	5 / 410 / 040	/ /	/ /	/ /	/ /
	A		/ /	/ /	/ /	/ /	/ /
	B		/ /	/ /	/ /	/ /	/ /
	C		/ /	/ /	/ /	/ /	/ /
	D		/ /	/ /	/ /	/ /	/ /
Loaded / measured by:			JD / JD / JD	JD / JD / JD	JD / JD / JD	JD / JD / JD	JD / JD / JD
Recorded by:			JD / JD / JD	JD / JD / JD	JD / JD / JD	JD / JD / JD	JD / JD / JD

Investigators' Signatures
Patsy Vichules
Jason Daniel
Brad Nelson
Marshall Brecht
Nicole Wilkerdt
REVIEWER

Concentrations prepared by: JD
Loading verified by: BN
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min 25.8 max 26.4 mean 26.1
Incubator # ___ min ___ max ___ mean ___
Room B246 min 24.7 max 25.8 mean 25.3

Comments:

Statistics: Method: Spearman-Karber
(48) 96 hour LC_{50}: 49.604
95% Confidence Interval: lower 44.58 upper 55.54

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Appendix C. (continued)

FDEP Biology Laboratory - Acute SRT Bench Sheet

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

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

Diluent/ Batch #: ASW / 5-7-07
Toxicant/ Batch#: $CdCl_2$ / 5-25-07

Test Beginning: Date: 5.30.07 Time: 12:50
Test Ending: Date: 6-3-07 Time: 1015

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	4003	Hach	MF
Alkalinity (mg/L as $CaCO_3$):	214	Hach	MF
Hardness (mg.L as $CaCO_3$):	—	Hach	MF
Total Ammonia (mg/L as N):	4C034	Denver	MF
Salinity (ppth):	~20	Mettler	MF

Organism Batch #/ Age: 5-30 07 / 5 Days
Feeding: Prior to test / Prior to renewal / (Daily)
Food: YCT — P.subcapitata — Artemia: Lot # GSL-S36-5 CF
Food Batch: — — 0hr 7h07 24hr 72h07 48hr 75-07 72hr 79-07
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Conc. (µg/L) mg/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 Conductivity µmhom/cm (mmhos/cm) 0 hr	Uncorrected Conductivity 24 hr	Uncorrected Conductivity 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	tox 1	5	5	5			8.1	24.2 JD		24.3			5.7	32.9 JD		33.8
	B	tox 2	5	5	5												
	C	tox 3	5	4 1D	4	8.3			24.2			6.5			32.9		
	D	tox 4	5	5	5		8.1			24.7			5.3			33.4	
20	A	tox 5	5	5	5			8.0			24.1			5.6			34.2
	B	tox 6	5	5	5												
	C	tox 7	5	5	4 1D	8.3			24.1			6.3			32.9		
	D	tox 8	5	5	4 1D		8.1			25.1			5.5			33.7	
30	A	tox 9	5	5	4 1D			8.0			24.0			4.8			33.9
	B	tox 10	5	5	5												
	C	tox 11	5	3 2D	3	8.3			24.2			6.6			33.3		
	D	tox 12	5	5	5		8.1			24.3			5.4			33.1	
45	A	tox 13	3	3	2 1D			8.1			24.2			5.1			33.7
	B	tox 14	4	4	1 3D												
	C	tox 15	2	1 1D	1	8.3			24.2			6.2			33.1		
	D	tox 16	3	2 1D	0 2D		8.1			25.1			5.4			34.0	
67	A	tox 17	1	0 1D	—												
	B	tox 18	1	0 1D	—												
	C	tox 19	—		—												
	D	tox 20	1	1	0 1D	8.3	8.1	8.0	24.2	24.7	24.5	6.5	5.5	5.2	32.6	33.0	33.8
100	A	tox 21	—		—												
	B	tox 22	—		—												
	C	tox 23	—		—												
	D	tox 24	—		—												
	A																
	B																
	C																
	D																
Loaded / measured by:				MF	MF	JD	MF	MF	JD	MF	MF	JD	MF	MF	JD	MF	MF
Recorded by:				MF	MF	JD	MF	MF	JD	MF	MF	JD	MF	MF	JD	MF	MF

Investigators' Signatures
Debra McCraik
James Handy
Alice Hanlon
Marshall Faircloth
Nicole Wilkerson
REVIEWER

Concentrations prepared by: JD
Loading verified by: —
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min 25.8 max 26.4 mean 26.1
Incubator # ___ min ___ max ___ mean ___
Room B246 min 24.7 max 25.8 mean 25.3

Comments:
@ transcription error JD 6.1.07

Statistics: Method: Spearman-Karber
48 / (96) hour LC_{50}: 38.18
95% Confidence Interval: lower 34.43 upper 42.33

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Appendix C. (continued)

FDEP Biology Laboratory - Acute SRT Bench Sheet

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

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

Diluent/ Batch #: ASW / 5-7-07 BA 6-28-07
Toxicant/ Batch#: CuCl2 / 5-7-07 BA 5-29-07 5-29-07

Test Beginning: Date: 5,30,07 Time: 12:00
Test Ending: Date: 6-3-07 Time: 1030

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	40.03	Hach	DPV
Alkalinity (mg/L as $CaCO_3$):	214	Hach	DPV
Hardness (mg.L as $CaCO_3$):	—	Hach	DPV
Total Ammonia (mg/L as N):	40.034	Denver	MF
Salinity (ppth):	30.0	Mettler	MF

Organism Batch #/ Age: 5-30-07/7 DAS
Feeding: Prior to test / Prior to renewal / Daily
Food: YCT — *P.subcapitata* — Artemia: Lot # GSL-S36 90F
Food Batch: _____ — _____ 0hr 7hr 24hr — 48hr 7hr 72hr —
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Conc. µg/L mg/L	Rep.	Chamber #	Number Live 0 hr	24 hr	48 hr	pH (SU) 0 hr	24 hr	48 hr	Temperature (°C) 0 hr	24 hr	48 hr	D.O. (mg/L) 0 hr	24 hr	48 hr	Uncorrected Conductivity µmhom/cm mmhos/cm 0 hr	24 hr	48 hr
			~~48 hr~~	~~72 hr~~	~~96 hr~~	~~48 hr~~	~~72 hr~~	~~96 hr~~	~~48 hr~~	~~72 hr~~	~~96 hr~~	~~48 hr~~	~~72 hr~~	~~96 hr~~	~~48 hr~~	~~72 hr~~	~~96 hr~~
Control	A	B1	10	9/0	9	8.3		8.2	24.5		24.6	6.5		6.2	32.5		33.2
	B	B2	10	10	10		8.2			24.7			6.0			32.8	
	C																
	D																
100	A	B3	10	9/0	9	8.3		8.2	24.6		24.6	6.7		6.3	32.7		33.4
	B	B4	10	9/0	7/0		8.2			24.7			6.1			33.1	
	C																
	D																
200	A	B5	10	9/0	9	8.3		8.2	24.6		24.6	6.8		6.4	32.7		33.5
	B	B6	10	8/0	8		8.2			24.8			6.1			33.1	
	C																
	D																
300	A	B7	10	1/0	1	8.3		8.2	24.6		24.5	6.8		6.6	32.6		33.4
	B	B8	10	2/0	2		8.2			24.8			6.1			33.0	
	C																
	D																
400	A	B9	10	1/0	1	8.3		8.2	24.6		24.6	6.8		6.7	32.1		33.1
	B	B10	10	1/0	1		8.2			24.8			6.1			32.8	
	C																
	D																
500	A	B11	10	0/0	—	8.3		—	24.6		—	6.8		—	32.4		—
	B	B12	10	0/0	—		8.3			24.8			6.1			32.9	
	C																
	D																
	A																
	B																
	C																
	D																
Loaded / measured by:			JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD
Recorded by:			JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD

Investigators' Signatures
Patsy Vickers
Jamie Davis
Paul Parker
Marshall Faircloth
Angela Weller
REVIEWER

Concentrations prepared by: JD
Loading verified by: BA
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min 25.8 max 26.4 mean 26.1
Incubator # ___ min ___ max ___ mean ___
Room B246 min 24.7 max 25.8 mean 25.3

Comments:

Statistics: Method: Spearman-Karber
48/ 96 hour LC_{50}: 247.36
95% Confidence Interval: lower 228.20 upper 268.13

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revised 08/24/06 SP

Appendix C. (continued)

FDEP Biology Laboratory - Acute SRT Bench Sheet

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

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

Diluent/ Batch #: ASW / 5-7-07
Toxicant/ Batch#: CuCl2 / 5-29-07

Test Beginning: Date: 5.30.07 Time: 13:00
Test Ending: Date: 6-3-07 Time: 1030

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	40.03	Hach	PDV
Alkalinity (mg/L as $CaCO_3$):	214	Hach	PDV
Hardness (mg.L as $CaCO_3$):	—	Hach	PDV
Total Ammonia (mg/L as N):	0.04	Denver	MF
Salinity (ppth):	20	Mettler	MF

Organism Batch #/ Age: S-30-07/7 DAYS
Feeding: Prior to test/ Prior to renewal/ Daily
Food: YCT — *P.subcapitata* — Artemia: Lot #ESL-536 90F
Food Batch: — —
0hr 1661 24hr — 48hr 7807 72hr —
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Conc. µg/L mg/L	Rep.	Chamber #	Number Live ~~0 hr~~ 48 hr	~~24 hr~~ 72 hr	~~48 hr~~ 96 hr	pH (SU) ~~0 hr~~ 48 hr	~~24 hr~~ 72 hr	~~48 hr~~ 96 hr	Temperature (°C) ~~0 hr~~ 48 hr	~~24 hr~~ 72 hr	~~48 hr~~ 96 hr	D.O. (mg/L) ~~0 hr~~ 48 hr	~~24 hr~~ 72 hr	~~48 hr~~ 96 hr	Uncorrected Conductivity µmhom/cm (mmhos/cm) ~~0 hr~~ 48 hr	~~24 hr~~ 72 hr	~~48 hr~~ 96 hr
Control	A	B1	9	9	9	8.3		8.2	24.3		24.1	6.8		5.5	32.7		33.2
	B	B2	10	10	10		8.2			25.3			5.6			33.3	
	C																
	D																
100	A	B3	9	9	9	8.3		8.1	24.3		24.8	6.8		5.4	32.8		33.3
	B	B4	7	7	7		8.2			24.6			5.5			33.0	
	C																
	D																
200	A	B5	9	9	9	8.3		8.1	24.2		24.1	6.9		5.2	32.9		32.9
	B	B6	8	8	8		8.2			24.8			5.7			33.0	
	C																
	D																
300	A	B7	1	1	1	8.4		8.2	24.3		25.0	6.9		5.5	32.9		33.4
	B	B8	2	2	2		8.2			25.3			5.8			33.0	
	C																
	D																
400	A	D1	1	1	1	8.3		8.2	24.4		25.5	7.0		5.7	32.4		33.0
	B	B10	1	1	1		8.2			24.9			5.8			32.5	
	C																
	D																
500	A	B11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	B	D12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	C																
	D																
	A																
	B																
	C																
	D																
Loaded / measured by:			JD	MF	MF	JD	MF	MF	JD	MF	MF	JD	MF	MF	JD	MF	MF
Recorded by:			JD	MF	MF	JD	MF	MF	JD	MF	MF	JD	MF	MF	JD	MF	MF

Investigators' Signatures
Patsy McCraik
Jenn Dyal
Chris Pasha
Marshall Faircloth
Nicole Willenbrock
REVIEWER

Concentrations prepared by: JD
Loading verified by: —
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min 25.3 max 26.4 mean 26.1
Incubator # ___ min ___ max ___ mean ___
Room B246 min 24.7 max 25.8 mean 25.3

Comments:

Statistics: Method: Spearman-Karber
48 (96) hour LC_{50}: 247.36
95% Confidence Interval: lower 228.20 upper 268.13

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revised 08/24/06 SP

Appendix C. (continued)

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

DATE: 05/30/07 DURATION: 48 hr TOXICANT: CdCl2
SPECIES: *Americamysis bahia*

RAW DATA: Concentration (ug/L)	Number Exposed	Mortalities
0.00	20	0
20.00	20	0
30.00	20	0
45.00	20	8
67.00	20	17
100.00	20	20

SPEARMAN-KARBER TRIM: 0.00%

SPEARMAN-KARBER ESTIMATES: LC50: 49.64
95% LOWER CONFIDENCE: 44.53
95% UPPER CONFIDENCE: 55.34

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

DATE: 05/30/07 DURATION: 48 hr. TOXICANT: CuCl2
SPECIES: *Menidia beryllina*

RAW DATA: Concentration (ug/L)	Number Exposed	Mortalities
0.00	20	1
100.00	20	4
200.00	20	3
300.00	20	17
400.00	20	18
500.00	20	20

SPEARMAN-KARBER TRIM: 13.16%

SPEARMAN-KARBER ESTIMATES: LC50: 247.36
95% LOWER CONFIDENCE: 228.20
95% UPPER CONFIDENCE: 268.13

NOTE: MORTALITY PROPORTIONS WERE NOT MONOTONICALLY INCREASING. ADJUSTMENTS WERE MADE PRIOR TO SPEARMAN-KARBER ESTIMATION.

Appendix D. Test Organism Receipts

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

NELAC Accredited

Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 5/29/07

Shipped to: FL DEP

P.O. No: N/A

Species	Quantity	Age	Brood Number	Temperature	Salinity
Mysidopsis bahia	150	4 DAYS	MS070525	25°C	20‰
Menidia beryllina	150	10 DAYS	SS070519	25°C	20‰
Cyprinella leedsi	150	12days	CL070517	25°C	
Pimephales promelas	150	6days	FM070523	25°C	

Packed by:

Shipped Via: FedEx

Notes:

Thank you for your order.

Appendix D. (continued)

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

NELAC Accredited

Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 6/11/07

Shipped to: FDEP

P.O. No: N/A

Species	Quantity	Age	Brood Number	Temperature	Salinity
Mysidopsis bahia	250	6days	ØMS070605	25°C	20ppt
	100	4days	MS070607	25°C	20ppt
Menidia beryllina	100	12days	SS070530	25°C	20ppt
Cyprinella leedsi					
Pimephales promelas	500	<24HRS	FM070611-0815	25°C	

Packed by: J —

Shipped Via: Fed Ex

Notes: _____

Thank you for your order.

Appendix E. Chemical Analyses performed on the effluent from the Southwest District Wastewater Treatment Facility Outfall D-001, sampled on June 11, 2007.

Date Sampled	Field ID	Analysis Group	Component	Result	Remark	Units	MDL	PQL
6/11/2007 10:39	Effluent	AGP/LN	Algal Growth Potential	294		mg DryWt/L	0.3	0.9
6/11/2007 10:39	Effluent	AGP/LN	Algal Growth Potential-Salinity Adjusted	626		mg DryWt/L	3	3
6/11/2007 10:39	Effluent	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	3.8		mg/L	0.2	2
6/11/2007 10:39	Effluent	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	1.2	I	ug/L	0.55	1.7
6/11/2007 10:39	Effluent	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.24	U	ug/L	0.24	0.71
6/11/2007 10:39	Effluent	Metals	Aluminum	40		ug/L	5	20
6/11/2007 10:39	Effluent	Metals	Calcium	40.3		mg/L	0.02	0.08
6/11/2007 10:39	Effluent	Metals	Iron	233		ug/L	5	20
6/11/2007 10:39	Effluent	Metals	Magnesium	14.5		mg/L	0.005	0.02
6/11/2007 10:39	Effluent	Metals	Arsenic	0.5	U	ug/L	0.5	2
6/11/2007 10:39	Effluent	Metals	Cadmium	0.02	U	ug/L	0.02	0.08
6/11/2007 10:39	Effluent	Metals	Chromium	1.5	I	ug/L	1	4
6/11/2007 10:39	Effluent	Metals	Copper	1.84		ug/L	0.25	1
6/11/2007 10:39	Effluent	Metals	Lead	0.21	I	ug/L	0.2	0.8
6/11/2007 10:39	Effluent	Metals	Nickel	2.99		ug/L	0.25	1
6/11/2007 10:39	Effluent	Metals	Selenium	0.5	U	ug/L	0.5	2
6/11/2007 10:39	Effluent	Metals	Silver	0.028	I	ug/L	0.025	0.1
6/11/2007 10:39	Effluent	Metals	Zinc	11	I	ug/L	5	20
6/11/2007 10:39	Effluent	Nutrients	Ammonia-N	14		mg N/L	1	2
6/11/2007 10:39	Effluent	Nutrients	NO2NO3-N	0.24		mg N/L	0.004	0.01
6/11/2007 10:39	Effluent	Nutrients	O-Phosphate-P	1.9	A	mg P/L	0.08	0.2
6/11/2007 10:39	Effluent	Nutrients	Kjeldahl Nitrogen	14		mg N/L	0.8	2
6/11/2007 10:39	Effluent	Nutrients	Total-P	2.2		mg P/L	0.1	0.3
6/11/2007 10:39	Effluent	Nutrients	TSS	5	I	mg/L	4	16
6/11/2007 10:39	Effluent	Pesticides	Alachlor	0.6	U	ug/L	0.6	2.4
6/11/2007 10:39	Effluent	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
6/11/2007 10:39	Effluent	Pesticides	Atrazine	0.089	U	ug/L	0.089	0.36
6/11/2007 10:39	Effluent	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.8
6/11/2007 10:39	Effluent	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
6/11/2007 10:39	Effluent	Pesticides	Butylate	0.2	UJ	ug/L	0.2	0.8
6/11/2007 10:39	Effluent	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
6/11/2007 10:39	Effluent	Pesticides	Chlorpyrifos Methyl	0.1	U	ug/L	0.1	0.4
6/11/2007 10:39	Effluent	Pesticides	Diazinon	0.05	U	ug/L	0.05	0.2
6/11/2007 10:39	Effluent	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
6/11/2007 10:39	Effluent	Pesticides	Ethoprop	0.1	U	ug/L	0.1	0.4
6/11/2007 10:39	Effluent	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
6/11/2007 10:39	Effluent	Pesticides	Fonofos	0.1	U	ug/L	0.1	0.4
6/11/2007 10:39	Effluent	Pesticides	Hexazinone	0.1	U	ug/L	0.1	0.4
6/11/2007 10:39	Effluent	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
6/11/2007 10:39	Effluent	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Component	Result	Remark	Units	MDL	PQL
6/11/2007 10:39	Effluent	Pesticides	Metolachlor	0.5	UJ	ug/L	0.5	2
6/11/2007 10:39	Effluent	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
6/11/2007 10:39	Effluent	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8
6/11/2007 10:39	Effluent	Pesticides	Naled	0.8	UJ	ug/L	0.8	3.2
6/11/2007 10:39	Effluent	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
6/11/2007 10:39	Effluent	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
6/11/2007 10:39	Effluent	Pesticides	Parathion Methyl	0.1	U	ug/L	0.1	0.4
6/11/2007 10:39	Effluent	Pesticides	Phorate	0.05	U	ug/L	0.05	0.2
6/11/2007 10:39	Effluent	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
6/11/2007 10:39	Effluent	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
6/11/2007 10:39	Effluent	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	1,2-Dichlorobenzene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	1,3-Dichlorobenzene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	1,4-Dichlorobenzene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	2,4-Dichlorophenol	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	2,4-Dimethylphenol	9.6	U	ug/L	9.6	38
6/11/2007 10:39	Effluent	Priority Organic Pollutants	2,4-Dinitrophenol	14	UJ	ug/L	14	58
6/11/2007 10:39	Effluent	Priority Organic Pollutants	2,4-Dinitrotoluene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	2,6-Dinitrotoluene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	2-Chloronaphthalene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	2-Chlorophenol	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	UJ	ug/L	2.9	12
6/11/2007 10:39	Effluent	Priority Organic Pollutants	2-Nitrophenol	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38	UJ	ug/L	38	150
6/11/2007 10:39	Effluent	Priority Organic Pollutants	4,4'-DDD	1.4	U	ug/L	1.4	5.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	4,4'-DDE	1.4	U	ug/L	1.4	5.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	4,4'-DDT	1.4	U	ug/L	1.4	5.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.7
6/11/2007 10:39	Effluent	Priority Organic Pollutants	4-Nitrophenol	14	U	ug/L	14	58
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Acenaphthene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Acenaphthylene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Aldrin	1.4	UJ	ug/L	1.4	5.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Anthracene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Benzidine	96	U	ug/L	96	380
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Benzo(a)anthracene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Benzo(a)pyrene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Benzo(b)fluoranthene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.96	U	ug/L	0.96	3.8

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Component	Result	Remark	Units	MDL	PQL
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Benzo(k)fluoranthene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	U	ug/L	2.9	12
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	14	U	ug/L	14	58
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Butyl benzyl phthalate	4.8	U	ug/L	4.8	19
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Chrysene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Di-n-butyl phthalate	4.8	U	ug/L	4.8	19
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Di-n-octyl phthalate	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Dieldrin	1.4	U	ug/L	1.4	5.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Diethyl phthalate	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Dimethyl phthalate	48	U	ug/L	48	190
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Endosulfan I	3.8	U	ug/L	3.8	15
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Endosulfan II	3.8	U	ug/L	3.8	15
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Endosulfan sulfate	1.4	U	ug/L	1.4	5.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Endrin	1.4	UJ	ug/L	1.4	5.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Endrin aldehyde	3.8	U	ug/L	3.8	15
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Fluoranthene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Fluorene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Heptachlor	1.4	U	ug/L	1.4	5.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Heptachlor epoxide	1.4	U	ug/L	1.4	5.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Hexachlorobenzene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Hexachlorobutadiene	2.9	U	ug/L	2.9	12
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	U	ug/L	2.9	12
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Hexachloroethane	2.9	U	ug/L	2.9	12
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Isophorone	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.7
6/11/2007 10:39	Effluent	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.7
6/11/2007 10:39	Effluent	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9	U	ug/L	2.9	12
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Naphthalene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.7
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Pentachlorophenol	2.9	U	ug/L	2.9	12
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Phenanthrene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Phenol	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	Pyrene	0.96	U	ug/L	0.96	3.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	alpha-BHC	1.4	U	ug/L	1.4	5.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	beta-BHC	1.4	U	ug/L	1.4	5.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	delta-BHC	1.4	U	ug/L	1.4	5.8
6/11/2007 10:39	Effluent	Priority Organic Pollutants	gamma-BHC	1.4	U	ug/L	1.4	5.8

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Component	Result	Remark	Units	MDL	PQL
6/11/2007 10:39	Effluent	Field Parameters	Dissolved Oxygen	7.39		mg/L		
6/11/2007 10:39	Effluent	Field Parameters	Salinity	0.35		‰		
6/11/2007 10:39	Effluent	Field Parameters	Specific Conductance	724		umhos/cm		
6/11/2007 10:39	Effluent	Field Parameters	Temperature	28.99		C		
6/11/2007 10:39	Effluent	Field Parameters	pH	7.52				
6/11/2007 10:44	Field Blank	Metals	Aluminum	5	U	ug/L	5	20
6/11/2007 10:44	Field Blank	Metals	Calcium	0.02	U	mg/L	0.02	0.08
6/11/2007 10:44	Field Blank	Metals	Iron	5	U	ug/L	5	20
6/11/2007 10:44	Field Blank	Metals	Magnesium	0.005	U	mg/L	0.005	0.02
6/11/2007 10:44	Field Blank	Metals	Arsenic	0.5	U	ug/L	0.5	2
6/11/2007 10:44	Field Blank	Metals	Cadmium	0.02	U	ug/L	0.02	0.08
6/11/2007 10:44	Field Blank	Metals	Chromium	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Metals	Copper	0.25	U	ug/L	0.25	1
6/11/2007 10:44	Field Blank	Metals	Lead	0.2	U	ug/L	0.2	0.8
6/11/2007 10:44	Field Blank	Metals	Nickel	0.25	U	ug/L	0.25	1
6/11/2007 10:44	Field Blank	Metals	Selenium	0.5	U	ug/L	0.5	2
6/11/2007 10:44	Field Blank	Metals	Silver	0.025	U	ug/L	0.025	0.1
6/11/2007 10:44	Field Blank	Metals	Zinc	5	U	ug/L	5	20
6/11/2007 10:44	Field Blank	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
6/11/2007 10:44	Field Blank	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
6/11/2007 10:44	Field Blank	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
6/11/2007 10:44	Field Blank	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
6/11/2007 10:44	Field Blank	Nutrients	Total-P	0.02	U	mg P/L	0.02	0.06
6/11/2007 10:44	Field Blank	Pesticides	Alachlor	0.57	U	ug/L	0.57	2.3
6/11/2007 10:44	Field Blank	Pesticides	Ametryn	0.048	U	ug/L	0.048	0.19
6/11/2007 10:44	Field Blank	Pesticides	Atrazine	0.048	U	ug/L	0.048	0.19
6/11/2007 10:44	Field Blank	Pesticides	Azinphos Methyl	0.19	U	ug/L	0.19	0.76
6/11/2007 10:44	Field Blank	Pesticides	Bromacil	0.19	U	ug/L	0.19	0.76
6/11/2007 10:44	Field Blank	Pesticides	Butylate	0.19	UJ	ug/L	0.19	0.76
6/11/2007 10:44	Field Blank	Pesticides	Chlorpyrifos Ethyl	0.048	U	ug/L	0.048	0.19
6/11/2007 10:44	Field Blank	Pesticides	Chlorpyrifos Methyl	0.095	U	ug/L	0.095	0.38
6/11/2007 10:44	Field Blank	Pesticides	Diazinon	0.048	U	ug/L	0.048	0.19
6/11/2007 10:44	Field Blank	Pesticides	Ethion	0.048	U	ug/L	0.048	0.19
6/11/2007 10:44	Field Blank	Pesticides	Ethoprop	0.095	U	ug/L	0.095	0.38
6/11/2007 10:44	Field Blank	Pesticides	Fenamiphos	0.19	U	ug/L	0.19	0.76
6/11/2007 10:44	Field Blank	Pesticides	Fonofos	0.095	U	ug/L	0.095	0.38
6/11/2007 10:44	Field Blank	Pesticides	Hexazinone	0.095	U	ug/L	0.095	0.38
6/11/2007 10:44	Field Blank	Pesticides	Malathion	0.14	U	ug/L	0.14	0.56
6/11/2007 10:44	Field Blank	Pesticides	Metalaxyl	0.24	U	ug/L	0.24	0.96
6/11/2007 10:44	Field Blank	Pesticides	Metolachlor	0.48	UJ	ug/L	0.48	1.9
6/11/2007 10:44	Field Blank	Pesticides	Metribuzin	0.095	U	ug/L	0.095	0.38

Appendix E. (continued)

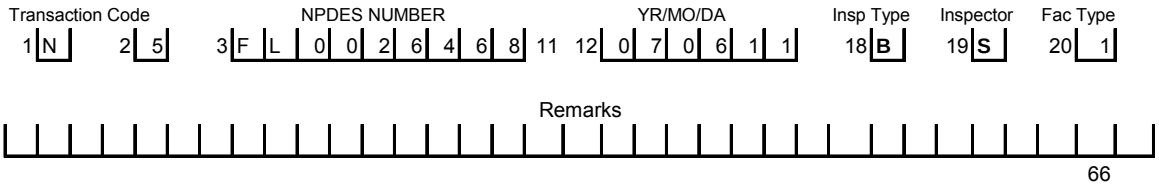
Date Sampled	Field ID	Analysis Group	Component	Result	Remark	Units	MDL	PQL
6/11/2007 10:44	Field Blank	Pesticides	Mevinphos	0.19	U	ug/L	0.19	0.76
6/11/2007 10:44	Field Blank	Pesticides	Naled	0.76	UJ	ug/L	0.76	3
6/11/2007 10:44	Field Blank	Pesticides	Norflurazon	0.14	U	ug/L	0.14	0.56
6/11/2007 10:44	Field Blank	Pesticides	Parathion Ethyl	0.14	U	ug/L	0.14	0.56
6/11/2007 10:44	Field Blank	Pesticides	Parathion Methyl	0.095	U	ug/L	0.095	0.38
6/11/2007 10:44	Field Blank	Pesticides	Phorate	0.048	U	ug/L	0.048	0.19
6/11/2007 10:44	Field Blank	Pesticides	Prometryn	0.14	U	ug/L	0.14	0.56
6/11/2007 10:44	Field Blank	Pesticides	Simazine	0.048	U	ug/L	0.048	0.19
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	1,2-Dichlorobenzene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	1,3-Dichlorobenzene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	1,4-Dichlorobenzene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	2,4-Dichlorophenol	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	2,4-Dimethylphenol	10	U	ug/L	10	40
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	2,4-Dinitrophenol	15	UJ	ug/L	15	60
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	2-Chloronaphthalene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	2-Chlorophenol	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3	UJ	ug/L	3	12
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	2-Nitrophenol	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	40	UJ	ug/L	40	160
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	4,4'-DDD	1.5	U	ug/L	1.5	6
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	4,4'-DDE	1.5	U	ug/L	1.5	6
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	4,4'-DDT	1.5	U	ug/L	1.5	6
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2	U	ug/L	2	8
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	60
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Acenaphthene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Acenaphthylene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Aldrin	1.5	UJ	ug/L	1.5	6
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Anthracene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Benzidine	100	U	ug/L	100	400
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Benzo(a)anthracene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Benzo(a)pyrene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1	U	ug/L	1	4

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Component	Result	Remark	Units	MDL	PQL
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3	U	ug/L	3	12
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	U	ug/L	15	60
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Butyl benzyl phthalate	5	U	ug/L	5	20
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Chrysene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Di-n-butyl phthalate	5	U	ug/L	5	20
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Di-n-octyl phthalate	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Dieldrin	1.5	U	ug/L	1.5	6
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Diethyl phthalate	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Dimethyl phthalate	50	U	ug/L	50	200
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Endosulfan I	4	U	ug/L	4	16
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Endosulfan II	4	U	ug/L	4	16
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Endosulfan sulfate	1.5	U	ug/L	1.5	6
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Endrin	1.5	UJ	ug/L	1.5	6
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Endrin aldehyde	4	U	ug/L	4	16
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Fluoranthene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Fluorene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Heptachlor	1.5	U	ug/L	1.5	6
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Heptachlor epoxide	1.5	U	ug/L	1.5	6
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Hexachlorobenzene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Hexachlorobutadiene	3	U	ug/L	3	12
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	3	U	ug/L	3	12
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Hexachloroethane	3	U	ug/L	3	12
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Isophorone	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2	U	ug/L	2	8
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	2	U	ug/L	2	8
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3	U	ug/L	3	12
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Naphthalene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Nitrobenzene	2	U	ug/L	2	8
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Pentachlorophenol	3	U	ug/L	3	12
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Phenanthrene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Phenol	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	Pyrene	1	U	ug/L	1	4
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	alpha-BHC	1.5	U	ug/L	1.5	6
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	beta-BHC	1.5	U	ug/L	1.5	6
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	delta-BHC	1.5	U	ug/L	1.5	6
6/11/2007 10:44	Field Blank	Priority Organic Pollutants	gamma-BHC	1.5	U	ug/L	1.5	6

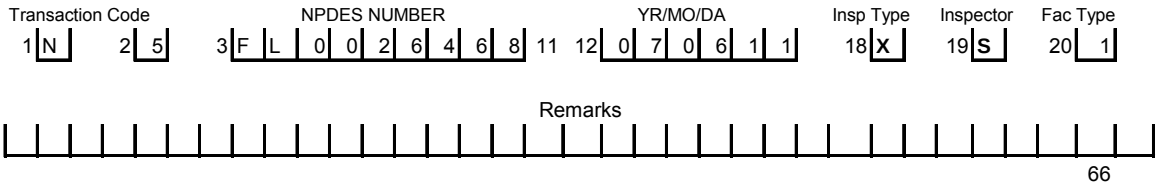
The Bioassay of Southwest District Wastewater Treatment Facility effluent sampled on June 11, 2007. NPDES #FL0026468.

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



The Priority Pollutants Analysis of Southwest District Wastewater Treatment Facility effluent sampled on June 11, 2007. NPDES #FL0026468.

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



Biological Analyses of Southwest District Wastewater Treatment Facility effluent sampled on June 11, 2007. NPDES #FL0026468.

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

