

Effluent Quality Assessment of the

City of Quincy WWTP

Gadsden County

NPDES #FL0029033

Sampled July 16, 18 and 20, 2007

November 2007

Biology Section
Bureau of Laboratories
Division of Resource Assessment and Management

Quality Manual No. 870346G
NELAC Certification No. E31780

City of Quincy WWTP, 300 North G., F. and A. Drive, Quincy, Gadsden County, Florida, NPDES #FL0029033. Effluent samples for chemical, microbiological, algal growth potential and bioassay analyses for this facility were collected on July 16, 2007. Additional effluent samples for bioassay analyses were collected on July 18 and 20, 2007.

Introduction

City of Quincy WWTP is an activated-sludge wastewater treatment plant, which uses a Bardenpho® 4-stage biological nutrient removal process to treat domestic wastewater. The facility has a permitted capacity of 1.5 million gallons per day (MGD) maximum monthly average daily flow (MMADF). The monthly average daily flow from July 1, 2006 through June 30, 2007, was 0.790 MGD. The flow during the sampling event on July 16, 2007, was 0.911 MGD. Wastewater treatment consists of bar screening, grit removal and flow equalization; biological treatment and nutrient removal which are achieved by passing the flow through a fermentation tank, a first anoxic tank, an aeration tank, a second anoxic tank, a reaeration tank and clarifier; secondary clarification through filtration, low-level disinfection by chlorination with chlorine gas and dechlorination with liquid bisulfite. Return activated sludge is reintroduced at the fermentation tank. After dechlorination, effluent is aerated, flow is measured and effluent is discharged into the Class III freshwaters of Quincy Creek at discharge location D-001. Outfall D-001 as stated in the NPDES permit is "*approximately 0 feet*" in length and discharges at a depth of approximately 0.3 m (1 foot). The point of discharge is located approximately at latitude 30º 35' 04" N, longitude 84º 33' 16" W. Residuals are treated by aerobic digestion, lime stabilization and dewatering on drying beds. Treated residuals are disposed by land application at agricultural application sites in Gadsden County. Influent screenings are disposed in a landfill.

There are no current Administrative Orders or Consent Orders for this facility. A warning letter was issued on July 28, 2005, for effluent quality and residual violations. The facility has no mixing zones. A review of Discharge Monitoring Report (DMR) data showed a permit violation for total residual chlorine (value 0.42 mg/L, limit ≥ 0.5 mg/L) on May 31, 2006; and, a permit violation for total phosphorus (value 1.6 mg/L, limit 1 mg/L) on July 31, 2006. DMR data for the current permit cycle suggests that the effluent trend is improving. (Facility information provided by Kim Allen and Glenn Butts of FDEP Northwest District and Joy Jackson of FDEP Central Laboratory.)

Methods

Samples were collected from the EFD-01 NPDES sampling point (at the head of the Parschall flume) for Outfall D-001 by Joy Jackson and Blake Spencer (FDEP Central Laboratory) 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 chronic screening toxicity tests and algal growth potential test were performed following internal DEP SOPs TA07_05, TA07_09, 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.

Dunnett's procedure (available at Statistical Analysis for Biological Methods http://www.epa.gov/EERD/stat2.htm) and t-tests were used to analyze data from these tests.

Toxicity Test Results

Tests were performed July 17 - 24, 2007.

Ceriodaphnia dubia chronic screening bioassay – No Result*

Pimephales promelas chronic screening bioassay – NOEC, < 100% sample

The bioassay samples showed toxicity to the *Pimephales promelas* test organisms, producing 12.5% mortality in the 100% sample concentration within the seven day test period. The *Ceriodaphnia dubia* test

was invalidated due to insufficient reproduction in the test controls and in the concurrent chronic SRT during the test period.

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

Algal Growth Potential

The effluent Algal Growth Potential (AGP) was 41.5 mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. Raschke and Shultz (1987) found that AGP values above 5.0 mg dry weight/L represent a “problem” threshold for fresh receiving waters, implying nutrient enrichment. The analytical chemistry suggests that the effluent is nitrogen-limited. The predicted AGP based on inorganic nitrogen concentrations was 20.5 (±20%) mg dry wt/L (Table 1; Miller et al. 1978).

See Table 1 for AGP results.

Chemistry Results

Total residual chlorine (TRC) was reported by the facility on July 16, 2007, as 1.55 mg/L in the effluent after chlorination but prior to dechlorination. This was not a violation of the permit limit (≥ 0.5 mg/L) for disinfection. TRC and total ammonia were not detected in any of the three bioassay samples (collected on July 16, 18 and 20, 2007, respectively) in the laboratory. The total ammonia concentration in the sample collected on July 16, 2007, and preserved for chemical analysis was 0.029 mg/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was < 0.02 mg/L.

Cadmium, copper, iron, lead and zinc were detected in the effluent at levels that comply with Class III fresh water quality criteria (62-302.530, F.A.C.); however, in the duplicate effluent sample, cadmium (0.53 µg/L) and lead (4.9 µg/L) exceeded their respective Class III freshwater criterion of ≤ 0.3 µg/L for cadmium (62-302.530 (15), F.A.C.) and ≤ 3.7 µg/L for lead (62-302.530 (39), F.A.C.) Nickel was detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL). Aluminum was 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 samples collected from the EFD-01 NPDES sampling point for Outfall D-001 for this facility on July 16, 18 and 20, 2007, were toxic to the *Pimephales promelas* test organisms during the chronic screening bioassays. The *Ceriodaphnia dubia* chronic bioassay was invalidated due to insufficient reproduction in the controls and the concurrent SRT. The effluent AGP result exceeded the "problem” threshold for fresh receiving waters. Effluent cadmium and lead exceeded their respective Class III freshwater quality criteria.

Literature Cited

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

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

Table 1. Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN) and total nitrogen (TN) limitation of the freshwater species *Pseudokirchneriella subcapitata* and ratios of nitrogen to phosphorus for samples collected from the City of Quincy Wastewater Treatment Plant on July 16, 2007.

City of Quincy WWTP					
Location	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (TN) ± 20%	Inorganic N:P ratio	Total N:P ratio
Effluent	41.5	20.5 ± 4.1	46.7 ± 9.3	1.9	3.4

Table 2. Effluent limits, Class III Freshwater Criteria and chemical and microbiological data for samples collected from the City of Quincy WWTP on July 16, 2007.

City of Quincy WWTP NPDES# FL0029033	Class III Stds	Effluent Limits	Effluent	Effluent Duplicate
Organic Constituents (µg/L)				
None Detected	-	-	-	-
Metals (µg/L unless otherwise noted)				
Aluminum	-	-	42	48
Arsenic	≤ 50	-	0.5 U	0.5 U
Cadmium	≤ 0.3 b	-	0.29	0.53
Calcium (mg/L)	-	-	35.3	35.7
Chromium-III	≤ 94.9 b	-	1 U	1 U
Copper	≤ 10.3 b	-	7.29	7.72
Iron	≤ 1,000	-	23	23
Lead	≤ 3.7 b	-	2.38	4.9
Magnesium (mg/L)	-	-	5.9	6
Nickel	≤ 57.6 b	-	1.5 I	1.2 I
Selenium	≤ 5.0	-	0.5 U	0.5 U
Silver	≤ 0.07	Report	0.025 U	0.025 U
Zinc	≤ 132.3 b	-	64	66
Nutrients (mg/L)				
Ortho-phosphate	-	-	0.28 A	0.27
Total Phosphorus	-	2 s	0.36	0.45
Total Ammonia	-	-	0.029	0.03
Un-ionized Ammonia	≤ 0.02 s	-	≤ 0.02 c	≤ 0.02 c
Nitrate and Nitrite	-	-	0.51	0.61
Total Kjeldahl Nitrogen	-	-	0.72	0.75
Organic Nitrogen	-	-	0.691 c	0.72 c
Total Nitrogen	-	6 s	1.23 c	1.36 c
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 5.0	≥ 5.0 s	9.4	9.4
pH (SU)	6.0 - 8.5	6.0 - 8.5 s	7.1	7.1
Conductivity (µmhos/cm)	≤ 1,275	-	479	479
Temperature °C	-	-	27.8	27.8
Total Residual Chlorine (mg/L)	≤ 0.01	≤ 0.01 s	1.55*	1.55*
Chlorophyll a (µg/L)	-	-	0.74	-
Phaeophytin (µg/L)	-	-	0.24 U	-
Total Suspended Solids (mg/L)	-	10 s	4 U	-
CBOD, 5 day (mg/L), N - inhibited	-	10 s	1.1 I	-
Flow (MGD)	-	1.5 m	1.5 m	0.794 a
Hardness (mg $CaCO_3$)	-	-	112.44 c	113.85 c
Microbiology (Number of counts/100ml)				
Fecal Coliforms	≤ 800 s	≤ 800 s	4 B	-
Total Coliforms	-	-	8 B	-

Value exceeds the Class III Water Quality Criteria or permit limits

a - Annual average
b - Value is calculated based on hardness
c - Value is calculated
m - monthly average daily flow
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
* - Value complies with permit requirement for NPDES sampling point EFA-01

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2007-06-25-11
City of Quincy STP

Requester: Shannan Bogdanov
Field Report Prepared By: Joy Jackson
Collected By: Joy Jackson
Send Final Report To Greg Smith
Sampling Agency: FDEP Biology Section

Customer: NW-DIST
Project ID: FYI3
PMAS: 1143

Lab ID *	Location: Quincy WWTP			☒ Comp ☐ Grab	Collection (begin) Date 7/15/07 Time 0900 Eastern Central	Collection (end) Date 7/16/07 Time 0900 Eastern Central	Bottle Group(s)**		
	Field ID: Quincy WWTP			Tot Res Chlorine (mg/L): 1.55	Diss Oxygen (mg/L): 9.4	Storet Station Number	A		
	Matrix (Include type e.g. Salt, Fresh, etc	Temp (C): 27.8	pH: 7.1	Sample Depth: ☒ m ☐ ft 0.1	479	☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm)	NPDES Number: FL0029033		
	Latitude o ' "	Longitude o ' "		Comments: BSX-CS-FCD, BSX-CS-FPS, BOD-INHB, W-TSS, W-NH3 N-NO2NO3 WTKN NTP					
Lab ID *	Location: Quincy WWTP			☐ Comp ☒ Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**		
	Field ID: Quincy WWTP			Tot Res Chlorine (mg/L): 1.55	Diss Oxygen (mg/L): 9.4	Storet Station Number	A		
	Matrix (Include type e.g. Salt, Fresh, etc	Temp (C): 27.8	pH: 7.1	Sample Depth: ☒ m ☐ ft 0.1	479	☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm)	NPDES Number: FL0029033		
	Latitude o ' "	Longitude o ' "		Comments					
Lab ID *	Location: Quincy WWTP - DUP			☐ Comp ☒ Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**		
	Field ID: Quincy WWTP - DUP			Tot Res Chlorine (mg/L): 1.55	Diss Oxygen (mg/L): 9.4	Storet Station Number	B		
	Matrix (Include type e.g. Salt, Fresh, etc	Temp (C): 27.8	pH: 7.1	Sample Depth: ☒ m ☐ ft 0.1	479	☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm)	NPDES Number: FL0029033		
	Latitude o ' "	Longitude o ' "		Comments: DUPLICATES					
Lab ID *	Location			☐ Comp ☐ Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**		
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number			
	Matrix (Include type e.g. Salt, Fresh, etc	Temp (C)	pH	Sample Depth: ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number		
	Latitude o ' "	Longitude o ' "		Comments					

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
Joy Jackson	7/16/07	HAND DELIVERED	Tom. B	07/16/07 11:13				

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2007-06-25-11
City of Quincy STP

Customer: NW-DIST

Project ID: FYI3

PMAS: 1143

Requester: Shannan Bogdanov

Collected By: Jay Jackson

Sampling Agency: FDEP Biology Section

Field Report Prepared By: Jay Jackson

Send Final Report To Greg Smith

Lab ID *	Location / Field ID	Collection (begin)	Collection (end)	Bottle Group(s)**
	Location: Quincy WWTP Field ID: Quincy WWTP	☒ Comp ☐ Grab Date 7/17/07 Time 0900 (Eastern) Central	Date 7/18/07 Time 0900 (Eastern) Central	A
	Matrix (Include type e.g. Salt, Fresh, etc) / Temp (C) / pH	Tot Res Chlorine (mg/L) / Diss Oxygen (mg/L)	Storet Station Number	
	Latitude o ' " . / Longitude o ' " .	Sample Depth ☐ m ☐ ft ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number	
		Comments: BST-CS-FCD + BST-CS-FFS ONLY - RENEWAL		

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

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

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

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
			KW	7/18/07 0945A				

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2007-06-25-11
City of Quincy STP

Customer: NW-DIST
Project ID: FYI3
PMAS: 1143

Requester: Shannan Bogdanov
Collected By: Blake Spencer
Sampling Agency: FDEP

Field Report Prepared By: Blake Spencer
Send Final Report To Greg Smith

Lab ID *	Location	Comp / Grab	Collection (begin) Eastern Central	Collection (end) Eastern Central	Bottle Group(s)**
	Quincy Wastewater Treatment Plant	☑ Comp ☐ Grab	Date 7/19/07 Time 9:00am	Date 7/20/07 Time 9:00am	A
	Field ID: Quincy Wastewater Treatment Plant	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc) / Temp (C) / pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number	
	Latitude o ' " . / Longitude o ' " .	Comments: BSY-CS-FCO BSY-CS-FFS			

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

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

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

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
Blake Spencer	7-20-07 1105	Hand Delivered	M. Faircloth	7/20/07 1405	M. Faircloth	7-23-07 1245		

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

Temperature 2.6°C mf

last revised October 1, 2003

Appendix B. Bench Sheets

FDEP Biology Laboratory - Chronic Screen Bench Sheet

Ceriodaphnia dubia

Facility: City of Quincy STP
Address: 300 North E. F. & A. Drive
County: GADSDEN
NPDES Permit #: FL 0029033
Contact/District: Jay Jackson (FDEP) Hiram Britt / NORTHWEST (central lab)

LIMS entry: 7/31/07 MF verified: 7/31/07

Diluent/ Batch: 20% DMW / 7-17-07 Test Days Used: 0 R 7
20% DMW /_____ Test Days Used: _____

SOP#: TA07_05 EPA 821-R-02-013 Method 1002.0

Start Date: 7-17-07 Time: ~~14 50~~ 12:50 BA
End Date: 7-25-07 Time: 1400

Organism: *Ceriodaphnia dubia*
Organism Batch #: 24-07
Organism age : <24 hours
Feeding: Prior to Test and Daily
Food: YCT *P. subcapitata*
Food Batch: 1-7-07 1-07
Chamber size : 30 ml
Sample volume : 20 ml

Sample Received	Lab Sample #	LIMS Job #	LIMS Sample #	Collection Date/Time	Received Date/Time
Test Day 0	1	TLH-2007-07-16-05	1026050	7-16-07 0900	7-16-07 1310
Test Day 2	2	TLH-2007-07-18-61	1027319	7/17/07 0900	7/18/07 1510
Test Day 4	3	TLH-2007-07-20-03	1028372	7/20/07 0935	7/20/07 1405

Water Quality Parameters	Field Chlorine (mg/L)			Lab Chlorine (mg/L)			Alkalinity (mg/L as $CaCO_3$)		
Lab Sample #:	1	2	3	1	2	3	1	2	3
Sample:	1.55 (A)	Not measured	Not measured	<0.03	<0.03	<0.03	127	135	126
Diluent/Control:				<0.03	<0.03	<0.03	84	84	84
Method:	Facility Rep	—	—	Hach	Hach	Hach	Hach	Hach	Hach
Measured by:	Plant Operator	—	—	~~PPV~~	~~PPV~~	MF	~~PPV~~	~~PPV~~	BA
Verified by:	MF	MF	MF	MF	MF	BA	MF	MF	MF
	Conductivity (circle one) (µmhos-cm) (mmhos-cm)			Ammonia (mg/L)			Hardness (mg/L as $CaCO_3$)		
Lab Sample #:	1	2	3	1	2	3	1	2	3
Sample:	482	476	485	<0.017	<0.017	<0.017	119	117	133
Diluent/Control:	178	178	178	<0.017	<0.017	<0.017	89	89	89
Method:	Mettler	Mettler	Mettler	Denver	Denver	Denver	Hach	Hach	Hach
Measured by:	BA	BA	BA	MF	BA	MF	~~PPV~~	~~PPV~~	BA
Verified by:	MF	MF	MF	~~PPV~~	MF	~~MF~~ MF	MF	MF	MF

witnessed 7/20/07

Temperature Shipped ≤6° C (all samples) (yes) no
Holding Time ≤36 hours (yes) no
Light Intensity : 50 - 100 ft. candles
Photoperiod : 16 light 8 dark
Temperature Range °C:
Incubator # 2 min. 24.2 max. 25.3 mean 24.8
Room B246 min. 24.1 max. 26.5 mean 25.7

Test Replicate	Loaded from culture vial
1	A3
2	A4
3	A8
4	B5
5	B4
6	B21
7	B22
8	B18
9	B21
10	B29

Statistics NA: NO Result	
Control % CV:	
Dunnetts PMSD:	
Reproduction NOEC:	
Survival NOEC:	
T-test value	
T- table value:	
df:	

Investigators' signatures
James Daniel
Brad Abraham
Marshall Faircloth
Patsy Vickers
Nijole Wellendorf
REVIEWER

Comments:
Test reported as No Result due to reproduction (insufficient). See NCR 2565. MF 7-31-07
(A) TRC from Chlorine Contact chamber NOT after Dechlorinator. confirmed by J. Jackson 8-2-07 MF

Test Page 1 of 3

PAGE 000013

revised 08/24/06 MF/SP

FDEP Biology Laboratory - Chronic Screen Bench Sheet

Ceriodaphnia dubia Survival and Reproduction

Facility: CITY OF QUincy STP

LIMS Sample # 102605D for lab sample 1

Start Date: 7/17/07 Time: ~~14:50~~ 12:50 BA

End Date: 7-25-07 Time: 1400

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total Neonates	Surviving adults	Neonates per adult
Control	0*												16	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	0	0	0	0	0	0	0	0	0	0	0	10	0
	4	0	0	0	0	0	0	0	0	0	0	0	10	0
	5	0	0	0	0	0	0	0	0	0	0	0	10	0
	6	~~1~~0	0	0	0	0	0	0	0	0	0	1	10	0.1
	7	0	0	0	2	0	0	1	2	3	2	10	10	1.0
	8	8	7	4	9	2	3	2	0	0	0	35	10	3.5
	Total	9	7	4	11	2	3	3	2	3	2	46	10	4.6

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total Neonates	Surviving adults	Neonates per adult
% sample	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	0	0	0	0	0	0	0	0	0	0	0	10	0
	4	0	1	0	0	0	0	0	0	0	0	1	10	0.1
	5	0	0	~~2~~ 0	0	~~2~~ 0	0	0	0	0	0	4	10	0.4
	6	~~1~~0	0	~~1~~0	0	0	0	0	0	0	0	6	10	0.6
	7	2	X	0	4	6	7	5	0	4	2	30	9	3.0
	8	0	-	0	9	10	0	1	11	10	0	41	9	4.1
	Total	3	1	3	15	20	7	6	11	14	2	82	9	8.2

Organisms loaded by: BA	
Day	Counted/ verified by:
0	JD
1	BA
2	BA
3	BA
4	BA
5	MF
6	MF
7	MF
8	MF

Concentration	Mean neonates /adult	% survival
Control	4.6	100 %
100%	8.2	90 %

Test acceptability	
Mean control reproduction 15/female	yes (no)
3rd brood in 60% of surviving females	yes (no)
Control survival ≥80%:	(yes) no

Comments: TEST reported as No Result due to insufficient reproduction in the controls. See NCR 2565. MF 7-31-07

*Day 0 is test initiation day

X = Dead (original organism)

Revised 09/01/06 MF/SP

Appendix B. (continued)

FDEP Biology Laboratory - Chronic Screen Bench Sheet

Ceriodaphnia dubia Parameters

Facility: CITY OF GLENWOOD STP

LIMS Sample # : 1026050 for lab sample 1

Circle µmhos-cm or mmhos-cm

Test Day ↓		Concentration	New Sample: Test Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity (µmhos/cm) (mmhos/cm)	Old Sample: Test Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity (µmhos/cm) (mmhos/cm)
Day 0	sample:	Control	M	8.1	24.1	7.5	178					
	1	100%	M	7.8	24.0	8.3	481					
	Measured by:			BA	BA	BA	BA					
	Recorded by:			BA	BA	BA	BA					
Day 1	sample:	Control	M	8.1	24.1	8.0	176	M	8.0	24.2	7.7	180
	1	100%	M	7.8	24.3	8.1	481	M	8.3	24.5	7.8	485
	Measured by:			BA	BA	BA	BA		BA	BA	BA	BA
	Recorded by:			BA	BA	BA	BA		BA	BA	BA	BA
Day 2	sample:	Control	M	8.0	24.6	7.3	177	M	8.1	24.4	7.7	188
	2	100%	M	7.5	25.1	8.3	471	M	8.3	24.5	7.5	537
	Measured by:			BA	BA	BA	BA		BA	BA	BA	BA
	Recorded by:			BA	BA	BA	BA		BA	BA	BA	BA
Day 3	sample:	Control	M	8.1	24.0	8.0	178	M	7.9	24.0	7.6	185
	2	100%	M	7.9	24.4	8.7	464	M	8.3	24.0	7.4	481
	Measured by:			BA	BA	BA	BA		BA	BA	BA	BA
	Recorded by:			BA	BA	BA	BA		BA	BA	BA	BA
Day 4	sample:	Control	M	8.1	24.0	7.6	177	M	8.1	24.5	7.5	275
	3	100%	M	7.7	24.1	8.2	463	M	8.2	24.0	7.7	482
	Measured by:			BA	BA	BA	BA		BA	BA	BA	BA
	Recorded by:			BA	BA	BA	BA		BA	BA	BA	BA
Day 5	sample:	Control	M	8.0	24.4	7.9	182	M	8.1	25.2	8.1	197
	3	100%	M	7.7	24.8	8.1	477	M	8.4	25.1	7.8	433
	Measured by:			MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:			MF	MF	MF	MF		MF	MF	MF	MF
Day 6	sample:	Control	M	8.2	24.8	7.5	179	M	8.1	24.0	7.1	190
	3	100%	M	7.8	24.9	7.9	474	M	8.4	24.2	7.4	486
	Measured by:			MF	MF	MF	MF		BA	BA	BA	BA
	Recorded by:			MF	MF	MF	MF		BA	BA	BA	BA
Day 7	sample:	Control	M	8.0	24.6	7.0	181	M	8.1	25.0	7.4	197
	3	100%	M	7.9	24.4	7.4	473	M	8.5	25.1	7.6	479
	Measured by:			BA	BA	BA	BA		BA	BA	BA	BA
	Recorded by:			BA	BA	BA	BA		BA	BA	BA	BA
Day 8	sample:	Control						M	8.2	24.9	7.5	192
	3	100%						M	8.5	24.9	7.8	470
	Measured by:								MF	MF	MF	MF
	Recorded by:								MF	MF	MF	MF

Comments:

Replicate M= "Metered" vial, a surrogate vial for parameters

Test Page 3 of 3 PAGE 000015 revised 08/24/06 MF/SP

FDEP Biology Laboratory - Chronic Screen Bench Sheet

Pimphales promelas or *Menidia beryllina*

Facility: City of Quincy STP
Address: 300 North G. F. A. Drive
County: Gadsden
NPDES Permit #: FL0029033
Contact/District: Joy Jackson / Gbrandhurst / Northwest FDEP Gaulab,

Test Species (circle one)
P. promelas SOP#: TA07_09 EPA-821-R-02-013 Method 1000.0
M. beryllina SOP#: TA07_14 EPA-821-R-02-014 Method 1006.0

Start Date: 7/31/07 Time: 1330
End Date: 7-24-07 Time: 1100

Diluent/ Batch: MHW / 7-19-07 Test Days Used: 0-6
MHW / Test Days Used:
ASW / Test Days Used:
ASW / Test Days Used:

Organism age : 1 days
Feeding Prior to Test and Daily
Artemia Lot # 256 536 90
Chamber size : 1000 ml
Test volume : 500 ml

Artemia Batch #			
Day 0	167-07	Day 4	111-07
Day 1	168-07	Day 5	112-07
Day 2	169-07	Day 6	113-07
Day 3	110-07		

LIMS:	Date	Initials
Entry:	7/31/07	MF
Verification:	7/31/07	JD

Sample Received	Lab Sample #	LIMS Job #	LIMS Sample #	Collection Date/Time	Received Date/Time
Test Day 0	1	TLH-20070731-05	1027550	7/30/07 0800	7/31/07 1310
Test Day 2	2	TLH-20070801-02	1027319	7/31/07 0800	7/31/07 1310
Test Day 4	3	TLH-20070802-03	1027512	7/2/07 0835	7/2/07 1105

Water Quality Parameters	Field Chlorine (mg/L)			Lab Chlorine (mg/L)			Alkalinity (mg/L as $CaCO_3$)			Hardness (mg/L as $CaCO_3$)		
Lab Sample #:	1	2	3	1	2	3	1	2	3	1	2	3
Sample:	1.55 (A)	mf measured	mf measured	<0.03	<0.03	<0.03	127	135	mf calc 126	119	117	mf calc 133
Diluent/Control:				<0.03	<0.03	<0.03	80	80	mf calc 78	94	94	mf 93
Method:	Facility Method	—	—	Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach
Measured by:	Plant Operator	—	—	PW	PW	MF	PW	PW	PW/PB	PW	PW	PB/PW
Verified by:	MF	MF	MF	BR	PB	PW	MF	MF	MF	MF	MF	MF

	Conductivity (circle one) (µmhos-cm mmhos-cm)			Ammonia (mg/L)			Salinity (ppth)		
Lab Sample#:	1	2	3	1	2	3	1	2	3
Sample:	482	476	485	<0.051	<0.051	<0.051	—	—	—
Diluent/Control:	325	325	325	<0.051	<0.051	<0.051	—	—	—
Method:	Mettler	Mettler	Mettler	Denver	Denver	Denver	Mettler	Mettler	Mettler
Measured by:	JD	JD	JD	MF	MF	MF	—	—	—
Verified by:	MF	MF	MF	PW	PW	PW	—	—	—

Temperature Shipped ≤6° C (all samples) (yes) no
Holding Time ≤36 hours (yes) no
Light Intensity : 50 - 100 ft candles
Photoperiod : 16 light 8 dark
Temperature Range °C:
Incubator # 2 min 24.2 max 25.3 mean 24.8 JD
Water bath # min max mean
Room B246 min 24.9 max 26.5 mean 25.7

Investigators' signatures
Joan Darish
Bruce Fulcher
Betsy Lilliott S
Marshall Faircloth

REVIEWER

Statistics	
Control %cv:	4.06%
Dunnetts PMSD:	6.83%
Survival NOEC:	100%
Survival LOEC:	>100%
Growth NOEC:	100%
Growth LOEC:	>100%

Comments: (A) TRC from chlorine contact chamber, at effl. dechlorination, confirmed by J. Jackson 8-2-07 MF

revised 3/13/07 MF

FDEP Biology Laboratory - Chronic Screen Bench Sheet

Pimphales promelas or Menidia beryllina Survival

Facility: ~~Panama~~ City Beach ~~Quincy~~ Organism: (*P. promelas*) *M.beryllina* (circle one)

LIMS Sample Number: 102650 for lab sample #1

Start Date: 7-17-07 Time: 1330

End Date: 7-24-07 Time: 1100

			TEST DAY							
Concentration	Replicate		0	1	2	3	4	5	6	7
Control	A	B17	10	10	10	10	10	10	10	10
	B	B18	10	10	10	10	10	10	10	10
	C	B19	10	10	10	10	10	10	10	10
	D	B20	10	10	10	10	10	10	10	10
100 % sample concentration	A	B21	10	10	10	10	10	10	10	10
	B	B22	10	10	10	9	8	8	8	8
	C	B23	10	10	9	9	9	8	8	8
	D	B24	10	10	10	9	9	9	9	9
Control	A		10							
	B		10							
	C		10							
	D		10							
% sample concentration	A		10							
	B		10							
	C		10							
	D		10							
Loaded by:	Checked by:		[redacted]	DC	DC	DD	MF	DD	DD	DD
Verified by:										

Comments: Fish 7 day survival T-Test value GdF = 1.5430 critical t-value: 2.7638
Control mean (1.0) 100% mean (0.875)

Appendix B. (continued)

Biology Laboratory Chronic Screening Bioassay Benchsheet

Parameters

P. promelas SOP TA-07_09 *M. beryllina* SOP TA-07_14

Sample Source: City of Quincy STP

LIMS Sample #: 1026C5C (for Lab sample #1)

Test Day			Old Sample						New Sample					
			Test	pH	Temp	DO	Cond (µmhos/cm)	Salinity	Test	pH	Temp	DO	Cond (µmhos/cm)	Salinity
↓		Conc.	Rep.	(su)	(°C)	(mg/L)	(mmhos/cm)	ppth	Rep.	(su)	(°C)	(mg/L)	(mmhos/cm)	ppth
Day 0	sample:	Control							A	8.0	24.7	7.8	326	0.03
	1	100%							A	7.7	24.7	8.4	480	0.16
	Measured by:									JD	JD	JD	JD	JD
	Recorded by:									JD	JD	JD	JD	JD
Day 1	sample:	Control	B	8.1	24.4	7.5	336	0.03	B	8.1	24.2	7.6	339	0.03
	1	100%	B	7.9	24.3	7.1	497 ~~346~~	0.17 ~~0.12~~	B	7.8	24.5	8.2	496	0.13
	Measured by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
Day 2	sample:	Control	C	7.4	25.0	7.1	338	0.04	C	8.0	24.6	7.3 Ⓐ	~~337~~ 371	0.11
	2	100%	C	7.9	25.3	7.2	493	0.17	C	7.9	24.6	~~8.1~~	~~441~~	0.17
	Measured by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
Day 3	sample:	Control	D	7.8	24.4	6.8	369	0.13	D	8.0	24.7	7.6	329	0.09
	2	100%	D	8.0	24.5	6.8	491	0.17	D	7.8	24.7	8.6	474	0.16
	Measured by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
Day 4	sample:	Control	A	7.6	25.3	6.3	~~347~~	<1 ~~0.04~~	A	7.9	24.7	7.8	337	<1 ~~0.04~~
	3	100%	A	7.7	24.9	6.1	483	<1 ~~0.04~~	A	7.7	24.6	7.8	476	<1 ~~0.04~~
	Measured by:			MF	MF	MF	MF	MF		MF	MF	MF	MF	MF
	Recorded by:			MF	MF	MF	MF	MF		MF	MF	MF	MF	MF
Day 5	sample:	Control	B	7.7	24.0	6.0	345	<1	B	7.9	24.2	7.3	336	<1
	3	100%	B	7.7	24.3	6.0	492	<1	B	7.7	24.3	7.5	478	<1
	Measured by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
Day 6	sample:	Control	C	7.8	24.1	6.4	341	<1	C	8.0	24.4	7.3	343	<1
	3	100%	C	7.9	24.2	6.3	493	<1	C	7.8	24.3	7.8	495	<1
	Measured by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
Day 7	sample:	Control	D	7.8	24.3	6.6	345	<1						
	3	100%	D	7.9	24.4	6.3	495	<1						
	Measured by:			JD	JD	JD	JD	JD						
	Recorded by:			JD	JD	JD	JD	JD						

Test Rep. = Replicate Record Salinity < 1 if freshwater Circle µmhos-cm or mmhos-cm

Comments: Ⓐ Transcription error J.D. 7.19.07

revised 6/24/05 mf

Appendix B. (continued)

FDEP Biology Laboratory - Chronic Screen Bench Sheet

Facility: City of Gainesville STP

LIMS Sample Number: IC 210050 for lab sample #1

Concentration	Replicate	Pan #	Pan wt. (g)	Pan + Fish (g)	Fish wt. (g)	Original # Fish	Mean wt. (mg)
			mean wt = fish wt divided by 10 convert g to mg: move decimal 3 places to right				
Control	A	297	0.02694	0.03337	0.00643	10	.643
	B	298	0.02537	0.03217	0.00680	10	.680
Ctrl	C	299	0.02519	0.03163	0.00644	10	.644
	D	300	0.02725	0.03361	0.00636	10	.636
100 %	A	301	0.02256	0.02899	0.00643	10	.643
sample	B	302	0.02387	0.03043	0.00656	10	.656
	C	303	0.01342	0.01992	0.00650	10	.650
	D	304	0.02367	0.03172	0.00805	10	.805
Control	A					10	
	B					10	
	C					10	
	D					10	
%	A					10	
sample	B					10	
	C					10	
	D					10	
	Weighed by initials:						

Growth	%CV	PMSD
Control	4.06%	6.73

Growth	Table	Calculated	dF
T-test	1.943 01	0.41545	6

mean control wt = 0.664
mean 100% wt = 0.653

Drying	Enc Incu
Temperature °C:	098°C
Hours:	14

Tare Weighing Date:		Final Weighing Date:		Measured Value		S-weight Value
Tare Pan 1 after Pan 5	0.02626 @	0.02626	S-weights	0.05000	@	0.05000
Tare Pan 1 after Pan 8	0.02623 @	0.02626	at tare	0.05001	@	0.05000
Final Pan 1 after Pan 5	0.03387 @	0.03387	S-weights	0.05000	@	0.05000
Final Pan 1 after Pan 8	0.03387 @	0.03387	at final	0.05003	@	0.05000

Comments:

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Appendix C. SRT Bench Sheets and Statistical Analysis for SRT and Facility Test

Larval Fish Growth and Survival Test-7 Day Survival

Start Date:	7/17/2007	Test ID:	1quincy pp	Sample ID:	FL0029033-NPDES Permit #
End Date:	7/24/2007	Lab ID:	Quincy STP	Sample Type:	EFF1-POTW
Sample Date:		Protocol:	EPAF 94-EPA/600/4-91/002	Test Species:	PP-Pimephales promelas
Comments:	Chronic Screen Quincy STP				

Conc-%	1	2	3	4
D-Control	1.0000	1.0000	1.0000	1.0000
100	1.0000	0.8000	0.8000	0.9000

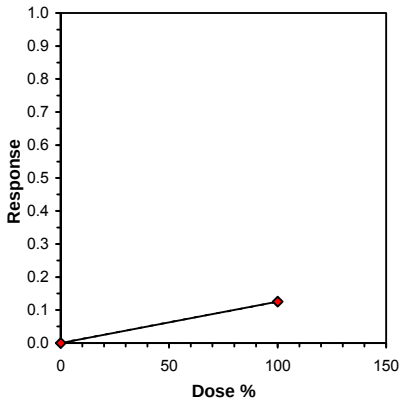
			Transform: Arcsin Square Root					1-Tailed			Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
D-Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	4				1.0000	1.0000
*100	0.8750	0.8750	1.2188	1.1071	1.4120	11.906	4	2.662	1.940	0.1408	0.8750	0.8750

Auxiliary Tests					Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)					0.832951		0.749		0.988445	2.274528
Equality of variance cannot be confirmed										
Hypothesis Test (1-tail, 0.05)	**NOEC**	**LOEC**	**ChV**	**TU**	**MSDu**	**MSDp**	**MSB**	**MSE**	**F-Prob**	**df**
Dunnett's Test	<100	100			0.062076	0.063668	0.074634	0.01053	0.037409	1, 6
Treatments vs D-Control										

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL(Exp)	Skew
IC05*	40.000			
IC10*	80.000			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			

* indicates IC estimate less than the lowest concentration



Appendix C. (continued)

Larval Fish Growth and Survival Test-7 Day Survival

Start Date:	7/17/2007	Test ID:	1quincy pp	Sample ID:	FL0029033-NPDES Permit #
End Date:	7/24/2007	Lab ID:	Quincy STP	Sample Type:	EFF1-POTW
Sample Date:		Protocol:	EPAF 94-EPA/600/4-91/002	Test Species:	PP-Pimephales promelas
Comments:	Chronic Screen Quincy STP				

Conc-%	1	2	3	4
D-Control	1.0000	1.0000	1.0000	1.0000
100	1.0000	0.8000	0.8000	0.7000

			Transform: Arcsin Square Root					1-Tailed		
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD
D-Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	4			
*100	0.8250	0.8250	1.1544	0.9912	1.4120	15.615	4	2.859	2.353	0.2121

Auxiliary Tests	Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.792104		0.749		1.454107	4.163051
Equality of variance cannot be confirmed						
Hypothesis Test (1-tail, 0.05)	**MSDu**	**MSDp**	**MSB**	**MSE**	**F-Prob**	**df**
Heteroscedastic t Test indicates significant differences	0.106365	0.109092	0.132766	0.016247	0.028853	1, 6
Treatments vs D-Control						

Appendix C. (continued)

Larval Fish Growth and Survival Test-7 Day Growth

Start Date:	7/17/2007	Test ID:	1quincy pp	Sample ID:	FL0029033-NPDES Permit #
End Date:	7/24/2007	Lab ID:	Quincy STP	Sample Type:	EFF1-POTW
Sample Date:		Protocol:	EPAF 94-EPA/600/4-91/002	Test Species:	PP-Pimephales promelas
Comments:	Chronic Screen Quincy STP				

Conc-%	1	2	3	4
D-Control	0.6930	0.6800	0.6440	0.6380
100	0.6430	0.6160	0.6500	0.7050

			Transform: Untransformed					1-Tailed		
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD
D-Control	0.6638	1.0000	0.6638	0.6380	0.6930	4.055	4			
100	0.6535	0.9846	0.6535	0.6160	0.7050	5.713	4	0.445	1.943	0.0447

Auxiliary Tests	Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.955883		0.749		0.607341	-0.56464
F-Test indicates equal variances (p = 0.60)	1.924289		47.46723			
Hypothesis Test (1-tail, 0.05)	**MSDu**	**MSDp**	**MSB**	**MSE**	**F-Prob**	**df**
Homoscedastic t Test indicates no significant differences	0.044713	0.067365	0.00021	0.001059	0.671616	1, 6
Treatments vs D-Control						

Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or *Menidia beryllina*

Test Species (circle one)

(*P. promelas*)	SOP#: TA07_09	EPA-821-R-02-013	Method 1000.0
M. beryllina	SOP#: TA07_14	EPA-821-R-02-014	Method 1006.0

Diluent/ Batch: MHW1 7-14-07 Test Days Used: mf 0-6.5

Diluent/ Batch: 7-18-07 Test Days Used: mf 7-6

Toxicant/ Batch # : 7-14-07

Artemia Lot # : GSL53690

Start Date: 7-17-07 Time: 13:30

End Date: 7-24-07 Time: 1100

Organism Batch #/ Age: 7-17-07 / 1 Day/24hours

Artemia Batch #		
Day 0 107-07	Day 2 109-07	Day 5 112-07
Day1 108-07	Day 3 110 07	Day 6 113-07
	Day 4 111 mf 07	

Chamber size : 1000 ml

Test volume : 500 ml

Feeding: *P. promelas* 0.15 g wet wt. 2X day 6 hour interval

M. beryllina 0.10 g wet wt days 0-2 0.15g wet wt. days 3-7

Water Quality Parameters	Diluent 7-14-07	Diluent 7-18-07 (or other)	Method	Measured by	Verified by
Total Residual Cl_2 (mg/L):	<0.03	<0.03	HACH	PRV	JJ
Alkalinity (mg/L as $CaCO_3$):	80	78	HACH	PRV	JJ
Hardness (mg/L as $CaCO_3$):	94	93	HACH	PRV	JJ
Total Ammonia (mg/L as N):	<0.017	<0.017	DENVER	MF	JJ
Conductivity (umhos-cm) mmhos-cm:	325	335	METTLER	MF TD	MF

Statistics	
Growth NOEC:	mf 0.25
Growth LOEC:	0.5
Growth IC_{20}:	0.3534
Growth IC_{25}:	0.4171
Ctrl % CV:	13.95
Dunnetts PMSD:	27.4
Survival NOEC:	0.25
Survival LOEC:	0.5

Light Intensity : 50 - 100 ft. candles

Photoperiod : 16 light 8 dark

Temperature Range °C:

Incubator # 2 min. 24.2 max. 25.3 mean 24.8

Water bath # ____ min. _____ max. _____ mean _____

Room B246 min. 24.9 max. 26.5 mean 25.7

P. promelas PMSD Bounds for Growth: Lower 12 Upper 30

M. beryllina PMSD Bounds for Growth: Lower 11 Upper 28

Investigators' signatures

James Daniel

Marshall Faircloth

Patsy Michaels

Nicole Wellendorf

REVIEWER

Comments:

Test Page 1 of 6

PAGE 1 000031

revised 8/24/06 MF/SP

Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or Menidia beryllina Survival

Organism: ~~*P. promelas*~~ *M.beryllina* (circle one) D = dead M = missing

Concentration: µg/L (g/L) (circle one)

			TEST DAY							
Concentration	Replicate	Chamber	0	1	2	3	4	5	6	7
Control	A	A1	10	10	9/10	9	9	9	9	9
	B	A2	10	10	10	10	10	10	10	10
	C	A3	10	10	10	10	10	10	9/10	9
	D	A4	10	10	10	10	10	10	10	10
0.0035	A	A5	10	10	10	10	10	10	~~9~~ 10	10
	B	A6	10	10	10	9/10	9	9	9	9
	C	A7	10	10	10	10	10	10	10	10
	D	A8	10	10	10	10	10	10	10	10
0.135	A	A9	10	10	9/10	9	9	9	9	9
	B	A10	10	10	10	10	10	10	10	10
	C	A11	10	10	10	10	10	10	10	10
	D	A12	10	10	10	10	10	10	10	10
0.35	A	A13	10	10	10	9/10	9	9	9	9
	B	A14	10	10	10	10	10	10	10	10
	C	A15	10	10	10	10	10	10	10	10
	D	A16	10	10	10	10	10	10	9/10	9
0.5	A	A17	10	10	10	10	8	8/10	8	8
	B	A18	10	9/10	7/10	6/10	6	4/10	4	4
	C	A19	10	9/10	9	9	3/10	7/10	6/10	5/10
	D	A20	10	10	9/10	9	0	9	9	9
1.0	A	A21	10	1/10	0/10	–	–	–	–	–
	B	A22	10	2/10	2	2	2	0/10	–	–
	C	A23	10	0/10	–	–	–	–	–	–
	D	A24	10	0/10	–	–	–	–	–	–
	A		10							
	B		10							
	C		10							
	D		10							
Loaded by (0 hr): JD		Checked by*:	JD	JD	JD	MF	JD	JD	JD	
		Concentrations prepared by:	JD	JD	JD	MF	JD	JD	JD	

Comments: verified by BA

*verified by for 0 hour

Test Page 2 of 6 PAGE 2 revised 8/24/06 MF/SP

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Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or *Menidia beryllina* Parameters

Start Date: 7.11.07 Time: 13:40 30

End Date: 7-24-07 Time: 1100

Organism: ~~*P. promelas*~~ *M.beryllina* (circle one)

Concentration: µg/L ~~g/L~~ (circle one)

circle µmhos or mmhos

Test Day		Before Renewal					Test Start and After Renewal				
	Concentration	Test Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity µmhos/~~mmhos~~	Test Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity µmhos/~~mmhos~~
Day 0	Control						A	8.1	24.7	7.0	3.325
	.0625						A	8.2	24.8	7.5	0.452
	.125						A	8.2	24.7	7.6	0.638
	.25						A	8.2	24.8	7.8	0.328
	.50						A	8.2	24.8	7.9	0.1335
	1.0						A	8.2	24.9	7.8	2.33
							A				
	Measured by:							JJ	JJ	JJ	JJ
	Recorded by:							JJ	JJ	JJ	JJ
	Concentration	Replicate	pH	Temp	DO	Conductivity	Replicate	pH	Temp	DO	Conductivity
Day 1	Control	B	7.9	24.6	7.5	0.329	B	8.1	24.7	7.9	0.325
	.0625	B	7.8	24.4	6.9	0.453	B	8.1	24.7	7.8	0.464
	.125	B	7.8	24.4	6.6	0.641	B	8.1	24.6	7.7	0.605
	.25	B	7.8	24.3	6.7	0.324	B	8.1	24.6	7.7	0.353
	.5	B	7.8	24.3	6.9	1.32	B	8.1	24.6	7.7	1.32
	1.0	B	7.8	24.2	6.8	2.34	B	8.1	24.6	7.6	2.33
		B					B				
	Measured by:		JJ	JJ	JJ	JJ		JJ	JJ	JJ	JJ
	Recorded by:		JJ	JJ	JJ	JJ		JJ	JJ	JJ	JJ
	Concentration	Replicate	pH	Temp	DO	Conductivity	Replicate	pH	Temp	DO	Conductivity
Day 2	Control	C	7.7	24.7	6.4	0.336	C	8.0	24.4	7.3	0.333
	.0625	C	7.7	24.8	6.6	0.482	C	8.1	24.8	7.4	0.473
	.125	C	7.5	24.6	4.9	0.629	C	8.0	24.8	7.3	0.612
	.25	C	7.7	24.6	6.7	0.833	C	8.1	24.7	7.4	0.867
	.5	C	7.7	24.8	6.7	1.36	C	8.0	24.7	7.5	1.36
	1.0	~~D~~ C	7.7	24.7	6.6	2.34	~~D~~ C	8.1	24.9	7.7	2.38
		C					C				
	Measured by:		JJ	JJ	JJ	JJ		JJ	JJ	JJ	JJ
	Recorded by:		JJ	JJ	JJ	JJ		JJ	JJ	JJ	JJ
	Concentration	Replicate	pH	Temp	DO	Conductivity	Replicate	pH	Temp	DO	Conductivity
Day 3	Control	D	7.8	24.4	6.4	0.341	D	8.1	24.3	7.9	0.332
	.0625	D	7.8	24.3	6.3	0.484	D	8.1	24.5	7.7	0.460
	.125	D	7.8	24.4	6.4	0.629	D	8.1	24.4	7.6	0.599
	.25	D	7.8	24.4	6.4	0.839	D	8.1	24.4	7.7	0.845
	.5	D	7.7	24.4	6.4	1.38	D	8.1	24.4	7.6	1.31
	1.0	~~B~~ D	7.7	24.5	6.3	2.42	~~B~~ D	8.1	24.3	7.5	2.35
		D					D				
	Measured by:		JJ	JJ	JJ	JJ		JJ	JJ	JJ	JJ
	Recorded by:		JJ	JJ	JJ	JJ		JJ	JJ	JJ	JJ

Comments:

Test Page 3 of 6

PAGE 3

revised 8/24/06 MF/SP

Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or *Menidia beryllina* Parameters

Organism: (*P. promelas*) *M. beryllina* (circle one)

Concentration: µg/L (TIC) (circle one)

circle µmhos or mmhos

Test Day		Before Renewal					After Renewal				
	Concentration	Test Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity µmhos/(mmhos)	Test Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity µmhos/(mmhos)
Day 4	Control	A	7.6	25.4	6.3	0.340	A	7.9	24.8	7.2	0.335
	0.0625	A	7.6	25.1	6.6	0.467	A	7.9	24.8	7.5	0.468
	0.125	A	7.6	25.3	6.7	0.610	A	7.9	24.9	7.3	0.596
	0.25	A	7.6	25.2	6.7	0.863	A	7.9	25.0	7.4	0.848
	0.5	A	7.6	25.1	6.7	1.257	A	7.9	25.0	7.1	1.352
	1.0	mix B	7.7	24.8	6.6	2.42	mix B	7.9	24.9	7.1	2.35
		A					A				
	Measured by:		mf	mf	mf	mf		mf	mf	mf	mf
	Recorded by:										
	Concentration	Replicate	pH	Temp	DO	Conductivity	Replicate	pH	Temp	DO	Conductivity
Day 5	Control	B	7.5	24.2	5.5	0.343	B	7.8	24.0	7.3	0.339
	0.0625	B	7.5	24.1	5.7	0.476	B	7.9	24.0	7.3	0.472
	0.125	B	7.5	24.2	5.7	0.655	B	7.8	24.0	7.2	0.590
	0.25	B	7.6	24.3	6.1	0.862	B	7.9	24.1	7.2	0.855
	0.5	B	7.6	24.4	6.2	1.37	B	7.9	24.1	7.3	1.37
	1.0	B	7.5	24.5	5.9	2.38	B	not enough available			
		B					B				
	Measured by:		JD	JD	JD	JD		JD	JD	JD	JD
	Recorded by:		JD	JD	JD	JD		JD	JD	JD	JD
	Concentration	Replicate	pH	Temp	DO	Conductivity	Replicate	pH	Temp	DO	Conductivity
Day 6	Control	C	7.7	24.6	6.2	0.350	C	7.9	24.4	7.4	0.338
	0.0625	C	7.7	24.1	6.6	0.464	C	8.0	24.5	7.5	0.470
	0.125	C	7.6	24.2	6.4	0.616	C	8.0	24.5	7.5	0.596
	0.25	C	7.7	24.3	5.9	0.860	C	8.0	24.5	7.5	0.856
	0.5	C	7.7	24.0	6.6	1.40	C	8.0	24.5	7.4	1.37
		C					C				
		C					C				
	Measured by:		JD	JD	JD	JD		JD	JD	JD	JD
	Recorded by:		JD	JD	JD	JD		JD	JD	JD	JD
	Concentration	Replicate	pH	Temp	DO	Conductivity	Replicate	pH	Temp	DO	Conductivity
Day 7	Control	D	7.8	24.8	6.2	0.335	D				
	0.0625	D	7.7	24.6	6.1	0.473	D				
	0.125	D	7.7	24.7	6.1	0.568	D				
	0.25	D	7.7	24.5	6.1	0.872	D				
	0.5	D	7.7	24.4	6.1	1.37	D				
		D					D				
		D					D				
	Measured by:		JD	JD	JD	JD					
	Recorded by:		JD	JD	JD	JD					

Comments:

Test Page 4 of 6

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Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or *Menidia beryllina* Weights

SOP TA06_21

Organism: (*P. promelas*) *M.beryllina* (circle one)

Concentration: µg/L g/L (circle one)

mean wt = fish wt divided by 10

convert g to mg: move decimal 3 places to right

Concentration	Replicate	Pan #	Pan wt. (g)	Pan + Fish (g)	Fish wt. (g)	Original # of fish	Mean wt. (mg)
Control	A	313	0.02181	0.02541	0.0064	10	.640
	B	314	0.02138	0.02426	0.00788	10	.788
	C	315	0.02157	0.02366	0.00209	10	.209
	D	316	0.02125	0.02709	0.00584	10	.584
.0625	A	317	0.02204	0.02837	0.00631	10	.631
	B	318	0.02213	0.02774	0.00561	10	.561
	C	319	0.02223	0.03001	0.00779	10	.779
	D	320	0.02167	0.02965	0.00758	10	.758
.125	A	321	0.02165	0.02832	0.00667	10	.667
	B	322	0.02150	0.02734	0.00573	10	.573
	C	323	0.02186	0.02820	0.00634	10	.634
	D	324	0.02170	0.02774	0.00604	10	.604
.25	A	325	0.02140	0.02744	0.00604	10	.604
	B	326	0.02078	0.02690	0.00612	10	.612
	C	327	0.02154	0.02824	0.00670	10	.670
	D	328	0.02130	0.02632	0.00502	10	.502
.5	A	329	0.02043	0.02513	0.00470	10	.470
	B	330	0.02110	0.02378	0.00238	10	.238
	C	331	0.02095	0.02459	0.00364	10	.364
	D	332	0.02610	0.02706	0.00646	10	.646
	A					10	
	B					10	
	C					10	
	D					10	
	A					10	
	B					10	
	C					10	
	D					10	
		Weighed by:	PDG	DJ			

Comments:

Note: Pan number (#) refers to actual Pan number.

Test Page 5 of 6 PAGE 5 revised 8/24/06 MF/SP

Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or *Menidia beryllina* QC

SOPs TA07_09, TA07_14 and TA06_21

Empty Pan Weights Date: 6.14.07

	Pan 1 wt.	Pan 1 initial wt.
after Pan 5	0.02626	@ 0.02626
after Pan 10	0.02624	@ 0.02626
after Pan 15	0.02624	@ 0.02626
after Pan 20	0.02624	@ 0.02626
after Pan 25	0.02623	@ 0.02626
after Pan 30	0.02627	@ 0.02626
after Pan 35		@
after Pan 40		@
after Pan 45		@
after Pan 48		@

	Measured Value	S-weight Value
S-weights	0.05005	@ 0.05000
	illegible	@ 0.02000

Fish + Pan Weights Date: 7.26.07

	Pan 1 wt.	Pan 1 initial wt.
after Pan 5	0.02821	@ 0.02821
after Pan 10	0.02821	@ 0.02821
after Pan 15	0.02821	@ 0.02821
after Pan 20	0.02822	@ 0.02821
after Pan 25	0.02821	@ 0.02821
after Pan 30	0.02821	@ 0.02821
after Pan 35		@
after Pan 40		@
after Pan 45		@
after Pan 48		@

	Measured Value	S-weight Value
S-weights	0.01000	@ 0.01000
	0.05003	@ 0.05000

Drying Oven ID: EPA 3400 C

Temperature °C: 65°C

Drying Hours: 10

Note: Pan number (5, 10, etc.) refers to sequence of weighing as actual Pan #s may differ.

Comments:

Test Page 6 of 6 PAGE 6 revised 8/24/06 MF/SP

Appendix C. (continued)

Larval Fish Growth and Survival Test-7 Day Growth

Start Date:	7/17/2007	Test ID:	1julyppsrt	Sample ID:	SRT for PCB and Quincy
End Date:	7/24/2007	Lab ID:	Chronic SRT P. prom. July 17 2	Sample Type:	KCL-Potassium chloride
Sample Date:		Protocol:	EPAFW02-EPA/821/R-02-013	Test Species:	PP-Pimephales promelas
Comments:	Chronic SRT for Panama City Beach and Quincy chronic bioassays				

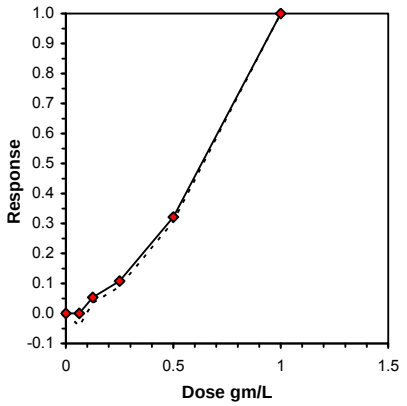
Conc-gm/L	1	2	3	4
D-Control	0.6400	0.7880	0.6090	0.5840
0.0625	0.6340	0.5610	0.7780	0.7580
0.125	0.6670	0.5780	0.6840	0.6040
0.25	0.6040	0.6120	0.6700	0.5020
0.5	0.4700	0.2880	0.3640	0.6960
1	0.0000	0.0000	0.0000	0.0000

			Transform: Untransformed					Isotonic	
Conc-gm/L	Mean	N-Mean	Mean	Min	Max	CV%	N	Mean	N-Mean
D-Control	0.6553	1.0000	0.6553	0.5840	0.7880	13.951	4	0.6690	1.0000
0.0625	0.6828	1.0420	0.6828	0.5610	0.7780	15.112	4	0.6690	1.0000
0.125	0.6333	0.9664	0.6333	0.5780	0.6840	7.960	4	0.6333	0.9466
0.25	0.5970	0.9111	0.5970	0.5020	0.6700	11.697	4	0.5970	0.8924
0.5	0.4545	0.6936	0.4545	0.2880	0.6960	39.045	4	0.4545	0.6794
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	4	0.0000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.975213	0.868	0.634543	0.820416
Bartlett's Test indicates equal variances (p = 0.31)	4.74499	13.2767		

Linear Interpolation (200 Resamples)

Point	gm/L	SD	95% CL(Exp)		Skew
IC05	0.1210	0.0826	0.0000	0.3814	1.3741
IC10	0.2324	0.0970	0.0000	0.4847	0.5696
IC15	0.2997	0.1022	0.0000	0.6481	0.3223
IC20	0.3584	0.0958	0.0971	0.6583	0.3953
IC25	0.4171	0.0911	0.1479	0.6685	0.1173
IC40	0.5584	0.0719	0.3214	0.7200	-0.1760
IC50	0.6320	0.0649	0.3841	0.7667	-0.4063



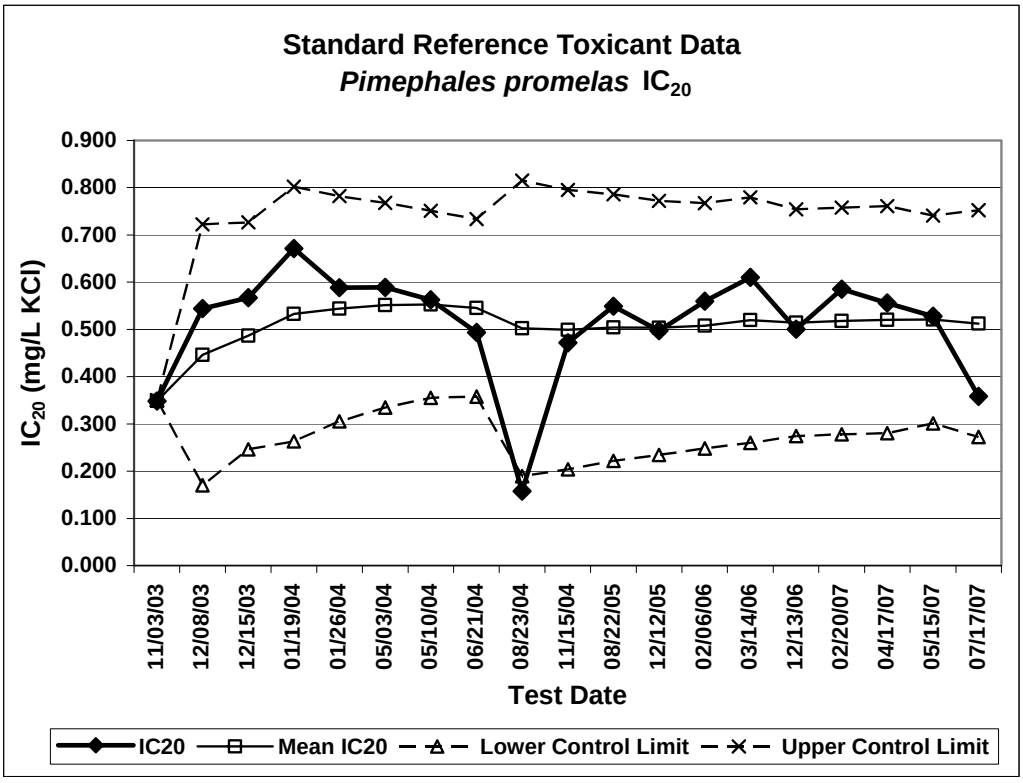
Appendix C. (continued)

Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 7-Day Chronic Toxicity
Pimephales promelas (fathead minnow) - Potassium Chloride (KCl)

Date	IC20	Mean IC20	Std Dev	Lower Control Limit	Upper Control Limit
11/03/03	0.349	0.349	0.35	0.350	0.350
12/08/03	0.544	0.446	0.14	0.170	0.723
12/15/03	0.567	0.487	0.12	0.246	0.727
01/19/04	0.671	0.533	0.13	0.263	0.802
01/26/04	0.588	0.544	0.12	0.305	0.782
05/03/04	0.589	0.551	0.11	0.335	0.768
05/10/04	0.563	0.553	0.10	0.355	0.751
06/21/04	0.494	0.546	0.09	0.358	0.734
08/23/04	0.157	0.503	0.16	0.190	0.815
11/15/04	0.472	0.499	0.15	0.204	0.795
08/22/05	0.549	0.504	0.14	0.222	0.786
12/12/05	0.497	0.503	0.13	0.234	0.772
02/06/06	0.559	0.508	0.13	0.248	0.767
03/14/06	0.610	0.520	0.13	0.260	0.780
12/13/06	0.501	0.514	0.12	0.274	0.754
02/20/07	0.585	0.518	0.12	0.278	0.758
04/17/07	0.556	0.521	0.12	0.281	0.761
05/15/07	0.528	0.521	0.11	0.301	0.741
07/17/07	0.358	0.513	0.12	0.273	0.753

Means are from all SRT tests, up to 20 tests..
Lower Confidence Limit = mean - 2 * Std Dev
Upper Confidence Limit = mean + 2 * Std Dev



Appendix D. Test Organism Receipt

1300 Blue Spruce Drive, Suite C
Fort Collins, Colorado 80524

Toll Free: 800/331-5916
Tel:970/484-5091 Fax:970/484-2514

ORGANISM HISTORY

DATE: 7/16/07

SPECIES: *Pimephales promelas*

AGE: N/A

LIFE STAGE: Embryo

HATCH DATE: 7/16/07

BEGAN FEEDING: N/A

FOOD: N/A

Water Chemistry Record:	Current	Range
TEMPERATURE:	24°C	--
SALINITY/CONDUCTIVITY:	--	--
TOTAL HARDNESS (as $CaCO_3$):	128 mg/l	--
TOTAL ALKALINITY (as $CaCO_3$):	90 mg/l	--
pH:	7.96	--

Comments:

Facility Supervisor

Aquatic BioSystems, Inc • Quality Research Organisms

Appendix E. Chemical Analyses performed on the effluent from the City of Quincy Wastewater Treatment Plant Outfall D001, sampled on July 16, 2007.

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/16/2007 9:00	Effluent	AGP/LN	Algal Growth Potential	41.5		mg DryWt/L	0.3	0.9
7/16/2007 9:00	Effluent	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	1.1	I	mg/L	0.2	2
7/16/2007 9:00	Effluent	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.74	I	ug/L	0.55	1.7
7/16/2007 9:00	Effluent	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.24	U	ug/L	0.24	0.71
7/16/2007 9:00	Effluent	Microbiology	Fecal Coliforms-Membrane Filter	4	B	#/100 mL		
7/16/2007 9:00	Effluent	Microbiology	Total Coliforms-Membrane Filter	8	B	#/100 mL		
7/16/2007 9:00	Effluent	Toxicology	Bioassay-Chronic-Scrn-FW-C.dubia, NOEC	-		NOEC		
7/16/2007 9:00	Effluent	Toxicology	Bioassay-Chronic-Scrn-FW-Fish, NOEC	100		NOEC		
7/16/2007 9:00	Effluent	Metals	Calcium	35.3		mg/L	0.02	0.08
7/16/2007 9:00	Effluent	Metals	Iron	23		ug/L	5	20
7/16/2007 9:00	Effluent	Metals	Magnesium	5.9		mg/L	0.005	0.02
7/16/2007 9:00	Effluent	Metals	Nickel	1.5	I	ug/L	1	4
7/16/2007 9:00	Effluent	Metals	Zinc	64		ug/L	5	20
7/16/2007 9:00	Effluent	Metals	Aluminum	42		ug/L	5	20
7/16/2007 9:00	Effluent	Metals	Arsenic	0.5	U	ug/L	0.5	2
7/16/2007 9:00	Effluent	Metals	Cadmium	0.29		ug/L	0.02	0.08
7/16/2007 9:00	Effluent	Metals	Chromium	1	U	ug/L	1	4
7/16/2007 9:00	Effluent	Metals	Copper	7.29		ug/L	0.25	1
7/16/2007 9:00	Effluent	Metals	Lead	2.38		ug/L	0.2	0.8
7/16/2007 9:00	Effluent	Metals	Selenium	0.5	U	ug/L	0.5	2
7/16/2007 9:00	Effluent	Metals	Silver	0.025	U	ug/L	0.025	0.1
7/16/2007 9:00	Effluent	Nutrients	Ammonia-N	0.029		mg N/L	0.01	0.02
7/16/2007 9:00	Effluent	Nutrients	NO2NO3-N	0.51		mg N/L	0.004	0.01
7/16/2007 9:00	Effluent	Nutrients	O-Phosphate-P	0.28	A	mg P/L	0.008	0.02
7/16/2007 9:00	Effluent	Nutrients	Kjeldahl Nitrogen	0.72		mg N/L	0.08	0.2
7/16/2007 9:00	Effluent	Nutrients	Total-P	0.36		mg P/L	0.02	0.06
7/16/2007 9:00	Effluent	Nutrients	TSS	4	U	mg/L	4	16
7/16/2007 9:00	Effluent	Pesticides	Alachlor	0.6	U	ug/L	0.6	2.4
7/16/2007 9:00	Effluent	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
7/16/2007 9:00	Effluent	Pesticides	Atrazine	0.05	U	ug/L	0.05	0.2
7/16/2007 9:00	Effluent	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.8
7/16/2007 9:00	Effluent	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
7/16/2007 9:00	Effluent	Pesticides	Butylate	0.2	U	ug/L	0.2	0.8
7/16/2007 9:00	Effluent	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/16/2007 9:00	Effluent	Pesticides	Chlorpyrifos Methyl	0.1	U	ug/L	0.1	0.4
7/16/2007 9:00	Effluent	Pesticides	Diazinon	0.05	UJ	ug/L	0.05	0.2
7/16/2007 9:00	Effluent	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
7/16/2007 9:00	Effluent	Pesticides	Ethoprop	0.1	U	ug/L	0.1	0.4
7/16/2007 9:00	Effluent	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
7/16/2007 9:00	Effluent	Pesticides	Fonofos	0.1	U	ug/L	0.1	0.4
7/16/2007 9:00	Effluent	Pesticides	Hexazinone	0.1	U	ug/L	0.1	0.4
7/16/2007 9:00	Effluent	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
7/16/2007 9:00	Effluent	Pesticides	Metalaxyl	0.25	UJ	ug/L	0.25	1
7/16/2007 9:00	Effluent	Pesticides	Metolachlor	0.5	U	ug/L	0.5	2
7/16/2007 9:00	Effluent	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
7/16/2007 9:00	Effluent	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8
7/16/2007 9:00	Effluent	Pesticides	Naled	0.8	UJ	ug/L	0.8	3.2
7/16/2007 9:00	Effluent	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
7/16/2007 9:00	Effluent	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
7/16/2007 9:00	Effluent	Pesticides	Parathion Methyl	0.1	U	ug/L	0.1	0.4
7/16/2007 9:00	Effluent	Pesticides	Phorate	0.05	U	ug/L	0.05	0.2
7/16/2007 9:00	Effluent	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
7/16/2007 9:00	Effluent	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	1,2-Dichlorobenzene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	1,3-Dichlorobenzene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	1,4-Dichlorobenzene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	2,4,6-Trichlorophenol	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	2,4-Dichlorophenol	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	2,4-Dimethylphenol	10	U	ug/L	10	42
7/16/2007 9:00	Effluent	Priority Organic Pollutants	2,4-Dinitrophenol	16	U	ug/L	16	62
7/16/2007 9:00	Effluent	Priority Organic Pollutants	2,4-Dinitrotoluene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	2,6-Dinitrotoluene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	2-Chloronaphthalene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	2-Chlorophenol	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1	U	ug/L	3.1	12
7/16/2007 9:00	Effluent	Priority Organic Pollutants	2-Nitrophenol	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	3,3'-Dichlorobenzidine	42	U	ug/L	42	170
7/16/2007 9:00	Effluent	Priority Organic Pollutants	4,4'-DDD	1.6	U	ug/L	1.6	6.2

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/16/2007 9:00	Effluent	Priority Organic Pollutants	4,4'-DDE	1.6	U	ug/L	1.6	6.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	4,4'-DDT	1.6	U	ug/L	1.6	6.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	4-Chloro-3-methylphenol	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.1	U	ug/L	2.1	8.3
7/16/2007 9:00	Effluent	Priority Organic Pollutants	4-Nitrophenol	16	U	ug/L	16	62
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Acenaphthene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Acenaphthylene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Aldrin	1.6	U	ug/L	1.6	6.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Anthracene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Benzidine	100	UJ	ug/L	100	420
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Benzo(a)anthracene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Benzo(a)pyrene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Benzo(b)fluoranthene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Benzo(g,h,i)perylene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Benzo(k)fluoranthene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.1	U	ug/L	3.1	12
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	16	U	ug/L	16	62
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Butyl benzyl phthalate	5.2	U	ug/L	5.2	21
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Chrysene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Di-n-butyl phthalate	5.2	U	ug/L	5.2	21
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Di-n-octyl phthalate	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Dibenzo(a,h)anthracene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Dieldrin	1.6	U	ug/L	1.6	6.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Diethyl phthalate	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Dimethyl phthalate	52	U	ug/L	52	210
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Endosulfan I	4.2	U	ug/L	4.2	17
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Endosulfan II	4.2	U	ug/L	4.2	17
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Endosulfan sulfate	1.6	U	ug/L	1.6	6.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Endrin	1.6	U	ug/L	1.6	6.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Endrin aldehyde	4.2	U	ug/L	4.2	17
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Fluoranthene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Fluorene	1	U	ug/L	1	4.2

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Heptachlor	1.6	U	ug/L	1.6	6.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Heptachlor epoxide	1.6	U	ug/L	1.6	6.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Hexachlorobenzene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Hexachlorobutadiene	3.1	U	ug/L	3.1	12
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.1	U	ug/L	3.1	12
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Hexachloroethane	3.1	U	ug/L	3.1	12
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Isophorone	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.1	U	ug/L	2.1	8.3
7/16/2007 9:00	Effluent	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1	U	ug/L	2.1	8.3
7/16/2007 9:00	Effluent	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.1	U	ug/L	3.1	12
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Naphthalene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Nitrobenzene	2.1	U	ug/L	2.1	8.3
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Pentachlorophenol	3.1	U	ug/L	3.1	12
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Phenanthrene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Phenol	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	Pyrene	1	U	ug/L	1	4.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	alpha-BHC	1.6	U	ug/L	1.6	6.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	beta-BHC	1.6	U	ug/L	1.6	6.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	delta-BHC	1.6	U	ug/L	1.6	6.2
7/16/2007 9:00	Effluent	Priority Organic Pollutants	gamma-BHC	1.6	U	ug/L	1.6	6.2
7/16/2007 9:00	Effluent	Nutrients	Dissolved Oxygen	9.4		mg/L		
7/16/2007 9:00	Effluent	Nutrients	Sample Depth	0.1		m		
7/16/2007 9:00	Effluent	Nutrients	Specific Conductance	479		umhos/cm		
7/16/2007 9:00	Effluent	Nutrients	Temperature	27.8		C		
7/16/2007 9:00	Effluent	Nutrients	Total Residual Chlorine	1.55		mg/L		
7/16/2007 9:00	Effluent	Nutrients	pH	7.1				
7/16/2007 9:00	Effluent Duplicate	Metals	Calcium	35.7		mg/L	0.02	0.08
7/16/2007 9:00	Effluent Duplicate	Metals	Iron	23		ug/L	5	20
7/16/2007 9:00	Effluent Duplicate	Metals	Magnesium	6		mg/L	0.005	0.02
7/16/2007 9:00	Effluent Duplicate	Metals	Nickel	1.2	I	ug/L	1	4
7/16/2007 9:00	Effluent Duplicate	Metals	Zinc	66		ug/L	5	20
7/16/2007 9:00	Effluent Duplicate	Metals	Aluminum	48		ug/L	5	20
7/16/2007 9:00	Effluent Duplicate	Metals	Arsenic	0.5	U	ug/L	0.5	2
7/16/2007 9:00	Effluent Duplicate	Metals	Cadmium	0.53		ug/L	0.02	0.08

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/16/2007 9:00	Effluent Duplicate	Metals	Chromium	1	U	ug/L	1	4
7/16/2007 9:00	Effluent Duplicate	Metals	Copper	7.72		ug/L	0.25	1
7/16/2007 9:00	Effluent Duplicate	Metals	Lead	4.9		ug/L	0.2	0.8
7/16/2007 9:00	Effluent Duplicate	Metals	Selenium	0.5	U	ug/L	0.5	2
7/16/2007 9:00	Effluent Duplicate	Metals	Silver	0.025	U	ug/L	0.025	0.1
7/16/2007 9:00	Effluent Duplicate	Nutrients	Ammonia-N	0.03		mg N/L	0.01	0.02
7/16/2007 9:00	Effluent Duplicate	Nutrients	NO2NO3-N	0.61		mg N/L	0.004	0.01
7/16/2007 9:00	Effluent Duplicate	Nutrients	O-Phosphate-P	0.27		mg P/L	0.008	0.02
7/16/2007 9:00	Effluent Duplicate	Nutrients	Kjeldahl Nitrogen	0.75		mg N/L	0.08	0.2
7/16/2007 9:00	Effluent Duplicate	Nutrients	Total-P	0.45		mg P/L	0.02	0.06
7/16/2007 9:00	Effluent Duplicate	Pesticides	Alachlor	0.58	U	ug/L	0.58	2.3
7/16/2007 9:00	Effluent Duplicate	Pesticides	Ametryn	0.049	U	ug/L	0.049	0.2
7/16/2007 9:00	Effluent Duplicate	Pesticides	Atrazine	0.049	U	ug/L	0.049	0.2
7/16/2007 9:00	Effluent Duplicate	Pesticides	Azinphos Methyl	0.19	U	ug/L	0.19	0.76
7/16/2007 9:00	Effluent Duplicate	Pesticides	Bromacil	0.19	U	ug/L	0.19	0.76
7/16/2007 9:00	Effluent Duplicate	Pesticides	Butylate	0.19	U	ug/L	0.19	0.76
7/16/2007 9:00	Effluent Duplicate	Pesticides	Chlorpyrifos Ethyl	0.049	U	ug/L	0.049	0.2
7/16/2007 9:00	Effluent Duplicate	Pesticides	Chlorpyrifos Methyl	0.097	U	ug/L	0.097	0.39
7/16/2007 9:00	Effluent Duplicate	Pesticides	Diazinon	0.049	UJ	ug/L	0.049	0.2
7/16/2007 9:00	Effluent Duplicate	Pesticides	Ethion	0.049	U	ug/L	0.049	0.2
7/16/2007 9:00	Effluent Duplicate	Pesticides	Ethoprop	0.097	U	ug/L	0.097	0.39
7/16/2007 9:00	Effluent Duplicate	Pesticides	Fenamiphos	0.19	U	ug/L	0.19	0.76
7/16/2007 9:00	Effluent Duplicate	Pesticides	Fonofos	0.097	U	ug/L	0.097	0.39
7/16/2007 9:00	Effluent Duplicate	Pesticides	Hexazinone	0.097	U	ug/L	0.097	0.39
7/16/2007 9:00	Effluent Duplicate	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
7/16/2007 9:00	Effluent Duplicate	Pesticides	Metalaxyl	0.24	UJ	ug/L	0.24	0.96
7/16/2007 9:00	Effluent Duplicate	Pesticides	Metolachlor	0.49	U	ug/L	0.49	2
7/16/2007 9:00	Effluent Duplicate	Pesticides	Metribuzin	0.097	U	ug/L	0.097	0.39
7/16/2007 9:00	Effluent Duplicate	Pesticides	Mevinphos	0.19	U	ug/L	0.19	0.76
7/16/2007 9:00	Effluent Duplicate	Pesticides	Naled	0.78	UJ	ug/L	0.78	3.1
7/16/2007 9:00	Effluent Duplicate	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
7/16/2007 9:00	Effluent Duplicate	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
7/16/2007 9:00	Effluent Duplicate	Pesticides	Parathion Methyl	0.097	U	ug/L	0.097	0.39
7/16/2007 9:00	Effluent Duplicate	Pesticides	Phorate	0.049	U	ug/L	0.049	0.2
7/16/2007 9:00	Effluent Duplicate	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/16/2007 9:00	Effluent Duplicate	Pesticides	Simazine	0.049	U	ug/L	0.049	0.2
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	1,2-Dichlorobenzene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	1,3-Dichlorobenzene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	1,4-Dichlorobenzene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	2,4-Dichlorophenol	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	2,4-Dimethylphenol	11	U	ug/L	11	45
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	2,4-Dinitrophenol	17	U	ug/L	17	67
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	2,4-Dinitrotoluene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	2,6-Dinitrotoluene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	2-Chloronaphthalene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	2-Chlorophenol	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.4	U	ug/L	3.4	13
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	2-Nitrophenol	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	3,3'-Dichlorobenzidine	45	U	ug/L	45	180
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	4,4'-DDD	1.7	U	ug/L	1.7	6.7
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	4,4'-DDE	1.7	U	ug/L	1.7	6.7
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	4,4'-DDT	1.7	U	ug/L	1.7	6.7
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.2	U	ug/L	2.2	9
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	4-Nitrophenol	17	U	ug/L	17	67
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Acenaphthene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Acenaphthylene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Aldrin	1.7	U	ug/L	1.7	6.7
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Anthracene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Benzidine	110	UJ	ug/L	110	450
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Benzo(a)anthracene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Benzo(a)pyrene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Benzo(b)fluoranthene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Benzo(g,h,i)perylene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Benzo(k)fluoranthene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.1	U	ug/L	1.1	4.5

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.4	U	ug/L	3.4	13
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	17	U	ug/L	17	67
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Butyl benzyl phthalate	5.6	U	ug/L	5.6	22
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Chrysene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Di-n-butyl phthalate	5.6	U	ug/L	5.6	22
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Di-n-octyl phthalate	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Dibenzo(a,h)anthracene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Dieldrin	1.7	U	ug/L	1.7	6.7
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Diethyl phthalate	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Dimethyl phthalate	56	U	ug/L	56	220
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Endosulfan I	4.5	U	ug/L	4.5	18
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Endosulfan II	4.5	U	ug/L	4.5	18
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Endosulfan sulfate	1.7	U	ug/L	1.7	6.7
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Endrin	1.7	U	ug/L	1.7	6.7
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Endrin aldehyde	4.5	U	ug/L	4.5	18
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Fluoranthene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Fluorene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Heptachlor	1.7	U	ug/L	1.7	6.7
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Heptachlor epoxide	1.7	U	ug/L	1.7	6.7
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Hexachlorobenzene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Hexachlorobutadiene	3.4	U	ug/L	3.4	13
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.4	U	ug/L	3.4	13
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Hexachloroethane	3.4	U	ug/L	3.4	13
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Isophorone	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.2	U	ug/L	2.2	9
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	N-Nitrosodimethylamine	2.2	U	ug/L	2.2	9
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.4	U	ug/L	3.4	13
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Naphthalene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Nitrobenzene	2.2	U	ug/L	2.2	9
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Pentachlorophenol	3.4	U	ug/L	3.4	13
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Phenanthrene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Phenol	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	Pyrene	1.1	U	ug/L	1.1	4.5
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	alpha-BHC	1.7	U	ug/L	1.7	6.7

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	beta-BHC	1.7	U	ug/L	1.7	6.7
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	delta-BHC	1.7	U	ug/L	1.7	6.7
7/16/2007 9:00	Effluent Duplicate	Priority Organic Pollutants	gamma-BHC	1.7	U	ug/L	1.7	6.7
7/16/2007 9:00	Effluent Duplicate	Nutrients	Dissolved Oxygen	9.4		mg/L		
7/16/2007 9:00	Effluent Duplicate	Nutrients	Sample Depth	0.1		m		
7/16/2007 9:00	Effluent Duplicate	Nutrients	Specific Conductance	479		umhos/cm		
7/16/2007 9:00	Effluent Duplicate	Nutrients	Temperature	27.8		C		
7/16/2007 9:00	Effluent Duplicate	Nutrients	Total Residual Chlorine	1.55		mg/L		
7/16/2007 9:00	Effluent Duplicate	Nutrients	pH	7.1				

The Bioassay of the City Of Quincy Wastewater Treatment Plant effluent sampled on July 16, 18, and 20, 2007. NPDES #FL0029033.

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 2 9 0 3 3 11	12 0 7 0 7 1 6	18 B	19 S	20 1

Remarks

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The Priority Pollutants Analysis of the City Of Quincy Wastewater Treatment Plant effluent sampled on July 16, 2007. NPDES #FL0029033.

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 2 9 0 3 3 11	12 0 7 0 7 1 6	18 X	19 S	20 1

Remarks

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Biological Analyses of the City Of Quincy Wastewater Treatment Plant effluent sampled on July 16, 2007. NPDES #FL0029033.

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 2 9 0 3 3 11	12 0 7 0 7 1 6	18 S	19 S	20 1

Remarks

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