

Effluent Quality Assessment

Town of Jupiter RO Concentrate Disposal Facility

Palm Beach County

NPDES #FL0042358

Sampled April 27, 2009

August 2009

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration

Quality Manual No. 870346G
NELAC Certification No. E31780

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Town of Jupiter RO Concentrate Disposal Facility, 17403 Central Blvd., Jupiter, Palm Beach County, Florida, 33458. NPDES #FL0042358. Effluent grab samples for bioassay and chemical analyses for this facility were collected on April 27, 2009.

Introduction

Town of Jupiter RO (Reverse Osmosis) Concentrate Disposal Facility is a water treatment plant which uses the Reverse Osmosis process to produce potable water. (See Appendixes F and G for detailed facility information provided by Lisa Gatch of FDEP Southeast District.)

Methods

Samples were collected from the EFF-1 NPDES sampling point for Outfall D-001 by Terry Davis, William Thiel and Jeff Christian (FDEP Southeast 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.

Results and Discussion

- **Toxicity Test Results**

  Tests were performed April 28 - 30, 2009.

  Americamysis bahia 48-hour acute definitive bioassay – LC_{50} > 100%, 10% mortality in 100% sample at 48 hours

  Menidia beryllina 48-hour acute definitive bioassay – LC_{50} > 100%, 0% mortality in 100% sample at 48 hours

  The bioassay samples were not acutely toxic to the test organisms.

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

- **Algal Growth Potential**

  The effluent Algal Growth Potential (AGP) was 3.0 U (U - Material was analyzed for but not detected; the report value is the minimum detection limit) mg dry wt/L of the saltwater species *Dunaliella tertiolecta.* Raschke and Schultz found that AGP values above 10.0 mg dry weight/L represent a “problem” threshold for marine receiving waters, implying nutrient enrichment (personal communication, Marshall Faircloth, et. al. FDEP, with Ron Raschke USEPA Region 4 1987). The ratio of inorganic nitrogen to ortho-phosphate in the effluent suggests that the effluent is phosphorus-limited (Maloney et al. 1978).

  See Table 1 for AGP results.

- **Chemistry Results**

  Total residual chlorine was not detected in the bioassay sample in the laboratory. The total ammonia concentration detected in the bioassay sample in the laboratory was 3.62 mg N/L. Based on the pH, salinity, and temperature of the sample, the calculated unionized ammonia concentration was 0.46 mg/L. The total ammonia concentration in the composite sample collected and preserved for chemical analysis was 4.2 mg N/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was < 0.02 mg/L.

  Effluent Total Alpha (28.7 pCi/L) and combined Radium 226 + Radium 228 (22.6 pCi/L) exceeded their respective Class II Water quality criterion of (≤15 pCi/L; 62-302.530(57b), F.A.C.) and (≤5 pCi/L; 62-302.530(57a), F.A.C.); however, these concentrations were not in violation of the permitted limits (Report only) at the D-001 Outfall. It cannot be determined if these concentrations violated numerical permitted limits since samples were not collected from the compliance monitoring points located at the edge of the facility's mixing zone. Ammonia, fluoride and total suspended solids were detected in the effluent. Selenium and ortho-phosphate were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL). Bis(2-ethylhexyl)phathalate, nitrate and nitrite, and total phosphorus were detected in the field blank.

  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 NPDES sampling point for Outfall D-001 for this facility on April 27, 2009, was not acutely toxic to either test species during the 48-hour acute screening bioassays. The effluent AGP result was less than the "problem" threshold for marine receiving waters. Effluent Total Alpha (28.7 pCi/L) and combined Radium 226 + Radium 228 (22.6 pCi/L) exceeded their respective Class II Water quality criterion of (≤15 pCi/L; 62-302.530(57b), F.A.C.) and (≤5 pCi/L; 62-302.530(57a), F.A.C.); however, these concentrations did not violate permitted conditions since samples were not collected from the compliance monitoring points located at the edge of the facility's mixing zone. 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.

Table 1. Measured algal growth potential (AGP; mg dry weight/L) of the saltwater species *Dunaliella tertiolecta* and ratios of nitrogen to phosphorus for samples collected from the Town of Jupiter RO Concentrate Facility on April 27, 2009.

Town of Jupiter RO Concentrate Disposal Facility			
Location	AGP (measured)	Inorganic N:P ratio	Total N:P ratio
Effluent	3.0 AU	351.1	424.1

Table 2. Effluent limits, Class II Criteria for predominantly marine waters and chemical data for samples collected from the Town of Jupiter RO Concentrate Disposal Facility on April 27, 2009.

Town of Jupiter RO Concentrate Disposal Facility NPDES# FL0042358	Class II Criteria	Effluent Limits for Outfall D 001	Effluent	
Organic Constituents (µg/L)				
Bis(2-ethylhexyl)phthalate	-	-	-	F
Metals (µg/L unless otherwise noted)				
Aluminum	≤ 1500	-	180	U
Arsenic	≤ 50	-	0.75	U
Cadmium	≤ 8.8	-	0.09	U
Calcium (mg/L)	-	-	597	A
Chromium-III	-	-	0.9	U
Copper	≤ 3.7	≤ 2.9 s	1.5	UJ
Iron	≤ 300	-	90	U
Lead	≤ 8.5	-	0.6	U
Magnesium (mg/L)	-	-	724	A
Nickel	≤ 8.3	-	0.75	U
Selenium	≤ 71	-	0.7	I
Silver	≤ 2.3	-	0.075	U
Zinc	≤ 86	-	15	U
Nutrients (mg/L)				
Ortho-phosphate	-	-	0.012	I
Total Phosphorus	-	-	0.013	IF
Total Ammonia	-	-	4.2	
Un-ionized Ammonia	-	-	≤ 0.02	c
Nitrate and Nitrite	-	-	0.013	F
Total Kjeldahl Nitrogen	-	-	5.5	
Organic Nitrogen	-	-	1.3	c
Total Nitrogen	-	-	5.513	c
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 4.0	≥ 4.0 s	8.1	
pH (SU)	6.5 - 8.5	6.5 - 8.5 s	6.9	
Conductivity (µmhos/cm)	-	Report	29,750	
Temperature (°C)	-	Report	23.2	
Salinity	-	Report	19.2	c
Sample Depth (m)	-	-	0.01	
Total Residual Chlorine (mg/L)	≤ 0.01	-	< 0.03	£UQ
Chlorophyll *a* (µg/L) - Corrected	-	-	0.55	U
Phaeophytin (µg/L)	-	-	0.4	U
Total Suspended Solids (mg/L)	-	-	16	A
Fluoride (mg/L)	≤ 5.0	Report	3.6	
Alpha, Total (pCi/L)	≤ 15	Report	28.7	
Alpha-Counting Error (pCi/L)	-	-	4.7	
Radium 226 (pCi/L)	-	-	21.2	
Radium 226-Counting Error (pCi/L)	-	-	1	
Radium 228 (pCi/L)	-	-	1	
Radium 228-Counting Error (pCi/L)	-	-	0.6	
Radium 226 + 228 (pCi/L)	≤ 5	Report	22.2	c
Flow (MGD)	-	≤ 4.6 a	2.63	a
Hardness (mg $CaCO_3$)	-	-	4472.14	c

Value exceeds the Class III Water Quality Criteria or permit limits

a - Annual average
c - Value is calculated
s - Single sample
A - Value reported is the mean of two or more determinations
F - Analyte was detected in both sample and field blank. Bis(2-ethylhexyl)phthalate 0.16 I; total phosphorus 0.22 AJ and Nitrate/Nitrite 0.006 I.
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J - Estimated value
Q - Sample held beyond normal holding time
U - Material analyzed for but not detected; value reported is the method detection limit
£ - measured in bioassay lab.

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Request Number: RQ-2009-04-27-25
Jupiter RO Plant

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

Requester: Jennifer Paris
Field Report Prepared By: Terry Davis
Collected By: T. Davis, W. Miel, J. Christian
Send Final Report To: ~~Todd Brown~~/Terry Davis
Sampling Agency: DEP- Southeast Dist

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	Concentrate discharge	☐ Comp ☒ Grab	Date 4/27 Time 0915	Date Time	A
	Field ID: 51- JWTP-FY	Tot Res Chlorine (mg/L):	Diss Oxygen ~~(mg/L)~~: 106.6%	Storet Station Number:	
	Matrix (Include type e.g. Salt, Fresh, etc): Water	Temp (C): 23.19	pH: 6.85	Sample Depth: ☒ m ☐ ft .01	☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm): 29,750
	Latitude o ' "	Longitude o ' "		NPDES Number:	
	Comments: Cond std 58,580=58,910 umhos				

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	Blank	☐ Comp ☐ Grab	Date 04/27/09 Time 0920	Date Time	B
	Field ID: 51- JWTP-2	Tot Res Chlorine (mg/L):	Diss Oxygen (mg/L):	Storet Station Number:	
	Matrix (Include type e.g. Salt, Fresh, etc): Water-di.	Temp (C):	pH:	Sample Depth: ☒ m ☐ ft .01	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm):
	Latitude o ' "	Longitude o ' "		NPDES Number:	
	Comments: + per T. Davis				

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time 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):
	Latitude o ' "	Longitude o ' "		NPDES Number:	
	Comments:				

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
		☐ Comp ☐ Grab	Date Time	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):
	Latitude o ' "	Longitude o ' "		NPDES Number:	
	Comments: 2 bianssy Rec'd in Tor by JD, 4.28.09 10:20				

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
T Davis	4/27/1030	FedEx	Tahmourés Ebrahimi	04/28/09 9:15				

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

FDEP Biology Laboratory - Acute Screen Bioassay Bench Sheets

Facility: Jupiter RO

Address: 17403 Central Boulevard

City: ~~Jupiter~~ Jupiter JW 6/11/09 County: Palm Beach

Contact/District: Terry Davis / Southeast

NPDES Permit #: FL 0042358

LIMS Job #: TLH-2009-04-28-17 LIMS Sample #: 1182830

Lims Data Entry: 4-30-09 MF Data Entry Verification: 4-30-09 BA

Sample Collection: Date: 04/27/09 Time: 0915

Hold Time Start: Date: 04/27/09 Time: 0915

Comments:

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

Test Type: (Screen)
(Static) / Static Renewal / Flow-through
Test Duration: (48) 96 Hours.

Test 1 validation: Test 1: SOP TA 07_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

(√one)
Test 1 incubated in: [✓] Incubator #: 2 [ ] Waterbath #:_____
Test 2 incubated in: [ ] Incubator #:_____ [ ] Waterbath #:_____

Initial sample handling:
PH adjustment : yes (no) Initial pH: ____ NaOH N HCl N ____ Drops mL Final pH: ____
Aeration : yes (no) Initial DO: ____mg/L Final DO: ____mg/L Duration: ____minutes Rate: ~____bubbles/min
Salinity adjusted (Test 1): yes (no) Initial Salinity: ____ Final Salinity: ____ Salts Hypersaline brine
Salinity adjusted (Test 2): yes (no) Initial Salinity: ____ Final Salinity: ____ Salts Hypersaline brine
Dechlorination: yes (no) ____mL of 0.025N Sodium Thiosulfate per liter of sample. Final TRC: ____

Light Intensity : 50 - 100 ft. candles
Photoperiod : 16 light 8 dark
Temperature Range °C: (If used)
Incubator # 2 min 25.9 max 26.6 mean 26.3
Incubator # ____ min.____ max.____ mean____
Waterbath # ____ min.____ max.____ mean____
Room B246 min 25.1 max 25.9 mean 25.5

Sample Validation:
Temperature: Shipped ≤6°C (Yes) No — IF 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)

Water Quality Parameters	20% DMW	Well Water	Moderately Hard Water	Salt Water (ASW) NSW Test 1 (Batch # 3.30.09)	Salt Water ASW NSW Test 2	Other:	Original Sample	Measured by	Verified by
Field Total Residual Cl_2 (mg/L):	N/A	N/A	N/A	N/A	N/A		Not measured	—	MF
Lab Total Residual Cl_2 (mg/L):				<0.03		(A)	<0.03	JD	BA
Alkalinity (mg/L as $CaCO_3$):				213		~~BA~~ 106	106	BA	MF
Hardness (mg/L as $CaCO_3$):				—		—	— (B)	—	—
Total Ammonia (mg/L as N):				<0.034		(A) BA +1.6 JD	+1.6 JD	MF	BA
Conductivity: µmhos mmhos				31.5		(A) ~~36.1~~	30.1	JD	BA
Salinity (ppth):				~20		~~19.1~~	18.7	JD	BA

(B) Original sample NH 3.62

(A) entered in incorrect column MF for BA 4-30-09

(B) value should be doubled MF for BA 4-30-09

V 1.6 7/8/08

Investigators' Signatures
Chelsea Fussell
Marshall Faircloth
James Daniel
Loretta C. Wolfe
REVIEWER

Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1182830 Test #: 1/L SOP#:TA 07 03 Test Started: Date 4.28.09 Time: 1300
Organism/Batch/Age: A.bahia / 4-28-09 / 4 days Test Ended: Date 4-30-09 Time: 1230
Chamber/Test Volume: 1000 / 500 ml Diluent/ Batch: ASW / 3-30-09 Test Duration: (48 hr) 96 hr
Food/Batch: [ ] YCT____ [ ] P.sub____
[✓] Artemia Lot# 38438 Batch #: 0hr 61-09 24hr 62-09 48hr____ 72hr____
Feeding: [✓] Prior to Test [ ] Prior to Renewal [✓] 0 hr [✓] 24 hr [ ] 48 hr [ ] 72 hr

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
ctrl	A	A 9	5	5	5			
	B	A10	5	5	5			
	C	A11	5	4 1D	4			
	D	A12	5	5	5			
50%	A	A13	5	5	5			
	B	A14	5	5	5			
	C	A15	5	5	5			
	D	A16	5	5	5			
100%	A	A17	5	5	5			
	B	A18	5	5	5			
	C	A19	5	5	3 2D			
	D	A20	5	5	5			
Loaded/Verified by: BA / BA		Checked by:	BA	CF	CF			

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: 10% LC50: >100%
If Calculated: 95% CI________ Method________

V 2.3 7/15/2008

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 #: 11 82830 Test #: 2/2 SOP#:TA 07 04 Test Started: Date 4-28-09 Time: 1300
Organism/Batch/Age: M.beryllina 14-28-09 / 13 days Test Ended: Date 4-30-09 Time: 1240
Chamber/Test Volume: 1000/ 500 ml Diluent/ Batch: ASW / 3-30-09 Test Duration: (48 hr) 96 hr
Food/Batch: ☐ YCT ☐ P.sub
☑ Artemia Lot# 38438 Batch #: 0hr 61-09 24hr 6 48hr 72hr
Feeding: ☐ Prior to Test ☐ Prior to Renewal ☑ 0 hr ☐ 24 hr ☐ 48 hr ☐ 72 hr

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Ctrl	A	D1	5	5	5			
	B	D2	5	5	5			
	C	D3	5	5	5			
	D	D4	5	5	5			
50%	A	D5	5	5	5			
	B	D6	5	5	5			
	C	D7	5	5	5			
	D	D8	5	5	5			
100%	A	D9	5	5	5			
	B	D10	5	5	5			
	C	D11	5	5	5			
	D	D12	5	5	5			
			BD	CF	CF			

Loaded/Verified by: TS / BH Checked by:
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_____
V 2.3 7/15/2008
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 Parameter Bench Sheet

LIMS Sample #: 116283O Test #: 1 of 2

TEST SOP #: TA07_03 Test Species: ☐ *Ceriodaphnia dubia* ☐ *Cyprinella leedsi* ☐ *Pimephales promelas*

Test aerated: yes (circle one) Check 1: ☒ *Americamysis bahia* ☐ *Menidia beryllina* ☐ Other:

Concentration 41	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	8.2	8.1			
Temperature °C	24.3	24.0	24.0			
Dissolved Oxygen mg/L aerate if < 4	6.6	6.4	5.5			
Conductivity µmhos (mmhos)	31.5	31.8	32.8			
Salinity ppth	19.2	19.4	20.5			
(initials) Measured by:	JS	JS	BJA			
(initials) Recorded by:	JS	JS	BJA			

Comments:

Concentration 50%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	8.1	8.0	8.0			
Temperature °C	24.9	24.2	24.3			
Dissolved Oxygen mg/L aerate if < 4	6.6	6.5	5.9			
Conductivity µmhos (mmhos)	31.0	31.6	32.3			
Salinity ppth	19.3	19.6	20.1			
(initials) Measured by:	JS	JS	BJA			
(initials) Recorded by:	JS	JS	BJA			

Comments:

Salinity only needs measuring if saltwater.

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	7.5	7.8	7.8			
Temperature °C	25.9	25.2	24.4			
Dissolved Oxygen mg/L aerate if < 4	6.6	6.5	6.0			
Conductivity µmhos (mmhos)	30.4	31	31.1			
Salinity ppth	18.8	19.3	19.3			
(initials) Measured by:	JS	JS	BJA			
(initials) Recorded by:	JS	JS	BJA			

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 aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

Page 2 of 2

Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample #: 1182830 Test #: 2 of 2

TEST SOP #: TA07_07 Test Species: ☐ *Ceriodaphnia dubia* ☐ *Cyprinella leedsi* ☐ *Pimephales promelas*

Test aerated: yes (no) (circle one) Check 1: ☐ *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	24.3	24.0	24.3			
Dissolved Oxygen mg/L aerate if < 4	6.7	6.5	5.9			
Conductivity µmhos (mmhos)	31.5	34.8	32.5			
Salinity ppth	14.4	14.8	20.1			
(initials) Measured by:	JC	JC	BA			
(initials) Recorded by:	JC	JC	BA			

Comments:

Concentration 50%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	D	C			
pH (S.U.)	8.1	8.2	8.1			
Temperature °C	24.6	24.1	24.6			
Dissolved Oxygen mg/L aerate if < 4	6.7	6.6	5.6			
Conductivity µmhos (mmhos)	31.5	31.5	31.4			
Salinity ppth	14.4	14.4	14.5			
(initials) Measured by:	JC	JC	BA			
(initials) Recorded by:	JC	JC	BA			

Comments:

Salinity only needs measuring if saltwater.

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	7.5	7.8	7.9			
Temperature °C	25.8	24.1	24.4			
Dissolved Oxygen mg/L aerate if < 4	6.7	6.6	5.4			
Conductivity µmhos (mmhos)	30.4	30.8	31.2			
Salinity ppth	18.8	19.1	19.4			
(initials) Measured by:	JC	JC	BA			
(initials) Recorded by:	JC	JC	BA			

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 aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

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Appendix B. (continued)

Bioassay Instrument ID

Test ID: Jupiter RO Dates: 4-28-09 – 4-30-09

METER / DEVICE	ID	SOP	Parameter	Method	√used
YSI Model 58 Dissolved Oxygen Meter	90H018262	TA06_04	Dissolved Oxygen	SM 4500 O G	✓
Accumet AR-10 pH Meter	93312105	TA06_23	pH	SM 4500 H+	✓
Mettler-Toledo SevenMulti Conductivity Meter	SN 1225117049 Probe H04257	TA06_25	Conductivity	SM 2510 B	✓
			Salinity	SM 2520 B	✓
Denver Model 225 ISE with ammonia probe	SN K01377	TA06_17	Ammonia	SM 4500 NH3 F	✓
Thermometer (DO probe)	YSI 5750 SN 05J1720	TA06_05	Temperature	SM-2530B modified DEP SOP-001/01 FT1400	✓
Hach Pocket Colorimeter II	05050C026378	TA06_22	Total Residual Chlorine	EPA 330.5 SM 4500 CL G	✓
Alkalinity (Hach Kit)	No SN	TA06_08	Alkalinity	SM 2320 B	✓
Hardness (Hach Kit)	No SN	TA06_09	Hardness	SM 2340 C	
OHAUS Balance 250D	1125481084	TA06_21 TA06_27	Weight	-	
S-Weights	BIO-S-WEIGHTS-01	NA	Balance check	-	

SM-2530B modified to allow use of electronic and non-mercury filled thermometers.

Insert other device information in blank spaces(if used). Test ID = Facility or SRTs (acute SRT--Chronic SRT)

entered by Marshall Faircloth

V 1.1 6/12/08 MF

30

PAGE

Appendix C. SRT Bench Sheets and Statistical Analysis

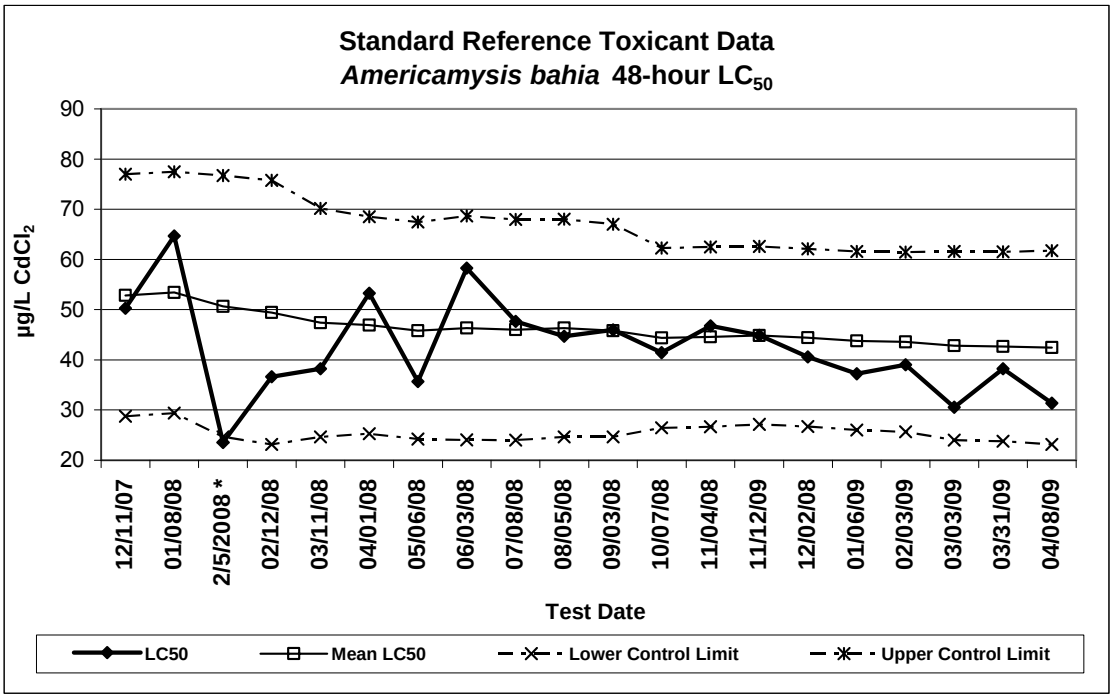
Florida Department of Environmental Protection
Bureau of Laboratories

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
12/11/07	50.27	52.86	12.06	28.75	76.98
01/08/08	64.65	53.42	12.03	29.36	77.48
2/5/2008 *	23.52	50.68	13.02	24.64	76.72
02/12/08	36.63	49.45	13.14	23.17	75.74
03/11/08	38.21	47.42	11.38	24.66	70.19
04/01/08	53.27	46.90	10.82	25.26	68.53
05/06/08	35.65	45.82	10.81	24.19	67.45
06/03/08	58.28	46.36	11.17	24.03	68.69
07/08/08	47.67	46.00	10.99	24.02	67.98
08/05/08	44.68	46.32	10.84	24.63	68.01
09/03/08	45.94	45.82	10.60	24.62	67.02
10/07/08	41.43	44.39	8.96	26.47	62.30
11/04/08	46.75	44.58	8.97	26.64	62.51
11/12/09	44.92	44.87	8.87	27.13	62.61
12/02/08	40.59	44.42	8.84	26.73	62.11
01/06/09	37.22	43.80	8.89	26.01	61.59
02/03/09	39.02	43.57	8.96	25.66	61.49
03/03/09	30.58	42.81	9.40	24.02	61.61
03/31/09	38.24	42.65	9.45	23.76	61.55
04/08/09	31.38	42.44	9.66	23.12	61.76

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

CV = 22.76
EPA reference 75th quartile CV = 26%



* Test result exceeded control limits on 2/5/2008. Test repeated on 2/12/2008.

Appendix C. (continued)

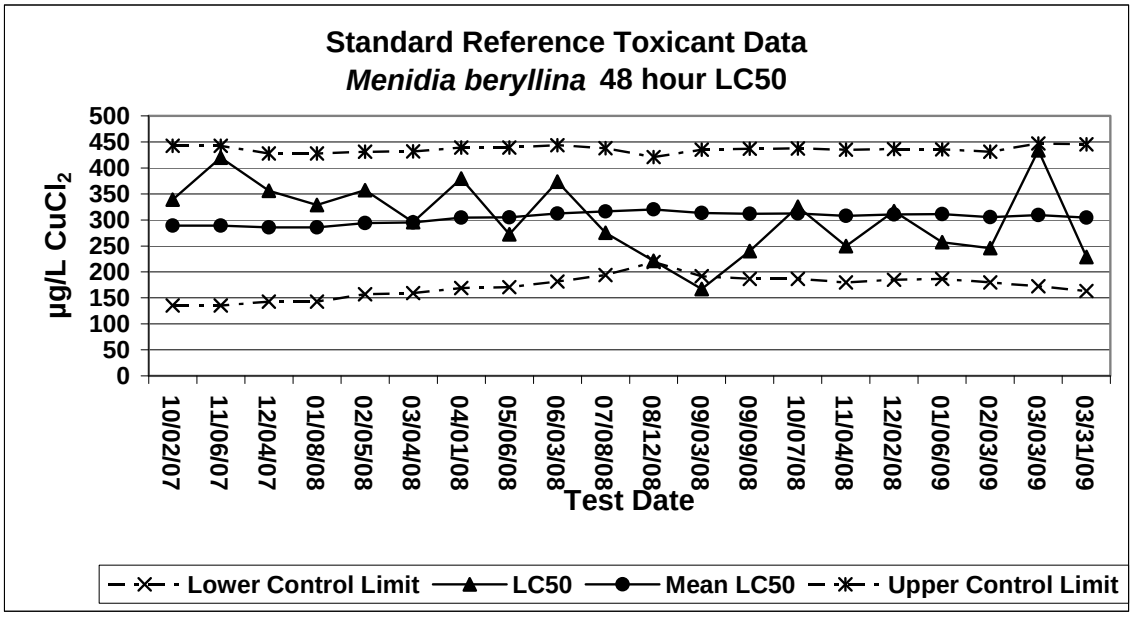
Florida Department of Environmental Protection
Bureau of Laboratories

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

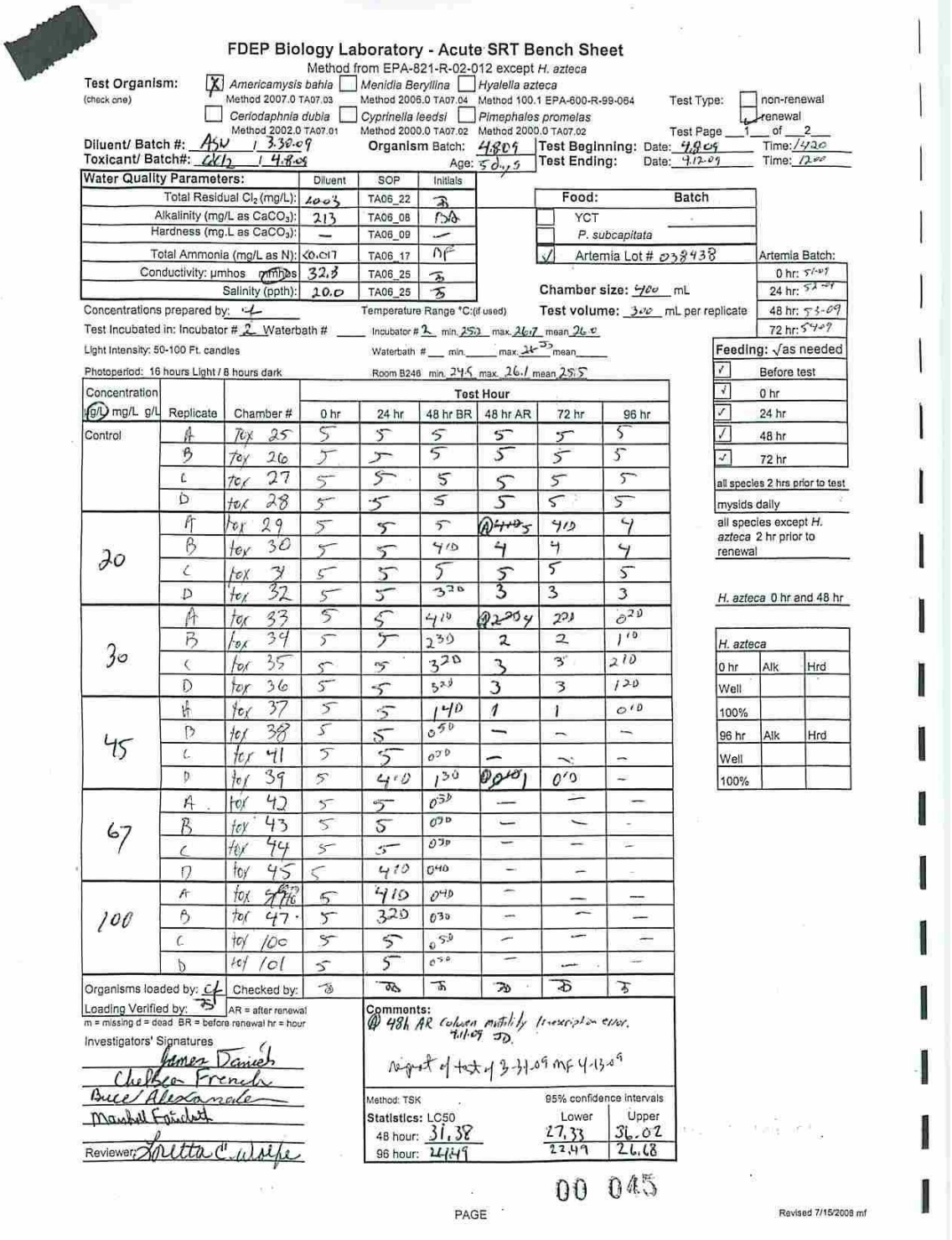
Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
10/02/07	338.90	289.15	76.7	135.7	442.6
11/06/07	419.55	289.15	76.7	135.7	442.6
12/04/07	356.07	285.50	71.3	143.0	428.0
01/08/08	329.03	285.29	71.1	143.0	427.5
02/05/08	357.47	294.07	68.5	157.1	431.0
03/04/08	295.52	295.31	68.1	159.3	431.9
04/01/08	379.50	304.05	67.5	169.0	439.1
05/06/08	272.50	304.73	67.1	170.5	438.9
06/03/08	373.47	312.52	65.5	181.5	443.5
07/08/08	275.20	316.13	61.0	194.2	438.1
08/12/08	221.17	320.17	50.5	219.2	421.1
09/03/08	167.46	313.48	60.9	191.7	435.3
09/09/08	240.07	311.58	62.6	186.3	436.9
10/07/08	325.55	312.05	62.7	186.6	437.5
11/04/08	249.81	307.63	63.9	179.9	435.4
12/02/08	316.79	310.59	62.8	185.0	436.2
01/06/09	257.04	311.08	62.3	186.5	435.7
02/03/09	245.51	305.47	62.9	179.6	431.4
03/03/09	433.98	309.64	68.6	172.5	446.8
03/31/09	228.94	304.17	70.5	163.1	445.2

Means are of the last 20 SRT tests.

EPA reference 75th quartile CV = 21% **CV = 23.18**



Appendix C. (continued)



FDEP Biology Laboratory - Acute SRT Bench Sheet

Method from EPA-821-R-02-012 except *H. azteca*

Test Organism: (check one) [X] *Americamysis bahia* Method 2007.0 TA07.03; [ ] *Menidia Beryllina* Method 2006.0 TA07.04; [ ] *Hyalella azteca* Method 100.1 EPA-600-R-99-064; [ ] *Ceriodaphnia dubia* Method 2002.0 TA07.01; [ ] *Cyprinella leedsi* Method 2000.0 TA07.02; [ ] *Pimephales promelas* Method 2000.0 TA07.02

Test Type: [ ] non-renewal [✓] renewal

Test Page 1 of 2

Diluent/ Batch #: ASW / 3.30.09

Toxicant/ Batch#: CuCl2 / 4.8.09

Organism Batch: 4809 Age: 5 days

Test Beginning: Date: 4.8.09 Time: 1420

Test Ending: Date: 4.12.09 Time: 1200

Water Quality Parameters:	Diluent	SOP	Initials
Total Residual Cl_2 (mg/L):	2003	TA06_22	JB
Alkalinity (mg/L as $CaCO_3$):	213	TA06_08	JB
Hardness (mg.L as $CaCO_3$):	—	TA06_09	—
Total Ammonia (mg/L as N):	<0.017	TA06_17	MF
Conductivity: µmhos mmhos	32.8	TA06_25	JB
Salinity (ppth):	20.0	TA06_25	JB

Food:	Batch
[ ] YCT	
[ ] *P. subcapitata*	
[✓] Artemia Lot # 038438	

Chamber size: 400 mL

Test volume: 300 mL per replicate

Artemia Batch:

0 hr: 5-09

24 hr: 5-09

48 hr: 5-09

72 hr: 5-09

Concentrations prepared by: JL

Test Incubated in: Incubator # 2 Waterbath # ____

Incubator # 2 min. 25.0 max. 26.7 mean 26.0

Waterbath # ___ min. ____ max. 26.3 mean ____

Light Intensity: 50-100 Ft. candles

Photoperiod: 16 hours Light / 8 hours dark

Room B246 min. 24.5 max. 26.1 mean 25.5

Temperature Range °C:(if used)

Feeding: √as needed
[✓] Before test
[✓] 0 hr
[✓] 24 hr
[✓] 48 hr
[✓] 72 hr

all species 2 hrs prior to test

mysids daily

all species except *H. azteca* 2 hr prior to renewal

H. azteca 0 hr and 48 hr

H. azteca		
0 hr	Alk	Hrd
Well		
100%		
96 hr	Alk	Hrd
Well		
100%		

Concentration (µg/L) mg/L g/L	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Control	A	Tox 25	5	5	5	5	5	5
	B	Tox 26	5	5	5	5	5	5
	C	Tox 27	5	5	5	5	5	5
	D	Tox 28	5	5	5	5	5	5
20	A	Tox 29	5	5	5	(4)+D=5	4D	4
	B	Tox 30	5	5	4D	4	4	4
	C	Tox 31	5	5	5	5	5	5
	D	Tox 32	5	5	3D	3	3	3
30	A	Tox 33	5	5	4D	(2)+D=4	2D	0D
	B	Tox 34	5	5	2D	2	2	1D
	C	Tox 35	5	5	3D	3	3	2D
	D	Tox 36	5	5	3D	3	3	1D
45	A	Tox 37	5	5	1D	1	1	0D
	D	Tox 38	5	5	0D	—	—	—
	C	Tox 41	5	5	0D	—	—	—
	D	Tox 39	5	4D	1D	(0)+D=1	0D	—
67	A	Tox 42	5	5	0D	—	—	—
	B	Tox 43	5	5	0D	—	—	—
	C	Tox 44	5	5	0D	—	—	—
	D	Tox 45	5	4D	0D	—	—	—
100	A	Tox 46	5	4D	0D	—	—	—
	B	Tox 47	5	3D	0D	—	—	—
	C	Tox 100	5	5	0D	—	—	—
	D	Tox 101	5	5	0D	—	—	—
Organisms loaded by: CF		Checked by: JB	JB	JB	JB	JB	JB	JB
Loading Verified by: JB								

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

Investigators' Signatures

James Daniel

Chelsea French

Bree Alexander

Marshall Fairchild

Reviewer: Loretta C. Wolfe

Comments:

@ 48h AR culture mortality / transcription error. 4.11.09 JD.

Report of test of 3-31-09 MF 4-13-09

Method: TSK

Statistics: LC50

	95% confidence intervals Lower	Upper
48 hour: 31.38	27.33	36.02
96 hour: 24.49	22.49	26.68

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PAGE

Revised 7/15/2008 mf

Appendix C. (continued)

FDEP Biology Laboratory - Acute SRT Bench Sheet
0-96 hour parameters

Methods from EPA-821-R-02-012 except *H. azteca*

Test Page 2 of 2

Test Organism: (check one)
- [X] *Americamysis bahia* Method 2007.0 TA07.03
- [ ] *Ceriodaphnia dubia* Method 2002.0 TA07.01
- [ ] *Menidia Beryllina* Method 2006.0 TA07.04
- [ ] *Cyprinella leedsi* Method 2000.0 TA07.02
- [ ] *Hyalella azteca* Method 100.1 EPA-600-R-99-064
- [ ] *Pimephales promelas* Method 2000.0 TA07.02

Test Beginning: Date: 4.8.09 Time: 1420
Test Ending: Date: 4.12.09 Time: 1200
Test Type: [ ] non-renewal [X] renewal

hr = hour AR = after renewal BR = before renewal

Concentration (%) mg/L g/L	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity [ ] µmhos [X] mmhos	Salinity (ppth)
Control	A	0 hr	8.4	24.0	7.4	32.4	20.1
	B	24 hr	8.2	24.5	5.4	33.3	20.8
	C	48 hr BR	8.1	24.7	5.4	33.4	20.8
	C	48 hr AR	8.3	24.2	6.7	32.1	19.9
	D	72 hr	8.2	24.4	5.5	32.8	20.5
	A	96 hr	8.1	25.3	5.3	33.0	20.4
20	A	0 hr	8.4	24.0	7.4	32.6	20.4
	B	24 hr	8.2	24.6	5.6	33.1	20.7
	C	48 hr BR	8.1	24.7	4.9	33.3	20.8
	C	48 hr AR	8.3	24.3	6.7	32.2	20.0
	D	72 hr	8.2	24.3	5.6	32.6	20.4
	A	96 hr	8.1	25.5	5.2	33.4	20.8
30	A	0 hr	8.4	24.0	7.3	32.7	20.5
	B	24 hr	8.2	24.5	5.5	33.1	20.7
	C	48 hr BR	8.1	24.5	4.9	33.3	20.8
	C	48 hr AR	8.3	24.4	6.8	32.2	20.0
	D	72 hr	8.2	24.3	5.6	32.7	20.4
	A	96 hr	8.2	25.5	5.4	33.7	21.0
45	A	0 hr	8.4	24.1	7.3	32.7	20.5
	B	24 hr	8.2	24.5	5.4	33.1	20.7
	C	48 hr BR	8.1	24.4	5.0	33.3	20.8
	C	48 hr AR	8.3	24.4	6.9	31.9	19.9
	D	72 hr	8.2	24.3	5.5	32.7	20.4
	A	96 hr	8.2	25.0	5.6	33.4	20.8
67	A	0 hr	8.4	24.2	7.3	32.8	20.5
	B	24 hr	8.2	24.5	5.3	33.2	20.7
	C	48 hr BR	8.0	24.3	5.2	33.4	20.8
	—	48 hr AR	—	—	—	—	—
	—	72 hr	—	—	—	—	—
	—	96 hr	—	—	—	—	—
100	A	0 hr	8.4	24.4	7.3	32.7	20.5
	B	24 hr	8.2	24.6	5.4	33.1	20.7
	C	48 hr BR	8.0	24.3	5.2	33.6	20.9
	—	48 hr AR	—	—	—	—	—
	—	72 hr	—	—	—	—	—
	—	96 hr	—	—	—	—	—

Investigators Signatures
James Daniel
Bruce Alexander
Chelsea Freed
Marshall Faircloth
Reviewed By: Loretta C Wilson

Measured by:
0 hr: JD
24 hr: JD
48 hr BR: JD
48 hr AR: JD
72 hr: JD
96 hr: JD

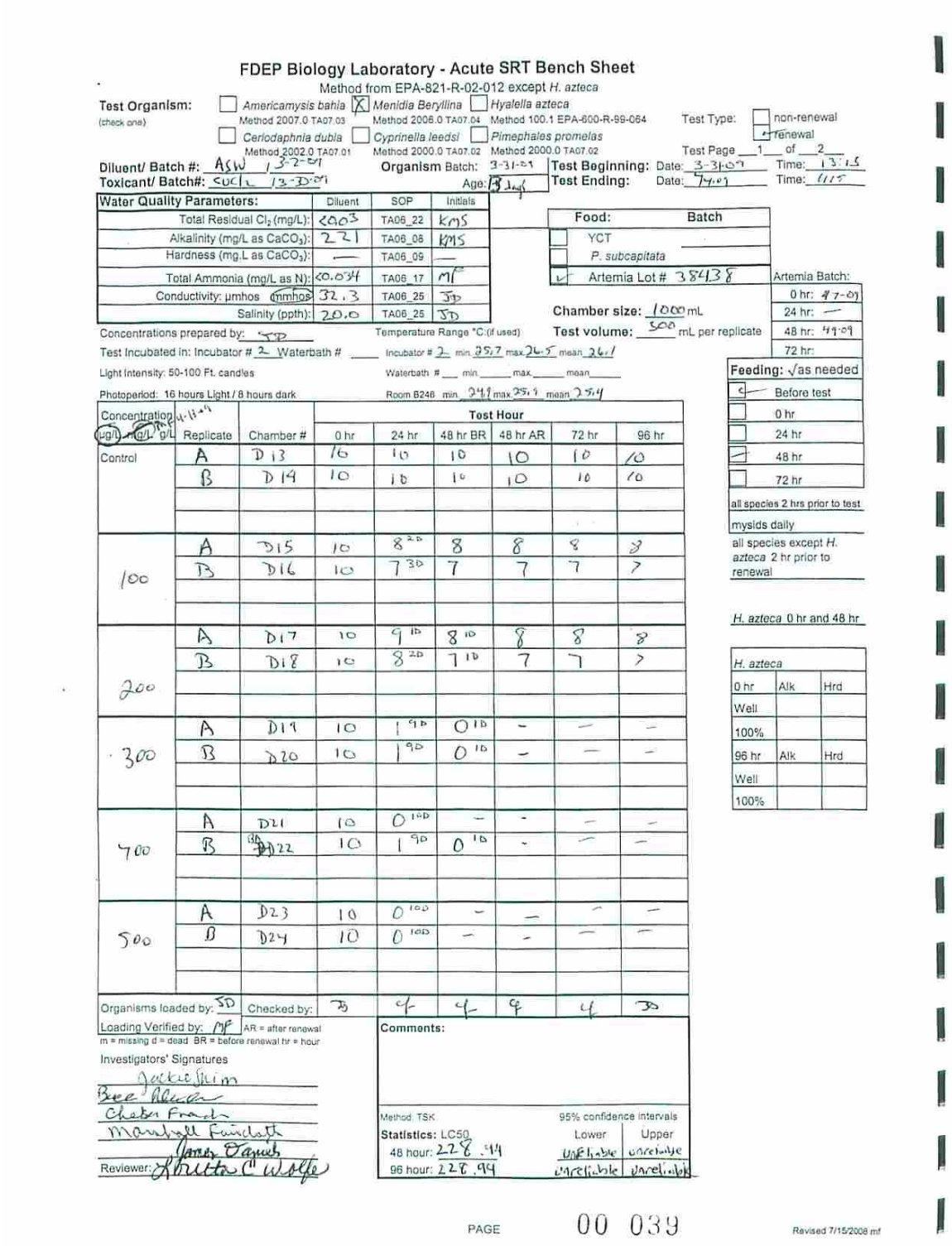
Measure/record salinity for marine tests

Comments:

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Revised 07/15/2008 MF

Appendix C. (continued)



FDEP Biology Laboratory - Acute SRT Bench Sheet

Method from EPA-821-R-02-012 except *H. azteca*

Test Organism: (check one) ☐ *Americamysis bahia* Method 2007.0 TA07.03 ☒ *Menidia Beryllina* Method 2006.0 TA07.04 ☐ *Hyalella azteca* Method 100.1 EPA-600-R-99-064 ☐ *Ceriodaphnia dubia* Method 2002.0 TA07.01 ☐ *Cyprinella leedsi* Method 2000.0 TA07.02 ☐ *Pimephales promelas* Method 2000.0 TA07.02

Test Type: ☐ non-renewal ☑ renewal

Test Page 1 of 2

Diluent/ Batch #: ASW 13-2-01 Organism Batch: 3-31-01 Test Beginning: Date: 3-31-09 Time: 13:15

Toxicant/ Batch#: CuCl2 13-3-01 Age: 48 hrs Test Ending: Date: 4-4-09 Time: 1115

Water Quality Parameters:	Diluent	SOP	Initials
Total Residual Cl_2 (mg/L):	<.003	TA06_22	KMS
Alkalinity (mg/L as $CaCO_3$):	221	TA06_08	KMS
Hardness (mg/L as $CaCO_3$):	—	TA06_09	—
Total Ammonia (mg/L as N):	<0.034	TA06_17	MF
Conductivity: µmhos mmhos	32.3	TA06_25	JD
Salinity (ppth):	20.0	TA06_25	JD

Food:	Batch
☐ YCT	
☐ *P. subcapitata*	
☑ Artemia Lot # 38438	Artemia Batch:

Artemia Batch: 0 hr: 4-7-09 24 hr: — 48 hr: 4-9-09 72 hr:

Chamber size: 1000 mL Test volume: 500 mL per replicate

Concentrations prepared by: JD Temperature Range °C:(if used)

Test Incubated in: Incubator # 2 Waterbath # ____ Incubator # 2 min. 25.7 max. 26.5 mean 26.1

Light Intensity: 50-100 Ft. candles Waterbath # ___ min. ____ max. ____ mean ____

Photoperiod: 16 hours Light / 8 hours dark Room B248 min. 24.9 max. 25.9 mean 25.4

Feeding: √as needed

- ☑ Before test
- ☐ 0 hr
- ☐ 24 hr
- ☑ 48 hr
- ☐ 72 hr

all species 2 hrs prior to test

mysids daily

all species except *H. azteca* 2 hr prior to renewal

H. azteca 0 hr and 48 hr

H. azteca		
0 hr	Alk	Hrd
Well		
100%		
96 hr	Alk	Hrd
Well		
100%		

Concentration (µg/L mg/L g/L)	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Control	A	D13	10	10	10	10	10	10
	B	D14	10	10	10	10	10	10
100	A	D15	10	8 2D	8	8	8	8
	B	D16	10	7 3D	7	7	7	7
200	A	D17	10	9 1D	8 1D	8	8	8
	B	D18	10	8 2D	7 1D	7	7	7
300	A	D19	10	1 9D	0 1D	—	—	—
	B	D20	10	1 9D	0 1D	—	—	—
400	A	D21	10	0 10D	—	—	—	—
	B	~~D22~~ BA	10	1 9D	0 1D	—	—	—
500	A	D23	10	0 10D	—	—	—	—
	B	D24	10	0 10D	—	—	—	—
Organisms loaded by: JD		Checked by:	JD	4	4	4	4	30

Loading Verified by: MF AR = after renewal m = missing d = dead BR = before renewal hr = hour

Investigators' Signatures

Jackie Shim

Bree Alexander

Chaten Frank

Marshall Faircloth

James Daniels

Reviewer: Kristin C. Wolfe

Comments:

Method: TSK

Statistics: LC50	95% confidence intervals Lower	Upper
48 hour: 228.94	Unreliable	unreliable
96 hour: 228.94	unreliable	unreliable

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Appendix C. (continued)

FDEP Biology Laboratory - Acute SRT Bench Sheet
0-96 hour parameters

Methods from EPA-821-R-02-012 except *H. azteca*

Test Page 2 of 2

Test Organism: (check one)
- ☐ *Americamysis bahia* Method 2007.0 TA07.03
- ☒ *Menidia Beryllina* Method 2006.0 TA07.04
- ☐ *Hyalella azteca* Method 100.1 EPA-600-R-99-064
- ☐ *Ceriodaphnia dubia* Method 2002.0 TA07.01
- ☐ *Cyprinella leedsi* Method 2000.0 TA07.02
- ☐ *Pimephales promelas* Method 2000.0 TA07.02

BA 6-11-09
3-31-09

Test Beginning: Date: 4.3.09 Time: 13:15
Test Ending: Date: 4.7.09 Time: 1115

Test Type: ☐ non-renewal ☒ renewal

hr = hour AR = after renewal BR = before renewal

Concentration (µg/L) ng/L g/L	Replicate	Test Hour	pH (SU)	Temperature (° C)	Dissolved Oxygen (mg/L)	Conductivity ☐ µmhos ☒ mmhos	Salinity (ppth)
Control	A	0 hr	8.3	24.8	6.8	32.3	20.0
	B	24 hr	8.1	25.0	5.0	32.5	20.2
	A	48 hr BR	8.1	24.7	5.7	32.6	20.3
	A	48 hr AR	8.3	24.5	6.4	32.4	20.0
	B	72 hr	8.2	24.5	5.3	32.9	20.6
	A	96 hr	8.1	24.3	5.5	33.1	20.4
100	A	0 hr	8.3	24.8	6.8	32.4	20.0
	B	24 hr	8.2	25.0	5.1	32.4	20.2
	A	48 hr BR	8.1	24.8	5.7	32.7	20.4
	A	48 hr AR	8.3	24.5	6.4	32.1	20.1
	B	72 hr	8.2	24.9	5.3	32.7	20.6
	A	96 hr	8.1	24.6	5.6	32.9	20.3
200	A	0 hr	8.3	24.8	6.9	32.2	20.0
	B	24 hr	8.2	24.9	5.2	32.5	20.3
	A	48 hr BR	8.1	24.8	5.6	32.7	20.4
	A	48 hr AR	8.3	24.5	6.5	32.4	20.2
	B	72 hr	8.2	24.4	5.3	32.8	20.6
	A	96 hr	8.1	24.6	5.7	33.1	20.4
300	A	0 hr	8.3	24.6	6.9	32.1	19.9
	B	24 hr	8.2	24.7	5.4	32.3	19.9
	A	48 hr BR	8.2	24.8	5.8	32.5	20.3
	-	48 hr AR	-	-	-	-	-
	-	72 hr	-	-	-	-	-
	-	96 hr	-	-	-	-	-
400	A	0 hr	8.3	24.6	6.9	31.6	19.6
	B	24 hr	8.2	24.5	5.5	31.9	20.1
	B	48 hr BR	8.2	24.8	6.1	32.2	20.0
	-	48 hr AR	-	-	-	-	-
	-	72 hr	-	-	-	-	-
	-	96 hr	-	-	-	-	-
500	A	0 hr	8.3	24.5	7.0	32.0	19.9
	B	24 hr	8.2	24.6	5.6	32.4	20.1
	A	48 hr BR	-	-	-	-	-
	-	48 hr AR	-	-	-	-	-
	-	72 hr	-	-	-	-	-
	-	96 hr	-	-	-	-	-

Investigators Signatures
James Daniel
Jackie Jones
Brian Allen
Chuck French
Marshall Faircloth
Reviewed By: Kathleen Colwell

Measured by:
0 hr: JD
24 hr: CF/JJ
48 hr BR: CF/JJ
48 hr AR: CF/JJ
72 hr: CF/JJ
96 hr: JD

Measure/record salinity for marine tests

Comments:

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Revised 07/15/2008 MF

Appendix C. (continued)

Americamysis bahia **Acute Standard Reference Toxicant Test**

DATE: 4-8-09 DURATION: 48 h TOXICANT : CdCl2
SPECIES: *Americamysis bahia*

RAW DATA: Concentration (ug/L)	Number Exposed	Mortalities
.00	20	0
20.00	20	3
30.00	20	8
45.00	20	18
67.00	20	20
100.00	20	20

SPEARMAN-KARBER TRIM: 15.00%

SPEARMAN-KARBER ESTIMATES: LC50: **31.38**
95% LOWER CONFIDENCE: 27.33
95% UPPER CONFIDENCE: 36.02

Menidia beryllina **Acute Standard Reference Toxicant Test**

DATE: 3-31-09 DURATION: 48 h TOXICANT : CuCl2
SPECIES: *Menidia beryllina*

RAW DATA: Concentration (ug/L)	Number Exposed	Mortalities
.00	20	0
100.00	20	5
200.00	20	5
300.00	20	20
400.00	20	20
500.00	20	20

SPEARMAN-KARBER TRIM: 25.00%

SPEARMAN-KARBER ESTIMATES: LC50: **228.94**
95% CONFIDENCE LIMITS ARE NOT RELIABLE.

Appendix D. Test Organism Receipt(s)

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 4/7/09

Shipped to: FDEP

P.O. No:

Species	Quantity	Age	Brood Number	Temp.	pH	Salinity
Mysidopsis bahia	150	4 Days	MS090403	25°C	8.0	20‰
Menidia beryllina						
						Hardness
Cyprinella leedsi	150	8 Days	CL090330	25°C	7.8	80 mg/L
Pimephales promelas						

Packed by:

Shipped Via: Fed Ex

Notes:

Thank you for your order.

4569 Samuel Street · Sarasota, FL 34233 · Tel: 941-925-3594 · Fax: 941-922-3874 · Web: www.biologylab.com

Appendix D. (continued)

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 3/30/09

Shipped to: FDEP

P.O. No: _____

Species	Quantity	Age	Brood Number	Temp.	pH	Salinity
Mysidopsis bahia						
Menidia beryllina	150	12 DAYS	SS090318	25°C	7.9	20‰
						Hardness
Cyprinella leedsi						
Pimephales promelas						

Packed by: [signature]

Shipped Via: FedEx

Notes: _____

Thank you for your order.

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Appendix D. (continued)

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 4/27/09

Shipped to: FDEP

P.O. No: _____

Species	Quantity	Age	Brood Number	Temp.	pH	Salinity
Mysidopsis bahia	100	3 DAYS	M5090424	25°C	8.0 S.U	20‰
Menidia beryllina	100	12 DAYS	55090415	25°C	8.0 SU	20‰
						Hardness
Cyprinella leedsi						
Pimephales promelas						

Packed by: _____

Shipped Via: FedEx

Notes: _____

Thank you for your order.

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Appendix E. Chemical Analyses performed on the effluent from the Town of Jupiter RO Concentrate Disposal Facility Outfall D-001, sampled on April 27, 2009.

Date Sampled	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
4/27/2009 9:15	Effluent	AGP/LN	Algal Growth Potential	3	AU	mg DryWt/L	3	3
4/27/2009 9:15	Effluent	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.55	U	ug/L	0.55	1.7
4/27/2009 9:15	Effluent	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.4	U	ug/L	0.4	1.2
4/27/2009 9:15	Effluent	Toxicology	Bioassay-Acute-Screen-SW-Mysid, LC50	100	L	LC50		
4/27/2009 9:15	Effluent	Toxicology	Bioassay-Acute-Screen-SW-Fish, LC50	100	L	LC50		
4/27/2009 9:15	Effluent	Metals	Chromium	0.9	U	ug/L	0.9	3.6
4/27/2009 9:15	Effluent	Metals	Nickel	0.75	U	ug/L	0.75	3
4/27/2009 9:15	Effluent	Metals	Copper	1.5	UJ	ug/L	1.5	1.5
4/27/2009 9:15	Effluent	Metals	Zinc	15	U	ug/L	15	60
4/27/2009 9:15	Effluent	Metals	Arsenic	0.75	U	ug/L	0.75	3
4/27/2009 9:15	Effluent	Metals	Cadmium	0.09	U	ug/L	0.09	0.36
4/27/2009 9:15	Effluent	Metals	Iron	90	U	ug/L	90	360
4/27/2009 9:15	Effluent	Metals	Aluminum	180	U	ug/L	180	720
4/27/2009 9:15	Effluent	Metals	Silver	0.075	U	ug/L	0.075	0.3
4/27/2009 9:15	Effluent	Metals	Selenium	0.7	I	ug/L	0.6	2.4
4/27/2009 9:15	Effluent	Metals	Magnesium	724	A	mg/L	0.8	3.2
4/27/2009 9:15	Effluent	Metals	Lead	0.6	U	ug/L	0.6	2.4
4/27/2009 9:15	Effluent	Metals	Calcium	597	A	mg/L	1.5	6
4/27/2009 9:15	Effluent	Nutrients	Fluoride	3.6		mg F/L	0.1	0.2
4/27/2009 9:15	Effluent	Nutrients	NO2NO3-N	0.013		mg N/L	0.004	0.01
4/27/2009 9:15	Effluent	Nutrients	Kjeldahl Nitrogen	5.5		mg N/L	0.16	0.4
4/27/2009 9:15	Effluent	Nutrients	TSS	16	A	mg/L	4	16
4/27/2009 9:15	Effluent	Nutrients	Ammonia-N	4.2		mg N/L	0.05	0.1
4/27/2009 9:15	Effluent	Nutrients	Total-P	0.013	I	mg P/L	0.008	0.02
4/27/2009 9:15	Effluent	Nutrients	O-Phosphate-P	0.012	I	mg P/L	0.008	0.02
4/27/2009 9:15	Effluent	Overflow	Radium 226-Counting Error	1		pCi/L		
4/27/2009 9:15	Effluent	Overflow	Radium 228-Counting Error	0.6		pCi/L		
4/27/2009 9:15	Effluent	Overflow	Alpha-Counting Error	4.7		pCi/L		
4/27/2009 9:15	Effluent	Overflow	Radium 226	21.2		pCi/L		
4/27/2009 9:15	Effluent	Overflow	Radium 228	1		pCi/L		
4/27/2009 9:15	Effluent	Overflow	Alpha, Total	28.7		pCi/L		
4/27/2009 9:15	Effluent	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
4/27/2009 9:15	Effluent	Pesticides	Diazinon	0.05	U	ug/L	0.05	0.2

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
4/27/2009 9:15	Effluent	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1
4/27/2009 9:15	Effluent	Pesticides	Alpha-BHC	0.01	U	ug/L	0.01	0.04
4/27/2009 9:15	Effluent	Pesticides	Endosulfan I	0.02	U	ug/L	0.02	0.08
4/27/2009 9:15	Effluent	Pesticides	Atrazine	0.05	U	ug/L	0.05	0.2
4/27/2009 9:15	Effluent	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
4/27/2009 9:15	Effluent	Pesticides	Butylate	0.2	U	ug/L	0.2	0.8
4/27/2009 9:15	Effluent	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
4/27/2009 9:15	Effluent	Pesticides	DDE-p,p'	0.02	U	ug/L	0.02	0.08
4/27/2009 9:15	Effluent	Pesticides	Endrin	0.05	U	ug/L	0.05	0.2
4/27/2009 9:15	Effluent	Pesticides	Alachlor	0.6	U	ug/L	0.6	2.4
4/27/2009 9:15	Effluent	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.8
4/27/2009 9:15	Effluent	Pesticides	Metolachlor	0.5	U	ug/L	0.5	2
4/27/2009 9:15	Effluent	Pesticides	Naled	0.8	U	ug/L	0.8	3.2
4/27/2009 9:15	Effluent	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
4/27/2009 9:15	Effluent	Pesticides	Phorate	0.05	U	ug/L	0.05	0.2
4/27/2009 9:15	Effluent	Pesticides	Gamma-BHC	0.01	U	ug/L	0.01	0.04
4/27/2009 9:15	Effluent	Pesticides	Aldrin	0.01	U	ug/L	0.01	0.04
4/27/2009 9:15	Effluent	Pesticides	Beta-BHC	0.01	U	ug/L	0.01	0.04
4/27/2009 9:15	Effluent	Pesticides	Delta-BHC	0.01	U	ug/L	0.01	0.04
4/27/2009 9:15	Effluent	Pesticides	Dieldrin	0.02	U	ug/L	0.02	0.08
4/27/2009 9:15	Effluent	Pesticides	Endosulfan II	0.02	U	ug/L	0.02	0.08
4/27/2009 9:15	Effluent	Pesticides	Ethoprop	0.1	U	ug/L	0.1	0.4
4/27/2009 9:15	Effluent	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
4/27/2009 9:15	Effluent	Pesticides	DDD-p,p'	0.02	U	ug/L	0.02	0.08
4/27/2009 9:15	Effluent	Pesticides	Endrin Aldehyde	0.02	U	ug/L	0.02	0.08
4/27/2009 9:15	Effluent	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
4/27/2009 9:15	Effluent	Pesticides	Parathion Methyl	0.1	U	ug/L	0.1	0.4
4/27/2009 9:15	Effluent	Pesticides	Chlordane	0.2	U	ug/L	0.2	0.8
4/27/2009 9:15	Effluent	Pesticides	Chlorpyrifos Methyl	0.1	U	ug/L	0.1	0.4
4/27/2009 9:15	Effluent	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
4/27/2009 9:15	Effluent	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
4/27/2009 9:15	Effluent	Pesticides	Fonofos	0.1	U	ug/L	0.1	0.4
4/27/2009 9:15	Effluent	Pesticides	Hexazinone	0.1	U	ug/L	0.1	0.4
4/27/2009 9:15	Effluent	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
4/27/2009 9:15	Effluent	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
4/27/2009 9:15	Effluent	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
4/27/2009 9:15	Effluent	Pesticides	DDT-p,p'	0.03	U	ug/L	0.03	0.12
4/27/2009 9:15	Effluent	Pesticides	Endosulfan Sulfate	0.02	U	ug/L	0.02	0.08
4/27/2009 9:15	Effluent	Pesticides	Heptachlor	0.01	U	ug/L	0.01	0.04
4/27/2009 9:15	Effluent	Pesticides	Heptachlor Epoxide	0.02	U	ug/L	0.02	0.08
4/27/2009 9:15	Effluent	Pesticides	Toxaphene	0.75	U	ug/L	0.75	3
4/27/2009 9:15	Effluent	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
4/27/2009 9:15	Effluent	Pesticides	Methoxychlor	0.05	UJ	ug/L	0.05	0.2
4/27/2009 9:15	Effluent	Priority Organic Pollutants	2,4-Dichlorophenol	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9	U	ug/L	2.9	11
4/27/2009 9:15	Effluent	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38	U	ug/L	38	150
4/27/2009 9:15	Effluent	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Benzidine	96	U	ug/L	96	380
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Benzo(a)anthracene	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	U	ug/L	2.9	11
4/27/2009 9:15	Effluent	Priority Organic Pollutants	2-Chloronaphthalene	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Fluoranthene	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	2,4-Dinitrophenol	14	U	ug/L	14	57
4/27/2009 9:15	Effluent	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.6
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Hexachloroethane	2.9	U	ug/L	2.9	11
4/27/2009 9:15	Effluent	Priority Organic Pollutants	2,4-Dinitrotoluene	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.6
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Acenaphthene	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Hexachlorobenzene	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	2-Chlorophenol	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Anthracene	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Isophorone	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.6
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Pentachlorophenol	2.9	U	ug/L	2.9	11
4/27/2009 9:15	Effluent	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	U	ug/L	2.9	11

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
4/27/2009 9:15	Effluent	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Hexachlorobutadiene	2.9	U	ug/L	2.9	11
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Naphthalene	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Pyrene	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	14	U	ug/L	14	57
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Butyl benzyl phthalate	4.8	U	ug/L	4.8	19
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Dimethyl phthalate	9.6	U	ug/L	9.6	38
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	UJ	ug/L	2.9	11
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Phenol	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	2,4-Dimethylphenol	9.6	U	ug/L	9.6	38
4/27/2009 9:15	Effluent	Priority Organic Pollutants	2-Nitrophenol	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Acenaphthylene	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Benzo(a)pyrene	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Benzo(b)fluoranthene	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Chrysene	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Di-n-butyl phthalate	4.8	U	ug/L	4.8	19
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Di-n-octyl phthalate	0.96	UJ	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Fluorene	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.6
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Phenanthrene	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	2,6-Dinitrotoluene	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	4-Nitrophenol	14	U	ug/L	14	57
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Benzo(k)fluoranthene	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Priority Organic Pollutants	Diethyl phthalate	0.96	U	ug/L	0.96	3.8
4/27/2009 9:15	Effluent	Field Parameter	Temperature	23.19		C		
4/27/2009 9:15	Effluent	Field Parameter	Sample Depth	0.01		m		
4/27/2009 9:15	Effluent	Field Parameter	Dissolved Oxygen	8.1		mg/L		
4/27/2009 9:15	Effluent	Field Parameter	Specific Conductance	29750		umhos/cm		
4/27/2009 9:15	Effluent	Field Parameter	pH	6.85				
4/27/2009 9:20	Blank	Metals	Calcium	0.075	U	mg/L	0.075	0.3

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
4/27/2009 9:20	Blank	Metals	Lead	0.2	U	ug/L	0.2	0.8
4/27/2009 9:20	Blank	Metals	Aluminum	60	U	ug/L	60	240
4/27/2009 9:20	Blank	Metals	Selenium	0.2	U	ug/L	0.2	0.8
4/27/2009 9:20	Blank	Metals	Copper	0.5	U	ug/L	0.5	0.5
4/27/2009 9:20	Blank	Metals	Silver	0.025	U	ug/L	0.025	0.1
4/27/2009 9:20	Blank	Metals	Arsenic	0.25	U	ug/L	0.25	1
4/27/2009 9:20	Blank	Metals	Cadmium	0.03	U	ug/L	0.03	0.12
4/27/2009 9:20	Blank	Metals	Nickel	0.25	U	ug/L	0.25	1
4/27/2009 9:20	Blank	Metals	Iron	30	U	ug/L	30	120
4/27/2009 9:20	Blank	Metals	Magnesium	0.04	U	mg/L	0.04	0.16
4/27/2009 9:20	Blank	Metals	Zinc	5	U	ug/L	5	20
4/27/2009 9:20	Blank	Metals	Chromium	0.3	U	ug/L	0.3	1.2
4/27/2009 9:20	Blank	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
4/27/2009 9:20	Blank	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
4/27/2009 9:20	Blank	Nutrients	Total-P	0.22	AJ	mg P/L	0.004	0.01
4/27/2009 9:20	Blank	Nutrients	NO2NO3-N	0.006	I	mg N/L	0.004	0.01
4/27/2009 9:20	Blank	Nutrients	Fluoride	0.05	U	mg F/L	0.05	0.1
4/27/2009 9:20	Blank	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
4/27/2009 9:20	Blank	Overflow	Radium 228-Counting Error	0.5		pCi/L		
4/27/2009 9:20	Blank	Overflow	Radium 228	0.8	U	pCi/L		
4/27/2009 9:20	Blank	Overflow	Radium 226	0.1		pCi/L		
4/27/2009 9:20	Blank	Overflow	Alpha-Counting Error	0.7		pCi/L		
4/27/2009 9:20	Blank	Overflow	Radium 226-Counting Error	0.1		pCi/L		
4/27/2009 9:20	Blank	Overflow	Alpha, Total	0.9	U	pCi/L		
4/27/2009 9:20	Blank	Pesticides	Azinphos Methyl	0.19	U	ug/L	0.19	0.76
4/27/2009 9:20	Blank	Pesticides	Prometryn	0.14	U	ug/L	0.14	0.56
4/27/2009 9:20	Blank	Pesticides	Diazinon	0.048	U	ug/L	0.048	0.19
4/27/2009 9:20	Blank	Pesticides	Fenamiphos	0.19	U	ug/L	0.19	0.76
4/27/2009 9:20	Blank	Pesticides	DDE-p,p'	0.019	U	ug/L	0.019	0.076
4/27/2009 9:20	Blank	Pesticides	Alachlor	0.58	U	ug/L	0.58	2.3
4/27/2009 9:20	Blank	Pesticides	Malathion	0.14	U	ug/L	0.14	0.56
4/27/2009 9:20	Blank	Pesticides	Mevinphos	0.19	U	ug/L	0.19	0.76
4/27/2009 9:20	Blank	Pesticides	DDD-p,p'	0.019	U	ug/L	0.019	0.076
4/27/2009 9:20	Blank	Pesticides	Endrin Aldehyde	0.019	U	ug/L	0.019	0.076

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
4/27/2009 9:20	Blank	Pesticides	Methoxychlor	0.048	UJ	ug/L	0.048	0.19
4/27/2009 9:20	Blank	Pesticides	Bromacil	0.19	U	ug/L	0.19	0.76
4/27/2009 9:20	Blank	Pesticides	Fonofos	0.096	U	ug/L	0.096	0.38
4/27/2009 9:20	Blank	Pesticides	Heptachlor Epoxide	0.019	U	ug/L	0.019	0.076
4/27/2009 9:20	Blank	Pesticides	Chlorpyrifos Ethyl	0.048	U	ug/L	0.048	0.19
4/27/2009 9:20	Blank	Pesticides	Aldrin	0.0096	U	ug/L	0.0096	0.038
4/27/2009 9:20	Blank	Pesticides	Alpha-BHC	0.0096	U	ug/L	0.0096	0.038
4/27/2009 9:20	Blank	Pesticides	Ethoprop	0.096	U	ug/L	0.096	0.38
4/27/2009 9:20	Blank	Pesticides	Parathion Ethyl	0.14	U	ug/L	0.14	0.56
4/27/2009 9:20	Blank	Pesticides	Phorate	0.048	U	ug/L	0.048	0.19
4/27/2009 9:20	Blank	Pesticides	Endosulfan II	0.019	U	ug/L	0.019	0.076
4/27/2009 9:20	Blank	Pesticides	Toxaphene	0.72	U	ug/L	0.72	2.9
4/27/2009 9:20	Blank	Pesticides	Ametryn	0.048	U	ug/L	0.048	0.19
4/27/2009 9:20	Blank	Pesticides	Atrazine	0.048	U	ug/L	0.048	0.19
4/27/2009 9:20	Blank	Pesticides	Naled	0.77	U	ug/L	0.77	3.1
4/27/2009 9:20	Blank	Pesticides	Delta-BHC	0.0096	U	ug/L	0.0096	0.038
4/27/2009 9:20	Blank	Pesticides	Dieldrin	0.019	U	ug/L	0.019	0.076
4/27/2009 9:20	Blank	Pesticides	Hexazinone	0.096	U	ug/L	0.096	0.38
4/27/2009 9:20	Blank	Pesticides	Metalaxyl	0.24	U	ug/L	0.24	0.96
4/27/2009 9:20	Blank	Pesticides	Metolachlor	0.48	U	ug/L	0.48	1.9
4/27/2009 9:20	Blank	Pesticides	Norflurazon	0.14	U	ug/L	0.14	0.56
4/27/2009 9:20	Blank	Pesticides	Simazine	0.048	U	ug/L	0.048	0.19
4/27/2009 9:20	Blank	Pesticides	Beta-BHC	0.0096	U	ug/L	0.0096	0.038
4/27/2009 9:20	Blank	Pesticides	Chlordane	0.19	U	ug/L	0.19	0.76
4/27/2009 9:20	Blank	Pesticides	DDT-p,p'	0.029	U	ug/L	0.029	0.12
4/27/2009 9:20	Blank	Pesticides	Endosulfan I	0.019	U	ug/L	0.019	0.076
4/27/2009 9:20	Blank	Pesticides	Endosulfan Sulfate	0.019	U	ug/L	0.019	0.076
4/27/2009 9:20	Blank	Pesticides	Endrin	0.048	U	ug/L	0.048	0.19
4/27/2009 9:20	Blank	Pesticides	Gamma-BHC	0.0096	U	ug/L	0.0096	0.038
4/27/2009 9:20	Blank	Pesticides	Heptachlor	0.0096	U	ug/L	0.0096	0.038
4/27/2009 9:20	Blank	Pesticides	Butylate	0.19	U	ug/L	0.19	0.76
4/27/2009 9:20	Blank	Pesticides	Ethion	0.048	U	ug/L	0.048	0.19
4/27/2009 9:20	Blank	Pesticides	Metribuzin	0.096	U	ug/L	0.096	0.38
4/27/2009 9:20	Blank	Pesticides	Parathion Methyl	0.096	U	ug/L	0.096	0.38

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
4/27/2009 9:20	Blank	Pesticides	Chlorpyrifos Methyl	0.096	U	ug/L	0.096	0.38
4/27/2009 9:20	Blank	Priority Organic Pollutants	2,4-Dichlorophenol	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	U	ug/L	2.9	12
4/27/2009 9:20	Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	Di-n-octyl phthalate	0.97	UJ	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	Hexachlorobenzene	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	Hexachlorobutadiene	2.9	U	ug/L	2.9	12
4/27/2009 9:20	Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.7
4/27/2009 9:20	Blank	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.7
4/27/2009 9:20	Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.7
4/27/2009 9:20	Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	U	ug/L	2.9	12
4/27/2009 9:20	Blank	Priority Organic Pollutants	Fluoranthene	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	Fluorene	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	Pentachlorophenol	2.9	U	ug/L	2.9	12
4/27/2009 9:20	Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	Phenanthrene	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	Phenol	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	2-Chloronaphthalene	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	Acenaphthene	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	Anthracene	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	Di-n-butyl phthalate	4.8	U	ug/L	4.8	19
4/27/2009 9:20	Blank	Priority Organic Pollutants	Diethyl phthalate	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	Dimethyl phthalate	9.7	U	ug/L	9.7	39
4/27/2009 9:20	Blank	Priority Organic Pollutants	Naphthalene	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	Pyrene	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	2,4-Dimethylphenol	9.7	U	ug/L	9.7	39

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
4/27/2009 9:20	Blank	Priority Organic Pollutants	2,4-Dinitrophenol	14	U	ug/L	14	58
4/27/2009 9:20	Blank	Priority Organic Pollutants	2-Nitrophenol	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	39	U	ug/L	39	150
4/27/2009 9:20	Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	Benzidine	97	U	ug/L	97	390
4/27/2009 9:20	Blank	Priority Organic Pollutants	Butyl benzyl phthalate	4.8	U	ug/L	4.8	19
4/27/2009 9:20	Blank	Priority Organic Pollutants	Chrysene	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	UJ	ug/L	2.9	12
4/27/2009 9:20	Blank	Priority Organic Pollutants	Hexachloroethane	2.9	U	ug/L	2.9	12
4/27/2009 9:20	Blank	Priority Organic Pollutants	Isophorone	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9	U	ug/L	2.9	12
4/27/2009 9:20	Blank	Priority Organic Pollutants	2-Chlorophenol	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.7
4/27/2009 9:20	Blank	Priority Organic Pollutants	4-Nitrophenol	14	U	ug/L	14	58
4/27/2009 9:20	Blank	Priority Organic Pollutants	Acenaphthylene	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	16	I	ug/L	14	58
4/27/2009 9:20	Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.97	U	ug/L	0.97	3.9
4/27/2009 9:20	Blank	Field Parameter	Sample Depth	0.1		m		

Appendix F. Facility Summary and Pages 1-7 of Facility Permit

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

Facility Name (as it appears on permit): Town of Jupiter water treatment Plant Reverse Osmosis Sysytem Email to which final report be sent: davidb@jupiter.fl.us		Former Names: N/A
Physical Address: 17403 Central Blvd Jupiter, FL 33458	NPDES Permit No.: FL0042358 Expiration Date:06/24/09	Prepared By: Lisa Gatch
County: Palm Beach	District: SED	Facility Type: water treatment plant
Function of Facility: produce potable water form ground water		
Sampling Location (actual permit designation of permitted sampling point): flow meters at water treatment plant (for Flow) and meter box off Central Blvd for effluent, for toxicity: 400m east of outfall, 400m west of outfall, 500m east of outfall and at River Road bridge (see permit)		
Description of permitted outfall: RO concentrate flows via gravity through 18-inch PVC pipe to the C-18 Canal (Class II surface water) where it is discharged by a submerged diffuser which is 120' long and runs along bottom of canal. The diffuser has 80 3-inch diameter holes spaced 1.5' apart on center. There is a 400m mixing zone.		
Description of treatment process RO concentrate is treated with by injecting sulfuric acid to lower pH, followed by degassification with a scrubber system to remove gaseous hydrogen sulfide. .		
Receiving Waters: C-18 canal, Class II surface water	Classification (indicate whether fresh or marine): Fresh?	
Temperature (C): d	Design Flow: 4.6 MGD	
pH (SU): ?	Mean Flow (for previous 12 months):	
Conductivity (umhos/cm): ?	Flow During Survey:	
Method of Chlorination:	Method of Dechlorination:	
Dissolved Oxygen (mg/L): ?	Total Residual Chlorine (mg/L) (after disinfection):	
Discharge is: Continuous		
Toxicity Test Requirements (routine and/or additional test language test species, salinity adjustment, etc.): routine		

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Appendix F. (continued)

Administrative or Consent Orders: yes administrative order **AO 03-008-IW-50-SED**
Facility Mixing Zone Details: 400 m on either side of outfall
List permit violations (DMR data) and plant upsets that occurred at the plant within the last year: **None**
Describe previous impact bioassessments, WQBEL's, and previous or current enforcement actions: **None**
Discuss MOR trends to prior data; is trend improving or declining:

List Effluent Limits (include additional sheets as necessary):

Parameter and Units	Limit	Describe special permit conditions and permit modifications:
See attached permit		

Appendix F. (continued)

Department of
Environmental Protection

Jeb Bush
Governor

Southeast District
400 N. Congress Avenue, Suite 200
West Palm Beach, Florida 33401

Colleen M. Castille
Secretary

STATE OF FLORIDA
INDUSTRIAL WASTEWATER FACILITY PERMIT

PERMITTEE:

Town of Jupiter
210 Military Trail
Jupiter, FL 33458

PERMIT NUMBER: FL0042358
PA FILE NUMBER: FL0042358-003-IW5A
ISSUANCE DATE: **June 25, 2004**
EXPIRATION DATE: **June 24, 2009**

RESPONSIBLE AUTHORITY:

Mr. David L. Brown
Director of Utilities

FACILITY:

Town of Jupiter RO Concentrate Disposal
Facility
17403 Central Blvd.
Jupiter, FL 33458
Palm Beach County

Latitude: 26° 55' 58.2" N Longitude: 80° 7' 59.12" W

This permit is issued under the provisions of Chapter 403, Florida Statutes, and applicable rules of the Florida Administrative Code and constitutes authorization to discharge to waters of the state under the National Pollutant Discharge Elimination System. This permit is accompanied by an Administrative Order pursuant to Paragraphs 403.088(2)(e) and (f), Florida Statutes. Compliance with Administrative Order AO-03-008-IW-50-SED is a specific requirement of this permit. The above named permittee is hereby authorized to operate the facilities shown on the application and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

A 4.6 million gallons per day (MGD), maximum design flow, Reverse Osmosis (RO) concentrate treatment and disposal facility, serving a 13.7 MGD RO potable water treatment facility (SIC No. 4941) for the Town of Jupiter.

WASTEWATER TREATMENT:

Concentrate is treated by injecting sulfuric acid to lower the pH, followed by degassification with a scrubber to remove gaseous hydrogen sulfide. A small portion of the RO concentrate (10 gpm) is used to regenerate the resin of Ion Exchange treatment units at the water plant. The regenerant wastewater discharges through the outfall, but will be connected to the Loxahatchee River Control District wastewater treatment plant within 180 days of permit issuance. The facility is also authorized for emergency discharge of stormwater through the concentrate disposal pipe to protect buildings and treatment facilities under extreme flooding conditions.

Appendix F. (continued)

PERMITTEE: Town of Jupi... PERMIT NUMBER: FL0042358

EFFLUENT DISPOSAL:

Surface Water Discharge:

The treated concentrate, ion exchange regenerant and emergency stormwater discharge is transported by 18-inch PVC pipe to the C-18 Canal, a Class II surface water body, where it is discharged by a submerged diffuser, which is 120 feet in length and runs perpendicular along the bottom of the canal at a depth of approximately 8.5 feet (mean high water). The diffuser design includes eighty 3-inch diameter ports, spaced 1.5 feet apart on center, with the flow directed in the upward direction. The concentrate flow is continuously measured at each RO treatment train by pitot tube flow meters. The water plant can operate at 1/2 capacity during electrical power loss using an emergency generator. One on-line back-up pump for acid injection is provided. The point of discharge is located approximately at latitude 26° 56' 14" N, longitude 80° 08' 06" W.

IN ACCORDANCE WITH: The limitations, monitoring requirements and other conditions as set forth in Part I through Part VIII on pages 3 through 21 of this permit.

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Appendix F. (continued)

PERMITTEE: Town of Jupi... PERMIT NUMBER: FL0042358

I. Effluent Limitations and Monitoring Requirements

A. Surface Water Discharges

1. During the period beginning on the issuance date and lasting through the expiration date of this permit, the permittee is authorized to discharge reverse osmosis concentrate, ion exchange regenerant, and stormwater from Outfall D-001. Such discharge shall be limited and monitored by the permittee as specified below:

	Discharge Limitations			Monitoring Requirements		
Parameters (units)	**Monthly Average**	**Daily Maximum**	**Daily Minimum**	**Monitoring Frequency**	**Sample Type**	**Sample Point**
Flow (MGD)	--	4.6	--	Continuous	Meter	FLW-1
Salinity (PPT)	--	Report	--	Monthly	Grab	EFF-1
Ammonia, Total (MG/L)	--	Report	--	Monthly	Grab	EFF-1
Nitrogen, Total (MG/L)	--	Report	--	Monthly	Grab	EFF-1
Phosphorus, Total (as P) (MG/L)	--	Report	--	Monthly	Grab	EFF-1
Copper, Total Recoverable (UG/L)	--	2.9	--	Quarterly	Grab	EFF-1
Fluoride, Total (as F) (MG/L)	--	Report (See Section I.A.4.)	--	Monthly	Grab	EFF-1
Oxygen, Dissolved (DO) (MG/L)	5.0	--	4.0	Weekly	In-situ	EFF-1
Temperature (F), Water (DEG.F)	--	Report	--	Monthly	In-situ	EFF-1
pH (SU)	--	8.5	6.5	Monthly	In-situ	EFF-1
Radium 226 + Radium 228, Total (PCI/L)	--	Report (See Section I.A.4.)	--	Monthly	Grab	EFF-1
Hydrogen sulfide (MG/L)	--	0.02	--	Monthly	Grab	EFF-1
Specific Conductance (UMHO/CM)	--	Report	--	Monthly	In-situ	EFF-1
Alpha, Gross Particle Activity (PCI/L)	--	Report (See Section I.A.4.)	--	Monthly	Grab	EFF-1
Whole Effluent Toxicity	See Section I.A.3			Semiannually	24-hr composite	EFF-1

2. Effluent samples shall be taken at the monitoring site locations listed in permit condition I.A.1 and as described below:

Sample Point	Description of Monitoring Location
FLW-1	Flow Meter(s) at Water Treatment Plant
EFF-1	Meter box off Central Blvd.

Appendix F. (continued)

3. Toxicity Effluent Limits and Monitoring Program

a. A mixing zone of approximately 145 meters upstream (west) and 255 meters downstream (east) of the point of discharge is authorized for chronic toxicity. Compliance with the mixing zone limit shall be demonstrated by conducting routine chronic toxicity tests on the effluent. The end point measured shall be the No-Observed-Effect-Concentration (NOEC), and the effluent limit shall be an NOEC of no less than 12.5% effluent.

b. The permittee shall conduct the chronic toxicity tests semiannually on the concentrate discharge prior to mixing with the receiving water as specified in the toxicity testing protocol as given in Section I.A.3.c. through k. below. All test species, procedures and quality assurance criteria used shall be in accordance with Short-term methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, EPA/600/4-91/003, or the most current edition. The control water and effluent samples shall be adjusted to a salinity of 20 ppt using artificial sea salts (e.g., Forty Fathoms) as described in EPA/600/4-91/003, Section 7, or the most current edition. A standard reference toxicant (SRT) quality assurance (QA) chronic toxicity test shall be conducted concurrently or no greater than 30 days before the date of the "routine" test, with each species used in the toxicity tests. The results of all QA toxicity tests shall be submitted with the discharge monitoring report (DMR). Any deviation from the bioassay procedures outlined herein shall be submitted in writing to the Department for review and approval prior to use.

c. The permittee shall conduct a mysid shrimp (*Americamysis bahia*), Survival and Growth Test (Method 1007), and an inland silverside, (*Menidia beryllina*), Larval Survival and Growth Test (Method 1006). These tests shall be conducted using a control (0% effluent) and the following definitive series: 100%, 50%, 25%, 12.5%, and 6.25% effluent.

d. For each set of tests conducted, a 24-hour composite sample of final effluent shall be collected and used per the sampling schedule discussed in EPA/600/4-91/003, Section 8. Two additional composite samples shall be collected according to the protocol and used as renewal solutions on Day 3 (48 hours) and Day 5 (96 hours) of the test.

e. If control mortality exceeds 20% for either species in any test, the test(s) for that species (including the control) shall be repeated. A test will be considered valid only if control mortality does not exceed 20% for either species. If, in any separate grab sample test, 100% mortality occurs prior to the end of the test, and control mortality is less than 20% at that time, that test (including the control) shall be terminated with the conclusion that the sample demonstrates unacceptable toxicity. Additionally, all tests conducted must meet the acceptability criteria as defined in EPA/600/4-91/003.

f. The toxicity tests specified above shall be conducted semi-annually until 6 consecutive, valid tests are completed with no violations. These tests are referred to as "routine" tests. Upon the completion of six valid tests that demonstrate that no violation of chronic toxicity has occurred, the permittee may petition the Department for a reduction in monitoring frequency.

g. Results from "routine" tests shall be reported according to EPA/600/4-91/003, Section 13, Report Preparation (or the most current edition), and shall be submitted to the DEP District Office in West Palm Beach (Attention: Industrial Waste Section). Additionally, all results shall be recorded and submitted on the Discharge Monitoring Report (DMR) in the following manner: If the NOEC of a test species is less than 12.5% effluent, "<12.5%" should be entered on the DMR for that species. If the NOEC of a test species is greater than or equal to 12.5% effluent, "≥12.5%" should be entered.

h. An NOEC of less than 12.5% effluent in any "routine" or additional definitive test will be a violation of these permit conditions and Rule 62-302.530(62), F. A. C.

i. If a violation (NOEC <12.5% effluent) is found in a "routine" test, the permittee shall conduct two additional tests on each species indicating the toxicity violation. Each additional test shall be conducted

Appendix F. (continued)

using a control (0% effluent) and a minimum of five effluent dilutions: 100%, 50%, 25%, 12.5%, and 6.25% effluent.

j. For each additional test, the sample collection requirements and the test acceptability criteria specified in d. through f. above must be met for the test to be considered valid. The first test shall begin within four weeks of the end of the "routine" tests, and shall be conducted bi-weekly thereafter until three additional, valid tests are completed. All test results shall be statistically analyzed according to the Appendices in EPA/600/4-91/003, or the most current edition.

k. Results from additional tests, required due to a chronic toxicity violation in the "routine" tests, shall be submitted in a single report prepared according to EPA/600/4-91/003, Section 13, or the most current edition and submitted within 60 days of completion of the third additional, valid test. Upon the completion of the additional tests, the permittee will meet with the Department within 30 days of the report submittal to identify corrective actions necessary to remedy the observed chronic toxicity.

l. An LC50 of less than 100% effluent in any additional definitive test will constitute a violation of these permit conditions and Rule 62-4.244(3)(a), F.A.C, Rule 62-302.200(1) and Rule 62-302.500(1), F.A.C. Test methodology shall be as given in the protocol for chronic toxicity testing above, and the results extracted from the report.

4. Mixing Zone Description and Monitoring Requirements
A mixing zone of 400 meters on either side of Outfall D001 (the discharge diffuser pipe) is authorized for the Class II surface water standards Combined Radium 226+228, Gross Alpha and Fluoride. A mixing zone of approximately 145 meters upstream (west) and 255 meters downstream (east) of the outfall is authorized for chronic toxicity.

a. The Class II surface water standards for Gross Alpha (15 ug/L), Fluoride (1.5 mg/L), and Combined Radium 226+228 (5.0 pCi/L), pursuant to F.A.C. Rule 62-302.530, shall be met at the boundary of the mixing zone(s). Compliance with the standards shall be verified by sampling the receiving water at the mixing zone boundaries, 400 meters on each side of the outfall. Compliance with the mixing zone for chronic toxicity shall be determined by testing of whole effluent toxicity in accordance with Section I.A.3. of the permit.

b. Compliance monitoring at the mixing zone boundaries shall be performed on a monthly basis. Samples shall be collected approximately in the middle of the C-18 Canal, at 400 meters on the each side of outfall. In addition, on a quarterly basis, samples shall be taken at 500 meters downstream (east) of the outfall. For the initial 12 months of the permit, samples shall be collected at slack low tide; for the second 12 months, samples shall be collected at slack high tide; for the third 12 months, samples shall be collected at slack low tide; for the fourth 12 months, samples shall be collected at slack high tide; for the fifth 12 months, samples shall be collected at slack low tide. The depth of sample collection shall be determined by checking for stratification of the receiving water by measuring the conductance throughout the water column at the sample collection point. Samples shall be taken at a depth where the receiving water density most closely resembles the effluent density, or if the conductance throughout the water column is greater than the effluent, the sample shall be taken at one foot below the water surface. Sampling and testing shall be as specified below:

Parameters (units)	Storet Number	Discharge Limitations			Monitoring Requirements		
		Monthly Avg.	Daily Max.	Other	Frequency	Sample Type	Sample Point
Sample Depth (feet, from surface)	N/A	N/A	N/A	Report	Monthly	Measure	SWD-3 and SWD-4
Sample Depth (feet, from surface)	N/A	N/A	N/A	Report	Quarterly	Measure	SWD-5

Appendix F. (continued)

Tide (slack high tide or slack low tide)	N/A	N/A	N/A	Report	Monthly	(Tide chart)	SWD-3 and SWD-4
Tide (slack high tide or slack low tide)	N/A	N/A	N/A	Report	Quarterly	(Tide chart)	SWD-5
Fluoride (mg/L)	00951	N/A	1.5	N/A	Monthly	Grab	SWD-3 and SWD-4
Fluoride (mg/L)	00951	N/A	1.5	N/A	Quarterly	Grab	SWD-5
Specific Conductance, Field (umhos)	00095	N/A	Report	N/A	Monthly	In-Situ	SWD-3 and SWD-4
Specific Conductance, Field (umhos)	00095	N/A	Report	N/A	Quarterly	In-Situ	SWD-5
Combined Radium 226 and 228 (pCi/L)	11503	N/A	5.0	N/A	Monthly	Grab	SWD-3 and SWD-4
Combined Radium 226 and 228 (pCi/L)	11503	N/A	5.0	N/A	Quarterly	Grab	SWD-5
Gross Alpha Particle Activity (pCi/L)	80045	N/A	15.0	N/A	Monthly	Grab	SWD-3 and SWD-4
Gross Alpha Particle Activity (pCi/L)	80045	N/A	15.0	N/A	Quarterly	Grab	SWD-5
Chlorophyll a (mg/L)	32230	N/A	Report	N/A	Monthly	Grab	SWD-3 and SWD-4

c. Sampling Stations are designated as follows:

Sample Point	Description of Monitoring Location
SWD-3	400 meters on east side of outfall
SWD-4	400 meters on west side of outfall
SWD-5	500 meters on east side of outfall

d. The permittee shall comply with the applicable sections of F.A.C. Rules 62-4.244 and 62-302.500 related to the subject mixing zones. Specifically, the permittee shall assure the minimum surface water criteria ("free froms") must be met in the mixing zones at all times and all places. The mixing zones must be "free from" nuisance conditions, toxic , carcinogenic, mutagenic and teratogenic substances, and which may cause serious danger to public health, safety or welfare. The mixing zone exemptions also shall not produce a significant adverse effect on the established community of organisms or otherwise significantly impair any of the designated uses of the receiving body of water.

5. River Road Bridge Monitoring

a. The permittee shall continue sampling at the River Road Bridge site (SWD-2) as specified below:

Parameters (units)	Storet Number	Discharge Limitations			Monitoring Requirements		
		Monthly Avg.	Daily Max.	Other	Frequency	Sample Type	Sample Point
Salinity (ppt)	00480	N/A	Report	N/A	Monthly	In-Situ	SWD-2
Total Ammonia (as N) (mg/L)	00610	N/A	Report	N/A	Monthly	Grab	SWD-2
Total Nitrogen (as N) (mg/L)	00600	N/A	Report	N/A	Monthly	Grab	SWD-2
Copper, Total Recoverable (ug/L)	01119	N/A	Report	N/A	Semiannually	Grab	SWD-2

Appendix F. (continued)

Temperature, Field (deg F)	00011	N/A	Report	N/A	Monthly	In-Situ	SWD-2
Dissolved Oxygen, Field (mg/L)	00300	N/A	Report	N/A	Monthly	In-Situ	SWD-2
pH, Field (s.u.)	00400	N/A	Report	Report (Day. Min.)	Monthly	In-Situ	SWD-2
Fluoride (mg/L)	00951	N/A	Report	N/A	Monthly	Grab	SWD-2
Specific Conductance, Field (umhos)	00095	N/A	Report	N/A	Monthly	In-Situ	SWD-2
Combined Radium 226 and 228 (pCi/L)	11503	N/A	Report	N/A	Semianually	Grab	SWD-2
Gross Alpha Particle Activity (pCi/L)	80045	N/A	Report	N/A	Semiannually	Grab	SWD-2
Chlorophyll a (mg/L)	32230	N/A	Report	N/A	Semiannually	Grab	SWD-2

b. Sampling Stations are designated as follows:

Sample Point	Description of Monitoring Location
SWD-2	River Road Bridge

c. Samples shall be taken at mid-depth on the same day as the other surface water sampling stations (SWD-3, SWD-4, and SWD-5) are sampled. For the initial 12 months of the permit, samples shall be collected at slack low tide; for the second 12 months, samples shall be collected at slack high tide; for the third 12 months, samples shall be collected at slack low tide; for the fourth 12 months, samples shall be collected at slack high tide; for the fifth 12 months, samples shall be collected at slack low tide.

6. There shall be no discharge of floating solids or visible foam in other than trace amounts.

7. The discharge shall not cause a visible sheen on the receiving water.

B. Underground Injection Control Systems

1. This section is not applicable to this facility.

C. Land Application Systems

1. This section is not applicable to this facility.

D. Other Methods of Disposal or Recycling

1. There shall be no discharge of industrial wastewater from this facility to ground or surface waters, except as authorized by this permit.

Appendix G. EPA Page

The Bioassay of Town of Jupiter RO Concentrate Disposal Facility effluent sampled on April 27, 2009. NPDES #FL0042358.

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 4 2 3 5 8 11	12 0 9 0 4 2 7	18 **B**	19 **S**	20 1

Remarks

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The Priority Pollutants Analysis of Town of Jupiter RO Concentrate Disposal Facility effluent sampled on April 27, 2009. NPDES #FL0042358.

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 4 2 3 5 8 11	12 0 9 0 4 2 7	18 **X**	19 **S**	20 1

Remarks

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Biological Analyses of Town of Jupiter RO Concentrate Disposal Facility effluent sampled on April 27, 2009. NPDES #FL0042358.

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 4 2 3 5 8 11	12 0 9 0 4 2 7	18 **S**	19 **S**	20 1

Remarks

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