

Effluent Quality Assessment

USAC Bartow Chemical Plant

Polk County

NPDES #FL0001961

Sampled September 8, 2009

January 2010

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration

Quality Manual No. 870346G
NELAC Certification No. E31780

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USAC Bartow Chemical Plant, 2559 Highway 60, West Fort Meade, Polk County, Florida, 33841. NPDES #FL0001961. Effluent samples for bioassay and chemical analyses for this facility were collected on September 8, 2009.

Introduction

USAC Bartow Chemical Plant is a closed diammonium/monammonium phosphate (DAP) manufacturing facility. The facility has no Administrative Orders, Consent Orders or Mixing Zones. There have been no reported permit violations within the past year. (See Appendix F for detailed facility information provided by Michael Lynch of FDEP Southwest District Bureau of Mining & Minerals Regulation Phosphate Management Program.)

Methods

Samples for bioassay and chemical analyses were collected from the EFF-01 NPDES sampling point for Outfall D-001 by Scott Rose and Mike Lynch (FDEP Southwest District Bureau of Mining & Minerals Regulation Phosphate Management Program), 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 forms.

The freshwater acute screening toxicity tests were performed following internal DEP SOPs TA07_01 and TA07_02. 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 performed September 9 - 13, 2009.

Ceriodaphnia dubia 96-hour acute screening bioassay – LC_{50} > 100%, 5% mortality in 100% sample at 96 hours

Cyprinella leedsi 96-hour acute screening bioassay – LC_{50} > 100%, 5% mortality in 100% sample at 96 hours

The bioassay samples were not acutely toxic to the bioassay 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

An Algal Growth Potential (AGP) sample was not collected for this facility during the sampling event of September 8, 2009; however, as determined by nutrient analyses, the ratio of inorganic nitrogen to ortho-phosphate (0.1:1) as well as the ratio of total nitrogen to total phosphorus (0.6:1) in the effluent suggests that the effluent is nitrogen-limited. To determine actual nutrient limitation, a limiting-nutrient algal growth potential test should be performed (Miller et al. 1978).

See Table 1 for predicted AGP.

Chemistry Results

Total residual chlorine was not detected in the bioassay sample in the bioassay laboratory. Total ammonia (0.0701 mg N/L) was detected in the bioassay sample in the bioassay laboratory. Based on the pH, salinity, and temperature of the bioassay sample, the calculated unionized ammonia concentration was < 0.02 mg N/L. The total ammonia concentration in the sample collected and preserved for chemical analysis was 0.18 mg N/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was < 0.02 mg N/L.

Arsenic, nickel, combined radium 226 and 228, and gross alpha particle activity was detected in the effluent at levels that comply with Class III freshwater quality criteria (62-302.530, F.A.C.). Aluminum, chromium and iron were detected between the laboratory method detection limits (MDL) and the laboratory practical quantification limits (PQL).

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

Conclusion

The effluent samples collected from the EFF-01 NPDES sampling point for Outfall D-001 for this facility on September 8, 2009, were not acutely toxic to either test species. Effluent water quality samples did not violate water quality criteria or permit limits.

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.

Table 1. Predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN), orthophosphate (OP), total nitrogen (TN) and total phosphorus (TP) limitation of the freshwater species *Pseudokirchneriella subcapitata* and ratios of nitrogen to phosphorus for samples collected from the USAC Bartow Chemical Plant on September 8, 2009.

USAC Bartow Chemical Plant						
	Predicted AGP	Predicted AGP	Predicted AGP	Predicted AGP	Inorganic	Total
Location	(TSIN) ± 20%	(OP) ± 20%	(TN) ± 20%	(TP) ± 20%	N:P ratio	N:P ratio
	8.4 ± 1.7	1075.0 ± 215.0	62.3 ± 12.5	1118.0 ± 223.6	0.1	0.6

Table 2. Effluent limits, Class III Freshwater Criteria and chemical data for samples collected from the USAC Bartow Chemical Plant on September 8, 2009.

USAC Bartow Chemical Plant NPDES# FL0001961	Class III Criteria	Effluent Limits	Effluent	
Organic Constituents (µg/L)				
None Detected	-	-	None Detected	
Metals (µg/L unless otherwise noted)				
Aluminum	-	-	160	I
Arsenic	≤ 50	-	1.66	
Cadmium	≤ 0.3 b	-	0.03	U
Calcium (mg/L)	-	-	25.9	
Chromium-III	≤ 98.0 b	-	0.4	I
Copper	≤ 10.7 b	-	0.5	U
Iron	≤ 1,000	-	110	I
Lead	≤ 3.9 b	-	0.2	U
Magnesium (mg/L)	-	-	12.7	
Mercury	≤ 0.012	-	-	
Nickel	≤ 59.6 b	-	1.12	
Selenium	≤ 5.0	-	0.2	U
Silver	≤ 0.07	-	0.025	U
Zinc	≤ 136.8 b	-	5	U
Nutrients (mg/L)				
Ortho-phosphate	-	Report	2.5	F
Total Phosphorus	-	≤ 40.0 s	2.6	A
Total Ammonia	-	-	0.18	
Un-ionized Ammonia	≤ 0.02 s	≤ 0.02 s	≤ 0.02	c
Nitrate and Nitrite	-	-	0.04	
Total Kjeldahl Nitrogen	-	-	1.6	
Organic Nitrogen	-	-	1.42	c
Total Nitrogen	-	Report	1.64	c
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 5.0	≥ 5.0 s	7.6	
pH (SU)	6.0 - 8.5	6.0 - 8.5 s	7.0	
Conductivity (µmhos/cm)	≤ 1,275	≤ 1,275 s	393	
Temperature (°C)	-	Report	28.5	
Total Residual Chlorine (mg/L)	≤ 0.01	-	0	
Chloride (mg/L)	-	-	8.3	
Fluoride (mg/L)	≤ 10.0	≤ 10.0 s	1.4	
Sulfate (mg/L)	-	Report	120	
Alpha, Total (pCi/L)	≤ 15	≤ 15 s	2	
Alpha-Counting Error (pCi/L)	-	-	1.5	
Radium 226 (pCi/L)	-	-	0.3	
Radium 226-Counting Error (pCi/L)	-	-	0.1	
Radium 228 (pCi/L)	-	-	0.8	U
Radium 228-Counting Error (pCi/L)	-	-	0.5	
Radium 226 + 228 (pCi/L)	≤ 5	≤ 5 s	0.3	c
Flow (MGD)	-	Report	1.445	m
Hardness (mg $CaCO_3$)	-	-	116.97	c

Value exceeds the Class III Water Quality Criteria or permit limits

m - monthly average
b - Value is calculated based on hardness
c - Value is calculated
s - Single sample
A - Value reported is the mean of two or more determinations. Value was 0.005 I in blank
F - Analyte was detected in both sample and field blank (0.005 I mg/L).
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

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Request Number: RQ-2009-09-07-37
US Agri-Chem Bartow

Event ID *

Requester: Jennifer Paris
Field Report Prepared By: Scott Rose

Customer: BMR-TAMPA
Collected By: Scott Rose - Mike Lynch
Send Final Report To Vishwas Sathe

Project ID: FYI5
Sampling Agency: FDEP

PMAS: 1143

Lab ID *	Location: US Agri-Chemical - Bartow			☐ Comp ☑ Grab	Collection (begin) Date	Time	Eastern Central	Collection (end) Date 9-8-09	Time 10:30	Eastern Central	Bottle Group(s)**
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L) 7.58			Storet Station Number			A
	Matrix (Include type e.g. Salt, Fresh, etc): water effluent	Temp (C) 28.53	pH 7.04	Sample Depth ☐ m ☐ ft n/a				☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm) 393		NPDES Number FL0001961	
	Latitude o ' "	Longitude o ' "		Comments: Sampled at outfall						FL0174106	
Lab ID *	Location: US Agri-Chemicals - Bartow			☐ Comp ☑ Grab	Collection (begin) Date	Time	Eastern Central	Collection (end) Date 9-8-09	Time 10:30	Eastern Central	Bottle Group(s)**
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)			Storet Station Number			B
	Matrix (Include type e.g. Salt, Fresh, etc): water - blanks	Temp (C)	pH	Sample Depth ☐ m ☐ ft				☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)		NPDES Number FL0001961	
	Latitude o ' "	Longitude o ' "		Comments						FL0174106	
Lab ID *	Location			☐ Comp ☐ Grab	Collection (begin) Date	Time	Eastern Central	Collection (end) Date	Time	Eastern Central	Bottle Group(s)**
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)			Storet Station Number			
	Matrix (Include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft				☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)		NPDES Number	
	Latitude o ' "	Longitude o ' "		Comments							
Lab ID *	Location			☐ Comp ☐ Grab	Collection (begin) Date	Time	Eastern Central	Collection (end) Date	Time	Eastern Central	Bottle Group(s)**
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)			Storet Station Number			
	Matrix (Include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft				☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)		NPDES Number	
	Latitude o ' "	Longitude o ' "		Comments: 2 bisassay Reid in tax by J.D. 10:16 9.9.09							

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
Scott Rose	9/8/09 2:30	Fax Ex	Tahmoures Ebrahimi	9:15 09/09/09				

* 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

JD by MF 11-17-09

Facility: ~~MacDill AFB~~ U.S. Agri-Chem Bartow

Address: 2559 Highway 60

City: West Fort Meade County: Polk 33841-9799

Contact/District: ~~Scott Rose~~ Scott Rose / BMR-TAMPA

NPDES Permit #: FL 0001961

LIMS ~~Job~~ #: 1214130 (Br Sumpkin)

LIMS ~~Sample~~ #: TH-2009-09091-68 (BA Job#)

Lims Data Entry: MF 9-18-09

Data Entry Verification: JD 9.18.09

Sample Collection: Date: 9-8-09 Time: 10:30

Hold Time Start: Date: 9-8-09 Time: 10:30

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_01

Control survival ≥90%: (Yes) No

Temperature Range ≤3°C: (Yes) No

Test 2 validation: Test 2: SOP TA 07_02

Control survival ≥90%: (Yes) No

Temperature Range ≤3°C: (Yes) No

(√one)

Test 1 incubated in: ☑ Incubator #: 2 ☐ Waterbath #:

Test 2 incubated in: ☑ Incubator #: 2 ☐ 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. 25.1 max. 26.1 mean 25.6

Incubator # ____ min. ____ max. ____ mean ____

Waterbath # ____ min. ____ max. ____ mean ____

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)

Not used Well Water as DMW Used BA

Batch #	~~8.30.09~~	9.1.09		8H.09					
Water Quality Parameters	BA 20% DMW 8.30.09	Well Water	Moderately Hard Water	Salt Water (ASW) NSW Test 1	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	<0.03		<0.03			0.04	SD/CF	BA
Alkalinity (mg/L as $CaCO_3$):	91	154		200			61	BA	MF
Hardness (mg/L as $CaCO_3$):	88	140					114	BA	MF
Total Ammonia (mg/L as N):	<0.017	<0.017		<0.017			0.0701	MF	BA
Conductivity: (umhos) mmhos	212	294					391	CF	BA
Salinity (ppth):	<1	<1		~20			0.12	CF	BA

Investigators' Signatures

Marshall Faircloth

Brad Alcorn

James Davis

Chelsea Frank

Loretta C. Wolfe

REVIEWER

V 1.6 7/8/08

Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1214130 Test #: 12 SOP#:TA 07_01 Test Started: Date 9.9.09 Time: 13:30
Organism/Batch/Age: C. dubia / 32-09 / <24hr Test Ended: Date 9-13-09 Time: 1410
Chamber/Test Volume: 30 / 30 ml Diluent/ Batch: DMW / 8-30-09 Test Duration: 48 hr (96 hr)
Food/Batch: [X] YCT 7-15-09 [X] P.sub 7-23-09
[ ] Artemia Lot# Batch #: 0hr 24hr 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	5	5	5	5	5	4 (D)
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
100%	A	A	5	5	5	5	5	4 (D)
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
			50	50	50	50	50	MF

Loaded/Verified by: [illegible] 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: 5 % 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 #: 124130 **Test #:** 2/2 **SOP#:TA 07** 02 **Test Started:** Date 9.9.09 Time: 13:30

Organism/Batch/Age: c. leedsi / 9.9.09 / 12 days **Test Ended:** Date 9-13.09 Time: 1410

Chamber/Test Volume: 1000 / 500 ml **Diluent/ Batch:** Well / 9-1-09 **Test Duration:** 48 hr (96) hr

Food/Batch: [ ] YCT____ [ ] P.sub____

[X] Artemia Lot# 38435 **Batch #:** 0hr 118-09 24hr____ 48hr 120-09 72hr____

Feeding: [X] Prior to Test [X] 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	D15	5	5	5	5	5	5
	B	D16	5	5	5	5	5	5
	C	D17	5	5	5	5	5	5
	D	D18	5	5	5	5	5	5
100%	A	D19	5	5	5	5	5	5
	B	D20	5	5	5	5	5	4 (10)
	C	D21	5	5	5	5	5	5
	D	D22	5	5	5	5	5	5
Loaded/Verified by: [illegible] / [illegible]	Checked by:		[illegible]	[illegible]	CF	[illegible]	[illegible]	mf

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: 5% 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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FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 1214130 Test #: 1 of 2

TEST SOP #: TA07_01 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	M		M	M		A
pH (S.U.)	8.1		8.0	8.1		8.1
Temperature °C	25.2		24.0	24.0		25.0
Dissolved Oxygen mg/L aerate if < 4	7.3		7.7	7.6		7.8
Conductivity (µmhos) mmhos	212		256	187		194
Salinity ppth	—		—	—		
(initials) Measured by:	cf		cf	cf		MF
(initials) Recorded by:	cf		cf	cf		MF

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		M	M		A
pH (S.U.)	7.1		8.0	7.3		8.1
Temperature °C	25.4		24.1	24.4		25.0
Dissolved Oxygen mg/L aerate if < 4	7.4		7.9	8.3		7.8
Conductivity (µmhos) mmhos	397		414	391		397
Salinity ppth	—		—	—		
(initials) Measured by:	cf		cf	cf		MF
(initials) Recorded by:	cf		cf	cf		MF

Comments:

Salinity only needs measuring if saltwater.

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:

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

FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 121130 Test #: 2 of 2

TEST SOP #: TA07 02 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	C	D	A
pH (S.U.)	8.0	8.2	8.2	8.1	8.2	8.2
Temperature °C	25.0	24.4	24.0	25.0	24.5	25.1
Dissolved Oxygen mg/L aerate if < 4	7.8	7.5	7.3	7.4	7.3	7.2
Conductivity (µmhos) mmhos	294	305	324	336	290	294
Salinity ppth	—	—	—	—	—	—
(initials) Measured by:	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	MF
(initials) Recorded by:	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	MF

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C	C	D	A
pH (S.U.)	7.1	7.9	7.7	7.3	7.7	7.8
Temperature °C	25.9	24.3	24.5	24.8	24.2	25.3
Dissolved Oxygen mg/L aerate if < 4	8.1	7.5	7.6	8.1	7.1	7.3
Conductivity (µmhos) mmhos	396	398	404	401	399	402
Salinity ppth	—	—	—	—	—	—
(initials) Measured by:	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	MF
(initials) Recorded by:	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	MF

Comments:

Salinity only needs measuring if saltwater.

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:

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:

Appendix B. (continued)

Bioassay Instrument ID

Test ID: U S Agrichem Bartow plant Dates: Sept 9-13, 2009

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 JD 10.2009

V 1.1 6/12/08 MF

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Appendix C. SRT Bench Sheets and Statistical Analysis

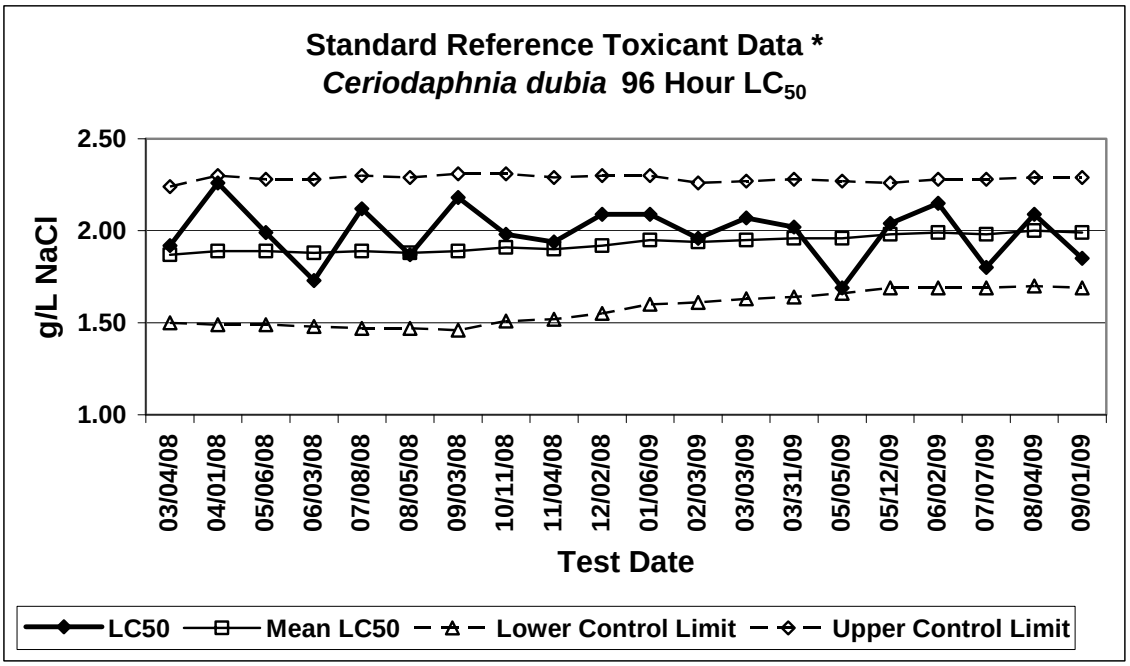
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 96-hour Acute Toxicity
Ceriodaphnia dubia (water flea) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
03/04/08	1.92	1.87	0.18	1.50	2.24
04/01/08	2.26	1.89	0.20	1.49	2.30
05/06/08	1.99	1.89	0.20	1.49	2.28
06/03/08	1.73	1.88	0.20	1.48	2.28
07/08/08	2.12	1.89	0.21	1.47	2.30
08/05/08	1.87	1.88	0.20	1.47	2.29
09/03/08	2.18	1.89	0.21	1.46	2.31
10/11/08	1.98	1.91	0.20	1.51	2.31
11/04/08	1.94	1.90	0.19	1.52	2.29
12/02/08	2.09	1.92	0.19	1.55	2.30
01/06/09	2.09	1.95	0.17	1.60	2.30
02/03/09	1.96	1.94	0.16	1.61	2.26
03/03/09	2.07	1.95	0.16	1.63	2.27
03/31/09	2.02	1.96	0.16	1.64	2.28
05/05/09	1.69	1.96	0.15	1.66	2.27
05/12/09	2.04	1.98	0.14	1.69	2.26
06/02/09	2.15	1.99	0.15	1.69	2.28
07/07/09	1.80	1.98	0.15	1.69	2.28
08/04/09	2.09	2.00	0.15	1.70	2.29
09/01/09	1.85	1.99	0.15	1.69	2.29

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

CV = 7.53
EPA reference 75th quartile CV = 29%



Appendix C. (continued)

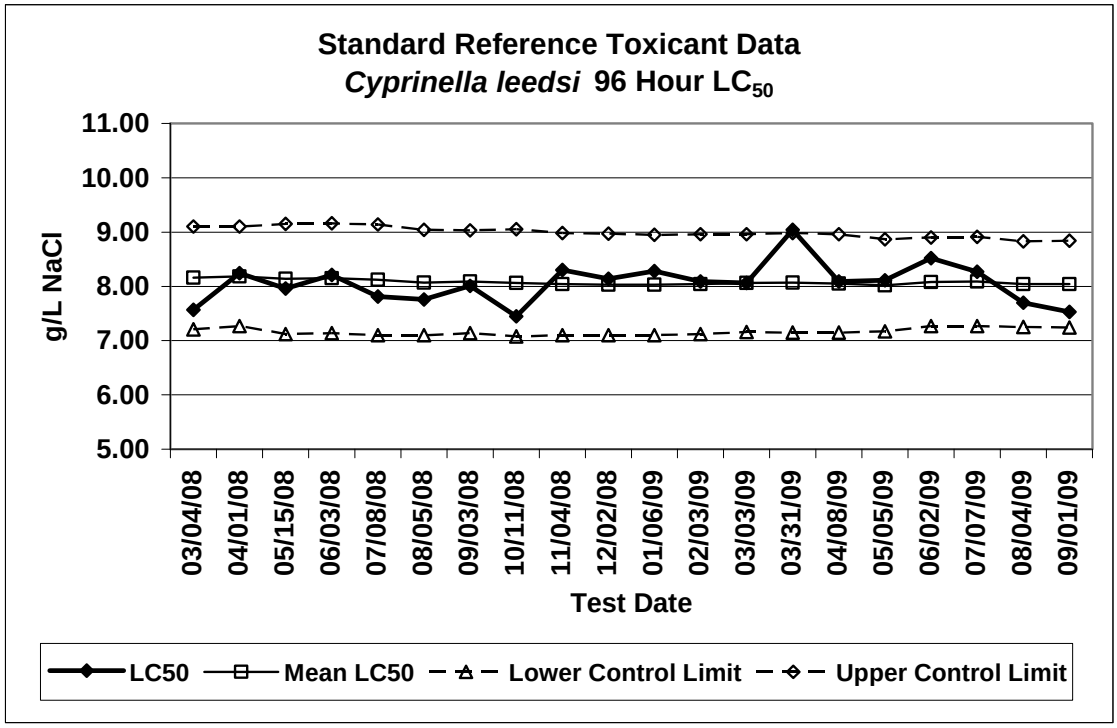
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 96-hour Acute Toxicity
Cyprinella leedsi (bannerfin shiner) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
03/04/08	7.57	8.16	0.47	7.21	9.10
04/01/08	8.24	8.18	0.46	7.27	9.10
05/15/08	7.96	8.14	0.51	7.12	9.15
06/03/08	8.21	8.15	0.51	7.14	9.16
07/08/08	7.81	8.12	0.51	7.10	9.14
08/05/08	7.76	8.07	0.48	7.10	9.04
09/03/08	8.01	8.09	0.47	7.14	9.03
10/11/08	7.45	8.06	0.49	7.08	9.05
11/04/08	8.30	8.04	0.47	7.10	8.98
12/02/08	8.14	8.03	0.47	7.10	8.97
01/06/09	8.28	8.03	0.46	7.10	8.95
02/03/09	8.09	8.04	0.46	7.12	8.96
03/03/09	8.06	8.06	0.45	7.16	8.96
03/31/09	9.04	8.07	0.46	7.15	8.98
04/08/09	8.09	8.05	0.45	7.15	8.96
05/05/09	8.11	8.02	0.43	7.17	8.87
06/02/09	8.52	8.08	0.41	7.27	8.90
07/07/09	8.27	8.09	0.41	7.27	8.91
08/04/09	7.70	8.04	0.40	7.25	8.83
09/01/09	7.53	8.04	0.40	7.24	8.84

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

CV = 4.96
EPA reference 75th quartile CV = 19%



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 #: DMW / 8.15.09
Toxicant/ Batch#: NaCl / 5.31.09
Organism Batch: 31.09 Age: <24hr
Test Beginning: Date: 9.1.09 Time: 12:00
Test Ending: Date: 9.5.09 Time: 1200

Water Quality Parameters:	Diluent	SOP	Initials
Total Residual Cl_2 (mg/L):	<0.03	TA06_22	BA
Alkalinity (mg/L as $CaCO_3$):	77	TA06_08	BA
Hardness (mg.L as $CaCO_3$):	85	TA06_09	BA
Total Ammonia (mg/L as N):	<0.017	TA06_17	MF
Conductivity: µmhos (mmhos)	0.174	TA06_25	BA
Salinity (ppth):	<1	TA06_25	BA

Food:	Batch
☑ YCT	7.15.09
☑ *P. subcapitata*	2.13.09
☐ Artemia Lot #	~

Artemia Batch:

0 hr:	
24 hr:	
48 hr:	
72 hr:	

Chamber size: 30 mL
Test volume: 20 mL per replicate

Concentrations prepared by: BA
Temperature Range °C:(if used)
Test Incubated in: Incubator # 2 Waterbath # ___ Incubator # 2 min. 24.5 max. 25.3 mean 24.9
Light Intensity: 50-100 Ft. candles Waterbath # ___ min. ___ max. ___ mean ___
Photoperiod: 16 hours Light / 8 hours dark Room B246 min. 24.9 max. 25.7 mean 25.3

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

Concentration µg/L mg/L	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Control	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
1.5	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	~~5~~ 5d	5
	C	C	5	5	5	4 1M	4	4
	D	D	5	5	5	5	5	5
2.0	A	A	5	5	5	1 4D	1	1
	B	B	5	5	5	3 1D	3	3
	C	C	5	5	4 1D	1 3D (A)	1	1
	D	D	5	5	5	3 2D	3	1 2D
2.5	A	A	5	3 2D	0 3D	–		
	B	B	5	3 2D	1 2D	0 1D		
	C	C	5	4 1D	1 3D	0 1D		
	D	D	5	5	0 5D	–		
3.0	A	A	5	1 4D	0 1D	–		
	B	B	5	1 4D	0 1D	–		
	C	C	5	3 2D	0 3D	–		
	D	D	5	4 1D	0 4D	–		
4.0	A	A	5	0 5D	–	–		
	B	B	5	0 5D	–	–		
	C	C	5	0 5D	–	–		
	D	D	5	2 3D	0 2D	–		

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

Organisms loaded by: BA Checked by: JS BA CF CF JS JS
Loading Verified by: JS AR = after renewal
m = missing d = dead BR = before renewal hr = hour

Comments: (A) Count is a 1 with 3 dead. CF

Investigators' Signatures

James Daniels
Bruce Ahr
Chelsea Francis
Marshall Fairbanks
Reviewer: Christa C. Wolfe

Method: TSK

Statistics: LC50	95% confidence intervals Lower	Upper
48 hour: 2.25	2.17	2.34
96 hour: 1.85	1.71	1.96

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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

Test Beginning: Date: 9.1.09 Time: 12:00
Test Ending: Date: 9.5.09 Time: 12:00

Test Type: ☐ non-renewal ☑ renewal

hr = hour AR = after renewal BR = before renewal

Concentration µg/L mg/L (circle)	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity ☐ µmhos ☑ mmhos	Salinity (ppth)
Control	M	0 hr	7.9	24.2	7.5	0.174	–
	–	24 hr	–	–	–	2.44	–
	A	48 hr BR	7.8	24.0	7.0	0.198	
	M	48 hr AR	7.9	24.2	7.8	0.181	
		72 hr	–	–	–	–	–
	M	96 hr	7.8	24.2	7.8	0.224	
1.5	M	0 hr	7.9	24.3	7.6	2.94	–
	–	24 hr	–	–	–	–	–
	A	48 hr BR	7.8	24.0	7.1	3.28	
	M	48 hr AR	8.0	24.4	7.7	2.91	
		72 hr					
	M	96 hr	7.8	24.1	7.9	3.19	
2.0	M	0 hr	7.9	24.3	7.8	3.95	–
	–	24 hr	–	–	–	–	–
	A	48 hr BR	7.8	24.0	7.0	4.44	
	M	48 hr AR	8.0	24.5	7.7	3.93	
		72 hr					
	M	96 hr	7.8	24.0	7.9	4.66	
2.5	M	0 hr	7.9	24.2	7.8	4.78	–
	–	24 hr	–	–	–	–	–
	A	48 hr BR	7.8	24.0	7.2	5.34	
	M	48 hr AR	8.1	24.3	7.6	4.77	
	B	72 hr	8.0	24.4	7.8	4.87	
		96 hr					
3.0	M	0 hr	7.9	24.2	7.8	5.68	–
	–	24 hr	–	–	–	–	–
	A	48 hr BR	7.9	24.0	7.2	6.45	
		48 hr AR					
		72 hr					
		96 hr					
4.0	M	0 hr	7.9	24.0	7.8	7.44	–
	–	24 hr	–	–	–	–	–
	A	48 hr BR	7.9	24.0	7.3	7.87	
		48 hr AR					
		72 hr					
		96 hr					

Investigators Signatures
Brian Hunk
Chelsea Ford
Marshall Fairchild
Jane Davis

Reviewed By: Loretta C. Wolfe

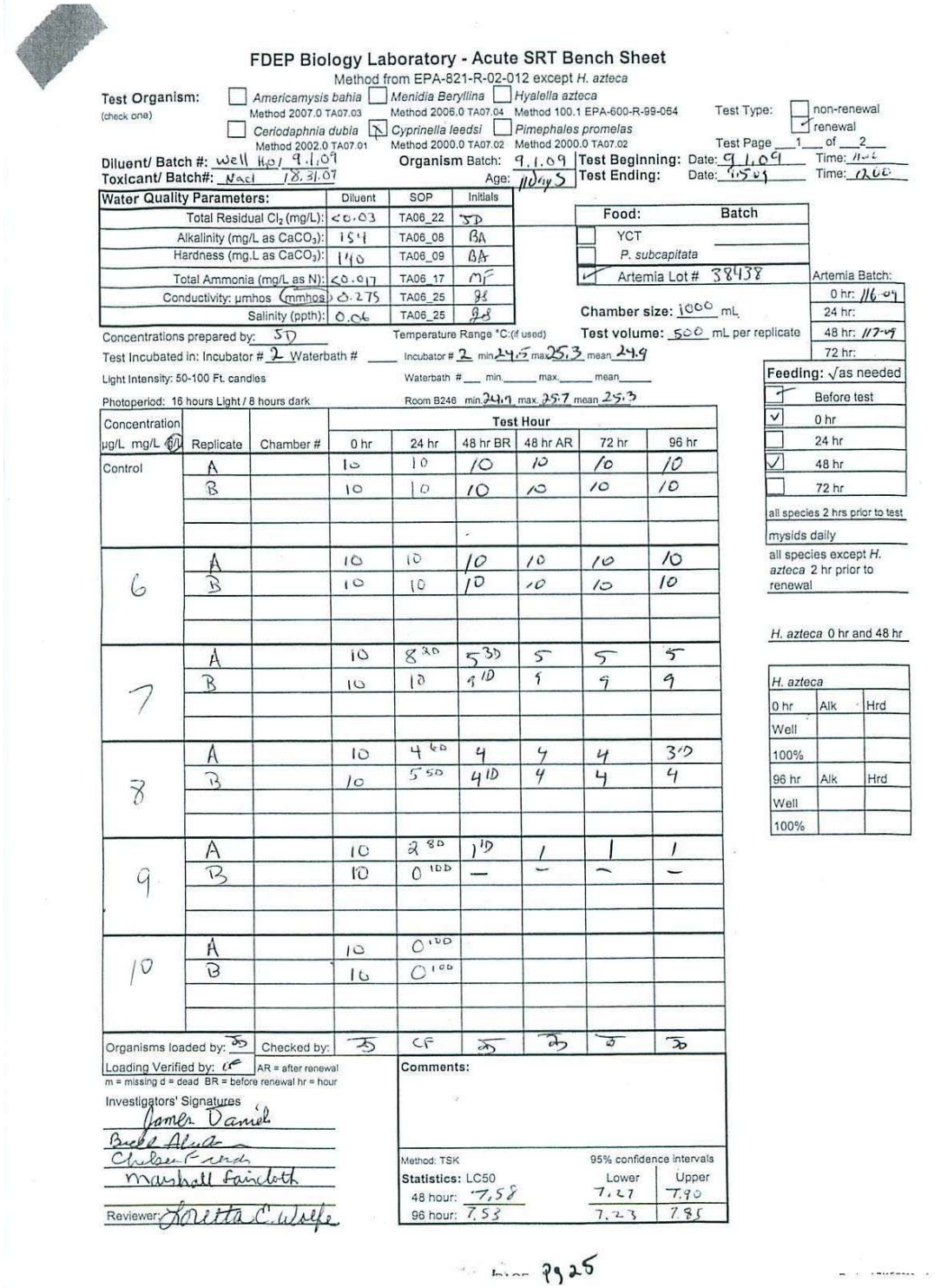
Measured by:
0 hr: BA
24 hr: –
48 hr BR: BA
48 hr AR: BA
72 hr: BA
96 hr: JD

Measure/record salinity for marine tests

Comments: 72 hr parameters taken for 2.5 sample when all organisms dead. BA 9.4.09

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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 #: well H2O 9.1.09

Toxicant/ Batch#: NaCl 18.31.07

Organism Batch: 9.1.09 Age: 10day 5

Test Beginning: Date: 9.1.09 Time: 1100

Test Ending: Date: 9.5.09 Time: 1200

Water Quality Parameters:	Diluent	SOP	Initials
Total Residual Cl_2 (mg/L):	<0.03	TA06_22	SD
Alkalinity (mg/L as $CaCO_3$):	154	TA06_08	BA
Hardness (mg.L as $CaCO_3$):	140	TA06_09	BA
Total Ammonia (mg/L as N):	<0.017	TA06_17	MF
Conductivity: µmhos (mmhos)	0.275	TA06_25	JS
Salinity (ppth):	0.06	TA06_25	JS

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

Artemia Batch:

0 hr: 116-09

24 hr:

48 hr: 117-09

72 hr:

Chamber size: 1000 mL

Test volume: 500 mL per replicate

Concentrations prepared by: SD

Temperature Range °C:(if used)

Test Incubated in: Incubator # 2 Waterbath # ___ Incubator # 2 min 24.5 max 25.3 mean 24.9

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

Photoperiod: 16 hours Light / 8 hours dark Room B246 min 24.9 max 25.7 mean 25.3

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

Concentration µg/L mg/L (ppt)	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Control	A		10	10	10	10	10	10
	B		10	10	10	10	10	10
6	A		10	10	10	10	10	10
	B		10	10	10	10	10	10
7	A		10	8 [3D]	5 [3D]	5	5	5
	B		10	10	9 [1D]	9	9	9
8	A		10	4 [6D]	4	4	4	3 [1D]
	B		10	5 [5D]	4 [1D]	4	4	4
9	A		10	2 [8D]	1 [1D]	1	1	1
	B		10	0 [10D]	—	—	—	—
10	A		10	0 [10D]				
	B		10	0 [10D]				
Organisms loaded by: JD	Checked by:		JD	CF	JD	JD	JD	JD
Loading Verified by: CF	AR = after renewal							

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

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

Investigators' Signatures

James Daniel

Bobbi Alvis

Chelsea Finch

Marshall Faircloth

Reviewer: Loretta C. Wolfe

Comments:

Method: TSK	95% confidence intervals	
Statistics: LC50	Lower	Upper
48 hour: 7.58	7.27	7.90
96 hour: 7.53	7.23	7.85

Page 9 of 25

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

Test Beginning: Date: 9.1.09 Time: 1100
Test Ending: Date: 9.5.09 Time: 1202
Test Type: ☐ non-renewal ☐ renewal

hr = hour AR = after renewal BR = before renewal

Concentration µg/L mg/L	Replicate	Test Hour	pH (SU)	Temperature (° C)	Dissolved Oxygen (mg/L)	Conductivity ☐ µmhos ☑ mmhos	Salinity (ppth)
Control	A	0 hr	7.9	24.8	8.2	0.275	0.06
	B	24 hr	8.0	24.2	7.8	0.276	
	A	48 hr BR	8.1	25.0	7.8	0.328	
	A	48 hr AR	8.1	23.9	7.9	0.329	
	B	72 hr	7.4	24.8	6.8	0.503	
	A	96 hr	7.9	24.6	7.7	0.350	
6	A	0 hr	7.9	25.2	8.2	10.96	6.11
	B	24 hr	7.9	24.2	7.6	10.8	
	A	48 hr BR	8.1	24.2	7.8	10.5	
	A	48 hr AR	8.0	23.9	7.9	10.4	
	B	72 hr	7.8	24.7	6.6	10.9	
	A	96 hr	8.0	24.1	7.3	11.0	
7	A	0 hr	7.9	25.4	8.2	12.81	7.32
	B	24 hr	7.9	24.1	7.5	12.5	
	A	48 hr BR	8.1	24.0	7.5	12.8	
	A	48 hr AR	8.0	23.9	7.8	12.9	
	B	72 hr	7.9	24.7	6.7	13.1	
	A	96 hr	8.1	24.1	7.3	13.2	
8	A	0 hr	7.9	25.4	8.0	14.54	8.41
	B	24 hr	7.9	24.0	7.5	14.3	
	A	48 hr BR	8.1	24.0	7.3	14.5	
	A	48 hr AR	8.0	23.9	7.7	14.3	
	B	72 hr	8.0	24.5	6.8	14.1	
	A	96 hr	8.1	24.2	7.2	14.7	
9	A	0 hr	7.9	25.4	8.2	16.03	9.33
	B	24 hr	8.0	24.0	7.5	15.9	
	A	48 hr BR	8.1	24.0	7.4	16.0	
	A	48 hr AR	8.0	23.9	7.7	~~14.3~~ 16.0	
	A	72 hr	8.0	24.5	6.8	16.4	
	A	96 hr	8.1	24.3	7.0	16.6	
10	A	0 hr	7.9	25.6	8.0	17.78	10.45
	B	24 hr	8.0	24.0	7.5	17.5	
		48 hr BR	—	~~24.0~~	~~7.6~~	—	—
		48 hr AR					
		72 hr					
		96 hr					

Investigators Signatures
Bruce Ahrdt
Chelsea Frenck
Jamie Dand
Marshall Faircloth
Reviewed By: Loretta C. Wolfe

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

Measure/record salinity for marine tests

Comments:

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Appendix C. (continued)

***Ceriodaphnia dubia* Acute Standard Reference Toxicant Test**

DATE: 9-1-09 DURATION: 96 h TOXICANT: NaCl
SPECIES: *Ceriodaphnia dubia*

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
.00	20	0
1.50	20	1
2.00	20	14
2.50	20	20
3.00	20	20
4.00	20	20

SPEARMAN-KARBER TRIM: 5.00%

SPEARMAN-KARBER ESTIMATES: **LC50: 1.85**
95% LOWER CONFIDENCE: 1.74
95% UPPER CONFIDENCE: 1.96

***Cyprinella leedsi* Acute Standard Reference Toxicant Test**

DATE: 9-1-09 DURATION: 96 h TOXICANT: NaCl
SPECIES: *Cyprinella leedsi*

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
.00	20	0
6.00	20	0
7.00	20	6
8.00	20	13
9.00	20	19
10.00	20	20

SPEARMAN-KARBER TRIM: .00%

SPEARMAN-KARBER ESTIMATES: LC50: 7.53
95% LOWER CONFIDENCE: 7.23
95% UPPER CONFIDENCE: 7.85

Appendix D. Test Organism Receipts

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 8/31/09

Shipped to: FDEP

P.O. No:

Species	Quantity	Age	Brood Number	Temp.	pH	Salinity
Mysidopsis bahia	150	4 DAYS	M5090827	25°C	8.0 s.u	20 ‰
Menidia beryllina	150	12 DAYS	SS090819	25°C	8.0 s.u.	20 ‰
						Hardness
Cyprinella leedsi	250	10 DAYS	CL090821	25°C	7.8 s.u.	80 mg/L
Pimephales promelas	150	8 DAYS	FM090823	25°C	7.8 s.u.	80 mg/L

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: 9/8/09

Shipped to: FDEP

P.O. No: _____

Species	Quantity	Age	Brood Number	Temp.	pH	Salinity
Mysidopsis bahia						
Menidia beryllina	150	12 DAY	55090828	25°C	8.0 S.U	20‰
						Hardness
Cyprinella leedsi	100	11 DAYS	CL 090829	25°C	7.8 S.U	80 mg/L
Pimephales promelas						

Packed by: [signature]

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 E. Chemical Analyses performed on the effluent from the USAC Bartow Chemical Plant Outfall D-001, sampled on September 8, 2009.

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
9/8/2009 10:30	Effluent	Toxicology	Bioassay-Acute-Screen-FW-C.dubia, LC50	100	L	LC50		
9/8/2009 10:30	Effluent	Toxicology	Bioassay-Acute-Screen-FW-Fish, LC50	100	L	LC50		
9/8/2009 10:30	Effluent	Metals	Cadmium	0.03	U	ug/L	0.03	0.12
9/8/2009 10:30	Effluent	Metals	Sodium	36.5		mg/L	0.5	2
9/8/2009 10:30	Effluent	Metals	Iron	110	I	ug/L	30	120
9/8/2009 10:30	Effluent	Metals	Silver	0.025	U	ug/L	0.025	0.1
9/8/2009 10:30	Effluent	Metals	Arsenic	1.66		ug/L	0.25	1
9/8/2009 10:30	Effluent	Metals	Zinc	5	U	ug/L	5	20
9/8/2009 10:30	Effluent	Metals	Nickel	1.12		ug/L	0.25	1
9/8/2009 10:30	Effluent	Metals	Calcium	25.9		mg/L	0.075	0.3
9/8/2009 10:30	Effluent	Metals	Lead	0.2	U	ug/L	0.2	0.8
9/8/2009 10:30	Effluent	Metals	Chromium	0.4	I	ug/L	0.3	1.2
9/8/2009 10:30	Effluent	Metals	Aluminum	160	I	ug/L	60	240
9/8/2009 10:30	Effluent	Metals	Selenium	0.2	U	ug/L	0.2	0.8
9/8/2009 10:30	Effluent	Metals	Copper	0.5	U	ug/L	0.5	0.5
9/8/2009 10:30	Effluent	Metals	Magnesium	12.7		mg/L	0.04	0.16
9/8/2009 10:30	Effluent	Nutrients	Kjeldahl Nitrogen	1.6		mg N/L	0.08	0.2
9/8/2009 10:30	Effluent	Nutrients	Organic Carbon	18		mg C/L	1	5
9/8/2009 10:30	Effluent	Nutrients	O-Phosphate-P	2.5		mg P/L	0.08	0.2
9/8/2009 10:30	Effluent	Nutrients	Ammonia-N	0.18		mg N/L	0.01	0.02
9/8/2009 10:30	Effluent	Nutrients	NO2NO3-N	0.04		mg N/L	0.004	0.01
9/8/2009 10:30	Effluent	Nutrients	Chloride	8.3		mg Cl/L	2	5
9/8/2009 10:30	Effluent	Nutrients	Alkalinity	36		mg CaCO3/L	0.65	2.5
9/8/2009 10:30	Effluent	Nutrients	Total-P	2.6	A	mg P/L	0.1	0.25
9/8/2009 10:30	Effluent	Nutrients	Fluoride	1.4		mg F/L	0.05	0.1
9/8/2009 10:30	Effluent	Nutrients	Color (true)	80		PCU	10	10
9/8/2009 10:30	Effluent	Nutrients	Sulfate	120		mg SO4/L	2	5
9/8/2009 10:30	Effluent	Overflow	Radium 228	0.8	U	pCi/L		
9/8/2009 10:30	Effluent	Overflow	Radium 226-Counting Error	0.1		pCi/L		
9/8/2009 10:30	Effluent	Overflow	Radium 228-Counting Error	0.5		pCi/L		
9/8/2009 10:30	Effluent	Overflow	Alpha-Counting Error	1.5		pCi/L		
9/8/2009 10:30	Effluent	Overflow	Alpha, Total	2		pCi/L		
9/8/2009 10:30	Effluent	Overflow	Radium 226	0.3		pCi/L		

Appendix E. (continued)

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
9/8/2009 10:30	Effluent	Pesticides	Butylate	0.2	U	ug/L	0.2	0.8
9/8/2009 10:30	Effluent	Pesticides	Chlorpyrifos Methyl	0.1	U	ug/L	0.1	0.4
9/8/2009 10:30	Effluent	Pesticides	Fonofos	0.1	U	ug/L	0.1	0.4
9/8/2009 10:30	Effluent	Pesticides	Mevinphos	0.2	UJ	ug/L	0.2	0.8
9/8/2009 10:30	Effluent	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
9/8/2009 10:30	Effluent	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.8
9/8/2009 10:30	Effluent	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
9/8/2009 10:30	Effluent	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
9/8/2009 10:30	Effluent	Pesticides	Metolachlor	0.5	U	ug/L	0.5	2
9/8/2009 10:30	Effluent	Pesticides	Atrazine	0.05	U	ug/L	0.05	0.2
9/8/2009 10:30	Effluent	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
9/8/2009 10:30	Effluent	Pesticides	Hexazinone	0.1	U	ug/L	0.1	0.4
9/8/2009 10:30	Effluent	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
9/8/2009 10:30	Effluent	Pesticides	Parathion Methyl	0.1	U	ug/L	0.1	0.4
9/8/2009 10:30	Effluent	Pesticides	Naled	0.8	UJ	ug/L	0.8	3.2
9/8/2009 10:30	Effluent	Pesticides	Alachlor	0.6	U	ug/L	0.6	2.4
9/8/2009 10:30	Effluent	Pesticides	Diazinon	0.05	U	ug/L	0.05	0.2
9/8/2009 10:30	Effluent	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
9/8/2009 10:30	Effluent	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
9/8/2009 10:30	Effluent	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
9/8/2009 10:30	Effluent	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
9/8/2009 10:30	Effluent	Pesticides	Ethoprop	0.1	U	ug/L	0.1	0.4
9/8/2009 10:30	Effluent	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
9/8/2009 10:30	Effluent	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1
9/8/2009 10:30	Effluent	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
9/8/2009 10:30	Effluent	Pesticides	Phorate	0.05	U	ug/L	0.05	0.2
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.3	U	ug/L	3.3	13
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Nitrobenzene	2.2	U	ug/L	2.2	8.8
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Phenanthrene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Pyrene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	2,4-Dimethylphenol	11	U	ug/L	11	44
9/8/2009 10:30	Effluent	Priority Organic Pollutants	2,6-Dinitrotoluene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	2-Chloronaphthalene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Acenaphthene	1.1	U	ug/L	1.1	4.4

Appendix E. (continued)

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Endrin aldehyde	4.4	UJ	ug/L	4.4	18
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Fluoranthene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	N-Nitrosodimethylamine	2.2	U	ug/L	2.2	8.8
9/8/2009 10:30	Effluent	Priority Organic Pollutants	delta-BHC	1.7	U	ug/L	1.7	6.6
9/8/2009 10:30	Effluent	Priority Organic Pollutants	3,3'-Dichlorobenzidine	44	UJ	ug/L	44	180
9/8/2009 10:30	Effluent	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Benzo(g,h,i)perylene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Butyl benzyl phthalate	5.5	U	ug/L	5.5	22
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Di-n-octyl phthalate	1.1	UJ	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Dibenzo(a,h)anthracene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Endosulfan II	4.4	U	ug/L	4.4	18
9/8/2009 10:30	Effluent	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.2	U	ug/L	2.2	8.8
9/8/2009 10:30	Effluent	Priority Organic Pollutants	alpha-BHC	1.7	U	ug/L	1.7	6.6
9/8/2009 10:30	Effluent	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Benzo(a)anthracene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	17	UJ	ug/L	17	66
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Endosulfan sulfate	1.7	U	ug/L	1.7	6.6
9/8/2009 10:30	Effluent	Priority Organic Pollutants	2,4-Dichlorophenol	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	2,4-Dinitrotoluene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.2	U	ug/L	2.2	8.8
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Benzidine	110	U	ug/L	110	440
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Benzo(a)pyrene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Dieldrin	1.7	U	ug/L	1.7	6.6
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Endrin	1.7	U	ug/L	1.7	6.6
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Heptachlor	1.7	UJ	ug/L	1.7	6.6
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Heptachlor epoxide	1.7	U	ug/L	1.7	6.6
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Pentachlorophenol	3.3	U	ug/L	3.3	13
9/8/2009 10:30	Effluent	Priority Organic Pollutants	gamma-BHC	1.7	U	ug/L	1.7	6.6
9/8/2009 10:30	Effluent	Priority Organic Pollutants	2,4-Dinitrophenol	17	U	ug/L	17	66
9/8/2009 10:30	Effluent	Priority Organic Pollutants	4,4'-DDD	1.7	U	ug/L	1.7	6.6
9/8/2009 10:30	Effluent	Priority Organic Pollutants	4,4'-DDE	1.7	U	ug/L	1.7	6.6
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Aldrin	1.7	UJ	ug/L	1.7	6.6
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.1	U	ug/L	1.1	4.4

Appendix E. (continued)

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Dimethyl phthalate	11	U	ug/L	11	44
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	beta-BHC	1.7	U	ug/L	1.7	6.6
9/8/2009 10:30	Effluent	Priority Organic Pollutants	2-Nitrophenol	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Benzo(b)fluoranthene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Benzo(k)fluoranthene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Di-n-butyl phthalate	5.5	U	ug/L	5.5	22
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Endosulfan I	4.4	U	ug/L	4.4	18
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Hexachlorobutadiene	3.3	U	ug/L	3.3	13
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Hexachloroethane	3.3	U	ug/L	3.3	13
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Phenol	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.3	U	ug/L	3.3	13
9/8/2009 10:30	Effluent	Priority Organic Pollutants	4-Nitrophenol	17	U	ug/L	17	66
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Acenaphthylene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Chrysene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Diethyl phthalate	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Hexachlorobenzene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Isophorone	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Naphthalene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	2-Chlorophenol	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	4,4'-DDT	1.7	UJ	ug/L	1.7	6.6
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Anthracene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.3	U	ug/L	3.3	13
9/8/2009 10:30	Effluent	Priority Organic Pollutants	Fluorene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Effluent	Field Parameter	Specific Conductance	393		umhos/cm		
9/8/2009 10:30	Effluent	Field Parameter	Temperature	28.53		C		
9/8/2009 10:30	Effluent	Field Parameter	Dissolved Oxygen	7.58		mg/L		
9/8/2009 10:30	Effluent	Field Parameter	pH	7.04				
9/8/2009 10:30	Blank	Metals	Zinc	5	U	ug/L	5	20
9/8/2009 10:30	Blank	Metals	Iron	30	U	ug/L	30	120
9/8/2009 10:30	Blank	Metals	Magnesium	0.04	U	mg/L	0.04	0.16
9/8/2009 10:30	Blank	Metals	Chromium	0.3	U	ug/L	0.3	1.2

Appendix E. (continued)

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
9/8/2009 10:30	Blank	Metals	Nickel	0.25	U	ug/L	0.25	1
9/8/2009 10:30	Blank	Metals	Lead	0.2	U	ug/L	0.2	0.8
9/8/2009 10:30	Blank	Metals	Sodium	0.5	U	mg/L	0.5	2
9/8/2009 10:30	Blank	Metals	Copper	0.5	U	ug/L	0.5	0.5
9/8/2009 10:30	Blank	Metals	Arsenic	0.25	U	ug/L	0.25	1
9/8/2009 10:30	Blank	Metals	Calcium	0.075	U	mg/L	0.075	0.3
9/8/2009 10:30	Blank	Metals	Aluminum	60	U	ug/L	60	240
9/8/2009 10:30	Blank	Metals	Silver	0.025	U	ug/L	0.025	0.1
9/8/2009 10:30	Blank	Metals	Selenium	0.2	U	ug/L	0.2	0.8
9/8/2009 10:30	Blank	Metals	Cadmium	0.03	U	ug/L	0.03	0.12
9/8/2009 10:30	Blank	Nutrients	Sulfate	0.2	U	mg SO4/L	0.2	0.5
9/8/2009 10:30	Blank	Nutrients	Total-P	0.004	U	mg P/L	0.004	0.01
9/8/2009 10:30	Blank	Nutrients	Alkalinity	0.65	U	mg CaCO3/L	0.65	2.5
9/8/2009 10:30	Blank	Nutrients	Color (true)	5	U	PCU	5	5
9/8/2009 10:30	Blank	Nutrients	O-Phosphate-P	0.005	I	mg P/L	0.004	0.01
9/8/2009 10:30	Blank	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
9/8/2009 10:30	Blank	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
9/8/2009 10:30	Blank	Nutrients	Fluoride	0.05	U	mg F/L	0.05	0.1
9/8/2009 10:30	Blank	Nutrients	Chloride	0.2	U	mg Cl/L	0.2	0.5
9/8/2009 10:30	Blank	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
9/8/2009 10:30	Blank	Nutrients	Organic Carbon	1.1	I	mg C/L	1	5
9/8/2009 10:30	Blank	Overflow	Radium 226	0.2	U	pCi/L		
9/8/2009 10:30	Blank	Overflow	Radium 228-Counting Error	0.5		pCi/L		
9/8/2009 10:30	Blank	Overflow	Alpha-Counting Error	0.5		pCi/L		
9/8/2009 10:30	Blank	Overflow	Radium 226-Counting Error	0.1		pCi/L		
9/8/2009 10:30	Blank	Overflow	Radium 228	0.7	U	pCi/L		
9/8/2009 10:30	Blank	Overflow	Alpha, Total	0.7	U	pCi/L		
9/8/2009 10:30	Blank	Pesticides	Ethion	0.048	U	ug/L	0.048	0.19
9/8/2009 10:30	Blank	Pesticides	Ametryn	0.048	U	ug/L	0.048	0.19
9/8/2009 10:30	Blank	Pesticides	Diazinon	0.048	U	ug/L	0.048	0.19
9/8/2009 10:30	Blank	Pesticides	Alachlor	0.58	U	ug/L	0.58	2.3
9/8/2009 10:30	Blank	Pesticides	Azinphos Methyl	0.19	U	ug/L	0.19	0.76
9/8/2009 10:30	Blank	Pesticides	Malathion	0.14	U	ug/L	0.14	0.56
9/8/2009 10:30	Blank	Pesticides	Metolachlor	0.48	U	ug/L	0.48	1.9

Appendix E. (continued)

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
9/8/2009 10:30	Blank	Pesticides	Norflurazon	0.14	U	ug/L	0.14	0.56
9/8/2009 10:30	Blank	Pesticides	Parathion Ethyl	0.14	U	ug/L	0.14	0.56
9/8/2009 10:30	Blank	Pesticides	Bromacil	0.19	U	ug/L	0.19	0.76
9/8/2009 10:30	Blank	Pesticides	Hexazinone	0.096	U	ug/L	0.096	0.38
9/8/2009 10:30	Blank	Pesticides	Prometryn	0.14	U	ug/L	0.14	0.56
9/8/2009 10:30	Blank	Pesticides	Simazine	0.048	U	ug/L	0.048	0.19
9/8/2009 10:30	Blank	Pesticides	Butylate	0.19	U	ug/L	0.19	0.76
9/8/2009 10:30	Blank	Pesticides	Chlorpyrifos Ethyl	0.048	U	ug/L	0.048	0.19
9/8/2009 10:30	Blank	Pesticides	Metalaxyl	0.24	U	ug/L	0.24	0.96
9/8/2009 10:30	Blank	Pesticides	Metribuzin	0.096	U	ug/L	0.096	0.38
9/8/2009 10:30	Blank	Pesticides	Mevinphos	0.19	UJ	ug/L	0.19	0.76
9/8/2009 10:30	Blank	Pesticides	Naled	0.77	UJ	ug/L	0.77	3.1
9/8/2009 10:30	Blank	Pesticides	Phorate	0.048	U	ug/L	0.048	0.19
9/8/2009 10:30	Blank	Pesticides	Atrazine	0.048	U	ug/L	0.048	0.19
9/8/2009 10:30	Blank	Pesticides	Chlorpyrifos Methyl	0.096	U	ug/L	0.096	0.38
9/8/2009 10:30	Blank	Pesticides	Fenamiphos	0.19	U	ug/L	0.19	0.76
9/8/2009 10:30	Blank	Pesticides	Ethoprop	0.096	U	ug/L	0.096	0.38
9/8/2009 10:30	Blank	Pesticides	Fonofos	0.096	U	ug/L	0.096	0.38
9/8/2009 10:30	Blank	Pesticides	Parathion Methyl	0.096	U	ug/L	0.096	0.38
9/8/2009 10:30	Blank	Priority Organic Pollutants	Hexachloroethane	3.3	U	ug/L	3.3	13
9/8/2009 10:30	Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.2	U	ug/L	2.2	8.8
9/8/2009 10:30	Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	2.2	U	ug/L	2.2	8.8
9/8/2009 10:30	Blank	Priority Organic Pollutants	Phenanthrene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.3	U	ug/L	3.3	13
9/8/2009 10:30	Blank	Priority Organic Pollutants	Acenaphthene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	Acenaphthylene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	Di-n-butyl phthalate	5.5	U	ug/L	5.5	22
9/8/2009 10:30	Blank	Priority Organic Pollutants	Dimethyl phthalate	11	U	ug/L	11	44
9/8/2009 10:30	Blank	Priority Organic Pollutants	Endosulfan II	4.4	U	ug/L	4.4	18
9/8/2009 10:30	Blank	Priority Organic Pollutants	Fluorene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	Isophorone	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	Nitrobenzene	2.2	U	ug/L	2.2	8.8
9/8/2009 10:30	Blank	Priority Organic Pollutants	gamma-BHC	1.7	U	ug/L	1.7	6.6

Appendix E. (continued)

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
9/8/2009 10:30	Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	4,4'-DDD	1.7	U	ug/L	1.7	6.6
9/8/2009 10:30	Blank	Priority Organic Pollutants	4,4'-DDE	1.7	U	ug/L	1.7	6.6
9/8/2009 10:30	Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	Anthracene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	17	UJ	ug/L	17	66
9/8/2009 10:30	Blank	Priority Organic Pollutants	Dieldrin	1.7	U	ug/L	1.7	6.6
9/8/2009 10:30	Blank	Priority Organic Pollutants	Pentachlorophenol	3.3	U	ug/L	3.3	13
9/8/2009 10:30	Blank	Priority Organic Pollutants	4-Nitrophenol	17	U	ug/L	17	66
9/8/2009 10:30	Blank	Priority Organic Pollutants	Di-n-octyl phthalate	1.1	UJ	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	Endrin aldehyde	4.4	UJ	ug/L	4.4	18
9/8/2009 10:30	Blank	Priority Organic Pollutants	Fluoranthene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	Pyrene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	delta-BHC	1.7	U	ug/L	1.7	6.6
9/8/2009 10:30	Blank	Priority Organic Pollutants	2,4-Dichlorophenol	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	Benzo(a)anthracene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.3	U	ug/L	3.3	13
9/8/2009 10:30	Blank	Priority Organic Pollutants	Naphthalene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	2,4-Dinitrophenol	17	U	ug/L	17	66
9/8/2009 10:30	Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.2	U	ug/L	2.2	8.8
9/8/2009 10:30	Blank	Priority Organic Pollutants	Benzidine	110	U	ug/L	110	440
9/8/2009 10:30	Blank	Priority Organic Pollutants	Butyl benzyl phthalate	5.5	U	ug/L	5.5	22
9/8/2009 10:30	Blank	Priority Organic Pollutants	Diethyl phthalate	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	Endosulfan I	4.4	U	ug/L	4.4	18
9/8/2009 10:30	Blank	Priority Organic Pollutants	Endosulfan sulfate	1.7	U	ug/L	1.7	6.6
9/8/2009 10:30	Blank	Priority Organic Pollutants	Endrin	1.7	U	ug/L	1.7	6.6
9/8/2009 10:30	Blank	Priority Organic Pollutants	Heptachlor epoxide	1.7	U	ug/L	1.7	6.6
9/8/2009 10:30	Blank	Priority Organic Pollutants	Hexachlorobenzene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	Hexachlorobutadiene	3.3	U	ug/L	3.3	13

Appendix E. (continued)

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
9/8/2009 10:30	Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	44	UJ	ug/L	44	180
9/8/2009 10:30	Blank	Priority Organic Pollutants	4,4'-DDT	1.7	U	ug/L	1.7	6.6
9/8/2009 10:30	Blank	Priority Organic Pollutants	Aldrin	1.7	UJ	ug/L	1.7	6.6
9/8/2009 10:30	Blank	Priority Organic Pollutants	Benzo(a)pyrene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	Heptachlor	1.7	UJ	ug/L	1.7	6.6
9/8/2009 10:30	Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	2,4-Dimethylphenol	11	U	ug/L	11	44
9/8/2009 10:30	Blank	Priority Organic Pollutants	2-Chloronaphthalene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	2-Nitrophenol	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	Chrysene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	Phenol	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	alpha-BHC	1.7	U	ug/L	1.7	6.6
9/8/2009 10:30	Blank	Priority Organic Pollutants	beta-BHC	1.7	U	ug/L	1.7	6.6
9/8/2009 10:30	Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	2-Chlorophenol	1.1	U	ug/L	1.1	4.4
9/8/2009 10:30	Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.3	U	ug/L	3.3	13

Appendix F. Facility Summary

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: Michael Lynch	**Contact Number:** 813-632-7600 x156
Facility Name (as it appears on permit): USAC Bartow Chemical Plant	**Former Names:**
NPDES Permit Number: FL0001961	**Permit Expiration Date:** May 2, 2009
Physical Address: 2559 Highway 60 West Fort Meade, FL 33841-9799	
District:	**County:** Polk
Function of Facility: Closed diammonium/monammonium phosphate (DAP) mantacturing facilty.	
Facility Type: Phosphate	**Permitted Capacity (MGD):**
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months):	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months):	
Description of type of Discharge: ☐ Continuous ☒ Intermittent ☐ Seasonal ☐ Rainfall Dependent ☐ Other, please specify	
Description of Sampling Location(s) - actual permit designation of permitted sampling point(s): D001	
Description of Permitted Outfall(s): D001	
Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility): The wastewater discharged from this facility consists of non-process water and stormwater. Treatment of the discharged water consists of natural settling and filtration in the lake system prior to discharging.	

Appendix F. (continued)

PART I: Continued										
List current Effluent Limits of Outfall(s) to be Sampled: This should include any AO or CO limits the facility may be under (Leave cell blank if not applicable)										
D001			Effluent Limitations				Monitoring Requirements			
Parameter	Units	Max/Min	Annual Average	Monthly Average	Weekly Average	Single Sample	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes

Appendix F. (continued)

PART I: Continued			
Receiving Waters: Discharged to Bear Branch then to Peace River	**Classification (indicate whether fresh or marine):** Fresh		
Toxicity Test Requirements (routine and/or additional test language, test species, salinity adjustment, etc.):			
Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.):			
Facility Mixing Zone Details (if applicable):			
List Permit Violations (DMR data) and plant upsets that occurred at the plant within the last year:			
Date	Parameter and Units	Limit	Result
Describe previous FYI and WQBEL study:			
Describe previous or current Enforcement Actions (including WLs):			
Describe any violations or problems noted in previous inspection:			
Discuss whether DMR trends within previous five years are improving or declining:			
Additional Comments (this should include a trend of the Effluent, i.e. if the facility is now Reuse):			

Appendix F. (continued)

PART II: Sampling Event Information	
Date(s) sample collected: 9/8/2009	**Sampler(s):** Mike Lynch and Scott Rose
Temperature (Deg C): 28.53	**pH (SU): 7.04**
Dissolved Oxygen (mg/L): 7.58	**Conductivity (umhos/cm):** 393
Total Residual Chlorine (mg/L):	**Total Residual Chlorine - after Disinfection (mg/L):**
Method of Chlorination:	**Method of De-chlorination:**
Flow During Sample Collection for each outfall(MGD): **D001 8.5 MGD**	
Describe Discharge during Sampling Event: ☒ Continuous ☐ Intermittent ☐ Seasonal ☐ Rainfall Dependent ☐ Other, please specify	
Describe any conditions, difficulties or abnormal events that occurred during the sample collection and any other additional comments here:	

Appendix F. (continued)

PERMITTEE:
U.S. Agri-Chemicals Corporation
Bartow DAP Plant

PERMIT NUMBER: FL0001961
PA FILE NUMBER: FL0001961-003-IW1S

EFFLUENT DISPOSAL:

Surface Water Discharge:

The permittee is authorized to discharge wastewater from this facility as follows:

- Outfall D-001 discharges non-process water and stormwater into Bear Branch, a tributary of the Peace River.

  See **Table 1.** below for the outfall location **(Attachment A)** and receiving water body classification.

TABLE 1.

DESIGNATION	LATITUDE	LONGITUDE	CLASS
OUTFALL D-001	27° 54' 10" N	81° 52' 44" W	III Freshwater

The wastewater discharge system receives treated process water from the associated closed phosphogypsum stack's Internal Outfall I-002 which mixes with the non-process wastewater and stormwater prior to final monitoring and discharge through Outfall D-001. The I-002 discharge at this location is authorized, monitored and reported in accordance with the requirements of Permit No. FL0174106. Final compliance monitoring and reporting for all discharge from D-001 are to be in accordance with Part I. A. below.

Ground Water Discharge:

All groundwater monitoring at this site is included in permit FL0174106 for the closed phosphogypsum stack.

NOTE: This permit replaces and supercedes in entirety, all previously issued wastewater permits and modifications under Permit No. FL0001961.

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

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 non-process wastewater and stormwater from Outfall D-001 as shown on **Attachment A.** into Bear Branch. Discharges from Outfall D-001 shall be limited and monitored, when discharging, by the permittee as specified in **Table 2.** below:

TABLE 2.

Parameters (units)	Discharge Limitations			Monitoring Requirements		
	Daily Minimum	Daily Maximum	Monthly Average	Monitoring Frequency	Sample Type	Sample Point
Flow (MGD)	N/A	Report	Report	Continuous	Recorder	EFF-01
pH (SU) (See Condition I.A.8.)	6.0	8.5	Report	Continuous	Recorder	EFF-01
Fluoride, Total (as F) (MG/L)	N/A	10.0	Report	Weekly	24-hour composite	EFF-01
Temperature (C), Water (DEG.C) (See Condition I.A.8.)	N/A	Report	Report	Weekly	Grab	EFF-01
Sulfate, Total (MG/L)	N/A	Report	Report	Weekly	Grab	EFF-01
Phosphate, Ortho (as P) (MG/L)	N/A	Report	Report	Weekly	24-hour composite	EFF-01

Appendix F. (continued)

PERMITTEE:
U.S. Agri-Chemicals Corporation
Bartow DAP Plant

PERMIT NUMBER: FL0001961
PA FILE NUMBER: FL0001961-003-IW1S

Parameters (units)	Discharge Limitations			Monitoring Requirements		
	Daily Minimum	Daily Maximum	Monthly Average	Monitoring Frequency	Sample Type	Sample Point
Phosphorus, Total (as P) (MG/L)	N/A	40.0	30.0	Weekly	24-hour composite	EFF-01
Phosphorus, Total (as P) (LBS/DAY) (See Conditions I.A.4.)	N/A	Report	Report	Weekly	Calculated	---
Nitrogen, Total (MG/L)	N/A	Report	Report	Weekly	24-hour composite	EFF-01
Nitrogen, Total (LBS/DAY) (See Condition I.A.4.)	N/A	Report	Report	Weekly	Calculated	---
Nitrogen, Ammonia, Total (as N) (MG/L) (See Condition I.A.8.)	N/A	Report	N/A	Monthly **	Grab	EFF-01
Ammonia, Unionized (MG/L)	N/A	0.02	N/A	Monthly **	Calculated	---
Oxygen, Dissolved (DO) (MG/L)	5.0	N/A	N/A	Monthly **	Grab	EFF-01
Specific Conductance (UMHOS/CM)	N/A	1275	N/A	Monthly **	Grab	EFF-01
Alpha, Gross Particle Activity (PCI/L) (See Condition I.A.9.)	N/A	15.0	N/A	Quarterly ***	24-hour composite	EFF-01
Radium 226 + Radium 228, Total (PCI/L) (See Condition I.A.9.) *	N/A	5.0	N/A	Quarterly ***	24-hour composite	EFF-01
Whole Effluent Toxicity - Acute	See Conditions I.A.5.					EFF-01

* Shall be analyzed only if Gross Alpha Particle Activity is equal to or exceeds 15.0 pCi/l
** Monitoring frequency shall be weekly during periods of treated process water discharge from I-002.
*** Monitoring frequency shall be monthly during periods of treated process water discharge from I-002.

2. Effluent samples shall be taken at the monitoring site locations listed in permit condition I.A.1 and as described in **Table 3.** below:

TABLE 3.

Sample Point	Description of Monitoring Location
EFF-01	Outfall D-001

3. The reported nutrient loadings for Total Nitrogen and Total Phosphorus are to be calculated using the total daily flow recorded for the day on which the sample is taken.

4. Until a Load Allocation for total nitrogen and total phosphorus is determined for this facility and this permit modified pursuant to Florida Administrative Code Rules 62-4.080 and 62-620.325, the permittee shall monitor and report loading for total nitrogen (as N) and total phosphorous (as P) from Outfall D-001 as listed in Condition I.A.1. above. The facility shall only be operated as authorized by this permit and shall make no changes outside of the scope of this authorization which would increase nutrient loading above historic values without prior approval from the Department.

The target values for total nitrogen are calculated using the 5-year rolling average method and fixed as follows:

- Total Nitrogen loading for Outfall D-001 is report only, but a target value of **44,000** pounds per year maximum applies.

The target values for total phosphorus are calculated using the 5-year rolling average method and fixed as follows:

- Total Phosphorus loading for Outfall D-001 is report only, but a target value of **68,423** pounds per year maximum applies.

The total nitrogen and phosphorus values above are calculated for Outfall 001 when discharging non-contact process water and stormwater. For compliance purposes the nitrogen and phosphorus loads from Outfall I-002

Appendix F. (continued)

are to be subtracted when Outfall I-002 is discharging. If a total nitrogen or total phosphorus target value (5-year rolling annual load calculated annually) is exceeded for any outfall authorized by this permit, the permittee shall immediately contact the Department within 3 days and within 7 days submit a written explanation for the exceedance. The permittee shall also describe what follow-up action is necessary, if any, to provide reasonable assurance that the requirements of Florida Administrative Code Rule 62-302.530(48) [Nutrients] will be met and to prevent reoccurrence of the exceedance, which is inconsistent with the requirements of this condition.

5. The permittee shall initiate the series of tests described below beginning within 60 days of permit issuance or, upon initiating discharge from Outfall D-001, whichever is later, to evaluate whole effluent toxicity of the discharge. All test species, procedures and quality assurance criteria used shall be in accordance with Methods for Measuring Acute Toxicity of Effluents to Freshwater and Marine Organisms, EPA/600/4-90/027F, or the most current edition. The control water and dilution water used will be moderately hard water as described in EPA/600/4-90/027F, Table 6, or the most current edition. A standard reference toxicant (SRT) quality assurance (QA) acute 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 toxicity tests shall be submitted with the discharge monitoring report (DMR). Any deviation of the bioassay procedures outlined herein shall be submitted in writing to the Department for review and approval prior to use.

   a. (1) The permittee shall conduct 96-hour acute static renewal toxicity tests using the daphnid, **Ceriodaphnia dubia**, and the bannerfin shiner, **Cyprinella leedsi**. All tests will be conducted on four separate grab samples collected at evenly spaced (6-hr) intervals over a 24-hour period and used in one composite test.

   (2) If control mortality exceeds 10% for either species in any test, the test for that species (including the control) shall be repeated. A test will be considered valid only if control mortality does not exceed 10% 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 10% at that time, that test (including the control) shall be terminated with the conclusion that the sample demonstrates unacceptable acute toxicity.

   b. (1) The toxicity tests specified above shall be conducted twice per year, once during the wet season (July through September) and once during the dry season (December through February). These tests are referred to as "routine" tests. During periods of treated process water discharge from Internal Outfall I-002, the toxicity tests specified above shall be conducted monthly.

   (2) Results from "routine" tests shall be reported according to EPA/600/4-90/027F, Section 12, Report Preparation (or the most current edition), and shall be submitted to:

   Florida Department of Environmental Protection
   Phosphate Management
   8407 Laurel Fair Circle
   Tampa, Florida 33610-7355

   (3) Results from "routine" tests shall be reported on the Discharge Monitoring Report (DMR) as follows:

   i. If greater than 50% mortality occurs in the composited grab sample test for the test species, "<100" (less than 100% effluent) should be entered on the DMR for that test species.

   ii. If 50% or less mortality occurs in the composited grab sample test for the test species, ">100" (greater than 100% effluent) should be entered on the DMR for that test species.

   iii. For each of the additional tests required, the calculated LC50 value should be entered on the DMR for that test species.

   c. (1) All "routine" test shall be conducted using a control (0% effluent) and test concentration of **100%** final effluent.

   (2) Mortalities of greater than 50% in a 100% effluent in any "routine" sample or an LC50 of less than 100% effluent in any additional definitive test will constitute a violation of these permit conditions, and Rule 62-302.200(1), Rule 62-302.500(1)(a)4 and Rule 62-4.244(3)(a), F. A. C.

   d. (1) If unacceptable acute toxicity (greater than 20% mortality of either test species in any sample) is found in a "routine" test, the permittee shall conduct three additional definitive tests on each species indicating unacceptable toxicity. The first additional test will include four grab samples taken as described in a. and run as a definitive analysis. The second and third additional definitive tests will be run on a single grab sample collected on the day and time when the greatest toxicity was identified in

Appendix F. (continued)

the "routine" test. Results for each additional test will include the determination of LC50 values with 95% confidence limits.

(2) The first additional test shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 50%, 25%, 12.5% and 6.25% effluent and a control (0% effluent). The dilution series may be modified in the second and third test to more accurately identify the toxicity, such that at least two dilutions above and two dilutions below the target toxicity and a control (0% effluent) are run.

(3) For each additional test, the sample collection requirements and the test acceptability criteria specified in section a. above must be met for the test to be considered valid. The first test shall begin within two weeks of the end of the "routine" tests, and shall be conducted weekly thereafter until *three* additional, valid tests are completed. The additional tests will be used to determine if the toxicity found in the "routine" test is still present.

(4) Results from additional tests, required due to unacceptable acute toxicity in the "routine" tests, shall be submitted in a single report prepared according to EPA/600/4-90/027F, Section 12, or the most current edition and submitted within 45 days of completion of the third additional, valid test. If the additional test(s) demonstrate unacceptable acute toxicity, the permittee will meet with the Department within 30 days of the report submittal to identify corrective actions necessary to remedy the unacceptable acute toxicity.

6. Specific Conductance shall not be increased more than 1275 umhos/cm.

7. Unless specified elsewhere in the permit, samples taken in compliance with the monitoring requirements specified in Parts I.A.1. shall be taken at the nearest accessible point after final treatment but prior to actual mixing with the receiving water body.

8. Effluent samples for pH and temperature shall be taken simultaneously with each total ammonia nitrogen grab sample. Un-ionized ammonia shall be calculated in accordance with Table 3 (attached). All measured values for pH, temperature, and total ammonia nitrogen used to calculate an un-ionized ammonia value must be reported as an attachment to the Discharge Monitoring Report (DMR). All calculated un-ionized ammonia values must also be reported on the attachment. The daily maximum value for un-ionized ammonia for each reporting period shall be reported on the DMR.

9. During any sampling event performed in accordance with the monitoring requirements for the radioactive species specified in Part I.A.1. above, a properly preserved sample must be taken for the determination of gross alpha particle activity, combined radium^{226} and radium^{228}. The sample must first be analyzed for gross alpha particle activity and if the total value exceeds the MCL of 15 pCi/l, the same sample (appropriately preserved as required above) shall be analyzed for combined radium$^{226+228}$. The analytical results shall be reported as required by this permit (Part I.E.2.), on the appropriate DMR(s), and quarterly to Phosphate Management as specified in Part I.E.3.

10. The permittee shall ensure that the water quality standards for Class III fresh surface waters as defined in Sections 62-302.500, 62-302.510 and 62-302.530, F.A.C., are not exceeded at the points of discharge, except where allowed by permit or Official Agency Action.

11. There shall be no discharge of floating solids or visible foam in other than trace amounts. *[Section 62-302.500, F.A.C.]*

12. The discharge shall not cause a visible sheen on the receiving water. *[Section 62-302.500, F.A.C.]*

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

Appendix F. (continued)

PERMITTEE:
U.S. Agri-Chemicals Corporation
Bartow DAP Plant

PERMIT NUMBER: FL0001961
PA FILE NUMBER: FL0001961-003-IW1S

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

E. Other Limitations and Monitoring and Reporting Requirements

1. The sample collection, analytical test methods and method detection limits (MDLs) applicable to this permit shall be in accordance with Rule 62-4.246, Chapters 62-160 and 62-601, F.A.C., and 40 CFR 136, as appropriate. The list of Department established analytical methods, and corresponding MDLs (method detection limits) and PQLs (practical quantification limits), which is titled "Florida Department of Environmental Protection Table as Required By Rule 62-4.246(4) Testing Methods for Discharges to Surface Water" dated June 21, 1996, is available from the Department on request. The MDLs and PQLs as described in this list shall constitute the minimum acceptable MDL/PQL values and the Department shall not accept results for which the laboratory's MDLs or PQLs are greater than those described above unless alternate MDLs and/or PQLs have been specifically approved by the Department for this permit. Any method included in the list may be used for reporting as long as it meets the following requirements:

   a. The laboratory's reported MDL and PQL values for the particular method must be equal or less than the corresponding method values specified in the Department's approved MDL and PQL list;

   b. The laboratory reported PQL for the specific parameter is less than or equal to the permit limit or the applicable water quality criteria, if any, stated in Chapter 62-302, F.A.C. Parameters that are listed as "report only" in the permit shall use methods that provide a PQL, which is equal to or less than the applicable water quality criteria stated in 62-302 FAC; and

   c. If the PQLs for all methods available in the approved list are above the stated permit limit or applicable water quality criteria for that parameter, then the method with the lowest stated PQL shall be used.

   Where the analytical results are below method detection or practical quantification limits, the permittee shall report the actual laboratory MDL and/or PQL values for the analyses that were performed following the instructions on the applicable discharge monitoring report. Approval of alternate laboratory MDLs or PQLs are not necessary if the laboratory reported MDLs and PQLs are less than or equal to the permit limit or the applicable water quality criteria, if any, stated in Chapter 62-302, F.A.C. However, where necessary, the permittee may request approval for alternative methods or for alternative MDLs and PQLs for any approved analytical method, in accordance with the criteria of Rules 62-160.520 and 62-160.530, F.A.C.

2. Monitoring requirements under this permit are effective on the first day of the second month following permit issuance. Until such time, the permittee shall continue to monitor and report in accordance with previously effective permit requirements, if any. During the period of operation authorized by this permit, the permittee shall complete and submit to the Department Discharge Monitoring Reports (DMRs) in accordance with the frequencies specified by the REPORT type (i.e., monthly, toxicity, quarterly, semiannual, annual, etc.) indicated on the DMR forms attached to this permit. Monitoring results for each monitoring period shall be submitted in accordance with the associated DMR due dates listed in **Table 4.** below.

TABLE 4.

REPORT Type on DMR	Monitoring Period	DMR Due Date
Monthly or Toxicity	first day of month – last day of month	28th day of following month
Quarterly	January 1 - March 31	April 28
	April 1 – June 30	July 28
	July 1 – September 30	October 28
	October 1 – December 31	January 28
Semi-annual	January 1 – June 30	July 28
	July 1 – December 31	January 28
Annual	January 1 – December 31	January 28

DMRs shall be submitted for each required monitoring period including months of no discharge.

The permittee shall make copies of the attached DMR form(s) and shall submit the completed DMR form(s) to the Department at the address specified below:

Appendix F. (continued)

Florida Department of Environmental Protection
Wastewater Compliance Evaluation Section, Mail Station 3551
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

If, during the term of this permit, the facility ceases to discharge for reasons other than maintaining the plant water balance, the Department shall be notified no later than 24-hours following cessation of discharge. Such notification shall be submitted in writing by facsimile to the Department.

All DMR forms for surface water reporting, including toxicity DMR forms, must be submitted every month. If an analysis is not required by this permit for that reporting period, "**NODI=9**" is to be entered in the space provided for that result. If an analysis is required by a condition of this permit for that reporting period and there is no discharge, "**NODI=C**" is to be entered in the space provided for that result. All analytical result reporting spaces/blanks on the DMR forms must be completed.

3. Unless specified otherwise in this permit, all reports and notifications required by this permit, including twenty-four hour notifications, shall be submitted to or reported to the Department at the address specified below:

Florida Department of Environmental Protection
Bureau of Mine Reclamation
Phosphate Management
8407 Laurel Fair Circle
Tampa, FL 33610-7355
Phone Number - (813) 744-6100
FAX Number - (813) 744-6457 (All FAX copies shall be followed by original copies.)

4. The permittee shall provide safe access points for obtaining representative samples, which are required by this permit.

5. All reports and other information shall be signed in accordance with the requirements of Rule 62-620.305, F.A.C.

6. If there is no discharge from the facility on a day scheduled for sampling, the sample shall be collected on the next business day of the next discharge.

7. Any bypass of the treatment facility which is not included in the monitoring specified in sections I.A, I.B, I.C, or I.D, is to be monitored for flow and all other required parameters. For parameters other than flow, at least one grab sample per day shall be monitored. Daily flow shall be monitored or estimated, as appropriate, to obtain reportable data. All monitoring results shall be reported on the appropriate DMR.

II. Industrial Sludge Management Requirements

1. This section is not applicable to this facility.

III. Ground Water Monitoring Requirements

1. Groundwater monitoring at this site is included in permit FL0174106 for the closed phosphogypsum stack.

IV. Other Land Application Requirements

1. This section is not applicable to this facility.

V. Operation and Maintenance Requirements

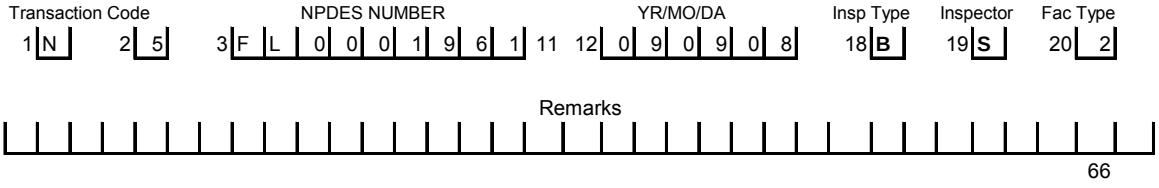
A. Operation of Treatment and Disposal Facilities

1. The permittee shall ensure that the operation and maintenance of this facility is as described in the application and supporting documents. *[Section 62-620.300(5), F.A.C.]*

Appendix G. EPA End Sheet

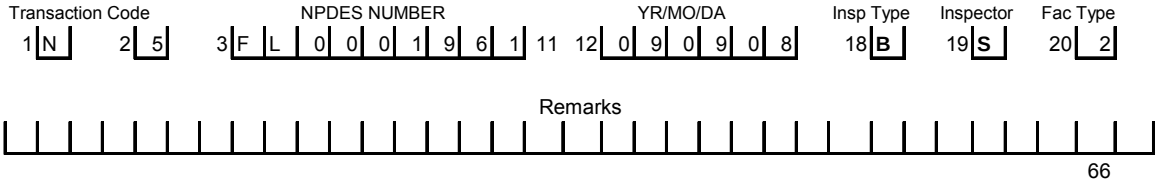
The Bioassay of the USAC Bartow Chemical Plant facility effluent sampled on September 8, 2009. NPDES #FL0001961.

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



The Priority Pollutants Analysis of the USAC Bartow Chemical Plant facility effluent sampled on September 8, 2009. NPDES #FL0001961.

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



Biological Analyses of the USAC Bartow Chemical Plant facility effluent sampled on September 8, 2009. NPDES #FL0001961.

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

