

Effluent Quality Assessment

Procter and Gamble Cellulose Company

AKA Buckeye Cellulose Corporation

AKA Buckeye Florida, LP

Pulp and Paper Mill

Taylor County

NPDES #FL0000876

Sampled July 23, 25, and 27, 2012

October 2012

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration

Quality Manual No. 870346G
NELAC Certification No. E31780

CONTENTS

Introduction

Methods

Results and Discussion

Literature Cited

Tables

Table 1 Measured marine algal growth potential (AGP)

Table 2 Effluent limits, Class III Freshwater Criteria, chemical data, and qualifiers

Appendices

Appendix A Chain of Custody

Appendix B Bioassay Bench Sheets

Appendix C SRT Bench Sheets and Statistical Analyses

Appendix D Organism Receipt

Appendix E Chemical Analyses of Effluent

Appendix F Facility Summary, Effluent Limits, and Permit Violations Recorded on Discharge Monitoring Report

Appendix G EPA End Sheet

Procter and Gamble Cellulose Company (aka Buckeye Cellulose Corporation; aka Buckeye Florida, LP) Pulp and Paper Mill, One Buckeye Drive, Perry, Taylor County, Florida, 32348. NPDES #FL0000876. Effluent grab samples for bioassays were collected on July 23, 25, and 27, 2012, and grab samples for biological and chemical analyses for this facility were collected on July 23, 2012.

Introduction

Procter and Gamble Cellulose Company is a dissolved Kraft pulp mill facility which operates a 58 million gallon per day capacity industrial wastewater treatment system. (See Appendix F for detailed facility information provided by Edward Jamro of FDEP Northeast District.)

Methods

Samples were collected from the EFF-1 NPDES sampling point for Outfall D-001 by Eesa Ali, Sharon Piltz and Jeremy Parrish (FDEP Northeast District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling. All DEP SOPs are available on the web at: http://www.dep.state.fl.us/water/sas/sop/index.htm.

See Appendix A for the completed chain of custody form.

The 7-day chronic definitive toxicity tests and algal growth potential test were performed following internal DEP SOPs TA07_14, TA07_15, 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.

Aliquots of bioassay samples 1443484, 1444284, and 1444997 were salinity-adjusted from apparent salinities of approximately 1.18, 1.13, and 1.15 parts per thousand (ppth), respectively, to a salinity of approximately 20 ppth for both the *Americamysis bahia* and the *Menidia beryllina* tests. Forty Fathoms® marine mix artificial sea salts was used for the salinity adjustments. The salinity adjustments were performed to meet the toxicity bioassay requirements suggested by FDEP Northeast District personnel. The salt control used for each test was prepared by diluting 20 ppth salinity artificial seawater (ASW) with well water to a salinity of approximately 1.0 ppth then salting this solution with artificial sea salts to match the salinity of the appropriate test solution. The purpose of the salt controls was to confirm that there was no effect of adding artificial sea salts to the sample. There was no mortality in the salt controls of the *Americamysis bahia* test or the *Menidia beryllina* test.

The algal growth potential (AGP) sample was salinity-adjusted with artificial sea salts from an apparent salinity of approximately 1.1 ppth to a salinity of approximately 7 ppth.

Results and Discussion

- **Toxicity Test Results**

  Tests were performed July 24 - 31, 2012.

Americamysis bahia 7-day chronic definitive bioassay –	NOEC: < 12.5% IC25: 54.3%
Menidia beryllina 7-day chronic definitive bioassay –	NOEC: 12.5% IC25: 27.3%

  The bioassay samples were chronically toxic to both the *Americamysis bahia* and *Menidia beryllina* test organisms. However, based on the proposed limit (IC25 ≥ 25%) under which these tests were performed, the noted toxicity was not an exceedance.

  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 salinity-adjusted effluent Algal Growth Potential (AGP) was 123 A mg dry wt/L of the saltwater species *Dunaliella tertiolecta.* Raschke and Schultz determined 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). Although the current receiving waters are Class III freshwater, the AGP test used the marine species due to the apparent salinity of the effluent being > 1.0 ppth. However, based on the very high AGP value and the nutrient concentrations in the effluent, an inference can be made that there is potential nutrient enrichment in the fresh receiving waters. The ratio (3.0:1) of total nitrogen to total phosphorus suggests that the effluent is nitrogen-limited (Maloney et al. 1978).

  See Table 1 for AGP results and qualifiers.

- **Chemistry Results**
  Total residual chlorine was not detected in any of the three bioassay samples in the bioassay laboratory. Total ammonia was detected in the bioassay samples in the bioassay laboratory in the samples collected on July 23, 2012 (3.00 mg N/L), July 25, 2012 (2.58 mg N/L), and July 27, 2012 (2.50 mg N/L). The total ammonia concentration in the sample collected and preserved for chemical analysis on July 23, 2012, was 3.1 mg N/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was 0.10 mg/L. The unionized ammonia concentration exceeded the Freshwater Surface Water Quality Criteria for Class III freshwater ((≤ 0.02 mg NH_3 / L 62-302.530) (3) F.A.C.).

  Cadmium, chromium, copper, fluoride, iron, nickel and zinc were detected in the effluent at levels that comply with Class III freshwater quality criteria (62-302.530, F.A.C.). Carbonaceous biological oxygen demand (CBOD), conductivity, dissolved oxygen (DO) and total phosphorus were detected at levels that were in compliance with permitted limits. Total suspended solids (TSS) and oils and greases were detected between the MDL and PQL and complied with permit limits. Arsenic, lead and silver were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL) and complied with Class III freshwater quality criteria. Aluminum was also detected in the effluent.

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

Conclusion

The effluent samples collected from the EFF-1 NPDES sampling point for Outfall D-001 for this facility on July 23, 25, and 27, 2012, were chronically toxic to both the *Americamysis bahia* and *Menidia beryllina* test organisms during the 7-day chronic definitive bioassays; however, the noted toxicity did not exceed the proposed IC25 limit of ≥ 25% effluent under which these tests were performed. The cause of toxicity was not determined. The effluent algal growth potential (AGP) greatly exceeded the "problem" threshold for marine waters. Based on the very high AGP value and the nutrient concentrations in the effluent, an inference can be made that there is potential nutrient enrichment in the fresh receiving waters. The effluent unionized ammonia concentration exceeded the Freshwater Surface Water Quality Criteria for Class III freshwater ((≤ 0.02 mg NH_3 / L 62-302.530) (3) F.A.C.). Additional water quality samples collected on July 23, 2012, did not exceed any applicable water quality standards and/or violate any permit conditions.

Literature Cited

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

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 Procter and Gamble Cellulose Company facility on July 23, 2012.

Buckeye Florida			
Location	AGP* (measured)	Inorganic N:P ratio	Total N:P ratio
EFF-1	123.0 A	1.9	3.0

A - Value reported is the mean of two or more determinations
* - sample salinity adjusted to 7ppt

Table 2. Effluent limits, Class III Freshwater Criteria and chemical data and qualifiers for samples collected from the Procter and Gamble Company facility on July 23, 2012.

Procter and Gamble Cellulose Company NPDES# FL0000876	Class III Criteria	Effluent Limits	EFF-1	
Organic Constituents (µg/L)				
None Detected	-		None Detected	
Metals (µg/L unless otherwise noted)				
Aluminum	-	-	590	
Arsenic	≤ 50	-	0.44	I
Cadmium	≤ 0.4 b	-	0.24	
Calcium (mg/L)	-	-	45.1	
Chromium-III	≤ 145.5 b	-	5.4	
Copper	≤ 16.1 b	-	3.78	
Iron	≤ 1,000	-	360	
Lead	≤ 7.2 b	-	0.42	I
Magnesium (mg/L)	-	-	18.7	
Nickel	≤ 89.6 b	-	7.4	
Selenium	≤ 5.0	-	0.2	U
Silver	≤ 0.07	-	0.049	I
Zinc	≤ 206.0 b	-	27	
Nutrients (mg/L)				
Ortho-phosphate	-	-	1.6	
Total Phosphorus	-	Report	2	
Total Ammonia	-	Report	3.1	
Un-ionized Ammonia	≤ 0.02 s	-	0.10	c
Nitrate and Nitrite	-	-	0.004	I
Total Kjeldahl Nitrogen	-	-	5.9	
Organic Nitrogen	-	-	2.8	c
Total Nitrogen	-	-	5.904	c
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 5.0	≥ 0.3 s	2.8	
pH (SU)	6.0 - 8.5	6.0 - 8.5	7.5	
Conductivity (µmhos/cm)	≤ 1,275	≤ 4,000 s	2,282	
Temperature (°C)	-	Report	33.0	
Salinity	-	-	1.18	£
Sample Depth (m)	-	-	0.1	
Total Residual Chlorine (mg/L)	≤ 0.01	-	< 0.03	UQ£
Chlorophyll *a* (µg/L) - Corrected	-	-	0.69	U
Phaeophytin (µg/L)	-	-	0.5	U
Total Suspended Solids (mg/L)	-	≤ 50,000 s	6	I
CBOD, 5 day (mg/L), N - inhibited	-	≤ 19,800 s	14	
Oils and Greases (mg/L)	≤ 5.0	≤ 10 s	1.2	IJ
Chloride (mg/L)	-	-	220	
Fluoride (mg/L)	≤ 10.0	-	0.16	
Sulfate (mg/L)	-	-	590	A
Flow (MGD)	-	Report	41.24	a
Hardness (mg $CaCO_3$)	-	-	189.62	c

Value exceeds the Class III Water Quality Criteria or permit limits

a - Annual average
b - Value is calculated based on hardness
c - Value is calculated
s - Single sample
A - Value reported is the mean of two or more determinations
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
U - Material analyzed for but not detected; value reported is the method detection limit
Q - Sample held beyound normal holding time
£ - measurement taken in the FDEP laboratory

Appendix A. Chain of Custody Form

23.19

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2012-07-~~3850~~

Beaches (Gulf Aire)-FLA010101

Requester: ~~Dana Vostal~~ E. ALI

Field Report Prepared By: EA

Customer: NE ~~NW~~-DIST

Collected By: EA/SP/JP

Send Final Report To: ~~Dan Green~~ Tom Kallemeyn

Project ID: ~~0854~~ 341

PMAS: 1143

Sampling Agency: DEP

Lab ID *	Location		Comp / Grab	Collection (comp begin or grab) Eastern Date Time Central	Composite end Eastern Date Time Central	Bottle Group(s)**
	Field ID	Buckeye EFF-1		Tot Res Chlorine (mg/L) 1.19	Diss Oxygen (mg/L) 2.79	Storet Station Number
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C) 33.00 / pH 7.45		Sample Depth 0.1 m / ft	Salinity (PPTh) / Sp Conductance (umho/cm) 2282	NPDES Number
	Latitude dd / dms	Longitude dd / dms		Comments		
Lab ID *	Location	Buckeye Final Eff after aerator	Comp / Grab *	Collection (comp begin or grab) Eastern Date Time Central	Composite end Eastern Date Time Central	Bottle Group(s)**
	Field ID	meter reading, no sample		Tot Res Chlorine (mg/L) n/a	Diss Oxygen (mg/L) 6.98	Storet Station Number
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C) 33.05 / pH 7.64		Sample Depth 0.1 m / ft	Salinity (PPTh) / Sp Conductance (umho/cm) 2278	NPDES Number
	Latitude dd / dms	Longitude dd / dms		Comments		
Lab ID *	Location	Buckeye Field Blank	Comp / Grab	Collection (comp begin or grab) Eastern Date 7/23/12 Time 11:25 Central	Composite end Eastern Date Time Central	Bottle Group(s)**
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number
	Matrix (i			Sample Depth m / ft	Salinity (PPTh) / Sp Conductance (umho/cm)	NPDES Number
	Latitude dd / dms	Longitude dd / dms		Comments		
Lab ID *	Location		Comp / Grab	Collection (comp begin or grab) Eastern Date Time Central	Composite end Eastern Date Time 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 dd / dms	Longitude dd / dms		Comments		

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
	7.23.12	self		07/23/12 13:25				

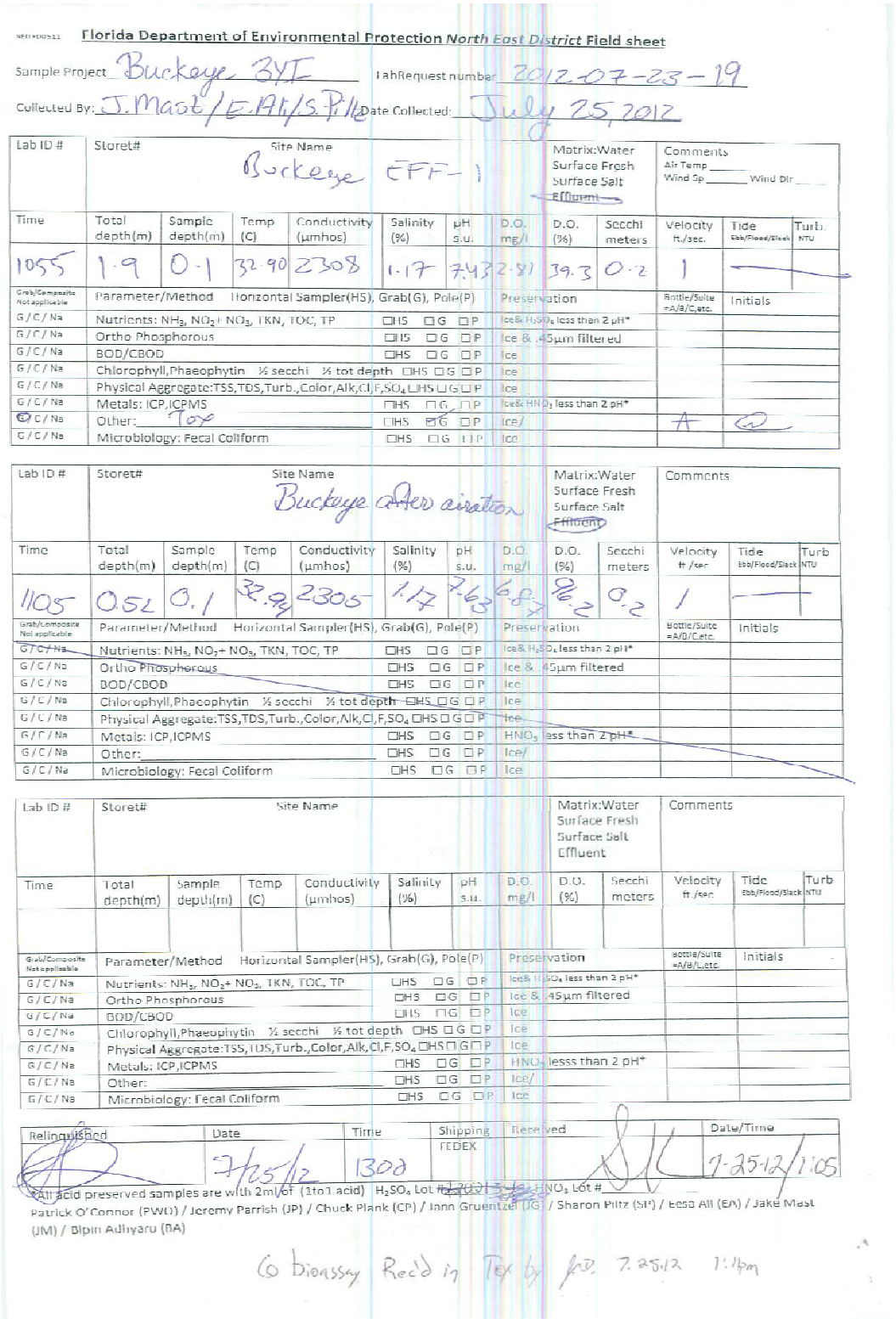
* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

Page 1 of 2

Appendix A. (continued)



Florida Department of Environmental Protection North East District Field sheet

Sample Project: Buckeye 3YI — LabRequest number: 2012-07-23-19

Collected By: J. Mast / E. Ali / S. Piltz — Date Collected: July 25, 2012

Lab ID #	Store#	Site Name	Matrix: Water / Surface Fresh / Surface Salt / ~~Effluent~~	Comments: Air Temp ____ Wind Sp ____ Wind Dir ____
		Buckeye EFF-1		

Time	Total depth(m)	Sample depth(m)	Temp (C)	Conductivity (µmhos)	Salinity (%)	pH s.u.	D.O. mg/l	D.O. (%)	Secchi meters	Velocity ft./sec.	Tide Ebb/Flood/Slack	Turb. NTU
1055	1.9	0.1	32.90	2308	1.17	7.43	2.81	39.3	0.2	1	—	

Grab/Composite Not applicable	Parameter/Method — Horizontal Sampler(HS), Grab(G), Pole(P)		Preservation	Bottle/Suite =A/B/C,etc.	Initials
G / C / Na	Nutrients: NH_3, NO_2+ NO_3, TKN, TOC, TP	☐HS ☐G ☐P	Ice& H_2SO_4 less than 2 pH*		
G / C / Na	Ortho Phosphorous	☐HS ☐G ☐P	Ice & .45µm filtered		
G / C / Na	BOD/CBOD	☐HS ☐G ☐P	Ice		
G / C / Na	Chlorophyll,Phaeophytin ½ secchi ½ tot depth	☐HS ☐G ☐P	Ice		
G / C / Na	Physical Aggregate:TSS,TDS,Turb.,Color,Alk,Cl,F,SO_4	☐HS ☐G ☐P	Ice		
G / C / Na	Metals: ICP,ICPMS	☐HS ☐G ☐P	Ice& HNO_3 less than 2 pH*		
G / C / Na	Other: Tox	☐HS ☑G ☐P	Ice/	A	
G / C / Na	Microbiology: Fecal Coliform	☐HS ☐G ☐P	Ice		

Lab ID #	Store#	Site Name	Matrix: Water / Surface Fresh / Surface Salt / ~~Effluent~~	Comments
		Buckeye after aeration		

Time	Total depth(m)	Sample depth(m)	Temp (C)	Conductivity (µmhos)	Salinity (%)	pH s.u.	D.O. mg/l	D.O. (%)	Secchi meters	Velocity ft /sec	Tide Ebb/Flood/Slack	Turb NTU
1105	0.52	0.1	32.9	2305	1.17	7.63	6.0	82	0.2	1	—	

Grab/Composite Not applicable	Parameter/Method — Horizontal Sampler(HS), Grab(G), Pole(P)		Preservation	Bottle/Suite =A/B/C,etc.	Initials
G / C / Na	Nutrients: NH_3, NO_2+ NO_3, TKN, TOC, TP	☐HS ☐G ☐P	Ice& H_2SO_4 less than 2 pH*		
G / C / Na	Ortho Phosphorous	☐HS ☐G ☐P	Ice & .45µm filtered		
G / C / Na	BOD/CBOD	☐HS ☐G ☐P	Ice		
G / C / Na	Chlorophyll,Phaeophytin ½ secchi ½ tot depth	☐HS ☐G ☐P	Ice		
G / C / Na	Physical Aggregate:TSS,TDS,Turb.,Color,Alk,Cl,F,SO_4	☐HS ☐G ☐P	Ice		
G / C / Na	Metals: ICP,ICPMS	☐HS ☐G ☐P	HNO_3 less than 2 pH*		
G / C / Na	Other:	☐HS ☐G ☐P	Ice/		
G / C / Na	Microbiology: Fecal Coliform	☐HS ☐G ☐P	Ice		

Lab ID #	Store#	Site Name	Matrix: Water / Surface Fresh / Surface Salt / Effluent	Comments

Time	Total depth(m)	Sample depth(m)	Temp (C)	Conductivity (µmhos)	Salinity (%)	pH s.u.	D.O. mg/l	D.O. (%)	Secchi meters	Velocity ft /sec	Tide Ebb/Flood/Slack	Turb NTU

Grab/Composite Not applicable	Parameter/Method — Horizontal Sampler(HS), Grab(G), Pole(P)		Preservation	Bottle/Suite =A/B/C,etc.	Initials
G / C / Na	Nutrients: NH_3, NO_2+ NO_3, TKN, TOC, TP	☐HS ☐G ☐P	Ice& H_2SO_4 less than 2 pH*		
G / C / Na	Ortho Phosphorous	☐HS ☐G ☐P	Ice & .45µm filtered		
G / C / Na	BOD/CBOD	☐HS ☐G ☐P	Ice		
G / C / Na	Chlorophyll,Phaeophytin ½ secchi ½ tot depth	☐HS ☐G ☐P	Ice		
G / C / Na	Physical Aggregate:TSS,TDS,Turb.,Color,Alk,Cl,F,SO_4	☐HS ☐G ☐P	Ice		
G / C / Na	Metals: ICP,ICPMS	☐HS ☐G ☐P	HNO_3 lesss than 2 pH*		
G / C / Na	Other:	☐HS ☐G ☐P	Ice/		
G / C / Na	Microbiology: Fecal Coliform	☐HS ☐G ☐P	Ice		

Relinquished	Date	Time	Shipping	Received	Date/Time
	7/25/12	1300	FEDEX		7-25-12/1:05

All acid preserved samples are with 2ml/oT (1to1 acid) H_2SO_4 Lot #2021 S ; HNO_3 Lot #____

Patrick O'Connor (PWO) / Jeremy Parrish (JP) / Chuck Plank (CP) / Jann Gruentzel (JG) / Sharon Piltz (SP) / Essa Ali (EA) / Jake Mast (JM) / Bipin Adhyaru (BA)

Co Bioassay Recd in Tox by JM 7.25.12 1:14pm

Appendix A. (continued)

NED FD0511 **Florida Department of Environmental Protection *North East District* Field sheet** 1/1

Sample Project Buckeye 541 LabRequest number 2012-07-23-19

Collected By: JM Date Collected: 7/27/12

Lab ID #	Storet#	Site Name	Matrix:Water Surface Fresh Surface Salt Effluent	Comments Air Temp ____ Wind Sp ____ Wind Dir ____
		EFF-1		

Time	Total depth(m)	Sample depth(m)	Temp (C)	Conductivity (µmhos)	Salinity (%)	pH s.u.	D.O. mg/l	D.O. (%)	Secchi meters	Velocity ft./sec.	Tide Ebb/Flood/Slack	Turb. NTU
1025	1.9	0.85	31.95	2293	1.16	7.42	2.88	39.7	0.25	0.2	—	—

Grab/Composite Not applicable	Parameter/Method Horizontal Sampler(HS), Grab(G), Pole(P)		Preservation	Bottle/Suite =A/B/C,etc.	Initials
G / C / Na	Nutrients: NH_3, NO_2+ NO_3, TKN, TOC, TP	☐HS ☐G ☐P	Ice& H_2SO_4 less than 2 pH*		
G / C / Na	Ortho Phosphorous	☐HS ☐G ☐P	Ice & .45µm filtered		
G / C / Na	BOD/CBOD	☐HS ☐G ☐P	Ice		
G / C / Na	Chlorophyll,Phaeophytin ½ secchi ½ tot depth	☐HS ☐G ☐P	Ice		
G / C / Na	Physical Aggregate:TSS,TDS,Turb.,Color,Alk,Cl,F,SO_4	☐HS ☐G ☐P	Ice		
G / C / Na	Metals: ICP,ICPMS	☐HS ☐G ☐P	Ice& HNO_3 less than 2 pH*		
G / C / Na	Other: TOX	☐HS ☒G ☐P	Ice/	A	JM
G / C / Na	Microbiology: Fecal Coliform	☐HS ☐G ☐P	Ice		

Lab ID #	Storet#	Site Name	Matrix:Water Surface Fresh Surface Salt Effluent	Comments
		EFF-1 after airation		

Time	Total depth(m)	Sample depth(m)	Temp (C)	Conductivity (µmhos)	Salinity (%)	pH s.u.	D.O. mg/l	D.O. (%)	Secchi meters	Velocity ft./sec	Tide Ebb/Flood/Slack	Turb NTU
1045	0.9	0.45	32.0	2293	1.16	7.62	6.91	94.9		3.0	—	—

Grab/Composite Not applicable	Parameter/Method Horizontal Sampler(HS), Grab(G), Pole(P)		Preservation	Bottle/Suite =A/B/C,etc.	Initials
G / C / Na	Nutrients: NH_3, NO_2+ NO_3, TKN, TOC, TP	☐HS ☐G ☐P	Ice& H_2SO_4 less than 2 pH*		
G / C / Na	Ortho Phosphorous	☐HS ☐G ☐P	Ice & .45µm filtered		
G / C / Na	BOD/CBOD	☐HS ☐G ☐P	Ice		
G / C / Na	Chlorophyll,Phaeophytin ½ secchi ½ tot depth	☐HS ☐G ☐P	Ice		
G / C / Na	Physical Aggregate:TSS,TDS,Turb.,Color,Alk,Cl,F,SO_4	☐HS ☐G ☐P	Ice		
G / C / Na	Metals: ICP,ICPMS	☐HS ☐G ☐P	HNO_3 less than 2 pH*		
G / C / Na	Other:	☐HS ☐G ☐P	Ice/		
G / C / Na	Microbiology: Fecal Coliform	☐HS ☐G ☐P	Ice		

Lab ID #	Storet#	Site Name	Matrix:Water Surface Fresh Surface Salt Effluent	Comments

Time	Total depth(m)	Sample depth(m)	Temp (C)	Conductivity (µmhos)	Salinity (%)	pH s.u.	D.O. mg/l	D.O. (%)	Secchi meters	Velocity ft./sec	Tide Ebb/Flood/Slack	Turb NTU

Grab/Composite Not applicable	Parameter/Method Horizontal Sampler(HS), Grab(G), Pole(P)		Preservation	Bottle/Suite =A/B/C,etc.	Initials
G / C / Na	Nutrients: NH_3, NO_2+ NO_3, TKN, TOC, TP	☐HS ☐G ☐P	Ice& H_2SO_4 less than 2 pH*		
G / C / Na	Ortho Phosphorous	☐HS ☐G ☐P	Ice & .45µm filtered		
G / C / Na	BOD/CBOD	☐HS ☐G ☐P	Ice		
G / C / Na	Chlorophyll,Phaeophytin ½ secchi ½ tot depth	☐HS ☐G ☐P	Ice		
G / C / Na	Physical Aggregate:TSS,TDS,Turb.,Color,Alk,Cl,F,SO_4	☐HS ☐G ☐P	Ice		
G / C / Na	Metals: ICP,ICPMS	☐HS ☐G ☐P	HNO_3 lesss than 2 pH*		
G / C / Na	Other:	☐HS ☐G ☐P	Ice/		
G / C / Na	Microbiology: Fecal Coliform	☐HS ☐G ☐P	Ice		

Relinquished	Date	Time	Shipping	Received	Date/Time
Jake Mast	7/27/12	1218	FEDEX		7-27-12 12:24

*All acid preserved samples are with 2ml of (1to1 acid) H_2SO_4 Lot #070134 HNO_3 Lot #____

Patrick O'Connor (PWO) / Jeremy Parrish (JP) / Chuck Plank (CP) / Jann Gruentzel (JG) / Sharon Piltz (SP) / Eesa Ali (EA) / Jake Mast (JM) / Bipin Adhyaru (BA)

Marshall Faircloth 6 Brooksy Trg 7-27-12 1246

Appendix B. Bench Sheets

FDEP Biology Laboratory - Chronic Bioassay Bench Sheet

Americamysis bahia

SOP#: TA07_15 EPA-821-R-02-014 Method 1007.0

Facility: Buckeye
Address: One Buckeye Drive, Perry
County: Taylor
NPDES Permit #: FL 0000876
Contact/District: Eggs Ali/Northeast

Start Date: 7.24.12 Time: 1300
End Date: 7.31.12 Time: 1230

Organism age : ____ days
Feeding Prior to Test and Daily
Artemia Lot # : 08812
Chamber size : 400 ml
Test volume : 250 ml

Artemia Batch #		Day 3	105-12
Day 0	102-12	Day 4	106-12
Day 1	103-12	Day 5	107-12
Day 2	104-12	Day 6	108-12

Diluent/ Batch:
ASW / 7.23.12 Test Days Used: 0-6
ASW /_____ Test Days Used: _____

LIMS entry: 8-8-12 MF Entry Verification: BA 8.8.12

Sample Received	Lab Sample #	LIMS Job #	LIMS Sample #	Collection Date/Time	Received Date/Time
Test Day 0	1	TLH-2012-07-23-12	1443184	7-23-12 1135	7.23.12 1325
Test Day 2	2	TLH-2012-07-25-48	1444284	7.25.12 1055	7.25.12 1305
Test Day 4	3	TLH-2012-07-27-40	1444997	7.27.12 1025	7.27.12 1224

Water Quality Parameters	Field Chlorine (mg/L)			Lab Chlorine (mg/L)			Alkalinity (mg/L as $CaCO_3$)			Hardness (mg/L as $CaCO_3$)		
Lab Sample #:	1	2	3	1	2	3	1	2	3	1	2	3
Sample:				<0.03	<0.03	<0.03	200	202	205			
Diluent/Control:				<0.03			154					
Method:				Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach
Measured by:				AP	AP	AP	AP	AP	AP			
Verified by:				JD	JD	JD	JD	JD	JD			
	Conductivity (circle one) (µmhos-cm / mmhos-cm)			Ammonia (mg/L)			Salinity (original sample) (ppth)			Salinity (adjusted sample) (ppth)		
Lab Sample#:	1	2	3	1	2	3	1	MF 2 1.13	MF 3	1	2	3
Sample:	31.2	30.5	31.7	3.00	2.58	2.50	1.18	~~2.28~~	~~2.~~ 1.19	19.1	19.0	19.8
Diluent/Control:	34.2	30.6	31.0	<0.034			—	—	—	21.3	19.2	19.2
Method:	Mettler	Mettler	Mettler	Denver	Denver	Denver	Mettler	Mettler	Mettler	Mettler	Mettler	Mettler
Measured by:	AP	AP	JD	MF	MF	MF	MF	JD	MF	AP	AP	JD
Verified by:	JD	JD	AP	AP	AP	AP	AP	AP	AP	JD	JD	AP

Parameters are for original sample except as noted.

Temperature Shipped ≤ 6° C (all samples) (yes) no
Holding Time ≤ 36 hours (all samples) (yes) no
Light Intensity : 50 - 100 ft. candles
Photoperiod : 16 light 8 dark
Temperature Range °C:
Incubator # 28 DO min. 24.1 max. 26.2 mean —
Water bath # ____ min. _____ max. _____ mean _____
Room B246 min. 24.8 max. 26.1 mean —

Results	
Growth NOEC:	<12.5%
Growth LOEC:	12.5%
Growth IC_{20}:	51.2%
Growth IC_{25}:	54.3%
Ctrl % CV:	7.9%
Dunnetts PMSD:	10.3%
Survival NOEC:	100%
Survival LOEC:	>100%

Investigators' signatures	Initials
Adrienne Pennington	AP
James Davis, II	JD
Marshall Farnlacher	MF
Bruce Ali	BA
Liz Miller	LM

REVIEWER

Comments:

Test Page 1 of 8

PAGE 33

revised 2/201/11 MF

Appendix B. (continued)

Chronic Survival Benchsheet
A. bahia SOP TA07_15

Loaded by (0 hour): BA Verified by (0 hour): JD Concentration: µg/L D = dead M = missing

Concentration	Replicate	TEST DAY 0	1	2	3	4	5	6	7
	A	5	5	5	5	5	5	5	5
Control	B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	5	5	5
	D	5	5	5	5	5	5	5	5
	E	5	5	5	5	5	5	5	5
	F	5	5	5	5	5	5	5	5
	G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	5
12.5%	A	5	5	5	5	5	5	5	5
	B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	5	5	5
	D	5	5	5	5	5	5	5	5
	E	5	5	5	5	5	5	5	5
	F	5	5	5	5	5	5	5	5
	G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	4 ID
25%	A	5	4 ID	4	4	4	4	4	4
	B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	5	5	5
	D	5	5	5	5	5	5	5	5
	E	5	5	5	5	5	5	5	5
	F	5	4 ID	4	4	4	4	4	4
	G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	5
50%	A	5	5	5	5	5	5	5	5
	B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	5	5	5
	D	5	5	5	5	5	5	5	5
	E	5	5	5	5	5	5	5	5
	F	5	5	5	5	5	5	5	5
	G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	5
Checked by:			JD	JD	JD	BA	JD	JD	BA

Concentration	Replicate	TEST DAY 0	1	2	3	4	5	6	7
	A	5	5	5	5	5	5	5	5
100%	B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	5	5	5
	D	5	5	5	5	5	4 ID	4	4
	E	5	5	5	5	5	5	5	5
	F	5	5	5	5	5	5	5	5
	G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	5
salt control	A	5	5	5	5	5	5	5	5
	B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	5	5	5
	D	5	5	5	5	5	5	5	5
	E	5	5	5	5	5	5	5	5
	F	5	5	5	5	5	5	5	5
	G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	5
	A	5							
	B	5							
	C	5							
	D	5							
	E	5							
	F	5							
	G	5							
	H	5							
	A	5							
	B	5							
	C	5							
	D	5							
	E	5							
	F	5							
	G	5							
	H	5							
Checked by:			JD	JD	JD	BA	JD	JD	BA

Comments:

revised 2/20/11 MF

Test Page 2 of 8

Page 34

Appendix B. (continued)

A. bahia Chronic Parameters Benchsheet
SOP TA07_15

Start Date: 7.24.12 Time: 1300
End Date: 7.31.12 Time: 1230

Organism: *A. bahia*
Concentration: µg/L

Test Day		Before Renewal						After Renewal					
	Test	pH	Temp	DO	Cond	Sal	Test	pH	Temp	DO	Cond	Sal
↓ Conc	Rep	(su)	(°C)	(mg/L)	(mmhos-cm)	(ppth)	Rep	(su)	(°C)	(mg/L)	(mmhos-cm)	(ppth)
Day 0 Control	A	8.2	24.9	6.8	34.2	21.3						
12.5%	A	8.3	25.0	6.7	33.2	20.4						
25%	A	8.3	24.8	6.8	32.8	20.2						
50%	A	8.3	24.7	6.8	32.2	19.8						
100%	A	8.3	24.7	6.7	31.2	19.1						
salt ctrl	A	8.3	25.8	6.6	30.5	18.8						
	A											
Measured by:		AP	JD	AP	AP	AP						
Recorded by:		AP	AP	AP	AP	AP						
	Rep	pH	Temp	DO	Cond	Sal	Rep	pH	Temp	DO	Cond	Sal
Day 1 Control	B	8.2	25.1	6.4	33.4	20.9	B	8.2	24.4	6.7	33.1	20.1
12.5%	B	8.2	25.2	6.3	33.6	21.0	B	8.3	24.6	6.7	33.1	20.1
25%	B	8.2	25.3	6.4	33.5	20.9	B	8.3	24.7	6.7	33.1	20.1
50%	B	8.3	25.5	6.6	33.1	20.3	B	8.3	24.6	6.7	32.5	19.9
100%	B	8.2	25.9	6.6	32.2	19.8	B	8.3	24.6	6.6	31.6	19.3
salt ctrl	B	8.3	25.9	6.4	31.6	19.6	B	8.3	24.5	6.5	31.8	19.5
	B						B					
Measured by:		JD	JD	JD	JD	JD		AP	JD	AP	AP	AP
Recorded by:		JD	JD	JD	JD	JD		AP	AP	AP	AP	AP
Conc	Rep	pH	Temp	DO	Cond	Sal	Rep	pH	Temp	DO	Cond	Sal
Day 2 Control	C	8.1	24.4	6.5	34.4	21.4	C	8.2	25.1	6.6	32.8	20.4
12.5%	C	8.1	24.6	6.7	34.0	21.0	C	8.2	25.1	6.7	32.9	20.4
25%	C	8.1	24.7	6.7	33.6	20.8	C	8.2	25.1	6.7	32.7	20.2
50%	C	8.1	24.6	6.5	33.6	20.9	C	8.2	25.1	6.6	32.4	20.0
100%	C	8.2	24.6	6.4	32.8	20.3	C	8.2	24.6	6.4	31.7	19.6
salt control	C	8.1	24.5	6.3	33.1	20.6	C	8.2	24.5	6.3	32.9	20.4
	C						C					
Measured by:		AP	JD	AP	AP	AP		AP	JD	AP	AP	AP
Recorded by:		AP	AP	AP	AP	AP		AP	JD	AP	AP	AP
Conc	Rep	pH	Temp	DO	Cond	Sal	Rep	pH	Temp	DO	Cond	Sal
Day 3 Control	D	7.9	25.8	5.6	33.6	21.2	D	8.1	24.2	6.7	30.6	19.2
12.5%	D	8.0	25.4	5.6	33.4	20.7	D	8.1	24.5	6.6	30.3	18.9
25%	D	8.0	25.2	5.4	33.1	20.5	D	8.1	24.6	6.6	30.4	19.0
50%	D	8.0	25.1	5.3	33.0	20.5	D	8.1	24.6	6.5	30.5	19.0
100%	D	8.0	25.2	4.3	32.4	20.1	D	8.1	24.5	5.7	30.5	19.0
salt ctrl	D	8.0	25.9	5.3	34.2	21.4	D	8.1	24.4	6.4	32.2	20.3
	D						D					
Measured by:		AP	JD	AP	AP	AP		AP	JD	AP	AP	AP
Recorded by:		AP	JD	AP	AP	AP		AP	JD	AP	AP	AP

conc = concentration rep = replicate cond = conductivity Sal = salinity

Comments:

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Test Page 3 of 8

PAGE 35

Appendix B. (continued)

A. bahia Chronic Parameters Benchsheet
SOP TA07_15

Start Date: 7.24.12 Time: 1300
End Date: 7.31.12 Time: 1250

Organism: *A. bahia*
Concentration: µg/L

Test Day	Conc	Test Rep	Before Renewal pH (su)	Temp (°C)	DO (mg/L)	Cond (mmhos-cm)	Sal (ppth)	After Renewal Test Rep	pH (su)	Temp (°C)	DO (mg/L)	Cond (mmhos-cm)	Sal (ppth)
Day 4	Control	E	7.8	24.0	6.6	31.5	19.3	E	8.0	25.3	6.3	30.5	19.0
	12.5%	E	7.8	25.3	5.9	30.5	18.9	E	8.1	25.5	6.1	30.3	18.8
	25%	E	7.9	25.9	5.8	30.7	19.0	E	8.1	25.6	6.1	30.2	18.7
	50%	E	7.9	25.9	5.8	31.1	19.3	E	8.1	25.6	6.1	30.4	18.8
	100%	E	7.9	25.9	5.3	30.9	19.2	E	8.1	25.5	6.0	30.7	19.1
	Salt Ctrl	E	7.9	25.9	5.1	32.8	20.5	E	8.2	25.4	5.9	32.4	20.1
		E						E					
	Measured by:		JD	JD	JD	JD	JD		BA	JD	BA	BA	BA
	Recorded by:		JD	JD	JD	JD	JD		BA	BA	BA	BA	BA
	Conc	Rep	pH	Temp	DO	Cond	Sal	Rep	pH	Temp	DO	Cond	Sal
Day 5	Control	F	7.9	25.9	5.4	32.4	20.0	F	8.1	25.3	5.9	31.0	19.2
	12.5%	F	7.9	25.9	5.2	31.8	19.9	F	8.1	25.4	6.0	30.9	19.1
	25%	F	8.0	25.9	5.6	31.8	19.8	F	8.2	25.3	6.3	30.7	19.0
	50%	F	8.0	25.9	5.7	32.4	20.2	F	8.2	25.3	6.5	30.9	19.1
	100%	F	8.0	25.9	5.6	32.7	20.4	F	8.2	25.7	6.6	31.7	19.8
	Salt ctrl	F	8.0	25.9	5.4	34.1	21.4	F	8.2	26.1	6.7	32.9	20.6
		F						F					
	Measured by:		BA	JD	BA	BA	BA		JD	JD	JD	JD	JD
	Recorded by:		BA	BA	BA	BA	BA		JD	JD	JD	JD	JD
	Conc	Rep	pH	Temp	DO	Cond	Sal	Rep	pH	Temp	DO	Cond	Sal
Day 6	Control	G	8.0	24.4	6.5	18.1	~~18.1~~ 19	G	8.2	25.6	6.3	32.9	20.6
	12.5%	G	8.1	25.8	6.4	18.7	30.8	G	8.2	25.8	6.2	32.3	20.1
	25%	G	8.1	25.1	6.2	18.7	30.7	G	8.2	25.4	6.3	31.9	19.8 JD
	50%	G	8.1	25.7	6.2	18.7	30.6	G	8.2	25.7	6.3	31.5	19.6
	100%	G	8.1	25.7	6.1	19.5	31.7	G	8.2	24.7	6.1	31.1	19.2
	Salt control	G	8.1	25.8	6.0	20.4	33.0	G	8.2	24.3	5.9	32.8	20.5
		G						G					
	Measured by:		JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by:		JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Conc	Rep	pH	Temp	DO	Cond	Sal	Rep	pH	Temp	DO	Cond	Sal
Day 7	Control	H	8.0	25.5	5.4	32.6	20.4						
	12.5%	H	8.0	26.0	5.3	32.5	20.4						
	25%	H	8.0	25.4	5.2	32.1	20.0						
	50%	H	8.0	25.9	5.1	32.2	20.1						
	100%	H	8.0	25.4	4.4	31.8	19.8						
	Salt ctrl	H	8.0	25.2	5.7	33.6	21.0						
		H											
	Measured by:		BA	BA	BA	BA	BA						
	Recorded by:		BA	BA	BA	BA	BA						

conc = concentration rep = replicate cond = conductivity Sal = salinity

Comments:

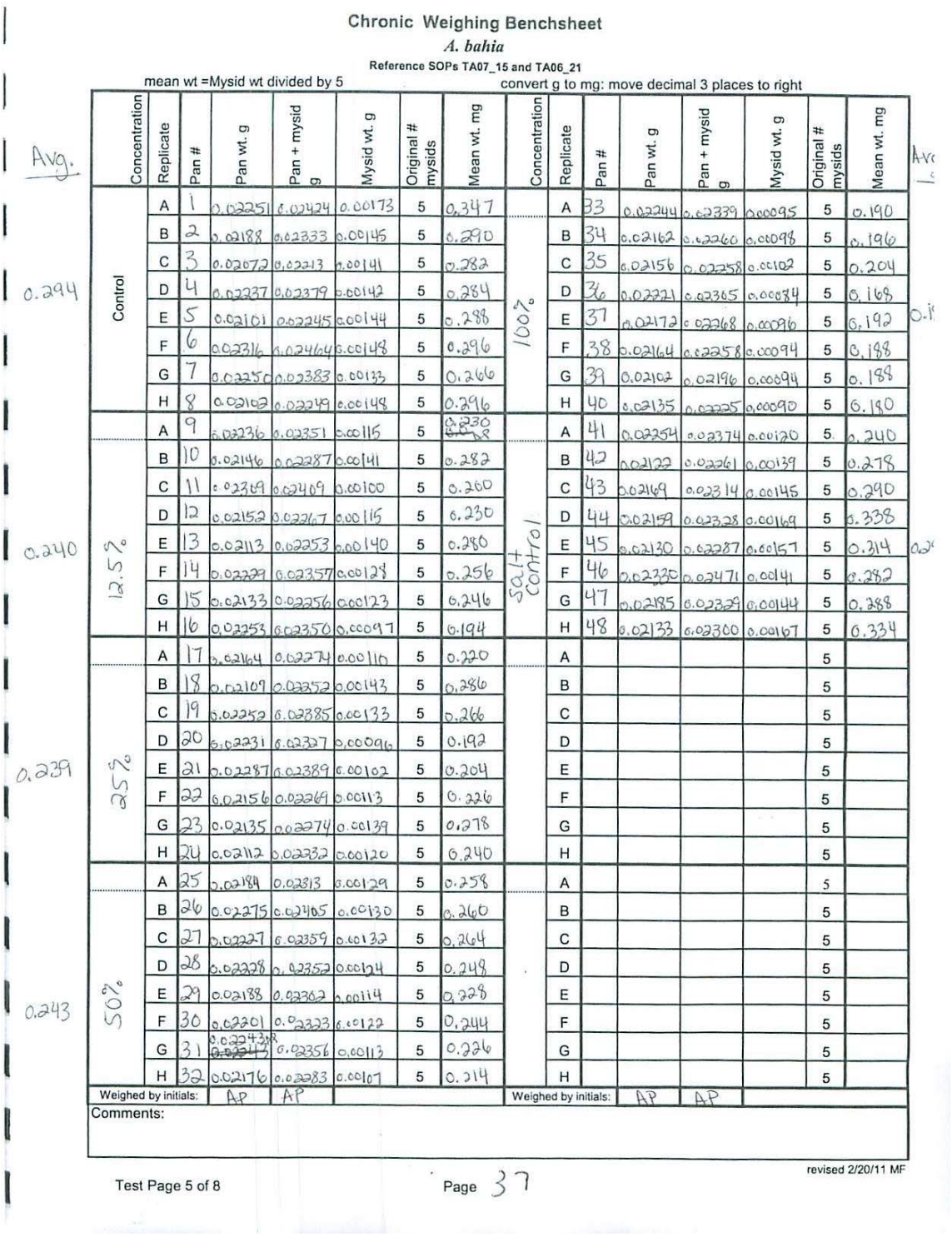
(A) JD and switched with Sal Day 6 Before

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Test Page 4 of 8

PAGE 36

Appendix B. (continued)



Chronic Weighing Benchsheet

A. bahia

Reference SOPs TA07_15 and TA06_21

mean wt =Mysid wt divided by 5 — convert g to mg: move decimal 3 places to right

Concentration	Replicate	Pan #	Pan wt. g	Pan + mysid g	Mysid wt. g	Original # mysids	Mean wt. mg	Concentration	Replicate	Pan #	Pan wt. g	Pan + mysid g	Mysid wt. g	Original # mysids	Mean wt. mg
Control	A	1	0.02251	0.02424	0.00173	5	0.347	100%	A	33	0.02244	0.02339	0.00095	5	0.190
	B	2	0.02188	0.02333	0.00145	5	0.290		B	34	0.02162	0.02260	0.00098	5	0.196
	C	3	0.02072	0.02213	0.00141	5	0.282		C	35	0.02156	0.02258	0.00102	5	0.204
	D	4	0.02237	0.02379	0.00142	5	0.284		D	36	0.02221	0.02305	0.00084	5	0.168
	E	5	0.02101	0.02245	0.00144	5	0.288		E	37	0.02172	0.02268	0.00096	5	0.192
	F	6	0.02316	0.02464	0.00148	5	0.296		F	38	0.02164	0.02258	0.00094	5	0.188
	G	7	0.02250	0.02383	0.00133	5	0.266		G	39	0.02102	0.02196	0.00094	5	0.188
	H	8	0.02103	0.02249	0.00148	5	0.296		H	40	0.02135	0.02225	0.00090	5	0.180
12.5%	A	9	0.02236	0.02351	0.00115	5	0.230	salt control	A	41	0.02254	0.02374	0.00120	5	0.240
	B	10	0.02146	0.02287	0.00141	5	0.282		B	42	0.02122	0.02261	0.00139	5	0.278
	C	11	0.02369	0.02469	0.00100	5	0.200		C	43	0.02169	0.02314	0.00145	5	0.290
	D	12	0.02152	0.02267	0.00115	5	0.230		D	44	0.02159	0.02328	0.00169	5	0.338
	E	13	0.02113	0.02253	0.00140	5	0.280		E	45	0.02130	0.02287	0.00157	5	0.314
	F	14	0.02229	0.02357	0.00128	5	0.256		F	46	0.02235	0.02376	0.00141	5	0.282
	G	15	0.02133	0.02256	0.00123	5	0.246		G	47	0.02185	0.02329	0.00144	5	0.288
	H	16	0.02253	0.02350	0.00097	5	0.194		H	48	0.02133	0.02300	0.00167	5	0.334
25%	A	17	0.02164	0.02274	0.00110	5	0.220		A					5	
	B	18	0.02109	0.02352	0.00143	5	0.286		B					5	
	C	19	0.02252	0.02385	0.00133	5	0.266		C					5	
	D	20	0.02231	0.02327	0.00096	5	0.192		D					5	
	E	21	0.02287	0.02389	0.00102	5	0.204		E					5	
	F	22	0.02156	0.02269	0.00113	5	0.226		F					5	
	G	23	0.02135	0.02274	0.00139	5	0.278		G					5	
	H	24	0.02112	0.02232	0.00120	5	0.240		H					5	
50%	A	25	0.02184	0.02313	0.00129	5	0.258		A					5	
	B	26	0.02275	0.02405	0.00130	5	0.260		B					5	
	C	27	0.02227	0.02359	0.00132	5	0.264		C					5	
	D	28	0.02328	0.02352	0.00124	5	0.248		D					5	
	E	29	0.02188	0.02302	0.00114	5	0.228		E					5	
	F	30	0.02301	0.02323	0.00122	5	0.244		F					5	
	G	31	0.02243	0.02356	0.00113	5	0.226		G					5	
	H	32	0.02176	0.02383	0.00107	5	0.214		H					5	
Weighed by initials:			AP	AP				Weighed by initials:			AP	AP			

Comments:

Test Page 5 of 8 — Page 37 — revised 2/20/11 MF

Appendix B. (continued)

Chronic Weighing Benchsheet
Quality Control

A. bahia

SOPs TA07_15 and TA06_21

Empty Pan Weights Date: 7-30-12 By: AP

Weights in grams	Pan 1 wt.	Pan 1 initial wt.
after Pan 5	0.02249	@ 0.02251
after Pan 10	0.02250	@ 0.02251
after Pan 15	0.02251	@ 0.02251
after Pan 20	0.02251	@ 0.02251
after Pan 25	0.02250	@ 0.02251
after Pan 30	0.02251	@ 0.02251
after Pan 35	0.02251	@ 0.02251
after Pan 40	0.02250	@ 0.02251
after Pan 45	0.02251	@ 0.02251
after Pan 48	0.02252	@ 0.02251

	Measured Value (g)	S-weight Value (g)
S-weights	0.01000	@ 0.01
	0.03001	@ 0.03

S-Weights: BIO-S-WEIGHTS-01
Balance: Ohaus 250D
Ser# 1125481084

Fish + Pan Weights Date: 8-2-12 By: AP

Weights in grams	Pan 1 wt.	Pan 1 initial wt.
after Pan 5	0.02427	@ 0.02424
after Pan 10	0.02424	@ 0.02424
after Pan 15	0.02425	@ 0.02424
after Pan 20	0.02423	@ 0.02424
after Pan 25	0.02422	@ 0.02424
after Pan 30	0.02423	@ 0.02424
after Pan 35	0.02422	@ 0.02424
after Pan 40	0.02421	@ 0.02424
after Pan 45	0.02420	@ 0.02424
after Pan 48	0.02421	@ 0.02424

	Measured Value (g)	S-weight Value (g)
S-weights	0.01000	@ 0.01
	0.05004	@ 0.05

Drying Oven ID: ER034000
Temperature °C: 100
Drying Hours: 8

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

Comments:

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Test Page 6 of 8

PAGE 38 pg 39 not used

Appendix B. (continued)

Test ID: Buckeye Dates: 7.24.12 – 7.31.12

METER / DEVICE	ID	SOP	Parameter	Method	v used
YSI Model 58 Dissolved Oxygen Meter	90H018262	TA06_04	Dissolved Oxygen	SM 4500 O G	✓
YSI DO Probe	5905	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 Salinity	SM 2510 B SM 2520 B	✓
Denver Model 225 ISE with ammonia probe	SN K01377	TA06_17	Ammonia	SM 4500 NH3 F	✓
Traceable Thermometer	#1-SN101686412 #2-SN221295527 #3-SN240116020 #4-SN80361795 #5-SN61990624	TA06_05	Temperature	SM-2530B modified DEP SOP-001/01 FT1400	✓ 5
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)

8.2.12 JD.

V 1.1 9/21/10 MF/jd

Page 40

Pg 39 not used

Appendix B. (continued)

FDEP Biology Laboratory - Chronic Bioassay Bench Sheet

Pimphales promelas or (*Menidia beryllina*)

Facility: Buckeye
Address: One Buckeye Drive, Perry
County: Taylor
NPDES Permit #: FL 0000876
Contact/District: Tessa Ali / Northeast

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

Start Date: 7.24.12 Time: 1330
End Date: 7-31-12 Time: 1100

Diluent/ Batch:
MHW /_____ Test Days Used: _____
MHW /_____ Test Days Used: _____
ASW / 7.23.12 Test Days Used: 0-6
ASW /_____ Test Days Used: _____

Organism age : ____ days
Feeding Prior to Test and Daily
Artemia Lot # : 088/2
Chamber size : 1000 ml
Test volume : 500 ml

Artemia Batch #		Day 3	105-12
Day 0	102-12	Day 4	106-12
Day 1	103-12	Day 5	107-12
Day 2	104-12	Day 6	108-12

Sample Received	Lab Sample #	LIMS Job #	LIMS Sample #	Collection Date/Time	Received Date/Time
Test Day 0	1	TLH- 2012-07-23-12	1443484	7-23-12 1135	7-23-12 1325
Test Day 2	2	TLH- 2012-07-25-45	1444284	7-25-12 1055	7-25-12 1305
Test Day 4	3	TLH- 2012-07-27-40	1444997	7-27-12 1025	7-27-12 1224

Water Quality Parameters	Field Chlorine (mg/L)			Lab Chlorine (mg/L)			Alkalinity (mg/L as $CaCO_3$)			Hardness (mg/L as $CaCO_3$)		
Lab Sample #:	1	2	3	1	2	3	1	2	3	1	2	3
Sample:	Not measured			<0.03	<0.03	<0.03	200	202	205			
Diluent/Control:				<0.03	—	—	154	—	—			
Method:				Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach
Measured by:				AP	AP	AP	AP	AP	AP			
Verified by:	MF	MF	MF	MF	MF	MF	MF	MF	MF			

	Conductivity (circle one) (µmhos-cm / mmhos-cm)			Ammonia (mg/L)			Salinity (ppth)		
Lab Sample#:	1	2	3	1	2	3	1	2	3
Sample:	31.2	~~19.1~~ 30.8 AP	31.2	3.00	2.58	2.50	19.1	18.8	18.9
Diluent/Control:	34.2	~~21.3~~ 30.1 AP	—	<0.034	—	—	21.3	18.5	19.3
Method:	Mettler	Mettler	Mettler	Denver	Denver	Denver	Mettler	Mettler	Mettler
Measured by:	AP	AP	JD	MF	MF	MF	AP	AP	JD
Verified by:	MF	MF	AP	AP	AP	AP	MF	MF	AP

Statistics	
Growth NOEC:	12.5%
Growth LOEC:	25%
Growth IC_{20}:	20.7%
Growth IC_{25}:	27.3%
Ctrl % CV:	11.4%
Dunnetts PMSD:	15.5%
Survival NOEC:	25 %
Survival LOEC:	50 %

Light Intensity : 50 - 100 ft. candles
Photoperiod : 16 light 8 dark
Temperature Range °C:
Incubator # 3 min. 24.7 max. 26.3 mean —
Water bath # ____ min. _____ max. _____ mean _____
Room B246 min 24.8 max. 26.1 mean —

Investigators' signatures
Adrienne Pemyth
Marshall Faircloth
Marshall Faircloth
James Daniels

Liz Mellen
REVIEWER

Comments:
sample 2 conductivity: 30.8 AP
diluent 2 conductivity: 30.1

00022

PAGE

revised 08/24/06 MF/SP

Appendix B. (continued)

Chronic Bioassay Survival Benchsheet

Facility: Buckeye

LIMS Sample Number: 1443484
(for Lab Sample # 1)

Department of Environmental Protection
Biology Laboratory Chronic Screening Bioassay
***P. promelas* SOP TA07_09 *M. beryllina* SOP TA07_14**

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

		TEST DAY							
Concentration	Replicate	0	1	2	3	4	5	6	7
Control	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10
	D	10	9 1D 3A 3D	9	9	9	9	9	9
Sample 12.5 %	A	10	9 1D	9	9	9	9	9	9
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10
Sample 25 %	A	10	10	10	10	10	10	10	10
	B	10	7 3D	7	7	7	7	7	7
	C	10	10	10	10	10	9 1D	9	9
	D	10	10	9 1D	9	9	9	9	9
Sample 50 %	A	10	8 2D	8	8	8	8	8	8
	B	10	9 1D	8 1D	8	8	8	8	8
	C	10	7 3D	5 2D	5	5	5	5	5
	D	10	9 1D	9	9	9	9	9	9
Sample 100 %	A	10	8 2D	8	7 1D	7	7	7	7
	B	10	5 5D	5	5	5	5	5	5
	C	10	6 4D	6	6	6	6	6	6
	D	10	6 4D	6	6	6	6	6	6
Sample % salt control	A	10	9 1D	9	9	9	9	9	9
	B	10	9 1D	8 1D	8	8	8	8	8
	C	10	9 1D	9	9	9	9	9	9
	D	10	7 3D	7	7	7	7	7	7
Sample %	A	10							
	B	10							
	C	10							
	D	10							
Loaded by: BA	Checked by:		JD	JD	JD	JD	JD	BA	JD
Verified by: MF									

Comments:

Page 00023

Appendix B. (continued)

Chronic Bioassay Parameters Benchsheet

P. promelas and M. beryllina SOP TA07_09 and TA-07_15

parameter pg. 1 AP

Sample Source: Buckeye

LIMS Sample #: 1443484 (for Lab sample #1)

Start Date: 7.24.12 End Date: ~~7.30~~ 7.31.12

Start Time: 1330 End Time: 1100

conc = concentration rep = replicate circle umhos or mmhos

switch temp → and pH AP

Test Day ↓		Conc.	Before Renewal: Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos mmhos	Salinity ppth	After Renewal: Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos mmhos	Salinity ppth
Day 0	sample:	Control	A	24.9	8.2	6.8	34.2	21.3						
	1	12.5%	A	25.0	8.3	6.7	33.2	20.4						
	1	25%	A	24.8	8.3	6.8	32.8	20.2						
	1	50%	A	24.7	8.3	6.8	32.2	19.8						
	1	100%	A	24.7	8.3	6.7	31.2	19.1						
	1	salt ctrl	A	25.8	8.3	6.6	30.5	18.8						
	1		A											
	Measured by:			JD	AP	AP	AP	AP						
	Recorded by:			AP	AP	AP	AP	AP						
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 1	sample:	Control	B	8.2	24.1	6.2	33.4	20.9	B	8.2	24.3	6.4	33.7	20.8
	1	12.5%	B	8.2	24.1	6.3	33.4	20.9	B	8.3	24.5	6.6	33.5	20.6
	1	25%	B	8.2	24.1	6.4	33.0	20.6	B	8.2	24.5	6.7	33.3	20.4
	1	50%	B	8.2	24.6	6.5	32.8	20.2	B	8.3	24.4	6.6	33.0	20.3
	1	100%	B	8.2	24.5	6.3	31.8	19.7	B	8.3	24.5	6.5	32.1	19.7
	1	salt ctrl	B	8.2	24.4	6.3	31.3	19.1	B	8.3	24.5	6.4	32.0	19.7
	1		B						B					~~32.1~~ AP
	Measured by:			JD	JD	JD	JD	JD		AP	JD	AP	AP	AP
	Recorded by:			JD	JD	JD	JD	JD		AP	AP	AP	AP	AP
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 2	sample:	Control	C	8.1	25.5	6.2	34.2	21.3	C	8.2	25.5	6.7	31.2	20.0
	2	12.5%	C	8.2	25.4	6.3	33.8	21.1	C	8.2	25.5	6.7	31.8	19.9
	2	25%	C	8.2	25.8	6.5	33.9	21.1	C	8.2	25.4	6.6	32.1	20.0
	2	50%	C	8.1	25.7	6.2	33.4	20.7	C	8.2	25.3	6.6	31.6	19.7
	2	100%	C	8.2	25.9	6.2	32.7	20.6	C	8.2	24.9	6.4	31.2	19.3
	2	salt control	C	8.2	25.9	6.2	33.1	20.6	C	8.2	24.8	6.3	32.2	20.1
	2		C						C					
	Measured by:			AP	JD	AP	AP	AP		AP	JD	AP	AP	AP
	Recorded by:			AP	JD	AP	AP	AP		AP	JD	AP	AP	AP
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 3	sample:	Control	D	8.0	24.9	6.0	33.2	20.9	D	8.1	25.0	6.9	30.1	18.5
	2	12.5%	D	8.1	25.5	6.1	33.6	21.1	D	8.1	24.9	6.8	30.7	18.6
	2	25%	D	8.1	25.9	6.2	33.3	20.9	D	8.2	24.9	6.7	30.7	18.6
	2	50%	D	8.1	25.9	5.8	32.8	20.5	D	8.1	24.8	6.7	31.0	18.9
	2	100%	D	8.1	25.4	5.6	32.1	20.0	D	8.2	24.7	6.2	30.8	18.8
	2	salt ctrl	D	8.1	25.4	5.6	33.0	20.6	D	8.2	24.6	6.8	32.4	19.9
	2		D						D					
	Measured by:			AP	JD	AP	AP	AP		AP	JD	AP	AP	AP
	Recorded by:			AP	JD	AP	AP	AP		AP	JD	AP	AP	AP

Comments:

For salinity <1 ppth insert <1. For salinity > 1 ppth, conductivity measurement is not required if salinity probe is functional.

Page 00024

Appendix B. (continued)

Chronic Bioassay Parameters Benchsheet

P. promelas and M. beryllina SOP TA07_09 and TA-07_15

Sample Source: Buckeye

LIMS Sample #: 14A34884 mH

Start Date: 7.24.12 End Date: 7.31.12

Start Time: 1330 End Time: 1300

conc = concentration rep = replicate

Test Day	Conc.	Before Renewal: Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos/mmhos	Salinity ppth	After Renewal: Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos/mmhos	Salinity ppth
Day 4 sample:	Control	A	8.0	25.4	6.4	31.2	19.3	A	8.1	25.2	6.2	30.5	20.1
3	12.5%	A	8.0	25.0	6.5	30.8	19.1	A	8.1	25.4	6.0	30.5	18.8
3	25%	A	7.9	25.0	5.7	30.8	19.1	A	8.1	25.5	6.0	30.3	18.8
3	50%	A	8.0	24.7	5.7	30.9	19.2	A	8.1	25.5	6.2	30.6	18.9
3	100%	A	8.0	24.8	5.8	30.6	19.0	A	8.2	25.6	6.2	30.7	19.1
3	Salt ctrl	A	8.0	24.9	5.7	32.4	20.2	A	8.1	25.5	6.2	32.1	20.0
3		A						A					
Measured by:			JD	JD	JD	JD	JD		BA	JD	BA	BA	BA
Recorded by:			JD	JD	JD	JD	JD		BA	BA	BA	BA	BA
		Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 5 sample:	Control	B	8.0	25.6	5.8	32.6	20.2	B	8.1	25.5	6.4	30.7	18.9
3	12.5%	B	8.1	25.8	5.9	31.8	19.9	B	8.1	25.7	6.4	30.6	18.8
3	25%	B	8.1	25.9	5.2	31.7	19.8	B	8.2	25.7	6.4	30.5	18.8
3	50%	B	8.1	25.7	5.3	31.7	19.7	B	8.2	25.8	6.5	30.6	18.8
3	100%	B	8.1	25.7	5.4	32.4	20.2	B	8.2	25.9	6.7	31.2	19.3
3	Salt control	B	8.2	25.9	5.4	33.9	21.3	B	8.2	24.9	6.7	32.8	20.5
3		B						B					
Measured by:			JD	JD	BA	BA	BA		JD	JD	JD	JD	JD
Recorded by:			BA	JD	BA	BA	BA		JD	JD	JD	JD	JD
		Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 6 sample:	Control	C	8.1	25.2	6.1	30.7	19.1	C	8.1	25.9	6.4	32.9	21.3
3	12.5%	C	8.1	25.9	6.0	30.7	19.1	C	8.1	25.5	6.3	32.1	20.0
3	25%	C	8.1	25.7	6.0	30.6	19.0	C	8.1	25.5	6.3	31.3	19.3
3	50%	C	8.1	25.8	6.1	30.8	19.1	C	8.2	25.4	6.3	31.1	19.2
3	100%	C	8.1	25.8	6.2	31.2	19.3	C	8.2	24.7	6.0	30.5	18.8
3	Salt ctrl	C	8.1	25.5	6.1	32.9	20.4	C	8.2	24.3	6.0	32.3	20.1
3		C						C					
Measured by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
Recorded by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
		Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 7 sample:	Control	D	8.0	25.9	5.9	32.4	20.1	D					
3	12.5%	D	8.0	25.8	5.8	32.0	20.0	D					
3	25%	D	8.0	25.8	5.6	31.9	20.0	D					
3	50%	D	8.0	25.7	5.4	31.6	19.7	D					
3	100%	D	8.1	25.7	4.4	31.2	19.3	D					
3	Salt ctrl	D	8.1	25.9	5.2	33.5	21.0	D					
3								D					
Measured by:			BA	JD	JD	JD	JD						
Recorded by:			BA	JD	JD	JD	JD						

Comments:

For salinity <1 ppth insert <1. For salinity > 1 ppth, conductivity measurement is not required if salinity probe is functional

Page 00025

Appendix B. (continued)

Chronic Bioassay Weighing Benchsheet

Facility: Buckeye

LIMS Sample Number: 1443484
(for Lab Sample # 1)

***P. promelas* and *M. beryllina* Bench Sheet**
SOP TA06_21

Concentration	Replicate	Pan #	Pan wt. g (mean wt = fish wt divided by 10)	Pan + Fish g (convert g to mg: move decimal 3 places to right)	Fish wt. g	Original # Fish	Mean wt. mg	Avg.
Control	A	49	0.02138	0.03185	0.01047	10	1.047	
	B	50	0.02119	0.03280	0.01161	10	1.161	1.177
	C	51	0.02195	0.03331	0.01136	10	1.136	
	D	52	0.02181	0.03546	0.01365	10	1.365	
sample 12.5 %	A	53	0.03222	0.03134	0.00912	10	0.912	
	B	54	0.02187	0.03151	0.00964	10	0.964	1.032
	C	55	0.02128	0.03282	0.01154	10	1.154	
	D	56	0.02222	0.03318	0.01096	10	1.096	
sample 25 %	A	57	0.02194	0.03226	0.01032	10	1.032	
	B	58	0.02245	0.03058	0.00813	10	0.813	0.895
	C	59	0.02169	0.03021	0.00852	10	0.852	
	D	60	0.02235	0.03119	0.00884	10	0.884	
sample 50 %	A	61	0.02263	0.02929	0.00666	10	0.666	
	B	62	0.02146	0.02856	0.00710	10	0.710	0.75
	C	63	0.02217	0.02921	0.00704	10	0.704	
	D	64	0.02066	0.03021	0.00955	10	0.955	
sample 100 %	A	65	0.02080	0.02814	0.00734	10	0.734	
	B	66	0.02233	0.02867	0.00634	10	0.634	0.67
	C	67	0.02211	0.02903	0.00692	10	0.692	
	D	68	0.02182	0.02808	0.00626	10	0.626	
sample %	A	69	0.02181	0.03133	0.00952	10	0.952	
Salt	B	70	0.02146	0.03036	0.00890	10	0.890	0.810
control	C	71	0.02183	0.02973	0.00790	10	0.790	
	D	72	0.02088	0.02696	0.00608	10	0.608	
sample %	A					10		
	B					10		
	C					10		
	D					10		
	Weighed by initials:		AD	AP			revised 7/16/08 mf	

Comments:

Balance: Ohaus 250D Ser# 1125481084
S-Weights: BIO-S-Weights-01

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

Page 00026

Appendix B. (continued)

Chronic Bioassay Weighing Benchsheet

Quality Control

Facility: Buckeye

LIMS Sample Number: 1443484
(for Lab Sample # 1)

***P. promelas and M. beryllina* Bench sheet**
SOPs TA07_09, TA07_14 and TA06_21

Drying Oven ID:	E2034000
Temperature °C:	100
Hours:	8

Tare weighed by: AP
Final weighed by: AP

Tare Weighing Date:	Final Weighing Date:	Measured Value (g)		S-weight Value (g)
Tare Pan 1 after Pan 5 (g) 0.02140	@ 0.02138	S-weights	@	0.01
Tare Pan 1 after Pan 10 (g) 0.02142	@ 0.02138	at tare 0.03601	@	~~0.01~~ 0.03
Tare Pan 1 after Pan 15 (g) 0.02137	@ 0.02138	S-weights	@	0.01
Tare Pan 1 after Pan 20 (g) 0.02135	@ 0.02138	at final 0.05003	@	0.05
Tare Pan 1 after Pan 25 (g) 0.02138	@ 0.02138			
Tare Pan 1 after Pan 30 (g)	@	Balance: Ohaus 250D Ser# 1125481084		
Tare Pan 1 after Pan 35 (g)	@	S-Weights: BIO-S-Weights-01		
Tare Pan 1 after Pan 40 (g)	@			
Tare Pan 1 after Pan 45 (g)	@			
Tare Pan 1 after Pan 48 (g)	@			
Final Pan 1 after Pan 5 (g) 0.03183 ~~0.03240~~	@ 0.03185 ~~0.03240~~			
Final Pan 1 after Pan 10 (g) 0.03185 ~~0.03239~~	@ 0.03185			
Final Pan 1 after Pan 15 (g) 0.03182	@ 0.03185			
Final Pan 1 after Pan 20 (g) 0.03182	@ 0.03185			
Final Pan 1 after Pan 25 (g) 0.03183	@ 0.03185			
Final Pan 1 after Pan 30 (g)	@			
Final Pan 1 after Pan 35 (g)	@			
Final Pan 1 after Pan 40 (g)	@			
Final Pan 1 after Pan 45 (g)	@			
Final Pan 1 after Pan 48 (g)	@			

Note: Pan numbers (5, 10, etc.) for Tare and Final refers to sequence of weighing as actual Pan #s may differ.

Comments:

revised 7/16/08 MF

Page 00027

Appendix B. (continued)

Test ID: Buckeye Dates: July 24 — July 31, 2012

METER / DEVICE	ID	SOP	Parameter	Method	v used
YSI Model 58 Dissolved Oxygen Meter	90H018262	TA06_04	Dissolved Oxygen	SM 4500 O G	✓
YSI DO Probe	5905	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 Salinity	SM 2510 B SM 2520 B	✓
Denver Model 225 ISE with ammonia probe	SN K01377	TA06_17	Ammonia	SM 4500 NH3 F	✓
Traceable Thermometer	#1-SN101686412 #2-SN221295527 #3-SN240116020 #4-SN80361795 #5-SN61990624	TA06_05	Temperature	SM-2530B modified DEP SOP-001/01 FT1400	✓ ~~#5~~
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)

8-2-12 AP

V 1.1 9/21/10 MF/jd

00028

Appendix C. SRT Bench Sheets and Statistical Analysis

Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 7-Day Chronic Toxicity

Americamysis bahia (mysid shrimp) - Cadmium Chloride ($CdCl_2$)

Date	IC20	Mean IC20	Std Dev	Lower Control Limit	Upper Control Limit
5/10/06	8.3284	8.33			
8/7/06	15.064	11.70	4.76	2.17	21.22
12/05/06	12.168	11.85	3.38	5.10	18.61
3/06/07	6.27	10.46	3.92	2.61	18.31
5/13/08	8.63	10.09	3.50	3.10	17.08
12/9/08	10.8	10.21	3.14	3.93	16.49
1/10/2010	12.46	10.53	2.99	4.55	16.51
3/15/2011	15.3	11.13	3.24	4.65	17.61
6/19/2012	15.4	11.60	3.35	4.90	18.30
7/24/2012	14.47	11.89	3.29	5.32	18.46

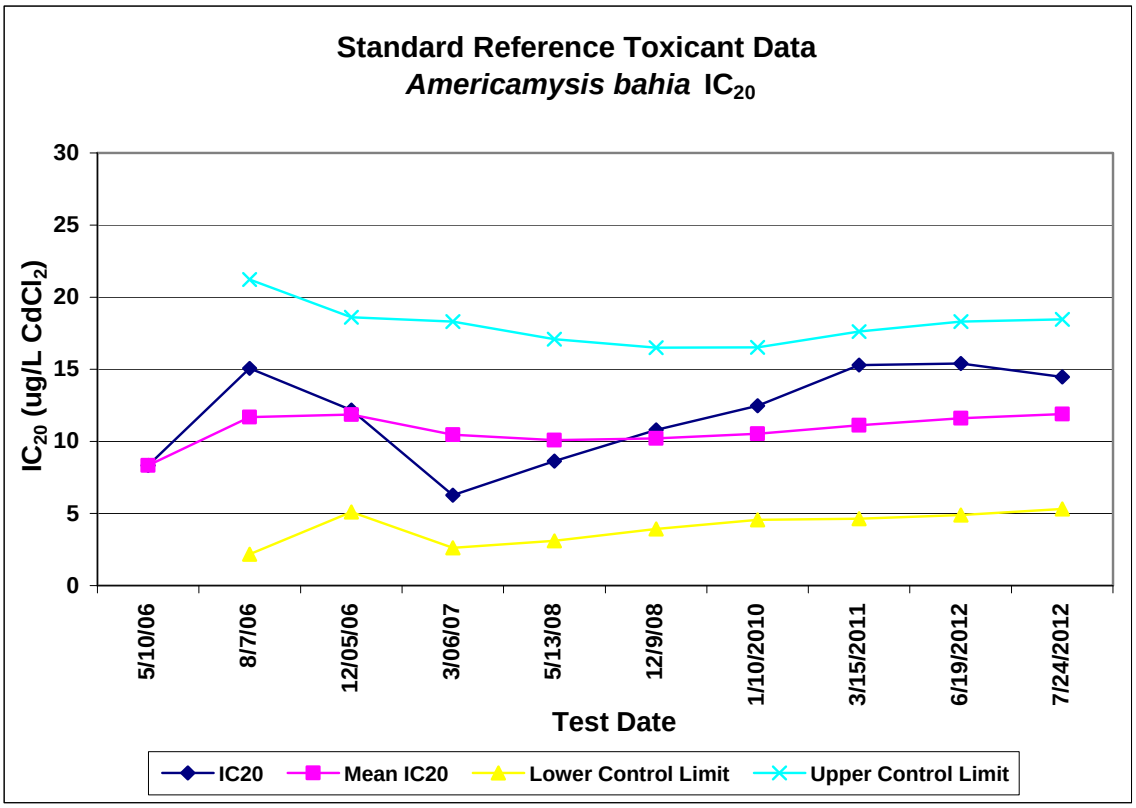
Fewer than 20 chronic SRTs (cadmium) have been performed for this species.

Lower Confidence Limit = mean - 2 * Std Dev

Upper Confidence Limit = mean + 2 * Std Dev

EPA %CV 75th percentile = 32%

Lab %CV = 27.6%



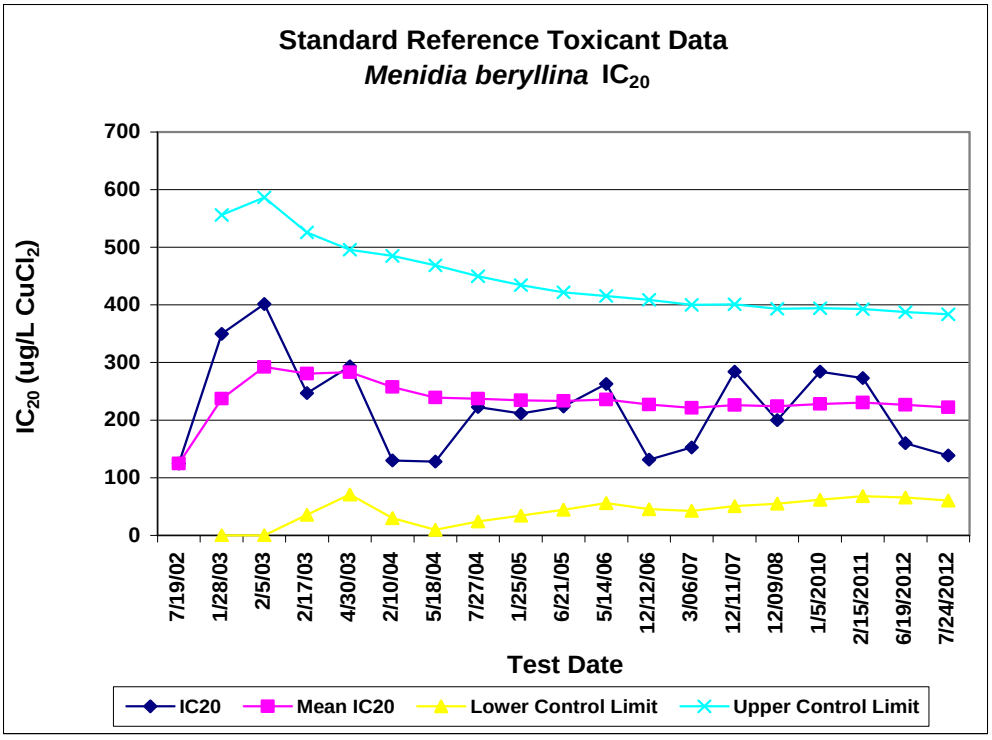
Appendix C. (continued)

Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 7-Day Chronic Toxicity
Menidia beryllina (inland silverside) - Copper Chloride ($CuCl_2$)

Date	IC20	Mean IC20	Std Dev	Lower Control Limit	Upper Control Limit
7/19/02	124.6	124.6			
1/28/03	349.9	237.2	159.3	0.0	555.9
2/5/03	401.6	292.0	147.3	0.0	586.6
2/17/03	246.8	280.7	122.4	36.0	525.5
4/30/03	293.2	283.2	106.1	71.0	495.5
2/10/04	129.8	257.6	113.7	30.2	485.1
5/18/04	128.0	239.1	114.8	9.5	468.7
7/27/04	222.6	237.1	106.4	24.2	449.9
1/25/05	211.5	234.2	99.9	34.4	434.1
6/21/05	223.7	233.2	94.3	44.6	421.7
5/14/06	262.9	235.9	89.9	56.1	415.6
12/12/06	131.5	227.2	90.8	45.5	408.9
3/06/07	152.6	221.4	89.4	42.6	400.2
12/11/07	284.0	225.9	87.5	50.9	400.9
12/09/08	200.0	224.2	84.6	55.0	393.4
1/5/2010	283.9	227.9	83.1	61.8	394.1
2/15/2011	273.0	230.6	81.2	68.2	392.9
6/19/2012	160.0	226.6	80.5	65.7	387.6
7/24/2012	138.7	222.0	80.8	60.5	383.6

Fewer than 20 chronic SRTs have been performed for this species.
Lower Confidence Limit = mean - 2 * Std Dev
Upper Confidence Limit = mean + 2 * Std Dev
EPA CV 75th percentile - 43%
Lab %CV = 36.4



Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet
Americamysis bahia

SOP#: TA07_15 EPA 821-R-02-014 Method 1007.0

Diluent/ Batch: ASW 7.23.12 Test Days Used: 0-7 Test Duration: 7 days
Diluent/ Batch: _____ Test Days Used: _____ Organism Batch # : 7.24.12
Toxicant/ Batch # : cdcl2 / 7.23.12 Organism Age: 7 days
Artemia Lot # : 08812

Artemia Batch #		Day 2	104-12
Day 0	102-12	Day 3	105-12
Day 1	103-12	Day 4	106-12
Feeding: 2 X Daily		Day 5	107-12
150 artemia/mysid (total)		Day 6	108-12

Start Date: 7.24.12 Time: 1315
End Date: 7.31.12 Time: 1030

Chamber size : 400 mL (400 recommended)
Sample volume : 300 mL (minimum 150 ml)

Water Quality Parameters	Diluent	Diluent (or other)	Measured by	Verified by
Total Residual Cl_2 (mg/L):	<0.03		AP	MF
Alkalinity (mg/L as $CaCO_3$):	154		AP	MF
Hardness (mg/L as $CaCO_3$):				
Total Ammonia (mg/L as N):	<0.034		MF	AP
Conductivity mmhos-cm:	32.8		JD	AP
Salinity ppth:	20.3		JD	AP

Results	
Growth NOEC:	10 ug/L
Growth LOEC:	20 ug/L
Growth IC_{20}:	14.47 ug/L
Growth IC_{25}:	15.58 ug/L
Ctrl % CV	13.1 %
Dunnetts PMSD:	15.4 %
Survival NOEC:	10 ug/L
Survival LOEC:	20 ug/L

PMSD Bounds for Growth
Lower: 11
Upper: 37

√ one ☐ Waterbath: #____
Test incubated in: ☑ Incubator: # 2

Light Intensity : 50 - 100 ft. candles
Photoperiod : 16 light 8 dark
Temperature Range °C:
(if used) Incubator # 2 min. 24.1 max. 26.2 mean –
(if used) Water bath # ____ min.____ max.____ mean____
Room B246 min. 24.8 max. 26.1 mean –

Comments:

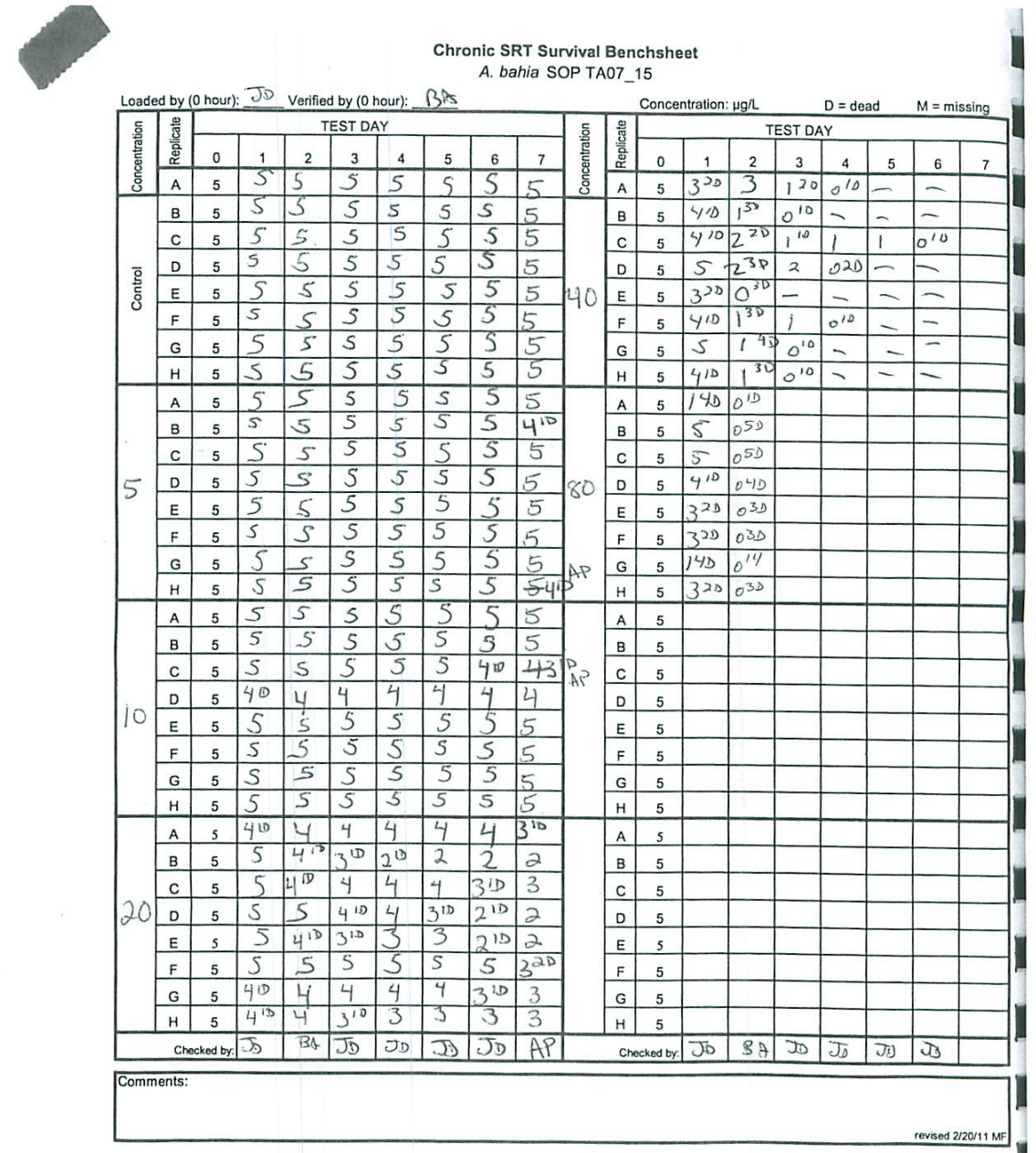
Investigators' signatures	Initials
James Danish	JD
Adrienne Pennington	AP
Marshall Fairchild	MF
Bruce Atalo	BA
Liz Mecum	EM

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Test Page 1 of 8 PAGE 9

Appendix C. (continued)



Chronic SRT Survival Benchsheet

A. bahia SOP TA07_15

Loaded by (0 hour): JD Verified by (0 hour): BA

Concentration: µg/L D = dead M = missing

Concentration	Replicate	TEST DAY 0	1	2	3	4	5	6	7
Control	A	5	5	5	5	5	5	5	5
	B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	5	5	5
	D	5	5	5	5	5	5	5	5
	E	5	5	5	5	5	5	5	5
	F	5	5	5	5	5	5	5	5
	G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	5
5	A	5	5	5	5	5	5	5	5
	B	5	5	5	5	5	5	5	4 1D
	C	5	5	5	5	5	5	5	5
	D	5	5	5	5	5	5	5	5
	E	5	5	5	5	5	5	5	5
	F	5	5	5	5	5	5	5	5
	G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	~~5~~ 4 1D AP
10	A	5	5	5	5	5	5	5	5
	B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	5	4 1D	~~4~~ 3 1D AP
	D	5	4 1D	4	4	4	4	4	4
	E	5	5	5	5	5	5	5	5
	F	5	5	5	5	5	5	5	5
	G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	5
20	A	5	4 1D	4	4	4	4	4	3 1D
	B	5	5	4 1D	3 1D	2 1D	2	2	2
	C	5	5	4 1D	4	4	4	3 1D	3
	D	5	5	5	4 1D	4	3 1D	2 1D	2
	E	5	5	4 1D	3 1D	3	3	2 1D	2
	F	5	5	5	5	5	5	5	3 2D
	G	5	4 1D	4	4	4	4	3 1D	3
	H	5	4 1D	4	3 1D	3	3	3	3
Checked by:			JD	BA	JD	JD	JD	JD	AP

Concentration	Replicate	TEST DAY 0	1	2	3	4	5	6	7
40	A	5	3 2D	3	1 2D	0 1D	—	—	
	B	5	4 1D	1 3D	0 1D	—	—	—	
	C	5	4 1D	2 2D	1 1D	1	1	0 1D	
	D	5	5	2 3D	2	0 2D	—	—	
	E	5	3 2D	0 3D	—	—	—	—	
	F	5	4 1D	1 3D	1	0 1D	—	—	
	G	5	5	1 4D	0 1D	—	—	—	
	H	5	4 1D	1 3D	0 1D	—	—	—	
80	A	5	1 4D	0 1D					
	B	5	5	0 5D					
	C	5	5	0 5D					
	D	5	4 1D	0 4D					
	E	5	3 2D	0 3D					
	F	5	3 2D	0 3D					
	G	5	1 4D	0 1D					
	H	5	3 2D	0 3D					
	A	5							
	B	5							
	C	5							
	D	5							
	E	5							
	F	5							
	G	5							
	H	5							
	A	5							
	B	5							
	C	5							
	D	5							
	E	5							
	F	5							
	G	5							
	H	5							
Checked by:			JD	BA	JD	JD	JD	JD	

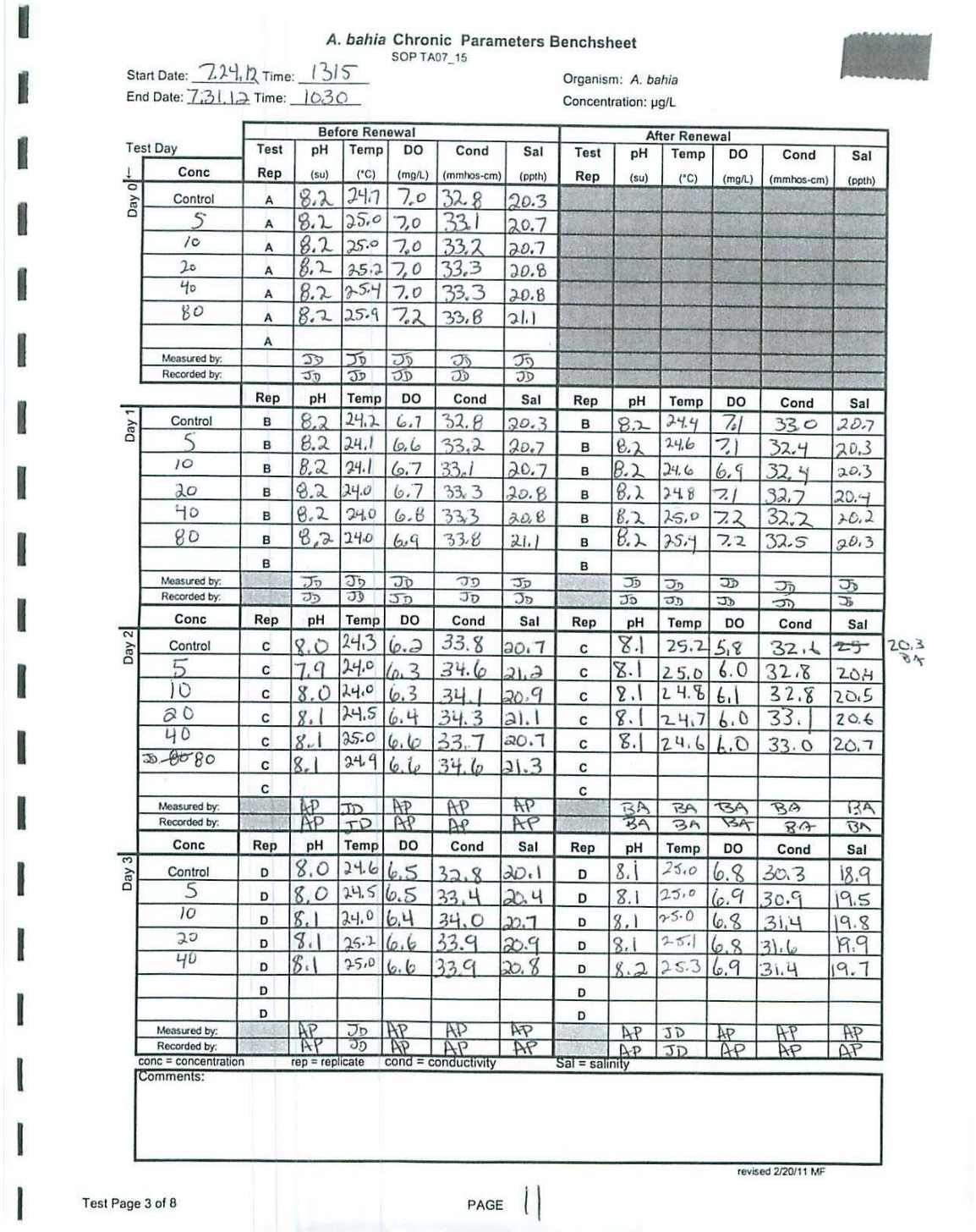
Comments:

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Test Page 2 of 8

Page 10

Appendix C. (continued)



A. bahia Chronic Parameters Benchsheet
SOP TA07_15

Start Date: 7.24.12 Time: 1315
End Date: 7.31.12 Time: 1030

Organism: *A. bahia*
Concentration: µg/L

Test Day	Conc	Before Renewal: Test Rep	pH (su)	Temp (°C)	DO (mg/L)	Cond (mmhos-cm)	Sal (ppth)	After Renewal: Test Rep	pH (su)	Temp (°C)	DO (mg/L)	Cond (mmhos-cm)	Sal (ppth)
Day 0	Control	A	8.2	24.7	7.0	32.8	20.3						
	5	A	8.2	25.0	7.0	33.1	20.7						
	10	A	8.2	25.0	7.0	33.2	20.7						
	20	A	8.2	25.2	7.0	33.3	20.8						
	40	A	8.2	25.4	7.0	33.3	20.8						
	80	A	8.2	25.9	7.2	33.8	21.1						
		A											
	Measured by:		JD	JD	JD	JD	JD						
	Recorded by:		JD	JD	JD	JD	JD						
	Conc	Rep	pH	Temp	DO	Cond	Sal	Rep	pH	Temp	DO	Cond	Sal
Day 1	Control	B	8.2	24.2	6.7	32.8	20.3	B	8.2	24.4	7.1	33.0	20.7
	5	B	8.2	24.1	6.6	33.2	20.7	B	8.2	24.6	7.1	32.4	20.3
	10	B	8.2	24.1	6.7	33.1	20.7	B	8.2	24.6	6.9	32.4	20.3
	20	B	8.2	24.0	6.7	33.3	20.8	B	8.2	24.8	7.1	32.7	20.4
	40	B	8.2	24.0	6.8	33.3	20.8	B	8.2	25.0	7.2	32.2	20.2
	80	B	8.2	24.0	6.9	33.8	21.1	B	8.2	25.4	7.2	32.5	20.3
		B						B					
	Measured by:		JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by:		JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Conc	Rep	pH	Temp	DO	Cond	Sal	Rep	pH	Temp	DO	Cond	Sal
Day 2	Control	C	8.0	24.3	6.2	33.8	20.7	C	8.1	25.2	5.8	32.1	~~25~~ 20.3 BA
	5	C	7.9	24.0	6.3	34.6	21.2	C	8.1	25.0	6.0	32.8	20.4
	10	C	8.0	24.0	6.3	34.1	20.9	C	8.1	24.8	6.1	32.8	20.5
	20	C	8.1	24.5	6.4	34.3	21.1	C	8.1	24.7	6.0	33.1	20.6
	40	C	8.1	25.0	6.6	33.7	20.7	C	8.1	24.6	6.0	33.0	20.7
	~~80~~ 80	C	8.1	24.9	6.6	34.6	21.3	C					
		C						C					
	Measured by:		AP	JD	AP	AP	AP		BA	BA	BA	BA	BA
	Recorded by:		AP	JD	AP	AP	AP		~~BA~~ BA	BA	~~BA~~ BA	~~BA~~ BA	BA
	Conc	Rep	pH	Temp	DO	Cond	Sal	Rep	pH	Temp	DO	Cond	Sal
Day 3	Control	D	8.0	24.6	6.5	32.8	20.1	D	8.1	25.0	6.8	30.3	18.9
	5	D	8.0	24.5	6.5	33.4	20.4	D	8.1	25.0	6.9	30.9	19.5
	10	D	8.1	24.0	6.4	34.0	20.7	D	8.1	25.0	6.8	31.4	19.8
	20	D	8.1	25.2	6.6	33.9	20.9	D	8.1	25.1	6.8	31.6	19.9
	40	D	8.1	25.0	6.6	33.9	20.8	D	8.2	25.3	6.9	31.4	19.7
		D						D					
		D						D					
	Measured by:		AP	JD	AP	AP	AP		AP	JD	AP	AP	AP
	Recorded by:		AP	JD	AP	AP	AP		AP	JD	AP	AP	AP

conc = concentration rep = replicate cond = conductivity Sal = salinity

Comments:

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Test Page 3 of 8

PAGE 11

Appendix C. (continued)

A. bahia Chronic Parameters Benchsheet

SOP TA07_15

Start Date: 7.24.12 Time: 1315

End Date: 7.31.12 Time: 1030

Organism: *A. bahia*

Concentration: µg/L

Test Day		Before Renewal						After Renewal					
	Conc	Test Rep	pH (su)	Temp (°C)	DO (mg/L)	Cond (mmhos-cm)	Sal (ppth)	Test Rep	pH (su)	Temp (°C)	DO (mg/L)	Cond (mmhos-cm)	Sal (ppth)
Day 4	Control	E	7.9	24.4	6.1	31.0	19.2	E	8.0	24.9	5.8	30.1	18.7
	5	E	7.9	24.1	5.9	30.7	19.1	E	8.1	25.4	6.0	31.6	19.6
	10	E	7.9	24.2	6.0	30.6	19.0	E	8.2	25.6	6.1	31.9	19.9
	20	E	7.9	24.5	6.1	31.2	19.4	E	8.2	25.7	6.2	32.0	19.9
	40	JD ~~ED~~	8.0	24.0	6.1	30.5	19.0	E	8.2	25.7	6.2	30.9	19.2
		E						E					
		E						E					
	Measured by:		JD	JD	JD	JD	JD		BA	BA	BA	BA	BA
	Recorded by:		JD	JD	JD	JD	JD		BA	BA	BA	BA	BA
		Rep	pH	Temp	DO	Cond	Sal	Rep	pH	Temp	DO	Cond	Sal
Day 5	Control	F	7.9	24.7	5.8	31.7	19.7	F	8.0	24.8	6.5	30.7	19.1
	5	F	8.0	24.7	5.8	~~33.1~~ 33.1 ~~ES~~	20.7	F	8.2	24.8	6.4	32.6	20.0
	10	F	8.0	24.7	5.8	33.3	20.8	F	8.2	24.8	6.5	32.6	20.0
	20	F	8.0	24.8	5.9	33.5	20.9	F	8.2	24.8	6.5	32.8	20.1
	40	C ~~JD~~	8.1	25.0	5.8	32.2	20.8	F	8.2	25.1	6.5	31.3	19.4
		F						F					
		F						F					
	Measured by:		BA	JD	BA	BA	BA		JD	JD	JD	JD	JD
	Recorded by:		BA	BA	BA	BA	BA		JD	JD	JD	JD	JD
	Conc	Rep	pH	Temp	DO	Cond	Sal	Rep	pH	Temp	DO	Cond	Sal
Day 6	Control	G	8.0	24.5	6.2	28.3	18.1	G	8.1	25.5	6.5	32.2	20.8
	5	G	8.1	24.2	6.3	30.4	19.6	G	8.2	24.5	6.5	32.2	20.8
	10	G	8.1	24.9	6.4	30.0	19.3	G	8.2	24.3	6.6	32.3	20.9
	20	G	8.1	24.4	6.4	30.6	19.7	G	8.2	24.2	6.6	32.6	20.9
	40	JD ~~BC~~	8.1	24.1	6.5	29.5	18.9	G					
		G						G					
		G						G					
	Measured by:		AP	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by:		AP	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Conc	Rep	pH	Temp	DO	Cond	Sal	Rep	pH	Temp	DO	Cond	Sal
Day 7	Control	H	8.1	23.7	6.2	31.7	19.5						
	5	H	8.1	~~24.9~~	6.1	33.1	20.4						
	10	H	8.1	~~25.1~~ N	6.0	33.3	20.5						
	20	H	8.1	24.0	6.1	33.5	20.7						
	~~40~~	H											
		H											
		H											
	Measured by:		AP	AP	AP	AP	AP						
	Recorded by:		AP	AP	AP	AP	AP						

conc = concentration rep = replicate cond = conductivity Sal = salinity

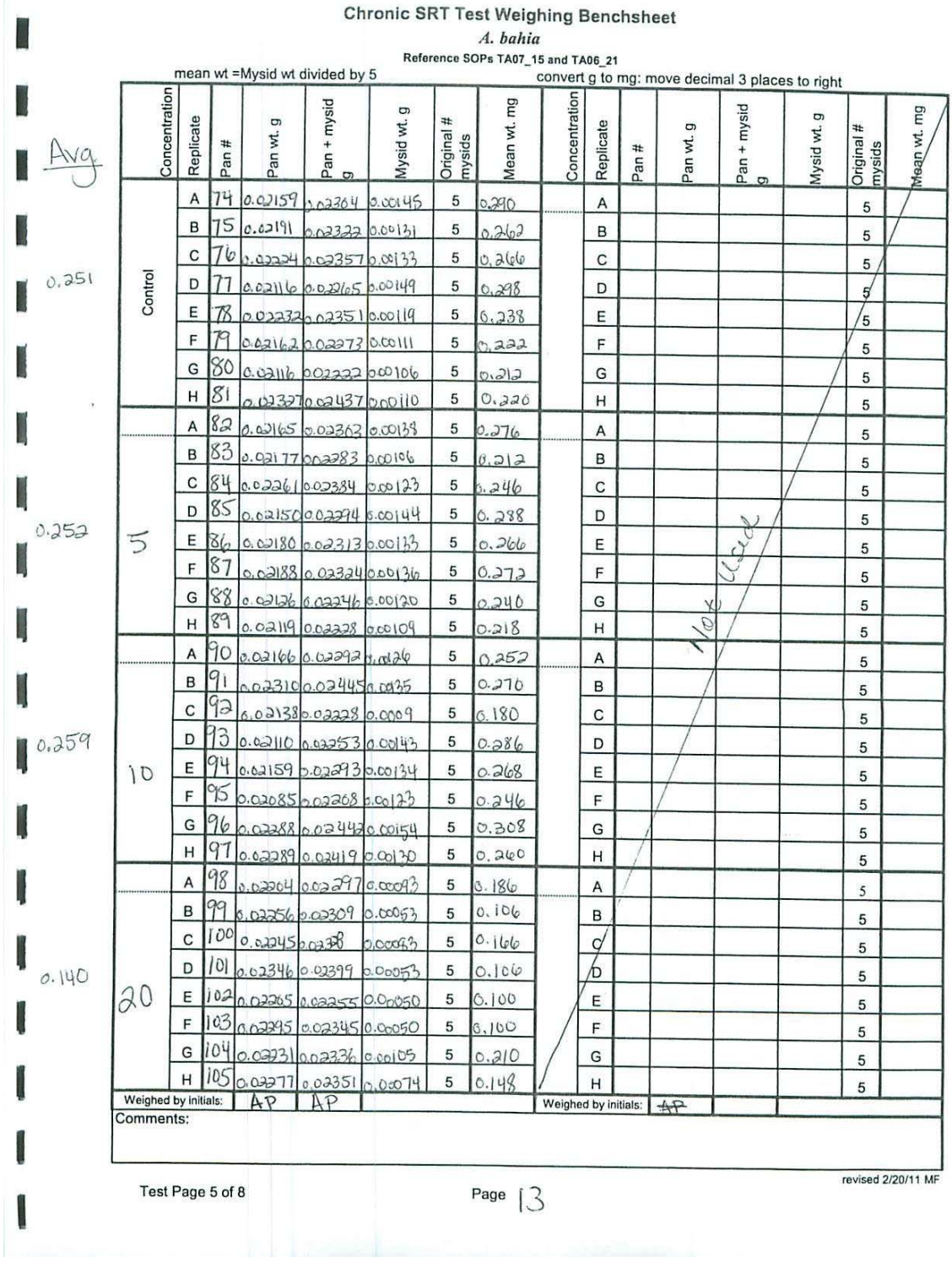
Comments:
Day 7 temp: 5 = 23.9; 10 = 24.1

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Test Page 4 of 8

PAGE 12

Appendix C. (continued)



Chronic SRT Test Weighing Benchsheet

A. bahia

Reference SOPs TA07_15 and TA06_21

mean wt =Mysid wt divided by 5 — convert g to mg: move decimal 3 places to right

Avg

Concentration	Replicate	Pan #	Pan wt. g	Pan + mysid g	Mysid wt. g	Original # mysids	Mean wt. mg	Concentration	Replicate	Pan #	Pan wt. g	Pan + mysid g	Mysid wt. g	Original # mysids	Mean wt. mg
Control	A	74	0.02159	0.02304	0.00145	5	0.290		A					5	
	B	75	0.02191	0.02322	0.00131	5	0.262		B					5	
	C	76	0.02224	0.02357	0.00133	5	0.266		C					5	
0.251	D	77	0.02116	0.02265	0.00149	5	0.298		D					5	
	E	78	0.02232	0.02351	0.00119	5	0.238		E					5	
	F	79	0.02162	0.02273	0.00111	5	0.222		F					5	
	G	80	0.02116	0.02222	0.00106	5	0.212		G					5	
	H	81	0.02327	0.02437	0.00110	5	0.220		H					5	
	A	82	0.02165	0.02303	0.00138	5	0.276		A					5	
	B	83	0.02177	0.02283	0.00106	5	0.212		B					5	
	C	84	0.02261	0.02384	0.00123	5	0.246		C					5	
	D	85	0.02150	0.02294	0.00144	5	0.288		D					5	
0.252	E	86	0.02180	0.02313	0.00133	5	0.266		E					5	
5	F	87	0.02188	0.02324	0.00136	5	0.272		F					5	
	G	88	0.02126	0.02246	0.00120	5	0.240		G					5	
	H	89	0.02119	0.02228	0.00109	5	0.218		H					5	
	A	90	0.02166	0.02292	0.00126	5	0.252		A					5	
	B	91	0.02310	0.02445	0.00135	5	0.270		B					5	
	C	92	0.02138	0.02228	0.0009	5	0.180		C					5	
	D	93	0.02110	0.02253	0.00143	5	0.286		D					5	
0.259	E	94	0.02159	0.02293	0.00134	5	0.268		E					5	
10	F	95	0.02085	0.02208	0.00123	5	0.246		F					5	
	G	96	0.02388	0.02442	0.00154	5	0.308		G					5	
	H	97	0.02289	0.02419	0.00130	5	0.260		H					5	
	A	98	0.02204	0.02297	0.00093	5	0.186		A					5	
	B	99	0.02256	0.02309	0.00053	5	0.106		B					5	
	C	100	0.02245	0.02298	0.00053	5	0.166		C					5	
	D	101	0.02346	0.02399	0.00053	5	0.106		D					5	
0.140	E	102	0.02265	0.02355	0.00050	5	0.100		E					5	
20	F	103	0.02295	0.02345	0.00050	5	0.100		F					5	
	G	104	0.02731	0.02836	0.00105	5	0.210		G					5	
	H	105	0.02277	0.02351	0.00074	5	0.148		H					5	
Weighed by initials:			AP	AP				Weighed by initials:			AP				

Not used

Comments:

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Test Page 5 of 8

Page 13

Appendix C. (continued)

Chronic SRT Test Weighing Benchsheet
Quality Control

A. bahia

SOPs TA07_15 and TA06_21

Empty Pan Weights Date: 7-30-12 By: AP

Weights in grams	Pan 1 wt.	Pan 1 initial wt.
after Pan 5	0.02156	@ 0.02159
after Pan 10	0.02158	@ 0.02159
after Pan 15	0.02158	@ 0.02159
after Pan 20	0.02157	@ 0.02159
after Pan 25	0.02159	@ 0.02159
after Pan 30	0.02158	@ 0.02159
after Pan 35	0.02157	@ 0.02159
after Pan 40		@
after Pan 45		@
after Pan 48		@

	Measured Value (g)	S-weight Value (g)
S-weights	0.01000	@ 0.01
	0.03001	@ 0.03

S-Weights: BIO-S-WEIGHTS-01
Balance: Ohaus 250D
Ser# 1125481084

Fish + Pan Weights Date: 8-2-12 By: AP

Weights in grams	Pan 1 wt.	Pan 1 initial wt.
after Pan 5	0.02301	@ 0.02304
after Pan 10	0.02303	@ 0.02304
after Pan 15	0.02302	@ 0.02304
after Pan 20	0.02306	@ 0.02304
after Pan 25	0.02303	@ 0.02304
after Pan 30	0.02305	@ 0.02304
after Pan 35	0.02307	@ 0.02304
after Pan 40		@
after Pan 45		@
after Pan 48		@

	Measured Value (g)	S-weight Value (g)
S-weights	0.01000	@ 0.01
	0.05004	@ 0.05

Drying Oven ID: ER034000
Temperature °C: 100
Drying Hours: 8

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

Comments:

revised 2/20/11 MF

Test Page 6 of 8

PAGE 14

Appendix C. (continued)

A. bahia Chronic SRT Fecundity Bench Sheet

Americamysis bahia SOP TA07_15

Concentration	Replicate	Total Mysids	Females: Eggs	Females: No Eggs	Males	Immature	Concentration	Replicate	Total Mysids	Females: Eggs	Females: No Eggs	Males	Immature
Control	A							A					
	B							B					
	C							C					
	D							D					
	E							E					
	F							F					
	G							G					
	H							H					
	A							A					
	B							B					
	C							C					
	D							D					
	E							E					
	F							F					
	G							G					
	H							H					
	A							A					
	B							B					
	C							C					
	D							D					
	E							E					
	F							F					
	G							G					
	H							H					
	A							A					
	B							B					
	C							C					
	D							D					
	E							E					
	F							F					
	G							G					
	H							H					
Checked by:							Checked by:						

Comments:

revised 2/20/11 MF

Appendix C. (continued)

Test ID: A.Bahia ch.SRT Dates: 7.24.12 – 7.31.12

METER / DEVICE	ID	SOP	Parameter	Method	v used
YSI Model 58 Dissolved Oxygen Meter	90H018262	TA06_04	Dissolved Oxygen	SM 4500 O G	✓
YSI DO Probe	5905	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 Salinity	SM 2510 B SM 2520 B	✓
Denver Model 225 ISE with ammonia probe	SN K01377	TA06_17	Ammonia	SM 4500 NH3 F	✓
Traceable Thermometer	#1-SN101686412 #2-SN221295527 #3-SN240116020 #4-SN80361795 #5-SN61990624	TA06_05	Temperature	SM-2530B modified DEP SOP-001/01 FT1400	✓ #5
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)

8.2.12 K.D.

V 1.1 9/21/10 MF/jd

Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or *Menidia beryllina*

Test Species (circle one)

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

Diluent/ Batch: ASW/7.23.12 Test Days Used: 0-6

Diluent/ Batch: ~~EC/7.25~~ Test Days Used: _____

Toxicant/ Batch # : $CuCl_2$ / 7.23.12

Artemia Lot # : 0881.2

Start Date: 7.24.12 Time: 1320

End Date: 7.31.12 Time: 1300

Organism Batch #/ Age: 7.24.12 / 10 days

Artemia Batch #		Day 2	104-12	Day 5	107-12
Day 0	103-12	Day 3	105-12	Day 6	108-12
Day1	103-12	Day 4	106-12		

Chamber size : 1000 ml

Test volume : 500 ml

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

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

Water Quality Parameters	Diluent	Diluent (or other)	Method	Measured by	Verified by
Total Residual Cl_2 (mg/L):	<0.03		HACH	AP	JD
Alkalinity (mg/L as $CaCO_3$):	154		HACH	AP	JD
Hardness (mg/L as $CaCO_3$):	—		HACH		
Total Ammonia (mg/L as N):	<0.034		DENVER	MF	AP
Conductivity µmhos-cm ~~mmhos-cm~~:	33.3		METTLER	JD	AP

Statistics	
Growth NOEC:	125 µg/L
Growth LOEC:	250 µg/L
Growth IC_{20}:	138.70 µg/L
Growth IC_{25}:	146.5 ~~mg/L~~ µg/L MF
Ctrl % CV:	7.43%
Dunnetts PMSD:	17.4%
Survival NOEC:	62.5 µg/L
Survival LOEC:	125 µg/L

Test incubated in : [X] Incubator # 3

[ ] Waterbath #_____

Light Intensity : 50 - 100 ft. candles

Photoperiod : 16 light 8 dark

Temperature Range °C:

Incubator # 3 min. 24.7 max. 26.3 mean —

Water bath # ____ min.____ max.____ mean____

Room B246 min. 24.8 max. 26.1 mean —

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

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

Investigators' signatures

James Daniel

Adrienne Pennington

Marshall Faircloth

Liz Miller

REVIEWER

Comments:

PAGE 85

revised 7/16/08 MF

Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or Menidia beryllina Survival

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

Concentration: µg/L g/L (circle one)

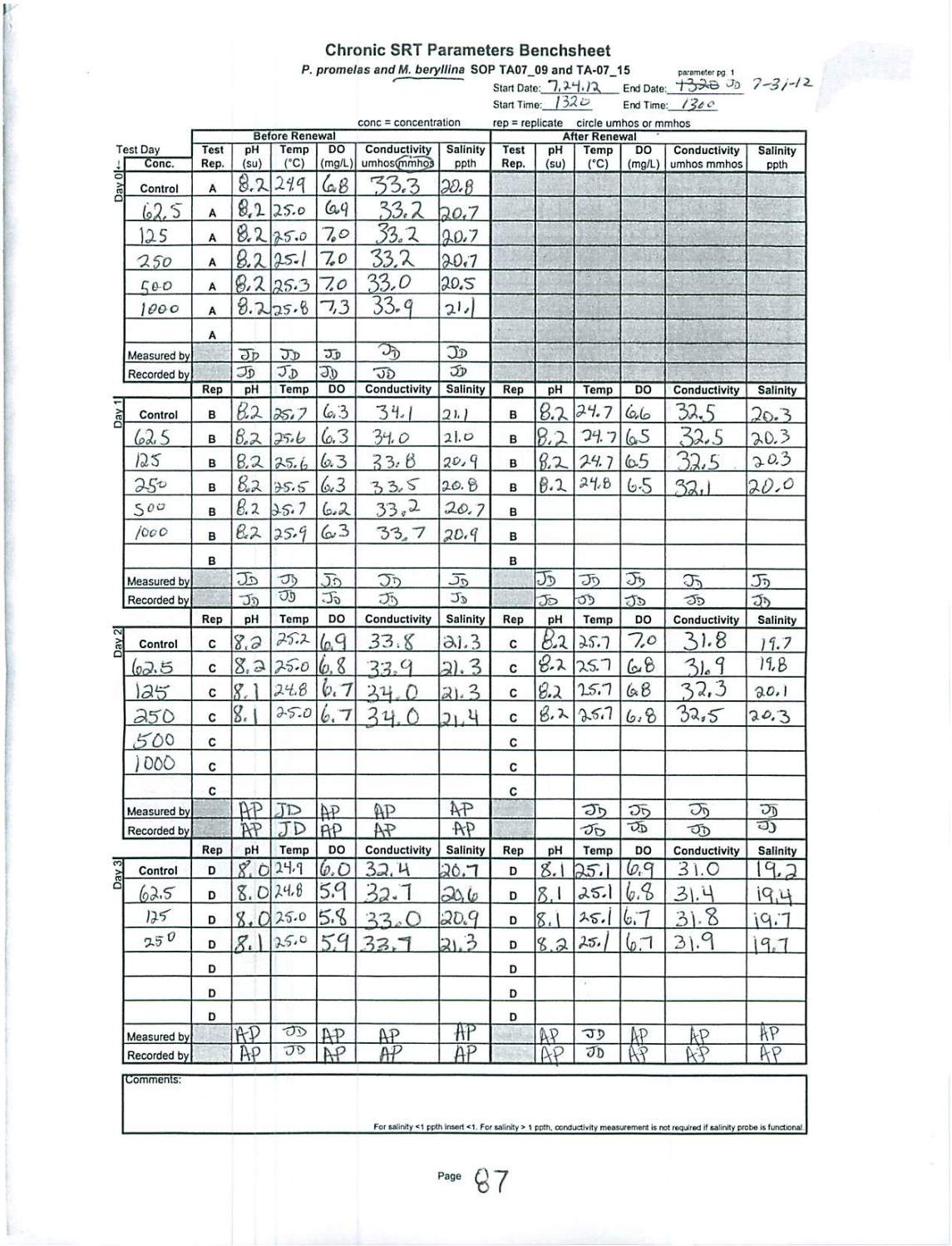
			TEST DAY							
Concentration	Replicate	Chamber	0	1	2	3	4	5	6	7
Control	A	A1	10	10	10	10	10	10	10	10
	B	A2	10	10	10	10	10	10	10	10
	C	A3	10	10	10	10	10	10	10	10
	D	A4	10	10	10	10	10	10	10	10
62.5	A	A5	10	10	10	10	10	10	10	10
	B	A6	10	10	9 1D	9	9	9	9	9
	C	A7	10	10	8 2D	8	8	8	8	8
	D	A8	10	10	10	10	10	10	10	10
125	A	A9	10	10	9 1D	9	9	9	9	9
	B	A10	10	10	9 1D	9	9	9	9	9
	C	A11	10	7 3D	7	7	7	7	7	7
	D	A12	10	6 4D	5 1D	4 1D	4	4	4	4
250	A	A13	10	0 10D	—	—	—	—	—	—
	B	A14	10	3 7D	1 2D	1	1	1	1	1
	C	A15	10	4 6D	3 1D	1 2D	1	1	1	1
	D	A16	10	2 8D	1 1D	1	1	1	1	1
500	A	A17	10							
	B	A18	10							
	C	A19	10							
	D	A20	10							
1000	A	A21	10							
	B	A22	10							
	C	A23	10							
	D	A24	10							
	A		10							
	B		10							
	C		10							
	D		10							
Loaded by (0 hr): JD		Checked by:		JD	JD	JD	JD	JD	JD	JD
Verified by (0 hr): BA										
Concentrations prepared by:				JD	JD	JD	JD	JD	JD	JD

Comments:

PAGE 86

revised 7/16/08 MF

Appendix C. (continued)



Chronic SRT Parameters Benchsheet

P. promelas and M. beryllina SOP TA07_09 and TA-07_15 parameter pg. 1

Start Date: 7.24.12 End Date: ~~7328~~ JD 7-31-12

Start Time: 1320 End Time: 1300

conc = concentration rep = replicate circle umhos or mmhos

Test Day		Before Renewal						After Renewal					
	Conc.	Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos mmhos	Salinity ppth	Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos mmhos	Salinity ppth
Day 0	Control	A	8.2	24.9	6.8	33.3	20.8						
	62.5	A	8.2	25.0	6.9	33.2	20.7						
	125	A	8.2	25.0	7.0	33.2	20.7						
	250	A	8.2	25.1	7.0	33.2	20.7						
	500	A	8.2	25.3	7.0	33.0	20.5						
	1000	A	8.2	25.8	7.3	33.9	21.1						
		A											
	Measured by		JD	JD	JD	JD	JD						
	Recorded by		JD	JD	JD	JD	JD						
		Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 1	Control	B	8.2	25.7	6.3	34.1	21.1	B	8.2	24.7	6.6	32.5	20.3
	62.5	B	8.2	25.6	6.3	34.0	21.0	B	8.2	24.7	6.5	32.5	20.3
	125	B	8.2	25.6	6.3	33.8	20.9	B	8.2	24.7	6.5	32.5	20.3
	250	B	8.2	25.5	6.3	33.5	20.8	B	8.2	24.8	6.5	32.1	20.0
	500	B	8.2	25.7	6.2	33.2	20.7	B					
	1000	B	8.2	25.9	6.3	33.7	20.9	B					
		B						B					
	Measured by		JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by		JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
		Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 2	Control	C	8.2	25.2	6.9	33.8	21.3	C	8.2	25.7	7.0	31.8	19.7
	62.5	C	8.2	25.0	6.8	33.9	21.3	C	8.2	25.7	6.8	31.9	19.8
	125	C	8.1	24.8	6.7	34.0	21.3	C	8.2	25.7	6.8	32.3	20.1
	250	C	8.1	25.0	6.7	34.0	21.4	C	8.2	25.7	6.8	32.5	20.3
	500	C						C					
	1000	C						C					
		C						C					
	Measured by		AP	JD	AP	AP	AP			JD	JD	JD	JD
	Recorded by		AP	JD	AP	AP	AP			JD	JD	JD	JD
		Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 3	Control	D	8.0	24.9	6.0	32.4	20.7	D	8.1	25.1	6.9	31.0	19.2
	62.5	D	8.0	24.8	5.9	32.7	20.6	D	8.1	25.1	6.8	31.4	19.4
	125	D	8.0	25.0	5.8	33.0	20.9	D	8.1	25.1	6.7	31.8	19.7
	250	D	8.1	25.0	5.9	33.7	21.3	D	8.2	25.1	6.7	31.9	19.7
		D						D					
		D						D					
		D						D					
	Measured by		AP	JD	AP	AP	AP		AP	JD	AP	AP	AP
	Recorded by		AP	JD	AP	AP	AP		AP	JD	AP	AP	AP

Comments:

For salinity <1 ppth insert <1. For salinity > 1 ppth, conductivity measurement is not required if salinity probe is functional.

Page 87

Appendix C. (continued)

Chronic SRT Parameters Benchsheet

P. promelas and M. beryllina SOP TA07_09 and TA-07_15 (TA-07_parameter pg 2)

Start Date: 7.24.12 End Date: ~~1320~~ 7-31-12

Start Time: 1320 End Time: 1300

conc = concentration rep = replicate

Test Day		Before Renewal						After Renewal					
	Conc.	Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos/~~mmhos~~	Salinity ppth	Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos/~~mmhos~~	Salinity ppth
Day 4	Control	A	8.0	24.0	6.5	31.3	19.2	A	8.1	25.1	6.6	30.3	20.0
	62.5	A	7.9	24.0	6.0	31.3	19.2	A	8.1	25.2	6.4	30.5	18.9
	125	A	7.9	24.0	5.9	31.2	19.2	A	8.1	25.2	6.4	30.7	19.0
	250	~~D~~ A/B	8.0	24.0	6.0	31.2	19.2	A	8.1	25.3	6.4	30.9	19.2
		A						A					
		A						A					
		A						A					
	Measured by		JD	JD	JD	JD	JD		BA	JD	BA	BA	BA
	Recorded by		JD	JD	JD	JD	JD		BA	BA	BA	BA	BA
		Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 5	Control	B	7.9	25.4	5.3	32.0	19.9	B	8.1	24.8	6.5	30.8	19.1
	62.5	B	7.9	25.0	5.4	32.2	20.0	B	8.1	24.9	6.5	31.1	19.2
	125	B	8.0	24.8	5.5	32.2	20.1	B	8.1	24.7	6.5	31.1	19.2
	250	B	8.0	24.6	5.5	32.7	20.4	B	8.1	25.1	6.7	31.2	19.2
		B						B					
		B						B					
		B						B					
	Measured by		BA	JD	BA	BA	BA		JD	JD	JD	JD	JD
	Recorded by		BA	BA	BA	BA	BA		JD	JD	JD	JD	JD
		Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 6	Control	C	8.0	24.6	6.5	30.7	19.0	C	8.2	25.9	5.9	29.9	19.1
	62.5	C	8.0	24.4	6.4	31.1	19.1	C	8.2	25.9	6.2	30.2	19.2
	125	C	8.0	24.3	6.3	31.1	19.1	C	8.2	25.8	6.4	29.9	19.1
	250	C	8.1	25.0	6.3	31.3	19.2	C	8.2	25.6	6.4	30.5	19.3
		C						C					
		C						C					
		C						C					
	Measured by		JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by		JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
		Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 7	Control	D	8.0	25.3	5.5	32.2	20.1	D					
	62.5	D	8.0	25.4	5.5	32.8	20.5	D					
	125	D	8.1	24.9	5.6	32.2	20.1	D					
	250	D	8.1	25.0	5.8	32.6	20.4	D					
		D						D					
		D						D					
		D						D					
	Measured by		BA	JD	JD	JD	JD						
	Recorded by		BA	JD	JD	JD	JD						

For salinity <1 ppth insert <1. For salinity > 1 ppth, conductivity measurement is not required if salinity probe is functional

Page 88

Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or *Menidia beryllina* Weights

SOP TA06_21

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

Concentration: µg/L g/L (circle one)

mean wt = fish wt divided by 10

convert g to mg: move decimal 3 places to right

Concentration	Replicate	Pan #	Pan wt. (g)	Pan + Fish (g)	Fish wt. (g)	Original # of fish	Mean wt. (mg)	Avg.
Control	A	110	0.02200	0.03340	0.0114	10	1.140	
	B	111	0.02274	0.03318	0.01044	10	1.044	1.142
	C	112	0.02206	0.03457	0.01251	10	1.251	
	D	113	0.02320	0.03352	0.01132	10	1.132	
62.5	A	114	0.02158	0.03417	0.01259	10	1.259	
	B	115	0.02282	0.03572	0.0129	10	1.290	1.220
	C	116	0.02134	0.03275	0.01141	10	1.141	
	D	117	0.02155	0.03345	0.0119	10	1.190	
125	A	118	0.02174	0.03336	0.01162	10	1.162	
	B	119	0.02084	0.03201	0.01117	10	1.117	1.049
	C	120	0.02216	0.03396	0.0118	10	1.180	
	D	121	0.02253	0.02990	0.00737	10	0.737	
250	A	—	—	—	—	10	—	
	B	122	0.02220	0.02350	0.0013	10	0.130	0.098
	C	123	0.02172	0.02287	0.00115	10	0.115	
	D	124	0.02093	0.02238	0.00145	10	0.145	
	A					10		
	B					10		
	C					10		
	D					10		
	A					10		
	B					10		
	C					10		
	D					10		
	A					10		
	B					10		
	C					10		
	D					10		
		Weighed by:	AP	AP				

Comments:

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

PAGE 89

revised 8/24/06 MF/SP

Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or *Menidia beryllina* QC

SOPs TA07_09, TA07_14 and TA06_21

all weights in grams

Empty Pan Weights Date: 7-30-12 Weighed by: AP

	Pan 1 wt.	Pan 1 initial wt.
after Pan 5	0.02200	@ 0.02200
after Pan 10	0.02202	@ 0.02200
after Pan 15	0.02198	@ 0.02200
after Pan 20		@
after Pan 25		@
after Pan 30		@
after Pan 35		@
after Pan 40		@
after Pan 45		@
after Pan 48		@

	Measured Value	S-weight Value
S-weights	0.01000	@ 0.01
	0.03001	@ 0.03

Balance: Ohaus 250D Ser# 1125481084

S-Weights: BIO-S-Weights-01

Fish + Pan Weights Date: 8-1-12 Weighed by: AP

	Pan 1 wt.	Pan 1 initial wt.
after Pan 5	0.03338	@ 0.03340
after Pan 10	0.03339	@ 0.03340
after Pan 15	0.03337	@ 0.03340
after Pan 20		@
after Pan 25		@
after Pan 30		@
after Pan 35		@
after Pan 40		@
after Pan 45		@
after Pan 48		@

	Measured Value	S-weight Value
S-weights	0.01000	@ 0.01
	0.05003	@ 0.05

Drying Oven ID: ER034000

Temperature °C: 100

Drying Hours: 8

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

Comments:

PAGE 90

revised 7/16/08 MF

Appendix C. (continued)

Test ID: M. beryllina chronic SRT Dates: 7/24/12 - 7/31/12

METER / DEVICE	ID	SOP	Parameter	Method	√ used
YSI Model 58 Dissolved Oxygen Meter	90H018262	TA06_04	Dissolved Oxygen	SM 4500 O G	✓
YSI DO Probe	5905	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 Salinity	SM 2510 B SM 2520 B	✓
Denver Model 225 ISE with ammonia probe	SN K01377	TA06_17	Ammonia	SM 4500 NH3 F	✓
Traceable Thermometer	#1-SN101686412 #2-SN221295527 #3-SN240116020 #4-SN80361795 #5-SN61990624	TA06_05	Temperature	SM-2530B modified DEP SOP-001/01 FT1400	✓ #5
Hach Pocket Colorimeter II #1	05110C042029	TA06_22	Total Residual Chlorine	EPA 330.5 SM 4500 CL G	✓
Hach Pocket Colorimeter II #2	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: 8-2-12 AP

V 1.2 2/20/11 MF/jd

PAGE 91

Appendix D. Test Organism Receipt

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Shipping Date: 7/23/12

Ship to: FDEP

P.O. No: _____

Species	Quantity	Age	Brood/Lot Number	Temp. (°C)	pH (S.U.)	Salinity (‰)
Mysidopsis bahia	600	6 DAYS	MS120717	25	7.9	20
Menidia beryllina	600	9 DAYS	MS120714	25	7.9	20
						Hardness mg/L
Cyprinella leedsi						
Pimephales promelas						
Ceriodaphnia dubia						
Daphnia magna						
YCT						
P. subcapitata						

Packed by: AJ PM

Shipped Via: FedEx

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 Procter and Gamble Cellulose Company facility EFF-1 NPDES sampling point for Outfall D-001, sampled on July 23, 2012.

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
7/23/2012 11:35	EFF-1	AGP/LN	Algal Growth Potential	123	A	mg DryWt/L	3	3
7/23/2012 11:35	EFF-1	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	14		mg/L	0.2	2
7/23/2012 11:35	EFF-1	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.5	U	ug/L	0.5	1.5
7/23/2012 11:35	EFF-1	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.69	U	ug/L	0.69	2.1
7/23/2012 11:35	EFF-1	Toxicology	Bioassay-Chron-Def-SW-Mysid, NOEC	12.5	K	NOEC		
7/23/2012 11:35	EFF-1	Toxicology	Bioassay-Chron-Def-SW-Mysid, IC25	54.3		IC25		
7/23/2012 11:35	EFF-1	Toxicology	Bioassay-Chron-Def-SW-Fish, IC25	27.3		IC25		
7/23/2012 11:35	EFF-1	Toxicology	Bioassay-Chron-Def-SW-Fish, NOEC	12.5		NOEC		
7/23/2012 11:35	EFF-1	Metals	Calcium	45.1		mg/L	0.075	0.3
7/23/2012 11:35	EFF-1	Metals	Iron	360		ug/L	30	120
7/23/2012 11:35	EFF-1	Metals	Selenium	0.2	U	ug/L	0.2	0.8
7/23/2012 11:35	EFF-1	Metals	Sodium	466		mg/L	2.5	10
7/23/2012 11:35	EFF-1	Metals	Lead	0.42	I	ug/L	0.2	0.8
7/23/2012 11:35	EFF-1	Metals	Aluminum	590		ug/L	60	240
7/23/2012 11:35	EFF-1	Metals	Zinc	27		ug/L	5	20
7/23/2012 11:35	EFF-1	Metals	Arsenic	0.44	I	ug/L	0.25	1
7/23/2012 11:35	EFF-1	Metals	Chromium	5.4		ug/L	0.3	1.2
7/23/2012 11:35	EFF-1	Metals	Magnesium	18.7		mg/L	0.04	0.16
7/23/2012 11:35	EFF-1	Metals	Silver	0.049	I	ug/L	0.025	0.1
7/23/2012 11:35	EFF-1	Metals	Cadmium	0.24		ug/L	0.05	0.2
7/23/2012 11:35	EFF-1	Metals	Copper	3.78		ug/L	0.5	1
7/23/2012 11:35	EFF-1	Metals	Nickel	7.4		ug/L	0.25	1
7/23/2012 11:35	EFF-1	Nutrients	Sulfate	590	A	mg SO4/L	4	10
7/23/2012 11:35	EFF-1	Nutrients	Color (true)	1200		PCU	28	66
7/23/2012 11:35	EFF-1	Nutrients	TSS	6	I	mg/L	2	10
7/23/2012 11:35	EFF-1	Nutrients	Fluoride	0.16		mg F/L	0.035	0.1
7/23/2012 11:35	EFF-1	Nutrients	Chloride	220		mg Cl/L	2	5
7/23/2012 11:35	EFF-1	Nutrients	O-Phosphate-P	1.6		mg P/L	0.04	0.1
7/23/2012 11:35	EFF-1	Nutrients	Organic Carbon	86	A	mg C/L	1	5
7/23/2012 11:35	EFF-1	Nutrients	Kjeldahl Nitrogen	5.9		mg N/L	0.4	1
7/23/2012 11:35	EFF-1	Nutrients	Alkalinity	192		mg CaCO3/L	0.65	2.5
7/23/2012 11:35	EFF-1	Nutrients	Total-P	2		mg P/L	0.025	0.25
7/23/2012 11:35	EFF-1	Nutrients	NO2NO3-N	0.004	I	mg N/L	0.004	0.01

Appendix E. (continued)

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
7/23/2012 11:35	EFF-1	Nutrients	Ammonia-N	3.1		mg N/L	0.2	0.4
7/23/2012 11:35	EFF-1	Overflow	Oil and Grease	1.2	IJ	mg/L	0.76	2.7
7/23/2012 11:35	EFF-1	Pesticides	Mevinphos	0.048	U	ug/L	0.048	0.19
7/23/2012 11:35	EFF-1	Pesticides	Metolachlor	0.29	U	ug/L	0.29	1.1
7/23/2012 11:35	EFF-1	Pesticides	Fenamiphos	0.14	U	ug/L	0.14	0.57
7/23/2012 11:35	EFF-1	Pesticides	Simazine	0.048	U	ug/L	0.048	0.19
7/23/2012 11:35	EFF-1	Pesticides	Norflurazon	0.14	U	ug/L	0.14	0.57
7/23/2012 11:35	EFF-1	Pesticides	Metalaxyl	0.19	U	ug/L	0.19	0.76
7/23/2012 11:35	EFF-1	Pesticides	Malathion	0.048	U	ug/L	0.048	0.19
7/23/2012 11:35	EFF-1	Pesticides	Chlorpyrifos Methyl	0.048	U	ug/L	0.048	0.19
7/23/2012 11:35	EFF-1	Pesticides	Hexazinone	0.14	U	ug/L	0.14	0.57
7/23/2012 11:35	EFF-1	Pesticides	Alachlor	0.29	U	ug/L	0.29	1.1
7/23/2012 11:35	EFF-1	Pesticides	Parathion Methyl	0.048	U	ug/L	0.048	0.19
7/23/2012 11:35	EFF-1	Pesticides	Prometryn	0.095	U	ug/L	0.095	0.38
7/23/2012 11:35	EFF-1	Pesticides	Fonofos	0.048	U	ug/L	0.048	0.19
7/23/2012 11:35	EFF-1	Pesticides	Azinphos Methyl	0.095	UJ	ug/L	0.095	0.38
7/23/2012 11:35	EFF-1	Pesticides	Atrazine	0.048	U	ug/L	0.048	0.19
7/23/2012 11:35	EFF-1	Pesticides	Ethoprop	0.024	U	ug/L	0.024	0.095
7/23/2012 11:35	EFF-1	Pesticides	Ethion	0.048	U	ug/L	0.048	0.19
7/23/2012 11:35	EFF-1	Pesticides	Diazinon	0.048	U	ug/L	0.048	0.19
7/23/2012 11:35	EFF-1	Pesticides	Phorate	0.024	U	ug/L	0.024	0.095
7/23/2012 11:35	EFF-1	Pesticides	Butylate	0.095	U	ug/L	0.095	0.38
7/23/2012 11:35	EFF-1	Pesticides	Ametryn	0.048	U	ug/L	0.048	0.19
7/23/2012 11:35	EFF-1	Pesticides	Parathion Ethyl	0.095	UJ	ug/L	0.095	0.38
7/23/2012 11:35	EFF-1	Pesticides	Chlorpyrifos Ethyl	0.048	U	ug/L	0.048	0.19
7/23/2012 11:35	EFF-1	Pesticides	Bromacil	0.19	U	ug/L	0.19	0.76
7/23/2012 11:35	EFF-1	Pesticides	Metribuzin	0.095	U	ug/L	0.095	0.38
7/23/2012 11:35	EFF-1	Pesticides	Naled	0.19	UJ	ug/L	0.19	0.76
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1	U	ug/L	1	4
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Benzo(k)fluoranthene	0.2	U	ug/L	0.2	0.81
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3	U	ug/L	3	12
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Chrysene	0.2	U	ug/L	0.2	0.81
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3	U	ug/L	3	12
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	4-Chloro-3-methylphenol	1	U	ug/L	1	4

Appendix E. (continued)

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Acenaphthene	0.2	U	ug/L	0.2	0.81
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Anthracene	0.2	U	ug/L	0.2	0.81
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Benzo(a)anthracene	0.2	U	ug/L	0.2	0.81
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Benzo(a)pyrene	0.2	U	ug/L	0.2	0.81
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Benzo(b)fluoranthene	0.2	U	ug/L	0.2	0.81
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Butyl benzyl phthalate	5.1	U	ug/L	5.1	20
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Dimethyl phthalate	10	U	ug/L	10	40
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Hexachlorocyclopentadiene	3	U	ug/L	3	12
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.2	U	ug/L	0.2	0.81
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	3,3'-Dichlorobenzidine	40	U	ug/L	40	160
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Di-n-butyl phthalate	5.1	U	ug/L	5.1	20
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Di-n-octyl phthalate	1	U	ug/L	1	4
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Fluorene	0.2	U	ug/L	0.2	0.81
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Nitrobenzene	2	U	ug/L	2	8.1
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Phenanthrene	0.2	U	ug/L	0.2	0.81
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Phenol	1	U	ug/L	1	4
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	2-Chloronaphthalene	1	U	ug/L	1	4
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3	U	ug/L	3	12
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2	U	ug/L	2	8.1
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Hexachloroethane	3	U	ug/L	3	12
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Isophorone	1	U	ug/L	1	4
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	2,4-Dichlorophenol	1	U	ug/L	1	4
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Acenaphthylene	0.2	U	ug/L	0.2	0.81
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Benzidine	100	U	ug/L	100	400
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.2	U	ug/L	0.2	0.81
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Diethyl phthalate	1	U	ug/L	1	4
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	N-Nitrosodimethylamine	2	U	ug/L	2	8.1
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	2-Chlorophenol	1	U	ug/L	1	4
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	2-Nitrophenol	1	U	ug/L	1	4
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	61
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1	U	ug/L	1	4
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	U	ug/L	15	61
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Fluoranthene	0.2	U	ug/L	0.2	0.81
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Naphthalene	0.2	U	ug/L	0.2	0.81

Appendix E. (continued)

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1	U	ug/L	1	4
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	2,4,6-Trichlorophenol	1	U	ug/L	1	4
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	61
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	2,4-Dinitrotoluene	1	U	ug/L	1	4
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.2	U	ug/L	0.2	0.81
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1	U	ug/L	1	4
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Hexachlorobenzene	1	U	ug/L	1	4
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	2,4-Dimethylphenol	10	U	ug/L	10	40
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	2,6-Dinitrotoluene	1	U	ug/L	1	4
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Hexachlorobutadiene	3	U	ug/L	3	12
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2	U	ug/L	2	8.1
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Pentachlorophenol	3	U	ug/L	3	12
7/23/2012 11:35	EFF-1	Priority Organic Pollutants	Pyrene	0.2	U	ug/L	0.2	0.81
7/23/2012 11:35	EFF-1	Field Parameter	Dissolved Oxygen	2.79		mg/L		
7/23/2012 11:35	EFF-1	Field Parameter	Temperature	33		C		
7/23/2012 11:35	EFF-1	Field Parameter	pH	7.45				
7/23/2012 11:35	EFF-1	Field Parameter	Sample Depth	0.1		m		
7/23/2012 11:35	EFF-1	Field Parameter	Specific Conductance	2282		umhos/cm		
7/25/2012 10:55	EFF-1 7 25	Field Parameter	Specific Conductance	2308		umhos/cm		
7/25/2012 10:55	EFF-1 7 25	Field Parameter	pH	7.43				
7/25/2012 10:55	EFF-1 7 25	Field Parameter	Dissolved Oxygen	2.81		mg/L		
7/25/2012 10:55	EFF-1 7 25	Field Parameter	Temperature	32.9		C		
7/25/2012 10:55	EFF-1 7 25	Field Parameter	Sample Depth	0.1		m		
7/27/2012 10:25	EFF-1 7 27	Field Parameter	pH	7.42				
7/27/2012 10:25	EFF-1 7 27	Field Parameter	Specific Conductance	2293		umhos/cm		
7/27/2012 10:25	EFF-1 7 27	Field Parameter	Temperature	31.95		C		
7/27/2012 10:25	EFF-1 7 27	Field Parameter	Dissolved Oxygen	0.25		mg/L		
7/27/2012 10:25	EFF-1 7 27	Field Parameter	Sample Depth	0.85		m		
7/25/2012 11:05	B After 7 25	Field Parameter	Sample Depth	0.1		m		
7/25/2012 11:05	B After 7 25	Field Parameter	Temperature	32.94		C		
7/25/2012 11:05	B After 7 25	Field Parameter	Dissolved Oxygen	6.87		mg/L		
7/25/2012 11:05	B After 7 25	Field Parameter	Specific Conductance	2305		umhos/cm		
7/25/2012 11:05	B After 7 25	Field Parameter	pH	7.63				
7/23/2012 11:25	Field Blank	Metals	Magnesium	0.04	U	mg/L	0.04	0.16

Appendix E. (continued)

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
7/23/2012 11:25	Field Blank	Metals	Sodium	0.5	U	mg/L	0.5	2
7/23/2012 11:25	Field Blank	Metals	Chromium	0.3	U	ug/L	0.3	1.2
7/23/2012 11:25	Field Blank	Metals	Aluminum	60	U	ug/L	60	240
7/23/2012 11:25	Field Blank	Metals	Iron	30	U	ug/L	30	120
7/23/2012 11:25	Field Blank	Metals	Calcium	0.075	U	mg/L	0.075	0.3
7/23/2012 11:25	Field Blank	Metals	Arsenic	0.25	U	ug/L	0.25	1
7/23/2012 11:25	Field Blank	Metals	Cadmium	0.05	U	ug/L	0.05	0.2
7/23/2012 11:25	Field Blank	Metals	Nickel	0.25	U	ug/L	0.25	1
7/23/2012 11:25	Field Blank	Metals	Selenium	0.2	U	ug/L	0.2	0.8
7/23/2012 11:25	Field Blank	Metals	Zinc	5	U	ug/L	5	20
7/23/2012 11:25	Field Blank	Metals	Lead	0.2	U	ug/L	0.2	0.8
7/23/2012 11:25	Field Blank	Metals	Copper	0.5	U	ug/L	0.5	1
7/23/2012 11:25	Field Blank	Metals	Silver	0.025	U	ug/L	0.025	0.1
7/23/2012 11:25	Field Blank	Nutrients	Chloride	0.2	U	mg Cl/L	0.2	0.5
7/23/2012 11:25	Field Blank	Nutrients	Fluoride	0.035	U	mg F/L	0.035	0.1
7/23/2012 11:25	Field Blank	Nutrients	TSS	2	U	mg/L	2	10
7/23/2012 11:25	Field Blank	Nutrients	Color (true)	2.5	U	PCU	2.5	6
7/23/2012 11:25	Field Blank	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
7/23/2012 11:25	Field Blank	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
7/23/2012 11:25	Field Blank	Nutrients	Alkalinity	0.65	U	mg CaCO3/L	0.65	2.5
7/23/2012 11:25	Field Blank	Nutrients	Organic Carbon	1	U	mg C/L	1	5
7/23/2012 11:25	Field Blank	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
7/23/2012 11:25	Field Blank	Nutrients	Total-P	0.004	U	mg P/L	0.004	0.01
7/23/2012 11:25	Field Blank	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
7/23/2012 11:25	Field Blank	Nutrients	Sulfate	0.2	U	mg SO4/L	0.2	0.5
7/23/2012 11:25	Field Blank	Overflow	Oil and Grease	0.72	U	mg/L	0.72	2.6
7/23/2012 11:25	Field Blank	Pesticides	Norflurazon	0.16	U	ug/L	0.16	0.66
7/23/2012 11:25	Field Blank	Pesticides	Metribuzin	0.11	U	ug/L	0.11	0.44
7/23/2012 11:25	Field Blank	Pesticides	Metolachlor	0.33	U	ug/L	0.33	1.3
7/23/2012 11:25	Field Blank	Pesticides	Malathion	0.055	U	ug/L	0.055	0.22
7/23/2012 11:25	Field Blank	Pesticides	Ethoprop	0.027	U	ug/L	0.027	0.11
7/23/2012 11:25	Field Blank	Pesticides	Parathion Ethyl	0.11	UJ	ug/L	0.11	0.44
7/23/2012 11:25	Field Blank	Pesticides	Chlorpyrifos Ethyl	0.055	U	ug/L	0.055	0.22
7/23/2012 11:25	Field Blank	Pesticides	Prometryn	0.11	U	ug/L	0.11	0.44

Appendix E. (continued)

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
7/23/2012 11:25	Field Blank	Pesticides	Parathion Methyl	0.055	U	ug/L	0.055	0.22
7/23/2012 11:25	Field Blank	Pesticides	Diazinon	0.055	U	ug/L	0.055	0.22
7/23/2012 11:25	Field Blank	Pesticides	Bromacil	0.22	U	ug/L	0.22	0.88
7/23/2012 11:25	Field Blank	Pesticides	Phorate	0.027	U	ug/L	0.027	0.11
7/23/2012 11:25	Field Blank	Pesticides	Naled	0.22	UJ	ug/L	0.22	0.88
7/23/2012 11:25	Field Blank	Pesticides	Mevinphos	0.055	U	ug/L	0.055	0.22
7/23/2012 11:25	Field Blank	Pesticides	Metalaxyl	0.22	U	ug/L	0.22	0.88
7/23/2012 11:25	Field Blank	Pesticides	Ethion	0.055	U	ug/L	0.055	0.22
7/23/2012 11:25	Field Blank	Pesticides	Simazine	0.055	U	ug/L	0.055	0.22
7/23/2012 11:25	Field Blank	Pesticides	Hexazinone	0.16	U	ug/L	0.16	0.66
7/23/2012 11:25	Field Blank	Pesticides	Fonofos	0.055	U	ug/L	0.055	0.22
7/23/2012 11:25	Field Blank	Pesticides	Fenamiphos	0.16	U	ug/L	0.16	0.66
7/23/2012 11:25	Field Blank	Pesticides	Chlorpyrifos Methyl	0.055	U	ug/L	0.055	0.22
7/23/2012 11:25	Field Blank	Pesticides	Atrazine	0.055	U	ug/L	0.055	0.22
7/23/2012 11:25	Field Blank	Pesticides	Azinphos Methyl	0.11	UJ	ug/L	0.11	0.44
7/23/2012 11:25	Field Blank	Pesticides	Butylate	0.11	U	ug/L	0.11	0.44
7/23/2012 11:25	Field Blank	Pesticides	Alachlor	0.33	U	ug/L	0.33	1.3
7/23/2012 11:25	Field Blank	Pesticides	Ametryn	0.055	U	ug/L	0.055	0.22
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Acenaphthylene	0.19	U	ug/L	0.19	0.77
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Benzidine	96	U	ug/L	96	380
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19	U	ug/L	0.19	0.77
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Butyl benzyl phthalate	4.8	U	ug/L	4.8	19
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19	U	ug/L	0.19	0.77
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.96	U	ug/L	0.96	3.8
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.96	U	ug/L	0.96	3.8
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Dimethyl phthalate	9.6	U	ug/L	9.6	38
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Hexachlorobutadiene	2.9	U	ug/L	2.9	12
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	U	ug/L	2.9	12
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Isophorone	0.96	U	ug/L	0.96	3.8
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9	U	ug/L	2.9	12
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Pentachlorophenol	2.9	U	ug/L	2.9	12
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	2,4-Dinitrophenol	14	U	ug/L	14	58
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	U	ug/L	2.9	12
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.19	U	ug/L	0.19	0.77

Appendix E. (continued)

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19	U	ug/L	0.19	0.77
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	2,4-Dimethylphenol	9.6	U	ug/L	9.6	38
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	2-Chlorophenol	0.96	U	ug/L	0.96	3.8
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38	U	ug/L	38	150
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.96	U	ug/L	0.96	3.8
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Anthracene	0.19	U	ug/L	0.19	0.77
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19	U	ug/L	0.19	0.77
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Diethyl phthalate	0.96	U	ug/L	0.96	3.8
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Phenanthrene	0.19	U	ug/L	0.19	0.77
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	0.96	U	ug/L	0.96	3.8
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.96	U	ug/L	0.96	3.8
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.7
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.19	U	ug/L	0.19	0.77
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	U	ug/L	2.9	12
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Di-n-butyl phthalate	4.8	U	ug/L	4.8	19
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Hexachloroethane	2.9	U	ug/L	2.9	12
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.7
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Phenol	0.96	U	ug/L	0.96	3.8
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Pyrene	0.19	U	ug/L	0.19	0.77
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.96	U	ug/L	0.96	3.8
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19	U	ug/L	0.19	0.77
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.96	U	ug/L	0.96	3.8
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	14	U	ug/L	14	58
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	2,4-Dichlorophenol	0.96	U	ug/L	0.96	3.8
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	0.96	U	ug/L	0.96	3.8
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	4-Nitrophenol	14	U	ug/L	14	58
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Acenaphthene	0.19	U	ug/L	0.19	0.77
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Di-n-octyl phthalate	0.96	U	ug/L	0.96	3.8
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Fluoranthene	0.19	U	ug/L	0.19	0.77
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Fluorene	0.19	U	ug/L	0.19	0.77
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Hexachlorobenzene	0.96	U	ug/L	0.96	3.8
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.7
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	2-Chloronaphthalene	0.96	U	ug/L	0.96	3.8
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	2-Nitrophenol	0.96	U	ug/L	0.96	3.8

Appendix E. (continued)

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Chrysene	0.19	U	ug/L	0.19	0.77
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.7
7/23/2012 11:25	Field Blank	Priority Organic Pollutants	Naphthalene	0.19	U	ug/L	0.19	0.77

Appendix F. Facility Summary, Effluent Limits, and Permit Violations Recorded on Discharge Monitoring Report

FACILITY SUMMARY – BUCKEYE CORP – TAYLOR COUNTY – JUNE 15, 2012

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: Edward Jamro	Contact Number:904-256-1617
Facility Name (as it appears on permit): Procter & Gamble Cellulose Company Aka - Buckeye Cellulose Corporation Aka – Buckeye Florida, LP	Former Names:
NPDES Permit Number:FL0000876 DER Permit Number:IO62-158779	Permit Expiration Date: 6/30/1995 7/27/1995
Physical Address: One Buckeye Drive Perry Florida32348	
District: NED	County: Taylor
Function of Facility: Pulp and paper mill	
Facility Type: Industrial wastewater	Permitted Capacity (MGD): 58 MGD
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): 5/1/11 to 4/30/12 -- 41.5 MGD	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months): NA	
Description of type of Discharge: ☒ Continuous ☐ Intermittent ☐ Seasonal ☐ Rainfall Dependent ☐ Other, please specify	

Appendix F. (continued)

FACILITY SUMMARY – BUCKEYE CORP – TAYLOR COUNTY – JUNE 15, 2012

Description of Sampling Location(s) - actual permit designation of permitted sampling point(s): **Nearest accessible point after treatment but prior to actual discharge or mixing with the receiving waters.**
Description of Permitted Outfall(s): **Fenholloway River at mile point 24.6 upstream of the River mouth, Class III freshwaters**
Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility): **Operation of a 58 million gallon per day (design) industrial wastewater treatment system serving a dissolved Kraft pulp mill that includes a lift station, bar racks, a 320 foot diameter primary clarifier with skimming pond, sludge pumps, 225 acres of sludge storage lagoons with conveyance structures, and a 30 acre aerated lagoon followed by a 120 acre aerated lagoon.**

Appendix F. (continued)

FACILITY SUMMARY – BUCKEYE CORP – TAYLOR COUNTY – JUNE 15, 2012

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

			Effluent Limitations				Monitoring Requirements			
Parameter	Units	Max/Min	Annual Average	Daily Average	Weekly Average	Single Sample	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes
Flow	MGD	Max.		Report		Report Daily max.	continuous	recorder		
BOD	Lbs/day	Max		13200		19800	Daily	24 hr composite		
TSS	Lbs/day	Max		25000		50000	Daily	24 hour composite		
pH	S.U.	Min.				6.0	Daily	grab		
pH	S.U.	Max.				8.5	Daily	grab		
Oil and Grease	mg/L	Max.				10	1/month	grab		
Specific Conductance	umhos/cm	Max.				4000	1/month	grab		
Temperature	Degrees F	Max.				Report	2/week	grab		See Note A.
Phenolic Compounds	mg/L	Max.				0.2	1/month	grab		
Chronic Toxicity - NOEC	Percent	Min.				100		24 hr composite		See part V of permit
Dissolved Oxygen	mg/L	Min.	See Note - B			See Note - B	Daily	grab		See Note - B
Total-P (as P)	mg/L	Max.				Report	1/quarter	grab		
Ammonia-N	mg/L	Max.				Report	1/quarter	grab		
2,3,7,8-TCDD	pg/l	Max.		0.014			1/quarter	Composite		

A. The temperature of the receiving water body shall not be increased to adversely affect aquatic life, vegetation, or beneficial uses.

B. The DO criteria for the Fenholloway River at the state road 356 bridge shall be .3mg/L or greater 50 percent of the time on an annual basis when the flow at the bridge is 250cfs or greater. The DO is required to be 0.1 mg/L 99% of the time on an annual basis regardless of flow.

Appendix F. (continued)

FACILITY SUMMARY – BUCKEYE CORP – TAYLOR COUNTY – JUNE 15, 2012

PART I: Continued

Receiving Waters: Fenholloway River	**Classification (indicate whether fresh or marine):** Class 3 fresh water

Toxicity Test Requirements (routine and/or additional test language, test species, salinity adjustment, etc.):

The 1992 permit refers to conducting chronic Toxicity tests on 24-hour composite samples. The permit references a "Part V" of the permit for further information but Part V of the permit does not appear to be available. There appears to be no current permit requirement for the permittee to conduct and report toxicity results. There is no PCS DMR for reporting toxicity.

Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.):

NONE

Facility Mixing Zone Details (if applicable):
22.1 mile mixing zone the entire length of the Fenholloway River before effluent reaches the Gulf

List Permit Violations (DMR data) and plant upsets that occurred at the plant within the last year:

Date 1/1/11 to 4/30/12	Parameter and Units	Limit	Result
No permit exceedances noted.			

Describe previous FYI and WQBEL study:
FYI's - Sampled 8/7/2009 and 2/15/2011.

Biological assessments by FDEP – 3/20/2006.

Permittee requested SSAC's for transparency and iron on 1/29/2009.

Describe previous or current Enforcement Actions (including WLs):
NA

Describe any violations or problems noted in previous inspection:
NA

Discuss whether DMR trends within previous five years are improving or declining:
Data over the past few years has remained consistent.

Additional Comments (this should include a trend of the Effluent, i.e. if the facility is now Reuse):

Page 4 of 5 v3.0 07/07/08

Appendix F. (continued)

FACILITY SUMMARY – BUCKEYE CORP – TAYLOR COUNTY – JUNE 15, 2012

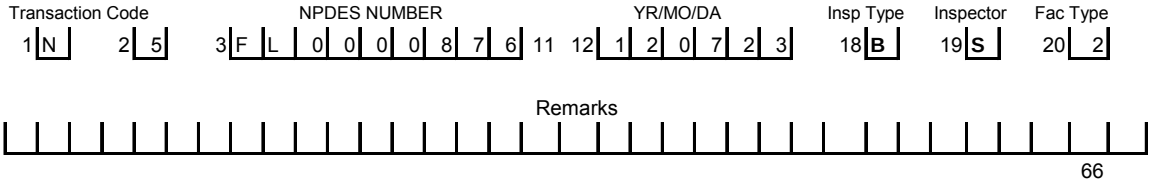
PART II: Sampling Event Information	
Date(s) sample collected: July 23, 2012 (planned)	Sampler(s): Eesa Ali, Sharon Piltz, Jeremy Parrish
Temperature (Deg C):	pH (SU):
Dissolved Oxygen (mg/L):	Conductivity (umhos/cm):
Total Residual Chlorine (mg/L):	Total Residual Chlorine - after Disinfection (mg/L):
Method of Chlorination:	Method of De-chlorination:
Flow During Sample Collection for each outfall(MGD):	
Mean Flow for each outfall for previous 12 months based on sampling date (If samples are taken on more than one day, indicate Mean Flow for each day):	
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:	

Page 5 of 5 v3.0 07/07/08

Appendix G. EPA End Sheet

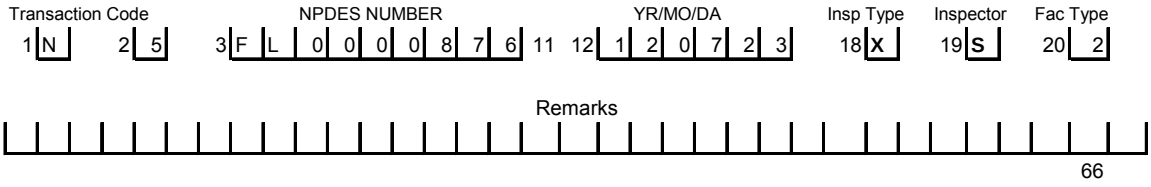
The Bioassay of Procter and Gamble Cellulose Company effluent sampled on July 23, 25, and 27, 2012. NPDES #FL0000876.

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



The Priority Pollutants Analysis of Procter and Gamble Cellulose Company effluent sampled on July 23, 2012. NPDES #FL0000876.

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



Biological Analyses of Procter and Gamble Cellulose Company effluent sampled on July 23, 2012. NPDES #FL0000876.

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

