

Bioassays of

Bay County Wastewater Treatment Plant – Military Point Lagoon

Bay County

NPDES #FL0002631

Sampled June 20, 22, 24, 2005

September 2005

Biology Section
Bureau of Laboratories
Division of Resource Assessment and Management

Quality Manual No. 870346G
NELAC Certification No. E31780

Bay County Wastewater Treatment Plant Military Point Lagoon, Lagoon Road, Tyndall Air Force Base, Panama City, Bay County, Florida, NPDES #FL0002631. Effluent samples for this facility were collected on June 20, 22, and 24, 2005.

Introduction

The Bay County Wastewater Treatment Plant Military Point Lagoon has a design flow of 37 million gallons per day (MGD) maximum daily flow, and a mean flow of 23.13 MGD (June 2004 - May 2005). The facility provides treatment of wastewater received from the Stone Container Corporation. The facility consists of a 27.923 hectare (69 acre) lagoon, which is divided into four cells. Three cells are divided to create aerated stabilization areas. A total of forty-five (45) 75-horsepower aerators are used to provide aeration. Cell #4 is a quiescent cell for solids settling. Effluent is not chlorinated or otherwise disinfected. Effluent is discharged through a 168 cm (42 inch) diameter pipe at Outfall D-001, which is located at latitude 30º 07' 31" N and longitude 85º 37' 48" W, at a depth of approximately 7.62 m (25 feet). The discharge pipe is approximately 396.24 m (1300 feet) in length, and has fifteen 20.32 cm (8-inch) diffusers along its length and a single 60.96 cm (24-inch) diffuser at the end. The facility has a mixing zone for aluminum, iron, and fecal coliforms, comprising a volume of water with the radius of 200 m (218.72 yards) around the discharge point, extending from the surface to the bottom of St. Andrews Bay.

The facility is currently operating under a consent order No. 00-0294-03-DW (facility information provided by Glenn Butts, Kim Allen, and Bill Evans of the FDEP Northwest District, Pensacola).

Methods

Samples were collected every two days for five days from the D-001 NPDES sampling point by Glenn Butts (FDEP Northwest District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling. All DEP SOP's are available on the web at: http://www.floridadep.org/labs/qa/sops.htm

The 7-day chronic screening toxicity tests and algal growth potential test were performed following internal DEP SOP's TA07_14, TA07_15, and TA08_01 through TA08_09. All internal DEP SOP's are available on the web at: http://www.floridadep.org/labs/cgi-bin/sop/biosop.asp

The salinity of each of the three samples collected for the bioassay tests was approximately 1.2 parts per thousand (ppth). Per permit conditions, the bioassay tests were performed on an effluent concentration of two (2) percent at a salinity of 20 ppth. The test solutions were prepared by mixing effluent and dilution water in a ratio of 1 to 50. The dilution water and control water were artificial sea water prepared with artificial sea salts (Forty Fathoms®) to an approximate salinity of 20 ppth. The sample of effluent for the AGP test was salinity adjusted from an approximate salinity of 1.2 ppth to 7 ppth to meet the salinity requirement of the test species.

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

Toxicity Test Results

Tests were performed June 21 - 28, 2005.

Americamysis bahia 7-day chronic screening bioassay – NOEC > 2%*, 2.5% mortality in 2% ample at 7 days*

Menidia beryllina 7-day chronic screening bioassay – NOEC > 2%*, 0% mortality in 2% ample at 7 days*

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

See Appendix 1 for bioassay bench sheets.

*NOTE: Result reported as 2% since this was the concentration of effluent used in the bioassay tests.

Algal Growth Potential

The effluent Algal Growth Potential (AGP) was 22.9 mg dry wt/L of *Dunaliella tertiolecta.* Raschke and Shultz found that AGP values above 10.0 mg dry wt/L represent a “problem” threshold for marine receiving waters, implying nutrient enrichment (personal communication with Ron Raschke, USEPA Region 4 1987). The analytical chemistry suggests that the effluent is nitrogen-limited.

See Table 1 for AGP results.

Chemistry Results

Total residual chlorine was not measured in the effluent samples in the field and was not detected in the bioassay samples (100% effluent) in the laboratory. Total ammonia was detected in each of the three bioassay samples (100% effluent) at concentrations of 1.48 mg/L, 1.50 mg/L and 0.988 mg/L, respectively; however, total ammonia was not detected in the sample aliquots containing two (2) percent effluent. The total ammonia concentration in the effluent sample collected (June 20, 2005) and preserved for chemical analysis was 1.1 mg/L. Based on the pH, salinity and temperature of the effluent as collected, the calculated unionized ammonia concentration was 0.04 mg/L. Additional samples were not collected for chemical analyses during the second (June 22, 2005) and third (June 24, 2005) sampling events.

The effluent’s concentration of dissolved oxygen (0.4 mg/L), as measured in the field during the first sampling event, was in violation of the Class III marine criteria for dissolved oxygen of ≥4.0 mg/L (62-302.530(31), F.A.C.). Dissolved oxygen was not measured in the field during the subsequent sampling events. When measured in the laboratory, the dissolved oxygen concentrations of the three 100% effluent samples were 4.0 mg/L, 5.6 mg/L and 7.7 mg/L, respectively.

Arsenic and zinc were detected in the effluent at levels that comply with Class III marine quality criteria. Chromium III, copper, lead, and nickel was detected between the laboratory minimum detection limits (MDL) and practical quantitation limits (PQL). The effluent’s aluminum (3,750 µg/L), copper (5.4 ug/L), and iron (685 µg/L) concentrations exceeded their respective Class III marine quality criteria of ≤ 1,500 µg/L (62-302.530(2), F.A.C.), ≤ 3.7 ug/L (62-302.530(24), F.A.C.), and 300 µg/L (62-302.530(39), F.A.C.). Since the permit does not have numeric values for allowable concentrations of aluminum and iron in the effluent, a determination could not be made as to whether or not the effluent was in compliance with Class III marine water quality standards at the edge of the mixing zone.

See Table 2 for results of analytes detected in the effluent, and corresponding limits.

See Appendix 2 for a complete list of chemical analyses performed.

Conclusion

The effluent samples collected from Outfall D-001 for this facility on June 20, 22, and 24, 2005, were not chronically toxic to either test species during the 7-day chronic screening bioassays, at the 2% effluent concentration. The effluent AGP result exceeded the "problem” threshold for marine receiving waters. The effluent’s copper and dissolved oxygen concentrations exceeded

Class III marine water quality criteria. A determination could not be made as to whether or not effluent concentrations of aluminum and iron, which exceeded Class III marine water quality criteria, violated mixing zone permit limits.

References

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. Algal growth potential (AGP; mg dry wt/L) of Dunaliella tertiolecta *and ratios of nitrogen to phosphorus for samples collected from Bay County WWTP Military Point Lagoon on June 20, 2004.*

Location	AGP	Inorganic N:P ratio	Total N:P ratio
Effluent Samples	22.9	1.45	3.91

Table 2. Effluent limits, Class III Marine Criteria, and chemical and microbiological data for samples collected from Bay County WWTP Military Point Lagoon on June 20, 2005.

Bay County WWTP Military Point Lagoon NPDES# FL002631	Class III Marine Stds	Effluent Limits	Effluent Samples
Organic Constituents			
Dioxin* (pg/L)	-	0.7 d	-
Metals (µg/L unless otherwise noted)			
Aluminum	≤ 1,500	**	3,750
Arsenic	≤ 50	-	25
Cadmium	≤ 9.3	-	0.5 U
Calcium (mg/L)	-	-	75.7
Chromium-III	-	-	3 I
Copper	≤ 3.7	-	5.4 I
Iron	≤ 300	**	685
Lead	≤ 8.5	-	2 I
Magnesium (mg/L)	-	-	16.6
Nickel	≤ 8.3	-	7 I
Selenium	≤ 71	-	5 U
Silver	≤ 2.3	-	0.25 U
Zinc	≤ 86	-	18
Nutrients (mg/L)			
Ortho-phosphate	-	-	0.76
Total Phosphorus	-	-	1.1
Ammonia	-	-	1.1
Unionized Ammonia	-	-	0.04 c
Nitrate+Nitrite	-	-	0.02 U
Total Kjeldahl Nitrogen	-	-	4.3
Organic Nitrogen	-	-	3.2 c
Total Nitrogen	-	-	4.3 c
General Physical and Chemical Parameters			
Dissolved Oxygen (mg/L)	≥ 4 s	-	0.4
pH (S.U.)	6.5-8.5 s	6.0-8.5 s	7.5
Conductivity (umhos/cm)	-	-	2287
Temperature (C)	-	-	31.6
TSS (lbs/day)	-	26,910 m	-
BOD (lbs/day)	-	9,400 m	-
Flow (monthly flow in MGD)	-	Report	23.13 a
Hardness (mg/L)	-	-	257.4 c
Microbiology (# counts/100ml)			
Fecal Coliforms-Membrane Filter	≤ 400	8,000 ma	-

Value exceeds the Class III Marine Water Quality Criteria (62-302, F.A.C.) and/or Effluent Limits

a - Annual average

c - calculated value

d- daily average

m - monthly average

s - Single sample

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 minimum detection limit

* - 2,3,7,8- Tetrachloro-dibenzo-p-dioxin

** - The facility has a mixing zone for this analyte, but no corresponding effluent limit

Appendix 1. Bench Sheets

Chronic Screening Bioassay Benchsheet

Sample Identification, Test Conditions and Physical Chemistry

***Americamysis bahia* SOP#: TA07_15**

Sample Source: Bay County WWTP
Address: Lagoon Road, Tyndall AFB
County: BAY
NPDES Permit #FL 0002631
Contact/District Glenn Butts Northwest

Start Date 6-21-05 Time 1400
End Date: 6-28-05 Time 1300

LIMS entry: 7-8-05 MF verified: 7-8-05 SP
Incubator # 2 Temperature Range: 24.6 - 26.4°C
Room B246 Temperature Range: 23.7 - 24.9°C
Waterbath Temperature Range: ~~24.0 - 27.0°C~~ NA 7-13-05
Feeding: 2 X Daily Artemia Lot:#: 35138425GR

Light Intensity : 50 - 100 ft. candles (yes) no
Photoperiod : 16 light 8 dark (yes) no
Chamber size : 400 mL Organism Batch #: 12-05
Sample volume : 250 ml Organism age : 7 days

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	NOT measured	Not measured	<0.03	<0.03	<0.03	320	340	280	340	250	247
Diluent/Control:	[redacted]			<0.03	<0.03	<0.03	267	269	2076	NA	NA	NA
additional Control:	[redacted]			—	—	—	—	—	[illegible]	—	—	—
additional Sample:	[redacted]			—	—	—	—	—	—	—	—	—
Method:	—	—	—	Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach
Measured by:	—	—	—	SP	SP	MF	[illegible]	SP	MF	[illegible]	SP	MF
Verified by:	MF	MF	MF	DN	MF	SP	DN	MF	SP	SP	MF	SP

	Salinity ‰			Ammonia mg/L		
Lab Sample#:	1	2	3	1	2	3
Samcle:	11	11	11	1.48	1.50	1.983
Diluent/Control:	20.1	~~20.1~~	~~20.1~~	<0.034	<0.034	<0.034
additional Control:	—	20.0 MF	19.7	—	7.505	—
additional Sample:	—	—	—	—	—	—
Method:	Mettler	Mettler	Mettler	Denver	Denver	Denver
Measured by:	SP/MF	SP	MF	MF	MF	MF
Verified by:	MF	MF	SP	DN	SP	SP

NOEC Survival:	100%
NOEC Growth:	100%
Pmsd wt -	17% Weight
Control CV%	35.4% Weight

MF 7-8-05

Sample Received	LAB ID #	LIMS SAMPLE #	LIMS JOB #
Test Day 0	Sample: 1	343256	TLH - 205-06-21-40
Test Day 2	Sample: 2	344116	TLH - 205-06-23-01
Test Day 4	Sample: 3	345204	TLH - 205-06-27-09

Lab Sample #	Collection Date/Time	Received Date/Time
1	6-20-05 1120	6-21-05 1155
2	6-22-05 1000	6-23-05 1230
3	6-24-05 1010	6-25-05 [illegible]

Diluent / Control Batch #:	Days Used
ASW #7-05	1-3
ASW #8-05	4-6, 7

95% Effluent Concentration tested for Permit

Investigators' signatures
Sarah Pinckney
Marshall Faircloth
Jessica McClendon
James Smith
Connie Pelicy

reviewed Nigel Mallette

Comments: Sample Parameters for Original Sample are above. Parameters for Sample 1 adjusted (20‰) Salinity 19.9 ppth are: alkalinity - 210 mg/L
: Ammonia - <0.034 mg/L
: Chlorine - <0.03 mg/L

Sample 2 As tested
alkalinity - Not measured
ammonia ~~1.50~~ <0.034
Chlorine - <0.03

Sample 3 as tested
alkalinity - 203 mg/L
Chlorine - <0.03 mg/L
Ammonia - ~~0.755 mg/L~~ <0.034 MF 7-8-05

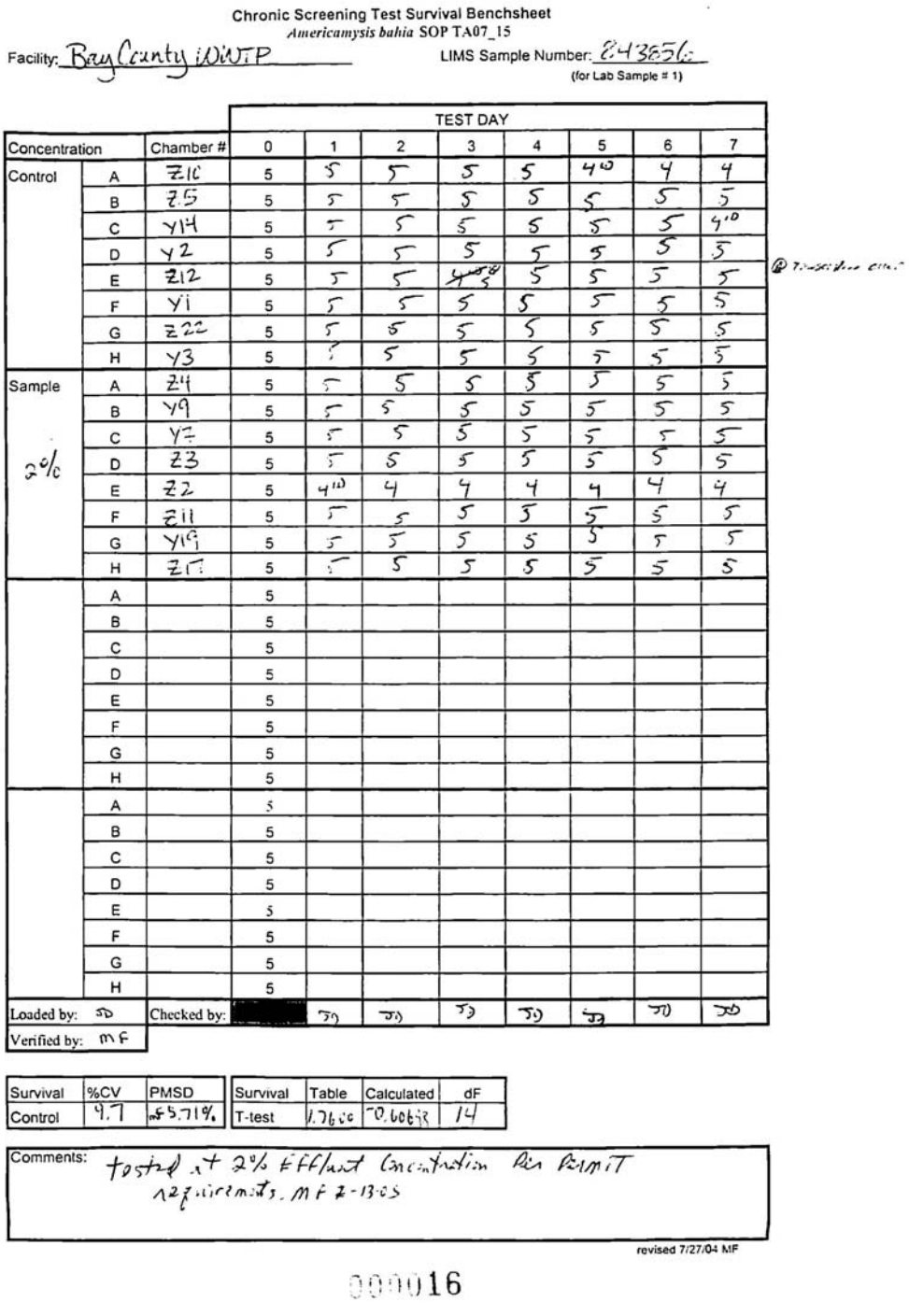
Write Original Sample Ammonia MF 7-8-05

Write 0 ug/L Sample MF 7-8-05

revised 1/24/05 JF

0015

Appendix 1. Bench Sheets (continued)



Chronic Screening Test Survival Benchsheet
Americamysis bahia SOP TA07_15

Facility: Bay County WWTP LIMS Sample Number: 243856 (for Lab Sample # 1)

Concentration		Chamber #	TEST DAY 0	1	2	3	4	5	6	7
Control	A	Z10	5	5	5	5	5	4	4	4
	B	Z5	5	5	5	5	5	5	5	5
	C	Y14	5	5	5	5	5	5	5	4
	D	Y2	5	5	5	5	5	5	5	5
	E	Z12	5	5	5	4 5	5	5	5	5
	F	Y1	5	5	5	5	5	5	5	5
	G	Z22	5	5	5	5	5	5	5	5
	H	Y3	5	5	5	5	5	5	5	5
Sample 2%	A	Z4	5	5	5	5	5	5	5	5
	B	Y9	5	5	5	5	5	5	5	5
	C	Y7	5	5	5	5	5	5	5	5
	D	Z3	5	5	5	5	5	5	5	5
	E	Z2	5	4	4	4	4	4	4	4
	F	Z11	5	5	5	5	5	5	5	5
	G	Y19	5	5	5	5	5	5	5	5
	H	Z17	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							
Loaded by: SD		Checked by:	[redacted]	SD	SD	SD	SD	SD	SD	SD
Verified by: MF										

Survival	%CV	PMSD
Control	9.7	5.71%

Survival	Table	Calculated	dF
T-test	1.761	-0.6063	14

Comments: tested at 2% Effluent Concentration Per Permit requirements. MF 2-13-05

revised 7/27/04 MF

000016

Appendix 1. Bench Sheets (continued)

Biology Laboratory Chronic Screening Bioassay Parameters Benchsheet
***Americamysis bahia* SOP TA-07_15**

Sample Source: Bay County
LIMS Sample #: 843856 (for Lab sample #1)
Start Date: 6/21/05 End Date: 6/28/05
Time: 1400 Time: 1300

Test Day			Old Sample					New Sample				
		Conc.	Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Salinity ppth	Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Salinity ppth
Day 0	sample:	Control	[redacted]					A	8.4	24.6	7.1	20.1
	1	100%						A	8.4	24.4	7.0	19.9
	Measured by:								JD	JD	JD	JD
	Recorded by:								DN	DN	DN	DN
Day 1	sample:	Control	B	8.3	24.8	5.8	20.7	B	8.2	24.0	4.5	20.9
	1	100%	B	8.3	24.8	5.9	20.4	B	8.2	24.1	4.7	20.4
	Measured by:			MF	MF	MF	MF		JD	JD	JD	JD
	Recorded by:			DN	DN	DN	DN		DN	DN	DN	DN
Day 2	sample:	Control	C	8.1	24.5	4.5	19.7	C	8.3	24.7	6.7	20.0
	2	100%	C	8.1	24.6	4.1	20.1	C	8.3	24.6	6.9	19.8
	Measured by:			DN	DN	DN	DN		DN	DN	DN	DN
	Recorded by:			DN	DN	DN	DN		DN	DN	DN	DN
Day 3	sample:	Control	D	8.2	25.0	4.7	22.0	D	8.3	24.2	7.3	20.4
	2	100%	D	8.1	25.2	4.6	20.5	D	8.3	24.6	7.3	20.5
	Measured by:			JD	JD	JD	JD		DN	DN	DN	DN
	Recorded by:			DN	DN	DN	DN		DN	DN	DN	DN
Day 4	sample:	Control	E	8.1	24.0	5.3	20.4	E	8.3	24.1	7.1	19.7
	3	100%	E	8.1	24.1	5.2	20.1	E	8.3	24.3	6.9	19.6
	Measured by:			MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:			MF	MF	MF	MF		MF	MF	MF	MF
Day 5	sample:	Control	F	8.2	24.7	5.0	32.5	F	8.3	24.1	7.0	18.9
	3	100%	F	8.1	24.9	4.4	32.1	F	8.4	24.0	6.9	18.7
	Measured by:			DN	DN	DN	DN		DN	DN	DN	DN
	Recorded by:			DN	DN	DN	DN		DN	DN	DN	DN
Day 6	sample:	Control	G	8.2	24.3	5.0	19.6	G	8.4	24.6	6.5	19.2
	3	100%	G	8.2	24.3	5.1	19.9	G	8.3	24.6	6.4	19.2
	Measured by:			JD	JD	JD	JD		SP	SP	SP	SP
	Recorded by:			JD	JD	JD	JD		SP	SP	SP	SP
Day 7	sample:	Control	H	8.1	24.0	5.7	19.3					
	3	100%	H	8.1	24.0	4.9	19.2					
	Measured by:			JD	JD	JD	JD					
	Recorded by:			JD	JD	JD	JD					

Test Rep. = Replicate

Comments: 100% ~~Concentration~~ Sample is Actually 2% effluent. tested per Permit requirements. MF-7-13-05

revised 6/24/05 mf

000017

Page 18 of this test book was not used.

Appendix 1. Bench Sheets (continued)

Chronic Screening Test Fecundity Benchsheet

Americamysis bahia SOP TA07_15

Facility: Bay County Regional WWTP LIMS Sample Number: 343353.0

(for Lab Sample # 1)

Concentration	Replicate	Females with Eggs	Females no Eggs	Males	Immature
Control	A		1	1	2
	B		2	2	1
	C	1	1	2	
	D		1	3	1
CTRL	E		3	2	
	F	2	1	2	
	G	2		2	1
	H		1	3	1
	A		2	2	1
Sample	B	1		4	
	C		1	4	
	D	1	2	2	
2%	E	2	1	1	
	F	1	2	2	
	G	1	1	3	
	H		2	3	
totals for control	A	5	10	17	6
	B				
	C	46.9% Identified as female		of 32 identified	
	D	53.1% Identified as male of 32 identified			
	E	33.33% of Identified Female had eggs			
	F	66.66% of identified female did not have eggs			
	G	15.5% not identified as male or female.			
	H				
totals for 2%	A	6	11	21	1
	B				
	C	44.7% identified as female		of 38 identified	
	D	55.3%			
	E				
	F				
	G				
	H				
Checked by:	[redacted]	MF	MF	MF	MF

Comments: 2% effluent concentration tested per Permit Requirements MF 7/27/05

revised 7/27/04 MF

000019

Appendix 1. Bench Sheets (continued)

Chronic Screening Test Weighing Benchsheet

Facility: Bay County WWTP

LIMS Sample Number: 843856

(for Lab Sample # 1)

Weigh page 1

Americamysis bahia Bench sheet

SOP TA06_21

Concentration	Replicate	Pan #	Pan wt. g (mean wt = Mysid wt divided by 5; convert g to mg: move decimal 3 places to right)	Pan + mysid g	Mysid wt. g	Original # mysids	Mean wt. mg
Control	A	1	0.02465	0.02588	0.00123	5	0.246
	B	2	0.02496	0.02622	0.00126	5	0.252
	C	3	0.02279	0.02402	0.00123	5	0.246
	D	4	0.02599	0.02725	0.00126	5	0.252
	E	5	0.02532	0.02765	0.00233	5	0.466
	F	6	0.02256	0.02442	0.00186	5	0.372
	G	7	0.02526	0.02712	0.00186	5	0.372
	H	8	0.02482	0.02652	0.00170	5	0.340
2 % sample	A	9	0.02472	0.02672	0.00200	5	0.400
	B	10	0.02366	0.02556	0.00190	5	0.380
	C	11	0.02427	0.02599	0.00172	5	0.344
	D	12	0.02469	0.02644	0.00175	5	0.350
	E	13	0.02360	0.02531	0.00171	5	0.342
	F	14	0.02570	0.02765	0.00195	5	0.390
	G	15	0.02257	0.02430	0.00173	5	0.346
	H	16	0.02492	0.02698	0.00206	5	0.412
	Weighed by initials:		DN	DN			

Growth	%CV	PMSD
Control	25.3 %	17%

Growth	Table	Calculated	dF
T-test	1.760	-1.70005	14

Drying	
Temperature °C:	105
Hours:	8

Tare Weighing Date:	Final Weighing Date:	Measured Value	S-weight Value
Tare Pan 1 after Pan 5	0.02462 @ 0.02465	S-weights	0.02000 g @ 0.02000g
Tare Pan 1 after Pan 10	0.02463 @ 0.02465		
Tare Pan 1 after Pan 15	0.02464 @ 0.02464	at tare	0.05003 g @ 0.05000g
Final Pan 1 after Pan 5	0.02588 @ 0.02588	S-weights	0.00997 g @ 0.01000g
Final Pan 1 after Pan 10	0.02591 @ 0.02588		
Final Pan 1 after Pan 15	0.02591 @ 0.02588	at final	0.03997 g @ 0.04000g

Note: Pan 5, 10 and 15 for Tare and Final refers to sequence of weighing as actual Pan #s may differ.

Comments: Mean wt mysids control = 0.31825 mg/per original mysid
Mean wt mysids 2% = 0.370 mg per original mysid
2% CV = 7.6%

revised 7/26/04 MF

000020

Appendix 1. Bench Sheets (continued)

Chronic Screening Bioassay Benchsheet

Sample Identification, Test Conditions and Physical Chemistry

State of Florida
Department of Environmental Protection
Biology Laboratory Chronic Screening Bioassay
P. promelas and *M. beryllina* Bench Sheet

Sample Source: Bay County WWTP
Address: Lagoon Road, Tyndall AFB
County: BAY
NPDES Permit #FL 0002631
Contact/District Glenn Butts / Northwest
Start Date 6-21-05 Time 1400 End Date: 6-25-05 Time 1400
LIMS entry: 7-8-05 MF Verified: 7-8-05 SP
Incubator # 2 Temperature Range: 24.6 - 26.4°C
Room B246 Temperature Range: 23.7 - 24.9°C
Feeding: 2 X Daily Artemia Lot:#: 351394256R

P. promelas SOP#: TA07_09 *M. beryllina* SOP#: TA07_14
Light Intensity : 50 - 100 ft. candles (yes) no
Photoperiod : 16 light 8 dark (yes) no
Chamber size : 1 L Organism Batch #: 11-05
Sample volume : 500 ml Organism age : 9 hours (days)
Organism: *P. promelas* (*M.beryllina*) (circle one)

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	NOT MEASURED	NOT MEASURED	<0.03	<0.03	<0.03	320	346	280	240	250	247
Diluent/Control:				<0.03	<0.03	<0.03	209	209	209	NA	NA	NA
Method:	—	—	—	Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach
Measured by:	—	—	—	SP	SP	MF	MF	SP	MF	MF	SP	MF
Verified by:	MF	MF	MF	SP	MF	SP	SP	MF	SP	SP	MF	SP

	Conductivity (circle one)			Ammonia mg/L			Salinity ‰			Statistics	
	(umhos-cm)	mmhos-cm									
Lab Sample#:	1	2	3	1	2	3	1	2	3		
Sample:	2.22	2.28	2.34	1.48	1.50	0.785	1.1	1.14	1.17	Control %cv:	35%
Diluent/Control:	32.4	31.9	31.5	<0.034	<0.034	<0.034	20.1	19.9	19.8	Dunnett's PMSD:	9.39%
Method:	Mettler	Mettler	Mettler	Denver	Denver	Denver	Mettler	Mettler	Mettler	Survival NOEC:	100
Measured by:	MF	SP	MF	MF	MF	MF	SP/MF	SP	MF	Survival LOEC:	NA
Verified by:	MF	MF	SP	SP	SP	SP	MF	MF	SP	Growth NOEC:	100
										Growth LOEC:	NA

conv. = conversion based on conductivity and temperature

Sample Received	LAB ID #	LIMS SAMPLE #	LIMS JOB #
Test Day 0	Sample: 1	843856	TLH-2005-06-21-40
Test Day 2	Sample: 2	844440	TLH-2005-06-23-01
Test Day 4	Sample: 3	845204	TLH-2005-06-27-09

Lab Sample #	Collection Date/Time	Received Date/Time
1	6-20-05 1120	6-21-05 1155
2	6-22-05 1000	6-23-05 1230
3	6-24-05 1010	6-25-05 1015

Diluent / Control Batch #:	Days Used
ASW-7-05	1-3
ASW B-05	4-7

Investigators' signatures
Marshall Faircloth
Reviewer

ppth = Parts per thousand.

Comments: Sample parameters are for 100% sample. Parameters for Sample diluted to 2% (percent) are on test parameters page except: alkalinity Sample (Salinity @ 19.9ppth) = 210 mg/L
Ammonia Sample (Salinity @ 19.9ppth) = <0.034 mg/L
Sample 2 extra Chlorine Sample (Salinity @ 19.9ppth) = <0.03 mg/L
alkalinity = 209
ammonia = <0.034
Chlorine = <0.03 mg/L
2% final concentration tested for permit requirement.
Sample #3 extra Test:
alkalinity = 203 mg/L Chlorine = <0.03 ammonia = <0.034 mg/L

revised 8/14/04 JF

Test Page 1 000037

Appendix 1. Bench Sheets (continued)

Chronic Screening Test Survival Benchsheet

Facility: Bay County WWTP

LIMS Sample Number: 8436560
(for Lab Sample # 1)

State of Florida
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	Chamber	Replicate	0	1	2	3	4	5	6	7
Control	F9	A	10	9 LD	9	9	9	8 LD	8	8
	F10	B	10	10	10	10	10	10	10	10
	F11	C	10	10	10	10	10	10	10	10
	F12	D	10	9 LD	9	9	9	9	9	9
2 % sample concentration	F13	A	10	10	10	10	10	10	10	10
	F14	B	10	10	10	10	10	10	10	10
	F15	C	10	9	10	10	10	10	10	10
	F16	D	10	10	10	10	10	10	10	10
Control		A	10							
		B	10							
		C	10							
		D	10							
% sample concentration		A	10							
		B	10							
		C	10							
		D	10							
Loaded by: SD		Checked by: [redacted]		SD	SD	SD	SD	SD	SD	SD
Verified by: MF										

Survival	%CV	PMSD
Control	10.41	9.81

Survival	Table	Calculated	dF
T-test	1.943	-1.63299	6

Comments: 92.5% Control Survival
100% / 2% [illegible]
Tested at 2% Effluent Concentration for Permit Requirement. MF 7-5-05

revised 6/24/04 MF

Test Page 2 000038

Appendix 1. Bench Sheets (continued)

Biology Laboratory Chronic Screening Bioassay Benchsheet
Parameters
***P. promelas* SOP TA-07_09 *M. beryllina* SOP TA-07_14**

Sample Source: Bay County
LIMS Sample #: 843856 (for Lab sample #1)
Start Date: 6/21/05 End Date: 6/28/05
Time: 1400 Time: 1400

Test Day		Conc.	Old Sample: Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Cond (µmhos/cm) (mmhos/cm)	Salinity ppth	New Sample: Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Cond (µmhos/cm) (mmhos/cm)	Salinity ppth
Day 0	sample:	Control							A	8.4	24.6	7.1	37.4	25.1
	1	100%							A	8.4	24.4	7.0	32.6	19.9
	Measured by:									MF	MF	MF	MF	MF
	Recorded by:									DN	DN	DN	DN	DN
Day 1	sample:	Control	B	8.3	24.4	6.1	33.4	20.6	B	8.2	24.6	5.2	33.4	20.8
	1	100%	B	8.3	24.6	6.1	33.0	20.5	B	8.2	24.4	5.0	32.4	20.4
	Measured by:			DN	DN	DN	DN	DN		DN	DN	DN	DN	DN
	Recorded by:			DN	DN	DN	DN	DN		DN	DN	DN	DN	DN
Day 2	sample:	Control	C	8.3	24.1	6.9	31.8	19.6	C	8.3	24.6	7.4	31.8	19.9
	2	100%	C	8.3	24.1	7.0	32.5	20.3	C	8.4	24.5	7.5	31.9	19.8
	Measured by:			DN	DN	DN	DN	DN		DN	DN	DN	DN	DN
	Recorded by:			DN	DN	DN	DN	DN		DN	DN	DN	DN	DN
Day 3	sample:	Control	D	8.2	24.3	6.0	33.9	21.2	D	8.4	24.1	7.3	32.1	20.4
	2	100%	D	8.3	24.2	6.0	33.3	21.0	D	8.4	24.4	7.4	33.0	20.6
	Measured by:			DN	DN	DN	DN	DN		DN	DN	DN	DN	DN
	Recorded by:			DN	DN	DN	DN	DN		DN	DN	DN	DN	DN
Day 4	sample:	Control	A	8.1	24.2	5.2	33.1	20.8	A	8.3	24.2	6.8	32.3	19.8
	3	100%	A	8.1	24.4	5.5	33.0	20.6	A	8.3	24.1	6.9	32.1	19.7
	Measured by:			MF	MF	MF	MF	MF		MF	MF	MF	MF	MF
	Recorded by:			MF	MF	MF	MF	MF		MF	MF	MF	MF	MF
Day 5	sample:	Control	B	8.2	24.3	5.0	31.5	19.5	B	8.4	24.0	6.9	30.3	18.4
	3	100%	B	8.2	24.5	5.0	31.7	19.7	B	8.4	24.0	7.0	30.3	18.7
	Measured by:			DN	DN	DN	DN	DN		DN	DN	DN	DN	DN
	Recorded by:			DN	DN	DN	DN	DN		DN	DN	DN	DN	DN
Day 6	sample:	Control	C	8.2	24.6	5.1	32.5	19.9	C	8.4	24.4	6.7	30.0	~~19.0~~ 19.0
	3	100%	C	8.2	24.5	5.3	31.0	19.3	C	8.4	24.8	6.8	30.0	~~19.0~~ 19.0
	Measured by:			SP	SP	SP	SP	SP		SP	SP	SP	SP	SP
	Recorded by:			SP	SP	SP	SP	SP		SP	SP	SP	SP	SP
Day 7	sample:	Control	D	8.2	24.0	5.7	34.3	19.6						
	3	100%	D	8.2	24.1	5.4	30.8	19.1						
	Measured by:			DN	DN	DN	DN	DN						
	Recorded by:			DN	DN	DN	DN	DN						

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

Comments: 100% is 2% Effluent Concentration tested per Permit
Aquaramade. MF 7-13-05

revised 6/24/05 mf

Test Page 3 000039

Page 40 of this test book was not used.

Appendix 1. Bench Sheets (continued)

Chronic Screening Test Weighing Benchsheet

Facility: Bay County WWTP

LIMS Sample Number: 8438560

(for Lab Sample # 1)

State of Florida
Department of Environmental Protection
Biology Laboratory Chronic Screening Bioassay
P. promelas and *M. beryllina* Bench Sheet
SOP TA06_21

Concentration	Replicate	Pan #	Pan wt. g	Pan + Fish g	Fish wt. g	Original # Fish	Mean wt. mg
			mean wt = fish wt divided by 10 convert g to mg: move decimal 3 places to right				
Control	A	17	[illegible]	[illegible]	[illegible]	10	1.736
	B	18	[illegible]	[illegible]	0.0179	10	1.790
	C	19	[illegible]	[illegible]	[illegible]	10	1.959
	D	20	[illegible]	[illegible]	[illegible]	10	1.964
2 % sample	A	21	[illegible]	[illegible]	[illegible]	10	2.002
	B	22	[illegible]	[illegible]	[illegible]	10	1.992
	C	23	[illegible]	[illegible]	[illegible]	10	1.767
	D	24	[illegible]	[illegible]	[illegible]	10	1.670
Control	A					10	
	B					10	
	C					10	
	D					10	
% sample	A					10	
	B					10	
	C					10	
	D					10	
	Weighed by initials:		DN	DN			

Growth	%CV	PMSD
Control	3.8	9.39%

Growth	Table	Calculated	dF
T-test	1.9430	0.0499	6

Drying	
Temperature °C:	
Hours:	

Tare Weighing Date: Final Weighing Date:

			Measured Value		S-weight Value
Tare Pan 1 after Pan 5	0.0463 @ 0.0246 2	S-weights	0.02000 g	@	0.020000 g
Tare Pan 1 after Pan 8	0.0463 @ 0.0246 2	at tare	0.05003 g	@	0.050000 g
Final Pan 1 after Pan 5	[illegible]	S-weights	0.01991 g	@	0.020000 g
Final Pan 1 after Pan 8	[illegible]	at final	0.05004 g	@	0.050000 g

Comments: [illegible]
mean control wt – 1.862 mg/fish
mean test wt – 1.857 mg/fish
2% Effluent Concentration tested per Permit Requirements MF 7-13-05

revised 6/21/04 MF

Page 000040 is blank MF 7-13-05 Test Page 4 of 4 000041

Appendix 2. Chemical Analyses performed on the effluent from the Bay County WWTP Military Point Lagoon Outfall D-001, sampled on June 20, 22, and 24, 2005.

Date Sampled	Field ID	Analysis	Component	Result	Units	Remark	MDL	PQL
6/20/2005 11:20	Effluent	Bio-AGP/LimNut	Algal Growth Potential	22.9	mg DryWt/L	V	0.3	0.9
6/20/2005 11:20	Effluent	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	4.3	ug/L	U	4.3	13
6/20/2005 11:20	Effluent	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	4.3	ug/L	U	4.3	13
6/20/2005 11:20	Effluent	Bio-Toxicology	Bioassay-Chronic-Scrn-SW-Fish, NOEC	2	NOEC			
6/20/2005 11:20	Effluent	Bio-Toxicology	Bioassay-Chronic-Scrn-SW-Mysid, NOEC	2	NOEC			
6/20/2005 11:20	Effluent	BNA-Water	1,2,4-Trichlorobenzene	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	1,2-Dichlorobenzene	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	1,3-Dichlorobenzene	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	1,4-Dichlorobenzene	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	2,4,6-Trichlorophenol	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	2,4-Dichlorophenol	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	2,4-Dimethylphenol	50	ug/L	U	50	200
6/20/2005 11:20	Effluent	BNA-Water	2,4-Dinitrophenol	15	ug/L	U	15	60
6/20/2005 11:20	Effluent	BNA-Water	2,4-Dinitrotoluene	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	2,6-Dinitrotoluene	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	2-Chloronaphthalene	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	2-Chlorophenol	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	2-Methyl-4,6-dinitrophenol	3	ug/L	U	3	12
6/20/2005 11:20	Effluent	BNA-Water	2-Nitrophenol	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	3,3'-Dichlorobenzidine	40	ug/L	UJ	40	160
6/20/2005 11:20	Effluent	BNA-Water	4,4'-DDD	1.5	ug/L	U	1.5	6
6/20/2005 11:20	Effluent	BNA-Water	4,4'-DDE	1.5	ug/L	U	1.5	6
6/20/2005 11:20	Effluent	BNA-Water	4,4'-DDT	1.5	ug/L	U	1.5	6
6/20/2005 11:20	Effluent	BNA-Water	4-Bromophenyl phenyl ether	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	4-Chloro-3-methylphenol	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	4-Chlorophenyl phenyl ether	2	ug/L	U	2	8
6/20/2005 11:20	Effluent	BNA-Water	4-Nitrophenol	15	ug/L	U	15	60
6/20/2005 11:20	Effluent	BNA-Water	Acenaphthene	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	Acenaphthylene	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	Aldrin	1.5	ug/L	U	1.5	6
6/20/2005 11:20	Effluent	BNA-Water	alpha-BHC	1.5	ug/L	U	1.5	6
6/20/2005 11:20	Effluent	BNA-Water	Anthracene	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	Benzidine	100	ug/L	U	100	400

Appendix 2. Chemical Analyses (continued)

Date Sampled	Field ID	Analysis	Component	Result	Units	Remark	MDL	PQL
6/20/2005 11:20	Effluent	BNA-Water	Benzo(a)anthracene	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	Benzo(a)pyrene	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	Benzo(b)fluoranthene	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	Benzo(g,h,i)perylene	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	Benzo(k)fluoranthene	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	beta-BHC	1.5	ug/L	U	1.5	6
6/20/2005 11:20	Effluent	BNA-Water	Bis(2-chloroethoxy)methane	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	Bis(2-chloroethyl)ether	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	Bis(2-chloroisopropyl)ether	3	ug/L	U	3	12
6/20/2005 11:20	Effluent	BNA-Water	Bis(2-ethylhexyl)phthalate	15	ug/L	U	15	60
6/20/2005 11:20	Effluent	BNA-Water	Butyl benzyl phthalate	5	ug/L	U	5	20
6/20/2005 11:20	Effluent	BNA-Water	Chrysene	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	delta-BHC	1.5	ug/L	U	1.5	6
6/20/2005 11:20	Effluent	BNA-Water	Dibenzo(a,h)anthracene	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	Dieldrin	1.5	ug/L	U	1.5	6
6/20/2005 11:20	Effluent	BNA-Water	Diethyl phthalate	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	Dimethyl phthalate	50	ug/L	U	50	200
6/20/2005 11:20	Effluent	BNA-Water	Di-n-butyl phthalate	5	ug/L	U	5	20
6/20/2005 11:20	Effluent	BNA-Water	Di-n-octyl phthalate	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	Endosulfan I	4	ug/L	U	4	16
6/20/2005 11:20	Effluent	BNA-Water	Endosulfan II	4	ug/L	U	4	16
6/20/2005 11:20	Effluent	BNA-Water	Endosulfan sulfate	1.5	ug/L	U	1.5	6
6/20/2005 11:20	Effluent	BNA-Water	Endrin	1.5	ug/L	U	1.5	6
6/20/2005 11:20	Effluent	BNA-Water	Endrin aldehyde	4	ug/L	U	4	16
6/20/2005 11:20	Effluent	BNA-Water	Fluoranthene	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	Fluorene	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	gamma-BHC	1.5	ug/L	U	1.5	6
6/20/2005 11:20	Effluent	BNA-Water	Heptachlor	1.5	ug/L	U	1.5	6
6/20/2005 11:20	Effluent	BNA-Water	Heptachlor epoxide	1.5	ug/L	U	1.5	6
6/20/2005 11:20	Effluent	BNA-Water	Hexachlorobenzene	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	Hexachlorobutadiene	3	ug/L	U	3	12
6/20/2005 11:20	Effluent	BNA-Water	Hexachlorocyclopentadiene	3	ug/L	UJ	3	12
6/20/2005 11:20	Effluent	BNA-Water	Hexachloroethane	3	ug/L	U	3	12
6/20/2005 11:20	Effluent	BNA-Water	Indeno(1,2,3-cd)pyrene	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	Isophorone	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	Naphthalene	1	ug/L	U	1	4

Appendix 2. Chemical Analyses (continued)

Date Sampled	Field ID	Analysis	Component	Result	Units	Remark	MDL	PQL
6/20/2005 11:20	Effluent	BNA-Water	Nitrobenzene	2	ug/L	U	2	8
6/20/2005 11:20	Effluent	BNA-Water	N-Nitrosodimethylamine	2	ug/L	U	2	8
6/20/2005 11:20	Effluent	BNA-Water	N-Nitrosodi-n-propylamine	2	ug/L	U	2	8
6/20/2005 11:20	Effluent	BNA-Water	N-Nitrosodiphenylamine	3	ug/L	U	3	12
6/20/2005 11:20	Effluent	BNA-Water	Pentachlorophenol	3	ug/L	U	3	12
6/20/2005 11:20	Effluent	BNA-Water	Phenanthrene	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	Phenol	1	ug/L	U	1	4
6/20/2005 11:20	Effluent	BNA-Water	Pyrene	1	ug/L	U	1	4
6/20/2005 6:45	Blank	BNA-Water	1,2,4-Trichlorobenzene	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	1,2-Dichlorobenzene	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	1,3-Dichlorobenzene	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	1,4-Dichlorobenzene	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	2,4,6-Trichlorophenol	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	2,4-Dichlorophenol	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	2,4-Dimethylphenol	49	ug/L	U	49	200
6/20/2005 6:45	Blank	BNA-Water	2,4-Dinitrophenol	15	ug/L	U	15	59
6/20/2005 6:45	Blank	BNA-Water	2,4-Dinitrotoluene	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	2,6-Dinitrotoluene	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	2-Chloronaphthalene	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	2-Chlorophenol	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	12
6/20/2005 6:45	Blank	BNA-Water	2-Nitrophenol	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	3,3'-Dichlorobenzidine	39	ug/L	UJ	39	160
6/20/2005 6:45	Blank	BNA-Water	4,4'-DDD	1.5	ug/L	U	1.5	5.9
6/20/2005 6:45	Blank	BNA-Water	4,4'-DDE	1.5	ug/L	U	1.5	5.9
6/20/2005 6:45	Blank	BNA-Water	4,4'-DDT	1.5	ug/L	U	1.5	5.9
6/20/2005 6:45	Blank	BNA-Water	4-Bromophenyl phenyl ether	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	4-Chloro-3-methylphenol	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	4-Chlorophenyl phenyl ether	2	ug/L	U	2	7.8
6/20/2005 6:45	Blank	BNA-Water	4-Nitrophenol	15	ug/L	U	15	59
6/20/2005 6:45	Blank	BNA-Water	Acenaphthene	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	Acenaphthylene	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	Aldrin	1.5	ug/L	U	1.5	5.9
6/20/2005 6:45	Blank	BNA-Water	alpha-BHC	1.5	ug/L	U	1.5	5.9
6/20/2005 6:45	Blank	BNA-Water	Anthracene	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	Benzidine	98	ug/L	U	98	390

Appendix 2. Chemical Analyses (continued)

Date Sampled	Field ID	Analysis	Component	Result	Units	Remark	MDL	PQL
6/20/2005 6:45	Blank	BNA-Water	Benzo(a)anthracene	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	Benzo(a)pyrene	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	Benzo(b)fluoranthene	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	Benzo(g,h,i)perylene	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	Benzo(k)fluoranthene	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	beta-BHC	1.5	ug/L	U	1.5	5.9
6/20/2005 6:45	Blank	BNA-Water	Bis(2-chloroethoxy)methane	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	Bis(2-chloroethyl)ether	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	12
6/20/2005 6:45	Blank	BNA-Water	Bis(2-ethylhexyl)phthalate	15	ug/L	U	15	59
6/20/2005 6:45	Blank	BNA-Water	Butyl benzyl phthalate	4.9	ug/L	U	4.9	20
6/20/2005 6:45	Blank	BNA-Water	Chrysene	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	delta-BHC	1.5	ug/L	U	1.5	5.9
6/20/2005 6:45	Blank	BNA-Water	Dibenzo(a,h)anthracene	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	Dieldrin	1.5	ug/L	U	1.5	5.9
6/20/2005 6:45	Blank	BNA-Water	Diethyl phthalate	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	Dimethyl phthalate	49	ug/L	U	49	200
6/20/2005 6:45	Blank	BNA-Water	Di-n-butyl phthalate	4.9	ug/L	U	4.9	20
6/20/2005 6:45	Blank	BNA-Water	Di-n-octyl phthalate	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	Endosulfan I	3.9	ug/L	U	3.9	16
6/20/2005 6:45	Blank	BNA-Water	Endosulfan II	3.9	ug/L	U	3.9	16
6/20/2005 6:45	Blank	BNA-Water	Endosulfan sulfate	1.5	ug/L	U	1.5	5.9
6/20/2005 6:45	Blank	BNA-Water	Endrin	1.5	ug/L	U	1.5	5.9
6/20/2005 6:45	Blank	BNA-Water	Endrin aldehyde	3.9	ug/L	U	3.9	16
6/20/2005 6:45	Blank	BNA-Water	Fluoranthene	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	Fluorene	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	gamma-BHC	1.5	ug/L	U	1.5	5.9
6/20/2005 6:45	Blank	BNA-Water	Heptachlor	1.5	ug/L	U	1.5	5.9
6/20/2005 6:45	Blank	BNA-Water	Heptachlor epoxide	1.5	ug/L	U	1.5	5.9
6/20/2005 6:45	Blank	BNA-Water	Hexachlorobenzene	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	12
6/20/2005 6:45	Blank	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	UJ	2.9	12
6/20/2005 6:45	Blank	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	12
6/20/2005 6:45	Blank	BNA-Water	Indeno(1,2,3-cd)pyrene	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	Isophorone	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	Naphthalene	0.98	ug/L	U	0.98	3.9

Appendix 2. Chemical Analyses (continued)

Date Sampled	Field ID	Analysis	Component	Result	Units	Remark	MDL	PQL
6/20/2005 6:45	Blank	BNA-Water	Nitrobenzene	2	ug/L	U	2	7.8
6/20/2005 6:45	Blank	BNA-Water	N-Nitrosodimethylamine	2	ug/L	U	2	7.8
6/20/2005 6:45	Blank	BNA-Water	N-Nitrosodi-n-propylamine	2	ug/L	U	2	7.8
6/20/2005 6:45	Blank	BNA-Water	N-Nitrosodiphenylamine	2.9	ug/L	U	2.9	12
6/20/2005 6:45	Blank	BNA-Water	Pentachlorophenol	2.9	ug/L	U	2.9	12
6/20/2005 6:45	Blank	BNA-Water	Phenanthrene	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	Phenol	0.98	ug/L	U	0.98	3.9
6/20/2005 6:45	Blank	BNA-Water	Pyrene	0.98	ug/L	U	0.98	3.9
6/20/2005 11:20	Effluent	GC-Water	Alachlor	0.6	ug/L	U	0.6	2.4
6/20/2005 11:20	Effluent	GC-Water	Ametryn	0.05	ug/L	U	0.05	0.2
6/20/2005 11:20	Effluent	GC-Water	Atrazine	0.05	ug/L	U	0.05	0.2
6/20/2005 11:20	Effluent	GC-Water	Azinphos Methyl	0.05	ug/L	U	0.05	0.2
6/20/2005 11:20	Effluent	GC-Water	Bromacil	0.2	ug/L	U	0.2	0.8
6/20/2005 11:20	Effluent	GC-Water	Butylate	0.2	ug/L	U	0.2	0.8
6/20/2005 11:20	Effluent	GC-Water	Chlorpyrifos Ethyl	0.05	ug/L	U	0.05	0.2
6/20/2005 11:20	Effluent	GC-Water	Chlorpyrifos Methyl	0.1	ug/L	U	0.1	0.4
6/20/2005 11:20	Effluent	GC-Water	Diazinon	0.05	ug/L	UJ	0.05	0.2
6/20/2005 11:20	Effluent	GC-Water	Ethion	0.05	ug/L	U	0.05	0.2
6/20/2005 11:20	Effluent	GC-Water	Ethoprop	0.1	ug/L	U	0.1	0.4
6/20/2005 11:20	Effluent	GC-Water	Fenamiphos	0.2	ug/L	U	0.2	0.8
6/20/2005 11:20	Effluent	GC-Water	Fonofos	0.1	ug/L	U	0.1	0.4
6/20/2005 11:20	Effluent	GC-Water	Hexazinone	0.1	ug/L	U	0.1	0.4
6/20/2005 11:20	Effluent	GC-Water	Malathion	0.15	ug/L	UJ	0.15	0.6
6/20/2005 11:20	Effluent	GC-Water	Metalaxyl	0.25	ug/L	U	0.25	1
6/20/2005 11:20	Effluent	GC-Water	Metolachlor	0.5	ug/L	U	0.5	2
6/20/2005 11:20	Effluent	GC-Water	Metribuzin	0.1	ug/L	U	0.1	0.4
6/20/2005 11:20	Effluent	GC-Water	Mevinphos	0.2	ug/L	U	0.2	0.8
6/20/2005 11:20	Effluent	GC-Water	Naled	0.8	ug/L	U	0.8	3.2
6/20/2005 11:20	Effluent	GC-Water	Norflurazon	0.1	ug/L	U	0.1	0.4
6/20/2005 11:20	Effluent	GC-Water	Parathion Ethyl	0.15	ug/L	U	0.15	0.6
6/20/2005 11:20	Effluent	GC-Water	Parathion Methyl	0.1	ug/L	U	0.1	0.4
6/20/2005 11:20	Effluent	GC-Water	Phorate	0.05	ug/L	U	0.05	0.2
6/20/2005 11:20	Effluent	GC-Water	Prometryn	0.15	ug/L	U	0.15	0.6
6/20/2005 11:20	Effluent	GC-Water	Simazine	0.05	ug/L	U	0.05	0.2
6/20/2005 6:45	Blank	GC-Water	Alachlor	0.59	ug/L	U	0.59	2.4
6/20/2005 6:45	Blank	GC-Water	Ametryn	0.049	ug/L	U	0.049	0.2

Appendix 2. Chemical Analyses (continued)

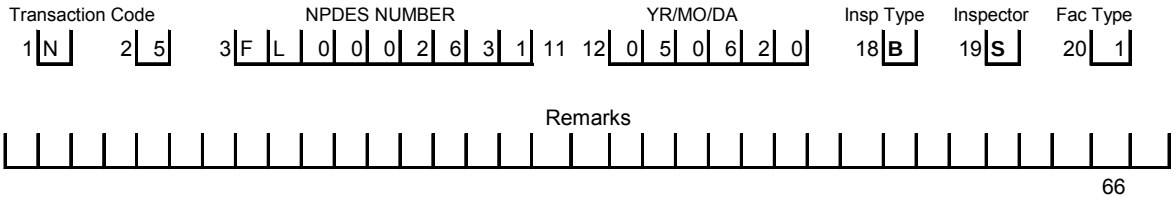
Date Sampled	Field ID	Analysis	Component	Result	Units	Remark	MDL	PQL
6/20/2005 6:45	Blank	GC-Water	Atrazine	0.049	ug/L	U	0.049	0.2
6/20/2005 6:45	Blank	GC-Water	Azinphos Methyl	0.049	ug/L	U	0.049	0.2
6/20/2005 6:45	Blank	GC-Water	Bromacil	0.2	ug/L	U	0.2	0.8
6/20/2005 6:45	Blank	GC-Water	Butylate	0.2	ug/L	U	0.2	0.8
6/20/2005 6:45	Blank	GC-Water	Chlorpyrifos Ethyl	0.049	ug/L	U	0.049	0.2
6/20/2005 6:45	Blank	GC-Water	Chlorpyrifos Methyl	0.098	ug/L	U	0.098	0.39
6/20/2005 6:45	Blank	GC-Water	Diazinon	0.049	ug/L	UJ	0.049	0.2
6/20/2005 6:45	Blank	GC-Water	Ethion	0.049	ug/L	U	0.049	0.2
6/20/2005 6:45	Blank	GC-Water	Ethoprop	0.098	ug/L	U	0.098	0.39
6/20/2005 6:45	Blank	GC-Water	Fenamiphos	0.2	ug/L	U	0.2	0.8
6/20/2005 6:45	Blank	GC-Water	Fonofos	0.098	ug/L	U	0.098	0.39
6/20/2005 6:45	Blank	GC-Water	Hexazinone	0.098	ug/L	U	0.098	0.39
6/20/2005 6:45	Blank	GC-Water	Malathion	0.15	ug/L	UJ	0.15	0.6
6/20/2005 6:45	Blank	GC-Water	Metalaxyl	0.25	ug/L	U	0.25	1
6/20/2005 6:45	Blank	GC-Water	Metolachlor	0.49	ug/L	U	0.49	2
6/20/2005 6:45	Blank	GC-Water	Metribuzin	0.098	ug/L	U	0.098	0.39
6/20/2005 6:45	Blank	GC-Water	Mevinphos	0.2	ug/L	U	0.2	0.8
6/20/2005 6:45	Blank	GC-Water	Naled	0.78	ug/L	U	0.78	3.1
6/20/2005 6:45	Blank	GC-Water	Norflurazon	0.098	ug/L	U	0.098	0.39
6/20/2005 6:45	Blank	GC-Water	Parathion Ethyl	0.15	ug/L	U	0.15	0.6
6/20/2005 6:45	Blank	GC-Water	Parathion Methyl	0.098	ug/L	U	0.098	0.39
6/20/2005 6:45	Blank	GC-Water	Phorate	0.049	ug/L	U	0.049	0.2
6/20/2005 6:45	Blank	GC-Water	Prometryn	0.15	ug/L	U	0.15	0.6
6/20/2005 6:45	Blank	GC-Water	Simazine	0.049	ug/L	U	0.049	0.2
6/20/2005 11:20	Effluent	Metals-Water	Aluminum	3.75E+03	ug/L		5	20
6/20/2005 11:20	Effluent	Metals-Water	Arsenic	25	ug/L		4	16
6/20/2005 11:20	Effluent	Metals-Water	Cadmium	0.5	ug/L	U	0.5	2
6/20/2005 11:20	Effluent	Metals-Water	Calcium	75.7	mg/L		0.05	0.2
6/20/2005 11:20	Effluent	Metals-Water	Chromium	3	ug/L	I	2	8
6/20/2005 11:20	Effluent	Metals-Water	Copper	5.4	ug/L	I	5	20
6/20/2005 11:20	Effluent	Metals-Water	Iron	685	ug/L		10	40
6/20/2005 11:20	Effluent	Metals-Water	Lead	2	ug/L	I	0.75	3
6/20/2005 11:20	Effluent	Metals-Water	Magnesium	16.6	mg/L		0.01	0.04
6/20/2005 11:20	Effluent	Metals-Water	Nickel	7	ug/L	I	2	8
6/20/2005 11:20	Effluent	Metals-Water	Selenium	5	ug/L	U	5	20
6/20/2005 11:20	Effluent	Metals-Water	Silver	0.25	ug/L	U	0.25	1

Appendix 2. Chemical Analyses (continued)

Date Sampled	Field ID	Analysis	Component	Result	Units	Remark	MDL	PQL
6/20/2005 11:20	Effluent	Metals-Water	Zinc	18	ug/L		3	12
6/20/2005 6:45	Blank	Metals-Water	Aluminum	5	ug/L	U	5	20
6/20/2005 6:45	Blank	Metals-Water	Arsenic	4	ug/L	U	4	16
6/20/2005 6:45	Blank	Metals-Water	Cadmium	0.05	ug/L	U	0.05	0.2
6/20/2005 6:45	Blank	Metals-Water	Calcium	0.05	mg/L	U	0.05	0.2
6/20/2005 6:45	Blank	Metals-Water	Chromium	2	ug/L	U	2	8
6/20/2005 6:45	Blank	Metals-Water	Copper	0.5	ug/L	U	0.5	2
6/20/2005 6:45	Blank	Metals-Water	Iron	10	ug/L	U	10	40
6/20/2005 6:45	Blank	Metals-Water	Lead	0.76	ug/L	U	0.76	3
6/20/2005 6:45	Blank	Metals-Water	Magnesium	0.01	mg/L	U	0.01	0.04
6/20/2005 6:45	Blank	Metals-Water	Nickel	2	ug/L	U	2	8
6/20/2005 6:45	Blank	Metals-Water	Selenium	0.5	ug/L	U	0.5	2
6/20/2005 6:45	Blank	Metals-Water	Silver	0.025	ug/L	U	0.025	0.1
6/20/2005 6:45	Blank	Metals-Water	Zinc	3	ug/L	U	3	12
6/20/2005 11:20	Effluent	Nutrients-Liquid	Ammonia-N	1.1	mg N/L		0.05	0.1
6/20/2005 11:20	Effluent	Nutrients-Liquid	Kjeldahl Nitrogen	4.3	mg N/L		0.12	0.4
6/20/2005 11:20	Effluent	Nutrients-Liquid	NO2NO3-N	0.02	mg N/L	U	0.02	0.05
6/20/2005 11:20	Effluent	Nutrients-Liquid	O-Phosphate-P	0.76	mg P/L		0.08	0.2
6/20/2005 11:20	Effluent	Nutrients-Liquid	Total-P	1.1	mg P/L		0.1	0.3
6/20/2005 6:45	Blank	Nutrients-Liquid	Ammonia-N	0.12	mg N/L		0.01	0.02
6/20/2005 6:45	Blank	Nutrients-Liquid	Kjeldahl Nitrogen	0.13	mg N/L	I	0.06	0.2
6/20/2005 6:45	Blank	Nutrients-Liquid	NO2NO3-N	0.004	mg N/L	U	0.004	0.01
6/20/2005 6:45	Blank	Nutrients-Liquid	O-Phosphate-P	0.004	mg P/L	U	0.004	0.01
6/20/2005 6:45	Blank	Nutrients-Liquid	Total-P	0.02	mg P/L	U	0.02	0.06

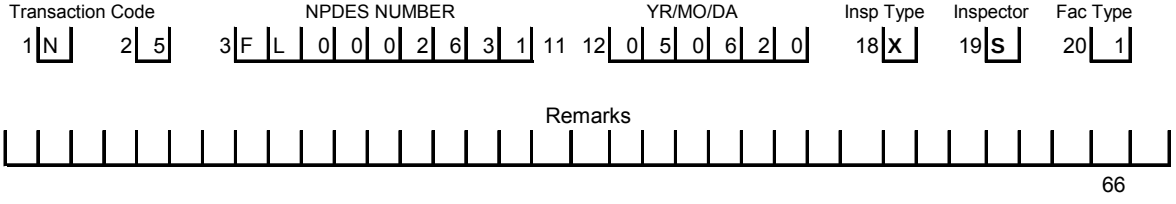
The Bioassay of Bay County WWTP Military Point Lagoon effluent sampled on June 20, 22 and 24, 2005, NPDES #FL0002631.

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



The Priority Pollutants Analysis of Bay County WWTP Military Point Lagoon effluent sampled on June 20, 2005, NPDES #FL0002631.

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



Biological Analyses of Bay County WWTP Military Point Lagoon effluent sampled on June 20, 2005, NPDES #FL0002631.

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

