

Bioassays of

Biltmore Condominiums

Palm Beach, Palm Beach County, Florida

NPDES #FL0037168

Sampled 5/7/01

August 2001

Biology Section

Division of Resource Assessment & Management

Comprehensive Quality Assurance Plan #870346G

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Bureau of Laboratories
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Introduction

Biltmore Condominiums, 150 Bradley Place, Palm Beach, Palm Beach County, NPDES# FL0037168, tests performed on 8 to 10 May 2001.

This facility has a design flow of 1.3 MGD. The wastewater from this facility is once-though, non-contact air conditioning cooling water that is not treated prior to discharge into the Class III marine waters of Lake Worth Lagoon (facility summary provided by Bob Hennes, FDEP, West Palm Beach).

The toxicity tests discussed in this report were performed in accordance with methods described by Weber, 1993, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, 4th Edition, EPA/600/4-90/027F.

Results and Discussion

The FDEP Biology Section performed two 48-hour static acute screening toxicity bioassays on a sample of effluent from this facility. The test species used for these bioassays were the mysid shrimp, *Americamysis bahia*, and the inland silverside, *Menidia beryllina*. The test results did not indicate toxicity within 48 hours (Table 1).

Total residual chlorine and total ammonia in the sample were not detected in the lab. Further chemical analyses were performed on the sample, and several metals and chloride were identified (Table 2).

Conclusion

The sample of effluent collected from this facility on May 7, 2001, did not show acute toxicity to either test species within 48 hours.

Table 1. Data recorded during the 48-hour acute screening bioassays of a sample of effluent from the Biltmore Condominiums, 150 Bradley Place, Palm Beach, Palm Beach County, Florida, NPDES# FL0037168, performed on 8 to 10 May 2001.

Facility:	**Biltmore Condominiums**			**NPDES #**	**FL0037168**	Facility Type:	**Air Conditioning**
Location:	150 Bradley Place			Contact/District:	T. Brown/ Southeast District		**Cooling System**
County:	Palm Beach			Test type:	static acute screen		
Sample Collection Date:	5/7/01	Time:	1100	# tests:	2	Receiving Water:	Lake Worth Lagoon
Test Beginning Date:	5/8/01	Time:	1340	Chlorination Type:	Non-chlorinated		
Test Ending Date:	5/10/01	Time:	1315				**Page 1 of 1**

Total Residual CL2	mg/L	Method
Field:	-	-
Lab:	<0.03	Hach

Ammonia	Total (mg/L)	Unionized (mg/L)
NSW:	<0.051	<0.051
100% Sample:	<0.051	<0.051

Alk & Hardness	Alkalinity (mg/L)	Hardness (mg/L)
NSW:	149	-
100% Sample:	187	-

Salinity[C]	(ppt)
Control Water:	26
100% Sample:	26

[C] Salinity based on conductivity and temperature measurements.

Organism: *Amerycanmysis bahia* Life stage: 3 days

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature[A]			Dissolved Oxygen			Conductivity Uncorrected mmhos/cm	
Concentrations	Volume(mL)	0 hr	24 hr	48 hr	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	48 hour
Control A	0/500	5	5	5	8.2	8.0	8.0	25.5	24.9	25.8	6.8	6.0	5.6	39.8	41.4
Control B	0/500	5	5	5	8.2	8.0	8.0	25.4	25.8	25.0	6.8	5.5	5.7	40.7	41.6
Control C	0/500	5	5	5	8.2	8.0	8.1	25.4	24.7	25.3	6.8	5.8	5.6	40.8	42.0
Control D	0/500	5	5	5	8.2	8.0	8.1	25.5	25.3	25.3	6.8	5.7	5.6	40.8	41.8
100% A	500/0	5	5	5	7.9	8.0	8.2	25.6	24.4	25.9	6.5	5.9	5.5	41.3	43.2
100% B	500/0	5	5	5	7.9	8.0	8.1	25.7	24.6	25.3	6.5	5.7	5.6	40.8	41.9
100% C	500/0	5	5	5	7.9	8.0	8.1	25.7	26.1	24.5	6.5	5.5	5.7	41.1	42.0
100% D	500/0	5	5	5	7.9	8.0	8.1	25.7	25.8	24.4	6.5	5.5	5.6	40.9	41.9

[A] Temperatures of room and test incubator were continuously recorded on a strip chart recorder.
Room Temperature range for the test period was 24.5-25.5°C.
Incubator #2 temperature range for the test period was 24.5-25.5°C.

Organism: *Menidia beryllina* Life stage: 12 days

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature[B]			Dissolved Oxygen			Conductivity Uncorrected mmhos/cm	
Concentrations	Volume(mL)	0 hr	24 hr	48 hr	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	48 hour
Control A	0/500	5	5	5	8.2	8.1	8.2	25.5	25.0	25.0	6.7	6.0	5.8	40.2	40.6
Control B	0/500	5	5	5	8.2	8.1	8.2	25.4	25.6	25.2	6.7	5.8	5.7	40.2	42.6
Control C	0/500	5	5	5	8.2	8.1	8.2	25.4	27.1	25.4	6.8	5.6	5.6	40.7	42.5
Control D	0/500	5	5	5	8.2	8.1	8.2	25.4	27.1	25.7	6.8	5.5	5.5	40.8	42.2
100% A	500/0	5	5	5	7.9	8.1	8.2	25.5	25.3	24.9	6.6	5.8	5.6	41.2	42.5
100% B	500/0	5	5	5	7.9	8.1	8.2	25.7	25.2	25.1	6.5	5.8	5.5	41.1	41.7
100% C	500/0	5	5	5	7.9	8.1	8.2	25.7	26.2	25.2	6.4	5.7	5.5	40.8	43.9
100% D	500/0	5	5	5	7.9	8.1	8.2	25.7	25.2	25.4	6.4	5.8	5.4	40.8	41.9

[B] Temperatures of room and test incubator were continuously recorded on a strip chart recorder.
Room Temperature range for the test period was 24.5-25.5°C.
Incubator #3 temperature range for the test period was 24.5-25.5°C.

Table 2. Results of chemical analyses on the sample of effluent from Biltmore Condominiums sampled on May 7, 2001.

Metals

Calcium	344	mg/L
Iron	68	µg/L [1]
Magnesium	1010	mg/L

Pesticides and Herbicides

None detected

Base, Neutral, & Acid Extractable Organics

None detected

Chloride

Chloride	15000 mg Cl/L

[1] Value reported is less than the minimum quantitation limit, and greater than or equal to the minimum detection limit.

FDEP Biology Section — Acute Bioassay Bench Sheet

Sample Source: 51-BC-1 Biltmore
County: Palm Beach
Contact / District: T. Brown/T. Davis/SE-DIST
NPDES Permit #: FL0037168
LIMS Sample #: 522130 LIMS Job #: TLH2001-05-08-05-01
sample log —
Test Type: (Screening) | Definitive
(Static) | Static Renewal | Flow-through
Test Number: 1 of 2

Sample Collection: Date 5/7/01 Time 1100
Test Beginning: Date 5/8/01 Time 1325
Test Ending: Date 5/10/01 Time 1315
Organism Batch #: 123 Diluent Batch #: NSW
Organism Age: 3 days SRT toxicant batch #: —
Test organism: A. bahia

Remarks: initial sample DO 4.1 mg/L, sample aerated to DO 6.5 (2 hours 15 min) MF 5/8/01

Conc.	Chamber #	Number Live 0 hr	24 h	48 h	pH 0 hr	24 h	48 h	Temperature (°C) 0 hr	24 h	48 h	D.O. (mg/L) 0 hr	24 h	48 h	UNCORRECTED Cond. (mmhos/cm) Cond. (µmhos/cm) 0 hr	24 h	48 h
CNTL	A F1	5	5	5	8.2	8.0	8.0	25.5	24.9	25.8	6.8	6.0	5.6	39.8	39.8	41.4
	B F2	5	5	5	8.2	8.0	8.0	25.4	25.8	25.0	6.8	5.5	5.7	40.7	41.4	41.6
	C F3	5	5	5	8.2	8.0	8.1	25.4	24.7	25.3	6.7	5.8	5.6	40.8	41.8	42.0
	D F4	5	5	5	8.2	8.0	8.1	25.5	25.3	25.3	6.8	5.7	5.6	40.8	41.1	41.8
100%	A F5	5	5	5	7.9	8.0	8.2	25.4	24.4	25.9	6.5	5.9	5.5	41.3	41.3	43.2
	B F6	5	5	5	7.9	8.0	8.1	25.7	24.6	25.3	6.5	5.7	5.6	40.8	40.9	41.9
	C F7	5	5	5	7.9	8.0	8.1	25.7	26.1	24.5	6.5	5.5	5.7	41.1	42.4	42.0
	D F8	5	5	5	7.9	8.0	8.1	25.7	25.8	24.4	6.5	5.5	5.6	40.9	41.8	41.9
measured by:		MF	SG	YMK	YMK	SG	SG	YMK	SG	SG	YMK	SG	SG	YMK	SG	SG
recorded by:		DPH	SG	YMK	DPH	MF	YMK	DPH	YMK	YMK	DPH	YMK	YMK	YMK	YMK	YMK

Investigators' Signatures
Shannon Gerard
Delia Rankin-Hinds
Yasser Kattan
Marshall Faircloth
Jessica Lyons
AB Wolfe
reviewer

form updated 3/3/99

Temperature Range °C
Incubator # 3 24.5-25.5
Room B246 24.5-25.5

NSW Salt Water / Well Water / 20% Min Water

Water Quality Parameters		Sample	Method	Measured by	Verified by
Field Total Residual Cl2 (mg/L):		NA	NA	NA	SG
Lab Total Residual Cl2 (mg/L):	<0.03	<0.03	DR100	SG	SG
Alkalinity (mg/L as $CaCO_3$):	149	187	Hach	JA	SG
Hardness (mg/L as $CaCO_3$):	NA	NA	Hach	JA	SG
Total ammonia (mg/L as N):	<0.051	<0.051	Denver	SG/YMK	SG
Salinity:	≈26	≈26	ysi	SG	SG

FDEP Biology Section — Acute Bioassay Bench Sheet

Sample Source: 51-BC-1 Biltmore
County: Palm Beach
Contact / District: T. Brown / T. Davis / SE-DIST
NPDES Permit #: FL00 37168
LIMS Sample #: 522130 LIMS Job #: TLH2001-05-08-05-01
sample log ____

Sample Collection: Date 5/7/01 Time 1100
Test Beginning: Date 5/8/01 Time 1340
Test Ending: Date 5/10/01 Time 1315
Organism Batch #: 17 Diluent Batch #: NSW
Organism Age: 12 days SRT toxicant batch #: —
Test organism: M. bahia

Test Type: ~~Screening~~ | Definitive
~~Static~~ Static Renewal | Flow-through
Test Number: 2 of 2

Remarks: initial sample DO 4.1 mg L. Sample aerated to DO 6.5 (2 hours 15 min) mf-s/sb/

Conc.	Chamber #	Number Live 0 hr	Number Live 24 h	Number Live 48 h	pH 0 hr	pH 24 h	pH 48 h	Temperature (°C) 0 hr	Temperature (°C) 24 h	Temperature (°C) 48 h	D.O. (mg/L) 0 hr	D.O. (mg/L) 24 h	D.O. (mg/L) 48 h	UNCORRECTED Cond (mmhos/cm) 0 hr	UNCORRECTED Cond (mmhos/cm) 24 h	UNCORRECTED Cond (mmhos/cm) 48 h
CNTL A	F9	5	5	5	8.2	8.1	8.2	25.3	25.0	25.0	6.7	6.0	5.8	40.2	40.1	40.6
B	F10	5	5	5	8.2	8.1	8.2	25.4	25.6	25.2	6.7	5.8	5.7	40.2	42.3	42.6
C	F11	5	5	5	8.2	8.1	8.2	25.4	27.1	25.4	6.8	5.6	5.6	40.7	43.9	42.5
D	F12	5	5	5	8.2	8.1	8.2	25.4	27.1	25.7	6.8	5.5	5.5	40.8	42.5	42.2
100% A	F13	5	5	5	7.9	8.1	8.2	25.5	23.3	24.9	6.6	5.8	5.6	41.2	41.9	42.5
B	F14	5	5	5	7.9	8.1	8.2	25.7	25.2	25.1	6.5	5.8	5.5	41.1	41.4	41.7
C	F15	5	5	5	7.9	8.1	8.2	25.7	26.2	25.2	6.4	5.7	5.5	40.8	43.6	43.9
D	F16	5	5	5	7.9	8.1	8.2	25.7	25.2	25.4	6.4	5.8	5.4	40.8	41.3	41.9
measured by:		MF	[illegible]	SG	YMK	SG	SG	YMK	SG	SG	YMK	SG	SG	YMK	[illegible]	SG
recorded by:		DPH	[illegible]	SG	DPH	[illegible]	[illegible]	DPH	[illegible]	[illegible]	DPH	[illegible]	[illegible]	DPH	[illegible]	[illegible]

Investigators' Signatures
Shannon Canady
Della Parker-Hanson
Yasser Kattan
Marshall Faircloth
Jodie Lynch
A H Wolfe
reviewer

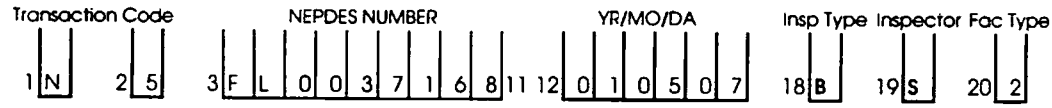
form updated 3/3/99

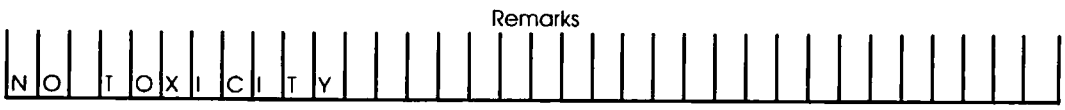
Temperature Range °C
Incubator # B 24.5 - 25.5
Room 6246 24.5 - 25.5

Water Quality Parameters	NSW Salt Water: Well Water	20% Min Water	Sample	Method	Measured by	Verified by
Field Total Residual Cl2 (mg/L):						
Lab Total Residual Cl2 (mg/L):	<0.03		<0.03	PR100	SG	SG
Alkalinity (mg/L as $CaCO_3$):	149		187	Hach	JA	SG
Hardness (mg/L as $CaCO_3$):	NA		NA	Hach	JA	SG
Total ammonia (mg/L as N):	<0.051		<0.051	Denver	SG/YMK	SG
Salinity:	≈26		≈26	YSI	SG	SG

The Bioassay of Biltmore Condominiums effluent sampled on May 7, 2001, NPDES #FL0037168.

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

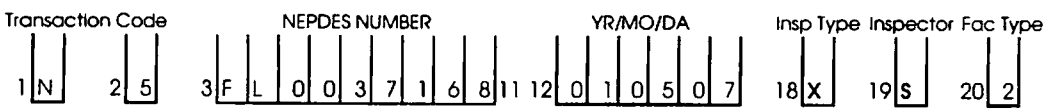


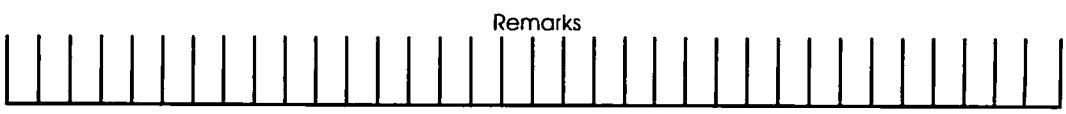


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The Priority Pollutants Analysis for Bioassay of Biltmore Condominiums effluent sampled on May 7, 2001, NPDES #FL0037168.

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





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