

Bioassays of

Seagate Towers Condominium Association, Inc.

Palm Beach County

NPDES #FL0001911

Sampled July 26, 2004

November 2004

Biology Section
Bureau of Laboratories
Division of Resource Assessment and Management

Quality Manual No. 870346G
NELAC Certification No. E31780

Seagate Towers Condominium Association, Inc., 200-220 MacFarlane Drive, Delray Beach, Palm Beach County, Florida, NPDES #FL0001911. Effluent samples for this facility were collected on July 26, 2004.

Introduction

Seagate Towers Condominium Association, Inc., has a set of two outfalls permitted for an air conditioner once-through non-contact cooling system. The combined design flow for both outfalls is 1.44 million gallons per day (MGD) maximum. The average flow was 1.15 MGD from January 2003 to May 2004. The approximate average flow for each outfall is 0.575 MGD. The cooling water does not undergo any treatment before it is discharged into the Intra-Coastal Waterway, a Class III Marine surface water body. There are no mixing zones for this facility, and no toxicity tests are required by the permit (facility information provided by Tjerk van Veen of FDEP Southeast District office).

Methods

Samples were collected from the NPDES D-001sampling point by Terry Davis and Tjerk van Veen (FDEP Southeast District office) 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 toxicity tests and algal growth potential test were performed following internal DEP SOP's TA07_03,TA07_04, and TA08_01 through TA08_07. All internal DEP SOP's are available on the web at: http://www.floridadep.org/labs/cgi-bin/sop/biosop.asp.

Prior to test initiation, the bioassay samples were aerated for 30 minutes at a rate of approximately 100 bubbles/minute, increasing the dissolved oxygen concentration from 4.7 mg/L to 7.0 mg/L.

Toxicity Test Results

Tests were performed July 27-29, 2004.

Americamysis bahia 48-hr acute screening bioassay –	LC_{50} > 100%, 5%* mortality in 100% sample at 48 hours
Menidia beryllina 48-hr acute screening bioassay –	LC_{50} > 100%, 0%* mortality in 100% sample at 48 hours

See Appendix 1 for bioassay bench sheets.

*NOTE: In a 48-hr acute screening test of 100% effluent, mortality of <20% provides reasonable assurance that the effluent meets the acute toxicity criterion of Florida's Surface Water Quality Standards (Rule 62-302.500 (1)(a)4, F.A.C.). Mortality between 20-50% mortality indicates low to moderate levels of toxicity, and further action may be required. Mortality of >50% provides reasonable assurance that the effluent fails to meet the minimum requirement to discharge to waters of the state (Rule 62-4.244(3)(a), F.A.C.).

Algal Growth Potential

The effluent AGP was 16.3 mg dry wt/L of *Dunaliella tertiolecta.* Raschke and Shultz found that Algal Growth Potential (AGP) values above 10.0 mg dry weight/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 and total ammonia were not detected in the bioassay sample in the laboratory. The total ammonia concentration in the sample collected and preserved for chemical analysis was 0.046 mg/L. The calculated unionized ammonia concentration based on field measurements of pH, temperature, and salinity was 0.004 mg/L.

The effluent iron level (420 µg/L) exceeded Class III marine water quality criterion of 300 µg/L (62-302.530(39)). Aluminum and copper were detected in the effluent at levels that comply with Class III marine water quality criteria, and lead was detected between the laboratory minimum quantitation limit and the practical quantitation limit.

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 D-001 for this facility on July 26, 2004, did not show acute toxicity to either test species during the 48-hour acute bioassays. The effluent AGP result exceeded the "problem" threshold for marine receiving waters. The effluent iron concentration exceeded its marine water quality criterion.

Table 1. Measured algal growth potential (AGP) of Dunaliella tertiolecta *and inorganic N:P ratio for samples collected at Seagate TowerCondominiums Association, Inc., on July 26, 2004.*

Location	AGP (measured)	Inorganic N:P ratio
Effluent Sample	16.3	2.44

Table 2. Effluent limits, Class III Marine Criteria, and chemical data for samples from Seagate Towers Condominium Association, Inc., collected on July 26, 2004.

Seagate Towers Condominium	Class III Marine Stds	Effluent Limits	Effluent Samples
Organic Constituents (µg/L)			
None detected	-	-	-
Metals (µg/L unless otherwise noted)			
Aluminum	≤ 1500	-	86
Arsenic	≤ 50	-	18 U
Cadmium	≤ 9.3	-	0.25 U
Calcium (mg/L)	-	-	384
Chromium-III	-	-	6 U
Copper	≤ 3.7	-	1.7 A
Iron	≤ 300	-	420
Lead	≤ 8.5	-	0.55 I
Magnesium (mg/L)	-	-	1130
Nickel	≤ 8.3	-	6 U
Selenium	≤ 71	-	5 U
Silver	-	-	0.1 U
Zinc	≤ 86	-	9 U
Nutrients (mg/L)			
Ortho-phosphate	-	-	0.19
Total Phosphorus	-	-	0.21
Ammonia	-	-	0.46
Unionized Ammonia	-	-	0.004 c
Nitrate+Nitrite	-	-	0.004 I
Total Kjeldahl Nitrogen	-	-	0.86
Organic Nitrogen	-	-	0.4 c
Total Nitrogen	-	-	0.86 c
General Physical and Chemical Parameters			
pH (S.U.)	6.5 - 8.5	6.5 - 8.5	7
Salinity (ppt) (lab)	-	-	31
Temperature (C)	-	≤ 37.7	29.5
AGP (mg DryWt/L)	-	-	16.3

Value exceeds the Class III Marine Water Quality Criteria (62-302, F.A.C.)

c - calculated value

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 minimum detection limit

FDEP Biology Section - Acute
Bioassay Bench Sheets

Facility: Seagate Towers Condominium Association
Address: 220 MacFarlane Dr.
City: Delray Beach County: Palm Beach
Contact/District: T Davis - T vanVoon / Southeast
NPDES Permit #: FL 0001911
LIMS Job #: TLH-2004-07-27-71 LIMS Sample #: 77-0146

Sample Collection: Date: 7/26/04 Time: 1045
Hold time Start: Date: 7/26/04 Time: 1045

Comments:
control water (NSW) diluted with well water to ~31 ppt.
No toxicity requirement in Permit. MF 7/27/04

Lims Data Entry: 8/4/04 mf Data Entry Verification: 8.6.04 JO

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

Test Type: (Screening)/Definitive
(Static) / Static Renewal / Flow-through
Test Duration: (48) 96 Hours.
Light Intensity : 50 - 100 ft. candles.
Photoperiod : 16 hours light 8 hours dark.
Initial sample handling:

Test 1 validation:
Control survival ≥90%: (Yes) No
Temperature Range ≤3°C: (Yes) No

Test 2 validation:
Control survival ≥90%: (Yes) No
Temperature Range ≤3°C: (Yes) No

PH adjustment : yes (no) Initial pH NaOH N HCl N Drops mL Final pH
Aeration : (yes) no Initial DO: 4.7 mg/L Final DO: 7.0 mg/L Duration: 30 minutes Rate: ~ 100 bubbles/min
Salinity adjusted (Test 1): yes (no) Initial Salinity: Final Salinity: Salts Hypersaline brine
Salinity adjusted (Test 2): yes (no) Initial Salinity: Final Salinity: Salts Hypersaline brine
Dechlorination: yes (no) mL of 0.025N Sodium Thiosulfate per liter of sample. Final TRC

Temperature Range °C
Incubator # 3 Range ~3.5-24°C
Room B246: 25.5-27.0°C
Waterbath: N/A

Sample Validation:
Temperature: Shipped ≤6°C (Yes) No Hand Delivered: Cooling (received °C < collected °C) Yes No
Holding Time: ≤36 Hours (Yes) No (Composite-end of collection; grab-when collected; 4 in 24 - time last sample collected)

Investigators' Signatures
Denise Nicholson
Christie Lorenzi
Sarah Pickard
Marshall Faircloth
James Hanks
Myrl Wellendorf
REVIEWER

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Water Quality Parameters	20% DMW	Well Water	Salt Water ASW (NSW) Test 1	Salt Water ASW (NSW) Test 2	Moderately Hard Water	Original Sample	Method	Measured by	Verified by
Field Total Residual Cl2 (mg/L):	N/A	N/A	N/A	N/A	N/A	—	—	not measured	mf
Lab Total Residual Cl2 (mg/L):			<0.03	<0.03		<0.03	HACH	SP	mf
Alkalinity (mg/L as $CaCO_3$):			141	141		163	HACH	DN/JO	mf
Hardness (mg/L as $CaCO_3$):			—	—		—	HACH	—	—
Total Ammonia (mg/L as N):			<0.068	<0.068		<0.068	DENVER	DN	mf
Salinity (ppt):			~31	~31		~31	YSI	mf	mf

FDEP Biology Section - - Bioassay Bench Sheet

Survival

LIMS Sample #: 770146 Test #: 1 Test Started: Date 7/27/04 Time: 1430

Organism: A. bahia Test Ended: Date 7/29/04 Time: 1310

Organism Batch: 4 Diluent/ Batch: NS10 / N/A

Organism Age: 6 days Food: YCT P. subcapitata (Artemia)

Chamber Size 1000 mL Batch: ___ ___ 019404256

Test Volume 500 mL Feeding: (Prior to test) - Prior to renewal (Daily)

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
CTRL	A	E1	5	5	5			
	B	E2	5	5	5			
	C	E3	5	5	5			
	D	E4	5	5	5			
100%	A	D.N. ~~E5~~ E9	5	5	5			
	B	~~E6~~ E10	5	5	5			
	C	~~E7~~ E11	5	5	5			
	D	E12	5	5	4 1m			
Organisms loaded by: JD		Checked by:	JD	MF	MF			
Loading Verified by: MF		(initials)	Comments:					

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

Test Results:

% mortality in 100% sample 5

LC_{50}: >100% If Calculated: 95% CI ______ Method: ______

Screening Tests: Report LC50 as >100%, =100%, or <100%.

Substitue highest test concentration used if other than 100% (example: Ocean outfall tested at 30% concentration).

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FDEP Biology Section - - Bioassay Bench Sheet

Survival

LIMS Sample #: 770146 Test #: 2 Test Started: Date 7/27/04 Time: 1420

Organism: M. beryllina Test Ended: Date 7/29/04 Time: 1315

Organism Batch: 24 Diluent/ Batch: NSW1 NA

Organism Age: 10 days Food: YCT *P. subcapitata* (Artemia) 019404256

Chamber Size 1000 mL Batch: ___ ___

Test Volume 500 mL Feeding: (Prior to test) - Prior to renewal - Daily

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
CTRL	A	E13	5	5	5			
	B	E14	5	5	5			
	C	E15	5	5	5			
	D	E16	5	5	5			
100%	A	E21	5	5	5			
	B	E22	5	5	5			
	C	E23	5	5	5			
	D	E24	5	5	5			
Organisms loaded by: JD		Checked by:	JD	MF	MF			
Loading Verified by: MF		(initials)						

Comments:

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

Test Results:

Mortality in 100% sample 0

LC: >100% If Calculated: 95% CI ___ Method: ___

Screening Tests: Report LC50 as >100%, =100%, or <100%.

Substitue highest test concentration used if other than 100% (example: Ocean outfall tested at 30% concentration).

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Bioassay Parameters

LIMS Sample # : 770146 Test # : 1 of 2

TEST SOP: TA07_03 Test Species: *Ceriodaphnia dubia* *Cyprinella leedsi* *Pimephales promelas* *Americamysis bahia* *Menidia beryllina* Other:

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Concentration CTRL	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	8.3	8.1	7.9			
Temperature °C	25.4	24.7	25.1			
Dissolved Oxygen mg/L	7.0	6.2	5.2			
Conductivity µmhos (mmhos)	46.2	43.0	45.6			
(initials) Measured by:	CAP	DN	MF			
(initials) Recorded by:	CAP	DN	DN			

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	8.0	8.0	7.9			
Temperature °C	25.4	25.1	25.3			
Dissolved Oxygen mg/L	6.7	6.0	5.2			
Conductivity µmhos (mmhos)	48.0	47.0	47.2			
(initials) Measured by:	CAP	DN	MF			
(initials) Recorded by:	CAP	DN	DN			

Comments:

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate						
pH (S.U.)						
Temperature °C						
Dissolved Oxygen mg/L						
Conductivity µmhos mmhos						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate						
pH (S.U.)						
Temperature °C						
Dissolved Oxygen mg/L						
Conductivity µmhos mmhos						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

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Bioassay Parameters

LIMS Sample # : 770146 **Test # :** 2 **of** 2

TEST SOP: TA07_ 04 **Test Species:** *Ceriodaphnia dubia Cyprinella leedsi Pimephales promelas Americamysis bahia Menidia beryllina* Other: _____

V.1 2/24/04

Concentration CTRL	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	8.3	8.0	7.9			
Temperature °C	25.5	24.7	25.8			
Dissolved Oxygen mg/L	7.0	6.1	5.4			
Conductivity µmhos mmhos	46.1	43.3	48.6			
(initials) Measured by:	CAP	DN	MF			
(initials) Recorded by:	CAP	DN	DN	X		

Comments:

Concentration 100 %	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	8.0	8.0	8.0			
Temperature °C	25.4	24.7	25.8			
Dissolved Oxygen mg/L	6.1	6.0	5.5			
Conductivity µmhos mmhos	47.1	45.8	48.3			
(initials) Measured by:	CAP	DN	MF			
(initials) Recorded by:	CAP	DN	DN			

Comments:

Concentration ~~100~~ %	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate						
pH (S.U.)						
Temperature °C						
Dissolved Oxygen mg/L						
Conductivity µmhos mmhos						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate						
pH (S.U.)						
Temperature °C						
Dissolved Oxygen mg/L						
Conductivity µmhos mmhos						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

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Appendix 2. Chemical Analyses performed on the effluent from the Seagate Towers Condominium Association, Inc. cooling process outfall D-001, sampled on July 26, 2004.

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
7/26/04	51-ST-1	Bio-AGP/LimNut	Algal Growth Potential	16.3	mg DryWt/L		0.1	0.3
7/26/04	51-ST-1	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	0.85	ug/L	U	0.85	2.6
7/26/04	51-ST-1	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	0.85	ug/L	U	0.85	2.6
7/26/04	51-ST-1	Bio-Toxicology	Bioassay-Acute-Screen-SW-Fish	100	LC50	L		
7/26/04	51-ST-1	Bio-Toxicology	Bioassay-Acute-Screen-SW-Mysid	100	LC50	L		
7/26/04	51-ST-1	BNA-Water	1,2,4-Trichlorobenzene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	1,2-Dichlorobenzene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	1,3-Dichlorobenzene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	1,4-Dichlorobenzene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	2,4,6-Trichlorophenol	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	2,4-Dichlorophenol	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	2,4-Dimethylphenol	48	ug/L	U	48	190
7/26/04	51-ST-1	BNA-Water	2,4-Dinitrophenol	14	ug/L	UJ	14	58
7/26/04	51-ST-1	BNA-Water	2,4-Dinitrotoluene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	2,6-Dinitrotoluene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	2-Chloronaphthalene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	2-Chlorophenol	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	12
7/26/04	51-ST-1	BNA-Water	2-Nitrophenol	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	3,3'-Dichlorobenzidine	38	ug/L	U	38	150
7/26/04	51-ST-1	BNA-Water	4,4'-DDD	1.4	ug/L	U	1.4	5.8
7/26/04	51-ST-1	BNA-Water	4,4'-DDE	1.4	ug/L	U	1.4	5.8
7/26/04	51-ST-1	BNA-Water	4,4'-DDT	1.4	ug/L	U	1.4	5.8
7/26/04	51-ST-1	BNA-Water	4-Bromophenyl phenyl ether	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	4-Chloro-3-methylphenol	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.7
7/26/04	51-ST-1	BNA-Water	4-Nitrophenol	14	ug/L	U	14	58
7/26/04	51-ST-1	BNA-Water	Acenaphthene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	Acenaphthylene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	Aldrin	1.4	ug/L	U	1.4	5.8
7/26/04	51-ST-1	BNA-Water	alpha-BHC	1.4	ug/L	U	1.4	5.8
7/26/04	51-ST-1	BNA-Water	Anthracene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	Benzidine	96	ug/L	U	96	380
7/26/04	51-ST-1	BNA-Water	Benzo(a)anthracene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	Benzo(a)pyrene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	Benzo(b)fluoranthene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	Benzo(g,h,i)perylene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	Benzo(k)fluoranthene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	beta-BHC	1.4	ug/L	U	1.4	5.8
7/26/04	51-ST-1	BNA-Water	Bis(2-chloroethoxy)methane	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	Bis(2-chloroethyl)ether	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	12
7/26/04	51-ST-1	BNA-Water	Bis(2-ethylhexyl)phthalate	14	ug/L	U	14	58
7/26/04	51-ST-1	BNA-Water	Butyl benzyl phthalate	4.8	ug/L	U	4.8	19
7/26/04	51-ST-1	BNA-Water	Chrysene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	delta-BHC	1.4	ug/L	U	1.4	5.8
7/26/04	51-ST-1	BNA-Water	Dibenzo(a,h)anthracene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	Dieldrin	1.4	ug/L	U	1.4	5.8
7/26/04	51-ST-1	BNA-Water	Diethyl phthalate	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	Dimethyl phthalate	48	ug/L	U	48	190

7/26/04	51-ST-1	BNA-Water	Di-n-butyl phthalate	4.8	ug/L	U	4.8	19
7/26/04	51-ST-1	BNA-Water	Di-n-octyl phthalate	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	Endosulfan I	3.8	ug/L	U	3.8	15
7/26/04	51-ST-1	BNA-Water	Endosulfan II	3.8	ug/L	U	3.8	15
7/26/04	51-ST-1	BNA-Water	Endosulfan sulfate	1.4	ug/L	U	1.4	5.8
7/26/04	51-ST-1	BNA-Water	Endrin	1.4	ug/L	U	1.4	5.8
7/26/04	51-ST-1	BNA-Water	Endrin aldehyde	3.8	ug/L	U	3.8	15
7/26/04	51-ST-1	BNA-Water	Fluoranthene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	Fluorene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	gamma-BHC	1.4	ug/L	U	1.4	5.8
7/26/04	51-ST-1	BNA-Water	Heptachlor	1.4	ug/L	U	1.4	5.8
7/26/04	51-ST-1	BNA-Water	Heptachlor epoxide	1.4	ug/L	U	1.4	5.8
7/26/04	51-ST-1	BNA-Water	Hexachlorobenzene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	12
7/26/04	51-ST-1	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	UJ	2.9	12
7/26/04	51-ST-1	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	12
7/26/04	51-ST-1	BNA-Water	Indeno(1,2,3-cd)pyrene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	Isophorone	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	Naphthalene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.7
7/26/04	51-ST-1	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	U	1.9	7.7
7/26/04	51-ST-1	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	U	1.9	7.7
7/26/04	51-ST-1	BNA-Water	N-Nitrosodiphenylamine	2.9	ug/L	U	2.9	12
7/26/04	51-ST-1	BNA-Water	Pentachlorophenol	2.9	ug/L	U	2.9	12
7/26/04	51-ST-1	BNA-Water	Phenanthrene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	Phenol	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-1	BNA-Water	Pyrene	0.96	ug/L	U	0.96	3.8
7/26/04	51-ST-2	BNA-Water	1,2,4-Trichlorobenzene	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	1,2-Dichlorobenzene	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	1,3-Dichlorobenzene	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	1,4-Dichlorobenzene	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	2,4,6-Trichlorophenol	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	2,4-Dichlorophenol	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	2,4-Dimethylphenol	51	ug/L	U	51	200
7/26/04	51-ST-2	BNA-Water	2,4-Dinitrophenol	15	ug/L	UJ	15	61
7/26/04	51-ST-2	BNA-Water	2,4-Dinitrotoluene	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	2,6-Dinitrotoluene	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	2-Chloronaphthalene	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	2-Chlorophenol	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	2-Methyl-4,6-dinitrophenol	3.1	ug/L	U	3.1	12
7/26/04	51-ST-2	BNA-Water	2-Nitrophenol	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	3,3'-Dichlorobenzidine	41	ug/L	U	41	160
7/26/04	51-ST-2	BNA-Water	4,4'-DDD	1.5	ug/L	U	1.5	6.1
7/26/04	51-ST-2	BNA-Water	4,4'-DDE	1.5	ug/L	U	1.5	6.1
7/26/04	51-ST-2	BNA-Water	4,4'-DDT	1.5	ug/L	U	1.5	6.1
7/26/04	51-ST-2	BNA-Water	4-Bromophenyl phenyl ether	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	4-Chloro-3-methylphenol	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	4-Chlorophenyl phenyl ether	2	ug/L	U	2	8.2
7/26/04	51-ST-2	BNA-Water	4-Nitrophenol	15	ug/L	U	15	61
7/26/04	51-ST-2	BNA-Water	Acenaphthene	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	Acenaphthylene	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	Aldrin	1.5	ug/L	U	1.5	6.1
7/26/04	51-ST-2	BNA-Water	alpha-BHC	1.5	ug/L	U	1.5	6.1
7/26/04	51-ST-2	BNA-Water	Anthracene	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	Benzidine	100	ug/L	U	100	410
7/26/04	51-ST-2	BNA-Water	Benzo(a)anthracene	1	ug/L	U	1	4.1

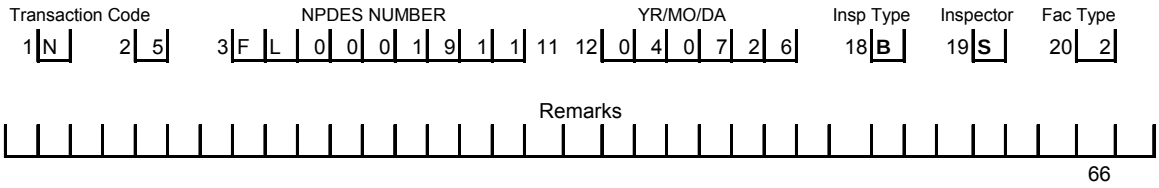
7/26/04	51-ST-2	BNA-Water	Benzo(a)pyrene	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	Benzo(b)fluoranthene	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	Benzo(g,h,i)perylene	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	Benzo(k)fluoranthene	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	beta-BHC	1.5	ug/L	U	1.5	6.1
7/26/04	51-ST-2	BNA-Water	Bis(2-chloroethoxy)methane	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	Bis(2-chloroethyl)ether	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	Bis(2-chloroisopropyl)ether	3.1	ug/L	U	3.1	12
7/26/04	51-ST-2	BNA-Water	Bis(2-ethylhexyl)phthalate	96	ug/L	J	15	61
7/26/04	51-ST-2	BNA-Water	Butyl benzyl phthalate	5.1	ug/L	U	5.1	20
7/26/04	51-ST-2	BNA-Water	Chrysene	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	delta-BHC	1.5	ug/L	U	1.5	6.1
7/26/04	51-ST-2	BNA-Water	Dibenzo(a,h)anthracene	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	Dieldrin	1.5	ug/L	U	1.5	6.1
7/26/04	51-ST-2	BNA-Water	Diethyl phthalate	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	Dimethyl phthalate	51	ug/L	U	51	200
7/26/04	51-ST-2	BNA-Water	Di-n-butyl phthalate	5.1	ug/L	U	5.1	20
7/26/04	51-ST-2	BNA-Water	Di-n-octyl phthalate	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	Endosulfan I	4.1	ug/L	U	4.1	16
7/26/04	51-ST-2	BNA-Water	Endosulfan II	4.1	ug/L	U	4.1	16
7/26/04	51-ST-2	BNA-Water	Endosulfan sulfate	1.5	ug/L	U	1.5	6.1
7/26/04	51-ST-2	BNA-Water	Endrin	1.5	ug/L	U	1.5	6.1
7/26/04	51-ST-2	BNA-Water	Endrin aldehyde	4.1	ug/L	U	4.1	16
7/26/04	51-ST-2	BNA-Water	Fluoranthene	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	Fluorene	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	gamma-BHC	1.5	ug/L	U	1.5	6.1
7/26/04	51-ST-2	BNA-Water	Heptachlor	1.5	ug/L	U	1.5	6.1
7/26/04	51-ST-2	BNA-Water	Heptachlor epoxide	1.5	ug/L	U	1.5	6.1
7/26/04	51-ST-2	BNA-Water	Hexachlorobenzene	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	Hexachlorobutadiene	3.1	ug/L	U	3.1	12
7/26/04	51-ST-2	BNA-Water	Hexachlorocyclopentadiene	3.1	ug/L	UJ	3.1	12
7/26/04	51-ST-2	BNA-Water	Hexachloroethane	3.1	ug/L	U	3.1	12
7/26/04	51-ST-2	BNA-Water	Indeno(1,2,3-cd)pyrene	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	Isophorone	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	Naphthalene	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	Nitrobenzene	2	ug/L	U	2	8.2
7/26/04	51-ST-2	BNA-Water	N-Nitrosodimethylamine	2	ug/L	U	2	8.2
7/26/04	51-ST-2	BNA-Water	N-Nitrosodi-n-propylamine	2	ug/L	U	2	8.2
7/26/04	51-ST-2	BNA-Water	N-Nitrosodiphenylamine	3.1	ug/L	U	3.1	12
7/26/04	51-ST-2	BNA-Water	Pentachlorophenol	3.1	ug/L	U	3.1	12
7/26/04	51-ST-2	BNA-Water	Phenanthrene	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	Phenol	1	ug/L	U	1	4.1
7/26/04	51-ST-2	BNA-Water	Pyrene	1	ug/L	U	1	4.1
7/26/04	51-ST-1	GC-Water	Alachlor	0.6	ug/L	U	0.6	2.4
7/26/04	51-ST-1	GC-Water	Ametryn	0.05	ug/L	U	0.05	0.2
7/26/04	51-ST-1	GC-Water	Atrazine	0.05	ug/L	U	0.05	0.2
7/26/04	51-ST-1	GC-Water	Azinphos Methyl	0.05	ug/L	U	0.05	0.2
7/26/04	51-ST-1	GC-Water	Bromacil	0.2	ug/L	U	0.2	0.8
7/26/04	51-ST-1	GC-Water	Butylate	0.2	ug/L	U	0.2	0.8
7/26/04	51-ST-1	GC-Water	Chlorpyrifos Ethyl	0.05	ug/L	U	0.05	0.2
7/26/04	51-ST-1	GC-Water	Chlorpyrifos Methyl	0.1	ug/L	U	0.1	0.4
7/26/04	51-ST-1	GC-Water	Diazinon	0.05	ug/L	U	0.05	0.2
7/26/04	51-ST-1	GC-Water	Ethion	0.05	ug/L	U	0.05	0.2
7/26/04	51-ST-1	GC-Water	Ethoprop	0.1	ug/L	U	0.1	0.4
7/26/04	51-ST-1	GC-Water	Fenamiphos	0.2	ug/L	U	0.2	0.8
7/26/04	51-ST-1	GC-Water	Fonofos	0.1	ug/L	U	0.1	0.4

7/26/04	51-ST-1	GC-Water	Hexazinone	0.1	ug/L	U	0.1	0.4
7/26/04	51-ST-1	GC-Water	Malathion	0.15	ug/L	U	0.15	0.6
7/26/04	51-ST-1	GC-Water	Metalaxyl	0.25	ug/L	U	0.25	1
7/26/04	51-ST-1	GC-Water	Metolachlor	0.5	ug/L	U	0.5	2
7/26/04	51-ST-1	GC-Water	Metribuzin	0.1	ug/L	UJ	0.1	0.4
7/26/04	51-ST-1	GC-Water	Mevinphos	0.2	ug/L	U	0.2	0.8
7/26/04	51-ST-1	GC-Water	Naled	0.8	ug/L	UJ	0.8	3.2
7/26/04	51-ST-1	GC-Water	Norflurazon	0.1	ug/L	U	0.1	0.4
7/26/04	51-ST-1	GC-Water	Parathion Ethyl	0.15	ug/L	U	0.15	0.6
7/26/04	51-ST-1	GC-Water	Parathion Methyl	0.1	ug/L	U	0.1	0.4
7/26/04	51-ST-1	GC-Water	Phorate	0.05	ug/L	U	0.05	0.2
7/26/04	51-ST-1	GC-Water	Prometryn	0.15	ug/L	U	0.15	0.6
7/26/04	51-ST-1	GC-Water	Simazine	0.05	ug/L	U	0.05	0.2
7/26/04	51-ST-2	GC-Water	Alachlor	0.58	ug/L	U	0.58	2.3
7/26/04	51-ST-2	GC-Water	Ametryn	0.049	ug/L	U	0.049	0.19
7/26/04	51-ST-2	GC-Water	Atrazine	0.049	ug/L	U	0.049	0.19
7/26/04	51-ST-2	GC-Water	Azinphos Methyl	0.049	ug/L	U	0.049	0.19
7/26/04	51-ST-2	GC-Water	Bromacil	0.19	ug/L	U	0.19	0.78
7/26/04	51-ST-2	GC-Water	Butylate	0.19	ug/L	U	0.19	0.78
7/26/04	51-ST-2	GC-Water	Chlorpyrifos Ethyl	0.049	ug/L	U	0.049	0.19
7/26/04	51-ST-2	GC-Water	Chlorpyrifos Methyl	0.097	ug/L	U	0.097	0.39
7/26/04	51-ST-2	GC-Water	Diazinon	0.049	ug/L	U	0.049	0.19
7/26/04	51-ST-2	GC-Water	Ethion	0.049	ug/L	U	0.049	0.19
7/26/04	51-ST-2	GC-Water	Ethoprop	0.097	ug/L	U	0.097	0.39
7/26/04	51-ST-2	GC-Water	Fenamiphos	0.19	ug/L	U	0.19	0.78
7/26/04	51-ST-2	GC-Water	Fonofos	0.097	ug/L	U	0.097	0.39
7/26/04	51-ST-2	GC-Water	Hexazinone	0.097	ug/L	U	0.097	0.39
7/26/04	51-ST-2	GC-Water	Malathion	0.15	ug/L	U	0.15	0.58
7/26/04	51-ST-2	GC-Water	Metalaxyl	0.24	ug/L	U	0.24	0.97
7/26/04	51-ST-2	GC-Water	Metolachlor	0.49	ug/L	U	0.49	1.9
7/26/04	51-ST-2	GC-Water	Metribuzin	0.097	ug/L	UJ	0.097	0.388
7/26/04	51-ST-2	GC-Water	Mevinphos	0.19	ug/L	U	0.19	0.78
7/26/04	51-ST-2	GC-Water	Naled	0.78	ug/L	UJ	0.7767	3.11
7/26/04	51-ST-2	GC-Water	Norflurazon	0.097	ug/L	U	0.097	0.39
7/26/04	51-ST-2	GC-Water	Parathion Ethyl	0.15	ug/L	U	0.15	0.58
7/26/04	51-ST-2	GC-Water	Parathion Methyl	0.097	ug/L	U	0.097	0.39
7/26/04	51-ST-2	GC-Water	Phorate	0.049	ug/L	U	0.049	0.19
7/26/04	51-ST-2	GC-Water	Prometryn	0.15	ug/L	U	0.15	0.58
7/26/04	51-ST-2	GC-Water	Simazine	0.049	ug/L	U	0.049	0.19
7/26/04	51-ST-1	Metals-Water	Aluminum	86	ug/L		15	60
7/26/04	51-ST-1	Metals-Water	Arsenic	18	ug/L	U	18	72
7/26/04	51-ST-1	Metals-Water	Cadmium	0.25	ug/L	U	0.25	1
7/26/04	51-ST-1	Metals-Water	Calcium	384	mg/L		0.15	0.6
7/26/04	51-ST-1	Metals-Water	Chromium	6	ug/L	U	6	24
7/26/04	51-ST-1	Metals-Water	Copper	1.7	ug/L	A	0.25	1
7/26/04	51-ST-1	Metals-Water	Iron	420	ug/L		30	120
7/26/04	51-ST-1	Metals-Water	Lead	0.55	ug/L	I	0.5	2
7/26/04	51-ST-1	Metals-Water	Magnesium	1130	mg/L		0.5	2
7/26/04	51-ST-1	Metals-Water	Nickel	6	ug/L	U	6	24
7/26/04	51-ST-1	Metals-Water	Selenium	5	ug/L	U	5	20
7/26/04	51-ST-1	Metals-Water	Silver	0.1	ug/L	U	0.1	0.4
7/26/04	51-ST-1	Metals-Water	Zinc	9	ug/L	U	9	36
7/26/04	51-ST-2	Metals-Water	Aluminum	5	ug/L	U	5	20
7/26/04	51-ST-2	Metals-Water	Arsenic	6	ug/L	U	6	24
7/26/04	51-ST-2	Metals-Water	Cadmium	0.025	ug/L	U	0.025	0.1
7/26/04	51-ST-2	Metals-Water	Calcium	0.05	mg/L	U	0.05	0.2

7/26/04	51-ST-2	Metals-Water	Chromium	2	ug/L	U	2	8
7/26/04	51-ST-2	Metals-Water	Copper	0.25	ug/L	U	0.25	1
7/26/04	51-ST-2	Metals-Water	Iron	10	ug/L	U	10	40
7/26/04	51-ST-2	Metals-Water	Lead	0.05	ug/L	U	0.05	0.2
7/26/04	51-ST-2	Metals-Water	Magnesium	0.02	mg/L	U	0.02	0.08
7/26/04	51-ST-2	Metals-Water	Nickel	2	ug/L	U	2	8
7/26/04	51-ST-2	Metals-Water	Selenium	0.5	ug/L	U	0.5	2
7/26/04	51-ST-2	Metals-Water	Silver	0.01	ug/L	U	0.01	0.04
7/26/04	51-ST-2	Metals-Water	Zinc	3	ug/L	U	3	12
7/26/04	51-ST-1	Nutrients-Liquid	Ammonia-N	0.46	mg N/L		0.02	0.04
7/26/04	51-ST-1	Nutrients-Liquid	Kjeldahl Nitrogen	0.86	mg N/L		0.12	0.4
7/26/04	51-ST-1	Nutrients-Liquid	NO2NO3-N	0.004	mg N/L	I	0.004	0.01
7/26/04	51-ST-1	Nutrients-Liquid	O-Phosphate-P	0.19	mg P/L		0.008	0.02
7/26/04	51-ST-1	Nutrients-Liquid	Total-P	0.21	mg P/L		0.02	0.06
7/26/04	51-ST-2	Nutrients-Liquid	Ammonia-N	0.01	mg N/L	U	0.01	0.02
7/26/04	51-ST-2	Nutrients-Liquid	Kjeldahl Nitrogen	0.06	mg N/L	U	0.06	0.2
7/26/04	51-ST-2	Nutrients-Liquid	NO2NO3-N	0.004	mg N/L	U	0.004	0.01
7/26/04	51-ST-2	Nutrients-Liquid	O-Phosphate-P	0.004	mg P/L	U	0.004	0.01
7/26/04	51-ST-2	Nutrients-Liquid	Total-P	0.02	mg P/L	U	0.02	0.06

The Bioassay of Seagate Towers Condominium Association, Inc. effluent sampled on July 26, 2004, NPDES #FL0001911.

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



The Priority Pollutants Analysis for Bioassay of Seagate Towers Condominium Association, Inc. effluent sampled on July 26, 2004, NPDES #FL0001911.

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

