

Effluent Quality Assessment

Marsh Landing WWTF

St. Johns County

NPDES #FL0044253

Sampled April 16, 2012

BIOASSAYS NOT PERFORMED

May 2012

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration

Quality Manual No. 870346G
NELAC Certification No. E31780

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Marsh Landing WWTF, 166 Marsh Cove Drive, Ponte Vedra Beach, St. Johns County, Florida, 32092. NPDES #FL0044253. Effluent grab samples for biological and chemical analyses and effluent composite samples for nutrients and total suspended solids (TSS) for this facility were collected on April 16, 2012.

Introduction

Marsh Landing Wastewater Treatment Facility (WWTF) is a domestic wastewater treatment plant which utilizes a biological treatment process to treat domestic wastewater. The primary method of effluent disposal is by reuse of reclaimed water in a slow-rate public access irrigation system. Surface water discharge is a backup disposal method. In the event of a wet weather discharge, effluent would be discharged to the Class III marine waters of the Intracoastal Waterway (See Appendix C for detailed facility information provided by Heather Webber of FDEP Northeast District.)

Methods

Samples were collected from the EFA-1 NPDES sampling point for Outfall D-001 by Eesa Ali and Sharon Piltz (FDEP Northeast District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling. All DEP SOPs are available on the web at: http://www.floridadep.org/labs/bars/sas/sop/index.htm.

See Appendix A for the completed chain of custody form.

The algal growth potential test (AGP) was performed following internal DEP SOPs 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.

Results and Discussion

- **Toxicity Test Results**
  Bioassay samples were not collected during this sampling event.

- **Algal Growth Potential**
  The effluent Algal Growth Potential (AGP) was 256 mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. Raschke and Schultz (1987) determined that AGP values above 5.0 mg dry weight/L represent a “problem” threshold for fresh receiving waters, implying nutrient enrichment. The analytical chemistry suggests that the effluent is nitrogen-limited (Table 1; Miller et al. 1978).

  An inference can be made based on the extremely high AGP value in the freshwater test that nutrient enrichment is likely to occur in marine receiving waters.

  Normally, when a freshwater effluent discharges to marine receiving water, the laboratory splits the sample and runs a salinity adjusted effluent sample as well. However, in this case, not enough sample remained after sample preparation for an additional analysis.

  See Table 1 for AGP results and qualifiers.

- **Chemistry Results**
  Total ammonia was not detected in the composite sample collected and preserved for chemical analysis. Total residual chlorine was not measured in the effluent when collected or in the Central Laboratory.

  Copper, nickel and zinc were detected in the effluent at levels that comply with Class III Marine quality criteria (62-302.530, F.A.C.). Aluminum was detected between the laboratory method detection limit (MDL) and practical quantitation limit (PQL). TSS and fecal coliforms were detected in the effluent at

levels that comply with water quality criteria and/or permit limits. Fluoride was detected in the effluent at a level that complies with Class III Marine criteria. Nitrate and nitrite were detected in the field blank.

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

Conclusion

Bioassay samples were not collected from this facility during the April 16, 2012 sampling event. The AGP result greatly exceeded the problem threshold for fresh receiving water suggesting by inference that nutrient enrichment could be an issue in marine receiving waters.

Additional effluent water quality samples collected on April 16, 2012, did not exceed Class III Marine water quality standards or permitted limits.

Literature Cited

Miller, W. E., T. E. Maloney, and J. C. Greene. 1978. The *Selenastrum capricornutum* Printz algal assay bottle test. EPA-600/9-78-018. U. S. EPA, Cincinnati, Ohio. 126 p.

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.

Table 1. Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN) and total nitrogen (TN) limitation of the freshwater species *Pseudokirchneriella subcapitata* for samples collected from the Marsh Landing WWTF on April 16, 2012.

Marsh Landing WWTF					
Sample	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (TN) ± 20%	Inorganic N:P ratio	Total N:P ratio
Effluent	256.0 A	608.0 ± 121.6	633.8 ± 126.8	4.1	3.8

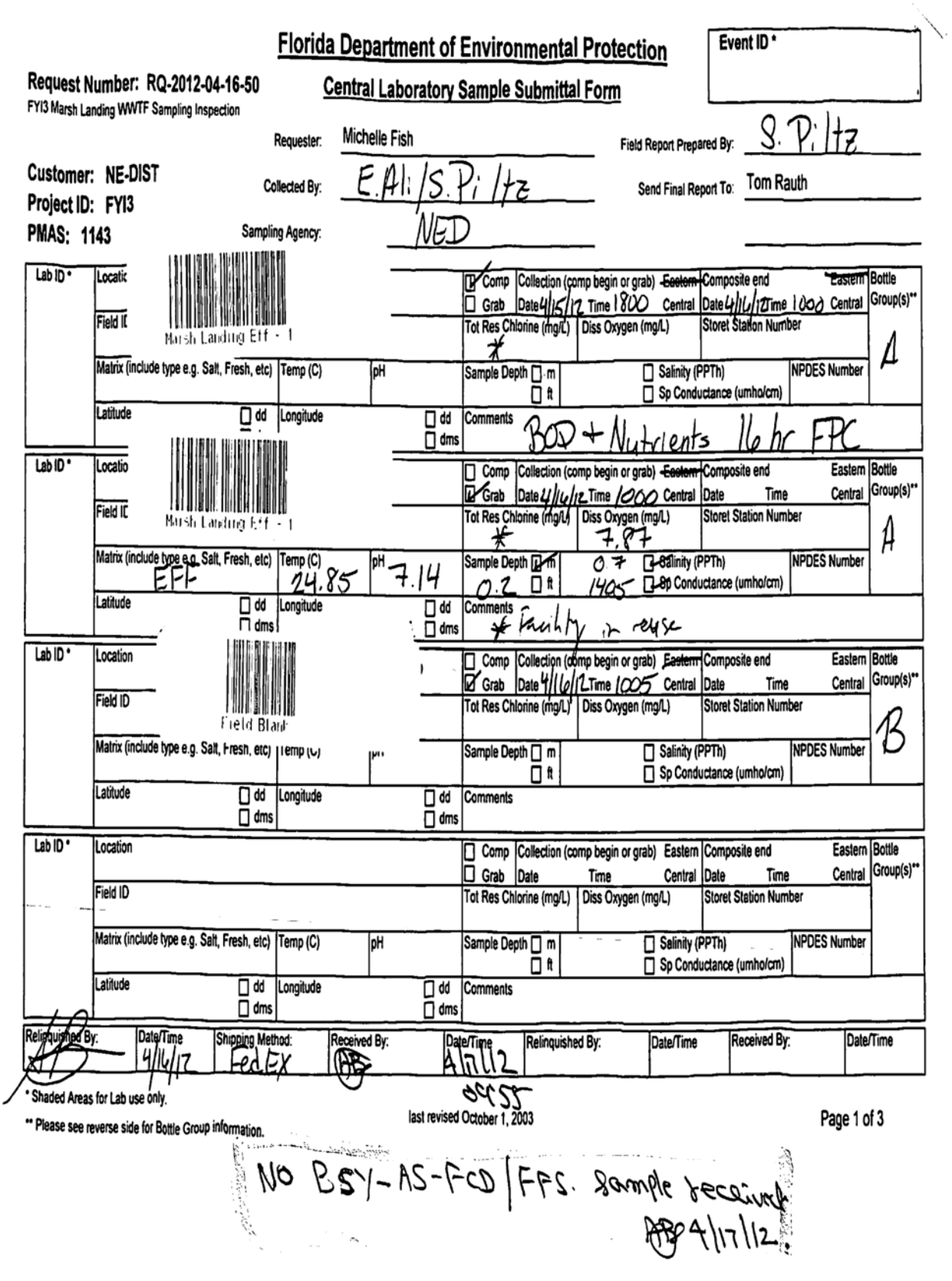
Table 2. Effluent limits, Class III Criteria for predominantly marine waters and chemical and microbiological data for samples collected from the Marsh Landing WWTF on April 16, 2012.

Marsh Landing WWTF NPDES# FL0044253	Class III Criteria	Effluent Limits	Effluent Grab	Effluent Composite
Organic Constituents (µg/L)				
None Detected	-		None Detected	
Metals (µg/L unless otherwise noted)				
Aluminum	≤ 1500	-	9 I	-
Arsenic	≤ 50	-	0.25 U	-
Cadmium	≤ 8.8	-	0.05 U	-
Calcium (mg/L)	-	-	70.5	-
Chromium-III	-	-	0.3 U	-
Copper	≤ 3.7	-	2.98	-
Iron	≤ 300	-	30 U	-
Lead	≤ 8.5	-	0.2 U	-
Magnesium (mg/L)	-	-	36.1	-
Nickel	≤ 8.3	-	1.57	-
Selenium	≤ 71	-	0.2 U	-
Silver	≤ 2.3	-	0.025 U	-
Zinc	≤ 86	-	48.4	-
Nutrients (mg/L)				
Ortho-phosphate	-	Report	-	3.9
Total Phosphorus	-	Report	-	4.4
Total Ammonia	-	Report	-	0.01 U
Un-ionized Ammonia	-	-	-	0.01 U
Nitrate and Nitrite	-	Report	-	16
Total Kjeldahl Nitrogen	-	≤ 7.5 p	-	0.68 J
Organic Nitrogen	-	Report	-	0.68 J
Total Nitrogen	-	Report	-	16.68 c
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 4.0	-	7.9	-
pH (SU)	6.5 - 8.5	-	7.1	-
Conductivity (µmhos/cm)	-	-	1405	-
Temperature (°C)	-	-	24.9	-
Sample Depth (m)	-	-	0.2	-
Chlorophyll *a* (µg/L) - Corrected	-	-	0.55 U	-
Phaeophytin (µg/L)	-	-	0.4 U	-
Total Suspended Solids (mg/L)	-	≤ 5.0 s	2 I	-
CBOD, 5 day (mg/L), N - inhibited	-	≤ 60 p	-	0.2 U
Chloride (mg/L)	-	-	240	-
Fluoride (mg/L)	≤ 5.0	-	0.8	-
Sulfate (mg/L)	-	-	160	-
Flow (MGD)	-	≤ 0.80 a	0.183 a	-
Hardness (mg $CaCO_3$)	-	-	324.70 c	-
Microbiology (Number of colony forming units/100ml)				
Fecal Coliforms ¥	≤ 400s #	≤ 800 s	2	-

Value exceeds the Class III Water Quality Criteria or permit limits

a - Annual average
c - Value is calculated
p - 16 hour flow proportioned composite
s - Single sample
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J - Estimated value
U - Material analyzed for but not detected; value reported is the method detection limit
¥ - Fecal coliform analysis performed by Columbia Analytical Services, Jacksonville.
- If 10 or fewer samples are taken within a month, the single sample limit is 400 CFU (62-302.530(6), F.A.C.)

Appendix A. Chain of Custody Form



Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2012-04-16-50
FYI3 Marsh Landing WWTF Sampling Inspection

Requester: Michelle Fish
Field Report Prepared By: S. Piltz
Collected By: E. Ali / S. Piltz
Send Final Report To: Tom Rauth
Sampling Agency: NED

Customer: NE-DIST
Project ID: FYI3
PMAS: 1143

Lab ID *	Location / Field ID	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Collection (comp begin or grab) Eastern Central	Composite end Eastern Central	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Sample Depth m / ft	Salinity (PPTh) / Sp Conductance (umho/cm)	Storet Station Number	NPDES Number	Bottle Group(s)**	Latitude / Longitude	Comments
	Marsh Landing Eff - 1				☒ Comp ☐ Grab Date 4/15/12 Time 1800	Date 4/16/12 Time 1000	*						A	☐ dd ☐ dms	BOD + Nutrients 16 hr FPC
	Marsh Landing Eff - 1	EFF	24.85	7.14	☐ Comp ☒ Grab Date 4/16/12 Time 1000		*	7.87	0.2 m / ft	0.7 / 1405			A	☐ dd ☐ dms	* Facility in reuse
	Field Blank				☐ Comp ☒ Grab Date 4/16/12 Time 1005								B	☐ dd ☐ dms	
					☐ Comp ☐ Grab Date Time									☐ dd ☐ dms	

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
	4/16/12	FedEX	ABB	4/17/12 0955				

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

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NO BSY-AS-FCD / FFS. Sample received ABB 4/17/12.

Appendix B. Chemical Analyses performed on the effluent from the Marsh Landing WWTF Outfall D-001, sampled on April 16, 2012.

Date	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
4/16/2012 10:00	Effluent Grab	AGP/LN	Algal Growth Potential	256	A	mg DryWt/L	0.3	0.9
4/16/2012 10:00	Effluent Grab	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.4	U	ug/L	0.4	1.2
4/16/2012 10:00	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.55	U	ug/L	0.55	1.7
4/16/2012 10:00	Effluent Grab	Overflow	Fecal Coliforms-Membrane Filter	2	U	cfu/100 mL	2	
4/16/2012 10:00	Effluent Grab	Metals	Cadmium	0.05	U	ug/L	0.05	0.2
4/16/2012 10:00	Effluent Grab	Metals	Sodium	158		mg/L	0.5	2
4/16/2012 10:00	Effluent Grab	Metals	Lead	0.2	U	ug/L	0.2	0.8
4/16/2012 10:00	Effluent Grab	Metals	Copper	2.98		ug/L	0.5	1
4/16/2012 10:00	Effluent Grab	Metals	Chromium	0.3	U	ug/L	0.3	1.2
4/16/2012 10:00	Effluent Grab	Metals	Calcium	70.5		mg/L	0.075	0.3
4/16/2012 10:00	Effluent Grab	Metals	Iron	30	U	ug/L	30	120
4/16/2012 10:00	Effluent Grab	Metals	Magnesium	36.1		mg/L	0.04	0.16
4/16/2012 10:00	Effluent Grab	Metals	Selenium	0.2	U	ug/L	0.2	0.8
4/16/2012 10:00	Effluent Grab	Metals	Arsenic	0.25	U	ug/L	0.25	1
4/16/2012 10:00	Effluent Grab	Metals	Zinc	48.4		ug/L	5	20
4/16/2012 10:00	Effluent Grab	Metals	Nickel	1.57		ug/L	0.25	1
4/16/2012 10:00	Effluent Grab	Metals	Aluminum	9	I	ug/L	5	20
4/16/2012 10:00	Effluent Grab	Metals	Silver	0.025	U	ug/L	0.025	0.1
4/16/2012 10:00	Effluent Grab	Nutrients	Sulfate	160		mg SO4/L	4	10
4/16/2012 10:00	Effluent Grab	Nutrients	TSS	2	I	mg/L	2	10
4/16/2012 10:00	Effluent Grab	Nutrients	O-Phosphate-P	3.9		mg P/L	0.16	0.4
4/16/2012 10:00	Effluent Grab	Nutrients	Alkalinity	109	A	mg CaCO3/L	0.65	2.5
4/16/2012 10:00	Effluent Grab	Nutrients	Chloride	240		mg Cl/L	4	10
4/16/2012 10:00	Effluent Grab	Nutrients	Fluoride	0.8		mg F/L	0.035	0.1
4/16/2012 10:00	Effluent Grab	Pesticides	Alachlor	0.67	U	ug/L	0.67	2.7
4/16/2012 10:00	Effluent Grab	Pesticides	Malathion	0.17	UJ	ug/L	0.17	0.67
4/16/2012 10:00	Effluent Grab	Pesticides	Metolachlor	0.56	U	ug/L	0.56	2.2
4/16/2012 10:00	Effluent Grab	Pesticides	Ametryn	0.056	UJ	ug/L	0.056	0.22
4/16/2012 10:00	Effluent Grab	Pesticides	Diazinon	0.056	U	ug/L	0.056	0.22
4/16/2012 10:00	Effluent Grab	Pesticides	Butylate	0.22	U	ug/L	0.22	0.89
4/16/2012 10:00	Effluent Grab	Pesticides	Hexazinone	0.11	U	ug/L	0.11	0.44
4/16/2012 10:00	Effluent Grab	Pesticides	Simazine	0.056	U	ug/L	0.056	0.22
4/16/2012 10:00	Effluent Grab	Pesticides	Atrazine	0.056	U	ug/L	0.056	0.22

Appendix B. continued

Date	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
4/16/2012 10:00	Effluent Grab	Pesticides	Azinphos Methyl	0.22	U	ug/L	0.22	0.89
4/16/2012 10:00	Effluent Grab	Pesticides	Chlorpyrifos Methyl	0.11	UJ	ug/L	0.11	0.44
4/16/2012 10:00	Effluent Grab	Pesticides	Ethoprop	0.11	U	ug/L	0.11	0.44
4/16/2012 10:00	Effluent Grab	Pesticides	Mevinphos	0.22	U	ug/L	0.22	0.89
4/16/2012 10:00	Effluent Grab	Pesticides	Bromacil	0.22	U	ug/L	0.22	0.89
4/16/2012 10:00	Effluent Grab	Pesticides	Naled	0.89	U	ug/L	0.89	3.6
4/16/2012 10:00	Effluent Grab	Pesticides	Phorate	0.056	UJ	ug/L	0.056	0.22
4/16/2012 10:00	Effluent Grab	Pesticides	Prometryn	0.17	UJ	ug/L	0.17	0.67
4/16/2012 10:00	Effluent Grab	Pesticides	Chlorpyrifos Ethyl	0.056	UJ	ug/L	0.056	0.22
4/16/2012 10:00	Effluent Grab	Pesticides	Ethion	0.056	UJ	ug/L	0.056	0.22
4/16/2012 10:00	Effluent Grab	Pesticides	Fonofos	0.11	U	ug/L	0.11	0.44
4/16/2012 10:00	Effluent Grab	Pesticides	Metribuzin	0.11	UJ	ug/L	0.11	0.44
4/16/2012 10:00	Effluent Grab	Pesticides	Norflurazon	0.17	U	ug/L	0.17	0.67
4/16/2012 10:00	Effluent Grab	Pesticides	Parathion Ethyl	0.17	U	ug/L	0.17	0.67
4/16/2012 10:00	Effluent Grab	Pesticides	Fenamiphos	0.22	U	ug/L	0.22	0.89
4/16/2012 10:00	Effluent Grab	Pesticides	Metalaxyl	0.28	U	ug/L	0.28	1.1
4/16/2012 10:00	Effluent Grab	Pesticides	Parathion Methyl	0.11	U	ug/L	0.11	0.44
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	2,4,6-Trichlorophenol	1	U	ug/L	1	4.1
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Pentachlorophenol	3.1	U	ug/L	3.1	12
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Benzo(a)pyrene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Benzo(b)fluoranthene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Benzo(k)fluoranthene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2	U	ug/L	2	8.2
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	2,4-Dinitrotoluene	1	U	ug/L	1	4.1
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Nitrobenzene	2	U	ug/L	2	8.2
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.1	U	ug/L	3.1	12
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Hexachloroethane	3.1	U	ug/L	3.1	12
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Chrysene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.1	U	ug/L	3.1	12
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1	U	ug/L	1	4.1
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	2-Chloronaphthalene	1	U	ug/L	1	4.1
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1	U	ug/L	1	4.1
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	61

Appendix B. continued

Date	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	3,3'-Dichlorobenzidine	41	U	ug/L	41	160
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Fluoranthene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Hexachlorobenzene	1	U	ug/L	1	4.1
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Hexachlorobutadiene	3.1	U	ug/L	3.1	12
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Naphthalene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2	U	ug/L	2	8.2
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Butyl benzyl phthalate	5.1	U	ug/L	5.1	20
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Di-n-butyl phthalate	5.1	UJ	ug/L	5.1	20
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Dimethyl phthalate	10	U	ug/L	10	41
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	N-Nitrosodimethylamine	2	U	ug/L	2	8.2
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	2-Nitrophenol	1	UJ	ug/L	1	4.1
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Acenaphthylene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Benzidine	100	U	ug/L	100	410
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Di-n-octyl phthalate	1	U	ug/L	1	4.1
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Diethyl phthalate	1	UJ	ug/L	1	4.1
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Fluorene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Isophorone	1	U	ug/L	1	4.1
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Phenanthrene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Phenol	1	UJ	ug/L	1	4.1
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Pyrene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	2,4-Dimethylphenol	10	UJ	ug/L	10	41
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	2,6-Dinitrotoluene	1	U	ug/L	1	4.1
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1	U	ug/L	3.1	12
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	4-Chloro-3-methylphenol	1	UJ	ug/L	1	4.1
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Anthracene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1	U	ug/L	1	4.1
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	U	ug/L	15	61
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.1	U	ug/L	3.1	12
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	2-Chlorophenol	1	UJ	ug/L	1	4.1
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Benzo(a)anthracene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1	U	ug/L	1	4.1
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	2,4-Dichlorophenol	1	UJ	ug/L	1	4.1

Appendix B. continued

Date	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	61
4/16/2012 10:00	Effluent Grab	Priority Organic Pollutants	Acenaphthene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:00	Effluent Grab	Field Parameter	Temperature	24.85		C		
4/16/2012 10:00	Effluent Grab	Field Parameter	Dissolved Oxygen	7.87		mg/L		
4/16/2012 10:00	Effluent Grab	Field Parameter	Sample Depth	0.2		m		
4/16/2012 10:00	Effluent Grab	Field Parameter	pH	7.14				
4/16/2012 10:00	Effluent Grab	Field Parameter	Specific Conductance	1405		umhos/cm		
4/16/2012 10:00	Effluent Composite	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	0.2	U	mg/L	0.2	2
4/16/2012 10:00	Effluent Composite	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
4/16/2012 10:00	Effluent Composite	Nutrients	Total-P	4.4		mg P/L	0.08	0.2
4/16/2012 10:00	Effluent Composite	Nutrients	Organic Carbon	5.8	A	mg C/L	1	5
4/16/2012 10:00	Effluent Composite	Nutrients	Kjeldahl Nitrogen	0.68	J	mg N/L	0.16	0.4
4/16/2012 10:00	Effluent Composite	Nutrients	NO2NO3-N	16		mg N/L	0.2	0.5
4/16/2012 10:05	Field Blank	Metals	Calcium	0.075	U	mg/L	0.075	0.3
4/16/2012 10:05	Field Blank	Metals	Iron	30	U	ug/L	30	120
4/16/2012 10:05	Field Blank	Metals	Aluminum	5	U	ug/L	5	20
4/16/2012 10:05	Field Blank	Metals	Lead	0.2	U	ug/L	0.2	0.8
4/16/2012 10:05	Field Blank	Metals	Sodium	0.5	U	mg/L	0.5	2
4/16/2012 10:05	Field Blank	Metals	Silver	0.025	U	ug/L	0.025	0.1
4/16/2012 10:05	Field Blank	Metals	Chromium	0.3	U	ug/L	0.3	1.2
4/16/2012 10:05	Field Blank	Metals	Copper	0.5	U	ug/L	0.5	1
4/16/2012 10:05	Field Blank	Metals	Arsenic	0.25	U	ug/L	0.25	1
4/16/2012 10:05	Field Blank	Metals	Cadmium	0.05	U	ug/L	0.05	0.2
4/16/2012 10:05	Field Blank	Metals	Nickel	0.25	U	ug/L	0.25	1
4/16/2012 10:05	Field Blank	Metals	Selenium	0.2	U	ug/L	0.2	0.8
4/16/2012 10:05	Field Blank	Metals	Magnesium	0.04	U	mg/L	0.04	0.16
4/16/2012 10:05	Field Blank	Metals	Zinc	5	U	ug/L	5	20
4/16/2012 10:05	Field Blank	Nutrients	Fluoride	0.035	U	mg F/L	0.035	0.1
4/16/2012 10:05	Field Blank	Nutrients	Total-P	0.004	U	mg P/L	0.004	0.01
4/16/2012 10:05	Field Blank	Nutrients	Chloride	0.2	U	mg Cl/L	0.2	0.5
4/16/2012 10:05	Field Blank	Nutrients	Organic Carbon	1	U	mg C/L	1	5
4/16/2012 10:05	Field Blank	Nutrients	Alkalinity	0.65	U	mg CaCO3/L	0.65	2.5
4/16/2012 10:05	Field Blank	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
4/16/2012 10:05	Field Blank	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02

Appendix B. continued

Date	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
4/16/2012 10:05	Field Blank	Nutrients	NO2NO3-N	0.009	I	mg N/L	0.004	0.01
4/16/2012 10:05	Field Blank	Nutrients	Sulfate	0.2	U	mg SO4/L	0.2	0.5
4/16/2012 10:05	Field Blank	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
4/16/2012 10:05	Field Blank	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.79
4/16/2012 10:05	Field Blank	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
4/16/2012 10:05	Field Blank	Pesticides	Malathion	0.15	U	ug/L	0.15	0.59
4/16/2012 10:05	Field Blank	Pesticides	Diazinon	0.05	U	ug/L	0.05	0.2
4/16/2012 10:05	Field Blank	Pesticides	Parathion Methyl	0.099	U	ug/L	0.099	0.4
4/16/2012 10:05	Field Blank	Pesticides	Phorate	0.05	U	ug/L	0.05	0.2
4/16/2012 10:05	Field Blank	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
4/16/2012 10:05	Field Blank	Pesticides	Ethoprop	0.099	U	ug/L	0.099	0.4
4/16/2012 10:05	Field Blank	Pesticides	Hexazinone	0.099	U	ug/L	0.099	0.4
4/16/2012 10:05	Field Blank	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	0.99
4/16/2012 10:05	Field Blank	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.59
4/16/2012 10:05	Field Blank	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.59
4/16/2012 10:05	Field Blank	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.59
4/16/2012 10:05	Field Blank	Pesticides	Alachlor	0.59	U	ug/L	0.59	2.4
4/16/2012 10:05	Field Blank	Pesticides	Butylate	0.2	U	ug/L	0.2	0.79
4/16/2012 10:05	Field Blank	Pesticides	Chlorpyrifos Methyl	0.099	U	ug/L	0.099	0.4
4/16/2012 10:05	Field Blank	Pesticides	Metribuzin	0.099	U	ug/L	0.099	0.4
4/16/2012 10:05	Field Blank	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.79
4/16/2012 10:05	Field Blank	Pesticides	Naled	0.79	U	ug/L	0.79	3.2
4/16/2012 10:05	Field Blank	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
4/16/2012 10:05	Field Blank	Pesticides	Metolachlor	0.5	U	ug/L	0.5	2
4/16/2012 10:05	Field Blank	Pesticides	Atrazine	0.05	U	ug/L	0.05	0.2
4/16/2012 10:05	Field Blank	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.79
4/16/2012 10:05	Field Blank	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.79
4/16/2012 10:05	Field Blank	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
4/16/2012 10:05	Field Blank	Pesticides	Fonofos	0.099	U	ug/L	0.099	0.4
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1	U	ug/L	1	4.1
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.1	U	ug/L	3.1	12
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Hexachloroethane	3.1	U	ug/L	3.1	12
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	2,4-Dimethylphenol	10	U	ug/L	10	41

Appendix B. continued

Date	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	2-Chloronaphthalene	1	U	ug/L	1	4.1
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	2-Nitrophenol	1	U	ug/L	1	4.1
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Di-n-butyl phthalate	5.1	UJ	ug/L	5.1	20
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2	U	ug/L	2	8.2
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	1	U	ug/L	1	4.1
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Benzidine	100	U	ug/L	100	410
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Butyl benzyl phthalate	5.1	U	ug/L	5.1	20
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	2	U	ug/L	2	8.2
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	41	U	ug/L	41	160
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	61
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Hexachlorobenzene	1	U	ug/L	1	4.1
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.1	U	ug/L	3.1	12
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Pentachlorophenol	3.1	U	ug/L	3.1	12
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Phenanthrene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	1	U	ug/L	1	4.1
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1	U	ug/L	3.1	12
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1	U	ug/L	1	4.1
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.1	U	ug/L	3.1	12
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Naphthalene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Phenol	1	U	ug/L	1	4.1
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1	U	ug/L	1	4.1
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	1	U	ug/L	1	4.1
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Acenaphthene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Chrysene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Dimethyl phthalate	10	U	ug/L	10	41
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Fluoranthene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Isophorone	1	U	ug/L	1	4.1
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Pyrene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	2,4-Dichlorophenol	1	U	ug/L	1	4.1
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	2-Chlorophenol	1	U	ug/L	1	4.1

Appendix B. continued

Date	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2	U	ug/L	2	8.2
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Di-n-octyl phthalate	1	U	ug/L	1	4.1
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Diethyl phthalate	1	UJ	ug/L	1	4.1
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Fluorene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Hexachlorobutadiene	3.1	U	ug/L	3.1	12
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	61
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	1	U	ug/L	1	4.1
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Acenaphthylene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	U	ug/L	15	61
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Nitrobenzene	2	U	ug/L	2	8.2
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1	U	ug/L	1	4.1
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Anthracene	0.2	U	ug/L	0.2	0.82
4/16/2012 10:05	Field Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.2	U	ug/L	0.2	0.82

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

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: Heather Webber - 03/05/12	**Contact Number:** 904-256-1622
Facility Name (as it appears on permit): Marsh Landing WWTF	**Former Names:** n/a
NPDES Permit Number: FL0044253	**Permit Expiration Date:** 11/05/12
Physical Address: 166 Marsh Cove Drive, Ponte Vedra Beach, FL 32092	
District: NED	**County:** St. Johns
Function of Facility: Domestic Wastewater Treatment Plant	
Facility Type: Domestic	**Permitted Capacity (MGD):** 0.800
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): 0.217 MGD (January 2011 – December 2011)	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months): R-001 Site #1 (Flow to Marsh Landing Country Club) 0.334 MGD (January 2011 – December 2011) R-001 Site #2 (Flow to Ponte Vedra Golf Course Pond) 0.072 MGD (January 2011 – December 2011)	
Description of type of Discharge: ☐ **Continuous** ☐ **Intermittent** ☐ **Seasonal** ☒ **Rainfall Dependent** ☐ **Other, please specify** D-001 is a limited wet weather discharge.	
Description of Sampling Location(s) - actual permit designation of permitted sampling point(s): EFA-1: Effluent sample point immediately after disinfection prior to transport to the lined or/and unlined reclaimed water holding ponds. EFD-1: Effluent sample point after the reclaimed water holding ponds and prior to discharge to the Marsh Landing storm water system. SWA-1: Measure stream flow approximate 300 ft upstream of the outfall or use 210 ft^2/Sec in the receiving water body upstream.	
Description of Permitted Outfall(s): D-001 is a 36-inch pipe, 10-linear feet from shore, discharging at a depth of approximately 5.0 feet. R-001 is a slow-rate public access land application system.	
Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility): 0.800 MGD annual average daily flow permitted capacity domestic wastewater treatment facility consisting of one influent mechanical screen, one equalization basin, two separate but interconnected biological treatment units each with an aeration basin and a center clarifier, one cloth disk filter a chlorine contact chamber, two aerobic digesters, two in-ground, reclaimed water holding ponds (one lined and one unlined), and one in-ground, lined, reject water holding pond. Primary method of disposal of the effluent is reuse of reclaimed water via slow-rate public access irrigation system. The surface water discharge is a backup disposal method.	

Appendix C. (continued)

PART I: Continued

List current Effluent Limits of Outfall(s) to be Sampled: This should include any AO or CO limits the facility may be under (Leave cell blank if not applicable)

			Effluent Limitations				Monitoring Requirements			
Parameter	Units	Max/Min	Annual Average	Monthly Average	Weekly Average	Single Sample	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes
Flow, Limited Wet Weather Discharge	MGD	Maximum	0.80	Report			Continuous During Discharge	Recording flow meters and totalizers	EFD-1	1
Stream Flow	Ft^3/Sec	Minimum				Report	Daily During Discharge	Instrument	SWA-1	2
Stream Dilution Ratio	Ratio	Minimum				75	Daily During Discharge	Calculation	CAL-1	3
Rainfall	Inches	Minimum		Report		Report	Daily During Discharge	Instrument	OTH-1	
BOD, Carbonaceous 5 day, 20C	Mg/L	Maximum	20.0	25.0		60.0	Daily During Discharge	16-hour flow proportioned composite	EFA-1	1, 4
Nitrogen, Kjeldahl, Total (as N)	Mg/L	Maximum	Report	5.0		7.5	Daily During Discharge	16-hour flow proportioned composite	EFA-1	1, 4
Solids, Total Suspended	Mg/L	Maximum				5.0	Daily (4 days/week)	Grab	EFB-1	
pH	s.u.	Range				6.5 to 8.5	Daily During Discharge	Meter	EFA-1	
Coliform, Fecal	#/100mL	Maximum								5
Total Residual Chlorine (For Disinfection)	Mg/L	Minimum				1.0	Daily During Discharge	Grab	EFA-1	
Total Residual Chlorine (For Dechlorination)	Mg/L	Maximum				0.01	Daily During Discharge	Grab	EFD-1	
Cumulative Number of Days during the Calendar Year the LWWD Activated	Day	Year-To-Date Total	Report			Report	Daily During Discharge	Documentation	OTH-2	1
Acute, Whole Effluent Toxicity								Grab	EFD-1	6
Nitrogen, Total (as N)	Mg/L	Maximum				Report	Monthly During Discharge	16-hour flow proportioned composite	EFA-1	4, 7
Phosphorus, Total (as P)	Mg/L	Maximum				Report	Monthly During Discharge	16-hour flow proportioned composite	EFA-1	4, 7

Appendix C. (continued)

PART I: Continued

List current Effluent Limits of Outfall(s) to be Sampled: This should include any AO or CO limits the facility may be under (Leave cell blank if not applicable)

			Effluent Limitations				Monitoring Requirements			
Parameter	Units	Max/Min	Annual Average	Monthly Average	Weekly Average	Single Sample	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes
Nitrogen, Ammonia, Total (as N)	Mg/L	Maximum				Report	Monthly During Discharge	16-hour flow proportioned composite	EFA-1	4, 7
Nitrogen, Organic Total (as N)	Mg/L	Maximum				Report	Monthly During Discharge	16-hour flow proportioned composite	EFA-1	4, 7
Nitrite plus Nitrate, Total (as N)	Mg/l	Maximum				Report	Monthly During Discharge	16-hour flow proportioned composite	EFA-1	4, 7
Phosphate, Ortho (as P)	Mg/L	Maximum				Report	Monthly During Discharge	16-hour flow proportioned composite	EFA-1	4, 7

Notes:

[1] The discharge is proposed to be used 91 days per year. The discharge cannot be activated more than 150 days during any calendar year.

[2] The stream flow shall be monitored at the upstream of the outfall of the LWWD of the Marsh Landing storm water system and shall report on the day of discharge.

[3] LWWD is authorized only when the dilution ratio equals or exceeds the minimum stream dilution factor of 75.0.

[4] 16-hour flow proportioned composite or flow proportioned composite samples for the time period of discharge if discharge is less than 16 hours.

[5] The arithmetic mean of the monthly fecal Coliform values collected during an annual period shall not exceed 200 per 100 mL of reclaimed water sample. The geometric mean of the fecal Coliform values for a minimum of 10 samples of reclaimed water shall not exceed 200 per 100 mL of sample. No more than 10 percent of the samples collected during a period of 30 consecutive days shall exceed 400 fecal Coliform values per 100 mL of sample. Any one sample shall not exceed 800 fecal Coliform values per 100 mL of sample.

[6] See toxicity test requirements below.

[7] Sample shall be taken on the first discharge day of the discharge month.

Appendix C. (continued)

PART I: Continued	
Receiving Waters: Intracoastal Waterway	**Classification (indicate whether fresh or marine):** Class III marine

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

Effluent limitation - Mortality less than or equal to 20% in the 100% effluent test concentration in any routine test shall constitute compliance. Mortality greater than 20% in the 100% effluent concentration in any test shall constitute unacceptable toxicity. Whole effluent acute toxicity shall not exceed in any routine test a mortality of greater than 50% in the 100% effluent concentration or an LC50 less than 100% effluent in any definitive test.

Monitoring frequency - The routine toxicity tests shall be conducted annually during the wet weather season August through October. Sampling is only required when a discharge exceeds 100,000 gallons per day monthly average daily flow. No more than one set of routine tests shall be required during any single calendar year.

Test Requirements - Routine Tests: All routine tests shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 75%, 50%, 25%, and 12.5% effluent. Additional Follow-up Tests, if required: If a routine test does not meet the acute toxicity limitation in I.A.12.a. (1) and (2) above, the permittee shall conduct two additional tests on each species that failed the test. The first additional test shall be conducted using a control and a minimum of five dilutions: 100%, 75%, 50%, 25%, and 12.5% effluent. The dilution series may be modified in the second test to more accurately bracket the toxicity, such that at least two dilutions above (not to exceed 100% effluent) and two dilutions below the target concentration and a control are run. The permittee shall conduct 96-hour acute static renewal toxicity tests using the freshwater daphnid, *Ceriodaphnia dubia*, and the bannerfin shiner, *Cyprinella leedsi*, concurrently.

Sampling Requirements - For routine and additional tests, a single grab sample shall be collected at location EFD-1. Results for each additional test shall include the determination of LC50 values with 95% confidence limits.

Quality Assurance Requirements - A standard reference toxicant (SRT) quality assurance (QA) acute toxicity test shall be conducted with each species used in the required toxicity tests either concurrently or no more than 30 days before the date of each routine or additional follow-up test conducted. The SRT-QA data shall be included in the bioassay reports for each companion routine or additional tests required. If the mortality in the controls exceeds 10% for either species in any test, the test for that species (including the control) shall be invalidated and the test repeated. If 100% mortality occurs prior to the end of any test and control mortality is less than 10% at that time, that test (including the control) shall be terminated with the conclusion that the test fails and constitutes non-compliance.

Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.): none

Facility Mixing Zone Details (if applicable): n/a

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

Describe previous FYI and WQBEL study: The effluent sample collected from Outfall D-001 at EFD-1 for this facility on August 15, 2005, was not acutely toxic to either test species during the acute screen 48-hour bioassays. The effluent AGP result exceeded the "problem" threshold for fresh receiving waters, suggesting nutrient enrichment may be an issue. The pH of the effluent exceeded the Class III marine surface water quality criterion.

Describe previous or current Enforcement Actions (including WLs): None since 2005

Describe any violations or problems noted in previous inspection: None – facility was in compliance at 06/13/2011 inspection.

Discuss whether DMR trends within previous five years are improving or declining: The DMRs do not show any trends.

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

PART II: Sampling Event Information

Appendix C. (continued)

Date(s) sample collected:	**Sampler(s):**
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:	

Appendix D. EPA End Sheet

The Bioassay of Marsh Landing WWTF was not performed on April 17, 2012. NPDES #FL0044253.

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 4 4 2 5 3 11	12 1 2 0 4 1 6	18 **B**	19 **S**	20 1

Remarks

B i o a s s a y n o t p e r f o r m e d

66

The Priority Pollutants Analysis of Marsh Landing WWTF effluent sampled on April 16, 2012. NPDES #FL0044253.

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 4 4 2 5 3 11	12 1 2 0 4 1 6	18 **X**	19 **S**	20 1

Remarks

66

Biological Analyses of Marsh Landing WWTF effluent sampled on April 16, 2012. NPDES #FL0044253.

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 4 4 2 5 3 11	12 1 2 0 4 1 6	18 **S**	19 **S**	20 1

Remarks

66