

Biological Assessment of

Dale Mabry AWWTP

Hillsborough County

NPDES #FL0036820

Sampled February 19 and 20, 2008

September 2008

Biology Section

Bureau of Laboratories

Division of Environmental Assessment and Restoration

Quality Manual No. 870346G

NELAC Certification No. E31780

Florida Department of Environmental Protection

Fifth Year Inspection Summary

Discharger:	Dale Mabry AWWTP
Physical Address:	13055 Delwood Road Tampa, FL 33602
County:	Hillsborough
NPDES Number:	FL0036820
Permit Expiration:	November 25, 2008

Toxics Sampling Inspection **(XSI)**

Date Sampled: February 19 and 20, 2008

Results: Bromodichloromethane, chloroform, copper, nickel, and zinc were detected in the effluent at levels above the practical quantitation limits (PQL) and in compliance with Class III Water Quality Criteria (62-302.530, F.A.C.). Aluminum, iron, and dibromochloromethane were detected in the effluent between the method detection limits (MDL) and PQLs. Atrazine was detected in the effluent below the PQL but above the MDL; however, the atrazine result was estimated. All effluent metals complied with Class III Water Quality Criteria and the facility's permit limits. Metals at the Control and Test Sites complied with Class III Water Quality Criteria.

Compliance Biomonitoring Inspection **(CBI)**

Date Sampled: February 19, 2008

Results: The effluent sample was not acutely toxic to the fish, *Cyprinella leedsi,* or to the water flea, *Ceriodaphnia dubia,* during the 48-hour acute screen bioassays.

Water Quality Inspection **(WQI)**

Date Sampled: February 19 and 20, 2008

Results: Effluent and receiving water samples were not collected on the same day due to scheduling conflicts, nor was the facility discharging the day the receiving water was collected. Therefore, the potential effect of the effluent downstream could not be fully determined. Fecal coliforms were not detected in the effluent and therefore complied with Class III Water Quality Criteria (62-302.530, F.A.C.) and the facility's permit limits. Fecal coliforms were detected at the Control Site (233 colony forming units [CFU]/ml) and the Test Site (223 CFU/ml) at levels that complied with Class III Water Quality Criteria. Effluent pH, dissolved oxygen, and specific conductance all complied with effluent limits and Water Quality Criteria. Effluent levels of ortho-phosphate (0.52 mg/L), total phosphorus (0.64 mg/L), nitrate-nitrite (0.98 mg/L), TKN (2.2 mg/L), and total ammonia (0.87 mg/L) were all higher than levels at either the Control or Test Site. Algal growth potential (AGP) of the effluent (98.8 mg dry wt/L) was approximately 5 times higher than both the Control Site (19.9 mg dry wt/L) and the Test Site (15.8 mg dry wt/L), a reflection of the elevated nutrients in the effluent. All AGP values exceeded the "problem" threshold of 5 mg dry wt/L.

Impact Bioassessment Inspection **(IBI)**

Date Sampled: February 20, 2008

Results: Periphyton composition was similar between the Control and Test Sites. The Test Site had a higher percentage of green algae (21.1 %) than the Control Site (12.8 %), but both sites were dominated by diatoms. The Control Site had a somewhat higher percentage of dominant taxon within the diatom community (21.6%) than the Test Site (12.2%). Quantitative measures of benthic macroinvertebrate assemblages from Hester-Dendy samplers showed differences between the Test Site and Control Site. The Test Site had significantly less individuals and number of taxa than the Control Site, which may be due in part to the much lower water velocity at the Test Site. Qualitative Stream Condition Index (SCI) scores from dipnet samples indicate that this portion of Brushy Creek may have somewhat degraded biological communities. The Control Site scored 45, placing it in Category 2, while the Test Site scored 24, placing it in Category 3, the lowest category. Habitat scores for both sites (Control Site – 115, Test Site – 106) placed both sites into the "suboptimal" category. Substrate diversity at both sites was suboptimal, and substrate availability was lower at the Test Site. There also appeared to be more habitat smothering at the Test Site.

Biological assessments are prepared by FDEP staff to provide information for review of NPDES permit renewal applications. Biological assessments, in conjunction with other information concerning the subject facility and its receiving-water body, are used to determine appropriate permit conditions.

Introduction

The Dale Mabry Advanced Wastewater Treatment Plant is located in Hillsborough County, Florida (Appendix A). This facility is a Type I oxidation ditch domestic wastewater treatment plant consisting of a headworks with two mechanically cleaned fine screens, one manual coarse backup screen with odor control and grit removal, one conditioning tank, two oxidation ditches, five clarifiers, five deep bed filtration/denitrification filters, two chlorine contact chambers with gaseous disinfection, and an effluent pumping station with four vertical turbine pumps. Activities at this plant include effluent post-aeration and dechlorination facilities using sulfur dioxide. Residual treatment facilities consist of two sludge holding tanks and three gravity belt thickeners (see Facility Summary in Appendix B). The effluent is then discharged into the Class III fresh water of Brushy Creek. The design flow of the wastewater system is 6.0 million gallons per day (MGD) annual average daily flow (AADF). The AADF from February 2007 through February 2008 was 1.394 MGD. The actual mean flow during this survey was 1.04 MGD (facility information from Pete Wenner of the FDEP Southwest District). A large portion of the effluent from this facility is either reused within the facility or transferred to the Hillsborough County Northwest Master Reuse System, where it is used for land application. During the month prior to this inspection, an average of 2.49 MGD was reused.

Surface Water Quality Criteria and facility permit limits are listed in Table 1. According to the facility's monthly discharge monitoring reports (DMR), the plant has had five total residual chlorine violations from April 2007 through January 2008, and a total nitrogen violation in December 2007 (Appendix B).

Methods

The purpose of this investigation was to determine the potential effects of the facility's effluent on the biota of the receiving waters. Chemical and biological comparisons were made between a Control Site (located in Brushy Creek approximately 150 meters upstream of the discharge) and a Test Site (located in Brushy Creek approximately 10 meters downstream of the discharge). Detailed methods and their relationship to Florida Administrative Code are given in Appendix C.

All field and laboratory biological methods followed Biology Section Standard Operating Procedures (SOPs, see http://www.floridadep.org/labs/qa/2002sops.htm for details) and met FDEP quality assurance/quality control standards (see http://www.floridadep.org/labs/qa/index.htm). All effluent samples were collected on February 19, 2008 at the compliance point, while the receiving water samples were collected on February 20, 2008 due to scheduling conflicts by the samplers. The facility was not discharging the day the receiving water samples were collected. The permit requires carbonaceous biological oxygen demand (CBOD5), total suspended solids (TSS), total nitrogen, and total phosphorus to be measured as 24-hour composite samples; however due to equipment malfunction, a grab sample was taken for these parameters. In addition, the equipment blank results are invalid since they were taken with the composite sampler and the effluent samples were grabs.

The following were involved in this investigation: Pete Wenner, Joe Squitieri, Gitta Schmitt, Jonathan Seiler, Mike Schumann, Charlie Thompson, Jason Jendrucko (FDEP Southwest District), and FDEP Central Laboratory in Tallahassee. See Appendix D for the chain of custody form (sample submittal form). The report was reviewed by District representatives and the Point Source Studies Review Committee (Nancy Ross, Jennifer Paris, and Michael Tanski).

Results and Discussion

- Specific chemical results are reported in Tables 1 and 2, and a complete list of chemical analytes can be reviewed in Appendix E. Atrazine was detected in the effluent in between the MDL and the PQL; however, the atrazine result was estimated. Dibromochloromethane was also detected in the effluent between the MDL and PQL. Chloroform and bromodichloromethane and were detected in the effluent above the PQL but at levels that complied with Class III Water Quality Criteria.
- Effluent nutrient concentrations were elevated compared to levels in the receiving water, but the Control and Test Sites nutrient levels were very similar. Since the effluent was not discharging the day the receiving water samples were collected, the effects of the effluent on the Test Site can not be determined. Single samples of total phosphorus in the effluent (0.64 mg/L) met the permit limit of 2.0 mg/L and effluent total nitrogen (3.18 mg/L) met the permit limit of 6.0 mg/L. Effluent orthophosphate was estimated at 0.52 mg/L (Note: this sample was not filtered at the proper time), while ortho-phosphate was 0.025 mg/L in the Control Site and 0.027 mg/L in the Test Site. Nitrate-nitrite was 0.98 mg/L in the effluent, 0.16 mg/L at the Control Site and 0.19 mg/L at the Test Site.
- Effluent conductivity, pH and dissolved oxygen complied with Class III Water Quality Criteria (Table 1; 62-302, F.A.C.) and facility permit limits. Dissolved oxygen, pH and conductivity at the Control and Test Sites complied with Class III Water Quality Criteria. Temperature

Table 1. Effluent limits, Class III Freshwater Criteria and chemical, microbiological and toxicological data.

Dale Mabry WWTP	Class III Criteria	Effluent Limits	Effluent 2/19/08	Control Site 2/20/08	Test Site 2/20/08
Organic Constituents (µg/L)					
Atrazine	-	-	0.2 IJ	-	-
Bromodichloromethane	<22 a	-	2.3	-	-
Chloroform	<470.8 a	-	13	-	-
Dibromochloromethane	<34 a	Report	0.3 I	-	-
Nutrients (mg/L)					
Ortho-phosphate	-	-	0.52 Y	0.025	0.027
Dissolved Organic Carbon		-	8.2	11	11
Total Organic Carbon		-	8.4	11	11
Total Phosphorus	-	≤ 2.0 s	0.64	0.08	0.071
Total Ammonia	-	-	0.87	0.062	0.064
Un-ionized Ammonia	≤ 0.02 s	-	≤ 0.02 c	≤ 0.02 c	≤ 0.02 c
Nitrate and Nitrite	-	-	0.98	0.16	0.19
Total Kjeldahl Nitrogen	-	-	2.2	0.82	0.84
Organic Nitrogen	-	-	1.33 c	0.758 c	0.776 c
Total Nitrogen	-	≤ 6.0 s	3.18 c	0.98 c	1.03 c
General Physical and Chemical Parameters					
Habitat Assessment	-	-	-	115	106
Dissolved Oxygen (mg/L)	≥ 5.0	≥ 5.0 s	8.4	6.4	6.5
pH (SU)	6.0 - 8.5	6.0 - 8.5	7.5	7.4	7.4
Conductivity (µmhos/cm)	≤ 1,275	-	959	392	427
Temperature °C	-	-	22.7	16.6	17.5
Sample Depth (m)	-	-	0.2	0.3	0.3
Total Residual Chlorine (mg/L)	≤ 0.01	≤ 0.01	< 0.01	-	-
Chlorophyll a (µg/L) - Corrected	-	-	0.73 I	2.2	2.3
Phaeophytin (µg/L)	-	-	0.24 U	2.4	1
Total Suspended Solids (mg/L)	-	10.0 s	4 U	15 I	8 I
Turbidity (NTU)	< 29 t	-	2.6 A	4.6	2.6
Color (pt-Co)	-	-	10	50 A	40
CBOD, 5 day (mg/L), N - inhibited	-	10.0 s	1.4 I	0.64 I	0.77 I
Flow (MGD)	-	≤ 6.0 a	1.04	-	-
Hardness (mg $CaCO_3$)	-	-	216.92 c	104.57 c	107.56 c
Toxicity (48-hour acute screening bioassay, percent mortality in 100% effluent)					
Bioassay-Water flea *(Ceriodaphnia dubia)*	-	≤ 50 d	0	-	-
Bioassay-Fish *(Cyprinella leedsi)*	-	≤ 50 d	0	-	-
Microbiology (Number of colony forming units/100ml)					
Fecal Coliforms	≤ 400 ¥	86 s	1 U	233 A	223 A

Value exceeds the Class III Water Quality Criteria or permit limits

a - Annual average
c - Value is calculated
d - based on 4/24 grab sample
s - Single sample
t - Shall not exceed 29 NTUs above background
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
J- Estimated value
U - Material analyzed for but not detected; value reported is the method detection limit
Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
¥ - If 10 or fewer samples are taken within a month, the single sample limit is 400 CFU (62.302.530(6), F.A.C.)

Table 2. Effluent limits, Class III Freshwater Criteria and metals data. Class III Criteria based on hardness are presented individually for each site based on hardness at that site.

Dale Mabry WWTP	Effluent Class III Criteria	Effluent Limits	Effluent	Control Site Class III Criteria	Control Site	Test Site Class III Criteria	Test Site
Metals (µg/L unless otherwise noted)							
Aluminum	-	-	69 I	-	370	-	510
Arsenic	≤ 50	-	0.5 U	≤ 50	1.1 I	≤ 50	1.1 I
Cadmium	≤ 0.5 b	-	0.02 U	≤ 0.28 b	0.051 I	≤ 0.29 b	0.02 U
Calcium (mg/L)	-	-	77.8	-	36.6	-	37.8
Chromium-III	≤ 162.5 b	-	1 U	≤ 89.39 b	1 U	≤ 91.48 b	1.2 I
Copper	≤ 18.1 b	-	3	≤ 9.69 b	2.8	≤ 9.93 b	3.1
Iron	≤ 1,000	-	32 I	≤ 1,000	540	≤ 1,000	670
Lead	≤ 8.5 b	-	0.2 U	≤ 3.37 b	0.86 I	≤ 3.49 b	0.9 I
Magnesium (mg/L)	-	-	5.5	-	3.2	-	3.2
Nickel	≤ 100.4 b	-	1.12	≤ 54.17 b	0.6 I	≤ 55.48 b	0.64 I
Selenium	≤ 5.0	-	0.5 U	≤ 5.0	0.5 U	≤ 5.0	0.5 U
Silver	≤ 0.07	-	0.025 U	≤ 0.07	0.025 U	≤ 0.07	0.025 U
Zinc	≤ 230.9 b	-	23	≤ 124.44 b	6 I	≤ 127.45 b	8 I

Value exceeds the Class III Water Quality Criteria or permit limits

b - Value is calculated based on hardness

I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

U - Material analyzed for but not detected; value reported is the method detection limit

in the effluent (22.7 °C) elevated the temperature at the Test Site (17.5°C) compared to the Control Site (16.6° C). Effluent conductivity (959 µmhos/cm) contributed to higher levels at the Test Site (427 µmhos/cm) than at the Control Site (392 µmhos/cm).

- The effluent sample was not acutely toxic to the fish, *Cyprinella leedsi*, or to the water flea, *Ceriodaphnia dubia*, during 48-hour acute screening bioassays (See Table 1 for percent mortality, Appendix F for bioassay bench sheets, and Appendix G for supporting standard reference toxicant data). Although the 48-hour acute screening toxicity test does not reflect the required permit conditions, passing test results indicate that the required permit conditions would likely be met.

- Fecal coliforms were undetected in the effluent and therefore complied with Class III Water Quality Criteria and facility permit limits. Fecal coliform counts in the receiving waters (Control Site - 233 CFU/100ml, Test Site - 223 CFU/ml) complied with Class III Water Quality Criteria (≤ 400 CFU/ml; See Table 1 for results and Appendix F for laboratory worksheets).

- Copper, nickel, and zinc were detected in the effluent at levels above the PQL but complied with Class III Water Quality Criteria (62-302.530, F.A.C.; Table 2) and facility permit limits. The metals aluminum and iron were found in the effluent at levels above the MDL and below the PQL. Iron, aluminum, and copper were detected at the Control Site and the Test Site at levels above the PQL. Arsenic, zinc, nickel, and lead were detected between the MDL and PQL at both the Control and Test Site, and Chromium III was detected between the MDL and PQL at the Test Site. All metals complied with Class III Water Quality Criteria and facility permit limits. The Test Site did have higher levels of zinc, nickel, aluminum, iron, and copper than at the Control Site. Since the effluent sample was collected the day before the receiving water sites and the facility was not discharging the day the Control and Test Site water chemistry samples were collected, it is unclear what affect the effluent is having on the water chemistry at the Test Site.

- Algal growth potential (AGP) is a measure of nutrients available for algal growth (Miller *et al.* 1978). Raschke and Shultz (1987) found that AGP above 5.0 mg dry weight/L represents a "problem" threshold for fresh receiving waters, implying nutrient enrichment. Effluent AGP was 98.8 mg dry weight/L (Table 3). The AGP value was 19.9 mg dry weight/L at the Control Site and 15.8 mg dry weight/L at the Test Site. All AGP values were above the problem threshold, although the effect of the effluent on the Test Site cannot be determined since the effluent was not discharging the day the receiving water was collected. The analytical chemistry suggests that the effluent is nitrogen-limited, and both the Control and Test Sites are co-limited by both nitrogen and phosphorus. There was not evidence of growth inhibition in the AGP data (Table 2).

- Chlorophyll-*a* was detected at low levels in water samples from the effluent and at both the Control and Test Sites (Table 1). Chlorophyll-*a* was 0.73 µg/L in the effluent, 2.2 µg/L in the Control Site and 2.3 µg/L in the Test Site. We note that nutrients in the water column may or may not fuel algal production immediately, depending upon the sum of environmental conditions that limit algal growth at the site (e.g. pH, shading, turbidity). Thus it is not necessarily contradictory for ambient nutrient levels to be high and for no chlorophyll-*a* to be detected in water samples.

Table 3. Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN), orthophosphate (OP), total nitrogen (TN) and total phosphorus (TP) limitation of the freshwater species *Pseudokirchneriella subcapitata* and ratios of nitrogen to phosphorus.

Dale Mabry WWTP							
Location	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (OP) ± 20%	Predicted AGP (TN) ± 20%	Predicted AGP (TP) ± 20%	Inorganic N:P ratio	Total N:P ratio
Effluent	98.8	70.3 ± 14.1	-	120.8 ± 24.2	-	3.6	5.0
Control Site	19.9 A	8.4 ± 1.7	10.8 ± 2.2	37.2 ± 7.4	34.4 ± 6.9	8.9	12.3
Test Site	15.8	9.7 ± 1.9	11.6 ± 2.3	39.1 ± 7.8	30.5 ± 6.1	9.4	14.5

A - Value reported is the mean of two or more determinations

- There were no major differences in algal community composition between the Control and Test Sites (Table 4, Appendix I). Both sites were dominated by diatoms. The most notable differences were that the percentage of the dominant diatom taxon was slightly higher at the Control Site (21.6%) than the Test Site (12.2%), and that the percentage of green algae was lower at the Control Site (12.8%) than at the Test Site (21.1%). The dominant diatom taxon at the Control Site was *Melosira* sp., while *Nitzschia* sp. was dominant at the Test Site.
- Habitat assessment scores were slightly higher at the Control Site (115) than at the Test Site (106) (Table 1, data sheets in Appendix H). However, both sites fall into the "suboptimal" category. The higher score at the Control Site can be attributed to the greater water velocity (Control Site - 0.12 meter/ second, Test Site - <0.1 meter/ second) and less habitat smothering than at the Test Site.
- Quantitative measures of benthic macroinvertebrate assemblages from Hester-Dendy samplers showed a far greater number of individuals at the Control Site than at the Test Site (Table 5, Appendix J). The sampler at the Control Site (2,776 individuals) had approximately ten times the number of individuals as at the Test Site (287 individuals). The reduction in individuals at the Test Site is likely due to the low water velocity at the Test Site. Since the sampler at the Test Site had less than 300 individuals, the Shannon-weaver diversity score is not reliable for that site and cannot be used to determine compliance with the biological integrity criterion (62-302.530(10), F.A.C.). Of the individuals that were collected, the Test Site had almost all fly larvae (dipterans; 93.6%) while the Control Site community composition was also dominated by fly larvae (68.8%), but also had a mix of snails, worms, and caddisflies.
- Qualitative measures of benthic macroinvertebrate assemblages from dipnet samples are summarized in Table 6 and in Appendix K. The Control Site SCI score was 45, placing it in Category 2, and the Test Site SCI score of 24 placing it in Category 3, the lowest category. The main reasons for the lower SCI score at the Test Site are the higher percentage of pollution tolerant individuals and the higher percentage of the dominant taxon, *Pyrgophorus platyrachis*. In contrast, the Control Site had a higher number of Tanytarsini individuals, a higher number of suspension feeders and filterers, and a higher number of clinger taxa, resulting in a higher SCI score. Both communities were mostly composed of fly larvae (dipterans), beetles (coleopterans), and snails (gastropods). The Control Site had a few more caddisflies (trichopterans), possibly due to the higher water velocity, and the Test Site had a higher percentage of Odonates.

Table 4. Periphyton Composition - Qualitative.

Dale Mabry WWTP	Control Site	Test Site
Number of Wet Taxa	21	20
Number of Wet Algal Units Identified	304	303
Percent Dominant Wet Taxon	79.9	71.6
Dominant Wet Taxon Name	Bacillariophyta (Diatoms)	Bacillariophyta (Diatoms)
Number of Diatom Taxa	55	54
Number of Diatom Algal Units Identified	501	501
Percent Dominant Diatom Taxon	21.6	12.2
Dominant Diatom Taxon Name	*Melosira* sp.	*Nitzschia* sp.
Percentage Composition for Wet Algae		
Blue-green algae	5.9	6.9
Green algae	12.8	21.1
Diatoms	79.9	71.6
Euglenophytes	0.3	0.3

Summary

FDEP data from this inspection indicated no water quality criteria or permit exceedances for this facility at the time. DMR data did indicate total residual chlorine exceedences on several occasions and a total nitrogen violation within the year prior to this inspection. The total residual chlorine performed in this inspection was within permit limits. The effluent is contributing high levels of nutrients into this portion of Brushy Creek although we were not able to assess the effects of the effluent on the water chemistry of the Test Site because the facility was not discharging the day the receiving water samples were collected. Additional sampling is recommended to determine how much the effluent raises the conductivity and nutrients at the Test Site compared to the Control Site. There appears to be nutrient enrichment in this entire portion of Brushy Creek, possibly due to its proximity to a highly residential area. The slow water velocity and increased habitat smothering appears to be contributing to lower habitat scores at the Test Site. The Test Site received lower SCI scores than the Control Site. It is unclear whether and to what degree the lower SCI score is an effect of the effluent or of the lower quality habitat at the Test Site. Community effects can be attributed to the effluent due to long term contributions, but chemistry values at the Test Site cannot since there was no flow. Therefore follow up monitoring of effluent and receiving waters is warranted. The effluent and receiving water sampling should be performed on the same day in order to better understand the extent the effluent is affecting the receiving water chemistry and biota.

Table 5. Macroinvertebrate Hester-Dendy Samples - Quantitative.

Dale Mabry WWTP	Control Site	Test Site
Summary Statistics		
Shannon-Weaver Diversity	3.74	3.23*
Number of Taxa	38	22
Florida Index	25	18
Number of EPT Taxa	5	2
Percent Dominant Taxon	22.3	34.9
Dominant Taxon Name	*Tanytarsus* sp. C Epler (Diptera)	*Polypedilum fallax* (Diptera)
Total Number of Individuals (counted)	1,398	144
Total Number of Individuals (#/m^2)	2,776	287
Community Composition: Percent of total		
Amphipoda	0.4	0.0
Coleoptera	1.2	1.4
Diptera	68.8	93.6
Ephemeroptera	0.3	0.0
Gastropoda	12.7	2.8
Odonata	0.2	0.0
Oligochaeta	10.7	0.7
Plecoptera	0.0	0.0
Trichoptera	5.6	1.4
Other	0.0	0.1
Functional Feeding Groups: Percent of total		
Burrowing Deposit Feeders	10.7	0.7
Piercers	0.0	0.7
Predators	6.9	7.9
Scrapers	17.6	4.2
Shredders	8.2	28.2
Surface Deposit Feeders	30.6	52.5
Suspension Feeders	26.1	5.0
Unknown	0.0	0.7

* - Shannon Weaver Diversity scores calculated on samples with < 300 individuals have the potential for negative bias (lower diversity scores compared to sites with more individuals). Therefore, Shannon-Weaver diversity scores should not be used for determining compliance with biological criterion.

Literature Cited

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Table 6. Macroinvertebrate Dipnet Samples - Qualitative.

Dale Mabry WWTP	Control Site		Test Site	
Summary Statistics				
Stream Condition Index 2007 (value)	45 A		24 A	
Stream Condition Index 2007 (category) *	Category 2		Category 3	
Stream Condition Index Metrics	Rep 1	Rep 2	Rep 1	Rep 2
Number of Total Taxa	26	27	24	25
Number of Ephemeroptera Taxa	1	1	1	1
Number of Trichoptera Taxa	2	2	1	1
Number of Clinger Taxa	4	4	1	1
Number of Long-lived Taxa	0	2	0	1
Number of Sensitive Taxa	1	0	1	1
Percent of Dominant Taxon	21.9	22.5	29.2	42.3
Percent Suspension Feeders and Filterers	17.1	17.0	3.1	4.2
Percent of Tanytarsini Individuals	21.9	23.1	6.3	4.2
Percent of Very Tolerant Individuals	22.6	20.4	30.6	46.5
Total Number of Individuals	146	147	144	142
Community Composition: Percent of total				
Dominant Taxon (name)	*Pyrgophorus platyrachis* (Gastropoda)	*Microcylloepus pusillus* (Coleoptera)	*Pyrgophorus platyrachis* (Gastropoda)	*Pyrgophorus platyrachis* (Gastropoda)
Acariformes	0.0	0.0	0.0	0.7
Amphipoda	1.4	0.7	4.2	2.1
Bivalvia	2.7	2.0	0.0	2.1
Coleoptera	20.6	24.5	21.5	21.8
Decapoda	0.0	0.7	0.0	0.0
Diptera	34.3	35.4	20.8	18.3
Ephemeroptera	0.7	1.4	4.2	0.7
Gastropoda	31.5	28.6	32.6	45.8
Odonata	1.4	2.0	15.3	5.6
Oligochaeta	2.1	0.7	0.0	1.4
Plecoptera	0.0	0.0	0.0	0.0
Trichoptera	4.8	4.1	0.7	0.7
Other	0.7	0.0	0.7	0.7
Functional Feeding Groups: Percent of total				
Burrowing Deposit Feeders	2.1	0.7	0.0	1.4
Predators	5.1	9.2	18.8	11.3
Scavengers	0.0	0.3	0.0	0.0
Scrapers	46.2	44.9	45.5	56.3
Shredders	3.8	1.4	5.6	3.2
Surface Deposit Feeders	25.7	25.9	24.3	22.2
Suspension Feeders	17.1	17.0	3.1	4.2
Unknown	0.0	0.7	2.8	1.4

A - Value reported is the mean of two determinations

* SCI_2007 categories from Table LT 7200-2 of Draft DEP-SOP-002/01 as referenced in Draft Quality Assurance Rule (62-160 F.A.C.),September 17, 2007: Values 0 ≤ 34 are Category III; Values 35 < 67 are Category II; Values 68 ≤ 100 are Category I

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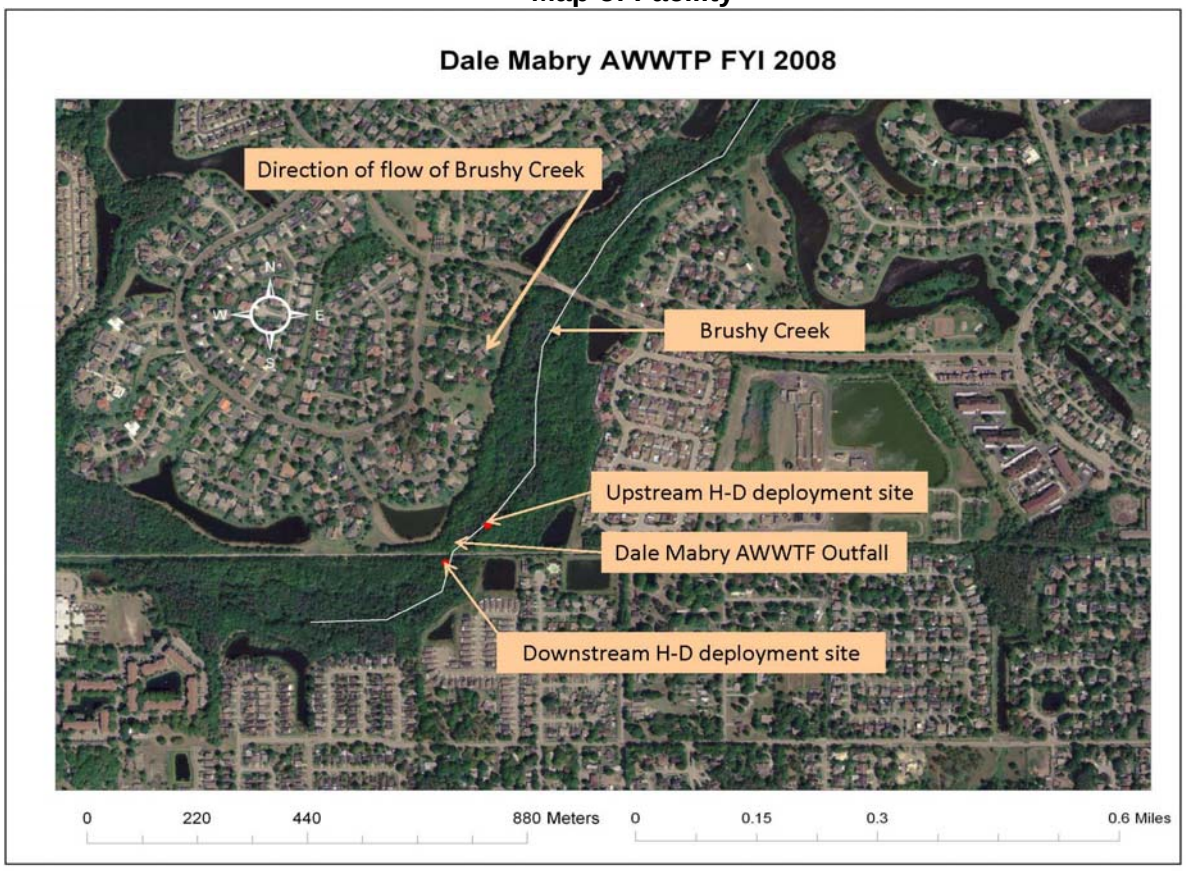
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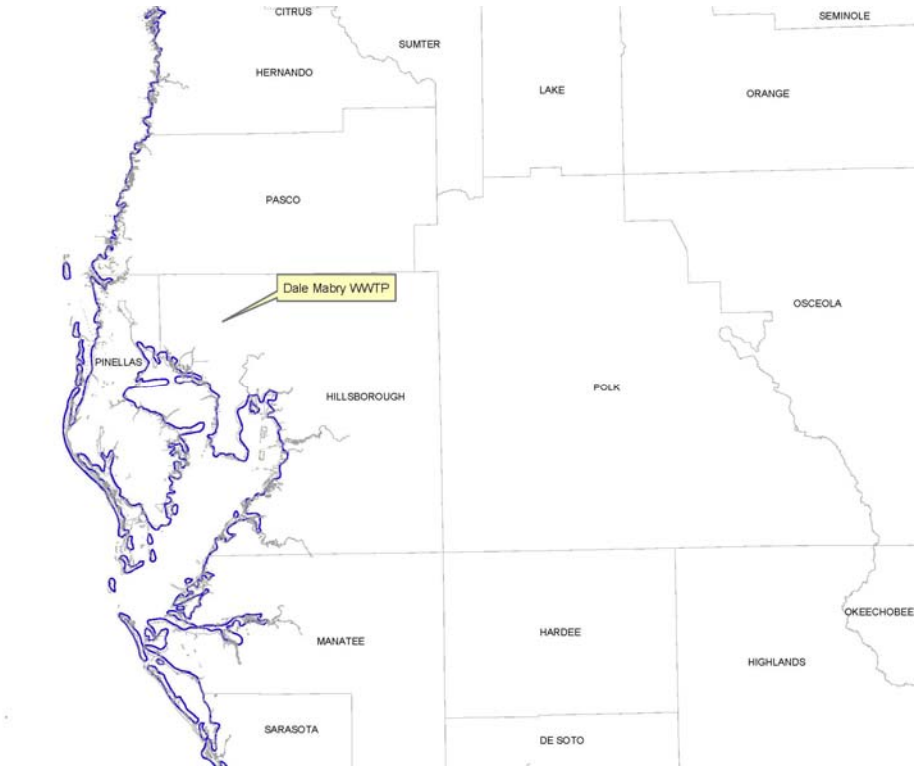
Appendices

- Appendix A. Map of facility
- Appendix B. Facility summary and DMR data
- Appendix C. Explanation of measurements
- Appendix D. Chain of Custody form
- Appendix E. Chemical analyses of effluent and receiving water.
- Appendix F. Additional physical, chemical, toxicological and microbiological results
- Appendix G. Standard Reference Toxicant test data
- Appendix H. Habitat Assessment field sheets
- Appendix I-1. Periphyton: Taxa list and number of individuals counted
- Appendix I-2. Periphyton: Diatom Taxa list and number of individuals counted
- Appendix J-1. Hester-Dendy multi-plate samplers: Taxa list and macroinvertebrate density (average number of individuals per m^2)
- Appendix J-2. Hester-Dendy multi-plate samplers: Taxa list and total number of macroinvertebrates counted
- Appendix K-1. Dipnet samples: Taxa list and number of macroinvertebrates counted (collapsed)
- Appendix K-2. Dipnet samples: Taxa list and number of macroinvertebrates counted

Appendix A

Map of Facility





State of Florida
Department of Environmental Protection
Facility Introduction & Summary

Facility Name (as it appears on permit): Dale Mabry AWWTP		**Former Names:**
Physical Address: 13055 Delwood Road Tampa, FL 33602	**NPDES Permit No.:** FL0036820 **Expiration Date:** November 25, 2008	**Prepared By:** Pete Wenner
County: Hillsborough	**District:** Southwest	**Facility Type:** DW-Major
Function of Facility: Wastewater Treatment Facility		
Sampling Location (actual permit designation of permitted sampling point):		
Description of permitted outfall: An existing 6.0 MGD 12-month average daily flow (12-MADF) permitted discharge to Brushy Creek to Rocky Creek then to Channel A to Tampa Bay (Class III waters) at Discharge Location D-001. The outfall is at the shoreline and discharges at a depth of approximately 3.85 feet. The point of discharge is located approximately at latitude 28^0 04' 08" N, longitude 82^0 32' 26" W.		
Description of treatment process (if multiple discharge points, include a map or diagram of facility): An existing 6.0 MGD annual average daily flow (AADF) Type I oxidation ditch domestic wastewater treatment plant consisting of: a headworks with two (2) mechanically cleaned fine screens and one (1) manual coarse backup screen with odor control and grit removal; one (1) conditioning tank of 137,626 gallons total volume; two (2) oxidation ditches of 4.51 million gallons total volume, five (5) clarifiers of 1.37 million gallons total volume and 15,236 square feet of total surface area; five (5) deep bed filtration/denitrification filters of 3,250 square feet total surface area; two (2) chlorine contact chambers of 158,202 gallons total volume, with gaseous disinfection; an effluent pumping station with four (4) vertical turbine pumps; and effluent post-aeration and dechlorination facilities using sulfur dioxide. Residuals treatment facilities consist of one (1) sludge holding tank of 466,341 gallons volume, one (1) sludge holding tank of 339,770 gallons volume, and three (3) gravity belt thickeners. Thickened residuals are transported by pipeline to the Hillsborough Northwest Regional Water Reclamation and Residuals Management Facility (FL0041670) for further treatment and disposal. The plant is a dual train facility with the exception of the headworks and the conditioning tank. Filter backwash is returned to the headworks. Methanol feed is available as is sodium aluminate. Polymer coagulant feed is available on a standby status for solids control.		
Receiving Waters: Brushy Creek to Rocky Creek then to Channel A to Tampa Bay (Class III waters)	**Classification (indicate whether fresh or marine):** Class III Fresh	
Temperature (C):	**Design Flow:** 6.0 MGD AADF	
pH (SU):	**Mean Flow (for previous 12 months):**	
Conductivity (umhos/cm):	**Flow During Survey:**	
Method of Chlorination:	**Method of Dechlorination**	
Dissolved Oxygen (mg/L):	**Total Residual Chlorine (mg/L) (after disinfection):**	
Discharge is: Continuous Intermittent Seasonal Rainfall Dependent Other		

Toxicity Test Requirements (routine and/or additional test language test species, salinity adjustment, etc.):
Dry season: (November-May): 96-hour acute static renewal, multi-concentration (definitive), freshwater Test species: Ceriodaphnia dubia, Cyprinella leedsi
Wet Season (June to October): Chronic: Ceriodaphnia dubia, Survival and Reproduction test; fathead minnow, Pimephales promelas, Larval survival and Growth Test. Tests shall be conducted using a control (0% effluent)and the following test concentrations: 100%, 50%, 25%, 12.5%. and 6.25% effluent.

Administrative or Consent Orders: N/A

Facility Mixing Zone Details: N/A

List permit violations (DMR data) and plant upsets that occurred at the plant within the last year:
Refer to Table 1 and 2, DMR Summary.

Describe previous impact bioassessments, WQBEL's, and previous or current enforcement actions:

Discuss MOR trends to prior data; is trend improving or declining:

List Effluent Limits (include additional sheets as necessary):

Parameter and Units	Limit	Describe special permit conditions and permit modifications:
Flow (D001) (MGD)	6.0 AADF	Continuous
CBOD (5-day) (mg/L)	5.0 (AA) 6.25 (MA) 7.5 (WA) 10.0 (SS)	FPC-24
TSS (mg/L)	5.0 (AA) 6.25 (MA) 7.5 (WA) 10.0 (SS)	FPC-24
pH (SU)	6.0-8.5	Meter
Fecal Coliform Bacteria #/100 mL	14 (AA) 14 (MA) 86 (SS)	Grab
Total Residual Chlorine (for disinfection) (mg/L)	1.0 (SS)	Meter
Total Residual Chlorine (for dechlorination) (mg/L)	0.01	Grab

Parameter and Units	Limit	Describe special permit conditions and permit modifications:
Flow (D001) (MGD)	6.0 AADF	Continuous
CBOD (5-day) (mg/L)	5.0 (AA) 6.25 (MA) 7.5 (WA) 10.0 (SS)	FPC-24
TSS (mg/L)	5.0 (AA) 6.25 (MA) 7.5 (WA) 10.0 (SS)	FPC-24
pH (SU)	6.0-8.5	Meter
Fecal Coliform Bacteria #/100 mL	14 (AA) 14 (MA) 86 (SS)	Grab
Total Residual Chlorine (for disinfection) (mg/L)	1.0 (SS)	Meter
Total Residual Chlorine (for dechlorination) (mg/L)	0.01	Grab
Parameter and Units	**Limit**	**Describe special permit conditions and permit modifications:**
Nitrogen, Total (as N) (mg/L)	3.0 (AA) 3.75 (MA) 4.5 (WA) 6.0 (SS)	FPC-24
Phosphorus, Total (as P) (mg/L)	1.0 (AA) 1.25 (MA) 1.5 (WA) 2.0 (SS)	FPC-24
Dissolved Oxygen (mg/L)	5.0 (SS)	Grab
Dichlorobromomethane (µg/L)	Report (MA)	Grab
Acute WET (Dry Season) Chronic WET (Wet Season)	LC50 > 100% NOEC > 100%	4/24 Grab 2/24 Grab

AA= Annual Average
MA= Monthly Average
WA= Weekly Average
SS= Single Sample

Recon Summary

On Thursday, January 17, 2008 FDEP staff conducted a recon of the facility outfall and Brushy Creek. No discharge was occurring from the facility at the time of the recon. The outfall pipe is routed under an access road that bisects Brushy Creek. There is a culvert measuring approximately 4-feet in width that runs under the access road which makes Brushy Creek contiguous at this point. There was negligible flow in the immediate vicinity of the culvert though a good flow regime was found slightly upstream and downstream of the culvert. The upstream and downstream flow were considered to be sufficient for the placement of Hester-Dendy samplers.

Hester-Dendy samplers were deployed in two locations the morning of Tuesday, January 22, 2008:

1. Brushy Creek – upstream of D001 at: Lat: 28^0 04' 11.8" N, Lon: 82^0 31' 56.3" W
2. Brushy Creek – downstream of D001 at: Lat: 28^0 04' 10.1" N, Lon: 82^0 31' 58.1" W

Figure 1 provides the locations of the Hester-Dendy sampling sites on an aerial map and Table 3 summarizes the conditions at both sampling locations.

TABLE 2: DMR SUMMARY

	14	***86***	***1***	***0.01***	***3.0***	***3.8***	***4.5***	***6***
D001	**Mo Med**	**Fc max**	**TCR min**	**TCR max**	**TN aa**	**TN ma**	**TN wa**	**TN max**
Feb 07	<1	<1	1.2	nodi=b	2	2.1	2.77	2.77
Mar	<1	<1	1.5	nodi=b	2.1	2.15	2.63	2.79
Apr	<1	<1	1.2	**6**	2	1.61	1.79	2
May	<1	<1	1	nodi=b	1.9	2.2	2.8	4.6
Jun	<1	<1	1	nodi=b	1.89	2.16	2.43	3.1
Jul	<1	<1	1.2	nodi=b	1.9	1.93	2.42	3.08
Aug	<1	<1	1.28	**2.31 (2x)**	1.91	1.68	1.67	2.58
Sep	<1	<1	1.1	**2.09**	1.89	1.58	2.6	3.8
Oct	<1	<1	1.13	nodi=b	1.93	1.67	2	2.6
Nov	<1	<1	1.2	nodi=b	2.09	3.19	3.89	5.41
Dec	1	<1	**0.75**	nodi=b	2.18	3.39	**4.6**	**6.57**
Jan 08	<1	<1	**0.56**	nodi=b	2.24	2.67	3.74	5.38
Feb	<1	1	1.2	nodi=b	2.25	2.14	**2.19**	**3.65**

2.09: Highlighted value indicates exceedance of permit value.

Parameter	Brushy Creek (Upstream)	Brushy Creek (Downstream)
Depth (m)	0.3	0.7
Dissolved Oxygen (mg/L)	8.11	7.44
Specific Conductance (µS/cm)	403	400
Temperature (^{0}C)	16.3	16.4
pH (SU)	8.19	7.50
Flow (m/s)	0.077	0.048
Latitude/longitude	N: 28^{0}04'11.8" W: 82^{0}31'56.3"	N: 28^{0}04'10.1" W: 82^{0}31'58.1"
Least wide riparian side	> 18m	> 18m
Artificially channelized	No	Yes
Artificially impounded	No	Yes
High water mark	> 1.0m	> 1.0m
Canopy cover (%)	60%	10%
Sediment type	Organic top layer over sand	Organic muck
Water odors	Absent	Distinctive effluent odor
Water surface oils	Absent	Absent
Clarity	Clear	Turbid
Color	Clear	Tannic
Periphyton	Present	Present
Fish	Present	Absent
Aquatic macrophytes	Absent	Absent
Iron/sulfur bacteria	Absent	Absent

Appendix C

Explanation of Measurements

(1) Quality Assurance and Quality Control

FDEP's quality assurance requirements for analytical laboratories and field activities are codified in Chapter 62-160, F.A.C., Quality Assurance (QA Rule) and in internal Standard Operating Procedures (FDEP SOPs). Methods for all analyses are on file at the FDEP Central Laboratory in Tallahassee and may be viewed on the web at http://www.floridadep.org/labs/sop/index.htm and/or http://www.floridadep.org/labs/qa/index.htm .

(2) Chemical Analyses of the Effluent

The effluent was analyzed for nutrients, metals, organic constituents (base, neutral, and acid extractables) and pesticides following FDEP SOPs. A list of the analytes tested for, results, data qualifiers, the minimum detection limit and the practical quantitation limit are given in Appendix E. The results from these analyses were compared with Water Quality Criteria (62-302 F.A.C.) and facility permit limits (Tables 1 and 2, Appendix B). Exceedances of Water Quality Criteria may be violations of specific provisions of Chapter 62-302 (F.A.C.) and/ or facility permit limits.

(3) Toxicity Bioassays

Acute screening toxicity bioassays were performed on the effluent sample using the water flea, *Ceriodaphnia dubia,* and the fish, *Cyprinella leedsi* following FDEP SOPs TA07_01 and TA07_02. Failure of toxicity testing may constitute a violation of 62-302.530(20), 62-302.530(61) and/or facility permit limits. Standard reference toxicant (SRT) tests are conducted monthly to ensure quality in toxicity testing.

(4) Bacteriological Testing

The effluent and water from control and test sites were analyzed for the presence and concentration of fecal coliform bacteria following FDEP SOPs MB1_0 and MB1_1. High levels of fecal coliform bacteria may constitute violation of 62-302.530(6) and/or facility permit limits.

(5) Habitat Assessment

Habitat assessment is used to evaluate the physical structure and extent of disturbance in a waterbody. Eight aspects are ranked, with 20 possible points for each aspect (QA Rule SOP FT 3100). The Habitat Assessment score includes types and amounts of benthic substrates, water velocity, amount of sand or silt accumulation, extent of artificial channelization, bank stability, and riparian zone width and vegetation type. All scores are summed to yield an overall Habitat Assessment score. Habitat Assessment score ranges from 11-160 and overall habitat quality is assigned to one of four categories: Optimal (120-160 points), Suboptimal (80-119 points), Marginal (40-79 points), and Poor (11-39 points).

(6) Algal Growth Potential (AGP)

The effluent and water from control and test sites are autoclaved, filtered (0.45μm), inoculated with the unicellular green alga, *Pseudokirchneriella subcapitata* (formerly *Selenastrum capricornutum,* USEPA 2002*),* and incubated for 14 days (FDEP SOP TA08_05). The algal growth potential (AGP) value is the peak growth of the alga within that 14-day period, recorded as mg dry weight/L. Raschke and Shultz (1987) found that an AGP above 5.0 mg dry weight/L represents a "problem" threshold for fresh receiving waters, implying nutrient enrichment. High AGP values may constitute one line of evidence for violation of 62-302.530(46) F.A.C., 62-302.530(47)(a) F.A.C. and/or 62-302.530(47)(b) F.A.C..

The concentration of nutrients in a water sample may be used to calculate the expected yield of AGP under the assumption that other required nutrients (e.g. silicon, micronutrients) are present in excess (Miller *et al*. 1978). The expected amount of production is calculated as 38 times the total soluble inorganic nitrogen (nitrate and nitrite plus ammonia) under nitrogen limitation or 430 times the ortho-phosphate (OP) concentration under phosphorus limitation with an error of ± 20%. When the ratio of nitrogen to phosphorus (N: P) is less than 10:1, nitrogen limitation of algal production is likely. When the N: P ratio is 20:1 or greater, phosphorus limitation is likely (USEPA 2000). For ratios in-between, co-limitation may occur. Production of lower biomass than expected may be evidence of growth inhibition related to toxic compounds present in the water sample tested and may be a violation of 62-302.530(61) F.A.C..

(7) Algal Phytoplankton and Periphyton Assemblages

Methods: Qualitative periphyton were sampled at both control and test sites by taking subsamples of algae from natural substrates throughout the sample reach (QA Rule FS7220). Periphyton were subsampled and identified to the lowest practical level, usually species (FDEP SOPs AB03, AB03_1 and AB05). Wet taxa and diatoms are identified separately. In the wet taxa analysis, soft algae are identified to the lowest practical level, and diatoms are identified only to order level (diatom). In the diatom analysis, diatoms are identified to the lowest practical level.

Chlorophyll *a* Content: Chlorophyll *a* content is measured in phytoplankton samples to estimate algal biomass (FDEP SOP BB05). High algal biomass implies nutrient stress (Stevenson and Bahls 1999) and may be a violation of 62-302.530(46) F.A.C., 62-302.530(47)(a) F.A.C. and/or 62-302.530(47)(b) F.A.C..

Algal Density: Algal density is estimated as number of natural units/ml for phytoplankton samples. Although algal density of a single site is highly variable and depends on a number of factors, comparison of algal density at a control site to algal density at a related test site gives a partial comparison of algal biomass at the two sites (Stevenson and Smol 2003).

Taxa richness: Taxa richness is the number of distinct algal taxa present in a sample. Extreme nutrient enrichment tends to reduce the number of different types of algae present in a sample because a few tolerant taxa tend to reproduce rapidly and constitute the majority of the cells present. However, moderate nutrient enrichment of nutrient poor waters may sometimes be correlated with increased algal taxa richness (Stevenson and Bahls 1999) as the algal community begins to respond to the increased input of nutrients.

Community Composition: Shifts in relative proportions of major groups of algae downstream of a point source, compared to upstream, control conditions, may indicate negative effects of a discharge (Stevenson and Bahls 1999) and may constitute violations of 62-302.530(46) F.A.C., 62-302.530(47)(a) F.A.C., 62-302.530(47)(b) F.A.C. and/or 62-302.530(61) F.A.C.

(8) Benthic Macroinvertebrate Assemblages

Methods: Benthic macroinvertebrates were collected using two methods. Quantitative samples were collected from Hester-Dendy multi-plate samplers incubated for 28 days (QA Rule SOP FS7430). Qualitative collections are made using 20 dipnet sweeps (QA Rule SOP FS7420). Benthic macroinvertebrates were sorted and identified to the lowest practical taxonomic level, usually species (FDEP SOP IZ06).

Taxa richness: Taxa richness is the number of distinct macroinvertebrate taxa present in a sample. Stress, habitat destruction and pollution tend to reduce the number of different types of organisms present (Karr and Chu 1998). Decreases in taxa richness related to a facility's effluent may constitute violations of 62-302.530(46) F.A.C., 62-302.530(47)(a) F.A.C., 62-302.530(47)(b) F.A.C. and/or 62-302.530(61) F.A.C..

Percent Contribution of Dominant Taxon: Percent contribution of the dominant taxon is calculated by dividing the number of individuals in the most abundant taxa by the total number of individuals counted. Percent contribution of the dominant taxon tends to increase with increasing perturbation (Plafkin *et al*., 1989). Increases in the percent contribution of the dominant taxon related to a facility's effluent may constitute violations of 62-302.530(46) F.A.C., 62-302.530(47)(a) F.A.C. and/or 62-302.530(47)(b) F.A.C..

Shannon-Weaver Diversity Index: This index is specified in the Florida Administrative Code 62-302 as a measure of biological integrity. Low diversity scores are undesirable. Where diversity is low, only a few taxa are abundant as compared to an area where many taxa are present in equitable abundance among taxa (Magurran 1988). A difference of 25% in Shannon-Weaver diversity between results from Hester-Dendy multiplate samplers incubated for 28 days at test and control sites constitutes a violation of 62-302.530(10) F.A.C..

Community Composition: Shifts in proportions of major groups of organisms downstream of a point source, compared to upstream, control conditions, may indicate negative effects of a discharge (Karr and Chu 1998; Fore et. al. 2007). Shifts in community composition related to a facility's effluent may constitute violations of 62-302.530(46) F.A.C., 62-302.530(47)(a) F.A.C., 62-302.530(47)(b) F.A.C. and/or 62-302.530(61) F.A.C..

Functional Feeding Groups: Environmental degradation may differentially affect groups of invertebrates based on how the group feeds (e.g. predators, deposit feeders, etc.). In Florida, pollution may be responsible for reducing the numbers of filter feeders and shredders (Fore et. al. 2007). Changes in the proportions of functional feeding groups related to a facility's effluent may constitute violations of 62-302.530(46) F.A.C., 62-302.530(47)(a) F.A.C., 62-302.530(47)(b) F.A.C. and/or 62-302.530(61) F.A.C..

The Stream Condition Index (SCI): The SCI is a composite macroinvertebrate metric developed for Florida (Fore et. al. 2007). This Index was revised in 2007 using data from qualitative dipnet samples. The SCI now assigns points to ten parameters; depending on how closely each parameter approaches an expected value (QA Rule SOP LT 7200). Points are assigned according to in which bioregion (Panhandle, Northeast, or Peninsula) the sampling location exists -and summed to yield a final SCI score (range 0-100). Included in the calculation of SCI are taxa richness, number of Ephemeroptera taxa, number of Trichoptera taxa, percent contribution of the dominant taxon, number of sensitive taxa, number of clinger taxa,

number of long-lived taxa, percent contribution of Tanytarsini, percent contribution of very tolerant, and the percent contribution of suspension and filter feeders. Scores are broken into three categories (I, II, and III). SCI 2007 categories are from Table LT 7200-2 of Draft DEP-SOP-002/01 as referenced in Draft Quality Assurance Rule (62-160 F.A.C.), September 17, 2007. A decrease in ordinal SCI score from the Control to the Test site may be evidence of degradation related to a facility's effluent. An SCI score in Category I, if it is shown to be related to a facility's effluent, may constitute violations of 62-302.530(47) F.A.C., 62-302.530(48)(a) F.A.C., 62-302.530(48)(b) F.A.C. and/or 62-302.530(62) F.A.C..

(9) Statistical Comparisons

Statistical comparisons of the proportions of taxa, major groups or feeding groups were made using 95% confidence intervals on proportions. A 95% confidence interval is the range of values above and below a given proportion that has a 95% chance of containing the true proportion (Sokal and Rohlf 1995). If the 95% confidence intervals for two proportions do not overlap, then the proportion of X in sample 1 is significantly different from the proportion of X in sample 2 at $p<0.05$. A "$p<0.05$" level of significance means that there is less than a 5% chance that the true proportions in the two samples are the same. All comparisons that are labeled as significant in the text have a probability <0.05 that the proportions are the same.

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Florida Department of Environmental Protection

Event ID *

Central Laboratory Sample Submittal Form

Request Number: RQ-2008-02-18-28
Dale Mabry (AWT) WWTP

Requester: Jennifer Paris

Field Report Prepared By:

Customer: SW-DIST

Collected By: P. WENNER / C. ANASTASIOU

Send Final Report To Tom Gucciardo

Project ID: FYI5

Sampling Agency: FDEP SW DIST

PMAS: 1143

Lab ID * 36054 | Location EFD01 | Field ID

Matrix (Include type e.g. Salt, Fresh, etc): FRESH | Temp (C): 22.65 | pH: 7.45

Latitude: 28° 04' 12.7" | Longitude: 82° 31' 31.6"

Comp / Grab | Collection (begin) Date / Time | Eastern / Central | Collection (end) Date 2/19/08 Time 0850 | Eastern / Central | Bottle Group(s)**: A

Tot Res Chlorine (mg/L): <0.01 | Diss Oxygen (mg/L): 8.42 | Storet Station Number

Sample Depth: 0.2 m / ft | Salinity (PPTh): 0.47 | Sp Conductance (umho/cm): 959 | NPDES Number

Comments: POE SAMPLE WAS COLLECTED @ 0850 BUT NOT FILTERED UNTIL 1145

Lab ID * 36058 | Location EQUIPMENT BLANK | Field ID

Matrix (Include type e.g. Salt, Fresh, etc): LAB DI WATER | Temp (C): | pH:

Latitude: ° ' " | Longitude: ° ' "

Comp / Grab | Collection (begin) Date / Time | Eastern / Central | Collection (end) Date 2/18/08 Time 0815 | Eastern / Central | Bottle Group(s)**: FED

Tot Res Chlorine (mg/L): | Diss Oxygen (mg/L): | Storet Station Number

Sample Depth: m / ft | Salinity (PPTh): | Sp Conductance (umho/cm): | NPDES Number

Comments: ALL SAMPLES COLLECTED AT 0815 BUT ACIDIFICATION OF NUTRIENTS & METALS DID NOT TAKE PLACE UNTIL 1016

Lab ID * | Location | Field ID

Matrix (Include type e.g. Salt, Fresh, etc): | Temp (C): | pH:

Latitude: ° ' " | Longitude: ° ' "

Comp / Grab | Collection (begin) Date / Time | Eastern / Central | Collection (end) Date / Time | Eastern / Central | Bottle Group(s)**:

Tot Res Chlorine (mg/L): | Diss Oxygen (mg/L): | Storet Station Number

Sample Depth: m / ft | Salinity (PPTh): | Sp Conductance (umho/cm): | NPDES Number

Comments:

Lab ID * | Location | Field ID

Matrix (Include type e.g. Salt, Fresh, etc): | Temp (C): | pH:

Latitude: ° ' " | Longitude: ° ' "

Comp / Grab | Collection (begin) Date / Time | Eastern / Central | Collection (end) Date / Time | Eastern / Central | Bottle Group(s)**:

Tot Res Chlorine (mg/L): | Diss Oxygen (mg/L): | Storet Station Number

Sample Depth: m / ft | Salinity (PPTh): | Sp Conductance (umho/cm): | NPDES Number

Comments: 2 Bloomsy Rec'd 9:40 2.20.08 in box J.D.

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
				2-20-08				

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information

last revised October 1, 2003

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2008-02-18-28
Dale Mabry (AWT) WWTP

Requester: Jennifer Paris

Field Report Prepared By: Gitta Schmitt

Customer: SW-DIST

Collected By: Schuman, Schmitt

Send Final Report To Tom Gucciardo

Project ID: FYI5

Sampling Agency FDEP

PMAS: 1143

Lab ID *	Location / Field ID / Matrix / Temp (C) / pH / Latitude / Longitude	Collection (begin) / Eastern / Central	Collection (end) / Eastern / Central	Bottle Group(s)**
	Location: Upstream Brushy CK - Control Field ID: Control 36055- Matrix (Include type e.g. Salt, Fresh, etc.) Temp (C): 16.6 pH: 7.4 Latitude o ' " Longitude o ' "	Comp / Grab Date 02/20/08 Time 1,200 Central Tot Res Chlorine (mg/L) Diss Oxygen (mg/L)	Date - Time - Central Storet Station Number	A
	Sample Depth X m / ft 0.2 Salinity (PPTh) Sp Conductance (umho/cm) 392 NPDES Number Comments			
	Location: Upstream Brushy CK Field ID: 36057 - Control Matrix (Include type e.g. Salt, Fresh, etc.) Temp (C): 16.6 pH: 7.4 Latitude o ' " Longitude o ' "	Comp / Grab Date 02/20/08 Time Central Tot Res Chlorine (mg/L) Diss Oxygen (mg/L)	Date Time Central Storet Station Number	C
	Sample Depth m / ft Salinity (PPTh) Sp Conductance (umho/cm) 392 NPDES Number Comments 4 - HDO, DTM, RLDC			
	Location Field ID Matrix (Include type e.g. Salt, Fresh, etc.) Temp (C) pH Latitude o ' " Longitude o ' "	Comp / Grab Date Time Central Tot Res Chlorine (mg/L) Diss Oxygen (mg/L)	Date Time Central Storet Station Number	Bottle Group(s)**
	Sample Depth m / ft Salinity (PPTh) Sp Conductance (umho/cm) NPDES Number Comments			
	Location Field ID Matrix (Include type e.g. Salt, Fresh, etc.) Temp (C) pH Latitude o ' " Longitude o ' "	Comp / Grab Date Time Central Tot Res Chlorine (mg/L) Diss Oxygen (mg/L)	Date Time Central Storet Station Number	Bottle Group(s)**
	Sample Depth m / ft Salinity (PPTh) Sp Conductance (umho/cm) NPDES Number Comments			

Relinquished By	Date/Time	Shipping Method	Received By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time
Gitta Schmitt	02/20/08 1:30	DHL	Schuman & Blalock	02/21/08 9:10				

Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2008-02-18-28
Dale Mabry (AWT) WWTP

Requester: Jennifer Paris

Field Report Prepared By: Gitta Schmitt

Customer: SW-DIST

Collected By: Schmitt, Schuman

Send Final Report To: Tom Gucciardo

Project ID: FYI5

Sampling Agency: FDEP

PMAS: 1143

Lab ID *

Location: Downstream Brushy Ck

Field ID: ~~36058~~ 02/20/08 - TEST 36056

Matrix (Include type e.g. Salt, (Fresh), etc): Fresh

Temp (C): 17.47 pH: 7.43

Latitude o ' "

Longitude o ' "

Comp / (Grab)

Collection (begin) Date 02/20 Time 1300 (Eastern) Central

Collection (end) Date Time Eastern Central

Bottle Group(s)**: A

Tot Res Chlorine (mg/L)

Diss Oxygen (mg/L): 6.52

Storet Station Number

Sample Depth: 0.3 (m / ft)

Salinity (PPTh): 0.21

Sp Conductance (umho/cm): 427

NPDES Number

Comments: DO% 68.2

Lab ID *

Location: Brushy Ck - Downstream

Field ID: 36063

Matrix (Include type e.g. Salt, (Fresh), etc

Temp (C): 17.47 pH: 7.43

Latitude o ' "

Longitude o ' "

Comp / Grab

Collection (begin) Date 02/20/08 Time Eastern Central

Collection (end) Date Time Eastern Central

Bottle Group(s)**: C

Tot Res Chlorine (mg/L)

Diss Oxygen (mg/L)

Storet Station Number

Sample Depth: m / ft

Salinity (PPTh): 0.21

Sp Conductance (umho/cm): 427

NPDES Number

Comments: 4 HDs

Lab ID *

Location: Brushy Ck - Downstream

Field ID: 36080 Downstream TEST

Matrix (Include type e.g. Salt, (Fresh), etc

Temp (C) pH

Latitude o ' "

Longitude o ' "

Comp / Grab

Collection (begin) Date 02/20/08 Time Eastern Central

Collection (end) Date Time Eastern Central

Bottle Group(s)**: C

Tot Res Chlorine (mg/L)

Diss Oxygen (mg/L)

Storet Station Number

Sample Depth: m / ft

Salinity (PPTh)

Sp Conductance (umho/cm)

NPDES Number

Comments: QLDC, DTM

Lab ID *

Location

Field ID

Matrix (Include type e.g. Salt, Fresh, etc) Temp (C) pH

Latitude o ' "

Longitude o ' "

Comp / Grab

Collection (begin) Date Time Eastern Central

Collection (end) Date Time Eastern Central

Bottle Group(s)**

Tot Res Chlorine (mg/L)

Diss Oxygen (mg/L)

Storet Station Number

Sample Depth: m / ft

Salinity (PPTh)

Sp Conductance (umho/cm)

NPDES Number

Comments

Relinquished By:	Date/Time	Shipping Method	Received By
Gitta Schmitt	02/20/08 17:30	DHL	Tahmoor Ebrahimi

Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
9:10 02/21/08				

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

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2 bottle pair BS

Appendix E

Chemical analysis of effluent and receiving water

Date_Sampled	Field_Sample_ID	SCH_Group	Name	Value	Qualifier	Units	MDL	PQL
2/19/2008	Effluent	AGP/LN	Algal Growth Potential	98.8		mg DryWt/L	0.3	0.9
2/19/2008	Effluent	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.24	U	ug/L	0.24	0.71
2/19/2008	Effluent	Chlorophyll/Grain Size/BOD	BOD-5 Day,N-Inhib	1.4	I	mg/L	0.2	2
2/19/2008	Effluent	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.73	I	ug/L	0.55	1.7
2/19/2008	Effluent	Toxicology	Bioassay-Acute-Screen-FW-C.dubia, LC50	100	L	LC50		
2/19/2008	Effluent	Toxicology	Bioassay-Acute-Screen-FW-Fish, LC50	100	L	LC50		
2/19/2008	Effluent	Metals	Silver	0.025	U	ug/L	0.025	0.1
2/19/2008	Effluent	Metals	Selenium	0.5	U	ug/L	0.5	2
2/19/2008	Effluent	Metals	Copper	3		ug/L	0.5	2
2/19/2008	Effluent	Metals	Nickel	1.12		ug/L	0.25	1
2/19/2008	Effluent	Metals	Arsenic	0.5	U	ug/L	0.5	2
2/19/2008	Effluent	Metals	Magnesium	5.5		mg/L	0.04	0.16
2/19/2008	Effluent	Metals	Lead	0.2	U	ug/L	0.2	0.8
2/19/2008	Effluent	Metals	Calcium	77.8		mg/L	0.075	0.3
2/19/2008	Effluent	Metals	Cadmium	0.02	U	ug/L	0.02	0.08
2/19/2008	Effluent	Metals	Aluminum	69	I	ug/L	60	240
2/19/2008	Effluent	Metals	Zinc	23		ug/L	5	20
2/19/2008	Effluent	Metals	Iron	32	I	ug/L	30	120
2/19/2008	Effluent	Metals	Chromium	1	U	ug/L	1	4
2/19/2008	Effluent	Nutrients	Total-P	0.64		mg P/L	0.02	0.06
2/19/2008	Effluent	Nutrients	Dissolved Organic Carbon	8.2		mg C/L	1	5
2/19/2008	Effluent	Nutrients	Ammonia-N	0.87		mg N/L	0.01	0.02
2/19/2008	Effluent	Nutrients	NO2NO3-N	0.98		mg N/L	0.008	0.02
2/19/2008	Effluent	Nutrients	Kjeldahl Nitrogen	2.2		mg N/L	0.08	0.2
2/19/2008	Effluent	Nutrients	TSS	4	U	mg/L	4	16
2/19/2008	Effluent	Nutrients	Total Organic Carbon	8.4		mg C/L	1	5
2/19/2008	Effluent	Nutrients	O-Phosphate-P	0.52	Y	mg P/L	0.012	0.03
2/19/2008	Effluent	Nutrients	Color	10		PCU	5	5
2/19/2008	Effluent	Nutrients	Turbidity	2.6	A	NTU	0.05	0.05
2/19/2008	Effluent	Pesticides	Phorate	0.05	U	ug/L	0.05	0.2
2/19/2008	Effluent	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1
2/19/2008	Effluent	Pesticides	Malathion	0.15	UJ	ug/L	0.15	0.6
2/19/2008	Effluent	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
2/19/2008	Effluent	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
2/19/2008	Effluent	Pesticides	Naled	0.8	U	ug/L	0.8	3.2
2/19/2008	Effluent	Pesticides	Hexazinone	0.1	U	ug/L	0.1	0.4
2/19/2008	Effluent	Pesticides	Fonofos	0.1	U	ug/L	0.1	0.4
2/19/2008	Effluent	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
2/19/2008	Effluent	Pesticides	Butylate	0.2	UJ	ug/L	0.2	0.8
2/19/2008	Effluent	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2

Date_Sampled	Field_Sample_ID	SCH_Group	Name	Value	Qualifier	Units	MDL	PQL
2/19/2008	Effluent	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
2/19/2008	Effluent	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
2/19/2008	Effluent	Pesticides	Alachlor	0.6	U	ug/L	0.6	2.4
2/19/2008	Effluent	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
2/19/2008	Effluent	Pesticides	Metolachlor	0.5	U	ug/L	0.5	2
2/19/2008	Effluent	Pesticides	Parathion Methyl	0.1	U	ug/L	0.1	0.4
2/19/2008	Effluent	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
2/19/2008	Effluent	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8
2/19/2008	Effluent	Pesticides	Ethoprop	0.1	U	ug/L	0.1	0.4
2/19/2008	Effluent	Pesticides	Chlorpyrifos Methyl	0.1	U	ug/L	0.1	0.4
2/19/2008	Effluent	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
2/19/2008	Effluent	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.8
2/19/2008	Effluent	Pesticides	Diazinon	0.05	UJ	ug/L	0.05	0.2
2/19/2008	Effluent	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
2/19/2008	Effluent	Pesticides	Atrazine	0.2	IJ	ug/L	0.05	0.2
2/19/2008	Effluent	Priority Organic Pollutants	Bromodichloromethane	2.3		ug/L	0.2	1
2/19/2008	Effluent	Priority Organic Pollutants	Bromoform	0.5	U	ug/L	0.5	2
2/19/2008	Effluent	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	62
2/19/2008	Effluent	Priority Organic Pollutants	2,4-Dinitrotoluene	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	Benzidine	100	U	ug/L	100	410
2/19/2008	Effluent	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	U	ug/L	15	62
2/19/2008	Effluent	Priority Organic Pollutants	Di-n-butyl phthalate	5.2	U	ug/L	5.2	21
2/19/2008	Effluent	Priority Organic Pollutants	Endrin	1.5	U	ug/L	1.5	6.2
2/19/2008	Effluent	Priority Organic Pollutants	Hexachlorobutadiene	3.1	U	ug/L	3.1	12
2/19/2008	Effluent	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.1	U	ug/L	2.1	8.2
2/19/2008	Effluent	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1	U	ug/L	2.1	8.2
2/19/2008	Effluent	Priority Organic Pollutants	Naphthalene	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	delta-BHC	1.5	U	ug/L	1.5	6.2
2/19/2008	Effluent	Priority Organic Pollutants	2-Chlorophenol	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.1	U	ug/L	2.1	8.2
2/19/2008	Effluent	Priority Organic Pollutants	Acenaphthene	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	Anthracene	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	Endosulfan I	4.1	U	ug/L	4.1	16
2/19/2008	Effluent	Priority Organic Pollutants	Fluoranthene	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	gamma-BHC	1.5	U	ug/L	1.5	6.2
2/19/2008	Effluent	Priority Organic Pollutants	2,4-Dichlorophenol	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	4,4'-DDD	1.5	U	ug/L	1.5	6.2
2/19/2008	Effluent	Priority Organic Pollutants	4-Chloro-3-methylphenol	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	Benzo(b)fluoranthene	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	Heptachlor epoxide	1.5	U	ug/L	1.5	6.2
2/19/2008	Effluent	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.1	U	ug/L	3.1	12

Date_Sampled	Field_Sample_ID	SCH_Group	Name	Value	Qualifier	Units	MDL	PQL
2/19/2008	Effluent	Priority Organic Pollutants	Pentachlorophenol	3.1	U	ug/L	3.1	12
2/19/2008	Effluent	Priority Organic Pollutants	2-Chloronaphthalene	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1	U	ug/L	3.1	12
2/19/2008	Effluent	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	Acenaphthylene	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	Benzo(a)anthracene	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	Dieldrin	1.5	U	ug/L	1.5	6.2
2/19/2008	Effluent	Priority Organic Pollutants	Dimethyl phthalate	10	U	ug/L	10	41
2/19/2008	Effluent	Priority Organic Pollutants	Endosulfan sulfate	1.5	U	ug/L	1.5	6.2
2/19/2008	Effluent	Priority Organic Pollutants	Hexachlorobenzene	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	Hexachloroethane	3.1	U	ug/L	3.1	12
2/19/2008	Effluent	Priority Organic Pollutants	Isophorone	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	beta-BHC	1.5	U	ug/L	1.5	6.2
2/19/2008	Effluent	Priority Organic Pollutants	Chloroform	13		ug/L	0.2	1
2/19/2008	Effluent	Priority Organic Pollutants	Dibromochloromethane	0.3	I	ug/L	0.2	1
2/19/2008	Effluent	Priority Organic Pollutants	2,4,6-Trichlorophenol	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	4,4'-DDT	1.5	U	ug/L	1.5	6.2
2/19/2008	Effluent	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	62
2/19/2008	Effluent	Priority Organic Pollutants	Benzo(g,h,i)perylene	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.1	U	ug/L	3.1	12
2/19/2008	Effluent	Priority Organic Pollutants	Dibenzo(a,h)anthracene	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	Pyrene	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	3,3'-Dichlorobenzidine	41	UJ	ug/L	41	160
2/19/2008	Effluent	Priority Organic Pollutants	4,4'-DDE	1.5	U	ug/L	1.5	6.2
2/19/2008	Effluent	Priority Organic Pollutants	Di-n-octyl phthalate	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	Endrin aldehyde	4.1	UJ	ug/L	4.1	16
2/19/2008	Effluent	Priority Organic Pollutants	Phenol	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	alpha-BHC	1.5	U	ug/L	1.5	6.2
2/19/2008	Effluent	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	Aldrin	1.5	U	ug/L	1.5	6.2
2/19/2008	Effluent	Priority Organic Pollutants	Benzo(a)pyrene	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	Benzo(k)fluoranthene	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	Butyl benzyl phthalate	5.2	U	ug/L	5.2	21
2/19/2008	Effluent	Priority Organic Pollutants	Fluorene	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	Heptachlor	1.5	U	ug/L	1.5	6.2
2/19/2008	Effluent	Priority Organic Pollutants	Nitrobenzene	2.1	U	ug/L	2.1	8.2
2/19/2008	Effluent	Priority Organic Pollutants	2,4-Dimethylphenol	10	U	ug/L	10	41
2/19/2008	Effluent	Priority Organic Pollutants	2,6-Dinitrotoluene	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	2-Nitrophenol	1	UJ	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	Chrysene	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	Diethyl phthalate	1	U	ug/L	1	4.1
2/19/2008	Effluent	Priority Organic Pollutants	Endosulfan II	4.1	U	ug/L	4.1	16

Date_Sampled	Field_Sample_ID	SCH_Group	Name	Value	Qualifier	Units	MDL	PQL
2/19/2008	Effluent	Priority Organic Pollutants	Phenanthrene	1	U	ug/L	1	4.1
2/19/2008	Effluent	Field Parameters	pH	7.45				
2/19/2008	Effluent	Field Parameters	Sample Depth	0.2		m		
2/19/2008	Effluent	Field Parameters	Specific Conductance	959		umhos/cm		
2/19/2008	Effluent	Field Parameters	Salinity	0.47		PPTh		
2/19/2008	Effluent	Field Parameters	Temperature	22.65		C		
2/19/2008	Effluent	Field Parameters	Dissolved Oxygen	8.42		mg/L		
2/20/2008	Control Site	AGP/LN	Algal Growth Potential	19.9	A	mg DryWt/L	0.3	0.9
2/20/2008	Control Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	2.2		ug/L	0.55	1.7
2/20/2008	Control Site	Chlorophyll/Grain Size/BOD	BOD-5 Day,N-Inhib	0.64	I	mg/L	0.2	2
2/20/2008	Control Site	Chlorophyll/Grain Size/BOD	Phaeophytin-a	2.4		ug/L	0.24	0.71
2/20/2008	Control Site	Metals	Iron	540		ug/L	30	120
2/20/2008	Control Site	Metals	Arsenic	1.1	I	ug/L	0.5	2
2/20/2008	Control Site	Metals	Selenium	0.5	U	ug/L	0.5	2
2/20/2008	Control Site	Metals	Silver	0.025	U	ug/L	0.025	0.1
2/20/2008	Control Site	Metals	Magnesium	3.2		mg/L	0.04	0.16
2/20/2008	Control Site	Metals	Chromium	1	U	ug/L	1	4
2/20/2008	Control Site	Metals	Aluminum	370		ug/L	60	240
2/20/2008	Control Site	Metals	Cadmium	0.051	I	ug/L	0.02	0.08
2/20/2008	Control Site	Metals	Zinc	6	I	ug/L	5	20
2/20/2008	Control Site	Metals	Nickel	0.6	I	ug/L	0.25	1
2/20/2008	Control Site	Metals	Copper	2.8		ug/L	0.5	2
2/20/2008	Control Site	Metals	Calcium	36.6		mg/L	0.075	0.3
2/20/2008	Control Site	Metals	Lead	0.86	I	ug/L	0.27	1.1
2/20/2008	Control Site	Nutrients	Dissolved Organic Carbon	11		mg C/L	1	5
2/20/2008	Control Site	Nutrients	Kjeldahl Nitrogen	0.82		mg N/L	0.08	0.2
2/20/2008	Control Site	Nutrients	TSS	15	I	mg/L	4	16
2/20/2008	Control Site	Nutrients	O-Phosphate-P	0.025		mg P/L	0.004	0.01
2/20/2008	Control Site	Nutrients	Total-P	0.08		mg P/L	0.02	0.06
2/20/2008	Control Site	Nutrients	NO2NO3-N	0.16		mg N/L	0.004	0.01
2/20/2008	Control Site	Nutrients	Ammonia-N	0.062		mg N/L	0.01	0.02
2/20/2008	Control Site	Nutrients	Color	50	A	PCU	5	5
2/20/2008	Control Site	Nutrients	Total Organic Carbon	11		mg C/L	1	5
2/20/2008	Control Site	Nutrients	Turbidity	4.6		NTU	0.05	0.05
2/20/2008	Control Site	Field Parameters	pH	7.4				
2/20/2008	Control Site	Field Parameters	Specific Conductance	392		umhos/cm		
2/20/2008	Control Site	Field Parameters	Dissolved Oxygen	6.39		mg/L		
2/20/2008	Control Site	Field Parameters	Salinity	0.19		PPTh		
2/20/2008	Control Site	Field Parameters	Temperature	16.6		C		
2/20/2008	Test Site	AGP/LN	Algal Growth Potential	15.8		mg DryWt/L	0.3	0.9
2/20/2008	Test Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	2.3		ug/L	0.55	1.7
2/20/2008	Test Site	Chlorophyll/Grain Size/BOD	Phaeophytin-a	1		ug/L	0.24	0.71
2/20/2008	Test Site	Chlorophyll/Grain Size/BOD	BOD-5 Day,N-Inhib	0.77	I	mg/L	0.2	2

Date_Sampled	Field_Sample_ID	SCH_Group	Name	Value	Qualifier	Units	MDL	PQL
2/20/2008	Test Site	Metals	Arsenic	1.1	I	ug/L	0.5	2
2/20/2008	Test Site	Metals	Chromium	1.2	I	ug/L	1	4
2/20/2008	Test Site	Metals	Copper	3.1		ug/L	0.5	2
2/20/2008	Test Site	Metals	Zinc	8	I	ug/L	5	20
2/20/2008	Test Site	Metals	Calcium	37.8		mg/L	0.075	0.3
2/20/2008	Test Site	Metals	Iron	670		ug/L	30	120
2/20/2008	Test Site	Metals	Aluminum	510		ug/L	60	240
2/20/2008	Test Site	Metals	Cadmium	0.02	U	ug/L	0.02	0.08
2/20/2008	Test Site	Metals	Silver	0.025	U	ug/L	0.025	0.1
2/20/2008	Test Site	Metals	Lead	0.9	I	ug/L	0.27	1.1
2/20/2008	Test Site	Metals	Magnesium	3.2		mg/L	0.04	0.16
2/20/2008	Test Site	Metals	Selenium	0.5	U	ug/L	0.5	2
2/20/2008	Test Site	Metals	Nickel	0.64	I	ug/L	0.25	1
2/20/2008	Test Site	Nutrients	Total-P	0.071		mg P/L	0.02	0.06
2/20/2008	Test Site	Nutrients	TSS	8	I	mg/L	4	16
2/20/2008	Test Site	Nutrients	Total Organic Carbon	11		mg C/L	1	5
2/20/2008	Test Site	Nutrients	Color	40		PCU	5	5
2/20/2008	Test Site	Nutrients	Kjeldahl Nitrogen	0.84		mg N/L	0.08	0.2
2/20/2008	Test Site	Nutrients	NO2NO3-N	0.19		mg N/L	0.004	0.01
2/20/2008	Test Site	Nutrients	O-Phosphate-P	0.027		mg P/L	0.004	0.01
2/20/2008	Test Site	Nutrients	Dissolved Organic Carbon	11		mg C/L	1	5
2/20/2008	Test Site	Nutrients	Turbidity	2.6		NTU	0.05	0.05
2/20/2008	Test Site	Nutrients	Ammonia-N	0.064		mg N/L	0.01	0.02
2/20/2008	Test Site	Field Parameters	Specific Conductance	427		umhos/cm		
2/20/2008	Test Site	Field Parameters	Temperature	17.47		C		
2/20/2008	Test Site	Field Parameters	Salinity	0.21		PPTh		
2/20/2008	Test Site	Field Parameters	pH	7.43				
2/20/2008	Test Site	Field Parameters	Dissolved Oxygen	6.52		mg/L		
2/20/2008	Test Site	Field Parameters	Sample Depth	0.3		m		

FDEP Biology Laboratory - Acute Screen Bioassay Bench Sheets

Facility: Dale Mabry AWWTP

Address: 13055 Dalwood Rd

City: Tampa County: Hillsborough

Contact/District: Peter Wenner / SW - District

NPDES Permit #: FL0036820

LIMS Job #: TLH-2008-02-20-19 LIMS Sample #: 1083729

Lims Data Entry: 2-22-08 MF Data Entry Verification: 2.22.08 SD

Sample Collection: Date: 2-19-08 Time: 0850

Hold Time Start: Date: 2-19-08 Time: 0850

Comments:

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

Test Type: Screen

(Static) / Static Renewal / Flow-through

Test Duration: (48) 96 Hours.

Test 1 validation: **Test 1:** SOP TA 07_01

Control survival ≥90%: (Yes) No

Temperature Range ≤3°C: (Yes) No

Test 2 validation: **Test 2:** SOP TA 07_02

Control survival ≥90%: (Yes) No

Temperature Range ≤3°C: (Yes) No

Initial sample handling:

PH adjustment : yes (no) Initial pH: ____ NaOH N HCl N ____ Drops mL Final pH: ____

Aeration : (yes) no Initial DO: 9.1 mg/L Final DO: 8.0 mg/L Duration: 15 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: ____

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)

Light Intensity : 50 - 100 ft. candles

Photoperiod : 16 light 8 dark

Temperature Range °C:

Incubator # 2 min 26.2 max 26.6 mean 26.4

Incubator # ____ min. ____ max. ____ mean ____

Room B246 min 23.8 max 24.6 mean 24.2

Investigators' Signatures

James Daniels

Marshall Faircloth

REVIEWER

Water Quality Parameters	20% DMW 2-11-08	Moderately Hard Water/ (Well Water)	Salt Water ASW NSW Test 1	Salt Water ASW NSW Test 2	Other:	Original Sample	Method	Measured by	Verified by
Field Total Residual Cl_2 (mg/L):	N/A	N/A	N/A	N/A		<0.01	Hach	R. Wenner	MF
Lab Total Residual Cl_2 (mg/L):	<0.03	<0.03				<0.04	HACH	SD	MF
Alkalinity (mg/L as $CaCO_3$):	83	145				163	HACH	BA	MF
Hardness (mg/L as $CaCO_3$):	81	142				200	HACH	BA	MF
Total Ammonia (mg/L as N):	<0.017	<0.017				0.310	DENVER	MF	SD
Salinity (ppth):	<1	<1				<1	YSI / Mettler	SD	MF

V 1.4 9/12/05

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1083729 Test #: 1/2 SOP#:TA 07 01 Test Started: Date 2-20-08 (February not December MF) Time: 11:05

Organism/Batch/Age: C. dubia /7-08/<24hours Test Ended: Date 2-22-08 Time: 11:00

Chamber/Test Volume: 30 / 20 ml Diluent/ Batch: DMW 12-1-08

Food/Batch: (YCT) 7260 (P.sub) 1-3-08 Artemia 0hr — 24hr — 48hr — 72hr — Artemia Lot# —

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	A	5	5	5			
	B	B	5	5	5			
	C	C	5	5	5			
	D	D	5	5	5			
100%	A	A	5	5	5			
	B	B	5	5	5			
	C	C	5	5	5			
	D	D	5	5	5			
Loaded/Verified by: BA MF		Checked by:	MF	MF	JD			

m = missing d = dead BR/AR = Before/After Renewal

Comments:

Test Results:

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

% mortality in 100% sample: Ø LC50: >100%

If Calculated: 95% CI_________ Method_________

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

PAGE V 2.1 11/01/2005

000002

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1083729 Test #: 2/2 SOP#:TA 07 02 Test Started: Date 2-20-08 Time: 1130
Organism/Batch/Age: C. leedsi / 2.19.08 / 12 days Test Ended: Date 2.27.08 Time: 1140
Chamber/Test Volume: 1000 / 500 ml Diluent/ Batch: Well H2O / 2.19.08
Food/Batch: YCT — P.sub — Artemia 0hr 31-08 24hr — 48hr — 72hr — Artemia Lot# GSL-536-90
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	D1	5	5	5			
	B	D2	5	5	5			
	C	D3	5	5	5			
	D	D4	5	5	5			
100%	A	D5	5	5	5			
	B	D6	5	5	5			
	C	D7	5	5	5			
	D	D8	5	5	5			
Loaded/Verified by: JD / BA		Checked by:	JD	MF	JD			

m = missing d = dead BR/AR = Before/After Renewal

Test Results:
Screening Tests: Report LC50 as >100%, =100%, or <100%.
% mortality in 100% sample: 0 LC50: >100%
If Calculated: 95% CI_____ Method_____

Comments:

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

PAGE V 2.1 11/01/2005

000003

FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 1083729 **Test #:** 1 of 2

TEST SOP #: TA07_01 **Test Species:** (*Ceriodaphnia dubia*) *Cyprinella leedsi* *Pimephales promelas* *Americamysis bahia* *Menidia beryllina* Other:_____

Concentration Ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		M			
pH (S.U.)	8.2		8.3			
Temperature °C	24.0		24.0			
Dissolved Oxygen mg/L	8.1		7.5			
Conductivity (µmhos) mmhos	169		275			
(initials) Measured by:	JD		JD			
(initials) Recorded by:	JD		JD			

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		M			
pH (S.U.)	7.7		8.0			
Temperature °C	25.5		24.0			
Dissolved Oxygen mg/L	8.1		7.5			
Conductivity (µmhos) mmhos	971		1272			
(initials) Measured by:	JD		JD			
(initials) Recorded by:	JD		JD			

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:

000004

V 2.0 2/24/04

FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 1083729 **Test #:** 2 of 2

TEST SOP #: TA07_02 **Test Species:** *Ceriodaphnia dubia* (*Cyprinella leedsi*) *Pimephales promelas* *Americamysis bahia* *Menidia beryllina* Other:

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.)	7.8	7.9	8.4			
Temperature °C	24.8	24.0	24.2			
Dissolved Oxygen mg/L	8.0	6.6	7.3			
Conductivity (µmhos) mmhos	275	286	305			
(initials) Measured by:	JD	BA	JD			
(initials) Recorded by:	JD	BA	JD			

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.)	7.7	8.1	8.4			
Temperature °C	25.8	24.3	24.3			
Dissolved Oxygen mg/L	8.1	6.4	7.1			
Conductivity (µmhos) mmhos	975	963	1035			
(initials) Measured by:	JD	BA	JD			
(initials) Recorded by:	JD	BA	JD			

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:

Chemical Analysis Report
RQ 2008-18-28

Project:	Dale Mabry FYI
Type:	WRAT
Requested by:	Wenner
Date of Report:	2/29/2008
Matrix:	Non-Potable Water

Florida Department of Environmental Protection
South West District Laboratory
13051 North Telecom Parkway
Temple Terrace, FL 33637-0926
NELAP Accreditation # E34886
DEP CompQAP# 880078

Certified by: Jason Cohen Quality Assurance Officer
Phone: 813-632-7600 ext.429

Results for NELAP accredited tests contained in this report meet the requirements specified by the NationalEnvironmental Laboratory Accreditation Conference (NELAC). All samples received were in acceptable condition and met NELAC requirements unless otherwise noted. Results were based on wet weight only. Results generated in this report pertain to the samples collected and submitted for analysis only.

Qualifiers:
- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- C- Growth of colonies were confluent. Reported value is lowest dilution.
- I - The reported value is bewteen the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value.
- K - Actual value is known to be less than the value given.
- L - Actual value is known to be greater than the value given.
- O - Sampled, but analysis lost or not performed
- Q - Sample held beyond normal holding time.
- U - Material was analyzed but not detected.
- V - The analyte was detected in both the sample and the associated method blank.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample.
- Z - Colonies were too numerous to count (TNTC). The numeric value represents the filtration volume
- ? - Data are rejected and should not be used. Some or all of the quality control data from the analyte were outside criteria and the presence or absence of the analyte cannot be determine from the data

RQ 2008-18-28
Chemical Analysis Report

Sample Location:		EFD01				Collection Date/ Time:		2/19/2008		8:50
Field ID:		36054				Laboratory Recept Date/Time		2/19/2008		12:00
Sample ID:	**Analyte**	**Ref Method:**	**Result**	**Code**	**Units**	**Set up Date/Time**		**Analysis Date/Time**		**Analyst**
36054F	Fecal Coliforms	SM 9222D	1	U	cfu/100ml	2/19/2008	12:55	2/20/2008	12:20	J.Cohen

Comments:

Sample Location:		Brushy Creek Upstream				Collection Date/ Time:		2/20/2008		15:45
Field ID:		36055				Laboratory Recept Date/Time		2/20/2008		16:55
Sample ID:	**Analyte**	**Ref Method:**	**Result**	**Code**	**Units**	**Set up Date/Time**		**Analysis Date/Time**		**Analyst**
36055F	Fecal Coliforms	SM 9222D	233	A	cfu/100ml	2/20/2008	17:08	2/21/2008	16:40	J.Cohen

Comments:

Sample Location:		Brushy Creek Downstream Test				Collection Date/ Time:		2/20/2008		15:30
Field ID:		36056				Laboratory Recept Date/Time		2/20/2008		16:55
Sample ID:	**Analyte**	**Ref Method:**	**Result**	**Code**	**Units**	**Set up Date/Time**		**Analysis Date/Time**		**Analyst**
36056F	Fecal Coliforms	SM 9222D	223	A	cfu/100ml	2/20/2008	17:08	2/21/2008	16:40	J.Cohen

Comments:

Sample Location:		Brushy Creek Downstream Blank				Collection Date/ Time:		2/20/2008		15:30
Field ID:		36056B				Laboratory Recept Date/Time		2/20/2008		16:55
Sample ID:	**Analyte**	**Ref Method:**	**Result**	**Code**	**Units**	**Set up Date/Time**		**Analysis Date/Time**		**Analyst**
36056BF	Fecal Coliforms	SM 9222D	1	U	cfu/100ml	2/20/2008	17:08	2/21/2008	16:40	J.Cohen

Comments:

Reference Method Descriptions

Reference Method:	Description	SOP
SM 9222B	Membrane filtration of Total Coliforms	Ana-001
SM 9222D	Membrane filtration of Fecal Coliforms	Ana-002
SM 5210B	Biochemcial Oxygen Demand (5 Day)	Ana-003
SM 5210B	Carbonaceous Biochemical Oxygen Demand (5 Day)	Ana-003
EPA 160.2	Total Suspended Solids	Ana-005
EPA 310.1	Alkalinity	Ana-004

Abbreviations:

CFU/100mL	-colony forming units per 100 milliliters
NTU	-nephelometric turbidity units
PCU	-platinum cobalt units
mg CaCO3/l	-milligrams calcium carbonate per liter
mg/L	-milligrams per liter
TSS	-Total Suspended Solids
BOD	-Biochemical Oxygen Demand
CBOD	-Carbonaceous Biochemical Oxygen Demand

Page 3 of 3 is blank.

Appendix G

Standard Reference Toxicant data

FDEP Biology Laboratory - Acute SRT Bench Sheet

Test Organism: *Americamysis bahia* Method 2007.0 | *Menidia beryllina* Method 2006.0 | *Hyalella azteca* Method 100.1 EPA-600-R-99-064
Ceriodaphnia dubia Method 2002.0 | *Cyprinella leedsi* Method 2000.0 | *Pimephales promelas* Method 2000.0 | Other: _____

Method from EPA-821-R-02-012
Test Type: 48 hour non-renewal / (96 hour renewal)
Test Page 1 of 2

Diluent/ Batch #: DMW 1-31-08
Toxicant/ Batch#: NaCl 12-4-08

Test Beginning: Date: 2-5-08 Time: 13:30
Test Ending: Date: 2-9-08 Time: 1000

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	MF
Alkalinity (mg/L as $CaCO_3$):	82	Hach	BA
Hardness (mg.L as $CaCO_3$):	86	Hach	BA
Total Ammonia (mg/L as N):	<0.07	Denver	MF
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 5-08/ <24hr
Feeding: (Prior to test) (Prior to renewal) Daily
Food: (YCT) (P.subcapitata) Artemia: Lot # —
Food Batch: 7-26-07 1-31-08 0hr — 24hr — 48hr — 72hr —
Chamber size: 30 mL
Test volume: 20 mL per replicate

Conc. (ug/L) mg/L	Rep.	Chamber #	Number Live 0 hr / 24 hr / 48 hr			pH (SU) 0 hr / 24 hr / 48 hr			Temperature (° C) 0 hr / 24 hr / 48 hr			D.O. (mg/L) 0 hr / 24 hr / 48 hr			Uncorrected Conductivity µmhos/cm (mmhos/cm) 0 hr / 24 hr / 48 hr		
			48 hr	72 hr	96 hr	48 hr	72 hr	96 hr	48 hr	72 hr	96 hr	48 hr	72 hr	96 hr	48 hr	72 hr	96 hr
Control	A	A	5	5	5	8.0		8.1	24.0		24.0	7.9		7.7	0.179		0.181
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
1.5	A	A	5	5	5	8.0		8.0	24.0		24.0	7.5		7.4	2.90		2.93
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
2.0	A	A	5	5	4 1D	8.0		8.0	24.1		24.0	7.5		7.3	3.94		4.14
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	4 1D												
2.5	A	A	5	2 3D	1 1D	8.0		8.0	24.2		24.0	7.4		7.3	4.79		5.01
	B	B	5	4 1D	0 4D												
	C	C	5	5	0 5D												
	D	D	5	4 1D	0 4D												
3.0	A	A	5	2 3D	0 2D	8.0		8.0	24.0		24.0	7.4		7.3	5.65		5.62
	B	B	5	2 3D	0 2D												
	C	C	5	2 3D	0 2D												
	D	D	5	2 3D	0 2D												
4.0	A	A	5	0 5D	—	8.1	8.0	—	24.1	25.3	—	7.2	7.6	—	7.4	7.1	—
	B	B	5	0 5D	—												
	C	C	5	0 5D	—												
	D	D	5	0 5D	—												
	A																
	B																
	C																
	D																
Loaded / measured by:			MF	MF	BA	BA	MF	BA	BA	MF	BA	BA	MF	BA	BA	MF	BA
Recorded by:			BA	MF	BA	BA	MF	BA	BA	MF	BA	BA	MF	BA	BA	MF	BA

Investigators' Signatures
Bruce Ahrs
Marshall Fairchild
Jason Dench
Loretta C. Wolfe
REVIEWER

Concentrations prepared by: BA
Loading verified by: BA
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 25.6 max. 26.6 mean 26.0
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 23.6 max. 25.2 mean 24.4

Comments:

Statistics: Method: Spearman-Karber
48/96 hour LC_{50}: 2.25
95% Confidence Interval: lower 2.14 upper 2.36

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revised 08/24/06 SP

FDEP Biology Laboratory - Acute SRT Bench Sheet

Test Organism: *Americamysis bahia* Method 2007.0 | *Menidia beryllina* Method 2006.0 | *Hyalella azteca* Method 100.1 EPA-600-R-99-064
Ceriodaphnia dubia Method 2002.0 | *Cyprinella leedsi* Method 2000.0 | *Pimephales promelas* Method 2000.0 | Other: _____

Method from EPA-821-R-02-012
Test Type: 48 hour non-renewal / 96 hour renewal
Test Page 2 of 2

Diluent/ Batch #: DMW, 1-31-08
Toxicant/ Batch#: NaCl, 2-4-08

Test Beginning: Date: 2.5.08 Time: 13:30
Test Ending: Date: 2-9-08 Time: 1000

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	MF
Alkalinity (mg/L as $CaCO_3$):	82	Hach	BA
Hardness (mg.L as $CaCO_3$):	86	Hach	BA
Total Ammonia (mg/L as N):	<0.07	Denver	MF
Salinity (ppth):	21	Mettler	BA

Organism Batch #/ Age: 5-08, <24hr
Feeding: Prior to test / Prior to renewal / Daily
Food: YCT / *P.subcapitata* Artemia: Lot # —
Food Batch: 7-26-07 1-31-08 0hr — 24hr — 48hr — 72hr —
Chamber size: 30 mL
Test volume: 20 mL per replicate

Conc. g/L µg/L mg/L	Rep.	Chamber #	Number Live 0 hr	24 hr	48 hr (96 hr)	pH (SU) 0 hr (48 hr)	24 hr (72 hr)	48 hr (96 hr)	Temperature (°C) 0 hr (48 hr)	24 hr (72 hr)	48 hr (96 hr)	D.O. (mg/L) 0 hr (48 hr)	24 hr (72 hr)	48 hr (96 hr)	Uncorrected Conductivity µmhos/cm (mmhos/cm) 0 hr (48 hr)	24 hr (72 hr)	48 hr (96 hr)
Control	A	A	5	5	5	7.9		8.2	24.0		24.2	7.6			0.172		0.195
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
1.5	A	A	5	5	5	8.0		8.1	24.0		24.7	7.5			2.85		2.95
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
2.0	A	A	4	4	3 1D	8.0		8.1	24.0		24.7	7.5			3.76		3.88
	B	B	5	4 1D	2 2D												
	C	C	5	4 1D	3 1D												
	D	D	4	3 1D	1 2D												
2.5	A	A	1	1	0 1D	8.0		8.1	24.0		24.9	7.5			4.60		4.66
	B	B	—	—	—												
	C	C	2	0 2D	—												
	D	D	—	—	—												
3.0	A	A	—	—	—	8.0			24.0			7.5			5.4		
	B	B	—	—	—												
	C	C	—	—	—												
	D	D	—	—	—												
4.8	A	A	—	—	—												
	B	B	—	—	—												
	C	C	—	—	—												
	D	D	—	—	—												
	A																
	B																
	C																
	D																
Loaded / measured by:			BA	BA	MF	BA		MF	BA		MF	BA			BA		MF
Recorded by:			BA	BA	MF	BA		MF	BA		MF	BA			BA		MF

Investigators' Signatures
Brent Marshall Fairchild James Davis
Loretta C. Wolfe
REVIEWER

Concentrations prepared by: BA
Loading verified by: BA
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min 25.6 max 26.6 mean 26.0
Incubator # ___ min ___ max ___ mean ___
Room B246 min 23.6 max 25.2 mean 24.4

Comments:

Statistics: Method: Spearman-Karber
48 / (96) hour LC_{50}: 1.94
95% Confidence Interval: lower 1.84 upper 2.06

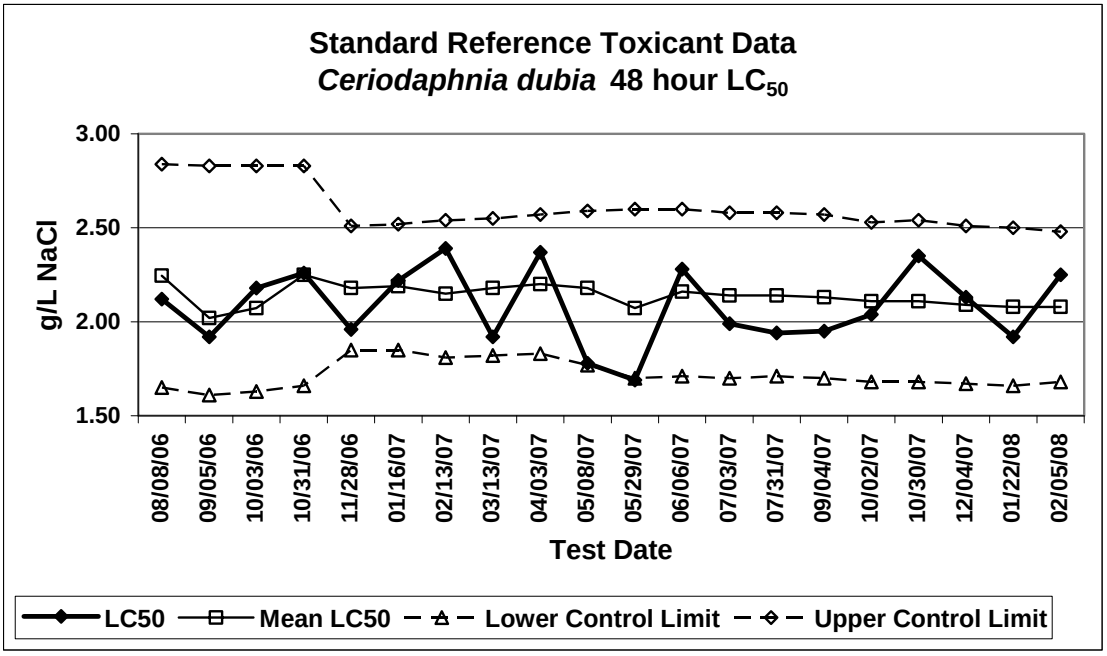
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 48-hour Acute Toxicity
Ceriodaphnia dubia (water flea) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
08/08/06	2.12	2.24	0.30	1.65	2.84
09/05/06	1.92	2.02	0.30	1.61	2.83
10/03/06	2.18	2.07	0.30	1.63	2.83
10/31/06	2.26	2.25	0.29	1.66	2.83
11/28/06	1.96	2.18	0.17	1.85	2.51
01/16/07	2.22	2.19	0.17	1.85	2.52
02/13/07	2.39	2.15	0.17	1.81	2.54
03/13/07	1.92	2.18	0.18	1.82	2.55
04/03/07	2.37	2.20	0.18	1.83	2.57
05/08/07	1.78	2.18	0.21	1.77	2.59
05/29/07	1.69	2.07	0.23	1.70	2.60
06/06/07	2.28	2.16	0.22	1.71	2.60
07/03/07	1.99	2.14	0.22	1.70	2.58
07/31/07	1.94	2.14	0.22	1.71	2.58
09/04/07	1.95	2.13	0.22	1.70	2.57
10/02/07	2.04	2.11	0.21	1.68	2.53
10/30/07	2.35	2.11	0.21	1.68	2.54
12/04/07	2.13	2.09	0.20	1.67	2.51
01/22/08	1.92	2.08	0.20	1.66	2.50
02/05/08	2.25	2.08	0.20	1.68	2.48

Means are of the last 20 SRT tests.
Lower Control Limit = mean - 2 * Std Dev
Upper Control Limit = mean + 2 * Std Dev

CV = 9.65
EPA reference 75th quartile CV = 29%



FDEP Biology Laboratory - Acute SRT Bench Sheet

Test Organism: *Americamysis bahia* Method 2007.0 | *Menidia beryllina* Method 2006.0 | *Hyalella azteca* Method 100.1 EPA-600-R-99-064
Ceriodaphnia dubia Method 2002.0 | *Cyprinella leedsi* Method 2000.0 | *Pimephales promelas* Method 2000.0 | Other: _____

Method from EPA-821-R-02-012
Test Type: 48 hour non-renewal / 96 hour renewal
Test Page 1 of 2

Diluent/ Batch #: WCII 12-4-08
Toxicant/ Batch#: NaCl 12-4-08

Test Beginning: Date: 2-5-08 Time: 1320
Test Ending: Date: 2-9-08 Time: 1010

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	MF
Alkalinity (mg/L as $CaCO_3$):	144	Hach	BA
Hardness (mg.L as $CaCO_3$):	143	Hach	BA
Total Ammonia (mg/L as N):	<0.07	Denver	MF
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 2-5-08 / 1 Day
Feeding: (Prior to test) / (Prior to renewal) / Daily
Food: YCT P.subcapitata (Artemia) Lot # GSL536 90
Food Batch: — —
0hr 2008 24hr — 48hr 2-7-08 72hr —
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Conc. µg/L mg/L	Rep.	Chamber #	Number Live 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	pH (SU) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	Temperature (°C) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	D.O. (mg/L) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	Uncorrected Conductivity µmhos/cm mmhos/cm 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr
Control	A	B13	(A)5/10	10	10	7.8		8.2	24.1		24.0	7.1		7.0	0.585		0.290
	B	B14	5/10	10	10		7.9			24.5			6.3			0.284	
	C		5														
	D		5														
6.0	A	B15	5/10	10	10	7.8		8.0	24.7		24.0	7.2		6.4	10.73		10.3
	B	B16	5/10	8/20	8		7.8			24.9			6.1			10.0	
	C		5														
	D		5														
7.0	A	B17	5/10	10	10	7.8		8.0	25.0		24.0	7.3		6.5	12.54		11.8
	B	B18	5/10	9/10	9		7.8			24.8			5.7			11.7	
	C		5														
	D		5														
8.0	A	B19	5/10	9/10	9	7.8		8.0	25.2		24.0	7.4		6.5	14.07		13.5
	B	B20	5/10	8/20	8		7.9			24.6			6.2			13.1	
	C		5														
	D		5														
9.0	A	B21	5/10	6/10	4/20	7.8		8.0	25.2		24.0	7.3		6.5	15.64		15.0
	B	B22	5/10	8/20	7/10		7.9			24.3			6.2			14.8	
	C		5														
	D		5														
10.0	A	B23	5/10	1/10	0/10	7.8		8.1	25.3		24.0/25.3	7.3		6.5	17.28		16.4
	B	B24	5/10	2/10	1/10		7.9			24.2			6.2			16.1	
	C		5														
	D		5														
	A																
	B																
	C																
	D																
Loaded / measured by:			JD	JD	JD	BA	JD	JD	BA	JD	JD	BA	JD	JD	BA	JD	JD
Recorded by:			BA	JD	JD	BA	JD	JD	BA	JD	JD	BA	JD	JD	BA	JD	JD

Investigators' Signatures
Bruce Atkins
Marshall Faircloth
Jamie Daniels

Loretta C. Wolfe
REVIEWER

Concentrations prepared by: MF
Loading verified by: MF
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min 25.6 max 26.6 mean 26.0
Incubator # ___ min ___ max ___ mean ___
Room B246 min 23.6 max 25.2 mean 24.4

Comments:
(A) Wrong number transcribed BA 2-5-08

Statistics: Method: Spearman-Karber
48/ 96 hour LC_{50}: 8.92
95% Confidence Interval: lower 8.58 upper 9.27

revised 08/24/06 SP

000033 PAGE

FDEP Biology Laboratory - Acute SRT Bench Sheet

Test Organism: *Americamysis bahia* Method 2007.0 | *Menidia beryllina* Method 2006.0 | *Hyalella azteca* Method 100.1 EPA-600-R-99-064
Ceriodaphnia dubia Method 2002.0 | (*Cyprinella leedsi* Method 2000.0) | *Pimephales promelas* Method 2000.0 | Other: _____

Method from EPA-821-R-02-012
Test Type: 48 hour non-renewal | (96 hour renewal)
Test Page 2 of 2

Diluent/ Batch #: well 12-4-08
Toxicant/ Batch#: NaCl 12-4-08

Test Beginning: Date: 2-5-08 Time: 1340 MF
Test Ending: Date: 2-9-08 Time: 1010

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	MF
Alkalinity (mg/L as $CaCO_3$):	144	Hach	BA
Hardness (mg.L as $CaCO_3$):	143	Hach	BA
Total Ammonia (mg/L as N):	<0.07	Denver	MF
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 2-5-08 10 days
Feeding: (Prior to test) (Prior to renewal) / Daily
Food: YCT — P.subcapitata — (Artemia): Lot # GSI-536-90
Food Batch: — —
Chamber size: 1000 mL
Test volume: 500 mL per replicate
0hr 2-5-08 24hr — 48hr 2-7-08 72hr —

Conc.			Number Live			pH (SU)			Temperature (°C)			D.O. (mg/L)			Uncorrected Conductivity µmhos/cm (mmhos/cm)		
(0%) µg/L mg/L	Rep.	Chamber #	0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr
Control	A	B13	10	10	10	8.1		8.2	24.0		24.9	7.5		7.5	0.279 (A)		0.295
	B	B14	10	10	10		8.1			24.0			6.0			0.280	
	C																
	D																
6.0	A	B15	10	9,10	9	8.0		8.0	24.0		24.9	7.1		7.1	10.1		10.3
	B	B16	8	8	8		8.0			24.0			6.1			10.2	
	C																
	D																
7.0	A	B17	10	10	10	8.0		8.0	24.0		25.0	7.1		7.1	12.1		12.3
	B	B18	9	9	9		7.9			24.1			6.1			12.0	
	C																
	D																
8.0	A	B19	9	8,10	8	8.0		8.0	24.0		25.2	7.1		7.0	13.9		14.0
	B	B20	8	8	8		7.9			24.0			5.9			13.6	
	C																
	D																
9.0	A	B21	4	4	4	8.0		7.9	24.1		25.0	7.1		6.7	15.6		15.8
	B	B22	7	6,10	4,2D		7.9			24.1			5.8			15.3	
	C																
	D																
10.0	A		—	—	—	8.0											
	B	B24	1	0,10	—		7.9		24.2	24.1		7.0	5.9		10.9	16.6	
	C																
	D																
	A																
	B																
	C																
	D																
Loaded / measured by:			JJ	JJ	MF	JD	JJ	MF	JJ	JJ	MF	JD	JJ	MF	JJ	JJ	MF
Recorded by:			JD	JJ	MF	JD	JJ	MF	JD	JJ	MF	JD	JJ	MF	JD	JJ	MF

Investigators' Signatures
Bill Marshall Faircloth Jason Farrell
Dottie C. Wolfe
REVIEWER

Concentrations prepared by: JD
Loading verified by: MF
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min 25.6 max 26.6 mean 26.0
Incubator # ___ min ___ max ___ mean ___
Room B246 min 23.6 max 25.2 mean 24.4

Comments: (A) 0.279 MF 2-7-08 for JD

Statistics: Method: Spearman-Karber
48 / (96) hour LC_{50}: 8.66
95% Confidence Interval: lower 8.32 upper 9.01

000034

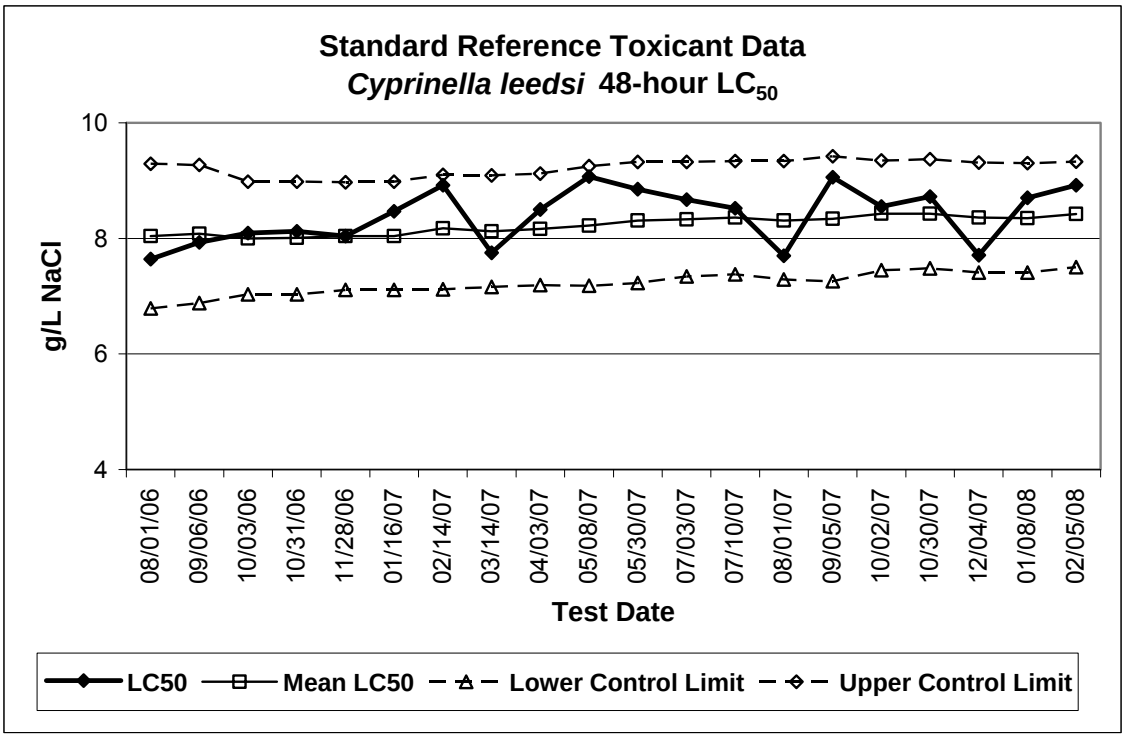
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 48-hour Acute Toxicity
Cyprinella leedsi (bannerfin shiner) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
08/01/06	7.64	8.04	0.63	6.79	9.29
09/06/06	7.93	8.08	0.60	6.88	9.27
10/03/06	8.09	8.00	0.49	7.03	8.98
10/31/06	8.12	8.01	0.49	7.03	8.98
11/28/06	8.04	8.04	0.46	7.11	8.97
01/16/07	8.47	8.04	0.27	7.11	8.98
02/14/07	8.92	8.17	0.41	7.12	9.10
03/14/07	7.75	8.12	0.41	7.16	9.09
04/03/07	8.50	8.16	0.40	7.19	9.12
05/08/07	9.07	8.22	0.52	7.18	9.25
05/30/07	8.85	8.31	0.49	7.23	9.32
07/03/07	8.67	8.33	0.50	7.34	9.32
07/10/07	8.52	8.36	0.49	7.38	9.34
08/01/07	7.7	8.31	0.51	7.29	9.34
09/05/07	9.06	8.34	0.54	7.26	9.42
10/02/07	8.55	8.43	0.47	7.45	9.35
10/30/07	8.72	8.43	0.47	7.48	9.37
12/04/07	7.71	8.36	0.47	7.41	9.31
01/08/08	8.7	8.35	0.47	7.41	9.30
02/05/08	8.92	8.42	0.46	7.50	9.33

Means are of the last 20 SRT tests.
Lower Confidence Limit = mean - 2 * Std Dev
Upper Confidence Limit = mean + 2 * Std Dev

CV = 5.42
EPA reference 75th quartile CV = 19%



MBL Aquaculture
4569 Samuel Street
Sarasota, Florida 34233
TEL: (800) 889-0384
FAX: (941) 922-3874
EMAIL: sales@mblaquaculture.com
WEB: www.MBLAquaculture.com

NELAC Accredited

Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 2/18/08

Shipped to: FDEP

P.O. No: N/A

Species	Quantity	Age	Brood Number	Temperature	Salinity
Mysidopsis bahia					
Menidia beryllina					
Cyprinella leedsi	120	11 DAYS	CL080207	25°C	
Pimephales promelas					

Packed by: D.C.

Shipped Via: FedEx.

Notes: _____

Thank you for your order.

Appendix H

Habitat Assessment Field Sheets

FDEP-SOP-001/01: Form FD 9000-3 (June 1, 2001)

PHYSICAL/CHEMICAL CHARACTERIZATION FIELD SHEET

SUBMITTING AGENCY CODE: / SUBMITTING AGENCY NAME:	STORET STATION NUMBER:	DATE (M/D/Y):	TIME	RECEIVING BODY OF WATER:
		02/20/08	12	

REMARKS:	COUNTY:	LOCATION:	FIELD ID/NAME:
+ / F	Hillsb	Upstream Bushy Cr	Control 36057

RIPARIAN ZONE/STREAM FEATURES

Predominant Land-Use in Watershed (specify relative percent in each category):

Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industrial	Other (Specify)
✓				✓	✓		

Local Watershed Erosion (check box): None ☐ Slight ☒ Moderate ☐ Heavy ☐

Local Watershed NPS Pollution (check box): No evidence ☒ Slight ☒ Moderate potential ☐ Obvious sources ☐

Width of riparian vegetation (m) On least buffered side:	List & map dominant Vegetation on back	Typical Width (m) Depth (m)/Velocity (m/sec) Transect
		5 m wide

Artificially Channelized ☐ no ☐ recent, severe ☐ some recovery ☐ mostly recovered

Artificially Impounded ☐ yes more sinuous

m/s	m/s	m/s
	0.12	

High Water Mark:	+	=
1	0.6	1.6
(m above present water level)	(present depth in m)	(m above bed)

m deep	m deep	m deep

Canopy Cover %: Open: ☐ Lightly Shaded (11-45%): ☒ Moderately Shaded (46-80%): ☐ Heavily Shaded: ☐

SEDIMENT/SUBSTRATE

Sediment Odors: Normal: ☒ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Anaerobic: ☒ Other: ☐

Sediment Oils: Absent: ☐ Slight: ☒ Moderate: ☐ Profuse: ☐

Sediment Deposition: Sludge: ☐ Sand Smothering: none moderate slight severe Silt smothering: none moderate slight severe Other:

Substrate Type	% coverage	# times sampled	method	Substrate Types	% coverage	# times sampled	method
Woody Debris (Snags)		5	20Y	Sand	3		
Leaf Packs of Mats		5		Mud/Muck/Silt			
Aquatic Vegetation		0		Other:			
Rock or Shell Rubbie		2		Other:			
Undercut banks/Roots		5		*Draw aerial view sketch of habitats found in 100 m section*			

WATER QUALITY	Depth (m):	Temp. (°C):	pH (SU):	D.O. (mg/l):	Cond. (umho/cm) Or Salinity (ppt):	sal	% DO	Secchi (m):
Top								
Mid-depth	0.3	16.60	7.4	6.59	392	0.19	65.5	0.3L
Bottom								

System Type: Stream: 1st-2nd order 5th – 6th order 3rd-4th order 7th order or greater Lake: ☐ Wetland: ☐ Estuary: ☐ Other: ☐

Water Odors (check box): Normal: ☒ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Other: ☐

Water Surface Oils (check box): None: ☒ Sheen: ☐ Globs: ☐ Slick: ☐

Clarity (check box): Clear: ☒ Slightly turbid: ☐ Turbid: ☐ Opaque: ☐

Color (check box): Tannic: ☐ Green (algae): ☐ Clear: ☒ Other: ☐

Weather Conditions/Notes:
- Cool + Cloudy
- The system appears to be more wetland-ish.

Abundance:	Absent	Rare	Common	Abundant
Periphyton	☐	☐	☐	☒
Fish	☐	☒	☐	☐
Aquatic Macrophytes	☒	☐	☐	☐
Iron/sulfur Bacteria	☒	☐	☐	☐

SAMPLING TEAM: N. Schuman, J. Seiler, J. Sendrucko, C. Thompson, B. Schmitt

SIGNATURE: [signature] DATE: 02/20/08

FDEP-SOP-001/01: Form FD 9000-5 (June 1, 2001)

STREAM/RIVER HABITAT ASSESSMENT FIELD SHEET

SUBMITTING AGENCY CODE: / SUBMITTING AGENCY NAME:	STORET STATION NUMBER:	DATE (M/D/Y): 02/20/08	RECEIVING BODY OF WATER:

REMARKS: FYI	COUNTY: Hillsb.	LOCATION: Brushy CK Upstream	FIELD ID/NAME: Control 36057

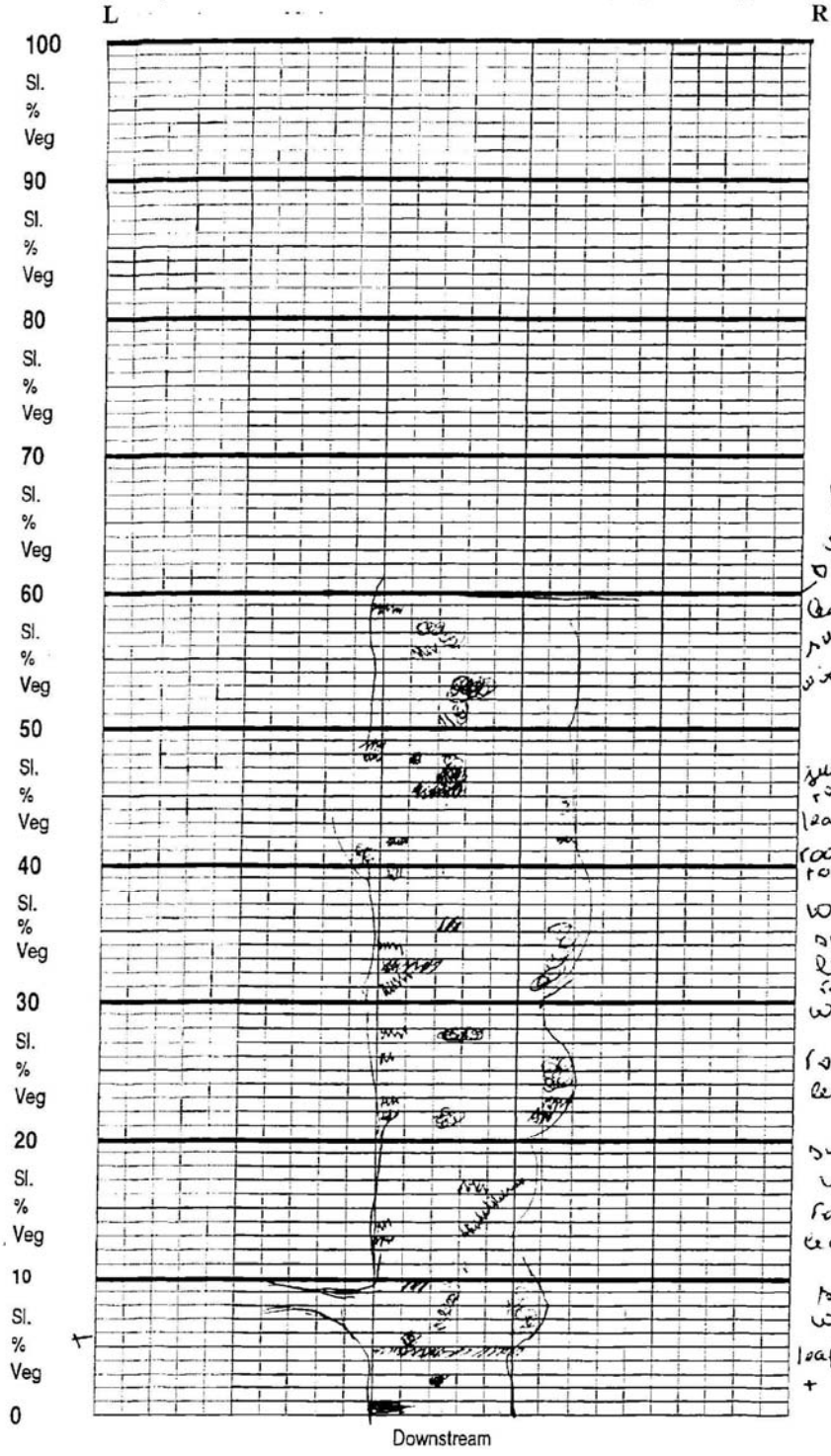
Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components Substrate Diversity 12	Four or more productive habitats present (snags, tree roots/undercut banks, aquatic vegetation, leaf packs (partially decayed), rock). 20 19 18 17 16	Three productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags). 15 14 13 (12) 11	Two productive habitats present. Less than desirable habitat, frequently disturbed or removed. 10 9 8 7 6	One or less productive habitat. Lack of habitat is obvious, substrates unstable or smothered. 5 4 3 2 1
Substrate Availability ~~16~~ 11	Greater than 30% productive habitat present at site. 20 19 18 17 (16)	16% to 30% productive habitat, by aerial extent. 15 14 13 12 (11)	6% to 15% productive habitat 10 9 8 7 6	Less than 5% productive habitat. 5 4 3 2 1
Water Velocity 13	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec 20 19 18 17 16	Max. observed at typical transect: 0.1 to 0.25 m/sec 15 14 (13) 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec. Or spate occurring: > 1 m/sec 5 4 3 2 1
Habitat Smothering 12 Primary Score ~~53~~ 48	Less than 20% of habitats affected by sand or silt accumulation 20 19 18 17 16	20%-50% of habitats affected by sand or silt accumulation 15 14 13 (12) 11	Smothering of 50%-80% of the habitats with sand or silt, pools shallow, frequent sediment movement 10 9 8 7 6	Smothering of >80% of habitats with sand or silt, as severe problem, pools absent 5 4 3 2 1
Secondary Habitat Components * Artificial Channelization 15	No artificial channelization or dredging. Stream with normal, sinuous pattern 20 19 18 17 16	Many have been channelized in the past (>20 yrs), but mostly recovered, fairly good sinuous pattern (15) 14 13 12 11	Channelized, somewhat recovered, but > 80% of area affected 10 9 8 7 6	Artificially channelized, box-cut banks, straight, instream habitat highly altered 5 4 3 2 1
Bank Stability Right Bank 9 Left Bank 9	Stable. No evidence of erosion or bank failure. Little potential for future problems. 10 (9)	Moderately stable. Infrequent or small areas of erosion, mostly healed over. 8 7 6	Moderately unstable. Moderate areas of erosion, high erosion potential during floods. 5 4	Unstable. Many (60%-80%) raw, eroded areas. Obvious bank sloughing. 3 2 1
Riparian Buffer Zone Width Right Bank ~~8~~ 3 Left Bank ~~8~~	Width of native vegetation (least buffered side) greater than 18 m 10 9	Width of native vegetation (least buffered side) 12m to 18 m (8) 7 6	Width of native vegetation 6 to 12 m. human activities still close to system 5 4	Less than 6 m of native buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank 9 Left Bank 9 Secondary Score ~~120~~ 114	Over 80% of riparian surfaces consist of native plants, including trees, understory shrubs, or non-woody machrophytes. Normal, expected plant community for given sunlight & habitat conditions. 10 (9)	50% to 80% of riparian zone is vegetated, and/or one class of plants normally expected for the sunlight & habitat conditions is not represented. Some disruption in community evident. 8 7 6	25% to 50% of riparian ozone is vegetated, and/or one or two expected classes of plants are not represented. Patches of bare soil or closely cropped vegetation, disruption obvious. 5 4	Less than 25% of streambank surfaces are vegetated and/or poor plant community (e.g. grass monoculture or exotics) present. Vegetation removed to stubble height of 2 inches or less. 3 2 1

~~115~~ 111 **TOTAL SCORE**

ANALYSIS DATE: 02/20/08	ANALYST: Gitta Schmitt	SIGNATURE: Gitta Schmitt

Stream/River Habitat Sketch Sheet, Form FD 9000-4 (December 11, 2001)

Length of grid represents 100 m of stream (not linear meters).
(Horizontal scale is double vertical scale, draw proportionately).



Substrates: Code key, draw proportionate habitat abundance.

- Snags
- Roots/undercut banks
- Leaf Packs (or mats)
- Macrophytes
- woody debry/ shall cubble
- _____
- _____

Velocity:
Note where velocity measures were taken. 0.25

Habitat Smothering:
Note areas (on map) where sand or silt is smothering substrates, limiting habitability.

Bank Stability:
Note areas (on map) with unstable, eroding banks.

Riparian Buffer Width:
Note areas (on map) where natural vegetation is altered or eliminated.

Plants observed/other notes:

0 leaf "possible"

leaf: 0.5
snag: 0.5+1+0.5
woody: 3+1+0.5

snag: 2
root: 0.5+0.5
leaf: 2+1

roots: 0.5
0.2+0.2

woody = 1+0.5

snag = 1+1+0.5+0.5+2 = 5

leaf = 2

root = 0.5+0.2

woody = 1+2

root = 0.5+1+0.5+0.5 =

leaf = 2

snag = 2+1 = 3

wood = 0.5+1

roots: 0.5+0.5 = 1

leaf = 1

snags: 3+0.5+2 = 5.5

woody = 1+2 = 3

leaf: 1.5

Prod. hab	1	2	3	4	5
Sweeps (Maj)	10	7	5	4	3
Sweeps (Min)	10	6	5	4	5

Brush Creek - upstream

snags = 5.5+3+5+2+2 = 17.5 roots =

FDEP-SOP-001/01: Form FD 9000-3 (June 1, 2001)

PHYSICAL/CHEMICAL CHARACTERIZATION FIELD SHEET

SUBMITTING AGENCY CODE: / SUBMITTING AGENCY NAME: FDEP/SWIM	STORET STATION NUMBER: 21FLA	DATE (M/D/Y): 7/20/08	TIME: 10	RECEIVING BODY OF WATER:
REMARKS: FYI	COUNTY: Hillsborough	LOCATION: Bushy Crk	FIELD ID/NAME: Test 36080	

RIPARIAN ZONE/STREAM FEATURES

Predominant Land-Use in Watershed (specify relative percent in each category):

Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industrial	Other (Specify)
20				80			

Local Watershed Erosion (check box): None ☐ Slight ☐ Moderate ☐ Heavy ☐

Local Watershed NPS Pollution (check box): No evidence ☐ Slight ☐ Moderate potential ☐ Obvious sources ☐

Width of riparian vegetation (m) On least buffered side: | List & map dominant Vegetation on back

Typical Width (m) Depth (m)/Velocity (m/sec) Transect .5 m wide

Artificially Channelized ☑ no ☐ recent, severe ☐ some recovery ☐ mostly recovered

Artificially Impounded ☐ yes ☐ more sinuous

m/s | m/s | m/s

20.1

High Water Mark: 0.5 + 1.0 = 1.5

(m above present water level) (present depth in m) (m above bed)

m deep | m deep | m deep

Canopy Cover %: Open: ☐ Lightly Shaded (11-45%): ☐ Moderately Shaded (46-80%): ☐ Heavily Shaded: ☐

SEDIMENT/SUBSTRATE

Sediment Odors: Normal: ☐ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Anaerobic: ☑ Other: ☐

Sediment Oils: Absent: ☑ Slight: ☐ Moderate: ☐ Profuse: ☐

Sediment Deposition: Sludge: ☐ Sand Smothering: none moderate slight severe Silt smothering: none moderate slight severe Other:

Substrate Type	% coverage	# times sampled	method	Substrate Types	% coverage	# times sampled	method
Woody Debris (Snags)		5		Sand		5	
Leaf Packs of Mats		5		Mud/Muck/Silt			
Aquatic Vegetation				Other:			
Rock or Shell Rubbie				Other:			
Undercut banks/Roots		5		*Draw aerial view sketch of habitats found in 100 m section*			

WATER QUALITY	Depth (m):	Temp. (°C):	pH (SU):	D.O. (mg/l):	Cond. (umho/cm) Or Salinity (ppt):	DO%	Sal	Secchi (m):
Top								
Mid-depth	0.3	17.47	7.43	6.52	427	68.2	0.21	0.52
Bottom								

System Type: Stream: 1st-2nd order 5th – 6th order 3rd-4th order 7th order or greater Lake: ☐ Wetland: ☐ Estuary: ☐ Other: ☐

Water Odors (check box): Normal: ☐ Sewage: ☑ Petroleum: ☐ Chemical: ☐ Other: ☐

Water Surface Oils (check box): None: ☑ Sheen: ☐ Globs: ☐ Slick: ☐

Clarity (check box): Clear: ☐ Slightly turbid: ☐ Turbid: ☑ Opaque: ☐

Color (check box): Tannic: ☑ Green (algae): ☐ Clear: ☐ Other: ☐

Weather Conditions/Notes:

Abundance:	Absent	Rare	Common	Abundant
Periphyton	☐	☐	☐	☐
Fish	☐	☑	☐	☐
Aquatic Macrophytes	☐	☐	☐	☐
Iron/sulfur Bacteria	☐	☐	☐	☐

SAMPLING TEAM: M. Schmitt, G. Schmitt | SIGNATURE: | DATE:

FDEP-SOP-001/01: Form FD 9000-5 (June 1, 2001)

STREAM/RIVER HABITAT ASSESSMENT FIELD SHEET

SUBMITTING AGENCY CODE: / SUBMITTING AGENCY NAME: FDEP/SWS	STORET STATION NUMBER: 24042036	DATE (M/D/Y): 02/20/08	RECEIVING BODY OF WATER:

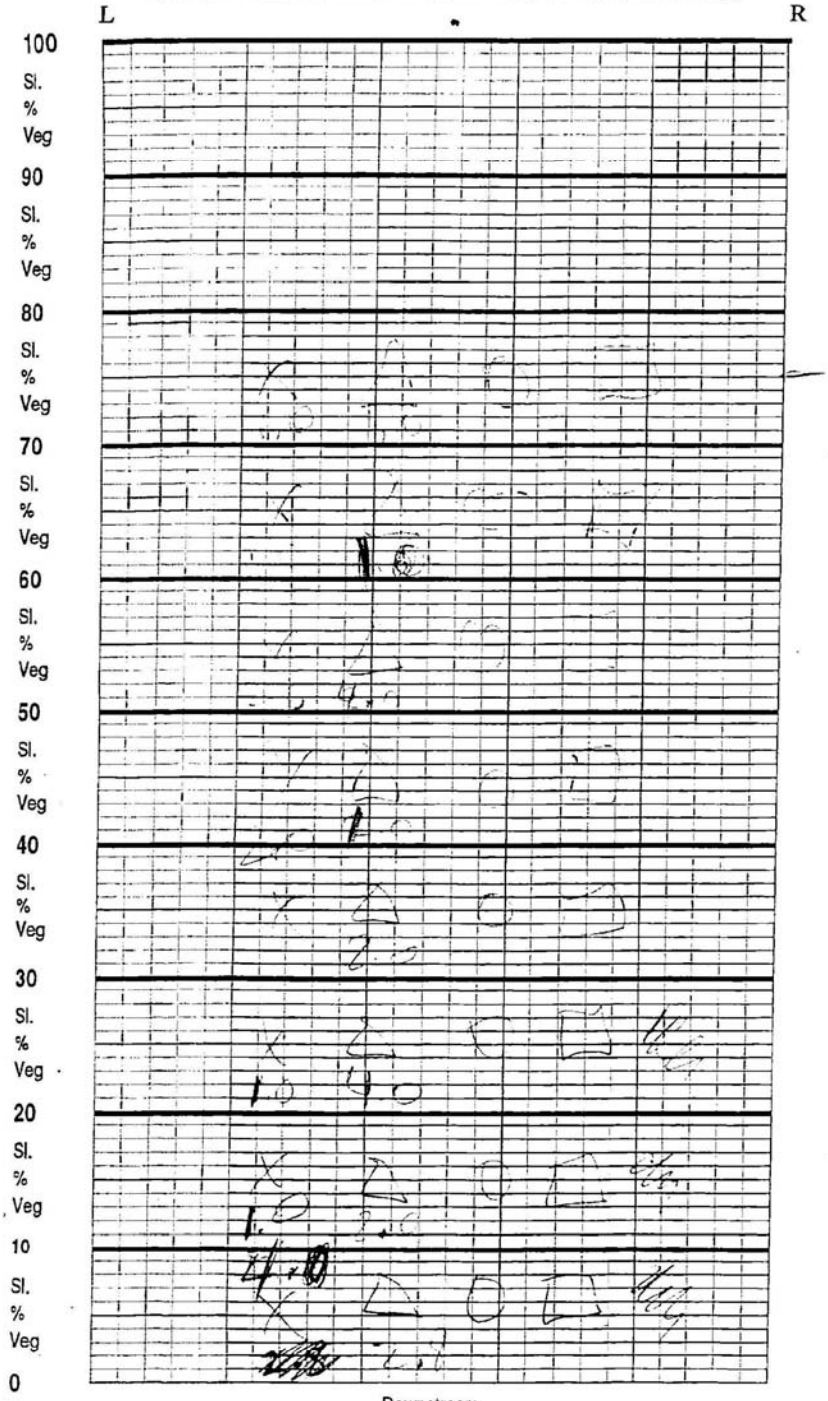
REMARKS: FJF	COUNTY: Hillsb.	LOCATION: Downstream Brushy CK	FIELD ID/NAME: Test 36080

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 13	Four or more productive habitats present (snags, tree roots/undercut banks, aquatic vegetation, leaf packs (partially decayed), rock). 20 19 18 17 16	Three productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags). 15 14 (13) 12 11	Two productive habitats present. Less than desirable habitat, frequently disturbed or removed. 10 9 8 7 6	One or less productive habitat. Lack of habitat is obvious, substrates unstable or smothered. 5 4 3 2 1
Substrate Availability 9	Greater than 30% productive habitat present at site. 20 19 18 17 16	16% to 30% productive habitat, by aerial extent. 15 14 13 12 11	6% to 15% productive habitat 10 (9) 8 7 6	Less than 5% productive habitat. 5 4 3 2 1
Water Velocity 8	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec 20 19 18 17 16	Max. observed at typical transect: 0.1 to 0.25 m/sec 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 10 9 (8) 7 6	Max. observed at typical transect: <0.05 m/sec. Or spate occurring: > 1 m/sec 5 4 3 2 1
Habitat Smothering 6 Primary Score 36	Less than 20% of habitats affected by sand or silt accumulation 20 19 18 17 16	20%-50% of habitats affected by sand or silt accumulation 15 14 13 12 11	Smothering of 50%-80% of the habitats with sand or silt, pools shallow, frequent sediment movement 10 9 8 7 (6)	Smothering of >80% of habitats with sand or silt, as severe problem, pools absent 5 4 3 2 1
Secondary Habitat Components **Artificial Channelization** 15	No artificial channelization or dredging. Stream with normal, sinuous pattern 20 19 18 17 16	Many have been channelized in the past (>20 yrs), but mostly recovered, fairly good sinuous pattern (15) 14 13 12 11	Channelized, somewhat recovered, but > 80% of area affected 10 9 8 7 6	Artificially channelized, box-cut banks, straight, instream habitat highly altered 5 4 3 2 1
Bank Stability Right Bank 9 Left Bank 9	Stable. No evidence of erosion or bank failure. Little potential for future problems. 10 (9)	Moderately stable. Infrequent or small areas of erosion, mostly healed over. 8 7 6	Moderately unstable. Moderate areas of erosion, high erosion potential during floods. 5 4	Unstable. Many (60%-80%) raw, eroded areas. Obvious bank sloughing. 3 2 1
Riparian Buffer Zone Width Right Bank 9 Left Bank 10	Width of native vegetation (least buffered side) greater than 18 m 10 (9)	Width of native vegetation (least buffered side) 12m to 18 m 8 7 6	Width of native vegetation 6 to 12 m. human activities still close to system 5 4	Less than 6 m of native buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank 9 Left Bank 9 Secondary Score 10	Over 80% of riparian surfaces consist of native plants, including trees, understory shrubs, or non-woody machrophytes. Normal, expected plant community for given sunlight & habitat conditions. 10 9	50% to 80% of riparian zone is vegetated, and/or one class of plants normally expected for the sunlight & habitat conditions is not represented. Some disruption in community evident. 8 7 6	25% to 50% of riparian ozone is vegetated, and/or one or two expected classes of plants are not represented. Patches of bare soil or closely cropped vegetation, disruption obvious. 5 4	Less than 25% of streambank surfaces are vegetated and/or poor plant community (e.g. grass monoculture or exotics) present. Vegetation removed to stubble height of 2 inches or less. 3 2 1

106 TOTAL SCORE

ANALYSIS DATE: 02/20/08	ANALYST: McLaren, G. Schmitt	SIGNATURE:

Strea m River Habitat Sketch Sheet, Form FD 9000-4 (December 11, 2001)
Length of grid represents 100 m of stream (not linear meters).
(Horizontal scale is double vertical scale, draw proportionately).



Downstream - Brushy Cr

11.5 - 6.0

75
5
7.5

Substrates: Code key, draw proportionate habitat abundance.

- Snags
- Roots/undercut banks
- Leaf Packs (or mats)
- Macrophytes
- Rocks
- _____
- _____

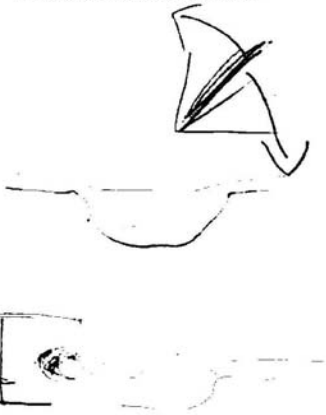
Velocity:
Note where velocity measures were taken.

Habitat Smothering:
Note areas (on map) where sand or silt is smothering substrates, limiting habitability.

Bank Stability:
Note areas (on map) with unstable, eroding banks.

Riparian Buffer Width:
Note areas (on map) where natural vegetation is altered or eliminated.

Plants observed/other notes:



Prod. hab	1	2	3	4	5
Sweeps (Maj)	10	7	5	4	3
Sweeps (Min)	10	6	5	4	5

Appendix I-1

Taxa list and number of individuals counted for qualitative natural periphyton collections made from Dale Mabry WWTP on February 20, 2008.

	Control Site	Test Site
Bacillariophyta		
Bacillariophyta	243	217
Chlorophycota		
Ankistrodesmus falcatus	-	6
Chlorella sp.	2	6
Closterium sp.	1	-
Closterium moniliferum moniliferum	1	-
Cosmarium sp.	2	-
Crucigenia tetrapedia	1	-
Pediastrum simplex	1	1
Scenedesmus sp.	3	6
Scenedesmus abundans	2	6
Scenedesmus arcuatus	1	-
Scenedesmus bicaudatus	1	1
Scenedesmus bijuga	1	2
Scenedesmus dimorphus	-	2
Scenedesmus quadricauda	20	32
Selenastrum sp.	2	1
Staurastrum sp.	-	1
Tetrastrum staurogeniaeforme	1	-
Chrysophyta		
Dinobryon sp.	3	-
Cyanophycota		
Aphanothece sp.	-	1
Jaaginema sp.	7	8
Merismopedia tenuissima	-	1
Merismopedia warmingiana	2	1
Oscillatoria sp.	1	-
Planktolyngbya sp.	2	3
Planktothrix sp.	-	1
Pseudanabaena sp.	-	1
Synechocystis sp.	6	5
Euglenophycota		
Euglenophyceae	-	1
Trachelomonas sp.	1	-

Appendix I-2

Diatom taxa list and number of individuals counted for qualitative natural periphyton collections made from Dale Mabry WWTP on February 20, 2008.

	Control Site	Test Site
Bacillariophyceae		
Bacillariophyceae	1	1
Achnanthes exigua	12	19
Achnanthes lanceolata	14	10
Achnanthes lanceolata apiculata	3	7
Achnanthes rupestoides	1	-
Achnanthes sp.	26	29
Bacillaria paxillifer	5	5
Brachysira vitrea	-	1
Caloneis sp.	-	1
Capartogramma crucicula	4	1
Cocconeis fluviatilis	44	20
Cocconeis placentula	8	3
Cocconeis sp.	4	-
Diadesmis confervacea	12	3
Encyonema evergladianum	-	1
Eunotia formica	-	1
Eunotia incisa	1	-
Eunotia monodon	1	-
Eunotia sp.	45	33
Frustulia rhomboides	1	-
Frustulia sp.	3	-
Gomphonema gracile	1	-
Gomphonema parvulum	-	1
Gomphonema sp.	10	6
Gyrosigma sp.	-	1
Hippodonta capitata	4	3
Hippodonta hungarica	3	4
Hippodonta sp.	2	6
Mastogloia sp.	-	2
Navicula cryptocephala	-	1
Navicula gastrum	3	1
Navicula germainii	14	12
Navicula latens	3	1
Navicula minima	2	6
Navicula porifera	1	-
Navicula radiosa	1	1
Navicula seminulum	4	6
Navicula sp.	48	39
Naviculaceae	15	24
Nitzschia amphibia	5	13
Nitzschia clausii	-	4
Nitzschia nana	1	-
Nitzschia palea	-	10
Nitzschia sp.	11	61
Pinnularia sp.	4	2
Plagiotropis sp.	1	-
Planothidium delicatulum	1	-
Planothidium sp.	4	8
Pleurosigma sp.	1	-
Rhopalodia sp.	-	1
Sellaphora pupula	3	1
Stauroneis phoenicenteron	-	1
Stauroneis smithii	1	4
Stauroneis sp.	4	1

Appendix I-2 cont'd

Diatom taxa list and number of individuals counted for qualitative natural periphyton collections made from Dale Mabry WWTP on February 20, 2008.

	Control Site	Test Site
Coscinodiscophyceae		
Aulacoseira sp.	4	12
Cyclostephanos invisitatus	1	20
Cyclotella atomus	2	9
Cyclotella meneghiniana	5	10
Cyclotella pseudostelligera	13	17
Cyclotella sp.	9	17
Melosira sp.	108	8
Fragilariophyceae		
Staurosira construens	1	-
Fragilaria capucina	-	3
Fragilariaceae	20	34
Opephora sp.	1	-
Staurosira elliptica	3	9
Staurosira venter	1	-
Staurosirella pinnata	-	6
Synedra acus	1	-
Synedra parasitica	-	1

Appendix J-1

Benthic macroinvertebrates collapsed taxa list and density (average number of individuals/m^2 rounded to the nearest individual, n = 4 samples) from Hester-Dendy artificial substrates incubated for 28 days upstream and downstream of the Dale Mabry WWTP and collected on February 20, 2008. See SOP LT 7100 sect. 4.2.1 for method on collapsing taxa.

	Control Site	Test Site
Annelida		
Oligochaeta		
Nais communis complex	8	2
Pristina sp.	2	-
Slavina appendiculata	288	-
Arthropoda		
Crustacea		
Amphipoda		
Hyalella azteca	12	-
Insecta		
Coleoptera		
Microcylloepus pusillus	25	4
Stenelmis sp.	9	-
Diptera		
Ablabesmyia mallochi	24	12
Ablabesmyia rhamphe grp.	13	4
Atrichopogon sp.	3	2
Chironomus sp.	2	-
Corynoneura sp.	145	41
Cricotopus bicinctus	18	-
Cricotopus or *orthocladius* sp.	2	-
Dicrotendipes sp.	-	6
Dicrotendipes neomodestus	2	-
Goeldichironomus cf. *natans*	-	2
Labrundinia pilosella	13	6
Palpomyia/bezzia grp.	3	-
Pentaneura inconspicua	143	6
Polypedilum fallax	58	100
Polypedilum flavum	320	8
Polypedilum illinoense grp.	-	10
Polypedilum scalaenum grp.	38	43
Polypedilum sp. A Epler	5	-
Rheotanytarsus exiguus grp.	345	2
Tanytarsus sp. A Epler	64	-
Tanytarsus sp. C Epler	620	16
Tanytarsus sp. L Epler	7	-
Tanytarsus sp. T Epler	4	2
Thienemanniella sp. C Epler	30	-
Thienemanniella xena	44	2
Tribelos sp.	-	4
Tribelos jucundum	4	-
Ephemeroptera		
Caenis sp.	2	-
Stenacron interpunctatum	6	-
Odonata		
Argia sp.	3	-
Enallagma coecum	3	-
Trichoptera		
Cheumatopsyche sp.	32	-
Hydroptila sp.	-	2
Neotrichia sp.	113	2
Oxyethira sp.	10	-
Mollusca		
Gastropoda		
Ancylidae	276	8
Pyrgophorus platyrachis	78	-

Appendix J-2

Benthic macroinvertebrates taxa list and counts (number of individuals counted) collected from Hester-Dendy artificial substrates (n= 4 samples) incubated upstream and downstream of the Dale Mabry WWTP for 28 days and collected on February 20, 2008.

	Control Site	Test Site
Annelida		
Oligochaeta		
Naididae	1	-
Nais communis complex	4	1
Pristina sp.	1	-
Slavina appendiculata	144	-
Arthropoda		
Crustacea		
Amphipoda		
Hyalella azteca	6	-
Insecta		
Coleoptera		
Elmidae	2	-
Microcylloepus pusillus	11	2
Stenelmis sp.	4	-
Diptera		
Ablabesmyia sp.	-	4
Ablabesmyia mallochi	11	3
Ablabesmyia rhamphe grp.	6	1
Atrichopogon sp.	1	1
Ceratopogonidae	1	-
Chironomidae	92	4
Chironomus sp.	1	-
Corynoneura sp.	66	20
Cricotopus bicinctus	8	-
Cricotopus or *orthocladius* sp.	1	-
Dicrotendipes neomodestus	1	-
Dicrotendipes sp.	-	3
Goeldichironomus cf. *natans*	-	1
Labrundinia pilosella	6	3
Palpomyia/bezzia grp.	1	-
Pentaneura inconspicua	65	3
Polypedilum fallax	26	49
Polypedilum flavum	143	4
Polypedilum illinoense grp.	-	5
Polypedilum scalaenum grp.	17	21
Polypedilum sp.	4	-
Polypedilum sp. A Epler	2	-
Rheotanytarsus exiguus grp.	139	1
Rheotanytarsus sp.	18	-
Tanytarsus sp.	2	-
Tanytarsus sp. A Epler	29	-
Tanytarsus sp. C Epler	281	8
Tanytarsus sp. L Epler	3	-
Tanytarsus sp. T Epler	2	1
Thienemanniella sp.	7	-
Thienemanniella sp. C Epler	11	-
Thienemanniella xena	16	1
Tribelos jucundum	2	-
Tribelos sp.	-	2

Appendix J-2 cont'd

Benthic macroinvertebrates taxa list and counts (number of individuals counted) collected from Hester-Dendy artificial substrates (n= 4 samples) incubated upstream and downstream of the Dale Mabry WWTP for 28 days and collected on February 20, 2008.

Ephemeroptera		
Caenis sp.	1	-
Stenacron interpunctatum	2	-
Stenacron sp.	1	-
Odonata		
Argia sp.	1	-
Coenagrionidae	1	-
Enallagma coecum	1	-
Trichoptera		
Cheumatopsyche sp.	16	-
Hydroptila sp.	-	1
Neotrichia sp.	57	1
Oxyethira sp.	5	-
Mollusca		
Gastropoda		
Ancylidae	139	4
Hydrobiidae	8	-
Pyrgophorus platyrachis	31	-

Appendix K-1

Qualitative benthic macroinvertebrate collapsed taxa list and number of individuals counted from 20-discrete-dipnet sweeps conducted upstream and downstream of Dale Mabry WWTP on February 20, 2008. See SOP LT 7100 sect. 4.2.1 for method on collapsing taxa.

	Control Site		Test Site	
	Rep 1	Rep 2	Rep 1	Rep 2
Annelida				
Hirudinea				
Helobdella stagnalis	-	-	-	1
Oligochaeta				
Aulodrilus pigueti	-	-	-	2
Slavina appendiculata	3	1	-	-
Arthropoda				
Arachnida				
Acariformes				
Oxus sp.	-	-	-	1
Crustacea				
Amphipoda				
Hyalella azteca	2	1	6	3
Decapoda				
Procambarus sp.	-	1	-	-
Insecta				
Coleoptera				
Dubiraphia vittata	2	-	16	11
Microcylloepus pusillus	21	33	15	20
Stenelmis sp.	7	3	-	-
Diptera				
Ablabesmyia mallochi	-	1	2	-
Ablabesmyia rhamphe grp.	2	1	-	-
Atrichopogon sp.	-	-	1	2
Ceratopogonidae	3	2	-	-
Corynoneura sp.	2	2	-	-
Cricotopus bicinctus	-	1	-	-
Labrundinia pilosella	3	1	1	1
Nanocladius crassicornus/rectinervis	-	1	-	-
Paralauterborniella nigrohalterale	-	-	1	-
Pentaneura inconspicua	-	7	2	3
Polypedilum flavum	3	1	4	2
Polypedilum halterale grp.	1	1	1	1
Polypedilum illinoense grp.	1	-	2	3
Polypedilum scalaenum grp.	1	-	-	-
Procladius (holotanypus) sp.	-	-	2	-
Rheotanytarsus exiguus grp.	8	8	-	-
Stenochironomus sp.	1	-	3	-
Tanytarsus sp. A Epler	3	1	-	-
Tanytarsus sp. C Epler	21	25	7	3
Tanytarsus sp. L Epler	-	-	2	3
Thienemanniella xena	-	-	-	1
Tribelos jucundum	1	-	2	7

Appendix K-1 cont'd

Qualitative benthic macroinvertebrate collapsed taxa list and number of individuals counted from 20-discrete-dipnet sweeps conducted upstream and downstream of Dale Mabry WWTP on February 20, 2008. See SOP LT 7100 sect. 4.2.1 for method on collapsing taxa.

Ephemeroptera				
Caenis sp.	1	2	6	1
Lepidoptera				
Undetermined Lepidoptera	1	-	-	-
Odonata				
Argia sp.	2	3	18	6
Enallagma sp.	-	-	3	-
Libellulidae	-	-	1	-
Nehalennia sp.	-	-	-	2
Trichoptera				
Cheumatopsyche sp.	1	1	-	-
Neotrichia sp.	6	5	-	1
Undetermined Trichoptera	-	-	1	-
Mollusca				
Bivalvia				
Corbicula fluminea	-	2	-	2
Eupera cubensis	4	1	-	1
Gastropoda				
Ancylidae	14	13	5	3
Micromenetus dilatatus avus	-	-	-	2
Planorbella sp.	-	2	-	-
Pyrgophorus platyrachis	32	27	42	60
Platyhelminthes				
Undetermined Platyhelminthes	-	-	1	-

Appendix K-2

Qualitative benthic macroinvertebrate taxa list and number of individuals counted from 20-discrete-dipnet sweeps conducted upstream and downstream of Dale Mabry WWTP on February 20, 2008.

	Control Site		Test Site	
	Rep 1	Rep 2	Rep 1	Rep 2
Annelida				
Hirudinea				
Helobdella stagnalis	-	-	-	1
Oligochaeta				
Aulodrilus pigueti	-	-	-	2
Slavina appendiculata	3	1	-	-
Arthropoda				
Arachnida				
Acariformes				
Oxus sp.	-	-	-	1
Crustacea				
Amphipoda				
Hyalella azteca	2	1	6	3
Decapoda				
Procambarus sp.	-	1	-	-
Insecta				
Coleoptera				
Dubiraphia vittata	2	-	16	11
Microcylloepus pusillus	21	33	15	20
Stenelmis sp.	7	3	-	-
Diptera				
Ablabesmyia mallochi	-	1	2	-
Ablabesmyia rhamphe grp.	2	1	-	-
Atrichopogon sp.	-	-	1	1
Ceratopogonidae	3	2	-	1
Chironomidae	4	8	2	3
Corynoneura sp.	2	2	-	-
Cricotopus bicinctus	-	1	-	-
Labrundinia pilosella	3	1	1	1
Nanocladius crassicornus/rectinervis	-	1	-	-
Paralauterborniella nigrohalterale	-	-	1	-
Pentaneura inconspicua	-	6	2	3
Polypedilum sp.	-	-	-	1
Polypedilum flavum	3	1	4	2
Polypedilum halterale grp.	1	1	1	1
Polypedilum illinoense grp.	1	-	2	2
Polypedilum scalaenum grp.	1	-	-	-
Procladius (holotanypus) sp.	-	-	2	-
Rheotanytarsus exiguus grp.	7	7	-	-
Stenochironomus sp.	1	-	3	-
Tanytarsus sp. A Epler	3	1	-	-
Tanytarsus sp. C Epler	18	19	5	3
Tanytarsus sp. L Epler	-	-	2	3
Thienemanniella xena	-	-	-	1
Tribelos sp.	-	-	-	1
Tribelos jucundum	1	-	2	3

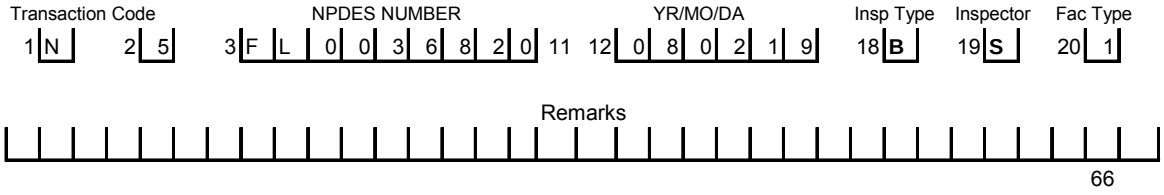
Appendix K-2 cont'd

Qualitative benthic macroinvertebrate taxa list and number of individuals counted from 20-discrete-dipnet sweeps conducted upstream and downstream of Dale Mabry WWTP on February 20, 2008.

Ephemeroptera				
Caenis sp.	1	2	6	1
Lepidoptera				
Undetermined Lepidoptera	1	-	-	-
Odonata				
Argia	1	3	11	4
Coenagrionidae	1	-	8	3
Enallagma sp.	-	-	2	-
Libellulidae	-	-	1	-
Nehalennia sp.	-	-	-	1
Trichoptera				
Cheumatopsyche sp.	1	1	-	-
Neotrichia sp.	6	5	-	1
Undetermined Trichoptera	-	-	1	-
Mollusca				
Bivalvia				
Corbicula fluminea	-	2	-	2
Eupera cubensis	4	1	-	1
Gastropoda				
Ancylidae	14	13	5	3
Micromenetus dilatatus avus	-	-	-	1
Planorbella sp.	-	2	-	-
Planorbidae	-	-	-	1
Pyrgophorus platyrachis	32	27	42	60
Platyhelminthes				
Undetermined Platyhelminthes	-	-	1	-

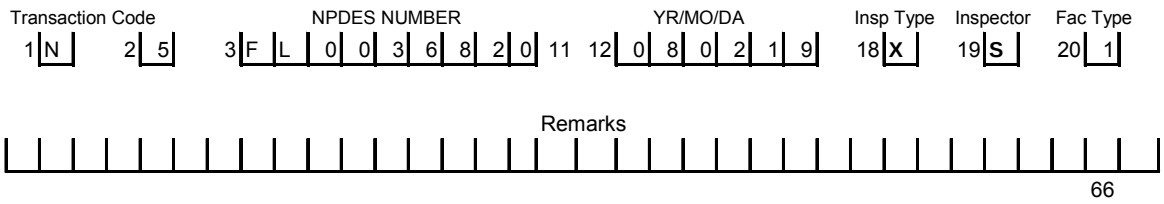
The Bioassay of the Dale Mabry WWTP effluent sampled on February 19, 2008, NPDES #FL0036820

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



The Priority Pollutants Analysis for Bioassay of the Dale Mabry WWTP effluent sampled on February 19, 2008, NPDES #FL0036820

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



Biological Analyses of the Dale Mabry WWTP effluent sampled on February 20, 2008, NPDES #FL0036820

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

