Biological Assessment of

Florida Army National Guard - Camp Blanding WWTF

Clay County

NPDES # FL0022853

Sampled October 31, 2011

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Biology Section

Bureau of Laboratories

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EPA End Sheet

Facility Overview

The Florida Army National Guard (FANG)-Camp Blanding Wastewater Treatment Facility is a Municipal Domestic Wastewater Treatment plant. The facility uses the sequential batch-reactor process and consists of one mechanical grit-removal screen, a 9-inch Parshall flume, a flow splitter, four sequential batch reactors, two chlorine contact chambers, one dechlorination system, a belt thickener, and one aerobic digester to treat domestic wastewater to secondary treatment levels. Liquid sodium hypochlorite is used for chlorination, and liquid sodium bisulfite is used for dechlorination. The treated effluent is discharged through a drain pipe approximately 7000 feet in length at Outfall D-001 into the South Fork of Black Creek, a Class III Fresh Water (see map Appendix A). Residuals are disposed of at a FDEP-permitted Residuals Management Facility (RMF), FDEP-permitted Wastewater Treatment Facility (WWTF), or in a Class I or II solid waste landfill. The design flow of the wastewater system is 0.90 million gallons per day (MGD) annual average daily flow (AADF). The annual average flow for October 2010 to September 2011 was 0.062 MGD. The flow was not measured during this survey.

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.

See the Facility Summary (Appendix B) for a description of the facility and summary of permit limits. However, note that the AADF and outfall location reported in the Facility Summary are incorrect.

Methods

The purpose of this investigation was to determine the discharge's effects on the biota of the receiving waters. Chemical and biological comparisons were made between a Control Site (located in the South Fork of Black Creek beginning 35 m upstream of the point of discharge and ending 135 m upstream of the point of discharge) and a Test Site (located in the South Fork of Black Creek beginning 130 m downstream of the point of discharge and ending 30 m downstream of the point of discharge). Effluent samples for all analyses were taken as grab and composite samples from monitoring location EFD-1, after dechlorination. The facility discharges through four sequencing batch reactors, so multiple toxicity tests were conducted on grab samples collected during two separate discharge events in an 8-hour day in order to characterize the water quality from multiple basins. The sample for the first toxicity test was collected on October 31, 2011 at 11:55 AM EST when the facility was discharging through basin #1. The sample for the second toxicity test was collected an hour later (12:55 PM EST) when the facility was discharging through basin #2.

All field and laboratory biological methods followed Bureau of Laboratories and Biology Section Standard Operating Procedures (see http://www.dep.state.fl.us/labs/library/lab_sops.htm and http://www.dep.state.fl.us/water/sas/sop/sops.htm for details) and met FDEP quality assurance/quality control standards (see http://www.dep.state.fl.us/water/sas/qa/index.htm). Explanations of specific methods and measurements can be found in Appendix C.

The following were involved in this investigation: Eesa Ali, Brian Kirts, Patrick O'Connor, Jeremy Parrish, and Sharon Piltz (FDEP Northeast District Office, Jacksonville), and FDEP Central Laboratory in Tallahassee. The report was reviewed by District representatives and the Point Source Studies Review Committee (Ed Smith, Nancy Ross, and Michelle Fish).

Results

Organic Constituents (See Table 1 and Appendix F)

- No organic constituents were detected in the effluent.
- No organic constituents were detected in the field blank.

Metals (See Table 2 and Appendix F)

- Effluent metals were detected at levels that complied with Class III Fresh Water Quality Criteria (62-302.530 F.A.C). There were no effluent permit limits for metals.
- All Control and Test Site metals were detected at levels that complied with Class III Fresh Water Quality Criteria.
- No metals were detected in the field blank.

Toxicity Whole Effluent Test (See Table 1 and Appendices G and H)

- Tests were performed November 1 through November 5, 2011.
- The effluent sample was not toxic to the water flea, *Ceriodaphnia dubia,* during the acute screen bioassays and therefore, complied with effluent permit limits.
- The fish, *Cyprinella leedsi,* acute screen test was invalidated at 48 hours due to excess control mortality. The control mortality was greater than 10%, and the maximum allowable control mortality is 10%. A non-conformance report (NCR 3962) was issued for this test.

Physical and Chemical Parameters (See Table 1 and Appendices D, E and F)

- Habitat Assessment scores were similar at the Control Site (141) and Test Site (136), which places both sites in the Optimal category (category from Appendix C). While the Control Site had better bank stability and riparian zone vegetation quality for both banks, both sites had similar in-stream conditions.
- Dissolved oxygen (mg/L), pH (Standard Units), and specific conductance (µmhos/cm) of the effluent complied with Class III Fresh Water Quality Criteria (62-302.530 F.A.C.) and effluent permit limits.
- Chlorophyll *a* (µg/L) was detected at low levels in the effluent sample and was undetected at both the Control and Test Sites.
- Total residual chlorine (TRC) of the effluent as measured in the FDEP laboratory was undetected. This measurement is Q-qualified because the sample was held beyond the normal holding time.
- Total suspended solids (mg/L) were detected in the effluent, Control Site, and Test Site at low levels between the laboratory method detection limit (MDL) and the laboratory practical quantitation limit (PQL). Effluent TSS complied with permit limits.
- Carbonaceous Biological Oxygen Demand (CBOD; mg/L) of the effluent complied with permit limits.
- Chloride (mg/L) was detected in the effluent, Control Site, and Test Site. The effluent does not appear to be significantly contributing to the Test Site chloride when compared to the Control Site.
- Sulfate (mg/L) was detected in the effluent, Control Site, and Test Site. The effluent does not appear to be significantly contributing to the Test Site sulfate when compared to the Control Site.

Microbiology (See Table 1 and Appendix F)

- Fecal coliform analyses were performed by Columbia Analytical Services, Jacksonville, Florida.
- Fecal coliforms were detected in the effluent and at both the Control and Test Sites at levels which complied with permit limits and Class III Fresh Water Quality Criterion (62-302.530(6) F.A.C.), respectively.
- While fecal coliforms complied with Class III Freshwater Quality Criteria, it should be noted that the fecal coliform colony counts from the Test Site were very close to the Class III Criteria Limit and were significantly higher than the fecal coliform colony counts from the effluent and Control Site.

Nutrients (See Table 1 and Appendix F)

- Effluent nutrient levels appeared to be contributing to slightly higher levels at the Test Site when compared to the Control Site.

- Ortho-phosphate and total phosphorus at the Test Site were orders of magnitude higher than at the Control Site, indicating nutrient enrichment from the effluent.
- Nitrate-nitrite at the Test Site was 45 times higher than that of the Control Site, indicating nutrient enrichment from the effluent. However, Total kjeldahl nitrogen (TKN) and organic nitrogen, although high in the effluent, were similar at the Control and Test Sites, indicating possible enrichment from other sources in addition to the effluent.
- No nutrients were detected in the field blank.

Algal Growth Potential (See Table 3 and Appendix F)

- Raschke and Shultz (1987) determined that AGP values above 5.0 mg dry weight/L represent a "problem" threshold for fresh receiving waters, implying nutrient enrichment. The AGP value in the effluent sample (146.0 mg dry wt/L) using the freshwater species, *Pseudokirchneriella subcapitata,* was approximately 29 times greater than the "problem" threshold value. The AGP value in the Test Site sample (12.6 A mg dry wt/L) was approximately 2.5 times greater than the "problem" threshold value. The analytical chemistry suggests that both the effluent and Test Site are nitrogen limited. The Control Site AGP value was below the "problem" threshold value, and the analytical chemistry suggests that it is phosphorus limited. The elevated Test Site AGP indicates that the effluent is contributing to nutrient enrichment of the Test Site.

Bioassessment

Periphyton (See Table 4 and Appendices I-1 and I-2)

- Periphyton communities at both the Control and Test Sites consisted mostly of diatoms. The diatom community at both sites was dominated by the genus *Eunotia* sp, which is typical of lower pH waters, and the percent dominance was nearly identical at both sites. The percentage of blue-green algae and green algae at both the Control and Test Sites was similar and relatively low. The expression of blue-greens and greens might be suppressed due to heavy shading of both sites. There were no adverse affects apparent on the periphyton community in the South Fork of Black Creek from the effluent.

Macroinvertebrates (See Tables 5 and 6 and Appendices J-1, J-2, K-1 and K-2)

- Quantitative macroinvertebrate data were collected from floating Hester Dendy samplers at the Control and Test Sites. The Shannon-Weaver diversity scores were high at the Control and Test Sites (4.22 and 3.98, respectively), but note that there were only 152 individuals collected at the Control Site compared to 547 individuals collected at the Test Site, a 113% difference in individuals. The diversity score of the Control Site may be negatively biased due to calculation based on fewer than 300 individuals (Lande 1996). Dipterans made up approximately 50% of the community at both sites. The dominant taxon at the Test Site was the dipteran *Thienemanniella similis,* and the dominant taxon at the Control Site was the coleopteran *Stenelmis* sp. The percent of ephemeropterans at the Control Site was almost twice that of the Test Site. Although a higher percentage of trichoptera were present at the Test Site, the trichoptera were largely *Cheumatopsyche* sp., which are generally considered to be pollution tolerant and often "bloom" under nutrient enrichment conditions. The dominant feeding group for both sites was surface deposit feeders.
- Qualitative macroinvertebrate data from dipnet samples indicated that the macroinvertebrate community at the Test Site was similar to the Control Site. The Test and Control sites both scored 85 A on the Stream Condition Index (SCI), placing them both in Category 1 (see Appendix C for an explanation of SCI categories). Both sites had similar numbers of ephemeroptera, trichoptera, sensitive and clinger taxa. The Test Site had a higher percentage of dominant taxon, suspension feeders, and Tanytarsini individuals, which tend to decline with human disturbance. (See Appendix C for an explanation of how these SCI metrics typically respond to human disturbance). The dominant taxon at the Test Site was *Microcylloepus pusillus,* and the co-dominant taxa at the Control Site were *Microcylloepus pusillus* and *Aulodrilus pigueti*. According to Brown (1972), *Microcylloepus pusillus* is "tolerant of siltation and turbidity, but sensitive to sewage and such industrial wastes as those from

rayon plants and plating mills". Overall, there were no negative effects on macroinvertebrates at the Test Site that were attributable to the effluent.

Conclusion

The fecal coliform counts at the Test Site were significantly higher than both the effluent and Control Site fecal coliform counts but all were within water quality limits. Increased ortho-phosphate, total phosphorus, and nitrate- nitrite values at the Test Site indicate some nutrient enrichment due to the effluent. The AGP results further support nutrient enrichment at the Test Site due to the effluent. The effluent AGP value was 29 times the "problem" threshold established by Raschke and Shultz (1987), and the Test Site AGP value was 2.5 times the "problem" threshold and 5 times the Control Site's value. The periphyton communities at the Control and Test sites were similar. The quantitative macroinvertebrate samples indicate that the colonizing community at the Test Site consisted of a greater number of individuals tolerant to disturbance compared to the Control Site. The qualitative SCI indicates similar macroinvertebrate communities at both sites. Overall, the effluent did not appear to adversely affect the periphyton or macroinvertebrate communities in this survey.

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

FANG- Camp Blanding	Class III Criteria	Effluent Limits	Effluent (Composite)	Effluent (11:55 am)	Effluent (12:55 pm)	Control Site	Test Site
Organic Constituents (µg/L)							
None Detected	-	None Detected					
Nutrients (mg/L)							
Ortho-phosphate	-	Report p	-	3.4	-	0.004 U	0.12
Total Phosphorus	-	Report p	3.8	-	-	0.01 I	0.15
Total Ammonia	-	Report	3.1	-	-	0.013 I	0.053
Nitrate and Nitrite	-	Report p	6.6	-	-	0.004 U	0.18
Total Kjeldahl Nitrogen	-	Report p	4.6	-	-	0.20	0.26
Organic Nitrogen	-	Report p	1.5 c	-	-	0.187 c	0.207 c
Total Nitrogen	-	Report	11.2 c	-	-	0.20 c	0.44 c
General Physical and Chemical Parameters							
Habitat Assessment	-	-	-	-	-	141	136
Dissolved Oxygen (mg/L)	≥ 5.0	≥ 5.0	-	6.3	5.8	8.1	7.9
pH (SU)	6.0 - 8.5	6.0 - 8.5	-	6.5	6.3	6.1	6.1
Conductivity (µmhos/cm)	≤ 1,275	-	-	495	523	35	56
Temperature (°C)	-	Report	4.0	23.2	23.3	17.6	18.6
Sample Depth (m)	-	-	-	1.1	1.4	-	0.3
Alkalinity (mg CaCO3/L)	≥ 20	-	90	-	-	1.2 I	6.4
Total Residual Chlorine (mg/L)	≤ 0.01	0.01	-	< 0.03 UQ£	< 0.03 UQ£	-	-
Chlorophyll *a* (µg/L) - Corrected	-	-	-	2.6 AJ	-	0.55 U	0.55 U
Phaeophytin (µg/L)	-	-	-	0.82 I	-	0.4 U	0.4 U
Total Suspended Solids (mg/L)	-	≤ 60.0 p	8 I	-	-	3 I	6 I
CBOD, 5 day (mg/L), N - inhibited	-	≤ 60.0 p	7.7 J	-	-	0.64 IJ	0.83 IJ
Chloride (mg/L)	-	-	49	-	-	5.1	6.7
Fluoride (mg/L)	≤ 10.0	-	0.12	-	-	0.035 U	0.051 I
Sulfate (mg/L)	-	-	49	-	-	4	6.1
Hardness (mg $CaCO_3$)	-	-	- c	112 c	- c	7.63 c	14.8 c
Toxicity (96 Hour Acute Screen, LC50, % mortality)							
Bioassay - Water flea *(Ceriodaphnia dubia)*	-	≤ 50	-	10	0	-	-
Bioassay - Fish *(Cyprinella leedsi)*	-	≤ 50	-	NCR3962**	NCR3962**	-	-
Microbiology (Number of colony forming units/100ml)							
Fecal Coliforms ¥	≤ 400s #	800s	-	5 B	-	120 B	390

c - Value is calculated
p - 8 hour flow proportioned composite
s - Single sample
A - Value reported is the mean of two or more determinations
B - Results based on colony counts outside the acceptance range
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J - Estimated value
L - Actual value is known to be greater than value given
Q - Sample held beyond normal holding time
U - Material analyzed for but not detected; value reported is the method detection limit
¥ - Fecal coliform analysis performed by Columbia Analytical Services
- If 10 or fewer samples are taken within a month, the single sample limit is 400 CFU (62-302.530(6), F.A.C.)
£ - measurement taken in the FDEP laboratory
**- NCR 3962 was issued for the *Cyprinella leedsi* bioassay. See report

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.

FANG- Camp Blanding	Effluent (11:55 am) Class III Criteria	Effluent Limits	Effluent (11:55 am)	Control Site Class III Criteria	Control Site	Test Site Class III Criteria	Test Site
Metals (µg/L unless otherwise noted)							
Aluminum	-	-	43	-	131	-	156 A
Arsenic	≤ 50	-	0.4 I	≤ 50	0.25 U	≤ 50	0.25 U
Cadmium	≤ 0.29 b	-	0.05 U	≤ 0.10 b	0.05 U	≤ 0.10 b	0.065 I
Calcium (mg/L)	-	-	31.9	-	1.82	-	4.13 A
Chromium-III	≤ 95 b	-	0.3 U	≤ 28 b	0.3 U	≤ 28 b	0.3 U
Copper	≤ 10 b	-	5.96	≤ 2.9 b	0.5 U	≤ 2.9 b	0.5 U
Iron	≤ 1,000	-	75 I	≤ 1,000	110 I	≤ 1,000	160 A
Lead	≤ 3.7 b	-	0.37 I	≤ 0.54 b	0.2 U	≤ 0.54 b	0.2 U
Magnesium (mg/L	-	-	7.9	-	0.75	-	1.08 A
Nickel	≤ 57 b	-	1.21	≤ 16 b	0.25 U	≤ 16 b	0.35 I
Selenium	≤ 5.0	-	0.21 I	≤ 5.0	0.2 U	≤ 5.0	0.2 U
Silver	≤ 0.07	-	0.059 I	≤ 0.07	0.025 U	≤ 0.07	0.025 U
Zinc	≤ 132 b	-	44	≤ 37 b	5 U	≤ 37 b	5 U

See Table 1 for calculated hardness.

b - Value is calculated based on hardness

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

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

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

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.

FANG- Camp Blanding							
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	146.0	368.6 ± 73.7		425.6 ± 85.1		2.9	2.9
Test Site	12.6 A	8.9 ± 1.8		16.7 ± 3.3		1.9	2.9
Control Site	2.3		1.7 ± 0.3		4.3 ± 0.9	4.3	20.4

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

Table 4. Periphyton Composition - Qualitative.

FANG- Camp Blanding	Control Site	Test Site
Number of Wet Taxa	12	12
Number of Wet Algal Units Identified	301	300
Percent Dominant Wet Taxon	87.0	90.3
Dominant Wet Taxon Name	Bacillariophyta (Diatoms)	Bacillariophyta (Diatoms)
Number of Diatom Taxa	40	63
Number of Diatom Algal Units Identified	500	502
Percent Dominant Diatom Taxon	23.2	22.3
Dominant Diatom Taxon Name	*Eunotia intermedia*	*Eunotia* sp.
Percentage Composition for Wet Algae		
Blue-green algae	9.0	4.0
Green algae	3.3	5.7
Diatoms	87.0	90.3

Table 5. Macroinvertebrate Hester-Dendy Samples - Quantitative.

FANG- Camp Blanding	Control Site	Test Site
Summary Statistics		
Shannon-Weaver Diversity	4.22*	3.98
Number of Taxa	31	42
Number of EPT Taxa	9	12
Percent Dominant Taxon	13.0	18.8
Dominant Taxon Name	*Stenelmis* sp. (Coleoptera)	*Thienemanniella similis* (Diptera)
Total Number of Individuals (counted)	152	547
Total Number of Individuals (#/m^2)	404	1,452
Community Composition: Percent of total		
Acariformes	0.7	0.4
Coleoptera	14.4	6.2
Diptera	51.3	55.0
Ephemeroptera	15.8	8.5
Gastropoda	0.7	0.0
Odonata	0.7	0.4
Oligochaeta	0.7	0.0
Plecoptera	6.6	4.4
Trichoptera	9.2	24.8
Other	0.0	0.4
Functional Feeding Groups: Percent of total		
Burrowing Deposit Feeders	0.7	0.0
Predators	11.3	6.7
Scrapers	16.4	7.4
Shredders	10.9	10.1
Surface Deposit Feeders	45.3	43.6
Suspension Feeders	15.4	31.6
Unknown	0.0	0.6

* Shannon Weaver Diversity scores calculated on samples with < 300 individulas have the potential for negative bias (lower diversity scores compared to sites with more individuals) (Lande 1996).

Table 6. Macroinvertebrate Dipnet Samples - Qualitative.

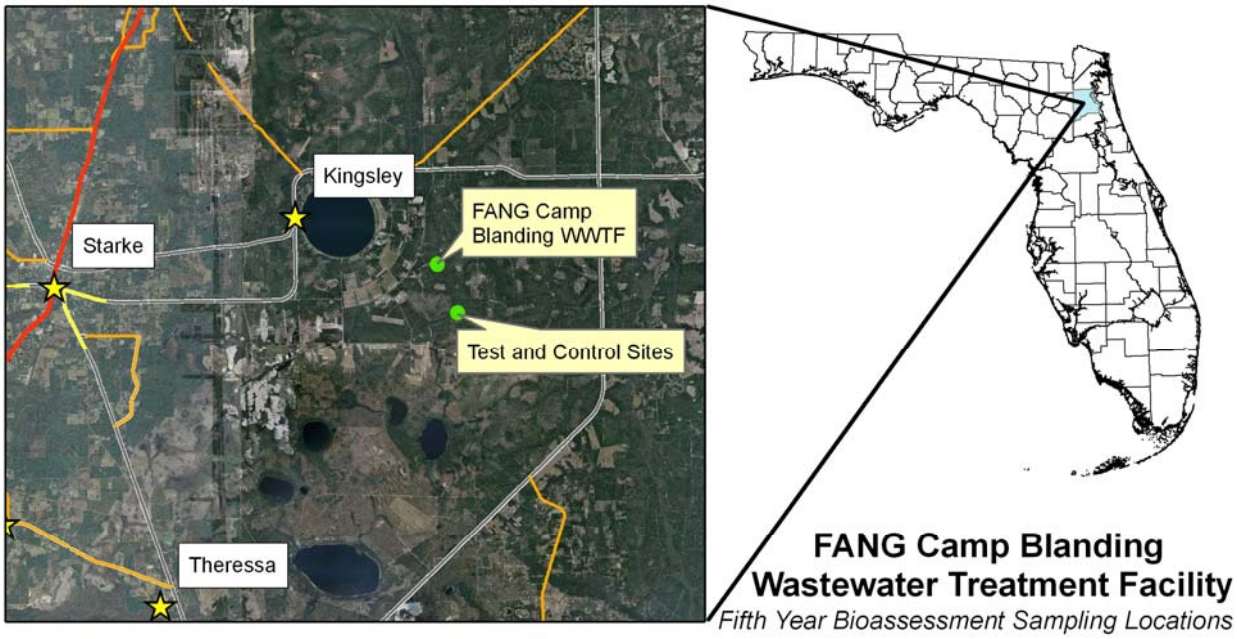
FANG Camp Blanding	Control Site		Test Site	
Summary Statistics				
Stream Condition Index 2007 (value)	85 A		85 A	
Stream Condition Index 2007 (category) *	Category 1		Category 1	
Stream Condition Index Metrics	Rep 1	Rep 2	Rep 1	Rep 2
Number of Total Taxa	44	39	27	39
Number of Ephemeroptera Taxa	5	3	3	5
Number of Trichoptera Taxa	7	6	5	6
Number of Clinger Taxa	10	8	8	7
Number of Long-lived Taxa	3	3	3	4
Number of Sensitive Taxa	13	9	10	15
Percent of Dominant Taxon	10.1	16.1	23.0	24.7
Percent Suspension Feeders and Filterers	14.2	12.6	23.0	18.2
Percent of Tanytarsini Individuals	3.4	0.7	6.8	4.1
Percent of Very Tolerant Individuals	2.7	2.1	0.7	1.4
Total Number of Individuals	148	143	148	146
Community Composition: Percent of total				
Dominant Taxon Name	*Microcylloepus pusillus/Aulodrilus pigueti* (Coleoptera/Oligochaeta)	*Aulodrilus pigueti* (Oligochaeta)	*Microcylloepus pusillus* (Coleoptera)	*Microcylloepus pusillus* (Coleoptera)
Acariformes	0.0	0.0	0.7	2.1
Amphipoda	0.0	0.7	2.7	2.7
Bivalvia	4.7	8.4	0.0	0.7
Coleoptera	19.6	22.4	37.2	37.0
Decapoda	1.4	0.7	0.7	0.7
Diptera	23.7	21.0	18.9	13.7
Ephemeroptera	10.8	7.7	6.1	6.2
Gastropoda	1.4	2.8	0.0	1.4
Odonata	12.8	12.6	2.0	0.0
Oligochaeta	12.8	18.2	0.7	1.4
Plecoptera	1.4	0.7	2.7	6.2
Trichoptera	11.5	4.9	28.4	28.1
Functional Feeding Groups: Percent of total				
Browser-Grazers	0.0	0.0	0.3	0.0
Burrowing Deposit Feeders	12.8	18.2	0.7	1.4
Predators	21.6	20.6	7.8	11.6
Scavengers	0.7	0.4	0.3	0.3
Scrapers	16.2	17.8	21.6	23.6
Shredders	7.4	5.2	16.9	16.1
Surface Deposit Feeders	27.0	25.2	29.4	27.4
Suspension Feeders	14.2	12.6	23.0	18.2
Unknown	0.0	0.0	0.0	1.4

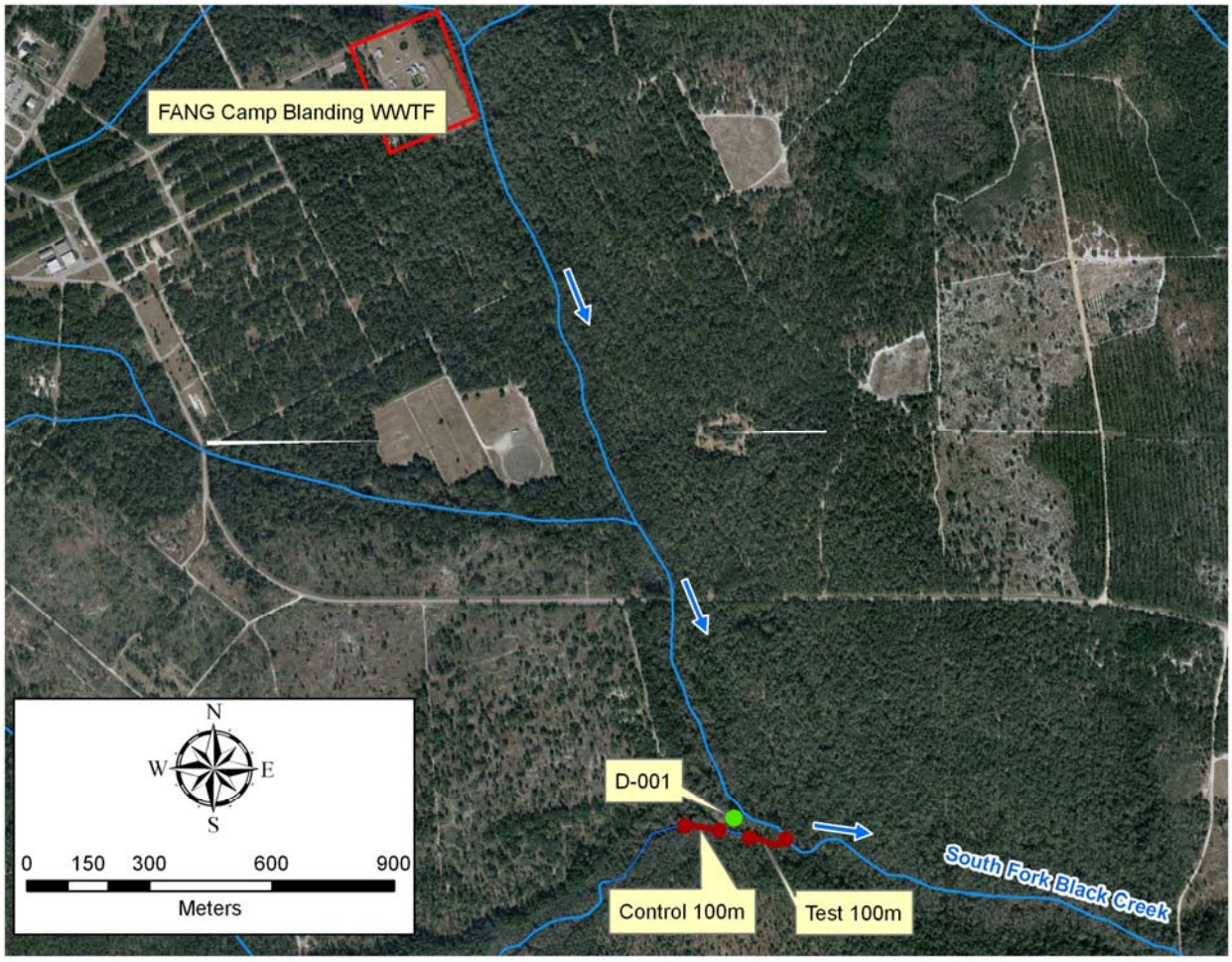
A - Value reported is the mean of two determinations

* SCI_2007 categories from Table LT 7200-2 of DEP-SOP-002/01 as referenced in Quality Assurance Rule (62-160 F.A.C.), December 3, 2008: Values 0 ≤ 34 are Category 3; Values 35 < 67 are Category 2; Values 68 ≤ 100 are Category 1

Appendix A

Map of Facility





Appendix B

Facility Summary

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: Brian Kirts	Contact Number: 904-256-1627
Facility Name (as it appears on permit): Camp Blanding WWTF	Former Names: NA
NPDES Permit Number: FL0022853	Permit Expiration Date: 12/4/2012
Physical Address: 5629 State Road 16 West Starke Florida 32091	
District: NED	County: Clay
Function of Facility: To treat domestic wastewater	
Facility Type: Domestic Wastewater	Permitted Capacity (MGD): 0.90MGD
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): At D-001 the annual average flow is 0.62 which is roughly 68% Capacity. The quarterly average is 0.57MGD. There are no other outfalls listed.	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months):	
Description of type of Discharge: ☒ Continuous ☐ Intermittent ☐ Seasonal ☐ Rainfall Dependent ☐ Other, please specify	
Description of Sampling Location(s) - actual permit designation of permitted sampling point(s): **EFA-1 Immediately after disinfection** **EFD-1 Immediately after dechlorination** **Located at Latitude 29 Degrees 56' 00"N Longitude 82 Degrees 57'11"W**	
Description of Permitted Outfall(s): **South Fork of Black Creek.**	
Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility): Sequential Batch Reactor Plant One mechanical grit removal screen Flow splitter 4 sequential batch reactors 2 chlorine contact chambers 1 dechlorination system 1 belt thickener 1 aerobic digester	

PART I: Continued

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

			Effluent Limitations				Monitoring Requirements			
Parameter	Units	Max/Min	Annual Average	Monthly Average	Weekly Average	Single Sample	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes
CBOD	Mg/L		20	25		60	Weekly	8 hr FPC	EFD-1	
CBOD % Removal	%			85			Calculated		CAL-1	
TSS	Mg/L		20	30		60	Weekly	8 hr FPC	EFD-1	
TSS % Removal	%			85			Monthly	Calculated	CAL-1	
pH	SU					6.0 to 8.5	5 days/week	grab	EFD-1	
DO	Mg/L					5	5 days/week	grab	EFD-1	
Fecal Coliform	#/100mL					800	Weekly	grab	EFD-1	
TRC	Mg/L					0.5	5 days/week	grab	EFA-1	
TRC after dechlor	Mg/L					0.01	Weekly	grab	EFD-1	
TN	Mg/l					Report	Quarterly	Calculated	CAL-1	
Total Ammonia	Mg/L					Report	Quarterly	grab	EFD-1	
Unionized Ammonia	Mg/L					Report	Quarterly	Calculated	CAL-1	
TON	Mg/L					Report	Quarterly	8 hr FPC	EFD-1	
TKN	Mg/L					Report	Quarterly	8 hr FPC	EFD-1	
NO2 +NO3	Mg/L					Report	Quarterly	8 hr FPC	EFD-1	
TP	Mg/L					Report	Quarterly	8 hr FPC	EFD-1	

PART I: Continued

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

			Effluent Limitations				Monitoring Requirements			
Parameter	Units	Max/Min	Annual Average	Monthly Average	Weekly Average	Single Sample	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes
Ortho Phosphate	Mg/L					Report	Quarterly	8 hr FPC	EFD-1	
Temperature	Deg C					Report	Quarterly	grab	EFD-1	
Toxicity									EFD-1	

Stream Monitoring

At SWB-1 (Approximately 150 feet upstream from the plant), SWD-1 (Effluent Outfall approximately 7000 feet from the plant, and SWD-2 (Approximately 150 feet downstream of the plant)

Monitor for DO, pH, Temperature, Fecal Coliform, CBOD, TSS, TN, NO2 plus NO3, TKN, Organic Nitrogen, TA, Ortho Phosphate, TP. All parameters are report only.

PART I: Continued

Receiving Waters:	Classification (indicate whether fresh or marine):
Black Creek	Fresh Water

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

Semiannual Acute Toxicity Requirement with Ceriodaphnia Dubia and Cyrinella leedsi. Two separate grab samples in an 8 hour day.

Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.):
NA

Facility Mixing Zone Details (if applicable):
NA

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

Date	Parameter and Units	Limit	Result
No violations No missing data up to June 2011.			

Describe previous or current Enforcement Actions (including WLs):

NA

Describe any violations or problems noted in previous inspection:

Last inspection (Feb 2011) was found to be in compliance.

Discuss whether DMR trends within previous five years are improving or declining:

Effluent is looking good

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

PART II: Sampling Event Information

Date(s) sample collected:	**Sampler(s):**
Temperature (Deg C):	**pH (SU):**
Dissolved Oxygen (mg/L):	**Conductivity (umhos/cm):**
Total Residual Chlorine (mg/L):	**Total Residual Chlorine - after Disinfection (mg/L):**
Method of Chlorination:	**Method of De-chlorination:**
Flow During Sample Collection for each outfall(MGD):	
Mean Flow for each outfall for previous 12 months based on sampling date (If samples are taken on more than one day, indicate Mean Flow for each day):	
Describe Discharge during Sampling Event: ☐ **Continuous** ☐ **Intermittent** ☐ **Seasonal** ☐ **Rainfall Dependent** ☐ **Other, please specify**	
Describe any conditions, difficulties or abnormal events that occurred during the sample collection and any other additional comments here:	

Appendix 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. The results from these analyses were compared with Water Quality Criteria (62-302 F.A.C.) and facility permit limits. Exceedances of Water Quality Criteria may constitute violations of specific provisions of Chapter 62-302 (F.A.C.) and/or facility permit limits.

(3) Toxicity Bioassays

Greater than 50% mortality in an acute toxicity test may constitute an exceedance of 62-302.500(1)(a) and/or a violation of facility permit limits. An inhibition concentration greater than 25% in a chronic test may constitute exceedances of 62-302.530(20), 62-302.530(61) and/or a violation of facility permit limits. Standard reference toxicant (SRT) tests are conducted monthly to ensure quality in toxicity testing.

(4) Bacteriological Testing

High levels of fecal coliform bacteria may constitute an exceedance of 62-302.530(6) and/or a violation of 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 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 exceedances 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 constitute an exceedance of 62-302.530(61) F.A.C.

(7) Algal Phytoplankton and Periphyton Assemblages

Qualitative periphyton are sampled by taking subsamples of algae from natural substrates throughout the sample reach. Phytoplankton were sampled from the water column using a 1 L grab sample. Periphyton were subsampled and identified to the lowest practical level, usually species. 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 an estimate of algal biomass. High algal biomass implies nutrient stress (Stevenson and Bahls 1999) and may be constitute exceedances 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 exceedances 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

Benthic macroinvertebrates were collected using two methods. Quantitative samples were collected from Hester-Dendy multi-plate samplers incubated for 28 days. Qualitative collections are made using 20 dipnet sweeps (QA Rule SOP FS 7420). Benthic macroinvertebrates were sorted and identified to the lowest practical taxonomic level, usually species.

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 exceedances 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 exceedances 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.

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 (Fore et. al. 2007, Karr and Chu 1998). Shifts in community composition related to a facility's effluent may constitute exceedances 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 exceedances 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.

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 constitute exceedances of 62-302.530(10) 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. As human disturbance increases, it is expected that taxa richness, the number of Ephemeroptera taxa, Trichoptera taxa, sensitive taxa, clinger taxa, long-lived taxa, and the percent contribution of Tanytarsini and suspension and filter feeders will decrease while percent contribution of dominant taxon, and percent contribution of very tolerant taxa will increase.

Scores are broken into three categories (1, 2, and 3). Sites in Category 1 are described as having higher diversity than Category 2 sites, particularly for Ephemeroptera and Trichoptera. A Category 1 site may have several more clinger and sensitive taxa, a higher proportion of Tanytarsini, and a lower percent of a dominant taxon than a site in Category 2. The site will also have a very small percentage of very tolerant individuals, if any.

Sites in Category 2 are described as having an average of 30 species with several different taxa of Ephemeroptera and Trichoptera. A Category 2 site also has several different long-lived taxa and, on average, 5 clinger and 6 sensitive taxa. There is a slight increase in dominance by a single taxon relative to sites in Category 1. Very tolerant taxa represent a small percentage of individuals but are noticeably increased as compared to sites in Category 1.

Sites in Category 3 are described as having a notable loss in taxonomic diversity, and Ephemeroptera, Trichoptera, long-lived, clinger and sensitive taxa are uncommon or rare. Filter feeders are reduced by at least 50%. The site is dominated by a tolerant taxon, and very tolerant individuals represent a large proportion of the individuals collected.

SCI 2007 categories are from Table LT 7200-2 of FDEP-SOP-002/01 as referenced in Draft Quality Assurance Rule (62-160 F.A.C.), December 3, 2008. 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 3, if it is shown to be related to a facility's effluent, may constitute exceedances 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 a violation of 62-302.530(61).

Appendix D

Chain of Custody

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2011-10-31-21
FYI5 FANG-Camp Blanding WWTF Sampling Inspection

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

Customer: NE-DIST
Project ID: FYI5
PMAS: 1143

Lab ID *	Location / Field ID	Matrix	Temp (C)	pH	Sample Depth	Salinity / Sp Conductance	Collection (begin)	Collection (end)	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	NPDES Number	Bottle Group(s)**	Latitude / Longitude	Comments
	FANG Camp Blanding EFF 1	EFF	23.18	6.45	1.05 m	0.24 ppth / 495 umho/cm	Comp / Grab Date 10/31/11 Time 1155 Eastern/Central	Date Time Eastern/Central		6.34			A	dd / dms	
	FANG Camp Blanding EFF 1	EFF	4.0°C				Comp / Grab Date 10/31/11 Time 2358 Central	Date 11/31/11 Time 0759 Central					A	dd / dms	
	Blank	DI					Comp / Grab Date 10/31/11 Time 1225 Central						D	dd / dms	
	FANG Camp Blanding EFF 1	EFF	23.3	6.27	1.4 m	0.27 ppth / 523 umho/cm	Comp / Grab Date 10/31/11 Time 1253 Central			5.82			A	dd / dms	4 Biosassay Read in Tox by JD 10.26 11.1.11

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
	10/31/11	Fed EX	ABB	11-1-11 09:30				

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

Page 1 of 4

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2011-10-31-21
FYI5 FANG-Camp Blanding WWTF Sampling Inspection

Requester: Michelle Fish
Field Report Prepared By: S. Piltz

Customer: NE-DIST
Project ID: FYI5
PMAS: 1143

Collected By: NED DEP
Sampling Agency: J. Parrish / P. OConnor
Send Final Report To: Tom Rauth

Lab ID *	Location / Field ID / Matrix (inc	Collection (begin)	Collection (end)	Bottle Group(s)**
	Camp Bland Downstream of Outta	☐ Comp ☐ Grab Date 10/3/11 Time 1200 ~~Eastern~~ Central	Date Time ~~Eastern~~ Central	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
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Comments: 1/2 SCI Bot	

Lab ID *	Location / Field ID / Matrix (inc	Collection (begin)	Collection (end)	Bottle Group(s)**
	Camp Bland Downstream of Outta	☐ Comp ☐ Grab Date 10/3/11 Time 1200 ~~Eastern~~ Central	Date Time ~~Eastern~~ Central	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
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Comments: 2/2 SCI Bot	

Lab ID *	Location / Field ID / Matrix (include type e.g. Salt, Fresh, etc)	Collection (begin)	Collection (end)	Bottle Group(s)**
	Camp Blanding upstream of outt	☑ Comp ☐ Grab Date 10/3/11 Time 1000 ~~Eastern~~ Central	Date Time ~~Eastern~~ Central	B
	Temp (C) 17.6 pH 6.12	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L) 8.05	Storet Station Number
		Sample Depth ☑ m 0.5 ☐ ft	☑ Salinity (PPTh) 0.03 35 ☑ Sp Conductance (umho/cm)	NPDES Number
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Comments	

Lab ID *	Location / Field ID / Matrix (include type e.g. Salt, Fresh, etc)	Collection (begin)	Collection (end)	Bottle Group(s)**
	Camp Blanding upstream of outt	☐ Comp ☐ Grab Date 10/3/11 Time ~~Eastern~~ Central	Date 10/3/11 Time ~~Eastern~~ Central	B
	Temp (C) pH	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number
		Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Comments: Hester D. 1/3	

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	10/3/11	Fed Ex	ABJ	11-4-11 0430				

* 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-2011-10-31-21
FYI5 FANG-Camp Blanding WWTF Sampling Inspection

Requester: Michelle Fish
Field Report Prepared By: S. Piltz

Customer: NE-DIST
Project ID: FYI5
PMAS: 1143

Collected By: J. Parrish / P. O'Connor
Sampling Agency: NED DEP
Send Final Report To: Tom Rauth

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	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	Bottle Group(s)**
	Camp Blanding upstream of outf				dd / dms	dd / dms	Comp	10/3/11	10/31/11							Hester D 2/3	B
	Camp Blanding upstream of outf				dd / dms	dd / dms	Comp	10/3/11	10/31/11							Hester D. 3/3	B
	Camp Blanding upstream of outf				dd / dms	dd / dms	Comp, Grab	10/3/11 Time 1000 Central	Date Time							SCI Bot 1/3	B C
	Camp Blanding upstream of outf				dd / dms	dd / dms	Comp, Grab	10/31/11 Time 1000 Central	Date Time							SCI Bot 2/3	C

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	10/31/11	Fed Ex	ABS	11-1-11 0930				

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last revised October 1, 2003

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2011-10-31-21
FYI5 FANG-Camp Blanding WWTF Sampling Inspection

Requester: Michelle Fish

Field Report Prepared By: S. P. Itz

Customer: NE-DIST
Project ID: FYI5
PMAS: 1143

Collected By: J. Parrish / P. O'Connor

Send Final Report To: Tom Rauth

Sampling Agency: NED DEP

Lab ID *	Location			☐ Comp ☐ Grab	Collection (begin) Date Time	Eastern Central	Collection (end) Date Time	Eastern Central	Bottle Group(s)**
	Field ID	Camp Blanding upstream of outf		Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)		Storet Station Number		C
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)		NPDES Number	
	Latitude ☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Comments					

Lab ID *	Location			☐ Comp ☐ Grab	Collection (begin) Date Time	Eastern Central	Collection (end) Date Time	Eastern Central	Bottle Group(s)**
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)		Storet Station Number		
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)		NPDES Number	
	Latitude ☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Comments					

Lab ID *	Location			☐ Comp ☐ Grab	Collection (begin) Date Time	Eastern Central	Collection (end) Date Time	Eastern Central	Bottle Group(s)**
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)		Storet Station Number		
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)		NPDES Number	
	Latitude ☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Comments					

Lab ID *	Location			☐ Comp ☐ Grab	Collection (begin) Date Time	Eastern Central	Collection (end) Date Time	Eastern Central	Bottle Group(s)**
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)		Storet Station Number		
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)		NPDES Number	
	Latitude ☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Comments					

Lab ID *	Location			☐ Comp ☐ Grab	Collection (begin) Date Time	Eastern Central	Collection (end) Date Time	Eastern Central	Bottle Group(s)**
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)		Storet Station Number		
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)		NPDES Number	
	Latitude ☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Comments					

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* 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-2011-10-31-21
FYI5 FANG-Camp Blanding WWTF Sampling Inspection

Requester: Michelle Fish
Field Report Prepared By: S.P. Fitz

Customer: NE-DIST
Project ID: FYI5
PMAS: 1143

Collected By: J. Parrish / P. O'Connor
Send Final Report To: Tom Rauth

Sampling Agency: DEP NEP

Lab ID *	Location / Field ID / Matrix	Temp (C)	pH	Collection (begin)	Collection (end)	Bottle Group(s)**
	Camp Bland Downstream of Outta	18.55	6.08	☐ Comp ☑ Grab Date 10/3/11 Time 1200 ~~Eastern~~ Central	Date Time Eastern Central	AB
				Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L) 7.9	Storet Station Number
				Sample Depth .03 ☑ m ☐ ft	0.03 ☑ Salinity (PPTh) 56 ☑ Sp Conductance (umho/cm)	NPDES Number
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments		
	Camp Bland Downstream of Outta			☐ Comp ☐ Grab Date 10/3/11 Time ~~Eastern~~ Central	Date 10/31/11 Time Eastern Central	B
				Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number
				Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments 1/3 Hester D.		
	Camp Bland Downstream of Outta			☐ Comp ☐ Grab Date 10/3/11 Time Eastern Central	Date 10/31/11 Time Eastern Central	B
				Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number
				Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments 2/3 Hester D.		
	Camp Bland Downstream of Outta			☐ Comp ☐ Grab Date 10/3/11 Time Eastern Central	Date 10/31/11 Time Eastern Central	B
				Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number
				Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments 3/3 Hester D.		

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
	10/31/11	Fed Ex	ABJ	11-1-11 09:30				

* Shaded Areas for Lab use only.

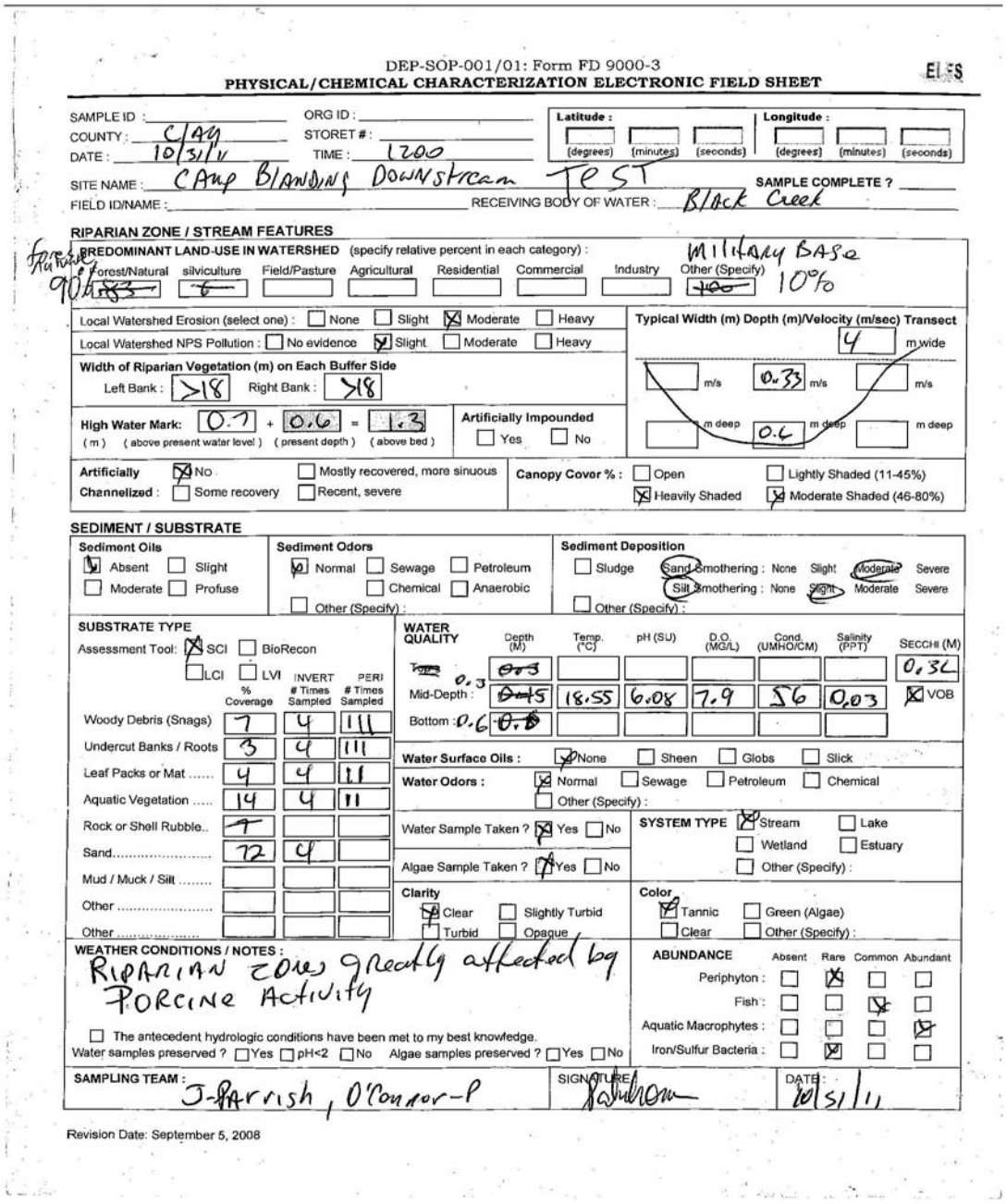
** Please see reverse side for Bottle Group information.

last revised October 1, 2003

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Appendix E

Physical/Chemical and Habitat Assessment field sheets



DEP-SOP-001/01: Form FD 9000-3

PHYSICAL/CHEMICAL CHARACTERIZATION ELECTRONIC FIELD SHEET

ELES

SAMPLE ID : _____ ORG ID : _____

COUNTY : Clay STORET # : _____

DATE : 10/31/11 TIME : 1200

Latitude : (degrees) (minutes) (seconds) Longitude : (degrees) (minutes) (seconds)

SITE NAME : Camp Blanding Downstream TEST SAMPLE COMPLETE ? _____

FIELD ID/NAME : _____ RECEIVING BODY OF WATER : Black Creek

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category) :

Future 90%

Forest/Natural	silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industry	Other (Specify)
~~33~~	~~6~~						~~100~~ Military Base 10%

Local Watershed Erosion (select one) : ☐ None ☐ Slight ☒ Moderate ☐ Heavy

Local Watershed NPS Pollution : ☐ No evidence ☒ Slight ☐ Moderate ☐ Heavy

Width of Riparian Vegetation (m) on Each Buffer Side

Left Bank : >18 Right Bank : >18

High Water Mark: 0.7 (m) + 0.6 (above present water level) = 1.3 (present depth) (above bed)

Artificially Impounded ☐ Yes ☐ No

Typical Width (m) Depth (m)/Velocity (m/sec) Transect

4 m wide

m/s 0.33 m/s m/s

m deep 0.4 m deep m deep

Artificially Channelized : ☒ No ☐ Some recovery ☐ Mostly recovered, more sinuous ☐ Recent, severe

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

SEDIMENT / SUBSTRATE

Sediment Oils ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse

Sediment Odors ☒ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ Other (Specify) :

Sediment Deposition ☐ Sludge ☐ Other (Specify) :

Sand Smothering : None Slight Moderate Severe

Silt Smothering : None Slight Moderate Severe

SUBSTRATE TYPE

Assessment Tool: ☒ SCI ☐ BioRecon ☐ LCI ☐ LVI

	% Coverage	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)	7	4	111
Undercut Banks / Roots	3	4	111
Leaf Packs or Mat	4	4	11
Aquatic Vegetation	14	4	11
Rock or Shell Rubble..	9		
Sand.....	72	4	
Mud / Muck / Silt			
Other			
Other			

WATER QUALITY

	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
~~Surface~~ 0.3	~~0.3~~						0.3L
Mid-Depth :	~~0.45~~	18.55	6.08	7.9	56	0.03	☒ VOB
Bottom : 0.6	~~0.6~~						

Water Surface Oils : ☒ None ☐ Sheen ☐ Globs ☐ Slick

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

Water Sample Taken ? ☒ Yes ☐ No

Algae Sample Taken ? ☒ Yes ☐ No

SYSTEM TYPE ☒ Stream ☐ Lake ☐ Wetland ☐ Estuary ☐ Other (Specify) :

Clarity ☒ Clear ☐ Slightly Turbid ☐ Turbid ☐ Opaque

Color ☒ Tannic ☐ Green (Algae) ☐ Clear ☐ Other (Specify) :

WEATHER CONDITIONS / NOTES :

Riparian zone greatly affected by Porcine Activity

☐ The antecedent hydrologic conditions have been met to my best knowledge.

Water samples preserved ? ☐ Yes ☐ pH<2 ☐ No Algae samples preserved ? ☐ Yes ☐ No

ABUNDANCE

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

SAMPLING TEAM : J-Parrish, O'Connor-P SIGNATURE DATE : 10/31/11

Revision Date: September 5, 2008

DEP-SOP-001/01: Form FD 9000-5

STATE OF FLORIDA, DEPARTMENT OF ENVIRONMENTAL PROTECTION

STREAM/RIVER HABITAT ASSESSMENT FIELD SHEET

SUBMITTING AGENCY CODE: / SUBMITTING AGENCY NAME:	STORET STATION NUMBER:	DATE (MM/DD/YY): 10/31/11	RECEIVING BODY OF WATER:
REMARKS:	COUNTY: Clay	LOCATION: Camp Blanding Downstream	FIELD ID/NAME: TEST

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 18	Four or more productive habitats present [snags, tree roots, 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 ~~18~~ 14 (10)	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 18	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 17 Primary Score ~~71~~ (to) 67	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand or silt accumulation. 20 19 18 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand or silt accumulation. 15 14 13 12 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand or silt accumulation. 5 4 3 2 1
Secondary Habitat Components **Artificial Channelization** 18	Good sinuosity. No evidence of dredging or artificial straightening. No spoil banks. Diversity of depths. 20 19 18 17 16	Good sinuosity within old channelized area and a diversity of depths. Evidence of dredging in the past (>10 yrs) but mostly recovered. 15 14 13 12 11	Some sinuosity developed within channelized area or some diversity of depth, but typically no pools (>2 times prevailing depth) present. 10 9 8 7 6	Straightened with spoil banks. Box-cut, monotypic depth. 5 4 3 2 1
Bank Stability Right Bank 8 Left Bank 7	Bankfull > 60% of bank height. Slope of bank ≤ 60°. Bankfull is within or above the root zone with few raw, eroded areas. 10 9	Only meets 2 of the 3 requirements for optimal bank stability. 8 7 6	Only meets 1 of the 3 requirements for optimal bank stability. 5 4	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank 10 Left Bank 10	Width of vegetation greater than 18 m 10 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities still close to system 5 4	Less than 6 m of buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank 8 Left Bank 8 Secondary Score 69	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants, trees, understory shrubs, or non-woody macrophytes). Minimal disturbance. 10 9	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. 8 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

~~Pt 140~~ 136 **TOTAL SCORE**

Date: 10/31/11	Analyst: O'Connor-P	Signature: Patricia O'Connor

136 FINAL Score

Form FD 9000-5 Revision Date: September 21, 2011

Downstream Form FD 9000-25 **FDEP Rapid Periphyton Survey (DEP SOP FS 7230)** Revised 10/11/11

Site: Camp Blanding, ~~Upstream~~ Downstream | County: Clay | Date: 10/31/11 1200 | Investigators: Parnell, Oconnor

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (0 - 6)	Canopy Cover (# shaded)
0	1	1	
	2	1	
	3	0	
	4		97
	5		
	6		
	7		
	8		
	9	↓	
10	1	0	
	2	1	
	3	1	
	4	0	
	5	0	84
	6	1	
	7	1	
	8	0	
	9	0	
20	1	1	
	2	0	
	3	0	
	4	1	
	5	1	60
	6	0	
	7	1	
	8	0	
	9	0	
30	1	1	
	2	1	
	3	0	
	4		
	5		52
	6	↓	
	7	1	
	8	1	
	9	1	

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (0-6)	Canopy Cover (# shaded)
40	1	0	
	2	0	
	3	1	
	4	0	
	5		93
	6		
	7		
	8	↓	
	9	1	
50	1	1	
	2	0	
	3		
	4		
	5		83
	6		
	7		
	8	0	
	9	1	
60	1	0	
	2	1	
	3	0	
	4		
	5		88
	6		
	7	↓	
	8	1	
	9	1	
70	1	1	
	2	1	
	3	0	
	4	1	
	5	1	94
	6	1	
	7	1	
	8	0	
	9	1	

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (0-6)	Canopy Cover (# shaded)
80	1	1	
	2	0	
	3		
	4		
	5		92
	6		
	7		
	8		
	9	↓	
90	1		
	2		
	3	1	
	4	0	
	5	0	90
	6	1	
	7	0	
	8		
	9	↓	
100	1	1	
	2	1	
	3	0	
	4		
	5		98
	6		
	7		
	8		
	9	↓	

Check accompanying data collected at same site/date.	
Water sample	✓
Algal mat sample	✓
SCI/Biorecon (circle 1)	✓
Habitat Assessment	✓
RQ: 7241-10-31-2	

CPS
Qualitative periph. sample

Algal Thickness Rank	
0	rough, no algae
1	< or =0.5 mm or slimy
2	>0.5 - 1 mm
3	>1mm - 6 mm
4	>6 - 20 mm
5	>20 mm - 10 cm
6	>10 cm

Record an "X" for points where algae is not sampled because the substrate cannot be seen or reached with the hand. If the cell is left blank, data managers will assume point was not evaluated.

Record canopy cover as the NUMBER OF SMALL DENSIOMETER SQUARES (OUT OF 96) THAT HAVE CANOPY COVER. Measure while facing upstream.

Collect an algal mat sample following DEP SOP FS 7240 if the percentage of total sampled points with a thickness rank of 4, 5, or 6 is >20%.

DEP-SOP-001/01: Form FD 9000-3

PHYSICAL/CHEMICAL CHARACTERIZATION ELECTRONIC FIELD SHEET ELFS

SAMPLE ID : _____ ORG ID : _____

COUNTY : Clay STORET # : _____

DATE : 10/31/11 TIME : 1000

Latitude :			Longitude :		
(degrees)	(minutes)	(seconds)	(degrees)	(minutes)	(seconds)

SITE NAME : Black cr. upstream of Falls Upstream SAMPLE COMPLETE ? Yes

FIELD ID/NAME : _____ RECEIVING BODY OF WATER : Black creek

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category) :

Forest/Natural	silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industry	Other (Specify)
90% Forest Native							10% Hillmybase

Local Watershed Erosion (select one) : ☒ None ☐ Slight ☐ Moderate ☐ Heavy

Local Watershed NPS Pollution : ☒ No evidence ☐ Slight ☐ Moderate ☐ Heavy

Width of Riparian Vegetation (m) on Each Buffer Side

Left Bank : 18m Right Bank : 18m

High Water Mark: 0.7 (m) + 0.3 (present depth) = 1 (above bed) (above present water level)

Artificially Impounded ☐ Yes ☐ No

Typical Width (m) Depth (m)/Velocity (m/sec) Transect

3 m wide

	m/s	0.33 m/s		m/s
	m deep	0.3 m deep		m deep

Artificially Channelized : ☒ No ☐ Some recovery ☐ Mostly recovered, more sinuous ☐ Recent, severe

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

SEDIMENT / SUBSTRATE

Sediment Oils ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse

Sediment Odors ☒ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ Other (Specify) :

Sediment Deposition ☐ Sludge

Sand Smothering : None (Slight) Moderate Severe

Silt Smothering : None Slight Moderate Severe

☐ Other (Specify) :

SUBSTRATE TYPE

Assessment Tool: ☒ SCI ☐ BioRecon ☐ LCI ☐ LVI

	% Coverage	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)	3	4	2
Undercut Banks / Roots	4	4	2
Leaf Packs or Mat	3	4	4
Aquatic Vegetation	16	4	2
Rock or Shell Rubble..			
Sand.....	74	4	
Mud / Muck / Silt			
Other			
Other			

WATER QUALITY

	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
Top :							
Mid-Depth :	0.5	17.6	6.12	8.05	35	0.02	☒ NOB
Bottom :	1						84% RO East

Water Surface Oils : ☒ None ☐ Sheen ☐ Globs ☐ Slick

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

Water Sample Taken ? ☒ Yes ☐ No

Algae Sample Taken ? ☒ Yes ☐ No

SYSTEM TYPE ☒ Stream ☐ Lake ☐ Wetland ☐ Estuary ☐ Other (Specify) :

Clarity ☒ Clear ☐ Slightly Turbid ☐ Turbid ☐ Opaque

Color ☐ Tannic ☐ Green (Algae) ☒ Clear ☐ Other (Specify) :

WEATHER CONDITIONS / NOTES :

ABUNDANCE

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

☒ The antecedent hydrologic conditions have been met to my best knowledge.

Water samples preserved ? ☒ Yes ☒ pH<2 ☐ No Algae samples preserved ? ☒ Yes ☐ No

SAMPLING TEAM : Jeremy Pawl / Pat Oconnor SIGNATURE : Jeremy Pawl DATE : 10/31/11

Revision Date: September 5, 2008

DEP-SOP-001/01: Form FD 9000-5
STATE OF FLORIDA, DEPARTMENT OF ENVIRONMENTAL PROTECTION
STREAM/RIVER HABITAT ASSESSMENT FIELD SHEET

SUBMITTING AGENCY CODE: / SUBMITTING AGENCY NAME:	STORET STATION NUMBER:	DATE (MM/DD/YY): 10/31/11	RECEIVING BODY OF WATER:
REMARKS:	COUNTY: Clay	LOCATION: Black Cr upstream of FANG OUTFALL	FIELD ID/NAME: Upstream

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 18	Four or more productive habitats present [snags, tree roots, 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 14	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 17	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 16 Primary Score 65	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand or silt accumulation. 20 19 18 17 (16)	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand or silt accumulation. 15 14 13 12 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand or silt accumulation. 5 4 3 2 1
Secondary Habitat Components **Artificial Channelization** 20	Good sinuosity. No evidence of dredging or artificial straightening. No spoil banks. Diversity of depths. (20) 19 18 17 16	Good sinuosity within old channelized area and a diversity of depths. Evidence of dredging in the past (>10 yrs) but mostly recovered. 15 14 13 12 11	Some sinuosity developed within channelized area or some diversity of depth, but typically no pools (>2 times prevailing depth) present. 10 9 8 7 6	Straightened with spoil banks. Box-cut, monotypic depth. 5 4 3 2 1
Bank Stability Right Bank 9 Left Bank 9	Bankfull > 60% of bank height. Slope of bank ≤ 60°. Bankfull is within or above the root zone with few raw, eroded areas. 10 (9)	Only meets 2 of the 3 requirements for optimal bank stability. 8 7 6	Only meets 1 of the 3 requirements for optimal bank stability. 5 4	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank 10 Left Bank 10	Width of vegetation greater than 18 m (10) 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities still close to system 5 4	Less than 6 m of buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank 9 Left Bank 9 Secondary Score 76	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants, trees, understory shrubs, or non-woody macrophytes). Minimal disturbance. 10 (9)	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. 8 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

141 **TOTAL SCORE**

Date: 10/31/11	Analyst: Jeremy Pruett	Signature: Jeremy Pruett

Form FD 9000-5 Revision Date: September 21, 2011

Form FD 9000-25 **FDEP Rapid Periphyton Survey (DEP SOP FS 7230)** Revised 10/11/11

Site: FAN 6 OUTFALL upstream | County: Clay | Date: 10/31/11 | Investigators: Jeremy Parrish / Pat O'Connor

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (0 - 6)	Canopy Cover (# shaded)	Transect (m)	Point 1=right 9=left	Algal Thickness Rank (0-6)	Canopy Cover (# shaded)	Transect (m)	Point 1=right 9=left	Algal Thickness Rank (0-6)	Canopy Cover (# shaded)
0	1	0		40	1	0		80	1	1	
	2	0			2	0			2	0	
	3	0			3	0			3		
	4	1			4	0			4	0	
	5	0	98%		5	0	94		5	0	96
	6	0			6	1			6	0	
	7	1			7	1			7	0	
	8	1			8	1			8	0	
	9	0			9	0			9	1	
10	1	0		50	1	0		90	1	0	
	2	1			2	0			2	0	
	3	0			3	0			3	1	
	4	1	96%		4	0			4	1	
	5	0			5	0	97		5	0	97
	6	0			6	0			6	0	
	7	0			7	1			7	0	
	8	1			8	0			8	0	
	9	0			9	0			9	0	
20	1	1		60	1	0		100	1	0	
	2	0			2	1			2	1	
	3	0			3	1			3		
	4	1	98		4	0			4		
	5	0			5	0	95		5		97
	6	0			6	0			6		
	7	0			7	0			7		
	8	0			8	0			8		
	9	0			9	0			9	1	
30	1	0		70	1	0					
	2	0			2	0					
	3	0			3	0					
	4	0			4	0					
	5	0	96		5	1	94				
	6	0			6	0					
	7	1			7	0					
	8	0			8	0					
	9	0			9	1					

Check accompanying data collected at same site/date.	
Water sample	✓
Algal mat sample	
SC/Biorecon (circle 1)	✓
Habitat Assessment	✓
RQ: 2011-10-31-21	

Qualitative Periphyton

Algal Thickness Rank	
0	rough, no algae
1	< or =0.5 mm or slimy
2	>0.5 - 1 mm
3	>1mm - 6 mm
4	>6 - 20 mm
5	>20 mm - 10 cm
6	>10 cm

Record an "X" for points where algae is not sampled because the substrate cannot be seen or reached with the hand. If the cell is left blank, data managers will assume point was not evaluated.

Record canopy cover as the NUMBER OF SMALL DENSIOMETER SQUARES (OUT OF 96) THAT HAVE CANOPY COVER. Measure while facing upstream.

Collect an algal mat sample following DEP SOP FS 7240 if the percentage of total sampled points with a thickness rank of 4, 5, or 6 is >20%.

2h78 01?

Appendix F
Chemical analysis of effluent and receiving water

Date_Sampled	UDL	SCH_Group	Component	Value	Qualifier	Units_Word_Result	MDL	PQL
10/31/2011 11:55	Effluent	AGP/LN	Algal Growth Potential	146		mg DryWt/L	0.3	0.9
10/31/2011 11:55	Effluent	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	2.6	AJ	ug/L	0.59	1.8
10/31/2011 11:55	Effluent	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.82	I	ug/L	0.43	1.3
10/31/2011 7:59	Effluent	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	7.7	J	mg/L	0.2	2
10/31/2011 11:55	Effluent	Overflow	Fecal Coliforms-Membrane Filter	5	B	cfu/100 mL	1.6	1.6
10/31/2011 11:55	Effluent	Toxicology	Bioassay-Acute-Def-FW-C.dubia, LC50	100	L	LC50		
10/31/2011 12:55	Effluent	Toxicology	Bioassay-Acute-Def-FW-Fish, LC50	No Result		LC50		
10/31/2011 11:55	Effluent	Toxicology	Bioassay-Acute-Def-FW-Fish, LC50	No Result		LC50		
10/31/2011 12:55	Effluent	Toxicology	Bioassay-Acute-Def-FW-C.dubia, LC50	100	L	LC50		
10/31/2011 11:55	Effluent	Metals	Nickel	1.21		ug/L	0.25	1
10/31/2011 11:55	Effluent	Metals	Aluminum	43		ug/L	5	20
10/31/2011 11:55	Effluent	Metals	Silver	0.059	I	ug/L	0.025	0.1
10/31/2011 11:55	Effluent	Metals	Arsenic	0.4	I	ug/L	0.25	1
10/31/2011 11:55	Effluent	Metals	Cadmium	0.05	U	ug/L	0.05	0.2
10/31/2011 11:55	Effluent	Metals	Selenium	0.21	I	ug/L	0.2	0.8
10/31/2011 11:55	Effluent	Metals	Copper	5.96		ug/L	0.5	1
10/31/2011 11:55	Effluent	Metals	Chromium	0.3	U	ug/L	0.3	1.2
10/31/2011 11:55	Effluent	Metals	Iron	75	I	ug/L	30	120
10/31/2011 11:55	Effluent	Metals	Calcium	31.9		mg/L	0.075	0.3
10/31/2011 11:55	Effluent	Metals	Sodium	43.9		mg/L	0.5	2
10/31/2011 11:55	Effluent	Metals	Lead	0.37	I	ug/L	0.2	0.8
10/31/2011 11:55	Effluent	Metals	Zinc	44		ug/L	5	20
10/31/2011 11:55	Effluent	Metals	Magnesium	7.9		mg/L	0.04	0.16
10/31/2011 7:59	Effluent	Nutrients	Total-P	3.8		mg P/L	0.025	0.25
10/31/2011 7:59	Effluent	Nutrients	Ammonia-N	3.1		mg N/L	0.05	0.1
10/31/2011 7:59	Effluent	Nutrients	Sulfate	49		mg SO4/L	2	5
10/31/2011 7:59	Effluent	Nutrients	Chloride	49		mg Cl/L	2	5
10/31/2011 7:59	Effluent	Nutrients	NO2NO3-N	6.6		mg N/L	0.08	0.2
10/31/2011 7:59	Effluent	Nutrients	Color (true)	22		PCU	2	6
10/31/2011 7:59	Effluent	Nutrients	Organic Carbon	9		mg C/L	1	5
10/31/2011 7:59	Effluent	Nutrients	Kjeldahl Nitrogen	4.6		mg N/L	0.4	1
10/31/2011 7:59	Effluent	Nutrients	Alkalinity	90		mg CaCO3/L	0.65	2.5
10/31/2011 7:59	Effluent	Nutrients	TSS	8	I	mg/L	2	10
10/31/2011 7:59	Effluent	Nutrients	Fluoride	0.12		mg F/L	0.035	0.1
10/31/2011 11:55	Effluent	Nutrients	O-Phosphate-P	3.4		mg P/L	0.08	0.2
10/31/2011 11:55	Effluent	Pesticides	Hexazinone	0.1	U	ug/L	0.1	0.4
10/31/2011 11:55	Effluent	Pesticides	DDT-p,p'	0.03	U	ug/L	0.03	0.12
10/31/2011 11:55	Effluent	Pesticides	Dieldrin	0.02	U	ug/L	0.02	0.08
10/31/2011 11:55	Effluent	Pesticides	Endrin Aldehyde	0.02	U	ug/L	0.02	0.08

Date_Sampled	UDL	SCH_Group	Component	Value	Qualifier	Units_Word_Result	MDL	PQL
10/31/2011 11:55	Effluent	Pesticides	Heptachlor Epoxide	0.02	U	ug/L	0.02	0.08
10/31/2011 11:55	Effluent	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
10/31/2011 11:55	Effluent	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Effluent	Pesticides	Naled	0.8	UJ	ug/L	0.8	3.2
10/31/2011 11:55	Effluent	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
10/31/2011 11:55	Effluent	Pesticides	Endrin	0.05	U	ug/L	0.05	0.2
10/31/2011 11:55	Effluent	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
10/31/2011 11:55	Effluent	Pesticides	Aldrin	0.01	U	ug/L	0.01	0.04
10/31/2011 11:55	Effluent	Pesticides	Endosulfan I	0.02	U	ug/L	0.02	0.08
10/31/2011 11:55	Effluent	Pesticides	Toxaphene	0.75	U	ug/L	0.75	3
10/31/2011 11:55	Effluent	Pesticides	Chlorpyrifos Methyl	0.1	U	ug/L	0.1	0.4
10/31/2011 11:55	Effluent	Pesticides	Ethoprop	0.1	U	ug/L	0.1	0.4
10/31/2011 11:55	Effluent	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Effluent	Pesticides	Beta-BHC	0.01	U	ug/L	0.01	0.04
10/31/2011 11:55	Effluent	Pesticides	Gamma-BHC	0.01	U	ug/L	0.01	0.04
10/31/2011 11:55	Effluent	Pesticides	Heptachlor	0.01	UJ	ug/L	0.01	0.04
10/31/2011 11:55	Effluent	Pesticides	Diazinon	0.055	U	ug/L	0.055	0.22
10/31/2011 11:55	Effluent	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
10/31/2011 11:55	Effluent	Pesticides	Fonofos	0.1	U	ug/L	0.1	0.4
10/31/2011 11:55	Effluent	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
10/31/2011 11:55	Effluent	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Effluent	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
10/31/2011 11:55	Effluent	Pesticides	Endosulfan Sulfate	0.02	U	ug/L	0.02	0.08
10/31/2011 11:55	Effluent	Pesticides	Alachlor	0.6	U	ug/L	0.6	2.4
10/31/2011 11:55	Effluent	Pesticides	Atrazine	0.05	U	ug/L	0.05	0.2
10/31/2011 11:55	Effluent	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
10/31/2011 11:55	Effluent	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1
10/31/2011 11:55	Effluent	Pesticides	Parathion Methyl	0.1	U	ug/L	0.1	0.4
10/31/2011 11:55	Effluent	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
10/31/2011 11:55	Effluent	Pesticides	Alpha-BHC	0.01	U	ug/L	0.01	0.04
10/31/2011 11:55	Effluent	Pesticides	Delta-BHC	0.01	U	ug/L	0.01	0.04
10/31/2011 11:55	Effluent	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Effluent	Pesticides	Butylate	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Effluent	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
10/31/2011 11:55	Effluent	Pesticides	Phorate	0.05	U	ug/L	0.05	0.2
10/31/2011 11:55	Effluent	Pesticides	DDE-p,p'	0.02	U	ug/L	0.02	0.08
10/31/2011 11:55	Effluent	Pesticides	Methoxychlor	0.05	UJ	ug/L	0.05	0.2
10/31/2011 11:55	Effluent	Pesticides	Metolachlor	0.5	U	ug/L	0.5	2
10/31/2011 11:55	Effluent	Pesticides	Chlordane	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Effluent	Pesticides	DDD-p,p'	0.02	U	ug/L	0.02	0.08
10/31/2011 11:55	Effluent	Pesticides	Endosulfan II	0.02	U	ug/L	0.02	0.08
10/31/2011 11:55	Effluent	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.2	U	ug/L	3.2	13

Date_Sampled	UDL	SCH_Group	Component	Value	Qualifier	Units_Word_Result	MDL	PQL
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Pyrene	0.21	U	ug/L	0.21	0.85
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Benzo(a)anthracene	0.21	U	ug/L	0.21	0.85
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	16	U	ug/L	16	64
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Chrysene	0.21	U	ug/L	0.21	0.85
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Di-n-butyl phthalate	5.3	UJ	ug/L	5.3	21
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Fluorene	0.21	U	ug/L	0.21	0.85
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Phenol	1.1	U	ug/L	1.1	4.3
10/31/2011 11:55	Effluent	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.1	U	ug/L	1.1	4.3
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Acenaphthylene	0.21	U	ug/L	0.21	0.85
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Benzidine	110	U	ug/L	110	430
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Benzo(k)fluoranthene	0.21	U	ug/L	0.21	0.85
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.1	U	ug/L	1.1	4.3
10/31/2011 11:55	Effluent	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.1	U	ug/L	1.1	4.3
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Anthracene	0.21	U	ug/L	0.21	0.85
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Di-n-octyl phthalate	1.1	U	ug/L	1.1	4.3
10/31/2011 11:55	Effluent	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1	U	ug/L	2.1	8.5
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Nitrobenzene	2.1	U	ug/L	2.1	8.5
10/31/2011 11:55	Effluent	Priority Organic Pollutants	2,4-Dinitrotoluene	1.1	U	ug/L	1.1	4.3
10/31/2011 11:55	Effluent	Priority Organic Pollutants	2-Chlorophenol	1.1	U	ug/L	1.1	4.3
10/31/2011 11:55	Effluent	Priority Organic Pollutants	2-Nitrophenol	1.1	U	ug/L	1.1	4.3
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Benzo(a)pyrene	0.21	U	ug/L	0.21	0.85
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Benzo(b)fluoranthene	0.21	U	ug/L	0.21	0.85
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Hexachlorobutadiene	3.2	U	ug/L	3.2	13
10/31/2011 11:55	Effluent	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.2	U	ug/L	3.2	13
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Phenanthrene	0.21	U	ug/L	0.21	0.85
10/31/2011 11:55	Effluent	Priority Organic Pollutants	2,4-Dimethylphenol	11	U	ug/L	11	43
10/31/2011 11:55	Effluent	Priority Organic Pollutants	2,6-Dinitrotoluene	1.1	U	ug/L	1.1	4.3
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Butyl benzyl phthalate	5.3	U	ug/L	5.3	21
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Fluoranthene	0.21	U	ug/L	0.21	0.85
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Hexachlorobenzene	1.1	U	ug/L	1.1	4.3
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Isophorone	1.1	U	ug/L	1.1	4.3
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Naphthalene	0.21	U	ug/L	0.21	0.85
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Pentachlorophenol	3.2	UJ	ug/L	3.2	13
10/31/2011 11:55	Effluent	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.1	U	ug/L	1.1	4.3
10/31/2011 11:55	Effluent	Priority Organic Pollutants	2,4-Dichlorophenol	1.1	U	ug/L	1.1	4.3
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.21	U	ug/L	0.21	0.85
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.2	U	ug/L	3.2	13
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.2	UJ	ug/L	3.2	13
10/31/2011 11:55	Effluent	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.1	U	ug/L	1.1	4.3
10/31/2011 11:55	Effluent	Priority Organic Pollutants	2,4-Dinitrophenol	16	U	ug/L	16	64
10/31/2011 11:55	Effluent	Priority Organic Pollutants	2-Chloronaphthalene	1.1	U	ug/L	1.1	4.3
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Acenaphthene	0.21	U	ug/L	0.21	0.85

Date_Sampled	UDL	SCH_Group	Component	Value	Qualifier	Units_Word_Result	MDL	PQL
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Dimethyl phthalate	11	UJ	ug/L	11	43
10/31/2011 11:55	Effluent	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.1	U	ug/L	2.1	8.5
10/31/2011 11:55	Effluent	Priority Organic Pollutants	3,3'-Dichlorobenzidine	43	UJ	ug/L	43	170
10/31/2011 11:55	Effluent	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.1	U	ug/L	2.1	8.5
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.1	U	ug/L	1.1	4.3
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.21	U	ug/L	0.21	0.85
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Diethyl phthalate	1.1	UJ	ug/L	1.1	4.3
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Hexachloroethane	3.2	U	ug/L	3.2	13
10/31/2011 11:55	Effluent	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.21	U	ug/L	0.21	0.85
10/31/2011 11:55	Effluent	Priority Organic Pollutants	4-Nitrophenol	16	U	ug/L	16	64
10/31/2011 7:59	Effluent	Field Parameter	Temperature	4		C		
10/31/2011 12:55	Effluent	Field Parameter	Temperature	23.3		C		
10/31/2011 12:55	Effluent	Field Parameter	Dissolved Oxygen	5.82		mg/L		
10/31/2011 11:55	Effluent	Field Parameter	Temperature	23.18		C		
10/31/2011 11:55	Effluent	Field Parameter	Dissolved Oxygen	6.34		mg/L		
10/31/2011 11:55	Effluent	Field Parameter	Specific Conductance	495		umhos/cm		
10/31/2011 11:55	Effluent	Field Parameter	pH	6.45				
10/31/2011 12:55	Effluent	Field Parameter	pH	6.27				
10/31/2011 11:55	Effluent	Field Parameter	Sample Depth	1.05		m		
10/31/2011 12:55	Effluent	Field Parameter	Sample Depth	1.4		m		
10/31/2011 12:55	Effluent	Field Parameter	Specific Conductance	523		umhos/cm		
10/31/2011 11:55	Field Blank	Metals	Iron	30	U	ug/L	30	120
10/31/2011 11:55	Field Blank	Metals	Sodium	0.5	U	mg/L	0.5	2
10/31/2011 11:55	Field Blank	Metals	Lead	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Field Blank	Metals	Selenium	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Field Blank	Metals	Copper	0.5	U	ug/L	0.5	1
10/31/2011 11:55	Field Blank	Metals	Silver	0.025	U	ug/L	0.025	0.1
10/31/2011 11:55	Field Blank	Metals	Nickel	0.25	U	ug/L	0.25	1
10/31/2011 11:55	Field Blank	Metals	Magnesium	0.04	U	mg/L	0.04	0.16
10/31/2011 11:55	Field Blank	Metals	Zinc	5	U	ug/L	5	20
10/31/2011 11:55	Field Blank	Metals	Arsenic	0.25	U	ug/L	0.25	1
10/31/2011 11:55	Field Blank	Metals	Cadmium	0.05	U	ug/L	0.05	0.2
10/31/2011 11:55	Field Blank	Metals	Aluminum	5	U	ug/L	5	20
10/31/2011 11:55	Field Blank	Metals	Chromium	0.3	U	ug/L	0.3	1.2
10/31/2011 11:55	Field Blank	Metals	Calcium	0.075	U	mg/L	0.075	0.3
10/31/2011 11:55	Field Blank	Nutrients	Alkalinity	0.65	U	mg CaCO3/L	0.65	2.5
10/31/2011 11:55	Field Blank	Nutrients	Fluoride	0.035	U	mg F/L	0.035	0.1
10/31/2011 11:55	Field Blank	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
10/31/2011 11:55	Field Blank	Nutrients	Color (true)	2	U	PCU	2	6
10/31/2011 11:55	Field Blank	Nutrients	Sulfate	0.2	U	mg SO4/L	0.2	0.5
10/31/2011 11:55	Field Blank	Nutrients	Organic Carbon	1	U	mg C/L	1	5
10/31/2011 11:55	Field Blank	Nutrients	Chloride	0.2	U	mg Cl/L	0.2	0.5

Date_Sampled	UDL	SCH_Group	Component	Value	Qualifier	Units_Word_Result	MDL	PQL
10/31/2011 11:55	Field Blank	Nutrients	Total-P	0.004	U	mg P/L	0.004	0.01
10/31/2011 11:55	Field Blank	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
10/31/2011 11:55	Field Blank	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
10/31/2011 11:55	Field Blank	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
10/31/2011 11:55	Field Blank	Pesticides	Azinphos Methyl	0.19	U	ug/L	0.19	0.76
10/31/2011 11:55	Field Blank	Pesticides	Heptachlor	0.0095	UJ	ug/L	0.0095	0.038
10/31/2011 11:55	Field Blank	Pesticides	Metalaxyl	0.24	U	ug/L	0.24	0.95
10/31/2011 11:55	Field Blank	Pesticides	Endosulfan Sulfate	0.019	U	ug/L	0.019	0.076
10/31/2011 11:55	Field Blank	Pesticides	Fonofos	0.095	U	ug/L	0.095	0.38
10/31/2011 11:55	Field Blank	Pesticides	Metolachlor	0.48	U	ug/L	0.48	1.9
10/31/2011 11:55	Field Blank	Pesticides	Parathion Methyl	0.095	U	ug/L	0.095	0.38
10/31/2011 11:55	Field Blank	Pesticides	Alpha-BHC	0.0095	U	ug/L	0.0095	0.038
10/31/2011 11:55	Field Blank	Pesticides	Delta-BHC	0.0095	U	ug/L	0.0095	0.038
10/31/2011 11:55	Field Blank	Pesticides	Endosulfan I	0.019	U	ug/L	0.019	0.076
10/31/2011 11:55	Field Blank	Pesticides	Endrin	0.048	U	ug/L	0.048	0.19
10/31/2011 11:55	Field Blank	Pesticides	Parathion Ethyl	0.14	U	ug/L	0.14	0.57
10/31/2011 11:55	Field Blank	Pesticides	Beta-BHC	0.0095	U	ug/L	0.0095	0.038
10/31/2011 11:55	Field Blank	Pesticides	Chlordane	0.19	U	ug/L	0.19	0.76
10/31/2011 11:55	Field Blank	Pesticides	DDD-p,p'	0.019	U	ug/L	0.019	0.076
10/31/2011 11:55	Field Blank	Pesticides	Ametryn	0.048	U	ug/L	0.048	0.19
10/31/2011 11:55	Field Blank	Pesticides	Ethion	0.048	U	ug/L	0.048	0.19
10/31/2011 11:55	Field Blank	Pesticides	Hexazinone	0.095	U	ug/L	0.095	0.38
10/31/2011 11:55	Field Blank	Pesticides	Prometryn	0.14	U	ug/L	0.14	0.57
10/31/2011 11:55	Field Blank	Pesticides	Aldrin	0.0095	U	ug/L	0.0095	0.038
10/31/2011 11:55	Field Blank	Pesticides	Gamma-BHC	0.0095	U	ug/L	0.0095	0.038
10/31/2011 11:55	Field Blank	Pesticides	Toxaphene	0.71	U	ug/L	0.71	2.9
10/31/2011 11:55	Field Blank	Pesticides	Alachlor	0.57	U	ug/L	0.57	2.3
10/31/2011 11:55	Field Blank	Pesticides	Simazine	0.048	U	ug/L	0.048	0.19
10/31/2011 11:55	Field Blank	Pesticides	DDE-p,p'	0.019	U	ug/L	0.019	0.076
10/31/2011 11:55	Field Blank	Pesticides	DDT-p,p'	0.029	U	ug/L	0.029	0.11
10/31/2011 11:55	Field Blank	Pesticides	Endosulfan II	0.019	U	ug/L	0.019	0.076
10/31/2011 11:55	Field Blank	Pesticides	Heptachlor Epoxide	0.019	U	ug/L	0.019	0.076
10/31/2011 11:55	Field Blank	Pesticides	Methoxychlor	0.048	UJ	ug/L	0.048	0.19
10/31/2011 11:55	Field Blank	Pesticides	Atrazine	0.048	U	ug/L	0.048	0.19
10/31/2011 11:55	Field Blank	Pesticides	Butylate	0.19	U	ug/L	0.19	0.76
10/31/2011 11:55	Field Blank	Pesticides	Chlorpyrifos Ethyl	0.048	U	ug/L	0.048	0.19
10/31/2011 11:55	Field Blank	Pesticides	Naled	0.76	UJ	ug/L	0.76	3
10/31/2011 11:55	Field Blank	Pesticides	Phorate	0.048	U	ug/L	0.048	0.19
10/31/2011 11:55	Field Blank	Pesticides	Endrin Aldehyde	0.019	U	ug/L	0.019	0.076
10/31/2011 11:55	Field Blank	Pesticides	Bromacil	0.19	U	ug/L	0.19	0.76
10/31/2011 11:55	Field Blank	Pesticides	Fenamiphos	0.19	U	ug/L	0.19	0.76
10/31/2011 11:55	Field Blank	Pesticides	Norflurazon	0.14	U	ug/L	0.14	0.57

Date_Sampled	UDL	SCH_Group	Component	Value	Qualifier	Units_Word_Result	MDL	PQL
10/31/2011 11:55	Field Blank	Pesticides	Dieldrin	0.019	U	ug/L	0.019	0.076
10/31/2011 11:55	Field Blank	Pesticides	Chlorpyrifos Methyl	0.095	U	ug/L	0.095	0.38
10/31/2011 11:55	Field Blank	Pesticides	Diazinon	0.048	U	ug/L	0.048	0.19
10/31/2011 11:55	Field Blank	Pesticides	Ethoprop	0.095	U	ug/L	0.095	0.38
10/31/2011 11:55	Field Blank	Pesticides	Metribuzin	0.095	U	ug/L	0.095	0.38
10/31/2011 11:55	Field Blank	Pesticides	Mevinphos	0.19	U	ug/L	0.19	0.76
10/31/2011 11:55	Field Blank	Pesticides	Malathion	0.14	U	ug/L	0.14	0.57
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Naphthalene	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Phenol	1	U	ug/L	1	4
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	2,4-Dimethylphenol	10	U	ug/L	10	40
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3	U	ug/L	3	12
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Fluorene	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	3	UJ	ug/L	3	12
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2	U	ug/L	2	8
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	2,4-Dichlorophenol	1	U	ug/L	1	4
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	2-Nitrophenol	1	U	ug/L	1	4
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1	U	ug/L	1	4
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	60
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Di-n-butyl phthalate	5	UJ	ug/L	5	20
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Hexachlorobutadiene	3	U	ug/L	3	12
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Hexachloroethane	3	U	ug/L	3	12
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Isophorone	1	U	ug/L	1	4
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	1	U	ug/L	1	4
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	40	UJ	ug/L	40	160
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3	U	ug/L	3	12
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2	U	ug/L	2	8
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Fluoranthene	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1	U	ug/L	1	4
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	1	U	ug/L	1	4
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	2-Chloronaphthalene	1	U	ug/L	1	4
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Anthracene	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Chrysene	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Phenanthrene	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Pyrene	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	60
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Acenaphthylene	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Benzidine	100	U	ug/L	100	400

Date_Sampled	UDL	SCH_Group	Component	Value	Qualifier	Units_Word_Result	MDL	PQL
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3	U	ug/L	3	12
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Nitrobenzene	2	U	ug/L	2	8
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	2-Chlorophenol	1	U	ug/L	1	4
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Acenaphthene	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Di-n-octyl phthalate	1	U	ug/L	1	4
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Diethyl phthalate	1	UJ	ug/L	1	4
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Dimethyl phthalate	10	UJ	ug/L	10	40
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	2	U	ug/L	2	8
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Pentachlorophenol	3	UJ	ug/L	3	12
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	1	U	ug/L	1	4
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	1	U	ug/L	1	4
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.2	U	ug/L	0.2	0.8
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1	U	ug/L	1	4
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1	U	ug/L	1	4
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	U	ug/L	15	60
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Butyl benzyl phthalate	5	U	ug/L	5	20
10/31/2011 11:55	Field Blank	Priority Organic Pollutants	Hexachlorobenzene	1	U	ug/L	1	4
10/31/2011 12:00	Test Site	Field Parameter	Specific Conductance	56		umhos/cm		
10/31/2011 12:00	Test Site	Field Parameter	pH	6.08				
10/31/2011 12:00	Test Site	Field Parameter	Sample Depth	0.3		m		
10/31/2011 12:00	Test Site	Field Parameter	Temperature	18.55		C		
10/31/2011 12:00	Test Site	Field Parameter	Dissolved Oxygen	7.9		mg/L		
10/31/2011 12:00	Test Site	AGP/LN	Algal Growth Potential	12.6	A	mg DryWt/L	0.3	0.9
10/31/2011 12:00	Test Site	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	0.83	IJ	mg/L	0.2	2
10/31/2011 12:00	Test Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.55	U	ug/L	0.55	1.7
10/31/2011 12:00	Test Site	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.4	U	ug/L	0.4	1.2
10/31/2011 12:00	Test Site	Overflow	Fecal Coliforms-Membrane Filter	390		cfu/100 mL	10	10
10/31/2011 12:00	Test Site	Metals	Magnesium	1.08	A	mg/L	0.04	0.16
10/31/2011 12:00	Test Site	Metals	Sodium	4.1	A	mg/L	0.5	2
10/31/2011 12:00	Test Site	Metals	Aluminum	156	A	ug/L	5	20
10/31/2011 12:00	Test Site	Metals	Copper	0.5	U	ug/L	0.5	1
10/31/2011 12:00	Test Site	Metals	Selenium	0.2	U	ug/L	0.2	0.8
10/31/2011 12:00	Test Site	Metals	Zinc	5	U	ug/L	5	20
10/31/2011 12:00	Test Site	Metals	Arsenic	0.25	U	ug/L	0.25	1
10/31/2011 12:00	Test Site	Metals	Silver	0.025	U	ug/L	0.025	0.1
10/31/2011 12:00	Test Site	Metals	Lead	0.2	U	ug/L	0.2	0.8
10/31/2011 12:00	Test Site	Metals	Nickel	0.35	I	ug/L	0.25	1
10/31/2011 12:00	Test Site	Metals	Chromium	0.3	U	ug/L	0.3	1.2
10/31/2011 12:00	Test Site	Metals	Calcium	4.13	A	mg/L	0.075	0.3
10/31/2011 12:00	Test Site	Metals	Iron	160	A	ug/L	30	120
10/31/2011 12:00	Test Site	Metals	Cadmium	0.065	I	ug/L	0.05	0.2

Date_Sampled	UDL	SCH_Group	Component	Value	Qualifier	Units_Word_Result	MDL	PQL
10/31/2011 12:00	Test Site	Nutrients	Sulfate	6.1		mg SO4/L	0.2	0.5
10/31/2011 12:00	Test Site	Nutrients	Color (true)	41		PCU	2	6
10/31/2011 12:00	Test Site	Nutrients	Organic Carbon	4.4	I	mg C/L	1	5
10/31/2011 12:00	Test Site	Nutrients	NO2NO3-N	0.18		mg N/L	0.004	0.01
10/31/2011 12:00	Test Site	Nutrients	Ammonia-N	0.053		mg N/L	0.01	0.02
10/31/2011 12:00	Test Site	Nutrients	Fluoride	0.051	I	mg F/L	0.035	0.1
10/31/2011 12:00	Test Site	Nutrients	Total-P	0.15		mg P/L	0.004	0.01
10/31/2011 12:00	Test Site	Nutrients	Kjeldahl Nitrogen	0.26		mg N/L	0.08	0.2
10/31/2011 12:00	Test Site	Nutrients	O-Phosphate-P	0.12		mg P/L	0.004	0.01
10/31/2011 12:00	Test Site	Nutrients	Alkalinity	6.4		mg CaCO3/L	0.65	2.5
10/31/2011 12:00	Test Site	Nutrients	TSS	6	I	mg/L	2	10
10/31/2011 12:00	Test Site	Nutrients	Chloride	6.7		mg Cl/L	0.2	0.5
10/31/2011 12:00	Test Site	Field Parameter	Specific Conductance	56		umhos/cm		
10/31/2011 12:00	Test Site	Field Parameter	Dissolved Oxygen	7.9		mg/L		
10/31/2011 12:00	Test Site	Field Parameter	Temperature	18.55		C		
10/31/2011 12:00	Test Site	Field Parameter	pH	6.08				
10/31/2011 12:00	Test Site	Field Parameter	Sample Depth	0.3		m		
10/31/2011 10:00	Control Site	AGP/LN	Algal Growth Potential	2.27		mg DryWt/L	0.3	0.9
10/31/2011 10:00	Control Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.55	U	ug/L	0.55	1.7
10/31/2011 10:00	Control Site	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	0.64	IJ	mg/L	0.2	2
10/31/2011 10:00	Control Site	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.4	U	ug/L	0.4	1.2
10/31/2011 10:00	Control Site	Overflow	Fecal Coliforms-Membrane Filter	120	B	cfu/100 mL	1.6	1.6
10/31/2011 10:00	Control Site	Metals	Iron	110	I	ug/L	30	120
10/31/2011 10:00	Control Site	Metals	Copper	0.5	U	ug/L	0.5	1
10/31/2011 10:00	Control Site	Metals	Cadmium	0.05	U	ug/L	0.05	0.2
10/31/2011 10:00	Control Site	Metals	Arsenic	0.25	U	ug/L	0.25	1
10/31/2011 10:00	Control Site	Metals	Aluminum	131		ug/L	5	20
10/31/2011 10:00	Control Site	Metals	Magnesium	0.75		mg/L	0.04	0.16
10/31/2011 10:00	Control Site	Metals	Sodium	3		mg/L	0.5	2
10/31/2011 10:00	Control Site	Metals	Chromium	0.3	U	ug/L	0.3	1.2
10/31/2011 10:00	Control Site	Metals	Zinc	5	U	ug/L	5	20
10/31/2011 10:00	Control Site	Metals	Lead	0.2	U	ug/L	0.2	0.8
10/31/2011 10:00	Control Site	Metals	Calcium	1.82		mg/L	0.075	0.3
10/31/2011 10:00	Control Site	Metals	Silver	0.025	U	ug/L	0.025	0.1
10/31/2011 10:00	Control Site	Metals	Nickel	0.25	U	ug/L	0.25	1
10/31/2011 10:00	Control Site	Metals	Selenium	0.2	U	ug/L	0.2	0.8
10/31/2011 10:00	Control Site	Nutrients	Organic Carbon	4.9	I	mg C/L	1	5
10/31/2011 10:00	Control Site	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
10/31/2011 10:00	Control Site	Nutrients	Fluoride	0.035	U	mg F/L	0.035	0.1
10/31/2011 10:00	Control Site	Nutrients	Alkalinity	1.2	I	mg CaCO3/L	0.65	2.5
10/31/2011 10:00	Control Site	Nutrients	Ammonia-N	0.013	I	mg N/L	0.01	0.02
10/31/2011 10:00	Control Site	Nutrients	Kjeldahl Nitrogen	0.2		mg N/L	0.08	0.2

Date_Sampled	UDL	SCH_Group	Component	Value	Qualifier	Units_Word_Result	MDL	PQL
10/31/2011 10:00	Control Site	Nutrients	Sulfate	4		mg SO4/L	0.2	0.5
10/31/2011 10:00	Control Site	Nutrients	Chloride	5.1		mg Cl/L	0.2	0.5
10/31/2011 10:00	Control Site	Nutrients	Color (true)	53	A	PCU	2	6
10/31/2011 10:00	Control Site	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
10/31/2011 10:00	Control Site	Nutrients	TSS	3	I	mg/L	2	10
10/31/2011 10:00	Control Site	Nutrients	Total-P	0.01	I	mg P/L	0.004	0.01
10/31/2011 10:00	Control Site	Field Parameter	Temperature	17.6		C		
10/31/2011 10:00	Control Site	Field Parameter	Dissolved Oxygen	8.05		mg/L		
10/31/2011 10:00	Control Site	Field Parameter	Specific Conductance	35		umhos/cm		
10/31/2011 10:00	Control Site	Field Parameter	Sample Depth	0.5		m		
10/31/2011 10:00	Control Site	Field Parameter	Dissolved Oxygen	8.05		mg/L		
10/31/2011 10:00	Control Site	Field Parameter	Specific Conductance	35		umhos/cm		
10/31/2011 10:00	Control Site	Field Parameter	Sample Depth	0.5		m		
10/31/2011 10:00	Control Site	Field Parameter	pH	6.12				
10/31/2011 10:00	Control Site	Field Parameter	pH	6.12				
10/31/2011 10:00	Control Site	Field Parameter	Temperature	17.6		C		

Appendix G

Toxicological results

FDEP Biology Laboratory - Acute Bioassay Bench Sheets

Facility: FANG 1 - Camp Blanding WWTF

Address: 5629 State Road 16

City: Starke, Florida County: Clay Zip 32091

Contact/District: Eesa Ali / Northeast

NPDES Permit #: FL FL0022853

LIMS Job #: 74H-2011-11-01-47

LIMS Sample #: 1388167

Lims Data Entry: 11-10-11 MF

Data Entry Verification: BA 11.10.11 10.10 BA

Sample Collection: Date: 10-31-11 Time: 1155

Hold Time Start: Date: 10-31-11 Time: 1155

Comments:

Initial sample handling:

Instructions: Check yes or no. If yes is checked, complete blanks

PH adjustment: ☐ yes ☒ no Initial pH: ____ NaOH ____ N HCl ____ N ____ Drops mL Final pH: ____

Aeration: ☐ yes ☒ no Initial DO: ____ mg/L Final DO: ____ mg/L Duration: ____ minutes Rate: ~ ____ 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:

Instructions: Check yes or no. Fill in temperatures.

Temperature: Shipped ≤ 6°C ☑ Yes ☐ No — IF Hand Delivered: Cooling ☐ Yes ☐ No (received ____ °C collected ____ °C)

Holding Time: ≤ 36 Hours ☑ Yes ☐ No (Composite-end of collection; grab-when collected; 4 in 24 - time last sample collected)

Investigators' Signatures:	Initials:
Marshall Faircloth	MF
James Danish	JD
Bobo Abo. Bk	Bk
REVIEWER: Ty Miller	

Diluent/Control Batch#:	10.11.11	11.1.11							
Water Quality Parameters	20% DMW	Well Water	Moderately Hard Water	Salt Water ASW NSW Test 1	Salt Water ASW NSW Test 2	Other: 10.31.11 Sample	Original Sample	Measured by	Verified by
Field Total Residual Cl_2 (mg/L):	N/A	N/A	N/A	N/A	N/A	N/A	Not measured		MF
Lab Total Residual Cl_2 (mg/L):	<0.03	<0.03				<0.03		BA/JD	BA/MF
Alkalinity (mg/L as $CaCO_3$):	76	-				127	~~BA MF/JD~~	MF/JD	BA
Hardness (mg/L as $CaCO_3$):	84	-				136	~~MF/JD~~	MF/JD	BA
Total Ammonia (mg/L as N):	<0.017	-				--	-	MF	BA
Conductivity: ☒ µmhos ☐ mmhos	~~509~~	211				509	—	BA/JD	BA/MF
Salinity (ppth):	183 BA								

V 1.8 1/13/10

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FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample # 1388167 **SOP#: TA 07** 1 **Test #** 1 **of** 2

Test Species:
Batch #: 11.1.11 Age: <24hr
- [x] *Ceriodaphnia dubia*
- [ ] *Cyprinella leedsi*
- [ ] *Pimephales promelas*
- [ ] *Menidia beryllina*
- [ ] *Americamysis bahia*
- [ ] Other:_____

Test Validation
Control Survival ≥ 90%: [x] Yes [ ] No
Temperature Range ≤ 3° C: [x] Yes [ ] No

Diluent (Batch # 10.11.11**)**
- [ ] ASW
- [x] 20% DMW
- [ ] MHW
- [ ] Well

Test Type: [x] Acute [x] Definitive
[ ] Static [x] Static Renewal [ ] Flow-Through

Test Duration:
- [ ] 48 hr
- [x] 96 hr
- [ ] ___hr

Test Started: Date 11.1.11 Time 13:00

Test Ended: Date 11-5-11 Time 12:00

Chamber Size 30 ml
Test Volume: 20 ml

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	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
6.25%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
12.5%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
25%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
50%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
100%	A	A	5	5	5	5	5	4 D
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	4 D	4
Checked or Verified by:			BA	JD	BA	BA	BA	BA

Food
- [x] YCT Batch# 8.26.11
- [x] P. subcapitata Batch# 8.4.11
- [ ] Artemia Lot#_____

Feeding and Artemia Batch #
- [x] 0 hr____ [x] Prior to Test
- [ ] 24 hr____
- [x] 48 hr____ [x] Prior to Renewal
- [ ] 72 hr____

Temperature Range (°C)
Incubator # 2
min. 24.6 max. 27.6 mean –

Incubator #___
min.____max.____mean____

Waterbath #___
min.____max.____mean____

Room B246
min. 22.9 max. 24.4 mean –

Light intensity (ft. candles): 50-100

Photoperiod (hours): 16 light, 8 dark

Loaded/ Verified by: BA / MF
m = missing, d = dead, BR/AR Before/ After Renewal

Test Results:
Screening Tests: Report LC50 as >100%, =100%, or <100%.
% mortality in 100% sample: 10% LC50: >100%
Calculated LC50 (Definitive) 95% CI_____ Method_____

Comments:

V. 2.5 1-13-10

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

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FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample # 1388167 SOP#: TA 07 02 Test # 2 of 2

Test Species: Batch #: 11.1.11 Age: 13 days
- ☐ *Ceriodaphnia dubia*
- ☒ *Cyprinella leedsi*
- ☐ *Pimephales promelas*
- ☐ *Menidia beryllina*
- ☐ *Americamysis bahia*
- ☐ Other:_____

Test Validation
Control Survival ≥ 90%: ☐ Yes ☑ No
Temperature Range ≤ 3° C: ☑ Yes ☐ No

Diluent (Batch # 11.1.11 / 10214.55)
☐ ASW ☐ 20% DMW ☐ MHW ☒ Well

Test Type: ☒ Acute ☒ Definitive ☐ Static ☑ Static Renewal ☐ Flow-Through

Test Duration: ☒ 48 hr ☐ 96 hr ☐ ___hr

Test Started: Date 11.1.11 Time 1200

Test Ended: Date 11.3.11 Time 1100

Chamber Size 1000 ml
Test Volume: 500 ml

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
(Ctrl)	A	B1	10	8 2D	7 1D			
	B	B2	10	10	8 2D			
6.25	A	B 3	10	10	7 3D			
	B	B 4	10	10	5 5D			
12.5	A	B 5	10	8 2D	7 1D			
	B	B 6	10	10	9 1D			
25	A	B 7	10	8 2D	6 2D			
	B	B 8	10	10	7 3D			
50	A	B 9	10	8 2D	7 1D			
	B	B 10	10	6 4D	4 2D			
100%	A	B 11	10	7 3D	4 3D			
	B	B 12	10	10	6 4D			
Checked or Verified by:			JD	JD	JD			

Food
- ☐ YCT Batch#_____
- ☐ P. subcapitata Batch#_____
- ☒ Artemia Lot# 23613

Feeding and Artemia Batch #
- ☒ 0 hr 1902 ☑ Prior to Test
- ☐ 24 hr___
- ☐ 48 hr___ ☐ Prior to Renewal
- ☐ 72 hr___

Temperature Range (°C)
Incubator # 3
min. 24.2 max. 26.3 mean –

Incubator #___
min.___ max.___ mean___

Waterbath #___
min.___ max.___ mean___

Room B246
min. 22.9 max. 24.4 mean –

Light intensity (ft. candles): 50-100

Photoperiod (hours): 16 light, 8 dark

Loaded/ Verified by: JD / BA
m = missing, d = dead, BR/AR Before/ After Renewal

Test Results:
Screening Tests: Report LC50 as >100%, =100%, or <100%.
% mortality in 100% sample:_____ LC50: NA
Calculated LC50 (Definitive) 95% CI_____ Method_____

Comments: Test Terminated Control excess mortality MF 11-10-11
See NCR 3962

V. 2.5 1-13-10

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

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FDEP Biology Laboratory - Bioassay Parameter Sheet

LIMS Sample # 1388167 Test # 1 of 2

Test Species:

☑ *Ceriodaphnia dubia* ☐ *Pimephales promelas* ☐ *Americamysis bahia*
☐ *Cyprinella leedsi* ☐ *Menidia beryllina* ☐ Other:_____

Test aerated: (if DO is < 4.0 mg/L)
☐ Yes ☑ No

Concentration	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity ☑ µmhos ☐ mmhos	Salinity* (ppth)
	M	0 hr	7.9	24.0	7.4	183	
	–	24 hr	–	~~24.3~~ BA	–	–	
ctrl	A	48 hr BR	7.9	24.3	6.9	194	
	M	48 hr AR	8.0	24.1	6.6	184	
	–	72 hr	–	–	–	–	
	A	96 hr	7.9	24.0	6.3	198	
	M	0 hr	7.9	24.0	7.6	201	
	–	24 hr	–	–	–	–	
6.25	A	48 hr BR	8.1	24.2	6.9	215	
	M	48 hr AR	8.1	24.0	6.7	199	
	–	72 hr	–	–	–	–	
	A	96 hr	8.0	24.0	7.2	209	
	M	0 hr	7.8	24.0	7.2	226	
	–	24 hr	–	–	–	–	
12.5	A	48 hr BR	8.2	24.2	7.1	248	
	M	48 hr AR	8.0	24.0	6.6	227	
	–	72 hr	–	–	–	–	
	A	96 hr	8.1	24.0	7.0	239	
	M	0 hr	7.7	24.0	7.3	265	
	–	24 hr	–	–	–	–	
25	A	48 hr BR	8.3	24.2	6.8	290	
	M	48 hr AR	7.9	24.0	6.7	262	
	–	72 hr	–	–	–	–	
	A	96 hr	8.1	24.0	7.3	273	
	M	0 hr	7.5	24.0	6.8	336	
	–	24 hr	–	–	–	–	
50	A	48 hr BR	8.4	24.1	7.3	361	
	M	48 hr AR	7.8	24.0	6.6	334	
	–	72 hr	–	–	–	–	
	A	96 hr	8.3 BA	24.0	7.4	344	
	M	0 hr	7.1	24.0	7.1	509	
	–	24 hr	–	–	~~BA~~	–	
100	A	48 hr BR	8.5	24.1	6.6	501	
	M	48 hr AR	7.5	24.0	6.3	495	
	–	72 hr	–	–	–	–	
	A	96 hr	8.4	24.0	7.6	495	
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					

*Measure/ record salinity for marine tests

Comments:

Measured By:
0 hr: BA
24 hr: –
48 hr BR: BA
48 hr AR: BA
72 hr: –
96 hr: BA

LIMS Sample # 1388167

FDEP Biology Laboratory - Bioassay Parameter Sheet

Test # 2 of 2

Test Species:

☐ *Ceriodaphnia dubia* ☐ *Pimephales promelas* ☐ *Americamysis bahia*
☒ *Cyprinella leedsi* ☐ *Menidia beryllina* ☐ Other:_____

Test aerated: (if DO is < 4.0 mg/L)
☐ Yes ☑ No

Concentration	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity ☒ µmhos ☐ mmhos	Salinity* (ppth)
	A	0 hr	7.6	25.8	7.8	291	
	B	24 hr	8.0	24.0	7.0	291	
Ctrl	A	48 hr BR	8.1	25.3	7.9	289	
		48 hr AR					
		72 hr					
		96 hr					
	A	0 hr	7.7	25.9	7.9	305	
	B	24 hr	8.1	24.2	7.2	292	
6.25%	A	48 hr BR	8.2	25.4	7.7	303	
		48 hr AR					
		72 hr					
		96 hr					
	A	0 hr	7.7	25.9	7.9	318	
	B	24 hr	8.1	24.2	7.3	307	
12.5%	A	48 hr BR	8.2	25.2	7.5	317	
		48 hr AR					
		72 hr					
		96 hr					
	A	0 hr	7.7	25.9	7.7	351	
	B	24 hr	8.1	24.2	7.3	342	
25%	A	48 hr BR	8.1	25.3	7.5	351	
		48 hr AR					
		72 hr					
		96 hr					
	A	0 hr	7.6	25.9	7.5	399	
	B	24 hr	8.1	24.6	7.1	396	
50%	A	48 hr BR	8.1	25.6	7.6	404	
		48 hr AR					
		72 hr					
		96 hr					
	A	0 hr	7.1	25.9	7.8	518	
	B	24 hr	7.9	24.7	7.0	502	
100%	A	48 hr BR	7.9	25.4	7.4	515	
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					

*Measure/ record salinity for marine tests

Comments:

Measured By:
0 hr: JD
24 hr: JD
48 hr BR: JD
48 hr AR:
72 hr:
96 hr:

Test ID: FAN 6 1 Camp Blanding WWTF Dates: 11-1-11 — 11-5-11

METER / DEVICE	ID	SOP	Parameter	Method	v used
YSI Model 58 Dissolved Oxygen Meter	90H018262	TA06_04	Dissolved Oxygen	SM 4500 O G	V
YSI DO Probe	5905	TA06_04	Dissolved Oxygen	SM 4500 O G	V
Accumet AR-10 pH Meter	93312105	TA06_23	pH	SM 4500 H+	V
Mettler-Toledo SevenMulti Conductivity Meter	SN 1225117049 Probe H04257	TA06_25	Conductivity Salinity	SM 2510 B SM 2520 B	V
Denver Model 225 ISE with ammonia probe	SN K01377	TA06_17	Ammonia	SM 4500 NH3 F	V
Traceable Thermometer	#1-SN101686412 #2-SN221295527 #3-SN240116020 #4-SN80361795 #5 SN61990624	TA06_05	Temperature	SM-2530B modified DEP SOP-001/01 FT1400	ec #5
Hach Pocket Colorimeter II	05050C026378	TA06_22	Total Residual Chlorine	EPA 330.5 SM 4500 CL G	V
Alkalinity (Hach Kit)	No SN	TA06_08	Alkalinity	SM 2320 B	V
Hardness (Hach Kit)	No SN	TA06_09	Hardness	SM 2340 C	V
OHAUS Balance 250D	1125481084	TA06_21 TA06_27	Weight	-	
S-Weights	BIO-S-WEIGHTS-01	NA	Balance check	-	

SM-2530B modified to allow use of electronic and non-mercury filled thermometers.

Insert other device information in blank spaces(if used). Test ID = Facility or SRTs (acute SRT--Chronic SRT)

entered by MF 11-9-11

V 1.1 9/21/10 MF/jd

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FDEP Biology Laboratory - Acute Bioassay Bench Sheets

Facility: FANG 2 - Camp Blanding WWTF

Address : 5629 State Road 16 32091

City: Starke **County:** Clay

Contact/District: Eesa Ali / Northeast

NPDES Permit #: FL 0022853

LIMS Job #: TLH-2011-11-01-47

LIMS Sample #: 1388168

Lims Data Entry: 11-18-11 OMF MF

Data Entry Verification: BA 11.16.11

Sample Collection: Date: 10-31-11 Time: 1255

Hold Time Start: Date: 10-31-11 Time: MF 1255

Comments:

Initial sample handling:

Instructions: Check yes or no. If yes is checked, complete blanks

PH adjustment : ☐ yes ☒ no Initial pH: ____ NaOH ____ N HCl ____ N ____ Drops mL Final pH: ____

Aeration : ☐ yes ☒ no Initial DO: ____mg/L Final DO: ____mg/L Duration: ____minutes Rate: ~ ____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:

Instructions: Check yes or no. Fill in temperatures.

Temperature: Shipped ≤ 6°C ☑ Yes ☐ No — IF Hand Delivered: Cooling ☐ Yes ☐ No (received ____°C collected ____°C)

Holding Time: ≤ 36 Hours ☑ Yes ☐ No (Composite-end of collection; grab-when collected; 4 in 24 - time last sample collected)

Investigators' Signatures:	Initials:
Marshall Faircloth	MF
James Daniels	JD
Brian Acker	BA
REVIEWER: Liz Miller	

Diluent/Control Batch#:	10.11.11	11.1.11							
Water Quality Parameters	20% DMW	Well Water	Moderately Hard Water	Salt Water ASW NSW Test 1	Salt Water ASW NSW Test 2	Other:	Original Sample	Measured by	Verified by
Field Total Residual Cl_2 (mg/L):	N/A	N/A	N/A	N/A	N/A	N/A	Not measured	MF	
Lab Total Residual Cl_2 (mg/L):	<0.03	<0.03					<0.03	BA/JD	BA/MF
Alkalinity (mg/L as $CaCO_3$):	76	-					125	MF/JD	BA
Hardness (mg/L as $CaCO_3$):	84	-					126	MF/JD	BA
Total Ammonia (mg/L as N):	<0.017	-					~~BA~~	MF	BA
Conductivity: ☑ µmhos ☐ mmhos	185	291					5800	BA/JD	BA/MF
Salinity (ppth):									

V 1.8 1/13/10

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FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample # 1388168 **SOP#: TA 07** 01 **Test #** 1 **of** 2

Test Species:
Batch #: 11.1.11 Age: <24hr
- [x] *Ceriodaphnia dubia*
- [ ] *Cyprinella leedsi*
- [ ] *Pimephales promelas*
- [ ] *Menidia beryllina*
- [ ] *Americamysis bahia*
- [ ] Other:

Test Validation
Control Survival ≥ 90%: [x] Yes [ ] No
Temperature Range ≤ 3° C: [x] Yes [ ] No

Diluent (Batch # 10.11.11)
- [ ] ASW
- [x] 20% DMW
- [ ] MHW
- [ ] Well

Test Type: [x] Acute [x] Definitive
[ ] Static [x] Static Renewal [ ] Flow-Through

Test Duration:
- [ ] 48 hr
- [x] 96 hr
- [ ] ___hr

Test Started: Date 11.1.11 Time 13:15

Test Ended: Date 11.5.11 Time 12:30

Chamber Size 30ml
Test Volume: 20ml

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	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
6.25%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
12.5%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	4 D
	C	C	5	5	5	5	5	5
	D	D	5	5	4 D	4	4	4
25%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
50%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
100%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
Checked or Verified by:			RA	JD	JD	JD	BA	BA

Food
- [x] YCT Batch# 8.26.11
- [x] P. subcapitata Batch# 8.4.11
- [ ] Artemia Lot#_____

Feeding and Artemia Batch #
- [ ] 0 hr_____ [x] Prior to Test
- [ ] 24 hr____
- [ ] 48 hr____ [x] Prior to Renewal
- [ ] 72 hr____

Temperature Range (°C)
Incubator # 2
min. 24.6 max. 27.6 mean ___

Incubator #___
min.____max.____mean____

Waterbath #___
min.____max.____mean____

Room B246
min. 22.9 max. 24.4 mean ___

Light intensity (ft. candles): 50-100

Photoperiod (hours): 16 light, 8 dark

Loaded/ Verified by: RA / MF
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%~~ 100%
Calculated LC50 (Definitive) 95% CI_____ Method_____

Comments:

V. 2.5 1-13-10

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

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FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample # 138818 SOP#: TA 07 02 Test # 2 of 2

Test Species:
Batch #: 11.1.11 Age: 13 days
- ☐ *Ceriodaphnia dubia*
- ☒ *Cyprinella leedsi*
- ☐ *Pimephales promelas*
- ☐ *Menidia beryllina*
- ☐ *Americamysis bahia*
- ☐ Other:

Test Validation
Control Survival ≥ 90%: ☐ Yes ☒ No
Temperature Range ≤ 3° C: ☒ Yes ☐ No

Diluent (Batch # 11.1.11)
☐ ASW ☐ 20% DMW ☐ MHW ☒ Well

Test Type: ☒ Acute ☒ Definitive ☐ Static ☑ Static Renewal ☐ Flow-Through

Test Duration: ☐ 48 hr ☒ 96 hr ☐ ___hr

Test Started: Date 11.1.11 Time 1200

Test Ended: Date 11.3.11 Time 1100

Chamber Size 200 ml
Test Volume: 100 ml

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Ctrl	A	B13	10	9 D	8 D			
	B	B 14	10	10	6 D			
6.25%	A	B 15	10	8 D	4 D			
	B	B 16	10	10	8 D			
12.5%	A	B 17	10	8 D	7 D			
	B	B 18	10	10	8 D			
25%	A	B 19	10	9 D	9			
	B	B 20	10	6 D	4 D			
50%	A	B 21	10	8 D	7 D			
	B	B 22	10	9 D	6 D			
100%	A	B 23	10	8 D	7 D			
	B	B 24	10	3 D	2 D			
Checked or Verified by:			JD	JD	JD			

Food
- ☐ YCT Batch#___
- ☐ P. subcapitata Batch#___
- ☒ Artemia Lot# 23613

Feeding and Artemia Batch #
- ☒ 0 hr 190-11 ☐ Prior to Test
- ☐ 24 hr___
- ☐ 48 hr___ ☑ HAMF Prior to Renewal
- ☐ 72 hr___

Temperature Range (°C)
Incubator # 3
min. 24.2 max. 26.3 mean —

Incubator #___
min.___ max.___ mean___

Waterbath #___
min.___ max.___ mean___

Room B246
min. 22.9 max. 24.4 mean —

Light intensity (ft. candles): 50-100

Photoperiod (hours): 16 light, 8 dark

Loaded/ Verified by: JD / PK
m = missing, d = dead, BR/AR Before/ After Renewal

Test Results:
Screening Tests: Report LC50 as >100%, =100%, or <100%.
% mortality in 100% sample:___ LC50: NA
Calculated LC50 (Definitive) 95% CI___ Method___

Comments: See NCR 3962, Test Terminated at 48 hours - excess control mortality. mf 11-10-11

V. 2.5 1-13-10

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

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LIMS Sample # 1388168

FDEP Biology Laboratory - Bioassay Parameter Sheet

Test # 1 of 1

Test Species:

☑ *Ceriodaphnia dubia* ☐ *Pimephales promelas* ☐ *Americamysis bahia*
☐ *Cyprinella leedsi* ☐ *Menidia beryllina* ☐ Other:_____

Test aerated:
(if DO is < 4.0 mg/L)
☐ Yes ☑ No

Concentration	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity ☑ µmhos ☐ mmhos	Salinity* (ppth)
	M	0 hr	7.9	24.0	6.8	185	
		24 hr					
Ctrl	m	48 hr BR	7.7	24.0	7.2	210	
	m	48 hr AR	7.9	24.0	7.5	188	
	—	72 hr	—	—	—	—	
	A	96 hr	8.2	24.0	7.2	224	
	M	0 hr	7.8	24.0	7.3	206	
		24 hr					
6.25	m	48 hr BR	8.1	24.0	7.3	228	
	m	48 hr AR	8.0	24.0	7.4	204	
	—	72 hr	—	—	—	—	
	A	96 hr	8.1	24.0	7.3	235	
	M	0 hr	7.8	24.0	7.2	227	
		24 hr					
12.5	m	48 hr BR	8.2	24.0	7.5	255	
	m	48 hr AR	7.7	24.0	7.5	235	
	—	72 hr	—	—	—	—	
	A	96 hr	8.1	24.0	7.5	246	
	M	0 hr	7.6	24.0	7.8	268	
		24 hr					
25	m	48 hr BR	8.5	24.0	7.8	297	
	m	48 hr AR	7.5	24.0	7.6	284	
	—	72 hr	—	—	—	—	
	A	96 hr	8.1	24.0	6.7	308	
	M	0 hr	7.4	24.0	8.2	336	
		24 hr					
50	m	48 hr BR	8.3	24.0	8.0	340	
	m	48 hr AR	7.2	24.0	7.7	387	
	—	72 hr	—	—	—	—	
	A	96 hr	8.2	24.0	7.3	405	
	M	0 hr	7.2	24.0	8.6	500	
		24 hr					
100%	m	48 hr BR	8.4	24.0	8.1	582	
	m	48 hr AR	6.8	24.0	JD 5.8	593	
	—	72 hr	—	—	—	—	
	A	96 hr	8.1	24.2	7.5	778	
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					

*Measure/ record salinity for marine tests

Comments:

Measured By:
0 hr: BA
24 hr: —
48 hr BR: JD
48 hr AR: JD
72 hr: —
96 hr: BA

LIMS Sample # 1388168

FDEP Biology Laboratory - Bioassay Parameter Sheet

Test # 2 of 2

Test Species:

☐ *Ceriodaphnia dubia* ☐ *Pimephales promelas* ☐ *Americamysis bahia*
☒ *Cyprinella leedsi* ☐ *Menidia beryllina* ☐ Other:_____

Test aerated: (if DO is < 4.0 mg/L)
☐ Yes ☒ No

Concentration	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity ☒ µmhos ☐ mmhos	Salinity* (ppth)
Ctrl	A	0 hr	7.6	25.9	8.5	291	
	B	24 hr	8.1	24.0	6.7	284	
	A	48 hr BR	8.1	25.0	7.8	293	
		48 hr AR					
		72 hr					
		96 hr					
6.25%	A	0 hr	7.7	25.9	8.8	305	
	B	24 hr	8.1	24.2	6.9	299	
	A	48 hr BR	8.2	25.0	7.6	310	
		48 hr AR					
		72 hr					
		96 hr					
12.5%	A	0 hr	7.6	25.9	8.8	317	
	B	24 hr	8.1	24.1	7.1	308	
	A	48 hr BR	8.1	25.3	7.7	321	
		48 hr AR					
		72 hr					
		96 hr					
25%	A	0 hr	7.7	25.9	8.9	344	
	B	24 hr	8.0	24.2	7.1	334	
	A	48 hr BR	8.1	25.3	7.6	349	
		48 hr AR					
		72 hr					
		96 hr					
50%	A	0 hr	7.6	25.9	8.9	394	
	B	24 hr	7.9	24.0	7.0	385	
	A	48 hr BR	8.1	25.6	7.5	395	
		48 hr AR					
		72 hr					
		96 hr					
100%	A	0 hr	7.1	25.9	8.8	507	
	B	24 hr	7.7	24.2	7.0	488	
	A	48 hr BR	8.1	25.0	7.4	506	
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					

*Measure/ record salinity for marine tests

Comments:

Measured By:
0 hr: JD
24 hr: JD
48 hr BR: JD
48 hr AR:
72 hr:
96 hr:

Test ID: FAN 6 #2 Camp Blanding WWTF Dates: 11-1-11 — 11-5-11

METER / DEVICE	ID	SOP	Parameter	Method	v used
YSI Model 58 Dissolved Oxygen Meter	90H018262	TA06_04	Dissolved Oxygen	SM 4500 O G	V
YSI DO Probe	5905	TA06_04	Dissolved Oxygen	SM 4500 O G	V
Accumet AR-10 pH Meter	93312105	TA06_23	pH	SM 4500 H+	V
Mettler-Toledo SevenMulti Conductivity Meter	SN 1225117049 Probe H04257	TA06_25	Conductivity Salinity	SM 2510 B SM 2520 B	V
Denver Model 225 ISE with ammonia probe	SN K01377	TA06_17	Ammonia	SM 4500 NH3 F	V
Traceable Thermometer	#1-SN101686412 #2-SN221295527 #3-SN240116020 #4-SN80361795 #5-SN61990624	TA06_05	Temperature	SM-2530B modified DEP SOP-001/01 FT1400	ec # 5
Hach Pocket Colorimeter II	05050C026378	TA06_22	Total Residual Chlorine	EPA 330.5 SM 4500 CL G	V
Alkalinity (Hach Kit)	No SN	TA06_08	Alkalinity	SM 2320 B	V
Hardness (Hach Kit)	No SN	TA06_09	Hardness	SM 2340 C	V
OHAUS Balance 250D	1125481084	TA06_21 TA06_27	Weight	-	
S-Weights	BIO-S-WEIGHTS-01	NA	Balance check	-	

SM-2530B modified to allow use of electronic and non-mercury filled thermometers.

Insert other device information in blank spaces(if used). Test ID = Facility or SRTs (acute SRT--Chronic SRT)

entered by M. Fairchild 11-9-11

V 1.1 9/21/10 MF/jd

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Appendix H

Standard Reference Toxicant Data

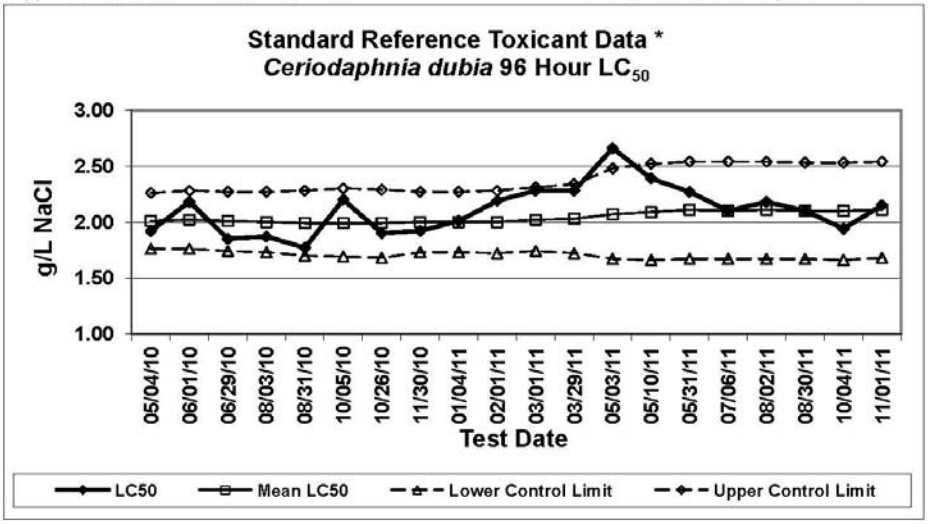
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 96-hour Acute Toxicity
Ceriodaphnia dubia (water flea) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
05/04/10	1.92	2.01	0.12	1.76	2.26
06/01/10	2.18	2.02	0.13	1.76	2.28
06/29/10	1.85	2.01	0.13	1.74	2.27
08/03/10	1.87	2.00	0.14	1.73	2.27
08/31/10	1.77	1.99	0.14	1.70	2.28
10/05/10	2.20	1.99	0.15	1.69	2.30
10/26/10	1.90	1.99	0.15	1.68	2.29
11/30/10	1.92	2.00	0.14	1.73	2.27
01/04/11	2.01	2.00	0.14	1.73	2.27
02/01/11	2.19	2.00	0.14	1.72	2.28
03/01/11	2.28	2.02	0.14	1.74	2.31
03/29/11	2.28	2.03	0.15	1.72	2.34
05/03/11	2.66	2.07	0.20	1.67	2.48
05/10/11	2.39	2.09	0.21	1.66	2.52
05/31/11	2.27	2.11	0.22	1.67	2.54
07/06/11	2.10	2.10	0.22	1.67	2.54
08/02/11	2.18	2.11	0.22	1.67	2.54
08/30/11	2.10	2.10	0.22	1.67	2.53
10/04/11	1.94	2.10	0.22	1.66	2.53
11/01/11	2.15	2.11	0.22	1.68	2.54

Lower Control Limit = mean - 2 * Std Dev
Upper Control Limit = mean + 2 * Std Dev

CV = 10.25
EPA reference 75th quartile CV = 29%



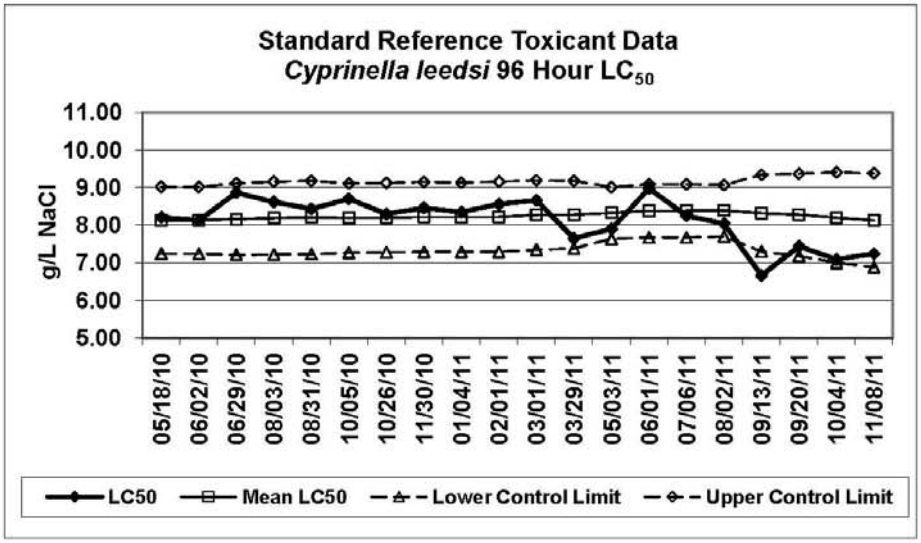
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 96-hour Acute Toxicity
Cyprinella leedsi (bannerfin shiner) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
05/18/10	8.21	8.13	0.45	7.24	9.02
06/02/10	8.13	8.13	0.45	7.24	9.02
06/29/10	8.87	8.16	0.47	7.21	9.11
08/03/10	8.62	8.19	0.48	7.22	9.16
08/31/10	8.43	8.21	0.49	7.23	9.18
10/05/10	8.70	8.19	0.46	7.27	9.11
10/26/10	8.30	8.20	0.46	7.28	9.12
11/30/10	8.46	8.22	0.46	7.29	9.15
01/04/11	8.35	8.21	0.46	7.29	9.13
02/01/11	8.56	8.22	0.47	7.29	9.16
03/01/11	8.66	8.27	0.46	7.35	9.19
03/29/11	7.65	8.28	0.45	7.38	9.18
05/03/11	7.90	8.33	0.34	7.64	9.01
06/01/11	8.98	8.38	0.36	7.67	9.09
07/06/11	8.25	8.38	0.36	7.67	9.09
08/02/11	8.04	8.39	0.34	7.70	9.07
09/13/11	6.66	8.32	0.51	7.30	9.34
09/20/11	7.44	8.28	0.55	7.18	9.37
10/04/11	7.09	8.20	0.60	7.00	9.41
11/08/11	7.24	8.13	0.62	6.88	9.38

Lower Confidence Limit = mean - 2 * Std Dev
Upper Confidence Limit = mean + 2 * Std Dev

CV = 7.68
EPA reference 75th quartile CV = 19%



Appendix I-1

Wet ID taxa list and number of algal units counted to a target of 300 natural units for qualitative natural periphyton collections made from FANG- Camp Blanding WWTF on 10/31/11.

	Control Site	Test Site
Bacillariophyta		
Bacillariophyta	262	271
Chlorophycota		
Apatococcus lobatus	4	5
Chlamydomonas sp.	1	-
Closterium libellula intermedium	-	1
Closterium venus venus	1	1
Cosmarium adoxum	-	2
Oedogonium sp.	-	4
Pleurotaenium minutum minutum	1	-
Rhizoclonium hieroglyphicum	-	1
Staurastrum distentum	-	1
Staurastrum punctulatum punctulatum	3	2
Cyanophycota		
Aphanocapsa rivularis	1	-
Jaaginema gracile	3	-
Komvophoron schmidlei	2	-
Oscillatoria sp.	-	1
Oscillatoria tenuis	-	5
Schizothrix calcicola	7	6
Synechocystis aquatilis	14	-
Xanthophyta		
Bumilleriopsis brevis	2	-

Appendix I-2

Diatom taxa list and number of valves counted to a target of 500 valves for qualitative periphyton collected from FANG- Camp Blanding WWTF on 10/31/11.

	Control Site	Test Site
Bacillariophyta		
Achnanthidium exiguum	2	3
Achnanthidium minutissimum	-	2
Achnanthidium sp.	-	1
Aulacoseira sp.	8	17
Brachysira vitrea	-	1
Caloneis sp.	3	1
Cavinula jaernefeltii	2	3
Chamaepinnularia mediocris	7	-
Cocconeis fluviatilis	-	37
Craticula halophila	2	1
Cymbella naviculiformis	-	1
Diadesmis confervacea	1	6
Encyonema silesiacum	27	8
Entomoneis sp.	-	2
Eunotia arcus	9	6
Eunotia flexuosa	1	-
Eunotia incisiopsis	59	16
Eunotia intermedia	116	43
Eunotia paludosa	8	6
Eunotia pectinalis undulata	3	11
Eunotia sp.	98	112
Fragilaria capucina	-	1
Fragilaria javanica	8	3
Fragilariaceae	-	1
Frustulia rhomboides	8	1
Frustulia sanctaerosae	25	2
Frustulia sp.	1	-
Frustulia vulgaris	2	12
Geissleria acceptata	20	30
Gomphonema clevei	-	1
Gomphonema gracile	-	1
Gomphonema parvulum	-	4
Kobayasiella sp.	1	1
Luticola mutica	1	3
Navicula cryptocephala	-	3
Navicula cryptotenella	-	5
Navicula heimansioides	4	7
Navicula longicephala	1	6
Navicula minima	5	20

Appendix I-2 (continued)

	Control Site	Test Site
Navicula seminulum hustedtii	-	1
Navicula sp.	7	14
Naviculaceae	2	4
Neidium alpinum quadripunctatum	-	8
Neidium densestriatum	-	1
Neidium sp.	2	-
Nitzschia clausii	-	2
Nitzschia nana	3	-
Nitzschia palea	4	9
Nitzschia sp.	12	11
Nupela neotropica	1	1
Nupela sp.	2	8
Nupela vitiosa	2	1
Pinnularia sp.	39	33
Planothidium apiculatum	-	4
Planothidium delicatulum	-	1
Planothidium frequentissimum	-	1
Psammothidium sacculum	-	2
Psammothidium subatomoides	-	1
Rhopalodia gibberula	1	1
Sellaphora pupula	-	1
Sellaphora seminulum	-	6
Stauroneis phoenicenteron	-	2
Stauroneis sp.	1	2
Staurosira construens	-	1
Stenopterobia delicatissima	-	1
Surirella sp.	1	4
Synedra ulna	-	2
Tabellaria sp.	1	2

Appendix J-1

Benthic macroinvertebrates collapsed taxa list and density (average number of individuals/m^2 rounded to the nearest individual, n = 3 samples) from Hester-Dendy artificial substrates incubated for 28 days upstream and downstream of the FANG- Camp Blanding WWTF and collected on 10/31/11. See SOP LT 7100 sect. 4.2.1 for method on collapsing taxa.

	Control Site	Test Site
Annelida		
Oligochaeta		
Enchytraeidae	3	-
Arthropoda		
Arachnida		
Acariformes		
Hygrobates sp.	3	-
Sperchon sp.	-	5
Insecta		
Coleoptera		
Ancyronyx variegatus	-	8
Microcylloepus pusillus	5	35
Stenelmis sp.	53	48
Diptera		
Ablabesmyia mallochi	-	3
Corynoneura sp.	-	38
Cricotopus or Orthocladius sp.	-	8
Hemerodromia sp.	5	8
Labrundinia sp.	-	3
Microtendipes pedellus grp.	-	8
Nilothauma sp.	-	3
Orthocladius annectens	-	3
Parametriocnemus sp.	11	28
Pentaneura inconspicua	3	3
Polypedilum flavum	17	30
Polypedilum illinoense grp.	3	6
Rheocricotopus robacki	51	237
Rheotanytarsus exiguus grp.	19	47
Rheotanytarsus pellucidus	10	22
Simulium sp.	-	21
Stelechomyia perpulchra	3	6
Stenochironomus sp.	3	11
Tanytarsus sp. C Epler	3	-
Tanytarsus sp. D Epler	-	8
Tanytarsus sp. L Epler	11	19
Tanytarsus sp. M Epler	-	8
Thienemanniella lobapodema	6	3

Appendix J-1 (continued)

	Control Site	Test Site
Thienemanniella similis	51	273
Tvetenia tshernovskii	-	3
Xestochironomus sp.	9	-
Xylotopus par	3	-
Ephemeroptera		
Acerpenna pygmaea	-	3
Eurylophella doris	-	3
Habrophlebiodes brunneipennis	-	3
Maccaffertium exiguum	25	45
Maccaffertium smithae	12	30
Pseudocloeon propinquum	27	37
Teloganopsis deficiens	-	3
Megaloptera		
Corydalus cornutus	-	5
Odonata		
Argia sp.	3	5
Plecoptera		
Acroneuria arenosa/evoluta	5	-
Neoperla sp.	21	-
Neoperla clymene	-	64
Trichoptera		
Cheumatopsyche sp.	11	130
Chimarra sp.	8	215
Mayatrichia ayama	-	3
Neotrichia sp.	3	-
Nyctiophylax sp.	16	13
Mollusca		
Gastropoda		
Ancylidae	3	-

Appendix J-2

Benthic macroinvertebrates taxa list and counts (number of individuals counted) collected from Hester-Dendy artificial substrates (n= 3 samples) incubated upstream and downstream of the FANG- Camp Blanding WWTF for 28 days and collected on 10/31/11.

	Control Site	Test Site
Annelida		
Oligochaeta		
Enchytraeidae	1	-
Arthropoda		
Arachnida		
Acariformes		
Hygrobates sp.	1	-
Sperchon sp.	-	2
Insecta		
Coleoptera		
Ancyronyx variegatus	-	3
Microcylloepus pusillus	2	13
Stenelmis sp.	20	18
Diptera		
Ablabesmyia mallochi	-	1
Chironomidae	5	9
Corynoneura sp.	-	14
Cricotopus or Orthocladius sp.	-	3
Hemerodromia sp.	2	3
Labrundinia sp.	-	1
Microtendipes sp.	-	2
Microtendipes pedellus grp.	-	1
Nilothauma sp.	-	1
Orthocladius annectens	-	1
Parametriocnemus sp.	4	10
Pentaneura inconspicua	1	1
Polypedilum flavum	6	11
Polypedilum illinoense grp.	1	2
Rheocricotopus robacki	18	87
Rheotanytarsus sp.	1	3
Rheotanytarsus exiguus grp.	6	15
Rheotanytarsus pellucidus	3	7
Simulium sp.	-	8
Stelechomyia perpulchra	1	2
Stenochironomus sp.	1	4
Tanytarsus sp. C Epler	1	-
Tanytarsus sp. D Epler	-	3
Tanytarsus sp. L Epler	4	7
Tanytarsus sp. M Epler	-	3
Thienemanniella sp.	10	6
Thienemanniella lobapodema	1	1

Appendix J-2 (continued)

	Control Site	Test Site
Thienemanniella similis	9	94
Tvetenia tshernovskii	-	1
Xestochironomus sp.	3	-
Xylotopus par	1	-
Ephemeroptera		
Acerpenna pygmaea	-	1
Baetidae	-	3
Eurylophella doris	-	1
Habrophlebiodes brunneipennis	-	1
Heptageniidae	-	4
Maccaffertium sp.	8	14
Maccaffertium exiguum	4	6
Maccaffertium smithae	2	4
Pseudocloeon sp.	-	5
Pseudocloeon propinquum	10	6
Teloganopsis deficiens	-	1
Megaloptera		
Corydalus cornutus	-	2
Odonata		
Argia	1	2
Plecoptera		
Acroneuria arenosa/evoluta	2	-
Neoperla sp.	8	8
Neoperla clymene	-	8
Perlidae	-	7
Plecoptera	-	1
Trichoptera		
Cheumatopsyche sp.	3	48
Chimarra sp.	3	81
Hydropsychidae	1	1
Mayatrichia ayama	-	1
Neotrichia sp.	1	-
Nyctiophylax sp.	6	5
Mollusca		
Gastropoda		
Ancylidae	1	-

Appendix K-1

Qualitative benthic macroinvertebrate collapsed taxa list and number of individuals counted from 20-discrete-dipnet sweeps conducted upstream and downstream of FANG- Camp Blanding WWTF on 10/31/11. 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				
Oligochaeta				
Aulodrilus pigueti	15	23	-	-
Bratislavia unidentata	-	-	1	1
Limnodrilus hoffmeisteri	4	2	-	-
Tubificidae	-	-	-	1
Eclipidrilus sp.	-	1	-	-
Arthropoda				
Arachnida				
Acariformes				
Arrenurus sp.	-	-	-	1
Lebertia sp.	-	-	1	-
Rhyncholimnochares sp.	-	-	-	1
Sperchonidae	-	-	-	1
Crustacea				
Amphipoda				
Crangonyx sp.	-	1	4	4
Decapoda				
Cambaridae	2	1	-	1
Palaemonetes sp.	-	-	1	-
Insecta				
Coleoptera				
Ancyronyx variegatus	2	2	-	1
Dubiraphia vittata	1	-	-	-
Macronychus glabratus	-	-	4	1
Microcylloepus pusillus	15	11	34	36
Stenelmis sp.	11	19	17	16
Diptera				
Ablabesmyia mallochi	1	1	-	-
Ablabesmyia rhamphe grp.	1	1	-	-
Cladotanytarsus sp.	1	1	-	-
Clinotanypus sp.	-	2	-	-
Cricotopus or Orthocladius sp.	-	-	1	1
Cryptochironomus sp.	-	-	-	1
Djalmabatista pulcher	2	4	-	1
Microtendipes rydalensis grp.	1	-	-	-
Palpomyia/bezzia grp.	6	2	-	-
Paramerina sp.	-	-	-	1
Parametriocnemus sp.	-	-	2	1
Pentaneura inconspicua	-	1	-	1

Appendix K-1 (continued)

	Control Site		Test Site	
	Rep 1	**Rep 2**	**Rep 1**	**Rep 2**
Polypedilum aviceps	-	-	-	1
Polypedilum flavum	-	-	2	-
Polypedilum illinoense grp.	-	1	-	-
Polypedilum scalaenum grp.	1	-	-	-
Rheocricotopus robacki	2	1	5	2
Rheotanytarsus exiguus grp.	2	-	10	2
Rheotanytarsus pellucidus	-	-	-	2
Simulium sp.	2	1	4	-
Stelechomyia perpulchra	1	-	1	-
Stenochironomus sp.	9	10	-	5
Tabanidae	1	-	-	-
Tanytarsus sp. D Epler	-	-	-	1
Tanytarsus sp. O Epler	2	-	-	-
Tanytarsus sp. Y Epler	-	-	-	1
Thienemanniella sp.	-	1	1	-
Thienemannimyia grp.	-	-	1	-
Tribelos sp.	-	4	-	-
Tribelos fuscicornis	1	-	-	-
Tribelos jucundum	2	-	-	-
Tvetenia tshernovskii	-	-	1	-
Ephemeroptera				
Acerpenna pygmaea	1	-	-	2
Caenis sp.	-	-	1	-
Callibaetis floridanus	1	-	-	-
Eurylophella doris	3	-	-	2
Leptophlebiidae	-	2	-	1
Maccaffertium sp.	4	1	2	2
Pseudocloeon sp.	-	-	-	2
Pseudocloeon propinquum	7	8	6	-
Odonata				
Argia sp.	7	7	3	-
Calopteryx sp.	2	4	-	-
Enallagma sp.	2	-	-	-
Gomphidae	-	2	-	-
Hetaerina sp.	1	2	-	-
Libellulidae	-	3	-	-
Macromia sp.	7	-	-	-
Plecoptera				
Leuctra sp.	-	-	-	2
Neoperla sp.	-	-	4	7
Neoperla clymene	2	1	-	-

Appendix K-1 (continued)

	Control Site		Test Site	
	Rep 1	**Rep 2**	**Rep 1**	**Rep 2**
Trichoptera				
Cheumatopsyche sp.	5	2	12	10
Chimarra sp.	1	1	8	11
Cyrnellus fraternus	-	1	-	-
Hydropsyche sp.	1	-	-	-
Mayatrichia ayama	-	-	-	1
Micrasema sp.	-	1	1	1
Neotrichia sp.	1	-	-	-
Nyctiophylax sp.	-	1	-	-
Oecetis sp.	6	-	1	3
Phylocentropus sp.	1	-	-	-
Triaenodes sp.	2	1	20	15
Mollusca				
Bivalvia				
Bivalvia	-	-	-	1
Sphaeriidae(mollusca)	7	12	-	-
Gastropoda				
Ancylidae	1	2	-	2
Campeloma sp.	-	2	-	-
Hydrobiidae	1	-	-	-

Appendix K-2

Qualitative benthic macroinvertebrate taxa list and number of individuals counted from 20-discrete-dipnet sweeps conducted upstream and downstream of FANG- Camp Blanding WWTF on 10/31/11.

	Control Site		Test Site	
	Rep 1	**Rep 2**	**Rep 1**	**Rep 2**
Annelida				
Oligochaeta				
Aulodrilus pigueti	4	10	-	-
Bratislavia unidentata	-	-	1	1
Limnodrilus hoffmeisteri	1	1	-	-
Tubificidae	14	14	-	1
Eclipidrilus sp.	-	1	-	-
Arthropoda				
Arachnida				
Acariformes				
Arrenurus sp.	-	-	-	1
Lebertia sp.	-	-	1	-
Rhyncholimnochares sp.	-	-	-	1
Sperchonidae sp.	-	-	-	1
Crustacea				
Amphipoda				
Crangonyx sp.	-	1	4	4
Decapoda				
Cambaridae	2	1	-	1
Palaemonetes sp.	-	-	1	-
Insecta				
Coleoptera				
Ancyronyx variegatus	2	2	-	1
Dubiraphia vittata	1	-	-	-
Macronychus glabratus	-	-	4	1
Microcylloepus pusillus	15	11	34	36
Stenelmis sp.	11	19	17	16
Diptera				
Ablabesmyia mallochi	1	1	-	-
Ablabesmyia rhamphe grp.	1	1	-	-
Ceratopogonidae	1	-	-	-
Chironomidae	5	2	1	1
Cladotanytarsus sp.	1	1	-	-
Clinotanypus sp.	-	2	-	-
Cricotopus or Orthocladius sp.	-	-	1	1
Cryptochironomus sp.	-	-	-	1
Diptera	-	1	-	-
Djalmabatista pulcher sp.	2	4	-	1
Microtendipes rydalensis grp.	1	-	-	-
Palpomyia/bezzia grp.	5	2	-	-
Paramerina sp.	-	-	-	1

Appendix K-2 (continued)

	Control Site		Test Site	
	Rep 1	**Rep 2**	**Rep 1**	**Rep 2**
Parametriocnemus sp.	-	-	2	1
Pentaneura inconspicua	-	1	-	1
Polypedilum aviceps	-	-	-	1
Polypedilum flavum	-	-	2	-
Polypedilum illinoense grp.	-	1	-	-
Polypedilum scalaenum grp.	1	-	-	-
Rheocricotopus robacki	2	1	5	2
Rheotanytarsus exiguus grp.	2	-	9	2
Rheotanytarsus pellucidus	-	-	-	2
Simulium sp.	2	1	4	-
Stelechomyia perpulchra	1	-	1	-
Stenochironomus sp.	4	7	-	4
Tabanidae	1	-	-	-
Tanytarsus sp.	1	-	-	-
Tanytarsus sp. D Epler	-	-	-	1
Tanytarsus sp. O Epler	1	-	-	-
Tanytarsus sp. Y Epler	-	-	-	1
Thienemanniella sp.	-	1	1	-
Thienemannimyia grp.	-	-	1	-
Tribelos sp.	1	4	-	-
Tribelos fuscicornis	1	-	-	-
Tribelos jucundum	1	-	-	-
Tvetenia tshernovskii	-	-	1	-
Ephemeroptera				
Acerpenna pygmaea	1	-	-	1
Baetidae	-	3	1	2
Caenis sp.	-	-	1	-
Callibaetis floridanus	1	-	-	-
Eurylophella doris	3	-	-	2
Heptageniidae	1	-	-	-
Leptophlebiidae	-	2	-	1
Maccaffertium sp.	3	1	2	2
Pseudocloeon sp.	2	3	4	1
Pseudocloeon propinquum	5	2	1	-
Odonata				
Argia sp.	7	7	3	-
Calopterygidae	1	-	-	-
Calopteryx sp.	1	4	-	-
Enallagma sp.	2	-	-	-
Gomphidae	-	2	-	-
Hetaerina sp.	1	2	-	-
Libellulidae	5	3	-	-
Macromia sp.	2	-	-	-

Appendix K-2 (continued)

	Control Site		Test Site	
	Rep 1	**Rep 2**	**Rep 1**	**Rep 2**
Plecoptera				
Leuctra sp.	-	-	-	2
Neoperla sp.	-	-	3	4
Neoperla clymene	2	1	-	-
Perlidae	-	-	-	3
Plecoptera	-	-	1	-
Trichoptera				
Cheumatopsyche sp.	5	2	12	10
Chimarra sp.	1	1	8	11
Cyrnellus fraternus	-	1	-	-
Hydropsyche sp.	1	-	-	-
Leptoceridae	1	-	2	1
Mayatrichia ayama	-	-	-	1
Micrasema sp.	-	1	1	1
Neotrichia sp.	1	-	-	-
Nyctiophylax sp.	-	1	-	-
Oecetis sp.	4	-	1	3
Phylocentropus sp.	1	-	-	-
Triaenodes sp.	2	1	18	14
Trichoptera	1	-	-	-
Mollusca				
Bivalvia				
Bivalvia	-	-	-	1
Sphaeriidae(mollusca)	7	12	-	-
Gastropoda				
Ancylidae	1	2	-	2
Campeloma sp.	-	2	-	-
Hydrobiidae	1	-	-	-

The Bioassay of the FANG- Camp Blanding WWTF effluent sampled on October 31, 2011, NPDES #FL0022853

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 2 2 8 5 3 11	12 1 1 1 0 3 1	# B	# S	# 1

Remarks

#

The Priority Pollutants Analysis for Bioassay of the FANG- Camp Blanding WWTF effluent sampled on October 31, 2011 NPDES #FL0022853

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 2 2 8 5 3 11	12 1 1 1 0 3 1	# X	# S	# 1

Remarks

#

Biological Analyses of the FANG- Camp Blanding WWTF effluent sampled on October 31, 2011, NPDES #FL0022853

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 2 2 8 5 3 11	12 1 1 1 0 3 1	# S	# S	# 1

Remarks

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