Biological Assessment of

Blountstown Wastewater Treatment Plant

Calhoun County

NPDES # FL0026867

Sampled April 7, 2014

September 2014

Biology Section

Bureau of Laboratories

Division of Environmental Assessment and Restoration

2014 FDEP Bureau of Laboratories Quality Manual

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Facility Overview

The Blountstown Wastewater Treatment Plant is a Municipal Domestic Advanced Wastewater Treatment (AWT) Facility. The effluent is discharged into Sutton Creek, which flows south to Old River and into the Apalachicola River, all Class III Fresh Waters (see map Appendix A). The permitted design flow of the wastewater system is 1.5 million gallons per day (MGD). The annual average flow for April 2013 to March 2014 was 0.695 MGD. The plant discharges using a sequencing batch reactor (SBR), and the flow reported by the facility for the day of sampling was 0.457 MGD.

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, summary of permit limits, Administrative Order (AO), Consent Order (CO), and Discharge Monitoring Report (DMR) information. The facility is operating under AO 077NW, which authorizes reduced staffing as the facility upgrades its sequential batch reactors to a more automated control system so as to provide time to train and/or hire additional certified operators. A CO, OGC No.14-0057, is in effect for chronic toxicity from outfall D-001, which changes the effluent permit limits to an interim limit of "Report Only". This CO directs the facility to identify the causes of its repeated toxicity violations and modify the facility systems to prevent future ones.

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 in Sutton Creek between a Control Site (beginning 40 meters (m) and ending 140 m upstream of the point of discharge) and a Test Site (beginning 120 m and ending 20 m downstream of the point of discharge). Effluent samples were taken as flow-proportioned composite and grab samples from monitoring location EFF-01, after dual-channel UV light disinfection.

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 DEP 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: Mark Sumner, Jennifer Weger, Cheryl Swanson, Harris Walters, and Ryan Coker (sample collection), and the FDEP Central Laboratory in Tallahassee. The report was reviewed by District representatives and the Point Source Studies Review Committee (Mike Tanski, Andrew Tintle, and Jennifer Weger).

Results

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

- Habitat Assessment scores were similar at the Test Site (124) and Control Site (125), which places both sites in the Optimal category. Both sites had marginal substrate availability and low substrate diversity, and experienced some habitat smothering.
- The effluent pH (6.8 SU) was recorded by facility meters at the time of sampling, but the standards used for calibration and verification were expired. While measuring specific conductance for the purpose of tracking the effluent plume in the stream, samplers recorded an approximate measurement for pH (7 SU) at outfall D-001; the value is J-qualified because the meter failed pH post-sampling verification. Although the similarity of facility and sampler values suggest that the effluent pH fell within the compliance range of the Class III Freshwater Quality Criteria (62-302.530, F.A.C.) and effluent permit limit at the time of sampling, compliance for pH is not determinable for this event because of QC issues. Control and Test Site pH results are estimated values (J-qualifier) due to post-sampling pH verification failure. Specific conductance (µmhos/cm) and DO (mg/L and % saturation) of the effluent, Test Site, and Control Site, measured by the samplers, complied with Class III Freshwater Quality Criteria (62-302.530, F.A.C.) and/or effluent permit limits.

Organic Constituents (See Table 2 and Appendix F)

- Sucralose was detected in the effluent grab sample at a high level and in the Test and Control Site samples at lower levels. The amount of sucralose detected in the Test Site sample was orders of magnitude higher than the amount detected in the Control Site sample, indicating the potential influence of the effluent on the Test Site.

- 1,4-Dioxane in the effluent grab sample was higher than in the Test Site sample, where it was detected between the method detection limit (MDL) and the practical quantitation limit (PQL) (I-qualifier). It was not detected in the Control Site sample.
- Atrazine and atrazine desethyl were detected in the effluent grab samples at levels between the MDL and the PQL (I-qualifier). The Test and Control Site samples were not analyzed for these components.
- No organic constituents were detected in the field blank.

Nutrients (See Table 2 and Appendix F)

- The respective permit limits for total nitrogen and total phosphorus are based on collection of a 16-hour flow proportioned composite. Although the effluent composite sample was composited over 24 hours, compliance with the permit limits is still determinable. The amount of effluent total nitrogen detected in the composite sample did not comply with the effluent permit limit. The effluent total phosphorus amount complied with the effluent permit limit.
- Effluent nutrients were detected in the effluent grab and composite samples in amounts higher than in the Test Site sample. In the Control Site sample, ortho-phosphate was not detected (U-qualifier) and the other nutrient analytes were detected in amounts lower than in the Test Site sample.
- Because of a malfunction of the samplers' measurement device, the effluent temperature was not available. Thus, un-ionized ammonia values could not be calculated for the effluent.
- No nutrients were detected in the field blank.

Analytical Water Chemistry (See Table 2 and Appendix F)

- Chlorophyll *a* (corrected; µg/L) was detected in both the Test and Control Site samples in similar amounts, and in the effluent grab sample at a much lower level (between the MDL and the PQL, I-qualifier).
- The respective permit limits for carbonaceous biochemical oxygen demand (CBOD) and total suspended solids (TSS) are based on collection of a 16-hour flow proportioned composite. Although the effluent sample was composited over 24-hours, compliance with the permit limits is still determinable. CBOD (mg/L) was detected between the MDL and PQL (I-qualifier) in the effluent composite (complied with effluent permit limits), Test, and Control Site samples. TSS (mg/L) were not detected in the effluent composite sample (U-qualifier), which complied with the effluent permit limit. TSS were detected in the Test Site and Control Site samples.

Microbiology (See Table 2 and Appendix F)

- Fecal coliforms detected in the effluent grab and Test Site samples were present at very high levels and did not comply with the Class III Freshwater Quality Criterion (62-302.530(6), F.A.C.) and/or the effluent permit limit. Fecal coliforms detected in the Control Site sample complied with the Class III Freshwater Quality Criterion (62-302.530(6), F.A.C.).

Toxicity Whole Effluent Test (See Table 2 and Appendix F)

- Tests were performed April 8 through 15, 2014.
- The effluent sample IC25 for the fish, *Pimephales promelas*, during the chronic definitive bioassay was 63.5% which complies with the permit limit under the CO; however, the *P. promelas* bioassay result follows the trend of toxicity referred to in the CO.
- The effluent sample IC25 for the water flea, *Ceriodaphnia dubia,* during the chronic definitive bioassay was greater than 100%.
- For more information, please contact the Biology Laboratory at 850-245-8177.

Metals (See Table 3 and Appendix F)

- All metals detected in the effluent grab sample were present at levels that complied with effluent permit limits and Class III Freshwater Quality Criteria (62-302.530, F. A. C.).
- Test and Control Site iron (1,370 µg/L and 1,370 µg/L, respectively) and lead (1.43 and 1.33 µg/L, respectively) exceeded Class III Freshwater Quality Criteria (62-302.530(38), F.A.C.). Upstream of the Test and Control Sites, a large metal pipeline crosses above the stream and may be responsible for some of the detected metal content.
- All other metals in the Test and Control Site grab samples were either undetected or detected at levels that complied with Class III Freshwater Quality Criteria (62-302.530, F. A. C.).
- No metals were detected in the field blank.

Algal Growth Potential (See Table 4 and Appendix F)

- Raschke and Shultz (1987) determined that AGP values above 5.0 mg dry weight/L, which represents a "problem" threshold for fresh receiving waters, imply nutrient enrichment. Using the freshwater species, *Pseudokirchneriella subcapitata,* the AGP value in the effluent sample was determined to be approximately 27 times greater than the problem threshold value, and the AGP value of the Test Site was approximately 8 times higher than the problem threshold value. The AGP value of the Control Site was below the problem threshold. The ratio of total nitrogen to total phosphorus suggests that the effluent and the Test Site are phosphorus-limited, while the Control Site is nitrogen and phosphorus co-limited.

Bioassessment

Periphyton (See Table 5)

- Periphyton communities at both the Test and Control Sites were similar and consisted mostly of diatoms. The diatom community at both sites was dominated by the genus *Eunotia*, a common inhabitant of Florida freshwaters.

Macroinvertebrates (See Table 6)

- Hester-Dendy samplers were deployed at the Test and Control Sites 28 days prior to this sampling event. Heavy rains and high flow broke the Test Site rack and left it exposed on cypress tree knees. The Control Site sampler, although intact and remaining in the water, was not analyzed because the Test Site Hester-Dendy was unusable.
- Stream Condition Index (SCI) dipnet sampling was conducted at both sites. Qualitative macroinvertebrate data from dipnet samples indicated that the macroinvertebrate community at the Test Site was more degraded than at the Control Site. The Test Site scored 34 on the SCI, placing it in Category 3, and the Control Site scored 50, placing it in Category 2 (see Appendix C for an explanation of SCI Categories). The SCI score differences can be attributed to the Test Site having a higher percentage of very tolerant individuals and a higher percent dominance of a single taxon than the Control Site (see Appendix C for an explanation of how these SCI metrics typically respond to human disturbance). The dominant taxon in the Test Site sample, the pollution-tolerant amphipod *Hyalella azteca*, increased its share of the community from 6-10% in the Control Site sample to approximately 43% in the Test Site sample. The dominant taxon in the Control Site sample, the Coleopteran riffle beetle *Dubiraphia vittata*, is more sensitive to pollution than *Hyalella azteca* and comprised only a quarter of the individuals collected at the Control Site. The percentage of Coleopterans in the communities dropped from approximately 30% to just 5-8% between the Control and Test Site samples.
- For more information or to obtain a copy of the taxa lists, please contact the Biology Laboratory at 850-245-8177.

Conclusion

Fecal coliforms detected in the effluent and Test Site samples did not comply with the Class III Freshwater Quality Criterion (62-302.530(6), F.A.C.) and/or the permit limit. Iron and lead amounts in the Test Site and the Control Site samples exceeded the Class III Freshwater Quality Criteria (62-302.530(38), F.A.C.) and were much higher than the amounts of each metal detected in the effluent, suggesting they may originate from another source. The effluent sample IC25 for the fish, *Pimephales promelas*, showed inhibition of growth, although it did comply with a report-only interim permit limit effected by the Consent Order, OGC No.14-0057. Effluent total nitrogen represents an excursion above the permit limit. Evidence of nutrient enrichment at the Test Site due to the effluent is supported by the elevated sample nutrient amounts and AGP values of the effluent and the Test Site. There were no adverse effects apparent on the periphyton community in Sutton Creek from the effluent. There were differences in the macroinvertebrate communities that suggest some level of degradation at the Test Site due to the effluent, which achieved an SCI score that was lower, and in a lower category, than the Control Site SCI score.

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Table 1. Effluent limits, Class III Freshwater Criteria and field parameters

Blountstown WWTP	Units	Class III Criteria	Effluent Permit Limits	Effluent (grab)	Test Site	Control Site
Habitat Assessment		-	-	-	124	125
Sample Depth	m	-	-	-	0.3	0.1
Temperature	C	-	-	-	20.9	20.8
pH	SU	6.0 - 8.5	6.0 - 8.5	7 J	8.6 J	8.1 J
Specific Conductance	µmhos/cm	≤ 1,275	-	604	135	45.8
Dissolved Oxygen	% saturation	≥ 67	-	92.4	71.7	67.9
Dissolved Oxygen	mg/L	-	≥ 6.0	8	6.4	6.0

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.

J - Estimated value

Table 2. Effluent limits, Class III Freshwater Criteria, analytical water chemistry, microbiology, and toxicity data

Blountstown WWTP	Units	Class III Criteria	Effluent Permit Limits	Effluent (grab)	Effluent (24-hour composite)	Test Site	Control Site
Organic Constituents							
Atrazine	ug/L	-	-	0.038 I	-	-	-
Atrazine Desethyl	ug/L	-	-	0.025 I	-	-	-
Sucralose	ug/L	-	-	8.3	-	1.2	0.053
1,4-Dioxane	ug/L	-	-	0.26	-	0.062 I	0.020 U
Nutrients and Analytical Water Chemistry							
Ortho-phosphate	mg P/L	-	-	0.053	-	0.015	0.004 U
Total Phosphorus	mg P/L	-	≤ 2.0 p	0.19	0.096	0.071	0.038
Total Ammonia	mg N/L	-		0.41		0.098	0.049
Un-ionized Ammonia	mg NH3/L	≤ 0.02 s	-	-	-	< 0.02 c	< 0.02 c
Nitrate and Nitrite	mg N/L	-	-	6.8	8.8	0.97	0.040
Total Kjeldahl Nitrogen	mg N/L	-	-	1.3	0.92	0.84	0.69
Organic Nitrogen	mg N/L	-	-	0.9 c	-	0.74 c	0.64 c
Total Nitrogen	mg N/L	-	≤ 6.0 p	8.1 c	9.7 ce	1.81 c	0.73 c
Total Organic Carbon	mg C/L	-	-	4.4	-	15	16
Chlorophyll *a* - Corrected	ug/L	-	-	0.81 I	-	4.3	3.7 A
Phaeophytin	ug/L	-	-	0.40 U	-	4.5	4.4 A
CBOD, 5 day, N - inhibited	mg/L	-	≤ 10.0 p		1.4 I	0.62 I	1.4 I
Hardness	mg CaCO3/L	-	-	129 c	-	31.7 c	16.6 c
Total Suspended Solids	mg/L	-	≤ 10.0 p		2 U	17	16 A
Turbidity	NTU	< 29 t	-	2.7 A	-	8.6	9.6
Color (true)	PCU	-	-	13	-	160 A	190
Alkalinity	mg CaCO3/L	≥ 20	-	74	-	17	8.1
Chloride	mg Cl/L	-	-	78 A	-	14	5.2
Fluoride	mg F/L	≤ 10.0	-	0.40	-	0.076 I	0.035 U
Sulfate	mg SO4/L	-	-	69 A	-	9.3	1.1
Microbiology							
Fecal Coliforms	cfu/100 mL	≤ 400 x	≤ 800 s	6900 eB	-	3800 e	200
Toxicity (Chronic Definitive, IC25)							
Bioassay - Water flea *(Ceriodaphnia dubia)* reproduction	% effluent	-	Report	-	> 100	-	-
Bioassay – Fish (*Pimephales promelas*) growth	% effluent	-	Report	-	63.5	-	-

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.

c - Value is calculated
e - Value exceeds the Class III Water Quality Criteria or permit limits
p - 16 hour flow proportioned composite
s - Single sample
t - Shall not exceed 29 NTUs above background
x - If 10 or fewer samples are taken within a month, the single sample limit is 400 CFU (62-302.530(6), F.A.C.)
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
L - Actual value is known to be greater than value given (appears in Appendix F)
U - Material analyzed for but not detected; value reported is the method detection limit

Table 3. Effluent limits, Class III Freshwater Criteria and analytical metals data

Blountstown WWTP	Units	Effluent Permit Limits	Effluent Class III Criteria	Effluent (grab)	Test Site Class III Criteria	Test Site	Control Site Class III Criteria	Control Site
Hardness	mg CaCO3/L	-	-	129 c	-	31.7 c	-	16.6 c
Aluminum	ug/L	-	-	165	-	702	-	645
Arsenic	ug/L	-	≤ 50	0.25 U	≤ 50	0.51 I	≤ 50	0.58 I
Cadmium	ug/L	-	≤ 0.327 b	0.050 U	≤ 0.115 b	0.050 U	≤ 0.097 b	0.050 U
Calcium	mg/L	-	-	29.3	-	8.38	-	4.97
Chromium, Total [g]	ug/L	-	≤ 106 b	0.30 U	≤ 33.6 b	0.83 I	≤ 27.7 b	0.81 I
Copper	ug/L	-	≤ 11.6 b	0.85 I	≤ 3.49 b	0.65 I	≤ 2.85 b	0.60 I
Iron	ug/L	-	≤ 1,000	130	≤ 1,000	1370 e	≤ 1,000	1370 e
Lead	ug/L	-	≤ 4.41 b	0.20 U	≤ 0.736 b	1.43 e	≤ 0.545 b	1.33 e
Magnesium	mg/L	-	-	13.6	-	2.61	-	1.01
Nickel	ug/L	-	≤ 64.8 b	0.82 I	≤ 19.7 b	0.49 I	≤ 16.1 b	0.52 I
Potassium	mg/L	-	-	11.2	-	1.8	-	0.49 I
Selenium	ug/L	-	≤ 5.0	0.20 U	≤ 5.0	0.23 I	≤ 5.0	0.20 U
Silver	ug/L	-	≤ 0.07	0.025 U	≤ 0.07	0.025 U	≤ 0.07	0.025 U
Sodium	mg/L	-	-	64.9	-	11.3	-	3.3
Zinc	ug/L	-	≤ 149 b	13 I	≤ 45.2 b	8.2 I	≤ 37 b	5.8 I

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.

b - Value is calculated based on hardness, (62-302.530)
c - Value is calculated
e - Value exceeds the Class III Water Quality Criteria or permit limits
g - Class III Freshwater Quality Criterion (62-302.530(19)(a), F.A.C.) is for chromium-III
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 4. Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN), ortho-phosphate (OP), total nitrogen (TN) and total phosphorus (TP) limitation and ratios of nitrogen to phosphorus

Blountstown WWTF								
Location	**Test Species**	**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	*Pseudokirchneriella subcapitata*	134	not applicable [1]	22.8 ± 4.6	not applicable [1]	81.7 ± 16.3	136	42.6
Test Site	*Pseudokirchneriella subcapitata*	39.2	not applicable [1]	6.5 ± 1.3	not applicable [1]	30.5 ± 6.1	71.2	25.5
Control Site	*Pseudokirchneriella subcapitata*	1.03	3.4 ± 0.7	not applicable [2]	27.7 ± 5.5	16.3 ± 3.3	not applicable [2]	19.2

1 - not applicable to phosphorus-limited freshwaters

2 - non-detect in the analytical chemistry; predictions could not be made and N:P ratios could not be calculated.

Table 5. Periphyton samples - qualitative

Blountstown WWTP	Test Site	Control Site
Wet Algae Analysis		
Number of Wet Taxa	9	7
Number of Wet Algal Units Identified	300	300
Percent Dominant Wet Taxon	22.58	44.44
Dominant Wet Taxon Name	*Oscillatoria tenuis* (Cyanophyceae)	*Jaaginema gracile* (Cyanophyceae)
% Blue-green	7.33	4
% Green	3	2
% Diatoms	89.67	94
Diatom Analysis		
Number of Diatom Taxa	44	47
Number of Diatom Valves Identified	499	501
Percent Dominant Diatom Taxon	18.04	31.54
Dominant Diatom Taxon Name	*Eunotia sp.* (Bacillariophyceae)	*Eunotia sp.* (Bacillariophyceae)

Table 6. Macroinvertebrate Dipnet Samples - Qualitative.

Blountstown WWTP	Test Site		Control Site	
Summary Statistics				
Stream Condition Index 2007 (value)	34 A		50 A	
Stream Condition Index 2007 (category) [3]	3		2	
Stream Condition Index Metrics	Rep 1	Rep 2	Rep 1	Rep 2
Number of Total Taxa	24	29	36	36
Number of Ephemeroptera Taxa	3	3	3	3
Number of Trichoptera Taxa	2	4	7	4
Number of Clinger Taxa	3	4	5	2
Number of Long-lived Taxa	1	1	2	1
Number of Sensitive Taxa	5	3	6	5
Percent of Dominant Taxon	43.2	42.8	25.5	26.8
Percent Suspension Feeders and Filterers	25.7	20.7	22.2	19.0
Percent of Tanytarsini Individuals	0.7	2.8	2.0	1.3
Percent of Very Tolerant Individuals	6.2	9.0	3.9	3.3
Total Number of Individuals	146	145	153	153
Community Composition: Percent of total				
Dominant Taxon Name	*Hyalella azteca* (Amphipoda)	*Hyalella azteca* (Amphipoda)	*Dubiraphia vittata* (Coleoptera)	*Dubiraphia vittata* (Coleoptera)
Acariformes	0.0	0.0	0.7	0.0
Amphipoda	43.2	42.8	5.9	9.8
Bivalvia	7.5	4.8	11.1	13.7
Coleoptera	8.2	4.8	30.1	29.4
Decapoda	0.0	0.0	0.7	1.3
Diptera	11.0	13.1	13.1	9.8
Ephemeroptera	5.5	6.9	11.1	7.2
Gastropoda	3.4	6.2	5.9	4.6
Odonata	1.4	2.1	2.0	2.6
Oligochaeta	0.0	0.7	3.3	5.2
Trichoptera	19.2	17.2	16.3	15.0
Other	0.69	1.37	0.01	1.31
Functional Feeding Groups: Percent of total				
Browser-Grazers	0.0	0.0	0.0	0.7
Burrowing Deposit Feeders	0.0	0.7	3.3	5.2
Piercers	0.0	0.0	0.0	0.3
Predators	5.5	7.6	13.4	13.7
Scavengers	0.0	0.0	0.3	0.7
Scrapers	9.9	12.4	24.8	21.2
Shredders	25.7	26.6	5.9	10.5
Surface Deposit Feeders	32.5	31.4	30.1	28.8
Suspension Feeders	25.7	20.7	22.2	19.0
Unknown	0.7	0.7	0.0	0.0

December 3, 2008: Values 0 ≤ 34 are Category 3; Values 35 < 67 are Category 2; Values 68 ≤ 100 are Category 1

A - Value reported is the mean of two determinations

3 - SCI_2007 categories from Table LT 7200-2 of DEP-SOP-002/01 as referenced in Quality Assurance Rule (62-160 F.A.C.),

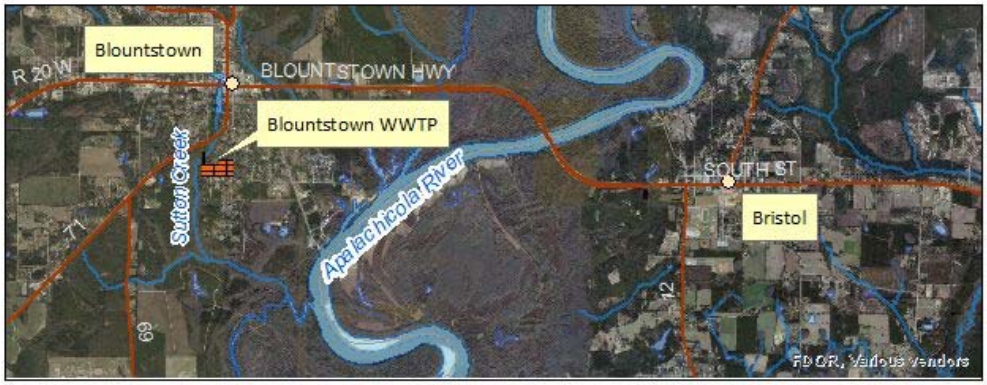
Appendix A

Map of Facility

Blountstown Wastewater Treatment Plant

Fifth Year Bioassessment Sampling Locations







Appendix B

Facility Summary

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: Shelley Alexander	**Contact Number:** 850-595-0677
Facility Name (as it appears on permit): Blountstown WWTP	**Former Names:**
NPDES Permit Number: FL0026867	**Permit Expiration Date:** June 7, 2015
Physical Address: 16140 SE Johnson Street	
District: NWD	**County:** Calhoun
Function of Facility: Wastewater Treatment	
Facility Type: Surface water Discharge	**Permitted Capacity (MGD):** 1.5
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): 0.695 (April 2013-April 2014)	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months): NA	
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):
EFF-03 End of Discharge Pipe at Sutton Creek

FLW-01 Flow-meter/ totalizer at Reuse Water Tank Weir

EFF-01 Sample point at weir at old Chlorine Contact Chamber prior to discharge

PPI-01 UV monitoring system measured intensity meter Channel 1

PPI-02 UV monitoring system measured intensity meter Channel 2

Description of Permitted Outfall(s):
Surface Water Discharge D-001: An existing 1.50 MGD monthly average daily flow discharge to Sutton Creek, Class III fresh waters, (WBID# 822). The outfall pipe is approximately 2 feet in length and discharges at the surface; the point of discharge is located approximately at latitude 30°26' 2.6" N, longitude 85°2' 58.8" W.

This system includes an industrial reuse system sending reclaimed water on site for plant operations.

Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility):

An existing 1.50 MGD design capacity, monthly average daily flow (MADF) advanced wastewater treatment (AWT) facility using Sequential Batch Reactors (SBR) with phosphorus removal that discharges effluent that meets the 5:5:3:1 CBOD5, TSS, Nitrogen and Phosphorus requirements defined under section 403.086(4)(a), F.S. The system facilities include an influent pumping station, one automatic and one manual bar screen, a Grit Separator, two 975,000-gallon SBR units, alum injection, a Post Equalization Tank with filter supply pumps, two cloth disk filters and a polymer feed system, dual channel ultraviolet light disinfection system with four UV modules with a total capacity of 4.0 MGD providing basic disinfection and a Reuse Water Tank. Effluent gravity flows from the Reuse Water Tank via a 16-inch pipe to Sutton Creek. Residuals are aerobically digested, dewatered by a belt filter press and disposed of at a landfill.

PART I: Continued								
List <u>current</u> 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)								
Flow to Sutton Creek	MGD	Max	1.500	Monthly Average	Continuous	Recording Flow Meter with Totalizer	FLW-01	See I.A.4
BOD, Carbonaceous 5 day, 20C	mg/L	Max Max Max Max	5.0 6.25 7.5 10.0	Annual Average Monthly Average Weekly Average Single Sample	Weekly	16-hr FPC	EFF-01	
Solids, Total Suspended	mg/L	Max Max Max Max	5.0 6.25 7.5 10.0	Annual Average Monthly Average Weekly Average Single Sample	Weekly	16-hr FPC	EFF-01	
Nitrogen, Total	mg/L	Max Max Max Max	3.0 3.75 4.5 6.0	Annual Average Monthly Average Weekly Average Single Sample	Weekly	16-hr FPC	EFF-01	
Phosphorus, Total (as P)	mg/L	Max Max Max Max	1.0 1.25 1.5 2.0	Annual Average Monthly Average Weekly Average Single Sample	Weekly	16-hr FPC	EFF-01	
pH	s.u.	Min Max	6.0 8.5	Single Sample Single Sample	Continuous	Meter	EFF-01	See I.A.3
Oxygen, Dissolved (DO)	mg/L	Min	6.0	Single Sample	Daily	Grab	EFF-03	
Coliform, Fecal	#/100mL	Max Max Max	200 200 800	Annual Average Monthly Geo. Mean Single Sample	Weekly	Grab	EFF-01	See I.A.5
Ultraviolet Light Intensity - Measured Channel 1	percent	Min	25	Single Sample	Continuous	Meter	PPI-01	See I.A.7 and I.A.8
Ultraviolet Light Intensity – Measured Channel 2	percent	Min	25	Single Sample	Continuous	Meter	PPI-02	See I.A.7 and I.A.8

PART I: Continued	
Receiving Waters:	**Classification (indicate whether fresh or marine):**
Sutton Creek	Class III fresh waters WBID #822

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

6. The permittee shall comply with the following requirements to evaluate chronic whole effluent toxicity of the discharge from outfall D-001.

   a. Effluent Limitation
      (1) In any routine or additional follow-up test for chronic whole effluent toxicity, the 25 percent inhibition concentration (IC25) shall not be less than 100% effluent. [Rules 62-302.530(61) and 62-4.241(1)(b), F.A.C.]
      (2) For acute whole effluent toxicity, the 96-hour LC50 shall not be less than 100% effluent in any test. [Rule 62-302.500(1)(a)4. and 62-4.241(1)(a), F.A.C.]

   b. Monitoring Frequency
      (1) Routine toxicity tests shall be conducted once every three months, the first starting within 60 days of the issuance date of this permit and lasting for the duration of this permit.
      (2) Upon completion of four consecutive valid routine tests that demonstrate compliance with the effluent limitation in 6.a.(1) above, the permittee may submit a written request to the Department for a reduction in monitoring frequency to once every six months. The request shall include a summary of the data and the complete bioassay laboratory reports for each test used to demonstrate compliance. The Department shall act on the request within 45 days of receipt. Reductions in monitoring shall only become effective upon the Department's written confirmation that the facility has completed four consecutive valid routine tests that demonstrate compliance with the effluent limitation in 6.a.(1) above.
      (3) If a test within the sequence of the four is deemed invalid based on the acceptance criteria in EPA-821-R-02-013, but is replaced by a repeat valid test initiated within 21 days after the last day of the invalid test, the invalid test will not be counted against the requirement for four consecutive valid tests for the purpose of evaluating the reduction of monitoring frequency.

   c. Sampling Requirements
      (1) For each routine test or additional follow-up test conducted, a total of three flow proportional 24-hr composite samples of final effluent shall be collected and used in accordance with the sampling protocol discussed in EPA-821-R-02-013, Section 8.
      (2) The first sample shall be used to initiate the test. The remaining two samples shall be collected according to the protocol and used as renewal solutions on Day 3 (48 hours) and Day 5 (96 hours) of the test.
      (3) Samples for routine and additional follow-up tests shall not be collected on the same day.

   d. Test Requirements
      (1) Routine Tests: All routine tests shall be conducted using a control (0% effluent) and a minimum of five test dilutions: 100%, 50%, 25%, 12.5%, and 6.25% final effluent.
      (2) The permittee shall conduct a daphnid, *Ceriodaphnia dubia*, Survival and Reproduction Test and a fathead minnow, *Pimephales promelas*, Larval Survival and Growth Test, concurrently.
      (3) All test species, procedures and quality assurance criteria used shall be in accordance with **Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms**, 4th Edition, EPA-821-R-02-013. Any deviation of the bioassay procedures outlined herein shall be submitted in writing to the Department for review and approval prior to use. In the event the above method is revised, the permittee shall conduct chronic toxicity testing in accordance with the revised method.
      (4) The control water and dilution water shall be moderately hard water as described in EPA-821-R-02-013, Section 7.2.3.

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

Administrative Order No. AO077NW June 8, 2010

The current permit authorized reduced staffing based on the PLC system automated control of the SBR system. The system includes an auto dialer that relays alarms to a manned 24/7 contact who then notifies on-call personnel to respond to the alarm. Reduced operator staffing requirement in the current permit is 8 hours/day for 5 days/week by a Class B or higher operator and a two-hour weekend visit by a Class C or higher operator.

The allowable reduced staffing has changed and pursuant to Rule 62-699.311(4)(a)2, F.A.C., staffing requirements for a plant under an electronic surveillance system or automatic control system may reduced as follows: for a Category I, Class B facility staffing by a Class C or higher operator 8 hours/day for 7 days/week with the 8 hours/day of staffing occurring during the 8-hour period of greatest influent flow or water production. The lead/chief operator shall be a Class B operator.

This is a new permitting requirement and the permittee requires time to hire and train new operators. The permittee is authorized to maintain the current staffing level for a period of six (6) months so as to provide time the train and/or hire additional certified operators. An Administrative Order shall accompany the permit and provide six (6) months for the permittee to obtain funding and to hire and train additional certified operators.

Consent Order OGC File No. 14-0057-07-DW March 13, 2014

For three years, following the effective date of this order, or until a moderating provision has been obtained for the Facility has ceased discharge to D-001, whichever comes first, Respondent shall have an interim limit of "report only" for the concentration of chronic toxicity from outfall D-001.

7-DAY CHRONIC STATRE
Ceriodaphnia dubia(Routine)
Permit Requirement " Report Only"
PARM Code TRP3B P
Mon. Site No. EFF-01
Sampling Frequency is Quarterly
24 hr FPC

7-DAY CHRONIC STATRE
Ceriodaphnia dubia(Additional)
Permit Requirement "Report Only"
PARM Code TRP3B Q
Mon. Site No. EFF-01
Sampling Frequency is As Needed

7-DAY CHRONIC STATRE
Ceriodaphnia dubia(Additional)
Permit Requirement "Report Only"
PARM Code TRP3B R
Mon. Site No. EFF-01
Sampling Frequency is As Needed

7-DAY CHRONIC STATRE
Pimephales promelas(Routine)
Permit Requirement "Report Only"
PARM Code TRP6C P
Mon. Site No. EFF-01
Sampling Frequency is Quarterly
24 hr FPC

7-DAY CHRONIC STATRE
Pimephales promelas(Additional)
Permit Requirement "Report Only"
PARM Code TRP6C Q
Mon. Site No. EFF-01
Sampling Frequency is As Needed

7-DAY CHRONIC STATRE
Pimephales promelas(Additional)
Permit Requirement "Report Only"
PARM Code TRP6C R
Mon. Site No. EFF-01
Sampling Frequency is As Needed

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
10/31/2013	P TRP3B %	100	32.2
9/30/2013	Nitrogen, Total MG/L	3.75 Monthly Average	3.95
9/30/2013	Nitrogen, Total MG/L	4.5 Weekly Average	5.14
4/30/2013	P TRP3B %	100	68.21

Describe previous FYI and WQBEL study:

Describe previous or current Enforcement Actions (including WLs):

Describe any violations or problems noted in previous inspection:

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

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: 04/07/2014	**Sampler(s):** Jen Weger, Mark Sumner; Cheryl Swanson, Ryan Coker, Harris Walters
Temperature (Deg C):	**pH (SU):**
Dissolved Oxygen (mg/L):	**Conductivity (umhos/cm):**
Total Residual Chlorine (mg/L): N/A	**Total Residual Chlorine - after Disinfection (mg/L):** N/A
Method of Chlorination: N/A	**Method of De-chlorination:** N/A
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: Due to rain event to the north, water level and flow velocity in Sutton Creek increased dramatically during sampling.	

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.dep.state.fl.us/labs/library/lab_sops.htm and/or http://www.dep.state.fl.us/water/sas/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.

(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 potential violation of facility permit limits. A 25% inhibition concentration (IC25) is the effluent concentration causing a 25% reduction in a biological response such as biomass or reproduction when compared to a control population. An IC25 of less than 100% in a chronic test may constitute exceedances of 62-302.530(20), 62-302.530(61) and/or a potential violation of facility permit limits. A no observed effect concentration (NOEC) less than 100% effluent in a chronic test may constitute an exceedance of 62-302.530(61) and/or a potential 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 potential violation of facility permit limits. Fecal coliform and enterococci results often are based on colony counts outside the acceptable range (B-qualifier). The dilutions performed on the sample did not yield results within the method acceptable range of 20- 60 colony forming units per plate. The B-qualifier does not affect data quality.

(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 $\pm$ 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. Qualitative collections are made using 20 dipnet sweeps (QA Rule SOP FS7420). Benthic macroinvertebrates were sorted and identified to the lowest practical taxonomic level, usually species.

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 DEP-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., or of 62-302.530(61).

(9) Definition of Qualifiers

A - Value reported is the mean of two or more determinations
B - Results based on colony counts outside the acceptable range.
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J - Estimated value
K - Actual value is known to be less than value given
L - Actual value is known to be greater than value given
N - Presumptive evidence of presence of material.
O - Sampled, but analysis lost or not performed.
Q - Sample held beyond normal holding time.
T - Value reported is less than the criterion of detection.
U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
V - Analyte was detected in both sample and method blank.
X - Too few individuals to calculate SCI value.
Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate
Z - Colonies were too numerous to count (TNTC)

Appendix D

Chain of Custody

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2014-03-31-20
FYI Blountstown WWTP Sampling Inspection

Requester: Jennifer G. Weger
Field Report Prepared By: J. Weger

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

Collected By: J. Weger, Mark Sumner
Sampling Agency: FDEP
Send Final Report To: Kim Allen

Lab ID *	Location: BLOUNTSTOWN WWT EFFLUENT GRAB 04/07/2014 JW DC MS			☐ Comp ☒ Grab	Collection (comp begin or grab) Eastern Date 04/07/14 Time 1015am Central	Composite end Date	Time	Eastern Central	Bottle Group(s)**
	Field ID			Tot Res Chlorine (mg/L): N/A	Diss Oxygen (mg/L)	Storet Station Number			A
	Matrix (include type e.g. Salt, Fresh, etc): Fresh	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number			
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments: YSI measurements not collected					
Lab ID *	Location: BLOUNTSTOWN WWT EFFLUENT COMPOS 04/07/2014 JW DC MS			☒ Comp ☐ Grab	Collection (comp begin or grab) Eastern Date 04/06/14 Time 1030am Central	Composite end Date 04/07/14 Time 10:30		Eastern Central	Bottle Group(s)**
	Field ID			Tot Res Chlorine (mg/L): N/A	Diss Oxygen (mg/L)	Storet Station Number			B
	Matrix (include type e.g. Salt, Fresh, etc): Fresh		pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number			
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments: YSI measurements not collected					
Lab ID *	Location: Blountstown WWTP			☐ Comp ☒ Grab	Collection (comp begin or grab) Eastern Date 04/07/13 Time 1000am Central	Composite end Date	Time	Eastern Central	Bottle Group(s)**
	Field ID: Field Blank			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number			E
	Matrix (include type e.g. Salt, Fresh, etc): DI H2O	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number			
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments: 2cld 1,4 Dioxane preserved 45min after sample collection					
Lab ID *	Location			☐ Comp ☐ Grab	Collection (comp begin or grab) Eastern Date Time Central	Composite 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					

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
J Weger	04/07/14 1300	n/d	[illegible]	4-7-14 13:00				

* Shaded Areas for Lab use only.
** Please see reverse side for Bottle Group information.

last revised October 1, 2003

1345 2 bioassay bottles
4/7/14 C. Reichert

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2014-03-31-20
FYI Blountstown WWTP Sampling Inspection

Requester: Jennifer G. Weger
Field Report Prepared By:

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

Collected By: Harris Walters, Cheryl Swanson, Ryan Coker
Send Final Report To: Kim Allen
Sampling Agency: FDEP

Lab ID*	Location / Field ID	Matrix / Temp (C) / pH	Collection / Composite	Tot Res Chlorine / Diss Oxygen / Storet Station Number	Sample Depth / Salinity / Sp Conductance / NPDES Number	Bottle Group(s)**
	BLOUNTSTOWN WWT CONTROL SITE - Rep 1 04/07/2014 HW CAS RC	Biology 20.8 8.05	☐ Comp ☒ Grab Collection (comp begin or grab) (Eastern) Central Date 4/7/14 Time 1040 Composite end Date Time Eastern Central	Diss Oxygen (mg/L) 6.04	Sample Depth ☒ m ☐ ft .5 ☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm) 45.8 NPDES Number	D
	Latitude 30.45435 ☐ dd ☐ dms Longitude 85.04930 ☐ dd ☐ dms	Comments: Test Site Sample Dup				
	BLOUNTSTOWN WWT CONTROL SITE - Rep 2 04/07/2014 HW CAS RC	Biology	☐ Comp ☒ Grab Collection (comp begin or grab) (Eastern) Central Date 4/7/14 Time 1040 Composite end Date Time Eastern Central	Diss Oxygen (mg/L)	Sample Depth ☐ m ☐ ft ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm) NPDES Number	D
	Latitude ☐ dd ☐ dms Longitude ☐ dd ☐ dms	Comments				
	BLOUNTSTOWN WWT CONTROL SITE - Rep 3 04/07/2014 HW CAS RC	Biology	☐ Comp ☒ Grab Collection (comp begin or grab) (Eastern) Central Date 4/7/14 Time 10 40 Composite end Date Time Eastern Central	Diss Oxygen (mg/L)	Sample Depth ☐ m ☐ ft ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm) NPDES Number	D
	Latitude ☐ dd ☐ dms Longitude ☐ dd ☐ dms	Comments				
	BLOUNTSTOWN WWT CONTROL SITE - Rep 4 04/07/2014 HW CAS RC	Biology	☐ Comp ☒ Grab Collection (comp begin or grab) (Eastern) Central Date 4/7/14 Time 1040 Composite end Date Time Eastern Central	Diss Oxygen (mg/L)	Sample Depth ☐ m ☐ ft ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm) NPDES Number	D
	Latitude ☐ dd ☐ dms Longitude ☐ dd ☐ dms	Comments				

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
Harris Walters	1411 4/7/14 BH	Hand					SIC	4-7-14 1615

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

Florida Department of Environmental Protection

Event ID *

Central Laboratory Sample Submittal Form

Request Number: RQ-2014-03-31-20
FYI Blountstown WWTP Sampling Inspection

Requester: Jennifer G. Weger — Field Report Prepared By:

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

Collected By: Harris Walters, Cheryl Swanson, Ryan Coker — Send Final Report To: Kim Allen

Sampling Agency: FDEP

Lab ID *	Location	Collection (comp begin or grab)	Composite end	Bottle Group(s)**
	BLOUNTSTOWN WWT CONTROL SITE 04/07/2014 HW CAS RC	☐ Comp ☒ Grab Date 4/7/14 Time 1040 Eastern Central	Date 4/7/14 Time 1040 Eastern Central	C, D
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L) 6.04	Storet Station Number
	Matrix (include type e.g. Salt, Fresh, etc) Fresh	Temp (C) 20.8 pH 6.09	Sample Depth .5 ☒ m ☐ ft	45.8 ☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm)
	Latitude 30.43408 ☐ dd ☐ dms	Longitude 85.04994 ☐ dd ☐ dms	Comments	NPDES Number

Lab ID *	Location	Collection (comp begin or grab)	Composite end	Bottle Group(s)**
	BLOUNTSTOWN WWT TEST SITE 04/07/2014 HW CAS RC	☐ Comp ☒ Grab Date 4/7/14 Time 1020 Eastern Central	Date 4/7/14 Time Eastern Central	C, D
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L) 6.43	Storet Station Number
	Matrix (include type e.g. Salt, Fresh, etc) Fresh	Temp (C) 20.9 pH 8.06	Sample Depth 5 ☒ m ☐ ft	135 ☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm)
	Latitude 30.43435 ☐ dd ☐ dms	Longitude 85.04930 ☐ dd ☐ dms	Comments	NPDES Number

Lab ID *	Location	Collection (comp begin or grab)	Composite end	Bottle Group(s)**
	BLOUNTSTOWN WWT DOWNSTREAM SITE 04/07/2014 HW CAS RC	☐ Comp ☒ Grab Date 4/7/14 Time Eastern Central	Date Time Eastern Central	F, G
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number
	Matrix (include type e.g. Salt, Fresh, etc) Fresh	Temp (C) pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Comments G=SCI Not Sampled	NPDES Number

Lab ID *	Location	Collection (comp begin or grab)	Composite end	Bottle Group(s)**
	BLOUNTSTOWN WWT FIELD BLANK 04/07/2014 HW CAS RC	☐ Comp ☒ Grab Date 4/7/14 Time Eastern Central	Date Time Eastern Central	E
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number
	Matrix (include type e.g. Salt, Fresh, etc) DI water	Temp (C) pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Comments Not Sampled	NPDES Number

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
Harris Walters	4/7/14 1411	Hand					SK	4-7-14 2:15

* 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-2014-03-31-20
FYI Blountstown WWTP Sampling Inspection

Requester: Jennifer G. Weger
Field Report Prepared By:

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

Collected By: Marcel Ross
Send Final Report To: Kim Allen
Sampling Agency: FDEP TMD

Lab ID *	Location			Collection (comp begin or grab) Eastern	Composite end Eastern	Bottle Group(s)**
	Blountstown WWTP			☑ Comp ☐ Grab Date 4/8 Time 7:00 AM Central	Date 4/9 Time 7 AM Central	A
	Field ID: EFF-1			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number
	Matrix (include type e.g. Salt, Fresh, etc): 10X	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			Collection (comp begin or grab) Eastern	Composite end Eastern	Bottle Group(s)**
				☐ Comp ☐ Grab Date Time Central	Date Time Central	
	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			Collection (comp begin or grab) Eastern	Composite end Eastern	Bottle Group(s)**
				☐ Comp ☐ Grab Date Time Central	Date Time Central	
	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			Collection (comp begin or grab) Eastern	Composite end Eastern	Bottle Group(s)**
				☐ Comp ☐ Grab Date Time Central	Date Time Central	
	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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[signature]	4/9 2:30	FD					[signature]	4/9/14, 2:37

* 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-2014-03-31-20
FYI Blountstown WWTP Sampling Inspection

Requester: Jennifer G. Weger
Field Report Prepared By: J. Weger

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

Collected By: J. Weger
Sampling Agency: FDEP WCAP
Send Final Report To: Kim Allen

Lab ID *										
	Location: Blountstown WWTP			☒ Comp ☐ Grab	Collection (comp begin or grab) Eastern Date 04/10/14 Time 8:00 am Central		Composite end Eastern Date 04/11/14 Time 8:00 am Central		Bottle Group(s)**	
	Field ID: Effluent Composite - Tox #3			Tot Res Chlorine (mg/L)		Diss Oxygen (mg/L)		Storet Station Number		B
	Matrix (include type e.g. Salt, Fresh, etc): Fresh	Temp (C)	pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)		NPDES Number		
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments: Bottle date & time is incorrect; use date above						

Lab ID *										
	Location			☐ Comp ☐ Grab	Collection (comp begin or grab) Eastern Date Time Central		Composite end Eastern Date Time 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 (comp begin or grab) Eastern Date Time Central		Composite end Eastern Date Time 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 (comp begin or grab) Eastern Date Time Central		Composite end Eastern Date Time 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						

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	04/11/14 BOS	n/a					[signature]	4-11-14 1:10 pm

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group Information.

last revised October 1, 2003

Appendix E

Physical/Chemical and Habitat Assessment field sheets

FDEP FORM FD 9000-3: PHYSICAL/CHEMICAL CHARACTERIZATION FIELD SHEET

SAMPLE ID _____ ORG ID _____ LATITUDE 30.43408
COUNTY Calhoun STORET # _____ LONGITUDE 85.04994
DATE 4/7/2014 TIME 1020 SAMPLING AGENCY _____
SITE NAME Blountstown WWTP
FIELD ID/NAME Test Site RECEIVING BODY OF WATER Sutton 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)

Landscape Development Intensity Index (LDI)

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 : 718 Right Bank : 718

Hydrologic Modification Score (per FT 3101)

Typical Width (m) Depth (m)/Velocity (m/sec) Transect
5 m wide
m/s | 7.3 m/s | m/s
m deep | 1 m deep | m deep

High Water Mark: 0.75 + 1 = 1.75
(m) (above present water level) (present depth) (above bed)

Artificially Impounded ☐ Yes ☒ No

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) :

Smothering of Substrates
Sand Smothering: None ☒ Slight ☐ Moderate ☐ Severe ☐
Silt Smothering: None ☐ Slight ☐ Moderate ☐ Severe ☒
Algae Smothering: None ☐ Slight ☒ Moderate ☐ Severe ☐

SUBSTRATE TYPE
Assessment Tool: ☑ SCI ☑ RPS ☑ LVS ☐ LCI ☐ BioRecon

	% Coverage	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)		10	10
Undercut Banks / Roots		3	0
Leaf Packs or Mat		2	0
Aquatic Vegetation			
Rock or Shell Rubble..			
Sand.....		5	6
Mud / Muck / Silt			
Other			
Other			

WATER QUALITY

	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
Top :	.3	20.9	8.6	6.43	71.7	135		0.3
Mid:								☐ VOB
Bottom								TOTAL DEPTH

Jumping 118 - 176 ~1.25
Meter ID: # 8

Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐
Water Surface Oils Normal ☒ Sheen ☐ Globs ☐ Slick ☐ Other ☐

Water Sample Taken? ☒ Yes ☐ No
Sample Preserved? ☒ Yes ☐ No
Lot Number:_____ Exp:_____

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

Algae Sample Taken? ☒ Yes ☐ No
Sample Preserved? ☐ Yes ☒ No
Lot Number:_____ Exp:_____

Clarity Clear ☐ Slightly Turbid ☐ Turbid ☒ Opaque ☐

ABUNDANCE

	Not Obs.	Rare	Common	Abundant
Periphyton:	☐	☒	☐	☐
Fish:	☐	☐	☒	☐
Aquatic Plants:	☐	☒	☐	☐
Iron/Sulfur Bacteria:	☒	☐	☐	☐

System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) ☐

AMBIENT FIELD CONDITIONS / NOTES:
Cond. jumped from 118 - 176
Effluent hugged right bank upon release
less deep than Control Site LVS < 2m² so no plants
☒ The antecedent hydrologic conditions have been met to my best knowledge.

Effluent @ 0.001 grecord 604
DO% 92.4
pH 7.-
Opmgic 2.-
to record per SOP

SAMPLING TEAM Harris Walters, Cheryl Swanson, Ryan Coker
SIGNATURE: Harris Walters
DATE : 4/7/14

Revision Date: September 19, 2012

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):	RECEIVING BODY OF WATER:
		04/07/14	Sutton Creek

REMARKS:	COUNTY:	LOCATION:	FIELD ID/NAME:
	Calhoun	Blountstown WWTP	Test Site

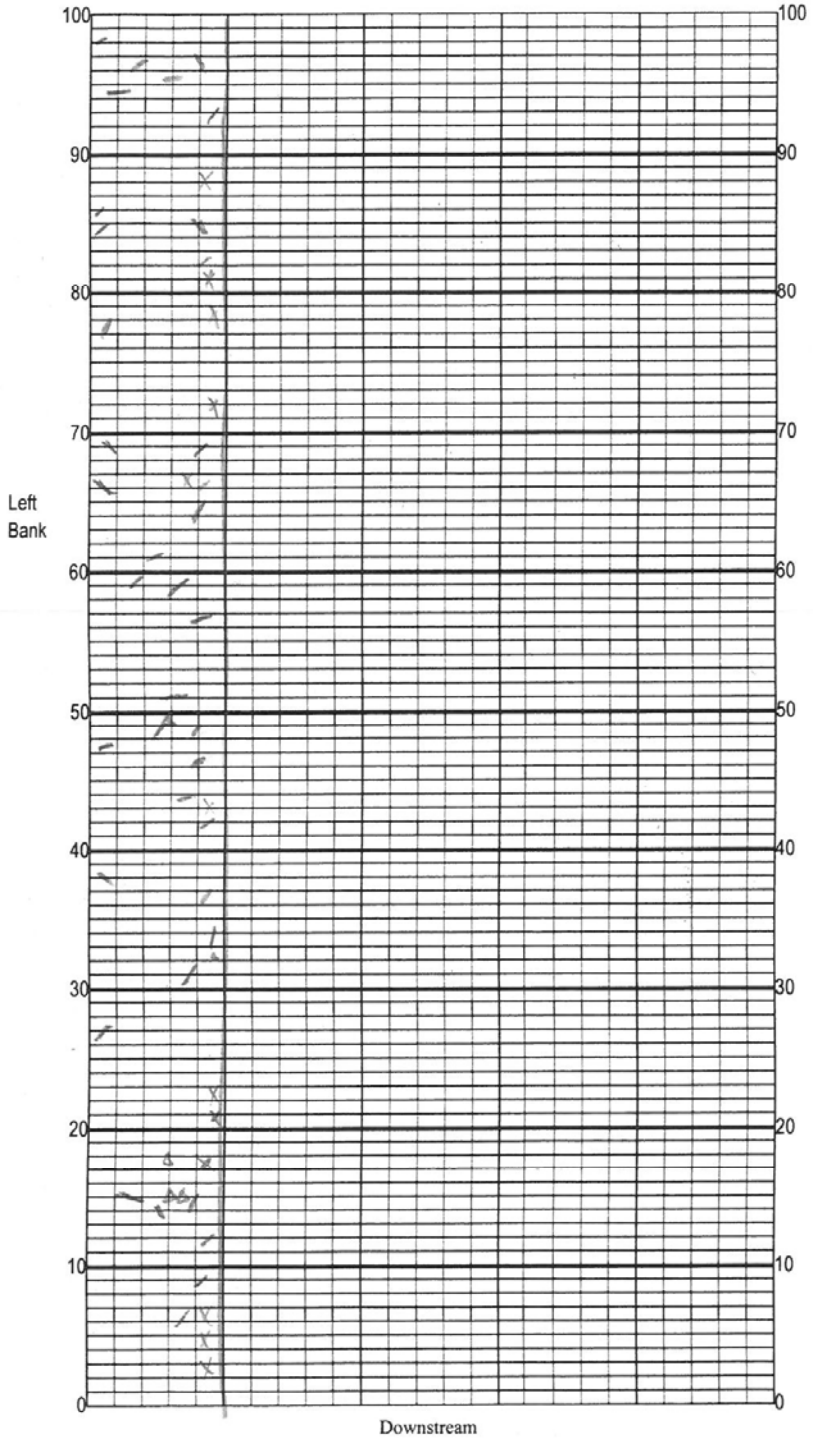
Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 5	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 12 11	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed 10 9 8 7 6	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered (5) 4 3 (2) 1
Substrate Availability 7	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 8 (7) 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity 26	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25 20 19 18 17 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.01 5 4 3 2 1
Habitat Smothering 12 RC Primary Score ~~44~~ 44	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 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, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components **Artificial Channelization** 20	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks. 20 19 18 17 16	Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered. 15 14 13 12 11	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area. 10 9 8 7 6	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks. 5 4 3 2 1
Bank Stability Right Bank 10 Left Bank 10	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankful to top of bank. 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 18 Left Bank 18	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 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 16 Left Bank 10 Secondary Score 90	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). 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

124 **TOTAL SCORE**

Date:	Analyst:	Signature:
4/7/14	Harris Watts	Harris Watts

Form FD 9000-5 Revision Date: December 19, 2011

DEP-SOP-001/01 Form FD 9000-4
Stream/River Habitat Sketch Sheet



Location: Blountstown WWTP Test Site

Date: 04/07/14

Sampler: Harris Walters

100 m: Latitude	30.43408
Longitude	85.04994
0 m: Latitude	
Longitude	

Substrates: Code key, draw proportionate habitat abundance.		%
/	Snags	~8
X	Roots/undercut banks	<2
Δ	Leaf Packs (or mats)	<2
0	Aquatic Macrophytes	
	Pools	total # observed = ____ # range expected = ____

Average width 5 m

Average depth 1.0 m

Velocity measured at 90 meter mark.

WQ & chemistry taken at 90 meter mark.

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

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

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

Plants observed / other notes:

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

Revision Date: June 2, 2011

FDEP FORM 9000-25: RAPID PERIPHYTON SURVEY FIELD SHEET

Site: Blountstown WWTP- Test Site | County: Calhoun | Date: 04/07/14 | Investigators: H. Walters, C. Swanson, R. Coker

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
0	1	N		
	2	N		
	3	N	E	
	4	N	E	
	5	N		
	6	N		
	7	N		
	8	N		
	9	N		
10	1	N		
	2	N		
	3		E	
	4	N	E	
	5	N	E	
	6	N	E	
	7	N		
	8	3		
	9	N		
20	1	N		
	2	N		
	3	N		
	4	N		
	5	N		
	6	N		
	7	N		
	8	N		
	9	N		
30	1	N		
	2	N		
	3	N	E	
	4	N	E	
	5	N	E	
	6	N	E	
	7	N		
	8	N		
	9	3		
40	1	N		
	2	N		
	3	N		
	4	N		
	5	N		
	6	4		
	7	N		
	8	3		
	9	N		
50	1	N		
	2	N		
	3	N		
	4	N		
	5	N		
	6	N		
	7	N		
	8	N		
	9	N		

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
60	1	N		
	2	N	E	
	3	N	E	
	4	N	E	
	5	N	E	
	6	N	E	
	7	N	E	
	8	N	E	
	9	N	E	
70	1	N		
	2	N		
	3	N	E	
	4	N	E	
	5	N	E	
	6	N	E	
	7	N	E	
	8	N	E	
	9	N	E	
80	1	N		
	2	N		
	3	N	E	
	4	N	E	
	5	N	E	
	6	N	E	
	7	N	E	
	8	N	E	
	9	N	E	
90	1	N		
	2		E	
	3		E	
	4		E	
	5		E	
	6		E	
	7		E	
	8		E	
	9		E	
100	1	N		
	2		E	
	3		E	
	4		E	
	5		E	
	6		E	
	7		E	
	8		E	
	9		E	

Secchi depth	.3
# points ranked 4-6	0
total points assessed	99
% points ranked 4-6	0

Check accompanying data collected at same site/date.	
Algal mat sample	—
Linear Veg Survey	✓
Habitat Assessment	✓
SCI/~~Biorecon~~	✓
Water sample	✓

RQ- 2014-03-21-20

Algal Thickness Rank	
N	rough, no algae, slimy, algae up to 1mm
3	>1mm - 6mm
4	>6mm - 20mm
5	>20mm - 10 cm
6	>10 cm

Entered CAS 4/21/14

Record "N" and check "Estimated" for points deeper than the Secchi depth; algae are presumed absent. Check "Estimated" if thickness estimated for deep points which can be seen but not reached.

Record "X" for points shallower than Secchi depth for which substrate cannot be seen or reached with the hand. No estimated rank.

Record canopy cover as the number of small densiometer quadrants (out of 96) that HAVE canopy cover. Measure facing upstream at point 4, 5, or 6.

Collect 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%.

Form FD9000-28 Water Field Form 031306_FD9000-28.doc

SITE NAME: Blountstown WWTP - Test Site DATE: 04/07/14 TIME: 1020 (military) (EST) ~~CST~~ DEPTH^: 0.1 ft (m) FIELD ID:

SAMPLING TEAM MEMBERS	WQ MEASUREMENTS	DOCUMENTATION	SAMPLE COLLECTION	PRESERVATION	PRESERVATION CHECK
Harris Walters SCI, H_2O	X	X	X	X	X
Cheryl Swanson SCI, H_2O		X	X		
Ryan Coker					

SAMPLING EQUIPMENT

- [x] Sample Container
- [ ] Pole
- [ ] Pump ID#: _____
- [ ] Tubing type: _____
- [ ] Other _____
- [ ] Other _____

WATER QUALITY MEASUREMENTS

Instrument ID: # 8

COLLECTION MODE

- [x] Wading
- [ ] Diving
- [ ] From Shore
- [ ] Other _____

Via Boat
- [ ] Canoe
- [ ] Electric Motor
- [ ] Gasoline Motor

Parameter Suite	Parameter(s)/Method	Matrix Code*	Preservation**	Preservative Lot #	pH Check	# Bottles***
Preserved Nutrients	[x] TKN [x] TP [x] NOx [x] NH3 [x] TOC [ ] Total N [ ] Other:	SW	[x] Ice [x] H_2SO_4		[x] <2 ✓	1
Filtered Nutrients	[x] oP [ ] Other:	SW	[x] Ice [x] .45 um Filter			1
Unpreserved Nutrients	[ ] NO_2 [ ] NO_3 [x] SO4 [ ] Other:	SW	[x] Ice			1
Physical/Aggregate Properties	[ ] TDS [x] TSS [ ] TS [x] Turbidity [x] Alk [x] Color [x] Other: CL, F	SW	[x] Ice			1
Chlorophyll	[ ] CHL-PPTN-W [x] CHL-CORR-W	SW	[x] Ice			1
BOD	[x] BOD-INHB [ ] BOD-UNIN	SW	[ ] Ice			1
Microbiology	MF: [ ] E coli [ ] T Coli [x] F Coli [ ] Entero [ ] F Strep	SW	[x] Ice			1
Macroinvertebrates	[ ] MI-FW-QLDC [ ] MI-FW-QLBR [ ] MI-FW-QNNC [ ] MI-MN-QNNC [x] MI-FW-QNAC	SW	[x] Formalin			2
Phytoplankton	[ ] PKD-QN-C [ ] DTY-QN-C	W	[ ] Lugol's			
Periphyton	[x] PRN-QL-C [x] DTM-QL-C [ ] PRN-QN-C [ ] DTM-QN-C	SW	[ ] Formalin X			1
AGP	[x] AA-AGP [ ] AA-LIM-NUT	SW	[x] Ice			
Metals	[x] W-ICP [ ] W-FIAS [x] W-ICPMS [ ] W-ICP-Tr	SW	[x] HNO_3		[x] <2	
Filtered Metals	[ ] W-ICP-F [ ] W-FIAS-F [ ] W-ICPMS-F [ ] W-ICP-Tr-F	W	[ ] HNO_3 [ ] .45 um Filter		[ ] <2	
Mercury	[ ] W-HG-AF	W				
BaseNeutral / Acid Extractable	[x] W-BNA [ ] W-AE [ ] W-BN [ ] W-PAH	SW	[x] Ice ✓			
	[ ] W-FL-PRO [ ] W [ ] Other:	W	[ ] Ice [ ] H_2SO_4		[ ] <2	
Pesticides	[ ] W-PEST-CL [ ] W-PCB [ ] W PEST-NP [ ] W-PSCL-PCB	W	[ ] Ice			
	[ ] W-NP-AA-SF [ ] W-PC-AA-SF [ ] W-PSHRB-NP [ ] W-SLFN-UREA [ ] W-SULFN-LC [ ] Other:	W	[ ] Ice			
	[ ] W-ACIDHERB	W	[ ] Ice [ ] H_2SO_4			
	[ ] W-CARB	W	[ ] Ice [ ] MCAA			
Purgeables	[ ] W-VOC-MS	W	[ ] Ice			
	[ ] W-VOC-MS-A	W	[ ] Ice [ ] HCl			
Bioassay	Specify Test:	W	[ ] Ice			
OTHER		W	[ ] Other:			

Notes: W-1-4-DIOX SW ✓ 2

W-SUC-AA-R SW ✓ 2

Use one line for each set of sample (as supplied by the laboratory) containers. Use separate sheet for field or laboratory duplicate or blank or different water depth

^Enter "S" for surface if collected at a depth less than or equal to 1 foot

*Matrix Codes (Insert prefix): **SW** = Surface Water **GW** = Groundwater **DW** = Drinking Water **WW** = Wastewater **O** = Other: _____

****PRESERVATIVES:1 ml added unless otherwise noted**

***Enter number of containers supplied by the laboratory for the test (e.g., 3 for volatile organics, etc.)

DEP Bureau of Laboratories Water Sample Collection Record

(Use with FDEP SOP-001/01 Form FD 9000-3 Physical/Chemical Characterization Field Sheet)

FDEP FORM FD 9000-3: PHYSICAL/CHEMICAL CHARACTERIZATION FIELD SHEET

SAMPLE ID _____ ORG ID _____ LATITUDE 30.43435
COUNTY Calhoun STORET # _____ LONGITUDE 85.04930
DATE 4/7/2014 TIME 1040 SAMPLING AGENCY _____
SITE NAME Blountstown WWTP
FIELD ID/NAME Control Site RECEIVING BODY OF WATER Sutton 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)

Landscape Development Intensity Index (LDI): _____

Local Watershed Erosion (select one): ☐ None ☐ Slight ☐ Moderate ☐ Heavy
Local Watershed NPS Pollution: ☐ No evidence ☐ Slight ☐ Moderate ☐ Heavy

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

Width of Riparian Vegetation (m) on Each Buffer Side
Left Bank: >18 Right Bank: >18

Hydrologic Modification Score (per FT 3101): _____

	m/s	7.33 m/s	m/s
	m deep	1 m deep	m deep

High Water Mark: 0.75 (m) + 1 (above present water level) = 1.75 (present depth) (above bed)

Artificially Impounded: ☐ Yes ☒ No

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):

Smothering of Substrates

	None	Slight	Moderate	Severe
Sand Smothering:	☒	☐	☐	☐
Silt Smothering:	☐	☐	☐	☑
Algae Smothering:	☐	☒	☐	☐

SUBSTRATE TYPE
Assessment Tool: ☒ SCI ☒ RPS ☒ LVS ☐ LCI ☐ BioRecon

	% Coverage	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)		6	5
Undercut Banks / Roots		6	45
Leaf Packs or Mat		2	0
Aquatic Vegetation			
Rock or Shell Rubble..			
Sand.....		5	0
Mud / Muck / Silt			
Other			
Other			

WATER QUALITY

	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
Top:	0.1	20.8	8.05	6.04	67.9	45.8		0.3
Mid:								☐ VOB
Bottom								TOTAL DEPTH
								1.5

Meter ID: #8

Water Odors Normal ☑ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐

Water Surface Oils Normal ☑ Sheen ☐ Globs ☐ Slick ☐ Other ☐

Water Sample Taken? ☒ Yes ☐ No
Sample Preserved? ☒ Yes ☐ No
Lot Number: _____ Exp: _____

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

Algae Sample Taken? ☒ Yes ☐ No
Sample Preserved? ☐ Yes ☒ No
Lot Number: _____ Exp: _____

Clarity Clear ☐ Slightly Turbid ☐ Turbid ☑ Opaque ☐

ABUNDANCE

	Not Obs.	Rare	Common	Abundant
Periphyton:	☐	☒	☐	☐
Fish:	☐	☐	☒	☐
Aquatic Plants:	☐	☒	☐	☐
Iron/Sulfur Bacteria:	☑	☐	☐	☐

System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) ☐ _____

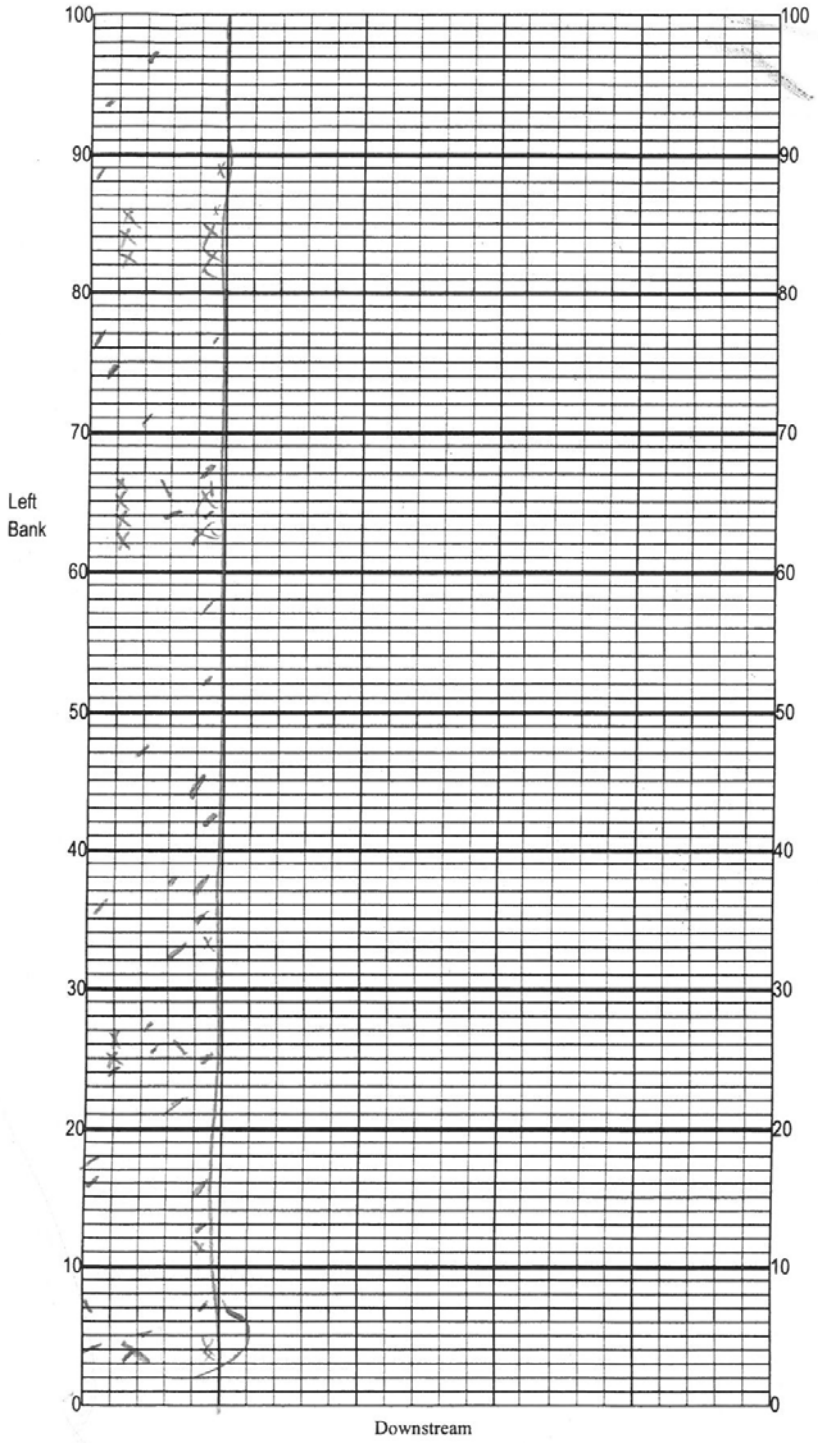
AMBIENT FIELD CONDITIONS / NOTES:
Site deep in middle, steep banks, + soft bottom
LVS < 2m² - no plants to record per SOP

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

SAMPLING TEAM Harris Walters, Cheryl Swanson, Ryan Coker
SIGNATURE: Harris Walters
DATE: 4/7/14

Revision Date: September 19, 2012

DEP-SOP-001/01 Form FD 9000-4
Stream/River Habitat Sketch Sheet



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

Location: Blountstown WWTP Control Site

Date: 04/07/14

Sampler: Harris Walters

100 m: Latitude	GIS
Longitude	GIS
0 m: Latitude	30.43425
Longitude	85.04930

Substrates: Code key, draw proportionate habitat abundance.

		%
1	Snags	8
X	Roots/undercut banks	
Δ	Leaf Packs (or mats)	<2
0	Aquatic Macrophytes	
	Pools	total # observed = ____ # range expected = ____

Average width 5 m
Average depth 1 m

Velocity measured at ____ meter mark.

WQ & chemistry taken at ____ meter mark.

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

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

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

Plants observed / other notes:

23.6 to the 0

Revision Date: June 2, 2011

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):	RECEIVING BODY OF WATER:
		04/07/14	Sutton Creek

REMARKS:	COUNTY:	LOCATION:	FIELD ID/NAME:
	Calhoun	Blountstown WWTP	Control Site

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 7	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 12 11	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed snag, root 10 9 8 (7) 6	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered 5 4 3 (2) 1
Substrate Availability 7	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 8 (7) 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity 20	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec (1/2 sec) ≥0.33 0.31 0.29 0.27 >0.25 (20) 19 18 17 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.01 5 4 3 2 1
Habitat Smothering 12 Primary Score 46	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 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, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components **Artificial Channelization** 20	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks. (20) 19 18 17 16	Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered. 15 14 13 12 11	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area. 10 9 8 7 6	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks. 5 4 3 2 1
Bank Stability Right Bank 10 Left Bank 10	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankful to top of bank. 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 9 Right Bank 10 16 Left Bank 8	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 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 10 Left Bank 10 Secondary Score 79	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). 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

125 **TOTAL SCORE**

Date:	Analyst:	Signature:
4/7/14	Harris Walters	Harris Walters

Form FD 9000-5 Revision Date: December 19, 2011

FDEP FORM 9000-25: RAPID PERIPHYTON SURVEY FIELD SHEET

Site: Blountstown WWTP- Control Site | County: Calhoun | Date: 04/07/14 | Investigators: H. Walters, C. Swanson, R. Coker

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
0	1	N			60	1	N		
	2		J			2		J	
	3					3			
	4					4			
	5					5			
	6					6			
	7					7			
	8		J			8		J	
	9	N				9	N		
10	1	N			70	1	N		
	2		J			2		J	
	3					3			
	4					4			
	5					5			
	6					6			
	7					7			
	8		J			8		J	
	9	N				9	N		
20	1	N			80	1	N		
	2		J			2		J	
	3					3			
	4					4			
	5					5			
	6					6			
	7					7			
	8		J			8		↓	
	9	N				9	N		
30	1	N			90	1	N		
	2		J			2		J	
	3					3			
	4					4			
	5					5			
	6					6			
	7					7			
	8		J			8		↓	
	9	N				9	N		
40	1	N			100	1	3		
	2		J			2	N	J	
	3					3			
	4					4			
	5					5			
	6					6		J	
	7					7			
	8		J			8			
	9	N				9	N		
50	1	N							
	2		J						
	3								
	4								
	5								
	6								
	7								
	8		J						
	9	N							

Secchi depth	3m

# points ranked 4-6	0
total points assessed	99
% points ranked 4-6	0

Check accompanying data collected at same site/date.	
Algal mat sample	—
Linear Veg Survey	✓
Habitat Assessment	✓
~~SCI/Biorecon~~	✓
Water sample	✓

RQ-2014-03-31-20

Algal Thickness Rank	
N	rough, no algae, slimy, algae up to 1mm
3	>1mm - 6mm
4	>6mm - 20mm
5	>20mm - 10 cm
6	>10 cm

entered CAS 4/21/14

Record "N" and check "Estimated" for points deeper than the Secchi depth; algae are presumed absent. Check "Estimated" if thickness estimated for deep points which can be seen but not reached.

Record "X" for points shallower than Secchi depth for which substrate cannot be seen or reached with the hand. No estimated rank.

Record canopy cover as the number of small densiometer quadrants (out of 96) that HAVE canopy cover. Measure facing upstream at point 4, 5, or 6.

Collect 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%.

Form FD9000-28 Water Field Form 031306_FD9000-28.doc

SITE NAME: Blountstown WWTP - Control Site DATE: 04/07/14 TIME 1040 (military) ~~EST~~ ~~CST~~ DEPTH^: 0.1 ft (m) FIELD ID: _____

SAMPLING TEAM MEMBERS	WQ MEASUREMENTS	DOCUMENTATION	SAMPLE COLLECTION	PRESERVATION	PRESERVATION CHECK
Harris Walters				X	X
Cheryl Swanson SCJ, H_2O	X	X	X		
Ryan Coker SCJ, H_2O	X		X		

SAMPLING EQUIPMENT
- [X] Sample Container
- [ ] Pole
- [ ] Pump ID#: _____
- [ ] Tubing type: _____
- [ ] Other _____
- [ ] Other _____

WATER QUALITY MEASUREMENTS
Instrument ID: # 8

COLLECTION MODE
- [X] Wading
- [ ] Diving
- [ ] From Shore
- [ ] Other _____

Via Boat
- [ ] Canoe
- [ ] Electric Motor
- [ ] Gasoline Motor

Parameter Suite	Parameter(s)/Method	Matrix Code*	Preservation**	Preservative Lot #	pH Check	# Bottles ***
Preserved Nutrients	[X]TKN [X]TP [X]NOx [X]NH3 [X]TOC [ ]Total N [ ]Other:	SW	[✓]Ice [ ] H_2SO_4		[✓]<2	1
Filtered Nutrients	[X]oP [ ]Other:	SW	[✓]Ice [ ].45 um Filter			1
Unpreserved Nutrients	[ ]NO_2 [ ]NO_3 [X]SO4 [ ]Other:	SW	[✓]Ice			1
Physical/Aggregate Properties	[ ]TDS [X]TSS [ ]TS [X]Turbidity [X]Alk [X]Color [X]Other: Cl, F	SW	[✓]Ice			1
Chlorophyll	[ ]CHL-PPTN-W [X] CHL-CORR-W	SW	[✓]Ice			1
BOD	[X]BOD-INHB [ ]BOD-UNIN	SW	[✓]Ice			1
Microbiology	MF: [ ] E coli [ ] T Coli [X] F Coli [ ] Entero [ ] F Strep	W	[ ] Ice			
Macroinvertebrates	[ ] MI-FW-QLDC [ ] MI-FW-QLBR [ ] MI-FW-QNNC [ ] MI-MN-QNNC [X] MI-FW-QNAC	SW	[✓]Formalin			2
Phytoplankton	[ ]PKD-QN-C [ ]DTY-QN-C	W	[ ]Lugol's			
Periphyton	[X]PRN-QL-C [X]DTM-QL-C [ ]PRN-QN-C [ ]DTM-QN-C	SW	[ ]Formalin			1
AGP	[X]AA-AGP [ ]AA-LIM-NUT	SW	[✓]Ice			
Metals	[X]W-ICP [ ]W-FIAS [X]W-ICPMS [ ]W-ICP-Tr	SW	[✓]HNO_3		[✓]<2	
Filtered Metals	[ ]W-ICP-F [ ]W-FIAS-F [ ]W-ICPMS-F [ ]W-ICP-Tr-F	W	[ ]HNO_3 [ ].45 um Filter		[ ]<2	
Mercury	[ ]W-HG-AF	W				
BaseNeutral / Acid Extractable	[X]W-BNA [ ]W-AE [ ]W-BN [ ]W-PAH	SW	[✓]Ice			
	[ ]W-FL-PRO [ ]W [ ]Other:	W	[ ] Ice [ ] H_2SO_4		[ ]<2	
Pesticides	[ ]W-PEST-CL [ ]W-PCB [ ]W PEST-NP [ ]W-PSCL-PCB	W	[ ] Ice			
	[ ]W-NP-AA-SF [ ]W-PC-AA-SF [ ]W-PSHRB-NP [ ]W-SLFN-UREA [ ] W-SULFN-LC [ ]Other:	W	[ ] Ice			
	[ ]W-ACIDHERB	W	[ ] Ice [ ] H_2SO_4			
	[ ] W-CARB	W	[ ] Ice [ ]MCAA			
Purgeables	[ ] W-VOC-MS	W	[ ] Ice			
	[ ]W-VOC-MS-A	W	[ ] Ice [ ] HCl			
Bioassay	Specify Test:	W	[ ] Ice			
OTHER		W	[ ] Other:			

Notes: W-1-4-Diox SW ✓ 2

W-SUC-AA-R SW ✓ 2

Use one line for each set of sample (as supplied by the laboratory) containers. Use separate sheet for field or laboratory duplicate or blank or different water depth

^Enter "S" for surface if collected at a depth less than or equal to 1 foot

*Matrix Codes (Insert prefix): **SW** = Surface Water **GW** = Groundwater **DW** = Drinking Water **WW** = Wastewater **O** = Other: _____

****PRESERVATIVES:1 ml added unless otherwise noted**

***Enter number of containers supplied by the laboratory for the test (e.g., 3 for volatile organics, etc.)

DEP Bureau of Laboratories Water Sample Collection Record

(Use with FDEP SOP-001/01 Form FD 9000-3 Physical/Chemical Characterization Field Sheet)

Appendix F

Chemical analysis of effluent and receiving water

Date_Sampled	Field_Sample_ID	SCH_Group	Component	Result	Units	MDL	PQL
4/7/2014 10:15	EFFLUENT GRAB	AGP/LN	Algal Growth Potential	134	mg DryWt/L	0.3	0.9
4/7/2014 10:15	EFFLUENT GRAB	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.81 I	ug/L	0.55	1.7
4/7/2014 10:15	EFFLUENT GRAB	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.40 U	ug/L	0.4	1.2
4/7/2014 10:15	EFFLUENT GRAB	Metals	Aluminum	165	ug/L	5	20
4/7/2014 10:15	EFFLUENT GRAB	Metals	Arsenic	0.25 U	ug/L	0.25	1
4/7/2014 10:15	EFFLUENT GRAB	Metals	Cadmium	0.050 U	ug/L	0.05	0.2
4/7/2014 10:15	EFFLUENT GRAB	Metals	Calcium	29.3	mg/L	0.075	0.3
4/7/2014 10:15	EFFLUENT GRAB	Metals	Chromium	0.30 U	ug/L	0.3	1.2
4/7/2014 10:15	EFFLUENT GRAB	Metals	Copper	0.85 I	ug/L	0.5	1
4/7/2014 10:15	EFFLUENT GRAB	Metals	Iron	130	ug/L	30	120
4/7/2014 10:15	EFFLUENT GRAB	Metals	Lead	0.20 U	ug/L	0.2	0.8
4/7/2014 10:15	EFFLUENT GRAB	Metals	Magnesium	13.6	mg/L	0.04	0.16
4/7/2014 10:15	EFFLUENT GRAB	Metals	Nickel	0.82 I	ug/L	0.25	1
4/7/2014 10:15	EFFLUENT GRAB	Metals	Potassium	11.2	mg/L	0.3	1.2
4/7/2014 10:15	EFFLUENT GRAB	Metals	Selenium	0.20 U	ug/L	0.2	0.8
4/7/2014 10:15	EFFLUENT GRAB	Metals	Silver	0.025 U	ug/L	0.025	0.1
4/7/2014 10:15	EFFLUENT GRAB	Metals	Sodium	64.9	mg/L	0.5	2
4/7/2014 10:15	EFFLUENT GRAB	Metals	Zinc	13 I	ug/L	5	20
4/7/2014 10:15	EFFLUENT GRAB	Microbiology	Fecal Coliforms-Membrane Filter	6.9E+03 B	cfu/100 mL	100	100
4/7/2014 10:15	EFFLUENT GRAB	Nutrients	Alkalinity	74	mg CaCO3/L	0.65	2.5
4/7/2014 10:15	EFFLUENT GRAB	Nutrients	Ammonia-N	0.41	mg N/L	0.01	0.025
4/7/2014 10:15	EFFLUENT GRAB	Nutrients	Chloride	78 A	mg Cl/L	2	5
4/7/2014 10:15	EFFLUENT GRAB	Nutrients	Color (true)	13	PCU	2.5	6
4/7/2014 10:15	EFFLUENT GRAB	Nutrients	Dissolved Oxygen	8.2	umhos/cm		
4/7/2014 10:15	EFFLUENT GRAB	Nutrients	Fluoride	0.40	mg F/L	0.035	0.1
4/7/2014 10:15	EFFLUENT GRAB	Nutrients	Kjeldahl Nitrogen	1.3	mg N/L	0.08	0.2
4/7/2014 10:15	EFFLUENT GRAB	Nutrients	NO2NO3-N	6.8	mg N/L	0.2	0.5
4/7/2014 10:15	EFFLUENT GRAB	Nutrients	O-Phosphate-P	0.053	mg P/L	0.008	0.02
4/7/2014 10:15	EFFLUENT GRAB	Nutrients	Organic Carbon	4.4	mg C/L	0.5	1
4/7/2014 10:15	EFFLUENT GRAB	Nutrients	pH	6.8	m		
4/7/2014 10:15	EFFLUENT GRAB	Nutrients	Sample Depth	0.2	mg/L		
4/7/2014 10:15	EFFLUENT GRAB	Nutrients	Specific Conductance	604	C		
4/7/2014 10:15	EFFLUENT GRAB	Nutrients	Sulfate	69 A	mg SO4/L	2	5

Date_Sampled	Field_Sample_ID	SCH_Group	Component	Result	Units	MDL	PQL
4/7/2014 10:15	EFFLUENT GRAB	Nutrients	Temperature				
4/7/2014 10:15	EFFLUENT GRAB	Nutrients	Total-P	0.19	mg P/L	0.005	0.05
4/7/2014 10:15	EFFLUENT GRAB	Nutrients	Turbidity	2.7 A	NTU	0.1	0.1
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Alachlor	0.060 U	ug/L	0.06	0.24
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Ametryn	0.010 U	ug/L	0.01	0.04
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Atrazine	0.038 I	ug/L	0.01	0.04
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Atrazine Desethyl	0.025 I	ug/L	0.01	0.04
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Atrazine Desisopropyl	0.010 U	ug/L	0.01	0.04
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Azinphos Methyl	0.020 U	ug/L	0.02	0.08
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Bromacil	0.040 UJ	ug/L	0.04	0.16
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Butylate	0.020 U	ug/L	0.02	0.08
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Chlorpyrifos Ethyl	0.010 U	ug/L	0.01	0.04
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Chlorpyrifos Methyl	0.010 U	ug/L	0.01	0.04
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Demeton	0.024 U	ug/L	0.024	0.096
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Diazinon	0.010 U	ug/L	0.01	0.04
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Disulfoton	0.0050 U	ug/L	0.005	0.02
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Ethion	0.010 U	ug/L	0.01	0.04
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Ethoprop	0.0050 U	ug/L	0.005	0.02
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Fenamiphos	0.030 U	ug/L	0.03	0.12
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Fonofos	0.010 U	ug/L	0.01	0.04
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Hexazinone	0.030 UJ	ug/L	0.03	0.12
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Malathion	0.010 U	ug/L	0.01	0.04
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Metalaxyl	0.040 U	ug/L	0.04	0.16
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Metolachlor	0.060 U	ug/L	0.06	0.24
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Metribuzin	0.020 U	ug/L	0.02	0.08
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Mevinphos	0.010 U	ug/L	0.01	0.04
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Naled	0.040 U	ug/L	0.04	0.16
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Norflurazon	0.030 U	ug/L	0.03	0.12
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Parathion Ethyl	0.020 U	ug/L	0.02	0.08
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Parathion Methyl	0.010 U	ug/L	0.01	0.04
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Phorate	0.0050 U	ug/L	0.005	0.02
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Prometon	0.020 U	ug/L	0.02	0.08
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Prometryn	0.020 U	ug/L	0.02	0.08
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Simazine	0.010 U	ug/L	0.01	0.04
4/7/2014 10:15	EFFLUENT GRAB	Pesticides	Sucralose	8.3	ug/L	0.17	0.83
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.0 U	ug/L	1	4
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	1,4-Dioxane	0.26	ug/L	0.02	0.1
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.0 U	ug/L	1	4

Date_Sampled	Field_Sample_ID	SCH_Group	Component	Result	Units	MDL	PQL
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	2,4-Dichlorophenol	1.0 U	ug/L	1	4
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	2,4-Dimethylphenol	10 U	ug/L	10	40
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	2,4-Dinitrophenol	15 UJ	ug/L	15	60
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	2,4-Dinitrotoluene	1.0 U	ug/L	1	4
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	2,6-Dinitrotoluene	1.0 U	ug/L	1	4
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	2-Chloronaphthalene	1.0 U	ug/L	1	4
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	2-Chlorophenol	1.0 U	ug/L	1	4
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.0 U	ug/L	3	12
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	2-Nitrophenol	1.0 U	ug/L	1	4
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	3,3'-Dichlorobenzidine	40 U	ug/L	40	160
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.0 U	ug/L	1	4
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.0 U	ug/L	1	4
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.0 U	ug/L	2	8
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	4-Nitrophenol	15 U	ug/L	15	60
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Acenaphthene	0.20 U	ug/L	0.2	0.8
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Acenaphthylene	0.20 U	ug/L	0.2	0.8
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Anthracene	0.20 U	ug/L	0.2	0.8
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Benzidine	100 U	ug/L	100	400
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Benzo(a)anthracene	0.20 U	ug/L	0.2	0.8
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Benzo(a)pyrene	0.20 U	ug/L	0.2	0.8
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Benzo(b)fluoranthene	0.20 U	ug/L	0.2	0.8
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.20 U	ug/L	0.2	0.8
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Benzo(k)fluoranthene	0.20 U	ug/L	0.2	0.8
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.0 U	ug/L	1	4
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.0 U	ug/L	1	4
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.0 U	ug/L	3	12
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.0 U	ug/L	2	8
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Butyl benzyl phthalate	1.0 U	ug/L	1	4
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Chrysene	0.20 U	ug/L	0.2	0.8
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.20 U	ug/L	0.2	0.8
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Diethyl phthalate	1.0 U	ug/L	1	4
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Dimethyl phthalate	1.0 U	ug/L	1	4
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Di-n-butyl phthalate	1.0 U	ug/L	1	4
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Di-n-octyl phthalate	1.0 U	ug/L	1	4
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Fluoranthene	0.20 U	ug/L	0.2	0.8
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Fluorene	0.20 U	ug/L	0.2	0.8
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Hexachlorobenzene	1.0 U	ug/L	1	4
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Hexachlorobutadiene	3.0 U	ug/L	3	12

Date_Sampled	Field_Sample_ID	SCH_Group	Component	Result	Units	MDL	PQL
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.0 U	ug/L	3	12
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Hexachloroethane	3.0 U	ug/L	3	12
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.20 U	ug/L	0.2	0.8
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Isophorone	1.0 U	ug/L	1	4
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Naphthalene	0.20 U	ug/L	0.2	0.8
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Nitrobenzene	2.0 U	ug/L	2	8
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	N-Nitrosodimethylamine	2.0 U	ug/L	2	8
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.0 U	ug/L	2	8
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.0 U	ug/L	3	12
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Pentachlorophenol	3.0 U	ug/L	3	12
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Phenanthrene	0.20 U	ug/L	0.2	0.8
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Phenol	1.0 U	ug/L	1	4
4/7/2014 10:15	EFFLUENT GRAB	Priority Organic Pollutants	Pyrene	0.20 U	ug/L	0.2	0.8
4/7/2014 10:30	EFFLUENT Compos	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	1.4 I	mg/L	0.2	2
4/7/2014 10:30	EFFLUENT Compos	Nutrients	Kjeldahl Nitrogen	0.92	mg N/L	0.08	0.2
4/7/2014 10:30	EFFLUENT Compos	Nutrients	NO2NO3-N	8.8	mg N/L	0.2	0.5
4/7/2014 10:30	EFFLUENT Compos	Nutrients	Total-P	0.096	mg P/L	0.005	0.05
4/7/2014 10:30	EFFLUENT Compos	Nutrients	TSS	2 U	mg/L	2	10
4/7/2014 10:30	EFFLUENT Compos	Toxicology	Bioassay-Chron-Def-FW-C.dubia, IC25	100 L	IC25		
4/7/2014 10:30	EFFLUENT Compos	Toxicology	Bioassay-Chron-Def-FW-C.dubia, NOEC	100	NOEC		
4/7/2014 10:30	EFFLUENT Compos	Toxicology	Bioassay-Chron-Def-FW-Fish, IC25	63.5	IC25		
4/7/2014 10:30	EFFLUENT Compos	Toxicology	Bioassay-Chron-Def-FW-Fish, NOEC	100	NOEC		
4/7/2014 10:20	TEST SITE	AGP/LN	Algal Growth Potential	39.2	mg DryWt/L	0.3	0.9
4/7/2014 10:20	TEST SITE	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	0.62 I	mg/L	0.2	2
4/7/2014 10:20	TEST SITE	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	4.3	ug/L	1.2	3.8
4/7/2014 10:20	TEST SITE	Chlorophyll/Grain Size/BOD	Phaeophytin-a	4.5	ug/L	0.89	2.7
4/7/2014 10:20	TEST SITE	Metals	Aluminum	702	ug/L	5	20
4/7/2014 10:20	TEST SITE	Metals	Arsenic	0.51 I	ug/L	0.25	1
4/7/2014 10:20	TEST SITE	Metals	Cadmium	0.050 U	ug/L	0.05	0.2
4/7/2014 10:20	TEST SITE	Metals	Calcium	8.38	mg/L	0.075	0.3
4/7/2014 10:20	TEST SITE	Metals	Chromium	0.83 I	ug/L	0.3	1.2
4/7/2014 10:20	TEST SITE	Metals	Copper	0.65 I	ug/L	0.5	1
4/7/2014 10:20	TEST SITE	Metals	Iron	1.37E+03	ug/L	30	120
4/7/2014 10:20	TEST SITE	Metals	Lead	1.43	ug/L	0.2	0.8
4/7/2014 10:20	TEST SITE	Metals	Magnesium	2.61	mg/L	0.04	0.16
4/7/2014 10:20	TEST SITE	Metals	Nickel	0.49 I	ug/L	0.25	1
4/7/2014 10:20	TEST SITE	Metals	Potassium	1.8	mg/L	0.3	1.2
4/7/2014 10:20	TEST SITE	Metals	Selenium	0.23 I	ug/L	0.2	0.8

Date_Sampled	Field_Sample_ID	SCH_Group	Component	Result	Units	MDL	PQL
4/7/2014 10:20	TEST SITE	Metals	Silver	0.025 U	ug/L	0.025	0.1
4/7/2014 10:20	TEST SITE	Metals	Sodium	11.3	mg/L	0.5	2
4/7/2014 10:20	TEST SITE	Metals	Zinc	8.2 I	ug/L	5	20
4/7/2014 10:20	TEST SITE	Microbiology	Fecal Coliforms-Membrane Filter	3.8E+03	cfu/100 mL	100	100
4/7/2014 10:20	TEST SITE	Nutrients	Alkalinity	17	mg CaCO3/L	0.65	2.5
4/7/2014 10:20	TEST SITE	Nutrients	Ammonia-N	0.098	mg N/L	0.002	0.005
4/7/2014 10:20	TEST SITE	Nutrients	Chloride	14	mg Cl/L	0.2	0.5
4/7/2014 10:20	TEST SITE	Nutrients	Color (true)	160 A	PCU	7.5	18
4/7/2014 10:20	TEST SITE	Nutrients	Dissolved Oxygen	6.43	mg/L		
4/7/2014 10:20	TEST SITE	Nutrients	Fluoride	0.076 I	mg F/L	0.035	0.1
4/7/2014 10:20	TEST SITE	Nutrients	Kjeldahl Nitrogen	0.84	mg N/L	0.08	0.2
4/7/2014 10:20	TEST SITE	Nutrients	NO2NO3-N	0.97	mg N/L	0.008	0.02
4/7/2014 10:20	TEST SITE	Nutrients	O-Phosphate-P	0.015	mg P/L	0.004	0.01
4/7/2014 10:20	TEST SITE	Nutrients	Organic Carbon	15	mg C/L	0.5	1
4/7/2014 10:20	TEST SITE	Nutrients	pH	8.6	su		
4/7/2014 10:20	TEST SITE	Nutrients	Sample Depth	0.3	m		
4/7/2014 10:20	TEST SITE	Nutrients	Specific Conductance	135	umhos/cm		
4/7/2014 10:20	TEST SITE	Nutrients	Sulfate	9.3	mg SO4/L	0.2	0.5
4/7/2014 10:20	TEST SITE	Nutrients	Temperature	20.9	C		
4/7/2014 10:20	TEST SITE	Nutrients	Total-P	0.071	mg P/L	0.005	0.05
4/7/2014 10:20	TEST SITE	Nutrients	TSS	17	mg/L	2	10
4/7/2014 10:20	TEST SITE	Nutrients	Turbidity	8.6	NTU	0.1	0.1
4/7/2014 10:20	TEST SITE	Pesticides	Sucralose	1.2	ug/L	0.01	0.05
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.94 U	ug/L	0.94	3.8
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	1,4-Dioxane	0.062 I	ug/L	0.02	0.1
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.94 U	ug/L	0.94	3.8
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	2,4-Dichlorophenol	0.94 U	ug/L	0.94	3.8
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	2,4-Dimethylphenol	9.4 U	ug/L	9.4	38
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	2,4-Dinitrophenol	14 UJ	ug/L	14	57
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	2,4-Dinitrotoluene	0.94 U	ug/L	0.94	3.8
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	2,6-Dinitrotoluene	0.94 U	ug/L	0.94	3.8
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	2-Chloronaphthalene	0.94 U	ug/L	0.94	3.8
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	2-Chlorophenol	0.94 U	ug/L	0.94	3.8
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.8 U	ug/L	2.8	11
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	2-Nitrophenol	0.94 U	ug/L	0.94	3.8
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38 U	ug/L	38	150
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.94 U	ug/L	0.94	3.8
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.94 U	ug/L	0.94	3.8

Date_Sampled	Field_Sample_ID	SCH_Group	Component	Result	Units	MDL	PQL
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9 U	ug/L	1.9	7.5
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	4-Nitrophenol	14 U	ug/L	14	57
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Acenaphthene	0.19 U	ug/L	0.19	0.75
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Acenaphthylene	0.19 U	ug/L	0.19	0.75
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Anthracene	0.19 U	ug/L	0.19	0.75
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Benzidine	94 U	ug/L	94	380
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Benzo(a)anthracene	0.19 U	ug/L	0.19	0.75
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Benzo(a)pyrene	0.19 U	ug/L	0.19	0.75
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19 U	ug/L	0.19	0.75
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19 U	ug/L	0.19	0.75
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19 U	ug/L	0.19	0.75
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.94 U	ug/L	0.94	3.8
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.94 U	ug/L	0.94	3.8
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.8 U	ug/L	2.8	11
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	1.9 U	ug/L	1.9	7.5
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Butyl benzyl phthalate	0.94 U	ug/L	0.94	3.8
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Chrysene	0.19 U	ug/L	0.19	0.75
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19 U	ug/L	0.19	0.75
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Diethyl phthalate	0.94 U	ug/L	0.94	3.8
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Dimethyl phthalate	0.94 U	ug/L	0.94	3.8
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Di-n-butyl phthalate	0.94 U	ug/L	0.94	3.8
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Di-n-octyl phthalate	0.94 U	ug/L	0.94	3.8
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Fluoranthene	0.19 U	ug/L	0.19	0.75
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Fluorene	0.19 U	ug/L	0.19	0.75
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Hexachlorobenzene	0.94 U	ug/L	0.94	3.8
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Hexachlorobutadiene	2.8 U	ug/L	2.8	11
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.8 U	ug/L	2.8	11
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Hexachloroethane	2.8 U	ug/L	2.8	11
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19 U	ug/L	0.19	0.75
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Isophorone	0.94 U	ug/L	0.94	3.8
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Naphthalene	0.19 U	ug/L	0.19	0.75
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Nitrobenzene	1.9 U	ug/L	1.9	7.5
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9 U	ug/L	1.9	7.5
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9 U	ug/L	1.9	7.5
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.8 U	ug/L	2.8	11
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Pentachlorophenol	2.8 U	ug/L	2.8	11
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Phenanthrene	0.19 U	ug/L	0.19	0.75
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Phenol	0.94 U	ug/L	0.94	3.8

Date_Sampled	Field_Sample_ID	SCH_Group	Component	Result	Units	MDL	PQL
4/7/2014 10:20	TEST SITE	Priority Organic Pollutants	Pyrene	0.19 U	ug/L	0.19	0.75
4/7/2014 10:40	CONTROL SITE	AGP/LN	Algal Growth Potential	1.03	mg DryWt/L	0.3	0.9
4/7/2014 10:40	CONTROL SITE	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	1.4 I	mg/L	0.2	2
4/7/2014 10:40	CONTROL SITE	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	3.7 A	ug/L	1.1	3.4
4/7/2014 10:40	CONTROL SITE	Chlorophyll/Grain Size/BOD	Phaeophytin-a	4.4 A	ug/L	0.8	2.4
4/7/2014 10:40	CONTROL SITE	Metals	Aluminum	645	ug/L	5	20
4/7/2014 10:40	CONTROL SITE	Metals	Arsenic	0.58 I	ug/L	0.25	1
4/7/2014 10:40	CONTROL SITE	Metals	Cadmium	0.050 U	ug/L	0.05	0.2
4/7/2014 10:40	CONTROL SITE	Metals	Calcium	4.97	mg/L	0.075	0.3
4/7/2014 10:40	CONTROL SITE	Metals	Chromium	0.81 I	ug/L	0.3	1.2
4/7/2014 10:40	CONTROL SITE	Metals	Copper	0.60 I	ug/L	0.5	1
4/7/2014 10:40	CONTROL SITE	Metals	Iron	1.37E+03	ug/L	30	120
4/7/2014 10:40	CONTROL SITE	Metals	Lead	1.33	ug/L	0.2	0.8
4/7/2014 10:40	CONTROL SITE	Metals	Magnesium	1.01	mg/L	0.04	0.16
4/7/2014 10:40	CONTROL SITE	Metals	Nickel	0.52 I	ug/L	0.25	1
4/7/2014 10:40	CONTROL SITE	Metals	Potassium	0.49 I	mg/L	0.3	1.2
4/7/2014 10:40	CONTROL SITE	Metals	Selenium	0.20 U	ug/L	0.2	0.8
4/7/2014 10:40	CONTROL SITE	Metals	Silver	0.025 U	ug/L	0.025	0.1
4/7/2014 10:40	CONTROL SITE	Metals	Sodium	3.3	mg/L	0.5	2
4/7/2014 10:40	CONTROL SITE	Metals	Zinc	5.8 I	ug/L	5	20
4/7/2014 10:40	CONTROL SITE	Microbiology	Fecal Coliforms-Membrane Filter	200	cfu/100 mL	9	9
4/7/2014 10:40	CONTROL SITE	Nutrients	Alkalinity	8.1	mg CaCO3/L	0.65	2.5
4/7/2014 10:40	CONTROL SITE	Nutrients	Ammonia-N	0.049	mg N/L	0.002	0.005
4/7/2014 10:40	CONTROL SITE	Nutrients	Chloride	5.2	mg Cl/L	0.2	0.5
4/7/2014 10:40	CONTROL SITE	Nutrients	Color (true)	190	PCU	7.5	18
4/7/2014 10:40	CONTROL SITE	Nutrients	Dissolved Oxygen	6.04	mg/L		
4/7/2014 10:40	CONTROL SITE	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.1
4/7/2014 10:40	CONTROL SITE	Nutrients	Kjeldahl Nitrogen	0.69	mg N/L	0.08	0.2
4/7/2014 10:40	CONTROL SITE	Nutrients	NO2NO3-N	0.040	mg N/L	0.004	0.01
4/7/2014 10:40	CONTROL SITE	Nutrients	O-Phosphate-P	0.004 U	mg P/L	0.004	0.01
4/7/2014 10:40	CONTROL SITE	Nutrients	Organic Carbon	16	mg C/L	0.5	1
4/7/2014 10:40	CONTROL SITE	Nutrients	pH	8.05 J	su		
4/7/2014 10:40	CONTROL SITE	Nutrients	Sample Depth	0.1	m		
4/7/2014 10:40	CONTROL SITE	Nutrients	Specific Conductance	45.8	umhos/cm		
4/7/2014 10:40	CONTROL SITE	Nutrients	Sulfate	1.1	mg SO4/L	0.2	0.5
4/7/2014 10:40	CONTROL SITE	Nutrients	Temperature	20.8	C		
4/7/2014 10:40	CONTROL SITE	Nutrients	Total-P	0.038	mg P/L	0.002	0.005
4/7/2014 10:40	CONTROL SITE	Nutrients	TSS	16 A	mg/L	2	10

Date_Sampled	Field_Sample_ID	SCH_Group	Component	Result	Units	MDL	PQL
4/7/2014 10:40	CONTROL SITE	Nutrients	Turbidity	9.6	NTU	0.1	0.1
4/7/2014 10:40	CONTROL SITE	Pesticides	Sucralose	0.053	ug/L	0.01	0.05
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.97 U	ug/L	0.97	3.9
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	1,4-Dioxane	0.020 U	ug/L	0.02	0.1
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.97 U	ug/L	0.97	3.9
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	2,4-Dichlorophenol	0.97 U	ug/L	0.97	3.9
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	2,4-Dimethylphenol	9.7 U	ug/L	9.7	39
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	2,4-Dinitrophenol	15 UJ	ug/L	15	58
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	2,4-Dinitrotoluene	0.97 U	ug/L	0.97	3.9
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	2,6-Dinitrotoluene	0.97 U	ug/L	0.97	3.9
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	2-Chloronaphthalene	0.97 U	ug/L	0.97	3.9
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	2-Chlorophenol	0.97 U	ug/L	0.97	3.9
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9 U	ug/L	2.9	12
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	2-Nitrophenol	0.97 U	ug/L	0.97	3.9
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	3,3'-Dichlorobenzidine	39 U	ug/L	39	160
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.97 U	ug/L	0.97	3.9
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.97 U	ug/L	0.97	3.9
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9 U	ug/L	1.9	7.8
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	4-Nitrophenol	15 U	ug/L	15	58
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Acenaphthene	0.19 U	ug/L	0.19	0.78
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Acenaphthylene	0.19 U	ug/L	0.19	0.78
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Anthracene	0.19 U	ug/L	0.19	0.78
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Benzidine	97 U	ug/L	97	390
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Benzo(a)anthracene	0.19 U	ug/L	0.19	0.78
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Benzo(a)pyrene	0.19 U	ug/L	0.19	0.78
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19 U	ug/L	0.19	0.78
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19 U	ug/L	0.19	0.78
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19 U	ug/L	0.19	0.78
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.97 U	ug/L	0.97	3.9
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.97 U	ug/L	0.97	3.9
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9 U	ug/L	2.9	12
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	1.9 U	ug/L	1.9	7.8
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Butyl benzyl phthalate	0.97 U	ug/L	0.97	3.9
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Chrysene	0.19 U	ug/L	0.19	0.78
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19 U	ug/L	0.19	0.78
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Diethyl phthalate	0.97 U	ug/L	0.97	3.9
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Dimethyl phthalate	0.97 U	ug/L	0.97	3.9
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Di-n-butyl phthalate	0.97 U	ug/L	0.97	3.9

Date_Sampled	Field_Sample_ID	SCH_Group	Component	Result	Units	MDL	PQL
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Di-n-octyl phthalate	0.97 U	ug/L	0.97	3.9
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Fluoranthene	0.19 U	ug/L	0.19	0.78
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Fluorene	0.19 U	ug/L	0.19	0.78
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Hexachlorobenzene	0.97 U	ug/L	0.97	3.9
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Hexachlorobutadiene	2.9 U	ug/L	2.9	12
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9 U	ug/L	2.9	12
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Hexachloroethane	2.9 U	ug/L	2.9	12
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19 U	ug/L	0.19	0.78
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Isophorone	0.97 U	ug/L	0.97	3.9
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Naphthalene	0.19 U	ug/L	0.19	0.78
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Nitrobenzene	1.9 U	ug/L	1.9	7.8
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9 U	ug/L	1.9	7.8
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9 U	ug/L	1.9	7.8
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9 U	ug/L	2.9	12
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Pentachlorophenol	2.9 U	ug/L	2.9	12
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Phenanthrene	0.19 U	ug/L	0.19	0.78
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Phenol	0.97 U	ug/L	0.97	3.9
4/7/2014 10:40	CONTROL SITE	Priority Organic Pollutants	Pyrene	0.19 U	ug/L	0.19	0.78
4/7/2014 10:00	Field Blank	Metals	Aluminum	5.0 U	ug/L	5	20
4/7/2014 10:00	Field Blank	Metals	Arsenic	0.25 U	ug/L	0.25	1
4/7/2014 10:00	Field Blank	Metals	Cadmium	0.050 U	ug/L	0.05	0.2
4/7/2014 10:00	Field Blank	Metals	Calcium	0.075 U	mg/L	0.075	0.3
4/7/2014 10:00	Field Blank	Metals	Chromium	0.30 U	ug/L	0.3	1.2
4/7/2014 10:00	Field Blank	Metals	Copper	0.50 U	ug/L	0.5	1
4/7/2014 10:00	Field Blank	Metals	Iron	30 U	ug/L	30	120
4/7/2014 10:00	Field Blank	Metals	Lead	0.20 U	ug/L	0.2	0.8
4/7/2014 10:00	Field Blank	Metals	Magnesium	0.040 U	mg/L	0.04	0.16
4/7/2014 10:00	Field Blank	Metals	Nickel	0.25 U	ug/L	0.25	1
4/7/2014 10:00	Field Blank	Metals	Potassium	0.30 U	mg/L	0.3	1.2
4/7/2014 10:00	Field Blank	Metals	Selenium	0.20 U	ug/L	0.2	0.8
4/7/2014 10:00	Field Blank	Metals	Silver	0.025 U	ug/L	0.025	0.1
4/7/2014 10:00	Field Blank	Metals	Sodium	0.50 U	mg/L	0.5	2
4/7/2014 10:00	Field Blank	Metals	Zinc	5.0 U	ug/L	5	20
4/7/2014 10:00	Field Blank	Nutrients	Alkalinity	0.65 U	mg CaCO3/L	0.65	2.5
4/7/2014 10:00	Field Blank	Nutrients	Ammonia-N	0.002 U	mg N/L	0.002	0.005
4/7/2014 10:00	Field Blank	Nutrients	Chloride	0.20 U	mg Cl/L	0.2	0.5
4/7/2014 10:00	Field Blank	Nutrients	Color (true)	2.5 U	PCU	2.5	6
4/7/2014 10:00	Field Blank	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.1

Date_Sampled	Field_Sample_ID	SCH_Group	Component	Result	Units	MDL	PQL
4/7/2014 10:00	Field Blank	Nutrients	Kjeldahl Nitrogen	0.080 U	mg N/L	0.08	0.2
4/7/2014 10:00	Field Blank	Nutrients	NO2NO3-N	0.004 U	mg N/L	0.004	0.01
4/7/2014 10:00	Field Blank	Nutrients	O-Phosphate-P	0.004 U	mg P/L	0.004	0.01
4/7/2014 10:00	Field Blank	Nutrients	Organic Carbon	0.50 U	mg C/L	0.5	1
4/7/2014 10:00	Field Blank	Nutrients	Sulfate	0.20 U	mg SO4/L	0.2	0.5
4/7/2014 10:00	Field Blank	Nutrients	Total-P	0.002 U	mg P/L	0.002	0.005
4/7/2014 10:00	Field Blank	Nutrients	Turbidity	0.10 U	NTU	0.1	0.1
4/7/2014 10:00	Field Blank	Pesticides	Alachlor	0.058 U	ug/L	0.058	0.23
4/7/2014 10:00	Field Blank	Pesticides	Ametryn	0.0097 U	ug/L	0.0097	0.039
4/7/2014 10:00	Field Blank	Pesticides	Atrazine	0.0097 U	ug/L	0.0097	0.039
4/7/2014 10:00	Field Blank	Pesticides	Atrazine Desethyl	0.0097 U	ug/L	0.0097	0.039
4/7/2014 10:00	Field Blank	Pesticides	Atrazine Desisopropyl	0.0097 U	ug/L	0.0097	0.039
4/7/2014 10:00	Field Blank	Pesticides	Azinphos Methyl	0.019 U	ug/L	0.019	0.078
4/7/2014 10:00	Field Blank	Pesticides	Bromacil	0.039 UJ	ug/L	0.039	0.16
4/7/2014 10:00	Field Blank	Pesticides	Butylate	0.019 U	ug/L	0.019	0.078
4/7/2014 10:00	Field Blank	Pesticides	Chlorpyrifos Ethyl	0.0097 U	ug/L	0.0097	0.039
4/7/2014 10:00	Field Blank	Pesticides	Chlorpyrifos Methyl	0.0097 U	ug/L	0.0097	0.039
4/7/2014 10:00	Field Blank	Pesticides	Demeton	0.023 U	ug/L	0.023	0.093
4/7/2014 10:00	Field Blank	Pesticides	Diazinon	0.0097 U	ug/L	0.0097	0.039
4/7/2014 10:00	Field Blank	Pesticides	Disulfoton	0.0049 U	ug/L	0.0049	0.019
4/7/2014 10:00	Field Blank	Pesticides	Ethion	0.0097 U	ug/L	0.0097	0.039
4/7/2014 10:00	Field Blank	Pesticides	Ethoprop	0.0049 U	ug/L	0.0049	0.019
4/7/2014 10:00	Field Blank	Pesticides	Fenamiphos	0.029 U	ug/L	0.029	0.12
4/7/2014 10:00	Field Blank	Pesticides	Fonofos	0.0097 U	ug/L	0.0097	0.039
4/7/2014 10:00	Field Blank	Pesticides	Hexazinone	0.029 UJ	ug/L	0.029	0.12
4/7/2014 10:00	Field Blank	Pesticides	Malathion	0.0097 U	ug/L	0.0097	0.039
4/7/2014 10:00	Field Blank	Pesticides	Metalaxyl	0.039 U	ug/L	0.039	0.16
4/7/2014 10:00	Field Blank	Pesticides	Metolachlor	0.058 U	ug/L	0.058	0.23
4/7/2014 10:00	Field Blank	Pesticides	Metribuzin	0.019 U	ug/L	0.019	0.078
4/7/2014 10:00	Field Blank	Pesticides	Mevinphos	0.0097 U	ug/L	0.0097	0.039
4/7/2014 10:00	Field Blank	Pesticides	Naled	0.039 U	ug/L	0.039	0.16
4/7/2014 10:00	Field Blank	Pesticides	Norflurazon	0.029 U	ug/L	0.029	0.12
4/7/2014 10:00	Field Blank	Pesticides	Parathion Ethyl	0.019 U	ug/L	0.019	0.078
4/7/2014 10:00	Field Blank	Pesticides	Parathion Methyl	0.0097 U	ug/L	0.0097	0.039
4/7/2014 10:00	Field Blank	Pesticides	Phorate	0.0049 U	ug/L	0.0049	0.019
4/7/2014 10:00	Field Blank	Pesticides	Prometon	0.019 U	ug/L	0.019	0.078
4/7/2014 10:00	Field Blank	Pesticides	Prometryn	0.019 U	ug/L	0.019	0.078
4/7/2014 10:00	Field Blank	Pesticides	Simazine	0.0097 U	ug/L	0.0097	0.039

Date_Sampled	Field_Sample_ID	SCH_Group	Component	Result	Units	MDL	PQL
4/7/2014 10:00	Field Blank	Pesticides	Sucralose	0.0096 U	ug/L	0.0096	0.048
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.96 U	ug/L	0.96	3.8
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	1,4-Dioxane	0.020 U	ug/L	0.02	0.1
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.96 U	ug/L	0.96	3.8
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	2,4-Dichlorophenol	0.96 U	ug/L	0.96	3.8
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	2,4-Dimethylphenol	9.6 U	ug/L	9.6	38
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	2,4-Dinitrophenol	14 UJ	ug/L	14	58
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	0.96 U	ug/L	0.96	3.8
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	0.96 U	ug/L	0.96	3.8
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	2-Chloronaphthalene	0.96 U	ug/L	0.96	3.8
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	2-Chlorophenol	0.96 U	ug/L	0.96	3.8
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9 U	ug/L	2.9	12
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	2-Nitrophenol	0.96 U	ug/L	0.96	3.8
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38 U	ug/L	38	150
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.96 U	ug/L	0.96	3.8
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.96 U	ug/L	0.96	3.8
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9 U	ug/L	1.9	7.7
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	4-Nitrophenol	14 U	ug/L	14	58
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Acenaphthene	0.19 U	ug/L	0.19	0.77
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Acenaphthylene	0.19 U	ug/L	0.19	0.77
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Anthracene	0.19 U	ug/L	0.19	0.77
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Benzidine	96 U	ug/L	96	380
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.19 U	ug/L	0.19	0.77
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.19 U	ug/L	0.19	0.77
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19 U	ug/L	0.19	0.77
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19 U	ug/L	0.19	0.77
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19 U	ug/L	0.19	0.77
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.96 U	ug/L	0.96	3.8
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.96 U	ug/L	0.96	3.8
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9 U	ug/L	2.9	12
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	1.9 U	ug/L	1.9	7.7
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Butyl benzyl phthalate	0.96 U	ug/L	0.96	3.8
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Chrysene	0.19 U	ug/L	0.19	0.77
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19 U	ug/L	0.19	0.77
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Diethyl phthalate	0.96 U	ug/L	0.96	3.8
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Dimethyl phthalate	0.96 U	ug/L	0.96	3.8
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Di-n-butyl phthalate	0.96 U	ug/L	0.96	3.8
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Di-n-octyl phthalate	0.96 U	ug/L	0.96	3.8

Date_Sampled	Field_Sample_ID	SCH_Group	Component	Result	Units	MDL	PQL
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Fluoranthene	0.19 U	ug/L	0.19	0.77
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Fluorene	0.19 U	ug/L	0.19	0.77
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Hexachlorobenzene	0.96 U	ug/L	0.96	3.8
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Hexachlorobutadiene	2.9 U	ug/L	2.9	12
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9 U	ug/L	2.9	12
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Hexachloroethane	2.9 U	ug/L	2.9	12
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19 U	ug/L	0.19	0.77
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Isophorone	0.96 U	ug/L	0.96	3.8
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Naphthalene	0.19 U	ug/L	0.19	0.77
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Nitrobenzene	1.9 U	ug/L	1.9	7.7
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9 U	ug/L	1.9	7.7
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9 U	ug/L	1.9	7.7
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9 U	ug/L	2.9	12
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Pentachlorophenol	2.9 U	ug/L	2.9	12
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Phenanthrene	0.19 U	ug/L	0.19	0.77
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Phenol	0.96 U	ug/L	0.96	3.8
4/7/2014 10:00	Field Blank	Priority Organic Pollutants	Pyrene	0.19 U	ug/L	0.19	0.77

Appendix G

Toxicological results

FDEP Biology Laboratory - Chronic Bioassay Bench Sheet

Pimephales promelas or Menidia beryllina

Facility: Blountstown
Address: 14140 SE Johnson St.
County: Calhoun
NPDES Permit #: FL 0026867
Contact/District: Nathan Mulkey / NWD

Test Species (circle one)
(P. promelas) SOP#: TA07_09 EPA-821-R-02-013 Method 1000.0
M. beryllina SOP#: TA07_14 EPA-821-R-02-014 Method 1006.0

Start Date: 4.8.14 Time: 1445
End Date: 4.15.14 Time: 1010

Diluent/ Batch:
MHW / 4.2.14 Test Days Used: 0 - 1
MHW / 4.4.14 Test Days Used: 2 - 6
ASW / _____ Test Days Used: _____
ASW / _____ Test Days Used: _____

Organism age : 48 hrs ~~days~~ CR
Feeding Prior to Test and Daily
Artemia Lot # : 23013
Chamber size : 1000 ml
Test volume : 500 ml

Organism Batch #: 4.8.14	
Artemia Batch # CR	Day 3 65.14
Day 0 62.184	Day 4 66.14
Day 1 63.14	Day 5 67.14
Day 2 64.14	Day 6 68.14

LIMS entry: Entry verification:

Sample Received	Lab Sample #	LIMS Job #	LIMS Sample #	Collection Date/Time	Received Date/Time
Test Day 0	1	TLH-2014-04-07-03	1591110	4.7.14/1030	4.7.14/1345
Test Day 2	2	TLH-2014-04-09-32	1591855	4.9.14/0800	4.9.14/1530
Test Day 4	3	TLH-2014-04-11-81	1593150	4.11.14/0800	4.11.14/1310

Batch #	4.2.14	4.4.14	NA	NA	NA			
Water Quality Parameters	(MHW) ASW (circle one)	(MHW) ASW (circle one)	Sample 1	Sample 2	Sample 3	Other:	Measured By:	Verified by:
Field Total Residual Cl_2 (mg/L):	NA	NA	*NM	NM	NM			CR
Lab Total Residual Cl_2 (mg/L):	<0.03	<0.03	0.04	<0.03	0.04		DP/CM	CR
Alkalinity (mg/L as $CaCO_3$):	74	72	75	76	76		CR/CM	DP/CR
Hardness (mg/L as $CaCO_3$):	79	77	125	107	109		CR/CM	DP/CR
Total Ammonia (mg/L as N):	<0.017	<0.017	0.0706	0.530	0.0530		MF	CR
Conductivity (umhos) mmhos:	293	298	641	510	488		CR/CM	DP/CR
Salinity (ppth):								

*NM = not measured

Light Intensity : 50 - 100 ft. candles
Photoperiod : 16 light 8 dark
Temperature Range °C:
Incubator # 2 min 24.1 max 27.0
Test min 24.2 max 26.3
Room B246 min 24.0 max 25.4

Sample Validation:
Instructions: Check yes or no. Fill in temperatures.
Temperature: Shipped ≤ 6°C □ Yes □ No
If Hand Delivered:Cooling ☑ Yes □ No (received ≤6°C °C collected___°C)
Holding Time: ≤ 36 Hours □ Yes □ No
(Composite-end of collection; grab-when collected;
4 in 24 - time last sample collected)

Statistics	
Growth NOEC:	100
Growth LOEC:	>100
Growth IC_{20}:	533
Growth IC_{25}:	683
Ctrl % CV:	39%
Dunnetts PMSD:	47.7
Survival NOEC:	100
Survival LOEC:	>100

Investigators' signatures

	Initials:
Cassidy Reichert	CR
Diane Powe	DP
Marshall Faircloth	MF
Jackie Jones	JJ
Certified	CM

REVIEWER

Comments: All samples were hand delivered and held in Refrigerator, overnight. mf 4/15/14

PAGE 000001 ~~000043~~ CR

revised 10/09/13 mf

Chronic Bioassay Survival Benchsheet

Facility: Blountstown

LIMS Sample Number: 1591110
(for Lab Sample # 1)

Department of Environmental Protection
Biology Laboratory Chronic Screening Bioassay
***P. promelas* SOP TA07_09 *M. beryllina* SOP TA07_14**

Organism: (*P. promelas*) *M.beryllina* (circle one)

		TEST DAY							
Concentration	Replicate	0	1	2	3	4	5	6	7
Control	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	4 LD	4	4	4
	C	10	10	10	10	10	10	10	10
	D	10	10	10	9 1D	9	9	9	9
Sample 6.25 %	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	~~9 1D~~ DP	10	10
	D	10	10	10	10	10	10	10	10
Sample 12.5 %	A	10	10	10	10	10	9 1D	9	9
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10
Sample 25 %	A	10	10	10	10	10	10	9 1D	9
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10
Sample 50 %	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	7 3D	7	7
	C	10	9 1D	9	9	8 1D	7 1D	6 1D	6
	D	10	10	10	10	10	10	10	10
Sample 100 %	A	10	10	10	10	10	9 1D	9	9
	B	10	10	10	10	10	8 2D	8	8
	C	10	10	10	10	9 1D	7 2D	4 3D	4
	D	10	10	10	10	10	8 2D	4 4D	4
Sample %	A	10							
	B	10							
	C	10							
	D	10							
Loaded by: CR/CM	Checked by:		CR/CM	DP/CM	DP/CM	SB/MF	DP	DP	CR

Verified by: CM/DP

Comments:

Chronic Bioassay Weighing Benchsheet

Facility: Blountstown

LIMS Sample Number: 1591110
(for Lab Sample # 1)

P. promelas and *M. beryllina* Bench Sheet
SOP TA06_21

Concentration	Replicate	Pan #	Pan wt. g	Pan + Fish g	Fish wt. g	Original # Fish	Mean wt. mg	Avg
			mean wt = fish wt divided by 10 convert g to mg: move decimal 3 places to right					
Control	A	1	0.02590	0.03289	0.00699	10	0.699	
	B	2	0.02588	0.02824	0.00236	10	0.236	0.55
	C	3	0.02446	0.03037	0.00591	10	0.591	
	D	4	0.02548	0.03221	0.00673	10	0.673	
sample 6.25 %	A	5	0.02582	0.03366	0.00784	10	0.784	
	B	6	0.02626	0.03567	0.00941	10	0.941	
	C	7	0.02505	0.03382	0.00877	10	0.877	0.87
	D	8	0.02594	0.03477	0.00883	10	0.883	
sample 12.5 %	A	9	0.02514	0.03191	0.00677	10	0.677	
	B	10	0.02503	0.03360	0.00857	10	0.857	
	C	11	0.02620	0.03395	0.00775	10	0.775	0.80
	D	12	0.02688	0.03615	0.00927	10	0.927	
sample 25 %	A	13	0.02610	0.03421	0.00811	10	0.811	
	B	14	0.02585	0.03473	0.00888	10	0.888	
	C	15	0.02520	0.03337	0.00817	10	0.817	0.83
	D	16	0.02587	0.03400	0.00813	10	0.813	
sample 50 %	A	17	0.02548	0.03284	0.00736	10	0.736	
	B	18	0.02582	0.03082	0.00500	10	0.500	
	C	19	0.02496	0.02890	0.00394	10	0.394	0.62
	D	20	0.02588	0.03459	0.00871	10	0.871	
sample 100 %	A	21	0.02499	0.03143	0.00644	10	0.644	
	B	22	0.02528	0.03042	0.00514	10	0.514	
	C	23	0.02523	0.02847	0.00324	10	0.324	0.434
	D	24	0.02710	0.02963	0.00253	10	0.253	
sample %	A					10		
	B					10		
	C					10		
	D					10		
	Weighed by initials:		CM	CR	revised 7/16/08 mf			

Comments:

Balance: Ohaus 250D Ser# 1125481084
S-Weights: BIO-S-Weights-01

Note: Pan number (#) refers to actual Pan number.

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FDEP Biology Laboratory - Chronic Definitive Bench Sheet

Ceriodaphnia dubia

Facility: Blountstown WWTP
Address: 16140 SE Johnson St.
County: Calhoun
NPDES Permit #: FL 0026867
Contact/District: Nathan Mulkey / NWD

LIMS entry:_____ verified:_____

Diluent/ Batch: MHWCD / 4-1-14 Test Days Used: 0-1
MHWCD / 4-5-14 Test Days Used: 2-6

SOP#: TA07_05 EPA 821-R-02-013 Method 1002.0

Organism: *Ceriodaphnia dubia*
Organism Batch #: 4-8-14
Organism age : <24 hours
Feeding: Prior to Test and Daily
Food: ☑ YCT ☑ *P. subcapitata*
Food Batch: 12-23-13 MF 3-10-14
Chamber size : 30 ml
Sample volume : 20 ml

Sample Received	LAB Sample #	LIMS JOB #	LIMS SAMPLE #	Collection Date/Time	Received Date/Time
Test Day 0	1	TLH-2014-04-07-03	1591110	4.7.14 / 1030	4.7.14 / 1345
Test Day 2	2	TLH-2014-04-09-32	1591855	4.9.14 / 0800	4.9.14 / 1530
Test Day 4	3	TLH-2014-04-11-81	1593150	4.11.14 / 0800	4.11.14 / 1310

Batch #	4-1-14	4-5-14	NA	NA	NA			
Water Quality Parameters	MHWCD	MHWCD	Sample 1	Sample 2	Sample 3	Other:	Measured By:	Verified by:
Field Total Residual Cl_2 (mg/L):	NA	NA	*NM	NM	NM		—	CR
Lab Total Residual Cl_2 (mg/L):	<0.03	<0.03	0.04	<0.03	0.04		DP/CM	CR
Alkalinity (mg/L as $CaCO_3$):	71	70	75	76	76		CR/CM/DP	/CR
Hardness (mg/L as $CaCO_3$):	82	84	125	107	109		CR/CM/DP	/CR
Total Ammonia (mg/L as N):	<0.017	<0.017	0.0706	0.520	0.0530		MF	CR
Conductivity: (umhos) mmhos:	300	313	641	510	488		DP/MF/CR	/
Salinity (ppth):								

* NM = not measured

Test Incubated in: Incubator #: 5

Temperature Shipped ≤ 6° C (all samples) (yes) no
Holding Time ≤ 36 hours (yes) no
Light Intensity : 50 - 100 ft. candles
Photoperiod : 16 light 8 dark
Temperature Range °C:
Incubator # 5 min 25.0 max. 26.3
Room B246 min. 24.0 max. 25.4
Test min. 24.4 max. 26.6

Loaded by: MF

Test Replicates	Loaded from culture vial
1	C1
2	C2
3	C21
4	C22
5	A4
6	A14
7	A18
8	A24
9	A24
10	B18

Results	
Control % CV:	26.0%
Dunnetts PMSD:	19.8%
Reproduction NOEC:	100%
Reproduction LOEC:	>100%
Survival NOEC:	100%
Survival LOEC:	>100%
ICP_{20}:	>100%
ICP_{25}:	>100%

Investigators' signatures

	Initials
Diane Power	DP
Marshall Fairchild	MF
Cassidy Reichert	CR
Jackie Savage	JS

REVIEWER

Comments:

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revised 02/15/13 MF

FDEP Biology Laboratory - Chronic Definitive Bench Sheet

Ceriodaphnia dubia Survival and Reproduction

SOP TA07_05

Facility: Blounts Town

LIMS Sample #: 591110 for lab sample #1

Start Date: 4-8-14 Time: 1040

End Date: 4-15-14 Time: 0900

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Surviving orginal organisms	Neonates per female
Control	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	3	1	0	0	0	0	3	0	1	4	12	10	1.2
	4	0	0	0	0	0	0	0	0	0	0	0 MF	10	0
	5	6	0	3	4	0	0	3	1	2	6	25 MF	10	2.6
	6	10	7	10	8	10	4	16	8	4	8	69	10	6.9
	7	(10)	9	10	9	14	13	10	13	(8)	(10)	78	10	7.8
	8													
	Total	19	17	23	21	24	17	17	22	7	18	185	10	18.5

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Surviving orginal organisms	Neonates per female
6.25%	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	5	3	4	5	3	2	5	4	4	4	39	10	3.9
	4	0	11	0	0	8	10	0	9	0	0	38	10	3.8
	5	7	0	2	9	0	0	8	0	7	8	41	10	4.1
	6	7	13	8	9	12	14	10	10	11	11	105	10	10.5
	7	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC		10	
	8													
	Total	19	27	14	23	23	26	23	23	22	23	223	10	22.3

Organisms loaded by: MF

Day	Counted/ verified by:	Concentrations prepared by:
0	DP	MF
1	MF	CM/DP
2	MF	MF
3	MF	MF
4	MF	MF
5	98	DP
6	MF	MF
7	MF	
8		

Concentration	Mean neonates /female	% survival
Control	18.5	100 %
6.25%	22.3	100 %
12.50%	24.6	100 %
25%	25.3	100 %
50%	27.4	100 %
100%	30.3	100 %

Test acceptability	
Mean control reproduction 15/female	(yes) no
3rd brood in 60% of surviving females	(yes) no
Control survival ≥ 80%:	(yes) no

Comments: S = Split brood MF 4/14/14

(#) = 4th Brood don't count MF NC = 4th brood No Count MF

*Day 0 is test initiation day

X = Dead (original organism)

FDEP Biology Laboratory - Chronic Definitive Bench Sheet

Ceriodaphnia dubia Survival and Reproduction

SOP TA07_05

Facility: Blounts Town

LIMS Sample # : 1591110 for lab sample #1

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	orginal organisms	Neonates per female
12.50%	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	4	3	4	3	2	3	5	5	4	3	36 mf	10	3.6
	4	8	10	0	0	8	0	8	7	8	8	60	10	6.0
	5	0	0	6	11	0	9	2	16	0	0	26	10	2.6
	6	14	13	11	13	12	13	13	11	12	12	124	10	12.4
	7	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC		10	
	8													
	Total	26	26	21	27	22	25	28	24	24	23	246	10	24.6

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	orginal organisms	Neonates per female
25%	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	3	0	4	4	3	3	2	5	4	3	31	10	3.1
	4	10	5	8	4	6	10	9	8	10	8	81	10	8.1
	5	16	8	0	12 mf	6	0	0	0	0	0	8	10	0,8
	6	18	13	17	13	13	14	11	12	9	13	133	10	13.3
	7	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC		10	
	8			mf										
	Total	32	26	28	23	22	27	22	25	23	24	253 mf	10	25.3

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Surviving orginal organism	Neonates per female
50%	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	4	3	2	4	4	4	4	2	2	2	31	10	3.1
	4	11	0	10	12	10	12	12	11	10	8	96	10	9.6
	5	0	1	0	0	0	0	0	0	0	0	11	10	1.1
	6	14	13	11	13	14	19	12	9	15	16	136	10	13.6
	7	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC		10	
	8													
	Total	29	27	23	29	28	35	28	22	27	26	274	10	27.4

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Surviving orginal organism	Neonates per female
100%	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	0	4	3	5	5	6	5	0	6	4	38	10	3.8
	4	7	9	11	11	16 mf	9	12 mf	8	8	8	83	10	8.3
	5	8	1	0	0	16	16	13	11	0	0	32	10	3.2
	6	19	13	16	14	19	18	0	11	11	15	138	10	13.8
	7	NC	NC	NC	NC	NC	NC	NC mf	NC	NC	NC	12	10	12
	8							12						
	Total	34	27	30	30	36	34	30 mf	30	25	27	303	10	30.3

Comments:

5 - split brood.

Rep 7 Day 7 100% = 0 mf

Rep 7 Day 7 100% = 12 mf

*Day 0 is test initiation day

X = Dead (original organism)

***Pimephales promelas* IC-25 growth statistics**

Transform: Untransformed									Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N		Mean	N-Mean
D-Control	0.5498	1.0000	0.5498	0.2360	0.6990	38.958	4		0.7656	1.0000
6.25	0.8713	1.5848	0.8713	0.7840	0.9410	7.453	4		0.7656	1.0000
12.5	0.8090	1.4716	0.8090	0.6770	0.9270	13.315	4		0.7656	1.0000
25	0.8323	1.5139	0.8323	0.8110	0.8880	4.476	4		0.7656	1.0000
50	0.6253	1.1373	0.6253	0.3940	0.8710	34.774	4		0.6253	0.8167
100	0.4338	0.7890	0.4338	0.2530	0.6440	41.104	4		0.4338	0.5666
Auxiliary Tests							**Statistic**	**Critical**	**Skew**	**Kurt**
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)							0.98192	0.884	-0.4119	0.03575
Bartlett's Test indicates equal variances (p = 0.09)							9.64463	15.0863		

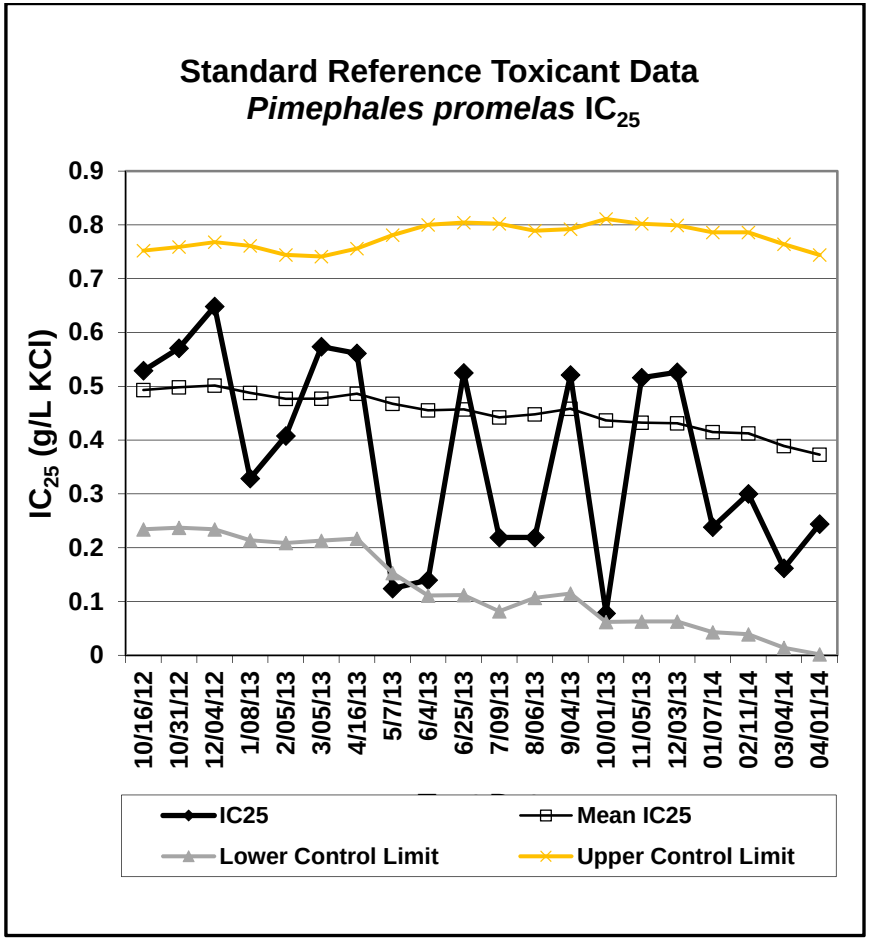
Linear Interpolation (200 Resamples)					
Point	%	SD	95% CL(Exp)		Skew
IC05	31.820	9.361	25.746	71.174	1.2413
IC10	38.640	10.578	26.492	80.118	0.7398
IC15	45.460	11.885	27.238	88.575	0.5503
C20	53.342				
IC25	63.336				
IC40	93.319				
IC50	>100				

Appendix H

Standard Reference Toxicant (SRT) data

Standard Reference Toxicant (SRT) Test Data - 7-Day Chronic Toxicity					
Pimephales promelas (fathead minnow) - Potassium Chloride (KCl)					
Date	IC25	Mean IC25	Std Dev	Lower Control Limit	Upper Control Limit
10/16/12	0.529	0.493	0.13	0.234	0.752
10/31/12	0.571	0.498	0.13	0.237	0.759
12/04/12	0.648	0.501	0.13	0.234	0.768
1/08/13	0.329	0.488	0.14	0.214	0.761
2/05/13	0.408	0.477	0.13	0.209	0.744
3/05/13	0.574	0.477	0.13	0.213	0.741
4/16/13	0.561	0.486	0.13	0.217	0.756
5/7/13	0.124	0.467	0.16	0.153	0.781
6/4/13	0.140	0.456	0.17	0.111	0.800
6/25/13	0.525	0.457	0.17	0.112	0.804
7/09/13	0.219	0.442	0.18	0.082	0.802
8/06/13	0.219	0.448	0.17	0.107	0.789
9/04/13	0.521	0.458	0.17	0.115	0.792
10/01/13	0.078	0.437	0.19	0.062	0.811
11/05/13	0.516	0.433	0.18	0.063	0.802
12/03/13	0.526	0.431	0.18	0.063	0.799
01/07/14	0.238	0.415	0.19	0.043	0.786
02/11/14	0.300	0.413	0.19	0.039	0.786
03/04/14	0.162	0.389	0.19	0.014	0.764
04/01/14	0.244	0.373	0.19	0.002	0.744

Means are from the last 20 SRTs.
Lower Confidence Limit = mean - 2 * Std Dev
Upper Confidence Limit = mean + 2 * Std Dev



The Bioassay of the Blountstown WWTP effluent sampled on April 07, 2014, NPDES #FL0026867

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 6 8 6 7 11	12 1 4 0 4 0 7	# B	# S	# 1

Remarks

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The Priority Pollutants Analysis of the Blountstown WWTP effluent sampled on April 07, 2014 NPDES #FL0026867

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 6 8 6 7 11	12 1 4 0 4 0 7	# X	# S	# 1

Remarks

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Biological Analyses of the Blountstown WWTP effluent sampled on April 07, 2014, NPDES #FL0026867

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 6 8 6 7 11	12 1 4 0 4 0 7	# S	# S	# 1

Remarks

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