Biological Assessment of

City of Bonifay WWTF

Holmes County

NPDES # FL0027731

Sampled December 11, 2017 and January 22, 2018

February 2019

Biology Program

DEP Laboratory

Division of Environmental Assessment and Restoration

DEP Laboratory Quality Manual

NELAC Certification No. E31780

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Summary of Results

CBOD 5-day N-inhibited and IC25 for *Ceriodaphnia dubia* exceeded their effluent permit limits. Total residual chlorine measured in the effluent grab samples, taken at monitoring location D-001, on December 11, 2017 and January 22, 2018 exceeded the effluent dechlorination permit limit. Total residual chlorine measurements taken in the east and west chambers on December 11, 2017, and January 22, 2018, were less than the minimum permit disinfection limit (Table 1b). Nutrient and AGP values measured downstream compared to upstream values indicate nutrient enrichment due to the effluent during the December sampling event. There was no detectable negative impact from the effluent to the floral or faunal communities in the unnamed tributary. The hydrology of the receiving water appears to be affecting the biological community. The creek was previously channelized and has not recovered much sinuosity. Bank stability, habitat smothering, substrate availability, and flow scored in the Suboptimal category or lower. The contribution of the effluent discharge is unknown. The qualitative and quantitative macroinvertebrate data indicated an imbalanced, low diversity faunal community dominated by tolerant taxa. Both the Test and the Control Sites had failing Stream Condition Index scores. Floristic data indicates no imbalance in the plant or algal community.

Facility Overview

The City of Bonifay WWTF is a domestic wastewater sequencing batch reactor facility. A Facility Summary, including a description of the facility, summary of permit limits, and any relevant Administrative Order (AO), Consent Order (CO), and Discharge Monitoring Report (DMR) information is provided in Appendix A. Bonifay WWTF is operating under a CO which provides interim limits for un-ionized ammonia, total nitrogen, and total phosphorus. An AO is also in effect for CBOD, nutrients, and dissolved oxygen (DO). These interim limits are reflected in the effluent permit limits listed in Tables 1 and 2. The effluent is intermittently discharged into an unnamed tributary of Camp Branch, a Class III Fresh Water (Figure1).

The unnamed tributary falls within the Panhandle West Nutrient Watershed Region for Numeric Nutrient Criteria (NNC). For this region, the NNC thresholds, expressed as annual geometric mean concentrations not to be exceeded more than once in any three-calendar year period, are 0.06 mg/L total phosphorus and 0.67 mg/L total nitrogen 62-302.531(2)(c), F.A.C. This FYI event only provides single sample results; therefore, compliance should be determined with additional sampling events per Rule 62-302.351 F.A.C. http://ca.dep.state.fl.us/mapdirect/?focus=nutrientcriteria

Methods

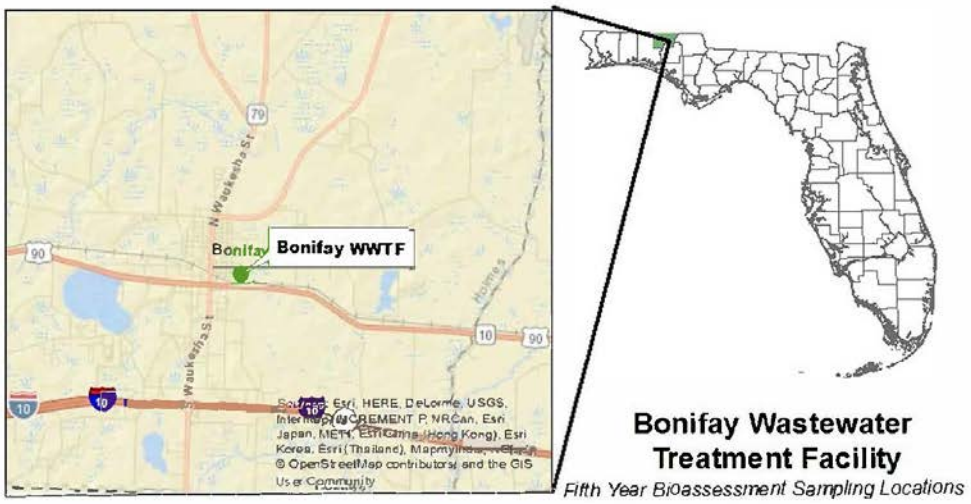
Effluent samples were taken as grab and composite samples from monitoring location D-001. Chemical and biological comparisons were made between a Control Site (located in the unnamed tributary beginning 50 m upstream of the point of discharge and ending 150m upstream of the point of discharge) and a Test Site (located in the unnamed tributary beginning 150m downstream of the point of discharge and ending 50m downstream of the point of discharge. (Figure 1) on December 11, 2017. Due to scheduling conflicts, the toxicity samples and an effluent sample were collected and analyzed on January 22, 2018.

All field and laboratory methods followed DEP Standard Operating Procedures (see https://floridadep.gov/dear/quality-assurance/content/dep-sops and https://floridadep.gov/dear/florida-dep-laboratory/content/dep-laboratory-quality-assurance-manual-and-sops for details) and met DEP quality assurance/quality control standards (see https://floridadep.gov/dear/quality-assurance). Explanations of specific methods and measurements can be found in Appendix B.

References to 62-302.530, F.A.C. are to the surface water quality criteria table with an effective date of 02/17/2016 and a notice identification number of 17115667.

The following were involved in this investigation: Mike King, Nathan Mulkey, Stopher Slade, and Dana Vestal (DEP Northwest Regional Operation Center, Pensacola), and DEP Laboratory in Tallahassee. The report was reviewed by District representatives and the Point Source Studies Review Committee (Nancy Ross, Mike Tanski and Adrienne Pennington).

Figure 1. Map of facility and sampling locations





Results

Physical and Chemical Parameters / Site Characterization (See Table 1 and Appendices C, D, and E)

- Habitat Assessment scores were higher at the Test Site (88) compared to the Control Site (62). The Test Site was in the Suboptimal category while the Control Site was in the Marginal category. While the Test Site had a lower score for substrate diversity, it had higher scores for every other category. Water flow in the stream was very low and available habitats were either smothered or out of the flow.
- Flow (MGD) during sample collection for outfall D-001 on 12/11/2017 was 0.456, on 01/22/2018 was 0.500, on 01/24/2018 was 0.526 and on 01/26/2018 was 0.462. Permit limit is less than or equal to 1.4 MGD.
- Total Residual Chlorine measured in the December 11 and January 22 effluent grab samples, taken at monitoring location D-001, exceeded the effluent dechlorination permit limit.
- Chlorine levels measured on December 11 and January 22 in the east chamber and west chamber were below the minimum disinfection limits.

Analytical Water Chemistry (See Table 2 and Appendix E)

- Ortho-phosphate and total phosphorus values were similar among the effluent and Test Site samples but were approximately 16-30 times lower in the Control Site sample. Nitrate and nitrite and total nitrogen values were similar among the effluent samples, slightly lower in the Test Site sample, and many times lower in the Control Site sample. Total ammonia and total organic carbon values were similar across all samples with the exception of the total organic carbon value from the January 22, 2018, effluent composite sample which was 4-6 times higher than the other samples. Total kjeldahl nitrogen and organic nitrogen values were similar among the effluent and Test Site samples collected on December 11, 2017, and approximately 2 times higher than the Control Site value from the same date. Effluent nutrient measurements were higher than those of the Control Site and there was detectable nutrient enrichment from the effluent at the Test Site.
- Chlorophyll *a* (corrected) was detected at levels between the MDL and PQL in the December effluent grab, Test Site, and Control Site samples and undetected in the January effluent grab sample.
- Carbonaceous biochemical oxygen demand (CBOD; 5-day nitrogen inhibited) of the January effluent composite sample exceeded permit limits. Turbidity and color were higher in the Control Site sample compared to the other samples.
- Chloride and sulfate were lower in the Control Site sample compared to the other samples.

Microbiology (See Table 2 and Appendix E)

- *Escherichia coli* (*E. coli*) and fecal coliform analyses were performed by the University of West Florida Laboratory, Pensacola, Florida.
- Fecal coliform bacteria were undetected in the December effluent grab sample and detected in the Test and Control Site samples at levels which complied with facility permit limits.
- *Escherichia coli* (*E. coli*) was undetected in the December effluent grab sample and detected in the Test and Control Site samples at levels which complied with Class III Freshwater Water Quality Criterion (62-302.530(6)(b), F.A.C.).

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

- Tests were performed January 23 through January 29, 2018.
- During the chronic definitive bioassay, the effluent composite sample IC25 for the water flea, *Ceriodaphnia dubia*, was calculated as 52.5%, and therefore did not comply with effluent permit limits. The IC25 for the fish, *Pimephales promelas*, was calculated as being greater than 100% effluent, and therefore complied with effluent permit limits.
- For more information or to obtain copies of the toxicity bench sheets, please contact the Biology Laboratory at 850-245-8177.

Metals (See Table 3 and Appendix E)

- Effluent metals were detected at levels that complied with Class III Freshwater Quality Criteria (62-302.530, F.A.C.).
- All metals in Control and Test Site grab samples were either undetected or detected at levels that complied with Class III Freshwater Quality Criteria (62-302.530, F. A. C.).

- Values for calcium, copper, potassium, sodium, and zinc were higher in the effluent samples compared to the Control Site sample values.

Algal Growth Potential (See Table 4 and Appendix E)

- The AGP values in the December effluent, Test Site, and Control Site samples using the freshwater species, *Pseudokirchneriella subcapitata*, show that the facility's effluent has the potential to enrich the downstream portion of the unnamed tributary when the facility is discharging. The analytical chemistry suggests that the effluent, Test Site, and Control Site are nitrogen-limited.
- By comparing the laboratory AGP result to the predicted AGP values for inorganic nitrogen and total nitrogen in the January effluent sample, an inference can be made that not all of the nitrogen in the effluent was bio-available to the test species at that time, providing additional evidence the effluent is nitrogen limited. To determine actual nutrient limitation, a limiting-nutrient algal growth potential test should be performed (Maloney et al. 1978).

Flora (See Appendix D)

- Two temporally independent Linear Vegetation Survey (LVS) samplings showing a Coefficient of Conservatism score ≥ 2.5 and the frequency of occurrence of Florida Exotic Plant Pest Council (FLEPPC) exotic taxa ≤ 25% are needed to achieve NNC floral metrics. Sites with no observed macrophytes are considered to achieve the LVS component of the NNC. Two temporally independent Rapid Periphyton survey (RPS) samplings with ≤ 25% rank 4-6 (algae > 6mm thick) coverage are needed to achieve NNC floral metrics. This FYI event can only provide single sample results; therefore, NNC compliance should be determined with additional sampling events.
- For the LVS, both Control and Test Sites had small amounts of aquatic macrophytes; usually under 5% cover. The Test Site had more macrophyte coverage than the Control Site and one more taxon.
- The RPS was performed at the Test and Control Sites. The overall canopy cover was less at the Test Site than at the Control Site; however, filamentous, mat-forming algae were not found at any of the sampled points at the Test Site and were found at 27% of the sampled points at the Control Site. RPS did not indicate nutrient enrichment at the Test Site.

Macroinvertebrates (See Tables 5 and 6)

- Quantitative macroinvertebrate data were collected from floating Hester-Dendy samplers incubated for 28 days within the flow of the effluent and the river at the Control and Test Sites. The Shannon-Weaver diversity scores were similarly low at the Test and Control Sites (1.71 and 2.02, respectively). Both sites were dominated by dipterans. Neither site had Ephemeroptera, Plecoptera, Trichoptera (EPT) taxa present nor other sensitive taxa, which decrease with increased human disturbance. No negative impacts to the Test Site macroinvertebrates could be attributed to the effluent.
- Qualitative macroinvertebrate data from dipnet samples indicated that the macroinvertebrate community at the Test Site was similar to the community at the Control Site. Both the Test Site and Control Site scored 10 A on the Stream Condition Index (SCI), which is a failing score (see Appendix C for an explanation of SCI scores). No EPT taxa were found in the Test Site, and a single EPT taxon was found in the Control Site. Both sites had a moderately high percentage of suspension feeders and a high percentage of very tolerant individuals. Both metrics tend to increase with human disturbance (see Appendix C for an explanation of how these SCI metrics typically respond to human disturbance). Overall, there were no negative effects on macroinvertebrates at the Test Site that were attributable to the effluent. Any adverse effects on the macroinvertebrate community were more likely attributable to lack of habitat availability due to habitat smothering or low flow.
- For more information or to obtain a copy of the taxa lists, please contact the Biology Laboratory at 850-245-8177.

Literature Cited

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

Bonifay WWTF	Units	Class III Criteria	Effluent Permit Limits	Effluent Grab 12/11	Effluent Grab 1/22	Effluent Composite 12/11	Effluent Composite 1/22	Test Site 12/11	Control Site 12/11
Habitat Assessment	-	-	-	-	-	-	-	88	65
Sample Depth	m	-	-	-	-	-	-	0.3	0.3
Temperature	C	-	Report	-	17.9	17.2	16.6	14.4	8.7
pH	SU	6.0 - 8.5	6.0 - 8.5	7.2	7.5	7.0	6.8	6.9	6.4
Specific Conductance	µmhos/cm	≤ 1,275	-	-	-	-	-	321	182
Dissolved Oxygen	mg/L	-	> 6.0	8.7	9.7	9.6	9.7	7.8	7.4

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

Table 1b. Effluent limits and field measurements for total residual chlorine

Bonifay WWTF	Units	Permit Limits	Effluent Grab 12/11	Effluent Grab 1/22	West Chamber 12/11	West Chamber 1/22	East Chamber 12/11	East Chamber 1/22
Total Residual Chlorine (For Dechlorination)	mg/L	≤ 0.01	0.04 e	> 2.2 e	-	-	-	-
Total Residual Chlorine (For Disinfection)	mg/L	≥ 0.5	-	-	0.22 e	.03 e	0.30 e	0.45 e

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
e- Value exceeds the Class III Water Quality Criteria or permit limits

Commented [SC1]: Round to 0.03?

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

Bonifay WWTF	Units	Class III Criteria	Effluent Permit Limits	Effluent Grab 12/11	Effluent Grab 1/22	Effluent Composite 12/11	Effluent Composite 1/22	Test Site 12/11	Control Site 12/11
Ortho-phosphate	mg P/L	-	-	2.1 Q	1.7	-	-	1.6	0.05
Total Phosphorus	mg P/L	0.06 [1]	≤ 8.0	2.2	1.9	2.2	1.8	1.6	0.11
Total Ammonia	mg N/L	-	Report	0.03	0.03	-	-	0.05	0.02
Un-ionized Ammonia (calculated salinity)	-	≤ 0.02 s	≤ 0.5	-	< 0.02 c	-	-	< 0.02 c	< 0.02 c
Nitrate and Nitrite	mg N/L	-	-	7.2	7.2	7.5	6.8	5.0	0.21
Total Kjeldahl Nitrogen	mg N/L	-	-	0.48	0.90	0.52	1.1	0.48	0.23
Organic Nitrogen	mg N/L	-	-	0.45 c	0.87 c	-	-	0.43 c	0.22 c
Total Nitrogen	mg N/L	0.67 [1]	≤ 20.0	7.7 c	8.1 c	8.0 c	7.9 c	5.5 c	0.44 c
Total Organic Carbon	mg C/L	-	-	2.9	3.2 A	3.1	18.0	3.3	4.1
Chlorophyll *a* - Corrected	µg/L	-	-	0.83 I	0.55 U	-	-	0.88 I	1.4 I
Phaeophytin	µg/L	-	-	0.40 U	0.40 U	-	-	0.40 U	0.40 U
CBOD, 5-day, N - inhibited	mg/L	-	≤ 16	-	-	2.0 Q	24 e	2.0	1.1 I
Total Suspended Solids	mg/L	-	≤ 16	-	-	2 I	2 I	2 I	2 I
Turbidity	NTU	< 29 t	-	0.85	1.3	-	-	2.9	6.1 A
Color (true)	PCU	-	-	2.5 U	3.3 I	-	-	14 A	36
Alkalinity	mg CaCO3/L	≥ 20	-	87	77 A	-	-	83	75
Chloride	mg Cl/L	-	-	32	33 A	-	-	21	4.3 A
Fluoride	mg F/L	≤ 10.0	-	0.04 I	0.05 IJ	-	-	0.05 I	0.07 I
Sulfate	mg SO4/L	-	-	18	23 A	-	-	17	7.6 A
Microbiology									
Fecal Coliforms [2]	cfu/100 mL	-	≤ 800	2 U	-	-	-	46	157 B
Escherichia coli [2]	MPN/100 mL	≤ 410 s	-	10 U	-	-	-	63	187
Toxicity (IC25, Chronic definitive, % effluent)									
Bioassay - Water flea *(Ceriodaphnia dubia)*	% effluent	-	≥ 100 p	-	-	-	52.5 e	-	-
Bioassay - Fish *(Pimephales promelas)*	% effluent	-	≥ 100 p	-	-	-	> 100	-	-

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 - 24-hour time-proportioned composite
s - Single sample
t - Shall not exceed 29 NTUs above background
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 laboratory practical quantitation limit
J - Estimated value
Q - Sample held beyond normal holding time
U - Material analyzed for but not detected; value reported is the method detection limit
1 - Panhandle West Nutrient Watershed Region for Numeric Nutrient Criteria (NNC), 62-302.531(2)(c), F.A.C
2 - Fecal coliform and *E. coli* analyses performed by the University of West Florida Laboratory, Pensacola, FL. Class III Freshwater criteria is now for *E. coli*; however, fecal coliforms were tested for.

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

Bonifay WWTF	Units	Effluent Permit Limits	Effluent Grab Class III Criteria	Effluent Grab 12/11	Effluent Grab Class III Criteria	Effluent Grab 1/22	Test Site Class III Criteria	Test Site 12/11	Control Site Class III Criteria	Control Site 12/11
Hardness	mg CaCO3/L	-	-	129 c	-	138 c	-	117 c	-	84.2 c
Aluminum	µg/L	-	-	8.9 I	-	11 I	-	103	-	262
Arsenic	µg/L	-	≤ 50	0.81	≤ 50	0.80	≤ 50	0.81	≤ 50	0.50
Cadmium	µg/L	-	≤ 0.327 b	0.048 I	≤ 0.343 b	0.038 I	≤ 0.304 b	0.038 I	≤ 0.238 b	0.020 U
Calcium	mg/L	-	-	41.3	-	45.1	-	37.4	-	27.6
Chromium, Total [3]	µg/L	-	≤ 106 b	0.40 U	≤ 112 b	0.61 I	≤ 98 b	0.40 U	≤ 74.9 b	0.55 I
Copper	µg/L	-	≤ 11.6 b	7.01	≤ 12.3 b	7.62	≤ 10.7 b	4.91	≤ 8.06 b	1.44
Iron	µg/L	-	≤ 1,000	30 U	≤ 1,000	37 I	≤ 1,000	170	≤ 1,000	420
Lead	µg/L	-	≤ 4.41 b	0.070 I	≤ 4.78 b	0.091 I	≤ 3.88 b	0.44	≤ 2.56 b	0.48
Magnesium	mg/L	-	-	6.34	-	6.11	-	5.72	-	3.72
Nickel	µg/L	-	≤ 64.8 b	0.69 I	≤ 68.4 b	0.68 I	≤ 59.5 b	0.60 I	≤ 45.1 b	0.41 I
Potassium	mg/L	-	-	7.1	-	7.3	-	5.8	-	2.1
Selenium	µg/L	-	≤ 5.0	0.20 U	≤ 5.0	0.20 U	≤ 5.0	0.20 U	≤ 5.0	0.20 U
Silver	µg/L	-	≤ 0.07	0.010 U	≤ 0.07	0.010 U	≤ 0.07	0.010 U	≤ 0.07	0.010 U
Sodium	mg/L	-	-	17.4	-	18.9	-	13.5	-	2.8
Zinc	µg/L	-	≤ 149 b	22	≤ 157 b	28	≤ 137 b	20	≤ 104 b	9.7 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(3))

c - Value is calculated

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

3 - Class III Freshwater Quality Criterion (62-302.530(19)(a), F.A.C.) is for chromium-III

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

Bonifay 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 Grab 12/11	*Pseudokirchneriella subcapitata*	231 A	274.6 ± 54.9	903 ± 180.6	291.8 ± 58.4	946 ± 189.2	3.4	3.5
Effluent Grab 1/22	*Pseudokirchneriella subcapitata*	55.4 A	274.8 ± 55	731 ± 146.2	307.8 ± 61.6	817 ± 163.4	4.3	4.3
Test Site 12/11	*Pseudokirchneriella subcapitata*	75.3	191.8 ± 38.4	688 ± 137.6	208.2 ± 41.6	688 ± 137.6	3.2	3.4
Control Site 12/11	*Pseudokirchneriella subcapitata*	7.12	8.6 ± 1.7	21.1 ± 4.2	16.7 ± 3.3	47.3 ± 9.5	4.6	4.0

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

Table 5. Macroinvertebrate Hester-Dendy samples - Quantitative

Bonifay WWTF	Test Site 12/11	Control Site 12/11
Summary Statistics		
Shannon-Weaver Diversity	1.71	2.02
Number of Taxa	13	10
Number of EPT Taxa	0	0
Percent Dominant Taxon	52.8	46.5
Dominant Taxon Name	*Dicrotendipes simpsoni* (Diptera)	*Dicrotendipes modestus* (Diptera)
Total Number of Individuals (counted)	908	1174
Total Number of Individuals (#/m^2)	1802	2330
Community Composition: Percent of total		
Diptera	97.1	99.6
Ephemeroptera	0.0	0.0
Gastropoda	0.4	0.1
Oligochaeta	2.4	0.3
Plecoptera	0.0	0.0
Trichoptera	0.0	0.0
Other	0.1	0.0
Functional Feeding Groups: Percent of total		
Burrowing Deposit Feeders	2.4	0.3
Predators	0.1	0.0
Scrapers	0.4	0.4
Shredders	2.0	20.0
Surface Deposit Feeders	50.9	51.2
Suspension Feeders	44.2	28.2
Unknown	0.0	0.0

Table 6. Macroinvertebrate Dipnet Samples - Qualitative

Bonifay	Test Site 12/11		Control 12/11	
Stream Condition Index 2012	**10 A**		**10 A**	
Replicate	Rep 1	Rep 2	Rep 1	Rep 2
Stream Condition Index Metrics				
Number of Total Taxa	18	18	19	27
Number of Ephemeroptera Taxa	0	0	0	0
Number of Trichoptera Taxa	0	0	0	1
Number of Long-lived Taxa	0	0	1	0
Number of Sensitive Taxa	0	0	0	0
Percent of Dominant Taxon	30.7	36.6	42.3	38.3
Percent Suspension Feeders and Filterers	28.6	31.7	23.2	23.5
Percent of Tanytarsini Individuals	0.0	0.0	0.0	0.7
Percent of Very Tolerant Individuals	67.1	64.1	81.7	73.8
Total Number of Individuals	140	142	142	149
Community Composition: Percent of total				
Dominant Taxon Name	*Dicrotendipes modestus* (Diptera)	*Dicrotendipes modestus* (Diptera)	*Dicrotendipes modestus* (Diptera)	*Dicrotendipes modestus* (Diptera)
Acariformes	0.0	0.0	0.0	0.7
Bivalvia	4.3	2.8	0.7	2.0
Diptera	69.3	69.7	59.2	58.4
Ephemeroptera	0.0	0.0	0.0	0.0
Gastropoda	20.0	17.6	28.9	22.2
Odonata	5.0	8.5	5.6	8.7
Oligochaeta	1.4	1.4	2.8	3.4
Plecoptera	0.0	0.0	0.0	0.0
Trichoptera	0.0	0.0	0.0	0.7
Other	0.0	0.0	2.8	4.0
Functional Feeding Groups: Percent of total				
Burrowing Deposit Feeders	1.4	1.4	2.8	3.4
Predators	6.4	8.8	7.8	13.8
Scrapers	21.4	17.6	28.9	23.2
Shredders	5.0	4.6	3.2	4.0
Surface Deposit Feeders	37.1	35.9	33.5	31.5
Suspension Feeders	28.6	31.7	23.2	23.5
Unknown	0.0	0.0	0.0	0.7

Appendix A

Facility Summary

PART I: Information gathered prior to sampling event

Prepared By: Dana Vestal	**Contact Number:** (850) 595-0659
Facility Name (as it appears on permit): City of Bonifay WWTF	**Former Names:** Not applicable
NPDES Permit Number: FL0027731	**Permit Expiration Date:** May 6, 2019
Physical Address: 611 Martin Luther King Jr. Ave., Bonifay, Florida 32425	
District: Northwest	**County:** Holmes
Function of Facility: Domestic wastewater treatment facility	
Facility Type: Domestic Wastewater Sequencing Batch Reactor (SBR)	**Permitted Capacity (MGD):** 1.4 MGD monthly average daily flow

Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): 0.679 MGD from monthly average flows FLW-01 October 2016 through September 2017.

If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months): Not applicable

Description of type of Discharge:
☐ **Continuous** ☐ **Intermittent** ☐ **Seasonal** ☐ **Rainfall Dependent**
☒ **Other, please specify:** This is an SBR, so batches of treated effluent are discharged daily every 1-3 hours as needed.

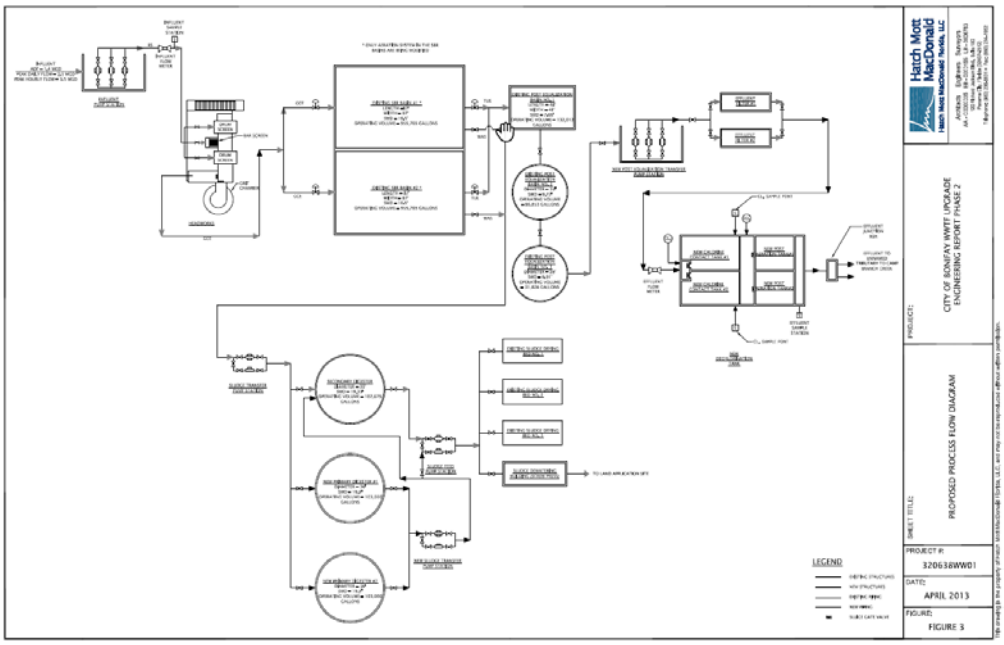
Description of Sampling Location(s) - actual permit designation of permitted sampling point(s):

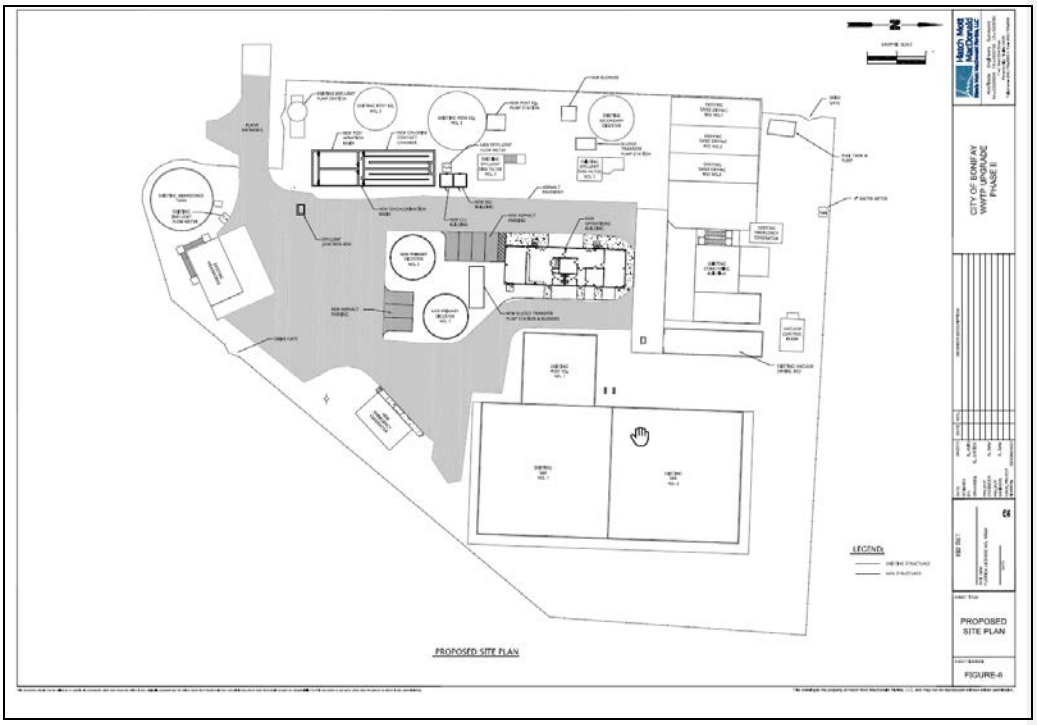
Monitoring Site Number	Description of Monitoring Site
CAL-01	Calculated Number
EFD-01	Effluent after reaeration and prior to discharge
EFA-01	Magnetic Flowmeter at post aeration chamber
FLW-01	Effluent Flow Recorder and totalizer
FLW-02	Influent flowmeter location before the treatment train
INF-01	Influent prior to treatment process

Description of Permitted Outfall(s): D-001 is 2 feet in length discharging at a depth of approximately 0.5 feet to an unnamed tributary of Camp Branch, Class III fresh waters (WBID #251).

Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility): The treatment system consists of a triplex influent submersible pump station, influent flowmeter, two internally fed rotary screens each rated at 1.75 MGD, an 11-ft diameter free standing stainless steel cyclonic pipe degritter, two 87 ft x 87 ft square tank Sequential Batch Reactors (SBR) with course bubble diffused aeration, three equalization flow tanks with total capacity of 109,283 gallons, two AquaDisk cloth media filters with total filtering capacity of 3.5 MGD, one 37,500 gallons chlorine contact chamber with flow proportional chlorinator, post aeration chamber with two aerators, 12-ft diameter dichlorination tank equipped with two aerators, two aerobic digesters with a total volume of 152,000 gallons, and Screw Press with polymer feed unit and three sludge drying beds.

The permit also extended the phase II wastewater treatment plant construction/upgrades project. The upgrades include: new fine bubble type diffusers and positive displacement blowers for SBR units, two baffled chlorine contact tanks with a total volume of 48,620 gallons to replace the existing chlorine contact chamber, a new 3.5 MGD dichlorination system with provision for mixing and adequate contact time after sulfur dioxide addition. Two new sulfur dioxide dosing systems including one to serve as backup, two new post aeration basins with total volume of 24,310 gallons, two single stage 103,000 gallons each sludge digesters with a two stage aerobic digestion train with two new sludge transfer pumps that will pump to an existing 102,000 gallons digester.




PROPOSED SITE PLAN
LEGEND:
CITY OF BONFAY
WWTP UPGRADE
PHASE II
PROPOSED
SITE PLAN
FIGURE-6

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)

			Effluent Limitations		Monitoring Requirements			
Parameter	Units	Max/ Min	Limit	Statistical Basis	Frequency of Analysis	Sample Type	Monitoring Site Number	Notes
Flow (D-001)	MGD	Max	1.4	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	8 10 12 16	Annual Average Monthly Average Weekly Average Single Sample	Weekly	16-hr FPC	EFD-01	
Solids, Total Suspended	mg/L	Max Max Max Max	8 10 12 16	Annual Average Monthly Average Weekly Average Single Sample	Weekly	16-hr FPC	EFD-01	
Nitrogen, Total	mg/L	Max Max Max Max	10.0 12.5 15.0 20.0	Annual Average Monthly Average Weekly Average Single Sample	Weekly	16-hr FPC	EFD-01	
Phosphorus, Total (as P)	mg/L	Max Max Max Max	4.0 5.0 6.0 8.0	Annual Average Monthly Average Weekly Average Single Sample	Weekly	16-hr FPC	EFD-01	
pH	s.u.	Min Max	6.0 8.5	Single Sample Single Sample	Continuous	Meter	EFD-01	See I.A.3 and I.A.7
Chlorine, Total Residual (For Disinfection)	mg/L	Min	0.5	Single Sample	Continuous	Meter	EFA-01	See I.A.3 and I.A.6
Chlorine, Total Residual (For Dechlorination)	mg/L	Max	0.01	Single Sample	Daily; 24 hours	Grab	EFD-01	
Oxygen, Dissolved Percent Saturation	% smpcm pln	Min	Report	Monthly Total	Daily; 24 hours	Grab	EFD-01	See I.A.9
Oxygen, Dissolved (DO)	Mg/L	Min	6.0	Minimum	Daily; 24 hours	Grab	EFD-01	
Coliform, Fecal	#/100mL	Max Max Max	200 200 800	Annual Average Mo Geo Mean Single Sample	Weekly	Grab	EFD-01	See I.A.5
Nitrogen, Ammonia, Total (as N)	mg/L	Max	Report	Single Sample	Weekly	Grab	EFD-01	
Temperature (C), Water	Deg C	Max	Report	Single Sample	Weekly	Grab	EFD-01	
Ammonia, Unionized (as NH3)	mg/L	Max	0.50	Single Sample	Weekly	Calculated	CAL-01	See I.A.7
Chronic Whole Effluent Toxicity, 7-Day IC25 (Ceriodaphnia dubia)	percent	Min	100	Single Sample	Semi-Annually; twice per year	24-hr FPC	EFD-01	See I.A.8
Chronic Whole Effluent Toxicity, 7-Day IC25 (Pimephales promelas)	percent	Min	100	Single Sample	Semi-Annually; twice per year	24-hr FPC	EFD-01	See I.A.8

I.A.3.: Hourly measurement of pH and total residual chlorine for disinfection during the period of required operator attendance may be substituted for continuous measurement. *[Chapter 62-601, Figure 2]*
I.A.4.: A recording flow meter with totalizer shall be utilized to measure flow and calibrated at least once every 12 months. *[62-601.200(17) and .500(6)]*
I.A.5.: The effluent limitation for the monthly geometric mean for fecal coliform is only applicable if 10 or more values are reported. If fewer than 10 values are reported, the monthly geometric mean shall be calculated and reported on the Discharge Monitoring Report. *[62-600.440(4)(c)]*
I.A.6.: Total residual chlorine must be maintained for a minimum contact time of 15 minutes based on peak hourly flow. *[62-600.440(4)(b), (5)(b), and (6)(b)]*
I.A.7.: Effluent samples for pH and temperature shall be monitored at the same time and location as the total ammonia grab sample which is used to calculate the unionized ammonia value. Unionized ammonia shall be calculated using the DEP Standard Operating Procedure for "Calculation of Un-Ionized Ammonia in Fresh Water" dated February 12, 2001. *[62-4.246(4) and 62-302.530(3)]*
I.A.8.: 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 six months, the first starting six months from the last test date and lasting for the duration of this permit.
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.
e. Quality Assurance Requirements
(1) A standard reference toxicant (SRT) quality assurance (QA) chronic toxicity test shall be conducted with each species used in the required toxicity tests either concurrently or initiated no more than 30 days before the date of each routine or additional follow-up test conducted. Additionally, the SRT test must be conducted concurrently if the test organisms are obtained from outside the test laboratory unless the test organism supplier provides control chart data from at least the last five monthly chronic toxicity tests using the same reference toxicant and test conditions. If the organism supplier provides the required SRT data, the organism supplier's SRT data and the test laboratory's monthly SRT-QA data shall be included in the reports for each companion routine or additional follow-up test required.
(2) If the mortality in the control (0% effluent) exceeds 20% for either species in any test or the "test

acceptability criteria" are not met, the test for that species (including the control) shall be invalidated and the test repeated. Test acceptability criteria for each species are defined in EPA-821-R-02-013, Section 13.12 (Ceriodaphnia dubia) and Section 11.11 (Pimephales promelas). The repeat test shall begin within 21 days after the last day of the invalid test.
(3) If 100% mortality occurs in all effluent concentrations for either test species prior to the end of any test and the control mortality is less than 20% at that time, the test (including the control) for that species shall be terminated with the conclusion that the test fails and constitutes non-compliance.
(4) Routine and additional follow-up tests shall be evaluated for acceptability based on the observed dose response relationship as required by EPA-821-R-02-013, Section 10.2.6., and the evaluation shall be included with the bioassay laboratory reports.
f. Reporting Requirements
(1) Results from all required tests shall be reported on the Discharge Monitoring Report (DMR) as follows:
(a) Routine and Additional Follow-up Test Results: The calculated IC25 for each test species shall be entered on the DMR.
(2) A bioassay laboratory report for each routine test shall be prepared according to EPA-821-R-02-013, Section 10, Report Preparation and Test Review, and mailed to the Department at the address below within 30 days after the last day of the test.
(3) For additional follow-up tests, a single bioassay laboratory report shall be prepared according to EPA-821-R-02-013, Section 10, and mailed within 30 days after the last day of the second valid additional follow-up test.
(4) Data for invalid tests shall be included in the bioassay laboratory report for the repeat test.
(5) The same bioassay data shall not be reported as the results of more than one test.
(6) All bioassay laboratory reports shall be sent to:
Florida Department of Environmental Protection
Northwest District Office
160 W. Government Street, Suite 308
Pensacola, Florida
g. Test Failures
(1) A test fails when the test results do not meet the limits in 8.a.(1).
(2) Additional Follow-up Tests:
(a) If a routine test does not meet the chronic toxicity limitation in 8.a.(1) above, the permittee shall notify the Department at the address above within 21 days after the last day of the failed routine test and conduct two additional follow-up tests on each species that failed the test in accordance with 8.d.
(b) The first test shall be initiated within 28 days after the last day of the failed routine test. The remaining additional follow-up tests shall be conducted weekly thereafter until a total of two valid additional follow-up tests are completed.
(c) The first additional follow-up test shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 50%, 25%, 12.5%, and 6.25% effluent. The permittee may modify the dilution series in the second additional follow-up test to more accurately bracket the toxicity such that at least two dilutions above and two dilutions below the target concentration and a control (0% effluent) are run. All test results shall be analyzed according to the procedures in EPA-821-R-02-013.
(3) In the event of three valid test failures (whether routine or additional follow-up tests) within a 12-month period, the permittee shall notify the Department within 21 days after the last day of the third test failure.
(a) The permittee shall submit a plan for correction of the effluent toxicity within 60 days after the last day of the third test failure.
(b) The Department shall review and approve the plan before initiation.
(c) The plan shall be initiated within 30 days following the Department's written approval of the plan.
(d) Progress reports shall be submitted quarterly to the Department at the address above.
(e) During the implementation of the plan, the permittee shall conduct quarterly routine whole effluent toxicity tests in accordance with 8.d. Additional follow-up tests are not required while the plan is in progress. Following completion or termination of the plan, the frequency of monitoring

for routine and additional follow-up tests shall return to the schedule established in 8.b.(1). If a routine test is invalid according to the acceptance criteria in EPA-821-R-02-013, a repeat test shall be initiated within 21 days after the last day of the invalid routine test.
(f) Upon completion of four consecutive quarterly valid routine tests that demonstrate compliance with the effluent limitation in 8.a.(1) above, the permittee may submit a written request to the Department to terminate the plan. The plan shall be terminated upon written verification by the Department that the facility has passed at least four consecutive quarterly valid routine whole effluent toxicity tests. If a test within the sequence of the four is deemed invalid, 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 quarterly valid routine tests for the purpose of terminating the plan.
(4) If chronic toxicity test results indicate greater than 50% mortality within 96 hours in an effluent concentration equal to or less than the effluent concentration specified as the acute toxicity limit in 8.a.(2), the Department may revise this permit to require acute definitive whole effluent toxicity testing.
(5) The additional follow-up testing and the plan do not preclude the Department taking enforcement action for acute or chronic whole effluent toxicity failures.
[62-4.241, 62-620.620(3)]
I.A.9.: No more than 10 percent of the daily average percent dissolved oxygen (DO) saturation values shall be below 67%. To report the "percent samples in compliance," count the number of daily average values greater than or equal to 67%, divide by the total number of daily average values, and multiply by 100% (round to the nearest integer). *[62-302.533(1)(a)]*

PART I: Continued	
Receiving Waters: Unnamed tributary of Camp Branch	**Classification (indicate whether fresh or marine):** Class III fresh waters
Toxicity Test Requirements (routine and/or additional test language, test species, salinity adjustment, etc.): See pages 5-8 above for chronic whole effluent toxicity 7-day IC25 for *Ceriodaphnia dubia* and *Pimphales promelas* requirements.	

Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.): AO088NW for CBOD, Nutrients and DO provided interim limits for loading CBOD 34,094 lb/yr annual total, total nitrogen 21,309 lb/yr annual total, total phosphorus 12,785 lb/yr annual total. AO088NW revoked with permit revision and new AO088NW issued January 14, 2015. AO-095NW for DO provides an interim limit of 6.0 mg/L minimum for DO and Report percent of samples in compliance with the new DO percent saturation limit. The AO was extended on January 12, 2016 with a final compliance deadline of February 1, 2018. CO OGC # 13-0846-30-DW executed on June 27, 2013, provides interim limits for un-ionized ammonia, total nitrogen, and total phosphorus until January 31, 2018. CO schedule listed below:

5. Within 30 days of the effective date of this Order, Respondent shall retain the services of a professional engineer, registered in the State of Florida, to accomplish all of the following:

a) Designing modifications of the Facility, effluent disposal system, and collection systems to ensure the Facility and effluent disposal system will function in full and consistent compliance with all applicable rules of the Department.
b) Completing an application for a Department wastewater permit to construct the modifications listed in subparagraph (b) of this paragraph, if such a permit is required.
c) Overseeing the construction of any modifications to the Facility, effluent disposal system, or collection system.
d) Submitting to the Department a Certification of Completion, prepared and sealed by a professional engineer registered in the State of Florida, stating that modifications to the Facility, effluent disposal system, and collection system have been constructed in accordance with the provisions of the Permit.
e) In the event the Department requires additional information to process the permit application described in subparagraph (c) of this paragraph, providing a written response containing the information requested by the Department within 30 days of the date of the request.

6. Within 90 days of the effective date of this Order, Respondent shall submit a complete application for a Department wastewater permit to construct the modifications listed in subparagraph (5)(b), if such a permit is required.

7. By December 31, 2015, Respondent shall complete construction of the modification(s) developed pursuant to paragraph 5 and submit a Certification of Completion, prepared and sealed by a professional engineer registered in the State of Florida, stating that modifications to the Facility, effluent disposal system, and collection system have been constructed in accordance with the provisions of the Permit. Respondent shall submit the Certification of Completion to the Department in accordance with Rule 62-620.630(2), F.A.C.

8. This Consent Order provides an interim limit for un-ionized ammonia, total nitrogen, and total phosphorous at Outfall D-001 until December 31, 2015. Respondent shall comply with the discharge limitations specified in the table below, and other requirements set forth in the Facility's Permit:

			Effluent Limitations				Monitoring Requirements		
Parameter	Units	Max/ Min	Annual Average	Monthly Average	Weekly Average	Single Sample	Monitoring Frequency	Sample Type	Monitoring Location Site Number
Total Nitrogen	mg/L	Max	10.0	12.5	15.0	20.0	Weekly	16-hr FPC	EFD-01
Total Phosphorus	mg/L	Max	4.0	5.0	6.0	8.0	Weekly	16-hr FPC	EFD-01

Unionized Ammonia	mg/L	Max	-	-	-	0.50	Weekly	Calculated	CAL-01

a) Tests conducted pursuant to this monitoring program shall conform to 62-601, F.A.C.
b) These monitoring requirements do not act as State of Florida Department of Environmental Protection Wastewater Permit effluent limitations, nor do they authorize or otherwise justify violation of the Florida Air and Water Pollution Control Act ("Act"), Part I, Chapter 403, F.S., during the pendency of this Order.

Paragraph 5 shall be completed by January 31, 2018.

Paragraph 7 shall be completed by January 31, 2018.

Paragraph 8 interim limits are extended until January 31, 2018.

AO January 12, 2016 Extension:
https://depedms.dep.state.fl.us:443/Oculus/servlet/shell?command=getEntity&[guid=38.454054.1]&[profile=Permitting_Authorization]

Permit Revision with new AO095NW and revoking AO088NW January 14, 2015:
https://depedms.dep.state.fl.us:443/Oculus/servlet/shell?command=getEntity&[guid=38.354710.1]&[profile=Permitting_Authorization]

Permit Renewal with AO-088NW May 7, 2014:
https://depedms.dep.state.fl.us:443/Oculus/servlet/shell?command=getEntity&[guid=38.287571.1]&[profile=Permitting_Authorization]

CO OGC # 13-0846 executed on June 27, 2013:
https://depedms.dep.state.fl.us:443/Oculus/servlet/shell?command=getEntity&[guid=38.215418.1]&[profile=Enforcement_Legal]

CO OGC # 13-0846-time extension issued on December 23, 2015:
https://depedms.dep.state.fl.us:443/Oculus/servlet/shell?command=getEntity&[guid=38.449650.1]&[profile=Enforcement_Legal]

Facility Mixing Zone Details (if applicable): Not applicable

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

Date	Parameter and Units	Limit	Result
June 2017	Ammonia, Unionized (mg/L) Maximum	0.5	0.64
June 2017	BOD, Carbonaceous 5 Day (mg/L) Monthly Average	10.0	10.5
June 2017	BOD, Carbonaceous 5 Day (mg/L) Maximum	16.0	17
August 2017	IC25 Statre 7-day Chr Ceriodaphnia (percent) Minimum	100.0	3.4

September 2017	IC25 Statre 7-day Chr Ceriodaphnia (percent) Minimum	100.0	9.8
Date	Parameter and Units	Limit	Result
May 2017	Nitrogen, Total (mg/L) Maximum	20.0	24.5
May 2017	Phosphorus, Total (mg/L) Maximum	8.0	14
May 2017	Phosphorus, Total (mg/L) Monthly Average	5.0	5.92
May 2017	Total Suspended Solids (mg/L) Maximum	16.0	82
May 2017	Total Suspended Solids (mg/L) Monthly Average	10.0	21.64
May 2017	Total Suspended Solids (mg/L) Weekly Average	12.0	21.64
June 2017	Total Suspended Solids (mg/L) Maximum	16.0	88
June 2017	Total Suspended Solids (mg/L) Monthly Average	10.0	43.8
June 2017	Total Suspended Solids (mg/L) Weekly Average	12.0	43.8

Describe previous FYI and WQBEL study: June 12-19, 2012 FYI5 report here: ftp://ftp.dep.state.fl.us/pub/labs/lds/reports/12701.pdf

Results

Organic Constituents (See Table 1 and Appendix F)

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

Metals (See Table 2 and Appendix F)

- All metals in the effluent sample were either undetected or detected at levels that complied with permit limits and Class III Freshwater Quality Criteria (62-302.530, F.A.C.)
- All metals in the Control and Test Site 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.

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

- Tests were performed June 12 through June 19, 2012.
- The effluent sample NOEC for the fish, *Pimephales promelas*, and the NOEC for the water flea, *Ceriodaphnia dubia*, during the chronic definitive bioassays were 100% effluent, and therefore, complied with effluent permit limits.

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

- Habitat Assessment scores were similar at the Control Site (65) and Test Site (79), which places both sites in the Marginal category. Both sites had similar substrate diversity and availability, but the Control Site had a greater percentage of habitat smothering than the Test Site. Both sites were artificially channelized and had poor bank stability on both the left and right banks. The Control Site also had lower riparian zone vegetation quality than the Test Site.
- Dissolved oxygen (mg/L), pH (Standard Units), and specific conductance (µmhos/cm) of the effluent complied with Class III Freshwater Quality Criteria (62-302.530, F.A.C.) and effluent permit limits.
- Dissolved oxygen (mg/L) of the Control Site (3.3 mg/L) and Test Site (4.4 mg/L) was below the minimum limit for Class III Freshwater Quality Criterion (62-302-.530(30), F.A.C.).
- The pH (Standard Units) and specific conductance (µmhos/cm) of the Control and Test Sites complied with Class III Freshwater Quality Criteria (62-302.530, F.A.C.).
- Alkalinity (mg CaCO3/L) of the effluent, Control Site, and Test Site samples complied with Class III Criteria.
- Total residual chlorine (TRC) of the effluent was undetected in the bioassay sample as measured in the FDEP laboratory. The sample was held beyond the normal holding time for this measurement (Q qualifier).
- Chlorophyll *a* (corrected) was detected at a low level in the effluent sample.
- Chlorophyll *a* (corrected) was undetected in the Control Site sample and detected at a low level between the laboratory method detection limit (MDL) and the laboratory practical quantitation limit (PQL) in the Test Site sample.
- Total suspended solids (TSS; mg/L) and Carbonaceous Biochemical Oxygen Demand (CBOD; mg/L) of the effluent sample complied with permit limits.

Microbiology (See Table 1 and Appendix F)

- Fecal coliform analyses were performed by The Water Spigot, Panama City, Florida.
- Fecal coliforms (1640 CFU/100mL B) were detected in the effluent sample at levels which exceeded Class III Freshwater Quality Criterion (62-302.530(6), F.A.C.) and the facility permit limits.
- Fecal coliforms were undetected in the Control and Test Site samples and therefore complied with Class III Freshwater Quality Criterion (62-302.530(6), F.A.C.).

Nutrients (See Table 1 and Appendix F)

- Effluent nutrient levels complied with permit limits.
- Total ammonia in the effluent sample (0.044 mg/L) was 6 times lower than total ammonia in the Control Site sample (0.27 mg/L) and 2.5 times lower than in the Test Site sample (0.11mg/L).

Effluent ortho-phosphate, total phosphorus, and nitrate+nitrite were generally higher than in the Control and Test Site samples. Nutrient levels in the Control and Test Site samples were similar which suggests the effluent is not currently contributing to eutrophic impacts at the Test Site due to this not being an effluent dominated stream. While several nutrients in the Test Site samples were slightly higher than the nutrients in the Control Site samples, the levels were of comparable range.

- No nutrients were detected in the field blank.

Algal Growth Potential (See Table 3 and Appendix F)

- Raschke and Shultz (1987) determined that AGP values above 5.0 mg dry weight/L represent a "problem" threshold for fresh receiving waters, implying nutrient enrichment. The AGP value in the effluent sample using the freshwater species, *Pseudokirchneriella subcapitata*, was approximately 40 times greater than the problem threshold value. The analytical chemistry suggests that the effluent is nitrogen limited.
- The AGP values for the Control and Test Sites were 26 times and 29 times, respectively, higher than the problem threshold. The analytical chemistry suggests that both study sites are nitrogen limited.
- While both instream sites have lower AGP values than the effluent, the Test Site AGP value is greater than the Control Site AGP value which indicates that there is a slight nutrient enrichment occurring at the Test Site due to the effluent.

Bioassessment

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

- Periphyton communities at both the Control and Test Sites consisted mostly of diatoms. The diatom communities were dominated by *Nitzschia* sp. at the Control Site and *Diadesmis confervacea* at the Test Site. The Control Site sample had a higher percentage of diatoms present, whereas, the Test Site sample had a higher percentage of blue-green algae present. Community differences in the Control and Test Sites may be due to differences in the substrate types that were sampled. There were no adverse effects apparent on the periphyton community in the unnamed tributary from the effluent.

Macroinvertebrates (See Figure 1, Table 5, and Appendices J-1 and J-2)

- Quantitative macroinvertebrate data were collected from floating Hester-Dendy samplers at the Control and Test Sites. One of the Test Site Hester-Dendy samplers was lost. Due to fluctuating water levels the integrity of the Hester-Dendy samples is questionable. The data will not be analyzed for this report as any differences in the sites cannot be attributed to the effluent.
- Qualitative macroinvertebrate data from dipnet samples indicated that the macroinvertebrate community at the Test Site was less disturbed than the Control Site. The Test Site scored 20 A on the Stream Condition Index (SCI), and the Control Site scored 8 A, placing both in Category 3 (see Appendix C for an explanation of SCI Categories). No Ephemeroptera or sensitive taxa were collected from either site. No Trichoptera taxa and only two long-lived taxa were collected from the Control Site, while only one Trichoptera taxa and one long-lived taxa were collected from the Test Site. The percentage of suspension feeders and filterers, which tend to decline with human disturbance, was higher at the Test Site (see Appendix C for an explanation of how these SCI metrics typically respond to human disturbance). The Control Site had a higher percentage of very tolerant individuals. Overall, there were no negative effects on macroinvertebrates at the Test Site that were attributable to the effluent. Any adverse effects on the macroinvertebrate community were more likely attributable to low habitat availability, low water velocity, and habitat smothering.

Conclusion

Instream sampling at the Control and Test Sites was postponed from the original June sampling date (06/10/12-06/14/12) due to heavy rain which caused high water levels in the unnamed tributary. Instream sampling occurred on July 9, 2012.

Dissolved oxygen at the Control Site and Test Site was below the minimum limit for Class III Freshwater Quality Criteria (62-302.530(30), F.A.C.). Fecal coliforms in the effluent sample were detected at levels which exceeded Class III Freshwater Quality Criterion (62-302.530(6), F.A.C.) and the facility permit limits. Whole

effluent toxicity testing complied with effluent permit limits. The nutrient and AGP values of the Control Site indicate that there is already significant nutrient enrichment in this portion of the unnamed tributary. While the nutrient values of the Test Site samples were slightly higher than those of the Control Site samples, the values are within the same range which indicates that the effluent is not contributing to eutrophic impacts at the Test Site. However, the AGP values reflect that there is a slight nutrient enrichment at the Test Site as a result of the effluent.
There were no adverse effects apparent on the periphyton or macroinvertebrate communities as a result of the effluent.

Level 1 WQBEL with draft permit issued March 25, 2014, starting on page 41 attachment of PDF: https://depedms.dep.state.fl.us:443/Oculus/servlet/shell?command=getEntity&[guid=38.399081.1]&[profile=Permitting_Authorization]

Describe previous or current Enforcement Actions (including WLs): The current enforcement action Consent Order OGC # 13-0846 was executed on June 27, 2013 ("CO") for effluent quality exceedances for unionized ammonia, total nitrogen, total suspended solids, total phosphorus, and total recoverable silver during 2011 and 2012. The CO provides interim limits for total nitrogen, total phosphorus and unionized ammonia until January 31, 2018.

Warning Letter issued July 8, 2011 for a sanitary sewer overflow ("SSO") that was not reported correctly to the Department. The case was closed without enforcement, a letter was issued conveying this on June 25, 2012.

Consent Order OGC # 05-0565 was executed on May 17, 2005 for an SSO at the wastewater facility into Branch Creek. The case was closed on July 28, 2005 when all the CO conditions were met.

Consent Order OGC # 00-2004 was executed on January 29, 2001 for effluent exceedances for nitrate and TSS. The case was closed on November 11, 2001 when all of the conditions of the CO were met.

Describe any violations or problems noted in previous inspection: The composite sampler thermometer was expired and was replaced. One of the aerators in the post aeration chamber was inoperable. The visual alarm on the temporary chlorine room was not working and the drain in the sulfur dioxide room was backing up and not draining water. The facility is undergoing a major construction project that will address these issues. The facility's influent flow meter was not calibrated, documentation was submitted showing the calibration was performed following the inspection. The facility's Treatment Facility Biosolids Plan needs to be updated to show current practices. Also, documentation was not being maintained onsite to demonstrate that vector attraction reduction requirements are being met in accordance with the permit. The biosolids transport record was updated to indicate the VAR requirements being met. A copy of the new form was provided to the Department.

Discuss whether DMR trends within previous five years are improving or declining: DMR trends are about the same.

Additional Comments (this should include a trend of the Effluent, i.e. if the facility is now Reuse): Facility is in the middle of a major construction project.

PART II: Sampling Event Information	
Date(s) sample collected: 12/11/2017, 01/22/2018, 01/24/2018, 01/26/2018	**Sampler(s):** Dana Vestal
Temperature (Deg C): 17.9	**pH (SU):** 7.45
Dissolved Oxygen (mg/L): 9.69	**Conductivity (µmhos/cm):** Don't have meter to measure
Total Residual Chlorine (mg/L): EFD-01 >2.2 (dechlorination point)	**Total Residual Chlorine - after Disinfection (mg/L):** EFA-01 West 0.28 and East 0.45 (disinfection points).
Method of Chlorination: 150 lb. gas chlorine	**Method of De-chlorination:** 150 lb. gas sulfur dioxide
Flow During Sample Collection for each outfall (MGD): 12/11/2017 0.456, 01/22/2018 0.500, 01/24/2018 0.526, 01/26/2018 0.462.	
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): 0.626 February 2017 through January 2018 monthly average flows.	
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: Very low flow through Parshall flume during sampling event, not enough chlorine for disinfection at sampling points, too much chlorine discharged post dechlorination.	

Appendix B

Explanation of Measurements

Biological assessments are prepared by DEP 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. References to Rule 62-302.530, F.A.C., are to the currently applicable surface water quality criteria table with an effective date of 02/17/2016 and a notice identification number of 17115667. New limits for *Escherichia coli* (*E. coli*), enterococci, and total ammonia nitrogen were approved on 07/24/2017**.**

1) Quality Assurance and Quality Control

All field and laboratory methods followed DEP Standard Operating Procedures (see https://floridadep.gov/dear/quality-assurance/content/dep-sops and https://floridadep.gov/dear/florida-dep-laboratory/content/dep-laboratory-quality-assurance-manual-and-sops for details) and met DEP quality assurance/quality control standards (see https://floridadep.gov/dear/quality-assurance).

2) Chemical Analyses of the Effluent

The effluent was analyzed for nutrients, metals, organic constituents (base, neutral, and acid extractables) and pesticides following DEP 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 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 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 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 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. AGP results within the range 6.10 to 20.0 mg dry wt/L are suggested to be representative of high productivity for freshwaters (Miller et al. 1978). 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 several factors, comparison of algal density at a control site to algal density at a related test site gives a partial comparison of algal biomass at the two sites (Stevenson and Smol 2003).

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

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

8) Benthic Macroinvertebrate Assemblages

Benthic macroinvertebrates were collected using two methods. Quantitative samples were collected from Hester-Dendy multi-plate samplers incubated for 28 days. Qualitative collections are made using 20 dipnet sweeps (QA Rule SOP 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 biological assessment tool that measures the degree to which flowing fresh waters support a healthy, well-balanced biological community, as indicated by aquatic, benthic macroinvertebrates. Macroinvertebrate taxonomic and abundance data are used to calculate ten biological metric scores, each of which has been shown to respond predictably to human disturbance (Fore et al. 2007; DEP SOP SCI 1000; DEP-SAS-001/11, incorporated into the Quality Assurance Rule by reference 62-160.210(2)(a), F.A.C.). The points for each of the metric scores (0 to 10) are summed to yield a final SCI score (range 0-100). The ten metrics are percent contribution of Tanytarsini, number of sensitive taxa, percent contribution of very tolerant taxa, number of total taxa, number of Ephemeroptera taxa, number of Trichoptera taxa, percent contribution of the dominant taxon, the percent contribution of suspension and filter feeders, number of long-lived taxa, and number of clinger taxa. As human disturbance increases, it is expected that the number of total taxa, 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.

The SCI can be used to determine faunal health associated with Chapter 62-302.531, F.A.C. An average SCI score of 40 or higher from at least two temporally independent SCIs, performed at representative locations and times indicates a balanced faunal community. Neither of the two most recent SCI scores should be less than 35. Failure of the SCI indicates that the stream does not meet the Clean Water Act goal of biological integrity, as measured by community structure and function. A failing SCI could be due to water quality problems or other physical disturbance factors such as habitat disruption or hydrologic alterations. While the stressor may not be known, a failed SCI does indicate that fauna is not well-balanced. A failing SCI score, 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) Rapid Periphyton Survey

Rapid Periphyton Survey (RPS) is a rapid method to quantify the extent and abundance of attached algae (periphyton) in a stream or river. A total of 99 points are assessed within a 100m area of sampling reach, 9 equidistant points along 11 cross-section transects spaced 10 m apart, if greater than 20% of sampled points have algal lengths greater than 6mm, a sample is collected, and the autecological information associated with the dominant algae is evaluated (see DEP SOP FS 7230 Rapid Periphyton Survey). This method could be used to determine floral health associated with Chapter 62-302.531, F.A.C.

10) Linear Vegetation Survey

Linear Vegetation Survey (LVS) is a rapid screening tool for ecological condition, by determining how closely a site's flora resembles that of an undisturbed condition. When the total area of macrophytes equals or exceeds two square meters within the wetted area of the 100 m sampling reach, macrophyte taxonomic names are recorded (DEP SOP FS 7320 Stream and River Linear Vegetation Survey (LVS) Method). This method could be used to determine floral health associated with Chapter 62-302.531, F.A.C.

11) 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 C

Chain of Custody

12-11-15

Request Number: RQ-2017-~~03-06-48~~

~~NW-RUN-135-4-72-71-79~~ FY15 City of Bonifay

Florida Department of Environmental Protection

Central Laboratory Submittal Form

Page 1 of 2

last revised Apr 7, 2016

Customer: NW-DIST

Project ID: ~~SMP~~ FY15

Requester: ~~Michael King~~ A. Pennington

Collected By: Nathan Milby

Field Report Prepared By: N. Milby

Sampling Agency: NWROE

Location: Bonifay WWTF	☐ Comp ☑ Grab	Collection (comp begin or grab) Date 12/1/17 Time 1100	Eastern (Central)	Composite end Date	Time	Bottle Group(s) (See pg 2): C/D				
Field ID: Camp Branch Control	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen 7.37	☑ mg/L ☐ % sat	Total Res. Chlorine (mg/L)					
STORET # 32020157	Temp (C) 8.74	pH 6.42	Sample Depth 0.3	☐ ft ☑ m	Sp. Conductance (umho/cm) 182					
Latitude 30.78704 ☑ dd ☐ dms	Longitude 85.671016 ☑ dd ☐ dms	Salinity (ppt)	Comments							
Location: Bonifay WWTF	☐ Comp ☑ Grab	Collection (comp begin or grab) Date 12/1/17 Time 1015	Eastern (Central)	Composite end Date	Time	Bottle Group(s): C/D				
Field ID: Camp Branch Test	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen 7.83	☑ mg/L ☐ % sat	Total Res. Chlorine (mg/L)					
STORET # 32020158	Temp (C) 14.39	pH 6.86	Sample Depth 0.3	☐ ft ☑ m	Sp. Conductance (umho/cm) 321					
Latitude 30.79049 ☑ dd ☐ dms	Longitude 85.67082 ☑ dd ☐ dms	Salinity (ppt)	Comments							
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date	Time	Bottle Group(s)				
Field ID	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)					
STORET #	Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)					
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments							
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date	Time	Bottle Group(s)				
Field ID	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)					
STORET #	Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)					
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments							

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
[signature]	12/1/17	FedEx	3	[signature]	12/12/17 10:25

Request Number: RQ-2017-12-11-15

FYI5 City of Bonifay WWTF (FL0027731) Sampling Inspection

Customer: NW-DIST

Project ID: FYI5

Florida Department of Environmental Protection
Central Laboratory Submittal Form

last revised Apr 7, 2016

Requester: Adrienne E. Pennington

Collected By: Dana Vestal

Field Report Prepared By: Dana Vestal

Sampling Agency: Florida DEP

Location: Bonifay FL0027731	☐ Comp ☒ Grab	Collection (comp begin or grab) Date 12/11/17 Time 10:42	Eastern Central	Composite end Date	Time	Bottle Group(s) (See pg 2): A
Field ID: D-001 brab	Matrix (type, e.g., Salt, Fresh, etc): wastewater	Diss. Oxygen 8.66	☒ mg/L ☐ % sat	Total Res. Chlorine (mg/L) 0.04	
STORET #	Temp (C)	pH 7.15	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments	
Location: Bonifay FL0027731	☒ Comp ☐ Grab	Collection (comp begin or grab) Date 12/10/17 Time 8A	Eastern Central	Composite end Date 12/11/17 Time 8A	Bottle Group(s): B
Field ID: D-001 composite	Matrix (type, e.g., Salt, Fresh, etc): wastewater	Diss. Oxygen 9.62	☒ mg/L ☐ % sat	Total Res. Chlorine (mg/L) < .002	
STORET #	Temp (C) 17.2	pH 7.02	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments	
Location: Bonifay FL0027731	☐ Comp ☒ Grab	Collection (comp begin or grab) Date 12/11/17 Time 12:30	Eastern Central	Composite end Date	Time	Bottle Group(s): E
Field ID: Field Blanks	Matrix (type, e.g., Salt, Fresh, etc): DI Water	Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
STORET #	Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments	
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date	Time	Bottle Group(s)
Field ID	Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
STORET #	Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments	

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
Dana Vestal	12/11/17 3:30P	FedEx	1	Tyler R	12/13/17 @10:05

V1 BOD-TN-NH3 1 AGP AB02 12.8.17 1108

Cathy Sturrer 1 CHL sample @ 10:41

2 samples PO4 Color/turb. TW 12/14/17

Request Number: RQ-2017-12-11-15

FYI5 City of Bonifay WWTF (FL0027731) Sampling Inspection

Customer: NW-DIST

Project ID: FYI5

Florida Department of Environmental Protection
Central Laboratory Submittal Form

last revised Jan 3, 2018

Requester: Adrienne E. Pennington

Collected By: Dana Vestal

Field Report Prepared By: Dana Vestal

Sampling Agency: FDEP

Location: Bonifay WWTF	☐ Comp ☒ Grab	Collection (comp begin or grab) Date 1/21/18 Time 10A	Eastern Central	Composite end Date 1/22/18 Time 10A	Bottle Group(s) (See pg 2): A B DO
Field ID: D-001 Grab Composite DO	Matrix (type, e.g., Salt, Fresh, etc): Wastewater	Diss. Oxygen 9.74	☒ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
WIN/STORET #	Temp (C) 16.6	pH 6.80	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments		
Location: Bonifay WWTF	☒ Comp ☐ Grab	Collection (comp begin or grab) Date 1/22/18 Time 0:34A	Eastern Central	Composite end Date Time	Bottle Group(s): A B DO
Field ID: D-001 Composite Grab DO	Matrix (type, e.g., Salt, Fresh, etc): Wastewater	Diss. Oxygen 9.69	☒ mg/L ☐ % sat	Total Res. Chlorine (mg/L) 72.2	
WIN/STORET #	Temp (C) 17.9	pH 7.45	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments		
Location: Bonifay WWTF	☐ Comp ☒ Grab	Collection (comp begin or grab) Date 1-22-18 Time 1210 SR 1-23-18	Eastern Central	Composite end Date Time	Bottle Group(s): C
~~Field ID~~: Field Blank DI Water	Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
WIN/STORET #	Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments		
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time	Bottle Group(s)
Field ID	Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
WIN/STORET #	Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments		

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
Dana Vestal	1/22/18 2:49	FedEx	4	SR	1-23-18 10:40

1285.1483 1.23.18 1105 AGR

Request Number: RQ-2017-12-11-15

FYI5 City of Bonifay WWTF (FL0027731) Sampling Inspection

Customer: NW-DIST

Project ID: FYI5

Florida Department of Environmental Protection
Central Laboratory Submittal Form

last revised Apr 7, 2016

Requester: Adrienne E. Pennington

Field Report Prepared By: Dana Vestal

Collected By: Dana Vestal

Sampling Agency: FDEP

Location: City of Bonifay WWTF			☒ Comp ☐ Grab	Collection (comp begin or grab) Date 1/23/18 Time 8:00A		Eastern Central	Composite end Date 1/24/18 Time 8:00A			Bottle Group(s) (See pg 2): B	
Field ID: D001 Composite			Matrix (type, e.g., Salt, Fresh, etc): wastewater		Diss. Oxygen 9.11e	☒ mg/L ☐ % sat	Total Res. Chlorine (mg/L) <0.02				
STORET #			Temp (C) 16.9	pH 7.10		Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)				
Latitude ☐ dd ☐ dms		Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments							
Location			☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time		Eastern Central	Composite end Date Time			Bottle Group(s)	
Field ID			Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)				
STORET #			Temp (C)	pH		Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)				
Latitude ☐ dd ☐ dms		Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments							
Location			☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time		Eastern Central	Composite end Date Time			Bottle Group(s)	
Field ID			Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)				
STORET #			Temp (C)	pH		Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)				
Latitude ☐ dd ☐ dms		Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments							
Location			☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time		Eastern Central	Composite end Date Time			Bottle Group(s)	
Field ID			Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)				
STORET #			Temp (C)	pH		Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)				
Latitude ☐ dd ☐ dms		Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments							

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
Dana Vestal	1/24/18 2:40 P.	FedEx	1	[illegible]	1/25/18 10:05

2 bioassay jugs 1.25.18 1110 HJ

Request Number: RQ-2017-12-11-15

FYI5 City of Bonifay WWTF (FL0027731) Sampling Inspection

Customer: NW-DIST

Project ID: FYI5

Florida Department of Environmental Protection
Central Laboratory Submittal Form

last revised Apr 7, 2016

Requester: Adrienne E. Pennington

Field Report Prepared By: Dana Vestal

Collected By: Dana Vestal

Sampling Agency: FDEP

Location: Bonifay FL0027731			☒ Comp ☐ Grab	Collection (comp begin or grab) Date 1/25/18 Time 10A	Eastern ☒ Central	Composite end Date 1/25/18 Time 1UP				Bottle Group(s) (See pg 2) B
Field ID: D001 Composite			Matrix (type, e.g., Salt, Fresh, etc): Wastewater		Diss. Oxygen 9.71	☒ mg/L ☐ % sat	Total Res. Chlorine (mg/L) <0.02			
STORET #			Temp (C) 16.16	pH 6.76	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)			
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)	Comments					
Location			☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern ☐ Central	Composite end Date Time				Bottle Group(s)
Field ID			Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)			
STORET #			Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)			
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)	Comments					
Location			☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern ☐ Central	Composite end Date Time				Bottle Group(s)
Field ID			Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)			
STORET #			Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)			
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)	Comments					
Location			☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern ☐ Central	Composite end Date Time				Bottle Group(s)
Field ID			Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)			
STORET #			Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)			
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)	Comments					

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
Dana Vestal	1/26/18 10:32A	Fed Ex	2		1.27.18 0910

Cooler 1: 2.9 / 1.8

Cooler 2: 1.3

Appendix D

Physical/Chemical and Habitat Assessment field sheets

DEP Form FD 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID _____ ORG ID 21FLPNS LATITUDE 30.79049

COUNTY Holmes STORET # 32020158 LONGITUDE 85.67082

DATE 12/11/17 TIME 1015 SAMPLING AGENCY FDEP NW ROC

SITE NAME Bonifay WWTF

FIELD ID/NAME Camp Branch Trib RECEIVING BODY OF WATER Holmes 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

m wide

Width of Riparian Vegetation (m) on Each Buffer Side

Left Bank: >18 Right Bank: >18 (<5m)

Hydrologic Modification Score (per FT 3101):

0.07 m/s 0.07 m/s 0.07 m/s

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

Artificially Impounded ☐ Yes ☐ No

0.5 m deep 0.4 m deep 0.4 m deep

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

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

SEDIMENT / SUBSTRATE

Sediment Oils: ☑ Absent ☐ Slight ☐ Moderate ☐ Profuse

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

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)	2.7	5	
Undercut Banks / Roots	0.1		
Leaf Packs or Mat	15.5	5	
Aquatic Vegetation	10.3	5	
Rock or Shell Rubble			
Sand			
Mud / Muck / Silt	74	5	
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:	0.3	14.39	6.86	7.83	76.8	321	0.15	
Mid:								☑ VOB
Bottom								TOTAL DEPTH

Meter ID: 132237 — TOTAL DEPTH: 0.8

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:

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

SAMPLING TEAM M.King / Nathan Whitney / Stephen Slade

SIGNATURE: _____ DATE: 12/11/17

62-160.800, F.A.C. Revision Date: March 1, 2014

DEP Form FD 9000-5 Stream/River Habitat Assessment Field Sheet

SAMPLING AGENCY:		STORET STATION NUMBER:	DATE (MM/DD/YY):	RECEIVING BODY OF WATER:
FDEP NW ROC		32020158	12/1/17	Holmes Creek
REMARKS:	COUNTY:	LOCATION:		FIELD ID/NAME:
Bonifay FY15	Holmes	Camp Branch		Test

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 11	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 NI 8	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 very smothered habitat 10 9 (8) 7 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity 8	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 11 Primary Score NI 38	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** 8	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 8 Left Bank 6	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 6 Left Bank 10	Width of vegetation greater than 18 m 10 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities 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 5 Left Bank 7 Secondary Score 50	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

88 **TOTAL SCORE**

Date:	Analyst:	Signature:
12/6/17	MIKE KING	

62-160.800, F.A.C.

Revision Date: March 1, 2014

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Camp Branch Test | County: Holmes | Date: 12/11/17 | Investigators: MILE KING

STORET Station Number: 32020158

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	N		60	1	N	N	
	2					2			
	3					3			
	4					4			
	5			0		5			36
	6					6			
	7					7			
	8					8			
	9					9			
10	1	N	N		70	1	N		
	2					2			
	3					3			
	4					4			
	5			10		5			24
	6					6			
	7					7			
	8					8			
	9					9			
20	1	N	N		80	1	N		
	2					2			
	3					3			
	4					4			
	5			16		5			24
	6					6			
	7					7			
	8					8			
	9					9			
30	1	N	N		90	1	N		
	2					2			
	3					3			
	4					4			
	5			24		5			36
	6					6			
	7					7			
	8					8			
	9					9			
40	1	N	N		100	1	N		
	2					2			
	3					3			
	4					4			
	5			24		5			24
	6					6			
	7					7			
	8					8			
	9					9			
50	1	N	N						
	2								
	3								
	4								
	5			24					
	6								
	7								
	8								
	9								

Secchi depth	0.8
Estimated?	Y

# 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-2017-12-11-15

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

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%.

62-160.800, F.A.C.

Revision Date: March 1, 2014

DEP FORM FD 9000-32: LINEAR VEGETATION SURVEY FIELD SHEET

Waterbody: CAMP BRANCH (TST) Date: 8/11/17 County: Holmes Storet Number: 32070158

Analyst: MIKE KING Signature:

Comments:

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1 m^2 of taxa present). Note in the boxes below if no dominant are selected, and note total macrophyte abundance rank for each section. Only the most common taxa are listed, so use blank spaces for additional taxa names.

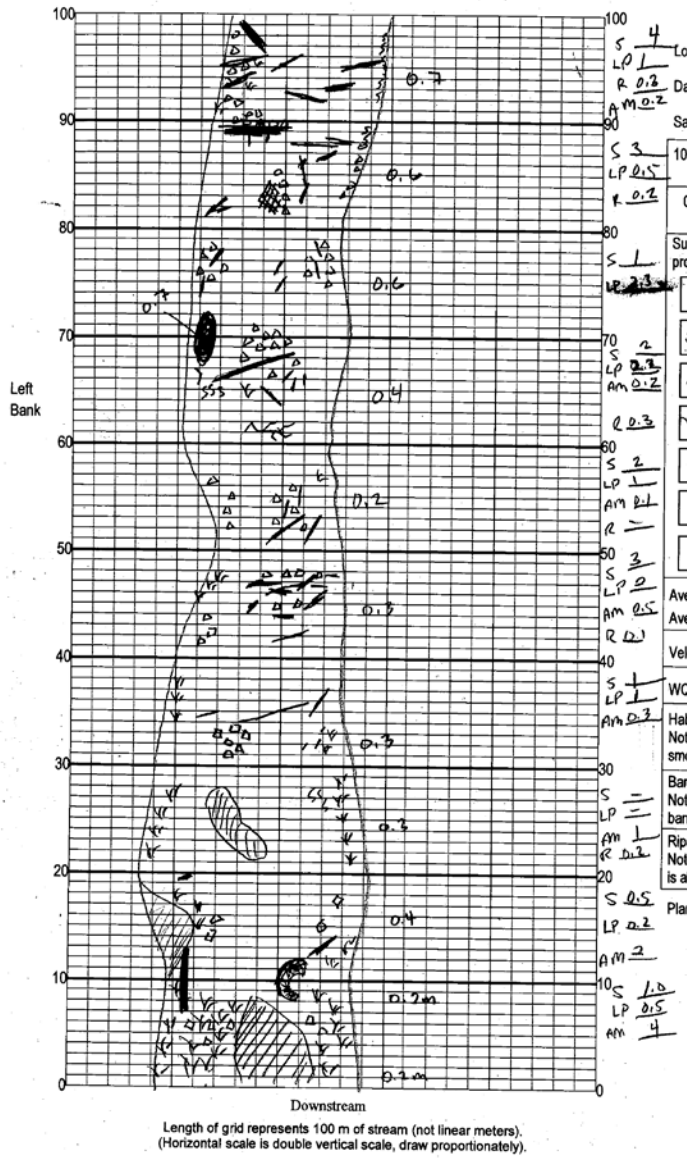
HERBACEOUS SPECIES	Meter Mark 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Alternanthera philoxeroides	D	D	D	D	D	D	D	D	D	D	
Bacopa caroliniana											
Bacopa monneri											
Bidens mitis											
Boehmeria cylindrica							✓				
Centella asiatica											
Ceratophyllum demersum											
Chara											
Cicuta maculata											
Cladium jamaicense											
Colocasia esculenta	✓	✓	✓	✓	✓	✓	✓				
Commelina diffusa											
Commelina virginica											
Crinum americanum											
Diodia virginiana											
Eichhornia crassipes											
Eleocharis (wispy viviparous)											
Hydrilla verticillata											
Hydrocotle	✓	✓	✓			✓	✓				
Hygrophila polysperma											
Hymenocallis											
Lachnanthes caroliniana											
Landoltia punctata											
Lemna											
Limnophila sessiflora											
Ludwigia leptocarpa											
Ludwigia palustris											
Ludwigia peruviana											
Ludwigia repens											
Luziola fluitans											
Ludwigia sp.				✓		✓					
Bidens Alba											

HERBACEOUS SPECIES	Meter Mark 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Micranthemum glomeratum											
Micranthemum umbrosum											
Myriophyllum aquaticum											
Najas guadelupensis											
Nuphar luteum											
Orontium aquaticum											
Panicum hemitomon											
Panicum repens											
Panicum rigidulum											
Pistia stratioides											
Polygonum glabra											
Polygonum hydropiperoides											
Polygonum punctatum											
Pontedaria cordata											
Potamogeton illinoensis											
Ruellia simplex											
Sacciolepis striata											
Sagittaria kurziana											
Sagittaria lancifolia											
Sagittaria latifolia											
Salvinia minima											
Samolus parviflora											
Saururus cernuus											
Sparganium americanum											
Typha											
Vallisneria americana											
Zizania aquatica											
~~WILD TARO~~											
~~Pennywort~~											

If no Dominant or Co-Dominant were selected, indicate with "X"

Indicate % cover macrophytes per section										
0-5% Macrophyte Coverage		✓	✓	✓	✓	✓	✓		✓	
>5 and ≤10% Macrophyte Coverage										
>10 and ≤25% Macrophyte Coverage	✓									
>25 and ≤50% Macrophyte Coverage										
> 50% Macrophyte Coverage										

DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet



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

S 4
LP 1
R 0.2
AM 0.2
S 3
LP 0.5
R 0.2
S 1
LP 2.3
S 2
LP 2.3
AM 0.2
R 0.3
S 2
LP 1
AM 0.1
R —
S 3
LP 0
AM 0.5
R 0.1
S 1
LP 1
AM 0.3
S —
LP —
AM 1
R 0.2
S 0.5
LP 0.2
AM 2
S 1.0
LP 0.5
AM 4

Location: Camp Branch Test
Date: 12/11/17
Sampler: MIKE KING

100 m: Latitude 30.79011
Longitude 85.67020
0 m: Latitude 30.79044
Longitude 85.67082

Substrates: Code key, draw proportionate habitat abundance. %

- Snags 17.5/800 2.2
- Roots/undercut banks 0.8/800 0.1
- Leaf Packs (or mats) 10.7/800 13.5
- Aquatic Macrophytes 8.3 10.3
- Pools total # observed = 1, # range expected = 1

Average width 8.0 m
Average depth 0.4 m
Velocity measured at 70 meter mark. 0.7
WQ & chemistry taken at 100 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:
Fern
Beech
MAPLE
Privet (mostly)
WILD TURKEY

62-160.800, F.A.C

Revision Date: March 1, 2014

DEP Form FD 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID _____ ORG ID 21FLPNS LATITUDE 30.78704
COUNTY Holmes STORET # 32020257 LONGITUDE -85.671016
DATE 12/11/17 TIME 1100 SAMPLING AGENCY FDEP NWROC
SITE NAME Bonita WWTF
FIELD ID/NAME Camp Branch Control RECEIVING BODY OF WATER Holmes 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: 70m (30m cleared) Right Bank: 6m

Hydrologic Modification Score (per FT 3101):

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

Artificially Impounded ☐ Yes ☐ No

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

0.01 m/s	0.01 m/s	0.01 m/s
0.8 m deep	0.6 m deep	0.4 m deep

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

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

SEDIMENT / SUBSTRATE

Sediment Oils ☑ Absent ☐ Slight ☐ Moderate ☐ Profuse

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

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)	5	4	
Undercut Banks / Roots	5.2	4	
Leaf Packs or Mat	14	4	
Aquatic Vegetation	1.8	4	
Rock or Shell Rubble..			
Sand.....	7	2	
Mud / Muck / Silt	60	2	
Other			
Other			

ABUNDANCE

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

WATER QUALITY

	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
Top: 03	8.74	8.74	6.42	7.37	83.4	182	0.09	
Mid:								☑ VOB
Bottom								TOTAL DEPTH

Meter ID: 132232 — TOTAL DEPTH: 0.5

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 ☐

System Type: Stream ☑ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) ☑ stormwater conveyance

AMBIENT FIELD CONDITIONS / NOTES:

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

SAMPLING TEAM M. King N. Mulkey S. Slade

SIGNATURE: _____ DATE: 12/11/17

62-160.800, F.A.C.

Revision Date: March 1, 2014

DEP Form FD 9000-5 Stream/River Habitat Assessment Field Sheet

SAMPLING AGENCY:		STORET STATION NUMBER:	DATE (MM/DD/YY):	RECEIVING BODY OF WATER:
FDEP NW ROC		3202025	12/1/17	Holmes Creek
REMARKS:	COUNTY:	LOCATION:		FIELD ID/NAME:
Bonifay FI5	Holmes	Camp Branch		Control

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 16	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 3	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. Plenty of HABITAT BUT NO FLOW ≥ 90% stream 5 4 (3) 2 1
Water Velocity 1	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 6 Primary Score 29	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** 5	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 5 Left Bank 4	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 5 Left Bank 7	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 4 Left Bank 6 Secondary Score 36	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

65 **TOTAL SCORE**

Date:	Analyst:	Signature:
12/1/17	MIKE KING	

62-160.800, F.A.C. Revision Date: March 1, 2014

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Camp Branch Control | County: Holmes | Date: 12/1/17 | Investigators:

STORET Station Number: 3202057

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	N		60	1	5	N	
	2					2	N		
	3					3			
	4					4			
	5			72		5			72
	6					6			
	7					7			
	8					8			
	9	N	N			9			
10	1	N	N		70	1	6		
	2					2	6		
	3					3	6		
	4					4	5		
	5			72		5	2		0
	6					6	2		
	7					7	2		
	8					8	6		
	9	N	N			9	6		
20	1	N	N		80	1	6		
	2					2	4		
	3					3	4		
	4					4	2		
	5			80		5	2		0
	6					6	3		
	7					7	4		
	8					8	6		
	9	N	N			9	6		
30	1	N	N		90	1	6		
	2					2	3		
	3					3	4		
	4					4	4		
	5			80		5	4		20
	6					6	4		
	7					7	3		
	8					8	3		
	9	N	N			9	3		
40	1	N	N		100	1	3		
	2	N				2	3		
	3	N				3	4		
	4	N				4	6		
	5	N		60		5	6		10
	6	N				6	4		
	7	N				7	4		
	8	N				8	3		
	9	N	N			9	3	N	
50	1	N	N						
	2	N							
	3	N							
	4	N							
	5	N		72					
	6	N							
	7	N							
	8	N							
	9	N							

Secchi depth	VOB
Estimated?	Y
# points ranked 4-6	07
total points assessed	99
% points ranked 4-6	27

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

RQ 2017-12-11-15

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

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%.

62-160.800, F.A.C. Revision Date: March 1, 2014

DEP FORM FD 9000-32: LINEAR VEGETATION SURVEY FIELD SHEET

Waterbody: CAMP BRANCH CONTROL | Date: 12/12/17 | County: Holmes | Storet Number: 3202057

Analyst: MIKE LIMA | Signature:

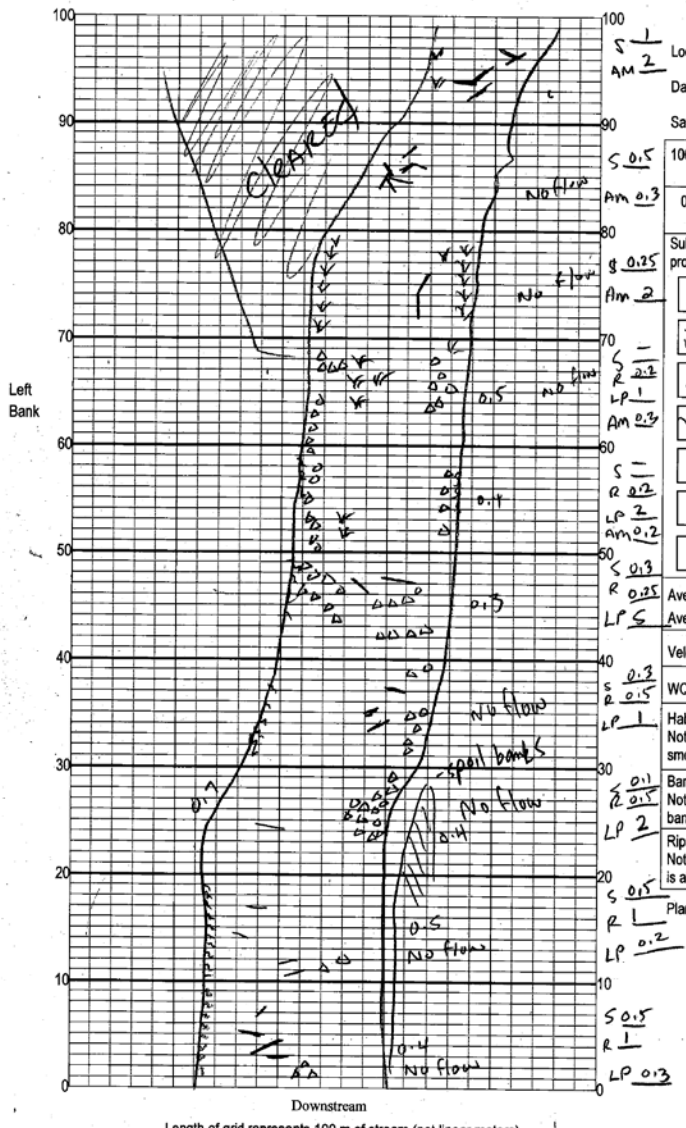
Comments:

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1 m^2 of taxa present). Note in the boxes below if no dominant are selected, and note total macrophyte abundance rank for each section. Only the most common taxa are listed, so use blank spaces for additional taxa names.

HERBACEOUS SPECIES	Meter Mark 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Alternanthera philoxeroides							✓ D	✓ D	✓ D	✓ D	
Bacopa caroliniana											
Bacopa monneri											
Bidens mitis											
Boehmeria cylindrica											
Centella asiatica											
Ceratophyllum demersum											
Chara											
Cicuta maculata											
Cladium jamaicense											
Colocasia esculenta											
Commelina diffusa											
Commelina virginica											
Crinum americanum											
Diodia virginiana											
Eichhornia crassipes											
Eleocharis (wispy viviparous)											
Hydrilla verticillata											
Hydrocotle											
Hygrophila polysperma											
Hymenocallis											
Lachnanthes caroliniana											
Landoltia punctata											
Lemna											
Limnophila sessiflora											
Ludwigia leptocarpa								✓	✓		
Ludwigia palustris											
Ludwigia peruviana											
Ludwigia repens											
Luziola fluitans											
If no Dominant or Co-Dominant were selected, indicate with "X"											
Indicate % cover macrophytes per section											
0-5% Macrophyte Coverage							✓	✓	✓	✓	
>5 and ≤10% Macrophyte Coverage											
>10 and ≤25% Macrophyte Coverage											
>25 and ≤50% Macrophyte Coverage											
> 50% Macrophyte Coverage											

HERBACEOUS SPECIES	Meter Mark 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Micranthemum glomeratum											
Micranthemum umbrosum											
Myriophyllum aquaticum											
Najas guadelupensis											
Nuphar luteum											
Orontium aquaticum											
Panicum hemitomon											
Panicum repens											
Panicum rigidulum											
Pistia stratioides											
Polygonum glabra											
Polygonum hydropiperoides									✓	✓	✓
Polygonum punctatum									✓	✓	✓
Pontedaria cordata											
Potamogeton illinoensis											
Ruellia simplex											
Sacciolepis striata											
Sagittaria kurziana											
Sagittaria lancifolia											
Sagittaria latifolia											
Salvinia minima											
Samolus parviflora											
Saururus cernuus											
Sparganium americanum											
Typha											
Vallisneria americana											
Zizania aquatica											

DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet



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

Location: Cony Branch Control
Date: 12/11/17
Sampler: MIKE King

100 m: Latitude 30.78911
Longitude 85.67720
0 m: Latitude 30.78704
Longitude -85.67016

Substrates: Code key, draw proportionate habitat abundance. %

Snags	3.45/700	4.9
Roots/undercut banks		5.2
Leaf Packs (or mats)	3.65/700	16
Aquatic Macrophytes	11.8/700	6.8
	4.8/700	
Pools	total # observed = 1	
	# range expected = 1.25	

Average width 7 m
Average depth 0.4 m

Velocity measured at 106 meter mark.

WQ & chemistry taken at 50 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:
Liquid Amber
Ferns
Privet
Maple
beach
alligator weed

62-160.800, F.A.C

Revision Date: March 1, 2014

Appendix E

Chemical analysis of effluent and receiving water

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
1/22/2018 11:34	Effluent Grab	AGP/LN	Algal Growth Potential	55.4 A	mg DryWt/L	0.3	0.9
1/22/2018 11:34	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.55 U	µg/L	0.55	1.7
1/22/2018 11:34	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	0.40 U	µg/L	0.4	1.2
1/22/2018 11:34	Effluent Grab	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.40 U	µg/L	0.4	1.2
1/22/2018 11:34	Effluent Grab	Metals	Aluminum	11 I	µg/L	3	12
1/22/2018 11:34	Effluent Grab	Metals	Nickel	0.68 I	µg/L	0.2	0.8
1/22/2018 11:34	Effluent Grab	Metals	Arsenic	0.80	µg/L	0.05	0.2
1/22/2018 11:34	Effluent Grab	Metals	Potassium	7.3	mg/L	0.3	1.2
1/22/2018 11:34	Effluent Grab	Metals	Copper	7.62	µg/L	0.2	0.8
1/22/2018 11:34	Effluent Grab	Metals	Chromium	0.61 I	µg/L	0.4	1.6
1/22/2018 11:34	Effluent Grab	Metals	Magnesium	6.11	mg/L	0.04	0.16
1/22/2018 11:34	Effluent Grab	Metals	Zinc	28	µg/L	5	20
1/22/2018 11:34	Effluent Grab	Metals	Silver	0.010 U	µg/L	0.01	0.04
1/22/2018 11:34	Effluent Grab	Metals	Cadmium	0.038 I	µg/L	0.02	0.08
1/22/2018 11:34	Effluent Grab	Metals	Sodium	18.9	mg/L	0.5	2
1/22/2018 11:34	Effluent Grab	Metals	Iron	37 I	µg/L	30	120
1/22/2018 11:34	Effluent Grab	Metals	Selenium	0.20 U	µg/L	0.2	0.8
1/22/2018 11:34	Effluent Grab	Metals	Lead	0.091 I	µg/L	0.05	0.2
1/22/2018 11:34	Effluent Grab	Metals	Calcium	45.1	mg/L	0.075	0.3
1/22/2018 11:34	Effluent Grab	Nutrients	Kjeldahl Nitrogen	0.90	mg N/L	0.08	0.2
1/22/2018 11:34	Effluent Grab	Nutrients	Total-P	1.9	mg P/L	0.025	0.25
1/22/2018 11:34	Effluent Grab	Nutrients	Chloride	33 A	mg Cl/L	0.4	1
1/22/2018 11:34	Effluent Grab	Nutrients	Organic Carbon	3.2 A	mg C/L	1	2
1/22/2018 11:34	Effluent Grab	Nutrients	Total Alkalinity	77 A	mg CaCO3/L	0.65	2.5
1/22/2018 11:34	Effluent Grab	Nutrients	Fluoride	0.049 IJ	mg F/L	0.035	0.1
1/22/2018 11:34	Effluent Grab	Nutrients	Turbidity	1.3	NTU	0.1	0.13
1/22/2018 11:34	Effluent Grab	Nutrients	NO2NO3-N	7.2	mg N/L	0.08	0.2
1/22/2018 11:34	Effluent Grab	Nutrients	Sulfate	23 A	mg SO4/L	0.4	1
1/22/2018 11:34	Effluent Grab	Nutrients	O-Phosphate-P	1.7	mg P/L	0.04	0.1
1/22/2018 11:34	Effluent Grab	Nutrients	Ammonia-N	0.032	mg N/L	0.002	0.005
1/22/2018 11:34	Effluent Grab	Nutrients	Color (true)	3.3 I	PCU	2.5	6
1/22/2018 11:34	Effluent Grab	Pesticides	Butylate	0.021 U	µg/L	0.021	0.085
1/22/2018 11:34	Effluent Grab	Pesticides	Fenamiphos	0.032 U	µg/L	0.032	0.13
1/22/2018 11:34	Effluent Grab	Pesticides	Metalaxyl	0.042 U	µg/L	0.042	0.17

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
1/22/2018 11:34	Effluent Grab	Pesticides	Phorate	0.0053 U	µg/L	0.0053	0.021
1/22/2018 11:34	Effluent Grab	Pesticides	Carbamazepine	4.0E-04 UJY	µg/L	0.0004	0.0016
1/22/2018 11:34	Effluent Grab	Pesticides	Triclopyr	0.0040 UY	µg/L	0.004	0.016
1/22/2018 11:34	Effluent Grab	Pesticides	Atrazine Desisopropyl	0.058 U	µg/L	0.058	0.22
1/22/2018 11:34	Effluent Grab	Pesticides	Azinphos Methyl	0.021 U	µg/L	0.021	0.085
1/22/2018 11:34	Effluent Grab	Pesticides	Diazinon	0.011 U	µg/L	0.011	0.042
1/22/2018 11:34	Effluent Grab	Pesticides	MCPP	0.0020 UY	µg/L	0.002	0.008
1/22/2018 11:34	Effluent Grab	Pesticides	Bromacil	0.042 U	µg/L	0.042	0.17
1/22/2018 11:34	Effluent Grab	Pesticides	Disulfoton	0.0053 U	µg/L	0.0053	0.021
1/22/2018 11:34	Effluent Grab	Pesticides	Fonofos	0.011 U	µg/L	0.011	0.042
1/22/2018 11:34	Effluent Grab	Pesticides	Naled	0.042 U	µg/L	0.042	0.17
1/22/2018 11:34	Effluent Grab	Pesticides	Bentazon	8.0E-04 UY	µg/L	0.0008	0.0032
1/22/2018 11:34	Effluent Grab	Pesticides	Ametryn	0.011 U	µg/L	0.011	0.042
1/22/2018 11:34	Effluent Grab	Pesticides	Atrazine	0.011 U	µg/L	0.011	0.042
1/22/2018 11:34	Effluent Grab	Pesticides	Malathion	0.011 U	µg/L	0.011	0.042
1/22/2018 11:34	Effluent Grab	Pesticides	Hexazinone	0.032 U	µg/L	0.032	0.13
1/22/2018 11:34	Effluent Grab	Pesticides	Chlorpyrifos Methyl	0.011 U	µg/L	0.011	0.042
1/22/2018 11:34	Effluent Grab	Pesticides	Parathion Methyl	0.011 U	µg/L	0.011	0.042
1/22/2018 11:34	Effluent Grab	Pesticides	Atrazine Desethyl	0.011 U	µg/L	0.011	0.042
1/22/2018 11:34	Effluent Grab	Pesticides	Metribuzin	0.021 U	µg/L	0.021	0.085
1/22/2018 11:34	Effluent Grab	Pesticides	Norflurazon	0.032 U	µg/L	0.032	0.13
1/22/2018 11:34	Effluent Grab	Pesticides	Prometryn	0.021 U	µg/L	0.021	0.085
1/22/2018 11:34	Effluent Grab	Pesticides	Sucralose	19	µg/L	0.01	0.04
1/22/2018 11:34	Effluent Grab	Pesticides	Mevinphos	0.011 U	µg/L	0.011	0.042
1/22/2018 11:34	Effluent Grab	Pesticides	Ethion	0.011 U	µg/L	0.011	0.042
1/22/2018 11:34	Effluent Grab	Pesticides	Ethoprop	0.0053 U	µg/L	0.0053	0.021
1/22/2018 11:34	Effluent Grab	Pesticides	Metolachlor	0.063 U	µg/L	0.063	0.25
1/22/2018 11:34	Effluent Grab	Pesticides	Parathion Ethyl	0.021 U	µg/L	0.021	0.085
1/22/2018 11:34	Effluent Grab	Pesticides	Prometon	0.021 U	µg/L	0.021	0.085
1/22/2018 11:34	Effluent Grab	Pesticides	Simazine	0.011 U	µg/L	0.011	0.042
1/22/2018 11:34	Effluent Grab	Pesticides	2,4-D	0.0020 UY	µg/L	0.002	0.008
1/22/2018 11:34	Effluent Grab	Pesticides	Alachlor	0.063 U	µg/L	0.063	0.25
1/22/2018 11:34	Effluent Grab	Pesticides	Chlorpyrifos Ethyl	0.011 U	µg/L	0.011	0.042
1/22/2018 11:34	Effluent Grab	Pesticides	Demeton	0.025 U	µg/L	0.025	0.1
1/22/2018 11:34	Effluent Grab	Pesticides	Acetaminophen	0.0080 UJY	µg/L	0.008	0.032
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.99 UJY	µg/L	0.99	4
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Benzo(a)pyrene	0.20 UY	µg/L	0.2	0.79
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	N-Nitrosodimethylamine	2.0 UY	µg/L	2	7.9

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Diethyl phthalate	0.99 UY	µg/L	0.99	4
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Benzo(k)fluoranthene	0.20 UY	µg/L	0.2	0.79
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	2,6-Dinitrotoluene	0.99 UY	µg/L	0.99	4
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.0 UY	µg/L	3	12
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Bis(2-ethylhexyl) phthalate	2.0 UY	µg/L	2	7.9
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Benzo(b)fluoranthene	0.20 UY	µg/L	0.2	0.79
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroisopropyl) ether	3.0 UY	µg/L	3	12
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Hexachloroethane	3.0 UY	µg/L	3	12
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Phenanthrene	0.20 UY	µg/L	0.2	0.79
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Phenol	0.99 UJY	µg/L	0.99	4
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Pyrene	0.20 UY	µg/L	0.2	0.79
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	2,4-Dinitrotoluene	0.99 UY	µg/L	0.99	4
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	2-Chloronaphthalene	0.99 UY	µg/L	0.99	4
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	3,3'-Dichlorobenzidine	40 UYJ	µg/L	40	160
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Acenaphthylene	0.20 UYJ	µg/L	0.2	0.79
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Di-n-butyl phthalate	0.99 UY	µg/L	0.99	4
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Fluoranthene	0.20 UY	µg/L	0.2	0.79
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Fluorene	0.20 UY	µg/L	0.2	0.79
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Hexachlorobenzene	0.99 UY	µg/L	0.99	4
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Hexachlorobutadiene	3.0 UY	µg/L	3	12
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.99 UY	µg/L	0.99	4
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	2-Chlorophenol	0.99 UJY	µg/L	0.99	4
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Acenaphthene	0.20 UYJ	µg/L	0.2	0.79
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroethoxy) methane	0.99 UY	µg/L	0.99	4
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Butyl benzyl phthalate	0.99 UY	µg/L	0.99	4
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Dimethyl phthalate	0.99 UY	µg/L	0.99	4
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Nitrobenzene	2.0 UY	µg/L	2	7.9
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Pentachlorophenol	0.99 UY	µg/L	0.99	4
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	1,4-Dioxane	0.25	µg/L	0.02	0.08
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	4-Nitrophenol	15 UY	µg/L	15	59
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Chrysene	0.20 UY	µg/L	0.2	0.79
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Indeno(1,2,3-cd) pyrene	0.20 UY	µg/L	0.2	0.79
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Isophorone	0.99 UY	µg/L	0.99	4
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	2,4-Dinitrophenol	15 UY	µg/L	15	59
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Anthracene	0.20 UY	µg/L	0.2	0.79
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Benzo (g, h, i) perylene	0.20 UY	µg/L	0.2	0.79
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroethyl) ether	0.99 UY	µg/L	0.99	4
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Dibenzo (a, h) anthracene	0.20 UY	µg/L	0.2	0.79

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.0 UY	µg/L	2	7.9
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Naphthalene	0.20 UY	µg/L	0.2	0.79
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	2,4-Dichlorophenol	0.99 UJY	µg/L	0.99	4
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.99 UY	µg/L	0.99	4
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.0 UY	µg/L	2	7.9
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Di-n-octyl phthalate	0.99 UY	µg/L	0.99	4
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.0 UYJ	µg/L	3	12
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	2,4-Dimethylphenol	9.9 UJY	µg/L	9.9	40
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.99 UY	µg/L	0.99	4
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.0 UY	µg/L	3	12
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	2-Nitrophenol	0.99 UJY	µg/L	0.99	4
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Benzidine	99 UYJ	µg/L	99	400
1/22/2018 11:34	Effluent Grab	Priority Organic Pollutants	Benzo(a)anthracene	0.20 UY	µg/L	0.2	0.79
1/22/2018 11:34	Effluent Grab	Nutrients	Total Residual Chlorine	72.2	mg/L		
1/22/2018 11:34	Effluent Grab	Nutrients	Temperature	17.9	C		
1/22/2018 11:34	Effluent Grab	Nutrients	Dissolved Oxygen	9.69	mg/L		
1/22/2018 11:34	Effluent Grab	Nutrients	pH	7.45			
12/11/2017 11:42	Effluent Grab	AGP/LN	Algal Growth Potential	231 A	mg DryWt/L	0.3	0.9
12/11/2017 11:42	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.83 I	µg/L	0.55	1.7
12/11/2017 11:42	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	0.67 I	µg/L	0.4	1.2
12/11/2017 11:42	Effluent Grab	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.40 U	µg/L	0.4	1.2
12/11/2017 11:42	Effluent Grab	Overflow	Fecal Coliforms-Membrane Filter	2 U	cfu/100 mL	2	2
12/11/2017 11:42	Effluent Grab	Overflow	Escherichia Coli-Quanti-Tray	10 U	MPN/100 mL	10	10
12/11/2017 11:42	Effluent Grab	Metals	Arsenic	0.81	µg/L	0.05	0.2
12/11/2017 11:42	Effluent Grab	Metals	Cadmium	0.048 I	µg/L	0.02	0.08
12/11/2017 11:42	Effluent Grab	Metals	Silver	0.010 U	µg/L	0.01	0.04
12/11/2017 11:42	Effluent Grab	Metals	Selenium	0.20 U	µg/L	0.2	0.8
12/11/2017 11:42	Effluent Grab	Metals	Magnesium	6.34	mg/L	0.04	0.16
12/11/2017 11:42	Effluent Grab	Metals	Potassium	7.1	mg/L	0.3	1.2
12/11/2017 11:42	Effluent Grab	Metals	Copper	7.01	µg/L	0.2	0.8
12/11/2017 11:42	Effluent Grab	Metals	Nickel	0.69 I	µg/L	0.2	0.8
12/11/2017 11:42	Effluent Grab	Metals	Iron	30 U	µg/L	30	120
12/11/2017 11:42	Effluent Grab	Metals	Calcium	41.3	mg/L	0.075	0.3
12/11/2017 11:42	Effluent Grab	Metals	Chromium	0.40 U	µg/L	0.4	1.6
12/11/2017 11:42	Effluent Grab	Metals	Sodium	17.4	mg/L	0.5	2
12/11/2017 11:42	Effluent Grab	Metals	Aluminum	8.9 I	µg/L	3	12
12/11/2017 11:42	Effluent Grab	Metals	Lead	0.070 I	µg/L	0.05	0.2
12/11/2017 11:42	Effluent Grab	Metals	Zinc	22	µg/L	5	20

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
12/11/2017 11:42	Effluent Grab	Nutrients	O-Phosphate-P	2.1 Q	mg P/L	0.04	0.1
12/11/2017 11:42	Effluent Grab	Nutrients	Total-P	2.2	mg P/L	0.025	0.25
12/11/2017 11:42	Effluent Grab	Nutrients	Color (true)	2.5 U	PCU	2.5	6
12/11/2017 11:42	Effluent Grab	Nutrients	Organic Carbon	2.9	mg C/L	0.5	1
12/11/2017 11:42	Effluent Grab	Nutrients	Turbidity	0.85	NTU	0.1	0.13
12/11/2017 11:42	Effluent Grab	Nutrients	Chloride	32	mg Cl/L	0.2	0.5
12/11/2017 11:42	Effluent Grab	Nutrients	Fluoride	0.043 I	mg F/L	0.035	0.1
12/11/2017 11:42	Effluent Grab	Nutrients	Total Alkalinity	87	mg CaCO3/L	0.65	2.5
12/11/2017 11:42	Effluent Grab	Nutrients	Ammonia-N	0.027	mg N/L	0.002	0.005
12/11/2017 11:42	Effluent Grab	Nutrients	NO2NO3-N	7.2	mg N/L	0.08	0.2
12/11/2017 11:42	Effluent Grab	Nutrients	Sulfate	18	mg SO4/L	0.2	0.5
12/11/2017 11:42	Effluent Grab	Nutrients	Kjeldahl Nitrogen	0.48	mg N/L	0.08	0.2
12/11/2017 11:42	Effluent Grab	Pesticides	Chlorpyrifos Methyl	0.011 U	µg/L	0.011	0.043
12/11/2017 11:42	Effluent Grab	Pesticides	Acetaminophen	0.0080 U	µg/L	0.008	0.032
12/11/2017 11:42	Effluent Grab	Pesticides	Bentazon	8.0E-04 U	µg/L	0.0008	0.0032
12/11/2017 11:42	Effluent Grab	Pesticides	Atrazine	0.011 U	µg/L	0.011	0.043
12/11/2017 11:42	Effluent Grab	Pesticides	Demeton	0.026 UJ	µg/L	0.026	0.1
12/11/2017 11:42	Effluent Grab	Pesticides	Disulfoton	0.0053 U	µg/L	0.0053	0.021
12/11/2017 11:42	Effluent Grab	Pesticides	Norflurazon	0.032 UJ	µg/L	0.032	0.13
12/11/2017 11:42	Effluent Grab	Pesticides	Ethoprop	0.0053 UJ	µg/L	0.0053	0.021
12/11/2017 11:42	Effluent Grab	Pesticides	Malathion	0.011 U	µg/L	0.011	0.043
12/11/2017 11:42	Effluent Grab	Pesticides	Parathion Methyl	0.011 UJ	µg/L	0.011	0.043
12/11/2017 11:42	Effluent Grab	Pesticides	Alachlor	0.064 U	µg/L	0.064	0.26
12/11/2017 11:42	Effluent Grab	Pesticides	Bromacil	0.043 U	µg/L	0.043	0.17
12/11/2017 11:42	Effluent Grab	Pesticides	Fenamiphos	0.032 UJ	µg/L	0.032	0.13
12/11/2017 11:42	Effluent Grab	Pesticides	Metolachlor	0.064 UJ	µg/L	0.064	0.26
12/11/2017 11:42	Effluent Grab	Pesticides	Prometon	0.021 U	µg/L	0.021	0.085
12/11/2017 11:42	Effluent Grab	Pesticides	Triclopyr	0.0040 U	µg/L	0.004	0.016
12/11/2017 11:42	Effluent Grab	Pesticides	Sucralose	14	µg/L	0.01	0.04
12/11/2017 11:42	Effluent Grab	Pesticides	Atrazine Desisopropyl	0.011 UJ	µg/L	0.011	0.043
12/11/2017 11:42	Effluent Grab	Pesticides	Azinphos Methyl	0.021 U	µg/L	0.021	0.085
12/11/2017 11:42	Effluent Grab	Pesticides	Butylate	0.021 U	µg/L	0.021	0.085
12/11/2017 11:42	Effluent Grab	Pesticides	Metalaxyl	0.043 U	µg/L	0.043	0.17
12/11/2017 11:42	Effluent Grab	Pesticides	Phorate	0.0053 U	µg/L	0.0053	0.021
12/11/2017 11:42	Effluent Grab	Pesticides	Carbamazepine	0.0034	µg/L	0.0004	0.0016
12/11/2017 11:42	Effluent Grab	Pesticides	2,4-D	0.0020 U	µg/L	0.002	0.008
12/11/2017 11:42	Effluent Grab	Pesticides	MCPP	0.0020 U	µg/L	0.002	0.008
12/11/2017 11:42	Effluent Grab	Pesticides	Diazinon	0.011 U	µg/L	0.011	0.043

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
12/11/2017 11:42	Effluent Grab	Pesticides	Mevinphos	0.011 UJ	µg/L	0.011	0.043
12/11/2017 11:42	Effluent Grab	Pesticides	Atrazine Desethyl	0.011 U	µg/L	0.011	0.043
12/11/2017 11:42	Effluent Grab	Pesticides	Ametryn	0.011 U	µg/L	0.011	0.043
12/11/2017 11:42	Effluent Grab	Pesticides	Chlorpyrifos Ethyl	0.011 U	µg/L	0.011	0.043
12/11/2017 11:42	Effluent Grab	Pesticides	Prometryn	0.021 U	µg/L	0.021	0.085
12/11/2017 11:42	Effluent Grab	Pesticides	Simazine	0.011 U	µg/L	0.011	0.043
12/11/2017 11:42	Effluent Grab	Pesticides	Ethion	0.011 U	µg/L	0.011	0.043
12/11/2017 11:42	Effluent Grab	Pesticides	Fonofos	0.011 UJ	µg/L	0.011	0.043
12/11/2017 11:42	Effluent Grab	Pesticides	Hexazinone	0.032 U	µg/L	0.032	0.13
12/11/2017 11:42	Effluent Grab	Pesticides	Metribuzin	0.021 U	µg/L	0.021	0.085
12/11/2017 11:42	Effluent Grab	Pesticides	Naled	0.043 UJ	µg/L	0.043	0.17
12/11/2017 11:42	Effluent Grab	Pesticides	Parathion Ethyl	0.021 U	µg/L	0.021	0.085
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.3 U	µg/L	2.3	9.2
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.1 U	µg/L	1.1	4.6
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	2,4-Dichlorophenol	1.1 U	µg/L	1.1	4.6
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	2,4-Dimethylphenol	11 U	µg/L	11	46
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	2-Chloronaphthalene	1.1 U	µg/L	1.1	4.6
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Indeno(1,2,3-cd) pyrene	0.23 U	µg/L	0.23	0.92
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Pentachlorophenol	1.1 U	µg/L	1.1	4.6
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Phenanthrene	0.23 U	µg/L	0.23	0.92
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	1,4-Dioxane	0.22	µg/L	0.02	0.08
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.4 U	µg/L	3.4	14
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Benzo(a)pyrene	0.23 U	µg/L	0.23	0.92
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Benzo(b)fluoranthene	0.23 U	µg/L	0.23	0.92
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Chrysene	0.23 U	µg/L	0.23	0.92
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Di-n-butyl phthalate	2.3 U	µg/L	2.3	9.2
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Dimethyl phthalate	1.1 U	µg/L	1.1	4.6
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Hexachloroethane	3.4 U	µg/L	3.4	14
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.4 U	µg/L	3.4	14
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Naphthalene	0.23 U	µg/L	0.23	0.92
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	2,4-Dinitrotoluene	1.1 U	µg/L	1.1	4.6
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.1 U	µg/L	1.1	4.6
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	4-Nitrophenol	17 U	µg/L	17	69
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Acenaphthene	0.23 U	µg/L	0.23	0.92
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroethyl) ether	1.1 U	µg/L	1.1	4.6
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Butyl benzyl phthalate	1.1 U	µg/L	1.1	4.6
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Di-n-octyl phthalate	1.1 U	µg/L	1.1	4.6
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Dibenzo (a, h) anthracene	0.23 U	µg/L	0.23	0.92

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.3 U	µg/L	2.3	9.2
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Benzo (g, h, i) perylene	0.23 U	µg/L	0.23	0.92
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Benzo(k)fluoranthene	0.23 U	µg/L	0.23	0.92
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Hexachlorobutadiene	3.4 U	µg/L	3.4	14
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.4 U	µg/L	3.4	14
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	2,4-Dinitrophenol	17 U	µg/L	17	69
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Bis(2-ethylhexyl) phthalate	2.3 U	µg/L	2.3	9.2
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Diethyl phthalate	2.3 U	µg/L	2.3	9.2
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Fluoranthene	0.23 U	µg/L	0.23	0.92
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Fluorene	0.23 U	µg/L	0.23	0.92
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Hexachlorobenzene	1.1 U	µg/L	1.1	4.6
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Pyrene	0.23 U	µg/L	0.23	0.92
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.1 U	µg/L	1.1	4.6
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	2,6-Dinitrotoluene	1.1 U	µg/L	1.1	4.6
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	3,3'-Dichlorobenzidine	46 U	µg/L	46	180
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.1 U	µg/L	1.1	4.6
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Anthracene	0.23 U	µg/L	0.23	0.92
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Benzo(a)anthracene	0.23 U	µg/L	0.23	0.92
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroethoxy) methane	1.1 U	µg/L	1.1	4.6
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Isophorone	1.1 U	µg/L	1.1	4.6
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Nitrobenzene	2.3 U	µg/L	2.3	9.2
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Phenol	1.1 U	µg/L	1.1	4.6
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	2-Chlorophenol	1.1 U	µg/L	1.1	4.6
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	2-Nitrophenol	1.1 U	µg/L	1.1	4.6
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Acenaphthylene	0.23 U	µg/L	0.23	0.92
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Benzidine	110 U	µg/L	110	460
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroisopropyl) ether	3.4 U	µg/L	3.4	14
12/11/2017 11:42	Effluent Grab	Priority Organic Pollutants	N-Nitrosodimethylamine	2.3 U	µg/L	2.3	9.2
12/11/2017 11:42	Effluent Grab	Nutrients	pH	7.15			
12/11/2017 11:42	Effluent Grab	Nutrients	Dissolved Oxygen	8.66	mg/L		
1/22/2018 11:00	Effluent Composite	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day, N-Inhib	24	mg/L	0.2	2
1/22/2018 11:00	Effluent Composite	Toxicology	Bioassay-Chron-Def-FW-Fish, NOEC	100	NOEC		
1/22/2018 11:00	Effluent Composite	Toxicology	Bioassay-Chron-Def-FW-C. dubia, NOEC	50	NOEC		
1/22/2018 11:00	Effluent Composite	Toxicology	Bioassay-Chron-Def-FW-Fish, IC25	100 L	IC25		
1/22/2018 11:00	Effluent Composite	Toxicology	Bioassay-Chron-Def-FW-C. dubia, IC25	52.5	IC25		
1/22/2018 11:00	Effluent Composite	Nutrients	Total-P	1.8	mg P/L	0.025	0.25
1/22/2018 11:00	Effluent Composite	Nutrients	Organic Carbon	18	mg C/L	1	2
1/22/2018 11:00	Effluent Composite	Nutrients	NO2NO3-N	6.8	mg N/L	0.08	0.2

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
1/22/2018 11:00	Effluent Composite	Nutrients	TSS	2 I	mg/L	2	10
1/22/2018 11:00	Effluent Composite	Nutrients	Kjeldahl Nitrogen	1.1	mg N/L	0.08	0.2
1/22/2018 11:00	Effluent Composite	Nutrients	Temperature	16.6	C		
1/22/2018 11:00	Effluent Composite	Nutrients	Dissolved Oxygen	9.74	mg/L		
1/22/2018 11:00	Effluent Composite	Nutrients	pH	6.80			
12/11/2017 9:00	Effluent Composite	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day, N-Inhib	2.0 Q	mg/L	0.2	2
12/11/2017 9:00	Effluent Composite	Nutrients	Kjeldahl Nitrogen	0.52	mg N/L	0.08	0.2
12/11/2017 9:00	Effluent Composite	Nutrients	Total-P	2.2	mg P/L	0.025	0.25
12/11/2017 9:00	Effluent Composite	Nutrients	TSS	2 I	mg/L	2	10
12/11/2017 9:00	Effluent Composite	Nutrients	Organic Carbon	3.1	mg C/L	0.5	1
12/11/2017 9:00	Effluent Composite	Nutrients	NO2NO3-N	7.5	mg N/L	0.08	0.2
12/11/2017 9:00	Effluent Composite	Nutrients	Temperature	17.2	C		
12/11/2017 9:00	Effluent Composite	Nutrients	Dissolved Oxygen	9.62	mg/L		
12/11/2017 9:00	Effluent Composite	Nutrients	pH	7.02			
1/22/2018 13:05	Field Blank	Metals	Potassium	0.30 U	mg/L	0.3	1.2
1/22/2018 13:05	Field Blank	Metals	Selenium	0.20 U	µg/L	0.2	0.8
1/22/2018 13:05	Field Blank	Metals	Calcium	0.075 U	mg/L	0.075	0.3
1/22/2018 13:05	Field Blank	Metals	Sodium	0.50 U	mg/L	0.5	2
1/22/2018 13:05	Field Blank	Metals	Zinc	5.0 U	µg/L	5	20
1/22/2018 13:05	Field Blank	Metals	Magnesium	0.040 U	mg/L	0.04	0.16
1/22/2018 13:05	Field Blank	Metals	Copper	0.20 U	µg/L	0.2	0.8
1/22/2018 13:05	Field Blank	Metals	Silver	0.010 U	µg/L	0.01	0.04
1/22/2018 13:05	Field Blank	Metals	Aluminum	3.0 U	µg/L	3	12
1/22/2018 13:05	Field Blank	Metals	Arsenic	0.050 U	µg/L	0.05	0.2
1/22/2018 13:05	Field Blank	Metals	Cadmium	0.020 U	µg/L	0.02	0.08
1/22/2018 13:05	Field Blank	Metals	Chromium	0.40 U	µg/L	0.4	1.6
1/22/2018 13:05	Field Blank	Metals	Lead	0.14 I	µg/L	0.05	0.2
1/22/2018 13:05	Field Blank	Metals	Iron	30 U	µg/L	30	120
1/22/2018 13:05	Field Blank	Metals	Nickel	0.20 U	µg/L	0.2	0.8
1/22/2018 13:05	Field Blank	Nutrients	O-Phosphate-P	0.004 U	mg P/L	0.004	0.01
1/22/2018 13:05	Field Blank	Nutrients	Chloride	0.20 U	mg Cl/L	0.2	0.5
1/22/2018 13:05	Field Blank	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.1
1/22/2018 13:05	Field Blank	Nutrients	NO2NO3-N	0.004 U	mg N/L	0.004	0.01
1/22/2018 13:05	Field Blank	Nutrients	Organic Carbon	0.50 U	mg C/L	0.5	1
1/22/2018 13:05	Field Blank	Nutrients	Total Alkalinity	0.65 U	mg CaCO3/L	0.65	2.5
1/22/2018 13:05	Field Blank	Nutrients	Kjeldahl Nitrogen	0.080 U	mg N/L	0.08	0.2
1/22/2018 13:05	Field Blank	Nutrients	Turbidity	0.10 U	NTU	0.1	0.13
1/22/2018 13:05	Field Blank	Nutrients	Total-P	0.002 U	mg P/L	0.002	0.005

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
1/22/2018 13:05	Field Blank	Nutrients	Color (true)	2.5 U	PCU	2.5	6
1/22/2018 13:05	Field Blank	Nutrients	Ammonia-N	0.002 U	mg N/L	0.002	0.005
1/22/2018 13:05	Field Blank	Nutrients	Sulfate	0.20 U	mg SO4/L	0.2	0.5
1/22/2018 13:05	Field Blank	Pesticides	Disulfoton	0.0047 U	µg/L	0.0047	0.019
1/22/2018 13:05	Field Blank	Pesticides	MCPP	0.0020 U	µg/L	0.002	0.008
1/22/2018 13:05	Field Blank	Pesticides	Atrazine	0.0095 U	µg/L	0.0095	0.038
1/22/2018 13:05	Field Blank	Pesticides	Fonofos	0.0095 U	µg/L	0.0095	0.038
1/22/2018 13:05	Field Blank	Pesticides	Malathion	0.0095 U	µg/L	0.0095	0.038
1/22/2018 13:05	Field Blank	Pesticides	Acetaminophen	0.0080 U	µg/L	0.008	0.032
1/22/2018 13:05	Field Blank	Pesticides	Azinphos Methyl	0.019 U	µg/L	0.019	0.076
1/22/2018 13:05	Field Blank	Pesticides	Fenamiphos	0.028 U	µg/L	0.028	0.11
1/22/2018 13:05	Field Blank	Pesticides	Mevinphos	0.0095 U	µg/L	0.0095	0.038
1/22/2018 13:05	Field Blank	Pesticides	Phorate	0.0047 U	µg/L	0.0047	0.019
1/22/2018 13:05	Field Blank	Pesticides	Simazine	0.0095 U	µg/L	0.0095	0.038
1/22/2018 13:05	Field Blank	Pesticides	Carbamazepine	4.0E-04 U	µg/L	0.0004	0.0016
1/22/2018 13:05	Field Blank	Pesticides	Alachlor	0.057 U	µg/L	0.057	0.23
1/22/2018 13:05	Field Blank	Pesticides	Ethion	0.0095 U	µg/L	0.0095	0.038
1/22/2018 13:05	Field Blank	Pesticides	Norflurazon	0.028 U	µg/L	0.028	0.11
1/22/2018 13:05	Field Blank	Pesticides	Sucralose	0.010 U	µg/L	0.01	0.04
1/22/2018 13:05	Field Blank	Pesticides	Metribuzin	0.019 U	µg/L	0.019	0.076
1/22/2018 13:05	Field Blank	Pesticides	Atrazine Desethyl	0.0095 U	µg/L	0.0095	0.038
1/22/2018 13:05	Field Blank	Pesticides	Atrazine Desisopropyl	0.0095 U	µg/L	0.0095	0.038
1/22/2018 13:05	Field Blank	Pesticides	Bromacil	0.038 U	µg/L	0.038	0.15
1/22/2018 13:05	Field Blank	Pesticides	Butylate	0.019 U	µg/L	0.019	0.076
1/22/2018 13:05	Field Blank	Pesticides	Metalaxyl	0.038 U	µg/L	0.038	0.15
1/22/2018 13:05	Field Blank	Pesticides	Metolachlor	0.057 U	µg/L	0.057	0.23
1/22/2018 13:05	Field Blank	Pesticides	Prometon	0.019 U	µg/L	0.019	0.076
1/22/2018 13:05	Field Blank	Pesticides	Prometryn	0.019 U	µg/L	0.019	0.076
1/22/2018 13:05	Field Blank	Pesticides	Ametryn	0.0095 U	µg/L	0.0095	0.038
1/22/2018 13:05	Field Blank	Pesticides	2,4-D	0.0020 U	µg/L	0.002	0.008
1/22/2018 13:05	Field Blank	Pesticides	Bentazon	8.0E-04 U	µg/L	0.0008	0.0032
1/22/2018 13:05	Field Blank	Pesticides	Triclopyr	0.0040 U	µg/L	0.004	0.016
1/22/2018 13:05	Field Blank	Pesticides	Chlorpyrifos Methyl	0.0095 U	µg/L	0.0095	0.038
1/22/2018 13:05	Field Blank	Pesticides	Demeton	0.023 U	µg/L	0.023	0.091
1/22/2018 13:05	Field Blank	Pesticides	Ethoprop	0.0047 U	µg/L	0.0047	0.019
1/22/2018 13:05	Field Blank	Pesticides	Hexazinone	0.028 U	µg/L	0.028	0.11
1/22/2018 13:05	Field Blank	Pesticides	Naled	0.038 U	µg/L	0.038	0.15
1/22/2018 13:05	Field Blank	Pesticides	Parathion Ethyl	0.019 U	µg/L	0.019	0.076

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
1/22/2018 13:05	Field Blank	Pesticides	Parathion Methyl	0.0095 U	µg/L	0.0095	0.038
1/22/2018 13:05	Field Blank	Pesticides	Chlorpyrifos Ethyl	0.0095 U	µg/L	0.0095	0.038
1/22/2018 13:05	Field Blank	Pesticides	Diazinon	0.0095 U	µg/L	0.0095	0.038
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	2-Nitrophenol	1.1 U	µg/L	1.1	4.2
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Isophorone	1.1 U	µg/L	1.1	4.2
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Anthracene	0.21 U	µg/L	0.21	0.84
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Benzidine	110 U	µg/L	110	420
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Hexachlorobutadiene	3.2 U	µg/L	3.2	13
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.2 U	µg/L	3.2	13
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Nitrobenzene	2.1 U	µg/L	2.1	8.4
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	1,4-Dioxane	0.020 U	µg/L	0.02	0.08
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	2-Chlorophenol	1.1 U	µg/L	1.1	4.2
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.2 U	µg/L	3.2	13
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.1 U	µg/L	1.1	4.2
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.21 U	µg/L	0.21	0.84
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Bis(2-ethylhexyl) phthalate	2.1 U	µg/L	2.1	8.4
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Di-n-butyl phthalate	1.1 U	µg/L	1.1	4.2
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1 U	µg/L	2.1	8.4
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Pyrene	0.21 U	µg/L	0.21	0.84
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	2,4-Dichlorophenol	1.1 U	µg/L	1.1	4.2
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	2,4-Dinitrophenol	16 U	µg/L	16	63
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.1 U	µg/L	1.1	4.2
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.1 U	µg/L	2.1	8.4
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Bis(2-chloroethyl) ether	1.1 U	µg/L	1.1	4.2
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl) ether	3.2 U	µg/L	3.2	13
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Butyl benzyl phthalate	1.1 U	µg/L	1.1	4.2
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Hexachloroethane	3.2 U	µg/L	3.2	13
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Pentachlorophenol	1.1 U	µg/L	1.1	4.2
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	1.1 U	µg/L	1.1	4.2
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.21 U	µg/L	0.21	0.84
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Bis(2-chloroethoxy) methane	1.1 U	µg/L	1.1	4.2
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	2,4-Dimethylphenol	11 U	µg/L	11	42
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Chrysene	0.21 U	µg/L	0.21	0.84
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Diethyl phthalate	1.1 U	µg/L	1.1	4.2
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.1 U	µg/L	2.1	8.4
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.1 U	µg/L	1.1	4.2
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Acenaphthene	0.21 U	µg/L	0.21	0.84
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Dibenzo (a, h) anthracene	0.21 U	µg/L	0.21	0.84

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Phenanthrene	0.21 U	µg/L	0.21	0.84
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Phenol	1.1 U	µg/L	1.1	4.2
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	4-Nitrophenol	16 U	µg/L	16	63
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Benzo (g, h, i) perylene	0.21 U	µg/L	0.21	0.84
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.21 U	µg/L	0.21	0.84
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Di-n-octyl phthalate	1.1 U	µg/L	1.1	4.2
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Dimethyl phthalate	1.1 U	µg/L	1.1	4.2
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Fluorene	0.21 U	µg/L	0.21	0.84
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Naphthalene	0.21 U	µg/L	0.21	0.84
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.1 U	µg/L	1.1	4.2
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	1.1 U	µg/L	1.1	4.2
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	2-Chloronaphthalene	1.1 U	µg/L	1.1	4.2
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	42 U	µg/L	42	170
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.21 U	µg/L	0.21	0.84
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Fluoranthene	0.21 U	µg/L	0.21	0.84
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Hexachlorobenzene	1.1 U	µg/L	1.1	4.2
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.2 U	µg/L	3.2	13
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Indeno(1,2,3-cd) pyrene	0.21 U	µg/L	0.21	0.84
1/22/2018 13:05	Field Blank	Priority Organic Pollutants	Acenaphthylene	0.21 U	µg/L	0.21	0.84
12/11/2017 13:36	Field Blank	Overflow	Fecal Coliforms-Membrane Filter	1 U	cfu/100 mL	1	1
12/11/2017 13:36	Field Blank	Overflow	Escherichia Coli-Quanti-Tray	1 U	MPN/100 mL	1	1
12/11/2017 13:36	Field Blank	Metals	Silver	0.010 U	µg/L	0.01	0.04
12/11/2017 13:36	Field Blank	Metals	Calcium	0.075 U	mg/L	0.075	0.3
12/11/2017 13:36	Field Blank	Metals	Copper	0.25 I	µg/L	0.2	0.8
12/11/2017 13:36	Field Blank	Metals	Magnesium	0.040 U	mg/L	0.04	0.16
12/11/2017 13:36	Field Blank	Metals	Selenium	0.20 U	µg/L	0.2	0.8
12/11/2017 13:36	Field Blank	Metals	Potassium	0.30 U	mg/L	0.3	1.2
12/11/2017 13:36	Field Blank	Metals	Iron	30 U	µg/L	30	120
12/11/2017 13:36	Field Blank	Metals	Sodium	0.50 U	mg/L	0.5	2
12/11/2017 13:36	Field Blank	Metals	Zinc	5.0 U	µg/L	5	20
12/11/2017 13:36	Field Blank	Metals	Arsenic	0.050 U	µg/L	0.05	0.2
12/11/2017 13:36	Field Blank	Metals	Cadmium	0.020 U	µg/L	0.02	0.08
12/11/2017 13:36	Field Blank	Metals	Nickel	0.20 U	µg/L	0.2	0.8
12/11/2017 13:36	Field Blank	Metals	Chromium	0.40 U	µg/L	0.4	1.6
12/11/2017 13:36	Field Blank	Metals	Lead	0.094 I	µg/L	0.05	0.2
12/11/2017 13:36	Field Blank	Metals	Aluminum	3.0 U	µg/L	3	12
12/11/2017 13:36	Field Blank	Nutrients	Color (true)	2.5 U	PCU	2.5	6
12/11/2017 13:36	Field Blank	Nutrients	Sulfate	0.20 U	mg SO4/L	0.2	0.5

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
12/11/2017 13:36	Field Blank	Nutrients	Chloride	0.20 U	mg Cl/L	0.2	0.5
12/11/2017 13:36	Field Blank	Nutrients	Ammonia-N	0.002 U	mg N/L	0.002	0.005
12/11/2017 13:36	Field Blank	Nutrients	Kjeldahl Nitrogen	0.080 U	mg N/L	0.08	0.2
12/11/2017 13:36	Field Blank	Nutrients	Total Alkalinity	0.65 U	mg CaCO3/L	0.65	2.5
12/11/2017 13:36	Field Blank	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.1
12/11/2017 13:36	Field Blank	Nutrients	O-Phosphate-P	0.004 U	mg P/L	0.004	0.01
12/11/2017 13:36	Field Blank	Nutrients	Organic Carbon	0.50 U	mg C/L	0.5	1
12/11/2017 13:36	Field Blank	Nutrients	Turbidity	0.10 U	NTU	0.1	0.13
12/11/2017 13:36	Field Blank	Nutrients	NO2NO3-N	0.004 U	mg N/L	0.004	0.01
12/11/2017 13:36	Field Blank	Nutrients	Total-P	0.002 U	mg P/L	0.002	0.005
12/11/2017 13:36	Field Blank	Pesticides	Alachlor	0.063 U	µg/L	0.063	0.25
12/11/2017 13:36	Field Blank	Pesticides	Carbamazepine	4.0E-04 U	µg/L	0.0004	0.0016
12/11/2017 13:36	Field Blank	Pesticides	Demeton	0.025 U	µg/L	0.025	0.1
12/11/2017 13:36	Field Blank	Pesticides	Malathion	0.010 U	µg/L	0.01	0.042
12/11/2017 13:36	Field Blank	Pesticides	Mevinphos	0.010 UJ	µg/L	0.01	0.042
12/11/2017 13:36	Field Blank	Pesticides	Azinphos Methyl	0.021 U	µg/L	0.021	0.084
12/11/2017 13:36	Field Blank	Pesticides	Parathion Methyl	0.010 UJ	µg/L	0.01	0.042
12/11/2017 13:36	Field Blank	Pesticides	Simazine	0.010 U	µg/L	0.01	0.042
12/11/2017 13:36	Field Blank	Pesticides	MCPP	0.0020 U	µg/L	0.002	0.008
12/11/2017 13:36	Field Blank	Pesticides	Atrazine Desisopropyl	0.010 U	µg/L	0.01	0.042
12/11/2017 13:36	Field Blank	Pesticides	Ethoprop	0.0052 UJ	µg/L	0.0052	0.021
12/11/2017 13:36	Field Blank	Pesticides	Phorate	0.0052 U	µg/L	0.0052	0.021
12/11/2017 13:36	Field Blank	Pesticides	Metribuzin	0.021 U	µg/L	0.021	0.084
12/11/2017 13:36	Field Blank	Pesticides	Prometryn	0.021 U	µg/L	0.021	0.084
12/11/2017 13:36	Field Blank	Pesticides	Diazinon	0.010 U	µg/L	0.01	0.042
12/11/2017 13:36	Field Blank	Pesticides	Disulfoton	0.0052 U	µg/L	0.0052	0.021
12/11/2017 13:36	Field Blank	Pesticides	Hexazinone	0.031 U	µg/L	0.031	0.13
12/11/2017 13:36	Field Blank	Pesticides	Chlorpyrifos Ethyl	0.010 U	µg/L	0.01	0.042
12/11/2017 13:36	Field Blank	Pesticides	Chlorpyrifos Methyl	0.010 U	µg/L	0.01	0.042
12/11/2017 13:36	Field Blank	Pesticides	Metolachlor	0.063 U	µg/L	0.063	0.25
12/11/2017 13:36	Field Blank	Pesticides	Norflurazon	0.031 UJ	µg/L	0.031	0.13
12/11/2017 13:36	Field Blank	Pesticides	Prometon	0.021 U	µg/L	0.021	0.084
12/11/2017 13:36	Field Blank	Pesticides	Sucralose	0.010 U	µg/L	0.01	0.04
12/11/2017 13:36	Field Blank	Pesticides	Bentazon	8.0E-04 U	µg/L	0.0008	0.0032
12/11/2017 13:36	Field Blank	Pesticides	Triclopyr	0.0040 U	µg/L	0.004	0.016
12/11/2017 13:36	Field Blank	Pesticides	Ametryn	0.010 U	µg/L	0.01	0.042
12/11/2017 13:36	Field Blank	Pesticides	Ethion	0.010 U	µg/L	0.01	0.042
12/11/2017 13:36	Field Blank	Pesticides	Fenamiphos	0.031 U	µg/L	0.031	0.13

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
12/11/2017 13:36	Field Blank	Pesticides	Fonofos	0.010 U	µg/L	0.01	0.042
12/11/2017 13:36	Field Blank	Pesticides	Acetaminophen	0.0080 U	µg/L	0.008	0.032
12/11/2017 13:36	Field Blank	Pesticides	Atrazine	0.010 U	µg/L	0.01	0.042
12/11/2017 13:36	Field Blank	Pesticides	Atrazine Desethyl	0.010 U	µg/L	0.01	0.042
12/11/2017 13:36	Field Blank	Pesticides	Bromacil	0.042 U	µg/L	0.042	0.17
12/11/2017 13:36	Field Blank	Pesticides	Metalaxyl	0.042 U	µg/L	0.042	0.17
12/11/2017 13:36	Field Blank	Pesticides	Naled	0.042 UJ	µg/L	0.042	0.17
12/11/2017 13:36	Field Blank	Pesticides	Parathion Ethyl	0.021 U	µg/L	0.021	0.084
12/11/2017 13:36	Field Blank	Pesticides	2,4-D	0.0020 U	µg/L	0.002	0.008
12/11/2017 13:36	Field Blank	Pesticides	Butylate	0.021 U	µg/L	0.021	0.084
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	2,4-Dichlorophenol	1.0 U	µg/L	1	4
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	2-Chloronaphthalene	1.0 U	µg/L	1	4
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	4-Nitrophenol	15 U	µg/L	15	61
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Anthracene	0.20 U	µg/L	0.2	0.81
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.20 U	µg/L	0.2	0.81
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Butyl benzyl phthalate	1.0 U	µg/L	1	4
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Dibenzo (a, h) anthracene	0.20 U	µg/L	0.2	0.81
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Dimethyl phthalate	1.0 U	µg/L	1	4
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	40 U	µg/L	40	160
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Fluoranthene	0.20 U	µg/L	0.2	0.81
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.0 U	µg/L	2	8.1
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.0 U	µg/L	3	12
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Naphthalene	0.20 U	µg/L	0.2	0.81
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Phenol	1.0 U	µg/L	1	4
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.0 U	µg/L	1	4
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.0 U	µg/L	3	12
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	2-Nitrophenol	1.0 U	µg/L	1	4
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.0 U	µg/L	1	4
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Acenaphthylene	0.20 U	µg/L	0.2	0.81
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Di-n-butyl phthalate	2.0 U	µg/L	2	8.1
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.0 U	µg/L	3	12
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Indeno(1,2,3-cd) pyrene	0.20 U	µg/L	0.2	0.81
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Nitrobenzene	2.0 U	µg/L	2	8.1
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.0 U	µg/L	1	4
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Benzidine	100 U	µg/L	100	400
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.20 U	µg/L	0.2	0.81
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Bis(2-chloroethoxy) methane	1.0 U	µg/L	1	4
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Di-n-octyl phthalate	1.0 U	µg/L	1	4

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Diethyl phthalate	2.0 U	µg/L	2	8.1
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	1.0 U	µg/L	1	4
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	2-Chlorophenol	1.0 U	µg/L	1	4
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.0 U	µg/L	2	8.1
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.20 U	µg/L	0.2	0.81
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Benzo (g, h, i) perylene	0.20 U	µg/L	0.2	0.81
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.20 U	µg/L	0.2	0.81
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl) ether	3.0 U	µg/L	3	12
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Chrysene	0.20 U	µg/L	0.2	0.81
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Isophorone	1.0 U	µg/L	1	4
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	2.0 U	µg/L	2	8.1
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	1,4-Dioxane	0.020 U	µg/L	0.02	0.08
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	2,4-Dimethylphenol	10 U	µg/L	10	40
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	1.0 U	µg/L	1	4
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Hexachlorobutadiene	3.0 U	µg/L	3	12
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Pentachlorophenol	1.0 U	µg/L	1	4
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.0 U	µg/L	1	4
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Fluorene	0.20 U	µg/L	0.2	0.81
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Hexachloroethane	3.0 U	µg/L	3	12
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Pyrene	0.20 U	µg/L	0.2	0.81
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	2,4-Dinitrophenol	15 U	µg/L	15	61
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Acenaphthene	0.20 U	µg/L	0.2	0.81
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Bis(2-chloroethyl) ether	1.0 U	µg/L	1	4
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Bis(2-ethylhexyl) phthalate	2.0 U	µg/L	2	8.1
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Hexachlorobenzene	1.0 U	µg/L	1	4
12/11/2017 13:36	Field Blank	Priority Organic Pollutants	Phenanthrene	0.20 U	µg/L	0.2	0.81
12/11/2017 11:15	Test Site	AGP/LN	Algal Growth Potential	75.3	mg DryWt/L	0.3	0.9
12/11/2017 11:15	Test Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	0.87 I	µg/L	0.4	1.2
12/11/2017 11:15	Test Site	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day, N-Inhib	2.0	mg/L	0.2	2
12/11/2017 11:15	Test Site	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.40 U	µg/L	0.4	1.2
12/11/2017 11:15	Test Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.88 I	µg/L	0.55	1.7
12/11/2017 11:15	Test Site	Overflow	Fecal Coliforms-Membrane Filter	46	cfu/100 mL	2	2
12/11/2017 11:15	Test Site	Overflow	Escherichia Coli-Quanti-Tray	63	MPN/100 mL	10	10
12/11/2017 11:15	Test Site	Metals	Silver	0.010 U	µg/L	0.01	0.04
12/11/2017 11:15	Test Site	Metals	Calcium	37.4	mg/L	0.075	0.3
12/11/2017 11:15	Test Site	Metals	Zinc	20	µg/L	5	20
12/11/2017 11:15	Test Site	Metals	Aluminum	103	µg/L	3	12
12/11/2017 11:15	Test Site	Metals	Arsenic	0.81	µg/L	0.05	0.2

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
12/11/2017 11:15	Test Site	Metals	Cadmium	0.038 I	µg/L	0.02	0.08
12/11/2017 11:15	Test Site	Metals	Magnesium	5.72	mg/L	0.04	0.16
12/11/2017 11:15	Test Site	Metals	Nickel	0.60 I	µg/L	0.2	0.8
12/11/2017 11:15	Test Site	Metals	Selenium	0.20 U	µg/L	0.2	0.8
12/11/2017 11:15	Test Site	Metals	Potassium	5.8	mg/L	0.3	1.2
12/11/2017 11:15	Test Site	Metals	Iron	170	µg/L	30	120
12/11/2017 11:15	Test Site	Metals	Copper	4.91	µg/L	0.2	0.8
12/11/2017 11:15	Test Site	Metals	Sodium	13.5	mg/L	0.5	2
12/11/2017 11:15	Test Site	Metals	Chromium	0.40 U	µg/L	0.4	1.6
12/11/2017 11:15	Test Site	Metals	Lead	0.44	µg/L	0.05	0.2
12/11/2017 11:15	Test Site	Nutrients	Ammonia-N	0.048	mg N/L	0.002	0.005
12/11/2017 11:15	Test Site	Nutrients	Color (true)	14 A	PCU	2.5	6
12/11/2017 11:15	Test Site	Nutrients	NO2NO3-N	5.0	mg N/L	0.04	0.1
12/11/2017 11:15	Test Site	Nutrients	O-Phosphate-P	1.6	mg P/L	0.04	0.1
12/11/2017 11:15	Test Site	Nutrients	Organic Carbon	3.3	mg C/L	0.5	1
12/11/2017 11:15	Test Site	Nutrients	Total Alkalinity	83	mg CaCO3/L	0.65	2.5
12/11/2017 11:15	Test Site	Nutrients	Total-P	1.6	mg P/L	0.025	0.25
12/11/2017 11:15	Test Site	Nutrients	Chloride	21	mg Cl/L	0.2	0.5
12/11/2017 11:15	Test Site	Nutrients	Fluoride	0.045 I	mg F/L	0.035	0.1
12/11/2017 11:15	Test Site	Nutrients	Kjeldahl Nitrogen	0.48	mg N/L	0.08	0.2
12/11/2017 11:15	Test Site	Nutrients	Sulfate	17	mg SO4/L	0.2	0.5
12/11/2017 11:15	Test Site	Nutrients	TSS	2 I	mg/L	2	10
12/11/2017 11:15	Test Site	Nutrients	Turbidity	2.9	NTU	0.1	0.13
12/11/2017 11:15	Test Site	Pesticides	Sucralose	9.2	µg/L	0.01	0.04
12/11/2017 11:15	Test Site	Priority Organic Pollutants	2,4-Dimethylphenol	10 U	µg/L	10	41
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Phenanthrene	0.21 U	µg/L	0.21	0.82
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Pentachlorophenol	1.0 U	µg/L	1	4.1
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Indeno(1,2,3-cd) pyrene	0.21 U	µg/L	0.21	0.82
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Fluorene	0.21 U	µg/L	0.21	0.82
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Fluoranthene	0.21 U	µg/L	0.21	0.82
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Di-n-octyl phthalate	1.0 U	µg/L	1	4.1
12/11/2017 11:15	Test Site	Priority Organic Pollutants	2-Chloronaphthalene	1.0 U	µg/L	1	4.1
12/11/2017 11:15	Test Site	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.1 U	µg/L	2.1	8.2
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Acenaphthylene	0.21 U	µg/L	0.21	0.82
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Dibenzo (a, h) anthracene	0.21 U	µg/L	0.21	0.82
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Hexachlorobenzene	1.0 U	µg/L	1	4.1
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Hexachloroethane	3.1 U	µg/L	3.1	12
12/11/2017 11:15	Test Site	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.1 U	µg/L	2.1	8.2

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
12/11/2017 11:15	Test Site	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.1 U	µg/L	3.1	12
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Phenol	1.0 U	µg/L	1	4.1
12/11/2017 11:15	Test Site	Priority Organic Pollutants	1,4-Dioxane	0.15	µg/L	0.02	0.08
12/11/2017 11:15	Test Site	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.0 U	µg/L	1	4.1
12/11/2017 11:15	Test Site	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.0 U	µg/L	1	4.1
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Acenaphthene	0.21 U	µg/L	0.21	0.82
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Bis(2-ethylhexyl) phthalate	2.1 U	µg/L	2.1	8.2
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.1 U	µg/L	3.1	12
12/11/2017 11:15	Test Site	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1 U	µg/L	2.1	8.2
12/11/2017 11:15	Test Site	Priority Organic Pollutants	2,4-Dichlorophenol	1.0 U	µg/L	1	4.1
12/11/2017 11:15	Test Site	Priority Organic Pollutants	2,4-Dinitrophenol	15 U	µg/L	15	62
12/11/2017 11:15	Test Site	Priority Organic Pollutants	2,6-Dinitrotoluene	1.0 U	µg/L	1	4.1
12/11/2017 11:15	Test Site	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1 U	µg/L	3.1	12
12/11/2017 11:15	Test Site	Priority Organic Pollutants	2-Nitrophenol	1.0 U	µg/L	1	4.1
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Benzo(a)anthracene	0.21 U	µg/L	0.21	0.82
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Benzo(k)fluoranthene	0.21 U	µg/L	0.21	0.82
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Chrysene	0.21 U	µg/L	0.21	0.82
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Diethyl phthalate	2.1 U	µg/L	2.1	8.2
12/11/2017 11:15	Test Site	Priority Organic Pollutants	4-Nitrophenol	15 U	µg/L	15	62
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Benzo(b)fluoranthene	0.21 U	µg/L	0.21	0.82
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Bis(2-chloroethoxy) methane	1.0 U	µg/L	1	4.1
12/11/2017 11:15	Test Site	Priority Organic Pollutants	3,3'-Dichlorobenzidine	41 U	µg/L	41	160
12/11/2017 11:15	Test Site	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.0 U	µg/L	1	4.1
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Benzo(a)pyrene	0.21 U	µg/L	0.21	0.82
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Hexachlorobutadiene	3.1 U	µg/L	3.1	12
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Naphthalene	0.21 U	µg/L	0.21	0.82
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Benzidine	100 U	µg/L	100	410
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Bis(2-chloroisopropyl) ether	3.1 U	µg/L	3.1	12
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Butyl benzyl phthalate	1.0 U	µg/L	1	4.1
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Dimethyl phthalate	1.0 U	µg/L	1	4.1
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Isophorone	1.0 U	µg/L	1	4.1
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Nitrobenzene	2.1 U	µg/L	2.1	8.2
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Pyrene	0.21 U	µg/L	0.21	0.82
12/11/2017 11:15	Test Site	Priority Organic Pollutants	2,4-Dinitrotoluene	1.0 U	µg/L	1	4.1
12/11/2017 11:15	Test Site	Priority Organic Pollutants	2-Chlorophenol	1.0 U	µg/L	1	4.1
12/11/2017 11:15	Test Site	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.0 U	µg/L	1	4.1
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Anthracene	0.21 U	µg/L	0.21	0.82
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Benzo (g, h, i) perylene	0.21 U	µg/L	0.21	0.82

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Bis(2-chloroethyl) ether	1.0 U	µg/L	1	4.1
12/11/2017 11:15	Test Site	Priority Organic Pollutants	Di-n-butyl phthalate	2.1 U	µg/L	2.1	8.2
12/11/2017 11:15	Test Site	Nutrients	Temperature	14.39	C		
12/11/2017 11:15	Test Site	Nutrients	Specific Conductance	321	µmhos/cm		
12/11/2017 11:15	Test Site	Nutrients	pH	6.86			
12/11/2017 11:15	Test Site	Nutrients	Sample Depth	0.3	m		
12/11/2017 11:15	Test Site	Nutrients	Dissolved Oxygen	7.83	mg/L		
12/11/2017 12:00	Control Site	AGP/LN	Algal Growth Potential	7.12	mg DryWt/L	0.3	0.9
12/11/2017 12:00	Control Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	1.6	µg/L	0.4	1.2
12/11/2017 12:00	Control Site	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.40 U	µg/L	0.4	1.2
12/11/2017 12:00	Control Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	1.4 I	µg/L	0.55	1.7
12/11/2017 12:00	Control Site	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day, N-Inhib	1.1 I	mg/L	0.2	2
12/11/2017 12:00	Control Site	Overflow	Fecal Coliforms-Membrane Filter	157 B	cfu/100 mL	2	2
12/11/2017 12:00	Control Site	Overflow	Escherichia Coli-Quanti-Tray	187	MPN/100 mL	10	10
12/11/2017 12:00	Control Site	Metals	Copper	1.44	µg/L	0.2	0.8
12/11/2017 12:00	Control Site	Metals	Cadmium	0.020 U	µg/L	0.02	0.08
12/11/2017 12:00	Control Site	Metals	Calcium	27.6	mg/L	0.075	0.3
12/11/2017 12:00	Control Site	Metals	Magnesium	3.72	mg/L	0.04	0.16
12/11/2017 12:00	Control Site	Metals	Aluminum	262	µg/L	3	12
12/11/2017 12:00	Control Site	Metals	Iron	420	µg/L	30	120
12/11/2017 12:00	Control Site	Metals	Zinc	9.7 I	µg/L	5	20
12/11/2017 12:00	Control Site	Metals	Selenium	0.20 U	µg/L	0.2	0.8
12/11/2017 12:00	Control Site	Metals	Lead	0.48	µg/L	0.05	0.2
12/11/2017 12:00	Control Site	Metals	Sodium	2.8	mg/L	0.5	2
12/11/2017 12:00	Control Site	Metals	Silver	0.010 U	µg/L	0.01	0.04
12/11/2017 12:00	Control Site	Metals	Chromium	0.55 I	µg/L	0.4	1.6
12/11/2017 12:00	Control Site	Metals	Nickel	0.41 I	µg/L	0.2	0.8
12/11/2017 12:00	Control Site	Metals	Arsenic	0.50	µg/L	0.05	0.2
12/11/2017 12:00	Control Site	Metals	Potassium	2.1	mg/L	0.3	1.2
12/11/2017 12:00	Control Site	Nutrients	Color (true)	36	PCU	2.5	6
12/11/2017 12:00	Control Site	Nutrients	TSS	2 I	mg/L	2	10
12/11/2017 12:00	Control Site	Nutrients	Turbidity	6.1 A	NTU	0.1	0.13
12/11/2017 12:00	Control Site	Nutrients	Fluoride	0.070 I	mg F/L	0.035	0.1
12/11/2017 12:00	Control Site	Nutrients	Total-P	0.11	mg P/L	0.005	0.05
12/11/2017 12:00	Control Site	Nutrients	Total Alkalinity	75	mg CaCO3/L	0.65	2.5
12/11/2017 12:00	Control Site	Nutrients	NO2NO3-N	0.21	mg N/L	0.004	0.01
12/11/2017 12:00	Control Site	Nutrients	Chloride	4.3 A	mg Cl/L	0.2	0.5
12/11/2017 12:00	Control Site	Nutrients	Sulfate	7.6 A	mg SO4/L	0.2	0.5

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
12/11/2017 12:00	Control Site	Nutrients	Kjeldahl Nitrogen	0.23	mg N/L	0.08	0.2
12/11/2017 12:00	Control Site	Nutrients	Organic Carbon	4.1	mg C/L	0.5	1
12/11/2017 12:00	Control Site	Nutrients	O-Phosphate-P	0.049	mg P/L	0.004	0.01
12/11/2017 12:00	Control Site	Nutrients	Ammonia-N	0.015	mg N/L	0.002	0.005
12/11/2017 12:00	Control Site	Pesticides	Sucralose	0.43	µg/L	0.01	0.04
12/11/2017 12:00	Control Site	Priority Organic Pollutants	2,6-Dinitrotoluene	1.0 U	µg/L	1	4.1
12/11/2017 12:00	Control Site	Priority Organic Pollutants	2-Chloronaphthalene	1.0 U	µg/L	1	4.1
12/11/2017 12:00	Control Site	Priority Organic Pollutants	4-Nitrophenol	15 U	µg/L	15	61
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Dibenzo (a, h) anthracene	0.20 U	µg/L	0.2	0.82
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Isophorone	1.0 U	µg/L	1	4.1
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Pyrene	0.20 U	µg/L	0.2	0.82
12/11/2017 12:00	Control Site	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1 U	µg/L	3.1	12
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Benzo(b)fluoranthene	0.20 U	µg/L	0.2	0.82
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Benzo(k)fluoranthene	0.20 U	µg/L	0.2	0.82
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Bis(2-chloroethoxy) methane	1.0 U	µg/L	1	4.1
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Butyl benzyl phthalate	1.0 U	µg/L	1	4.1
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Di-n-butyl phthalate	2.0 U	µg/L	2	8.2
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Hexachlorobenzene	1.0 U	µg/L	1	4.1
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Indeno(1,2,3-cd) pyrene	0.20 U	µg/L	0.2	0.82
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Pentachlorophenol	1.0 U	µg/L	1	4.1
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Benzo (g, h, i) perylene	0.20 U	µg/L	0.2	0.82
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Bis(2-chloroisopropyl) ether	3.1 U	µg/L	3.1	12
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Chrysene	0.20 U	µg/L	0.2	0.82
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Di-n-octyl phthalate	1.0 U	µg/L	1	4.1
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Dimethyl phthalate	1.0 U	µg/L	1	4.1
12/11/2017 12:00	Control Site	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.1 U	µg/L	3.1	12
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Naphthalene	0.20 U	µg/L	0.2	0.82
12/11/2017 12:00	Control Site	Priority Organic Pollutants	1,4-Dioxane	0.020 U	µg/L	0.02	0.08
12/11/2017 12:00	Control Site	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.0 U	µg/L	1	4.1
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Acenaphthene	0.20 U	µg/L	0.2	0.82
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Benzidine	100 U	µg/L	100	410
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Diethyl phthalate	2.0 U	µg/L	2	8.2
12/11/2017 12:00	Control Site	Priority Organic Pollutants	2,4-Dichlorophenol	1.0 U	µg/L	1	4.1
12/11/2017 12:00	Control Site	Priority Organic Pollutants	2,4-Dinitrophenol	15 U	µg/L	15	61
12/11/2017 12:00	Control Site	Priority Organic Pollutants	2-Nitrophenol	1.0 U	µg/L	1	4.1
12/11/2017 12:00	Control Site	Priority Organic Pollutants	3,3'-Dichlorobenzidine	41 U	µg/L	41	160
12/11/2017 12:00	Control Site	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.0 U	µg/L	2	8.2
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Benzo(a)anthracene	0.20 U	µg/L	0.2	0.82

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Bis(2-chloroethyl) ether	1.0 U	µg/L	1	4.1
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Hexachloroethane	3.1 U	µg/L	3.1	12
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Phenol	1.0 U	µg/L	1	4.1
12/11/2017 12:00	Control Site	Priority Organic Pollutants	2,4-Dimethylphenol	10 U	µg/L	10	41
12/11/2017 12:00	Control Site	Priority Organic Pollutants	2-Chlorophenol	1.0 U	µg/L	1	4.1
12/11/2017 12:00	Control Site	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.0 U	µg/L	1	4.1
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Benzo(a)pyrene	0.20 U	µg/L	0.2	0.82
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Bis(2-ethylhexyl) phthalate	2.0 U	µg/L	2	8.2
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Fluoranthene	0.20 U	µg/L	0.2	0.82
12/11/2017 12:00	Control Site	Priority Organic Pollutants	N-Nitrosodimethylamine	2.0 U	µg/L	2	8.2
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Nitrobenzene	2.0 U	µg/L	2	8.2
12/11/2017 12:00	Control Site	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.0 U	µg/L	1	4.1
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Fluorene	0.20 U	µg/L	0.2	0.82
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.1 U	µg/L	3.1	12
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Phenanthrene	0.20 U	µg/L	0.2	0.82
12/11/2017 12:00	Control Site	Priority Organic Pollutants	2,4-Dinitrotoluene	1.0 U	µg/L	1	4.1
12/11/2017 12:00	Control Site	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.0 U	µg/L	1	4.1
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Acenaphthylene	0.20 U	µg/L	0.2	0.82
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Anthracene	0.20 U	µg/L	0.2	0.82
12/11/2017 12:00	Control Site	Priority Organic Pollutants	Hexachlorobutadiene	3.1 U	µg/L	3.1	12
12/11/2017 12:00	Control Site	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.0 U	µg/L	2	8.2
12/11/2017 12:00	Control Site	Nutrients	Dissolved Oxygen	7.37	mg/L		
12/11/2017 12:00	Control Site	Nutrients	Specific Conductance	182	µmhos/cm		
12/11/2017 12:00	Control Site	Nutrients	pH	6.42			
12/11/2017 12:00	Control Site	Nutrients	Sample Depth	0.3	m		
12/11/2017 12:00	Control Site	Nutrients	Temperature	8.74	C		

Appendix F

Toxicological results

ffective date: 1/22/2018
evision Date: 1/22/2018
evision Author: A. Rankin

FDEP Laboratory-Chronic Definitive Bench Sheet

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

Organism: *Ceriodaphnia dubia*
Organism Batch #: 1.23.18
Organism Age : <24 hours
Feeding: Prior to Test and Daily
Food: ☑YCT ☑*P. subcapitata*
Food Batch: 8.4.17 12.6.17
Chamber size : 30 ml
Sample volume : 20 ml

acility: City of Bonifay WWTF
ddress: 611 Martin Luther King Jr Ave, Bonifay, FL 32425
County: Holmes
NPDES Permit #: FL 0027731
Contact/District: Northwest/Dana Vostal
LIMS entry: AER 2.12.18 verified: HS 2.12.18

Start Date: 1.23.18 Time: 1200
End Date: 1.29.18 Time: 1145

Diluent	Batch/LIMS #	Days Used
MHWCD	1.17.18/89012	0-5

Sample Received	LAB Sample #	LIMS JOB #	LIMS SAMPLE #	Collection Date/Time	Received Date/Time
Test Day 0	1	TLH- 2018-01-23-10	1960910	1.22.18 / 1100	1.23.18 / 1105
Test Day 2	2	TLH- 2018-01-25-10	1961922	1.24.18/0900	1.25.18 / 1110
Test Day 4	3	TLH- 2018-01-29-01	1962705	1.25.18/[illegible]	1.27.18/0910

Ⓐ

Water Quality Parameters	Batch # 1.17.18 MHWCD	MHWCD	NA Sample 1	NA Sample 2	NA Sample 3	Other:	Measured By:	Transcription Checked by:
Field Total Residual Cl_2 (mg/L):	NA	NA	N/A	<0.02	<0.02		Field	MSR
Lab Total Residual Cl_2 (mg/L):	<0.03		<0.03	<0.03	<0.03		JL/AER/MF	MF
Alkalinity (mg/L as $CaCO_3$):	70		103	102	121		JL/MF	MF
Hardness (mg/L as $CaCO_3$):	87		130	131	131		JL/MF	MF
Total Ammonia (mg/L as N):	<0.2		<0.2	<0.2	<0.2		JL/MF	DF
Conductivity: ☑µmhos ☐ mmhos:	398		380	392	378		AER/MF/DF	MF

Initial sample handling:

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

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

Ⓑ Aeration : ☑ yes ☐ no Initial DO: 10.6 mg/L Final DO: 8.5 mg/L Duration: 20 minutes Rate: ~ 100 bubbles/min

Dechlorination: ☐ yes ☒ no ____mL of 0.025N Sodium Thiosulfate per liter of sample. Final TRC: ____

Sample Validation:

Instructions: Check yes or no. Fill in temperatures.

Temperature: Shipped ≤ 6°C ☑Yes ☐ No

If Hand Delivered:Cooling ☐ Yes ☐ No (received ____°C collected ____°C)

Holding Time: ≤ 36 Hours ☑Yes ☐ No

(Composite-end of collection; grab-when collected;

4 in 24 - time last sample collected)

Light Intensity: 50 - 100 ft. candles (recommended)

Photoperiod: 16 light 8 dark (recommended)

Temperature Range °C:

Incubator # 5 min. 23.8 max. 27.1

Room B246 min. 24.0 max. 24.6

Test min. 23.2 max. 25.9

Loaded by: DF Loading verified by: AER

Randomizer # 5

Test Replicates	Loaded from culture vial
1	B10
2	C27
3	C18
4	B26
5	A5
6	B5
7	B30
8	B16
9	B10
10	C27

Stats calculated by: AER
Stats reviewed by: JL

Results

Control % CV:	12.5%
Dunnetts PMSD:	31.3%
Reproduction NOEC:	50%
Reproduction LOEC:	>50%
Survival NOEC:	100%
Survival LOEC:	>100%
IC_{25}:	57.590

Ⓓ

Concentration	Mean neonates /female	% survival
Control	31.6	100%
6.25%	27.6	100%
12.5%	22.9	90%
25%	28.5	100%
50%	23.9	90%
100%	21.0	90%

REVIEWER: [illegible] 3/6/18

Comments:

Ⓐ AER 1.27.18
Ⓑ Day 3 sample: DO = 10.0, aerated by HT for ~20 min; DOf = 8.5 AER 1.30.18
Day 4 Sample aerated 10 min 710 to 8.3 MF 1.27-18
Ⓒ AER 2.6.18 Ⓓ AER 2.12.18 IC25 = 57.590

TA-DUBIA_CHRONIC-1.1.xls

Test Page 1 of 7

Page

EPA End Sheet

The Bioassay of the Bonifay WWTF effluent sampled on December 11, 2017, NPDES #FL0027731

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	7	7	3	1	11	12	1	7	1	2	1	1	#	**B**	#	**S**	#	1

Remarks

#

The Priority Pollutants Bonifay WWTF effluent sampled on December 11, 2017 NPDES #FL0027731

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	7	7	3	1	11	12	1	7	1	2	1	1	#	**X**	#	**S**	#	1

Remarks

#

Biological Analyses of the Bonifay WWTF effluent sampled on December 11, 2017, NPDES #FL0027731

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	7	7	3	1	11	12	1	7	1	2	1	1	#	**S**	#	**S**	#	1

Remarks