Biological Assessment of Blountstown WWTP Calhoun County NPDES # FL0026867 Sampled June 10, 12 & 14, 2019

Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection
March 2020

DEP Laboratory, Biology Program
2600 Blair Stone Road, MS 6515
Tallahassee, FL 32399-2400
www.floridadep.gov

Contents

Summary of Results 3
Facility Overview 3
Methods 4
Results 6
Literature Cited 9
Appendix A. Facility Summary 16
Appendix B. Explanations of Measurements 28
Appendix C. Chain of Custody 32
Appendix D. Chemical Analysis of Effluent and Receiving Water 36

List of Tables

Table 1. Measured field parameters 10
Table 2. Analytical water chemistry, microbiological, and toxicological data 11
Table 3. Analytical metals data 13
Table 4. Algal Growth Potential (AGP) 14
Table 5. Macroinvertebrate Hester-Dendy samples – quantitative 15

List of Figures

Figure 1. Map of Facility and Sampling Locations 5

Summary of Results

Total phosphorus, ortho-phosphate, total ammonia, nitrate and nitrite, chloride, fluoride, sulfate, and measured algal growth potential were greatest in the effluent samples and elevated in the Test Site samples compared to the Control Site samples. These results suggest nutrient enrichment at the Test Site by the effluent and demonstrate the effect of the effluent on the water chemistry in the receiving waterbody. At the Control Site, alkalinity was below the Class III Freshwater Quality Criterion (62-302.530(1), F.A.C.) and iron and lead were above the Class III Freshwater Quality Criteria (62-302.530(38) and (39), F. A. C., respectively). Although there is no effluent permit limit for *Escherichia coli*, levels in the effluent grab sample exceeded the Class III Freshwater Quality Criterion (62-302.530(6)(b), F.A.C.). The Algal Growth Potential analysis showed that the effluent and the Test Site are likely to be nitrogen-phosphorus co-limited while the Control Site is likely to be ortho-phosphate limited (Miller et al. 1978). The Shannon-Weaver diversity score calculated for macroinvertebrates at the Test Site was less than 75% of the score calculated for the Control Site and does not meet the Class III Freshwater Quality Criterion (62-302.530(10)(a), F.A.C.). Diptera were dominant at both the Test Site and the Control Site. The percent of dominance was higher at the Test Site than the Control Site and the dominant taxon at the Test Site is generally more tolerant than the dominant taxon. The differences in the macroinvertebrate community composition suggest some level of degradation at the Test Site due to the effluent. The field samplers observed pieces of plastic coming from the effluent discharge pipe and plastic debris stuck on and around the Hester Dendy samplers at the Test Site but not at the upstream Control Site.

Facility Overview

The Blountstown Wastewater Treatment Plant is a domestic wastewater treatment 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. The facility is operating under AO-098NW which gives the facility until June 30, 2020 to comply with new limits for numeric nutrient criteria. The facility is operating under CO OGC File No. 14-0057 addressing the facility's chronic toxicity failures in 2011-2013. The deadline to meet the criteria is August 31, 2020. An amendment to CO 14-0057 was executed on January 31, 2020 addressing exceedances for total suspended solids from October 2018 to February 2019, total nitrogen from March to June 2019, and fecal coliforms in June 2019. The effluent is discharged into Sutton Creek, a Class III Freshwater (Figure 1).

Sutton Creek falls within the Panhandle West Nutrient Watershed Region for Numeric Nutrient Criteria (NNC). For this region, the NNC thresholds, expressed as annual geometric means, are 0.06 mg/L total phosphorus and 0.67 mg/L total nitrogen. This FYI event only provides single sample results. It should be noted that waterbody impairment assessments are based on longer-term data, and individual exceedances of a criterion do not indicate use impairment. http://ca.dep.state.fl.us/mapdirect/?focus=nutrientcriteria

Methods

Effluent samples were collected as grab and composite samples from monitoring site location EFF-01 on June 10, 2019 with renewal composite samples for toxicity collected on June 12 and 14, 2019. Chemical and biological comparisons were made between a Control Site (located in Sutton Creek 50 m upstream of the point of discharge) and a Test Site (located in Sutton Creek 10 m downstream of the point of discharge, beyond the downstream edge of the mixing zone) (Figure 1). Floating Hester-Dendy multiplate samplers were anchored to a cinder block on the creek bed at both the Test and Control Site. The water level was appropriate for sampling, but habitat assessments and Stream Condition Index sampling were not performed at either the Test Site or the Control Site because the creek was obstructed by fallen trees from Hurricane Michael. Due to an oversight, the field meter was not present for the instream sampling therefore, water temperature, pH, and dissolved oxygen were not recorded for the Test and Control Sites.

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.

All 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: Rachael Dragon, Todd Risk, Jessica Morse (DEP Biology lab, Tallahassee); Larry Couch (Panama City Branch Office, Panama City) Tanya Welborn, Adrienne Pennington, and Lucas Grantham (DEP Northwest District, Tallahassee); and DEP Laboratory in Tallahassee. The report was reviewed by District representatives and the Point Source Studies Review Committee (Mike Tanski, Nancy Ross, and Adrienne Pennington).

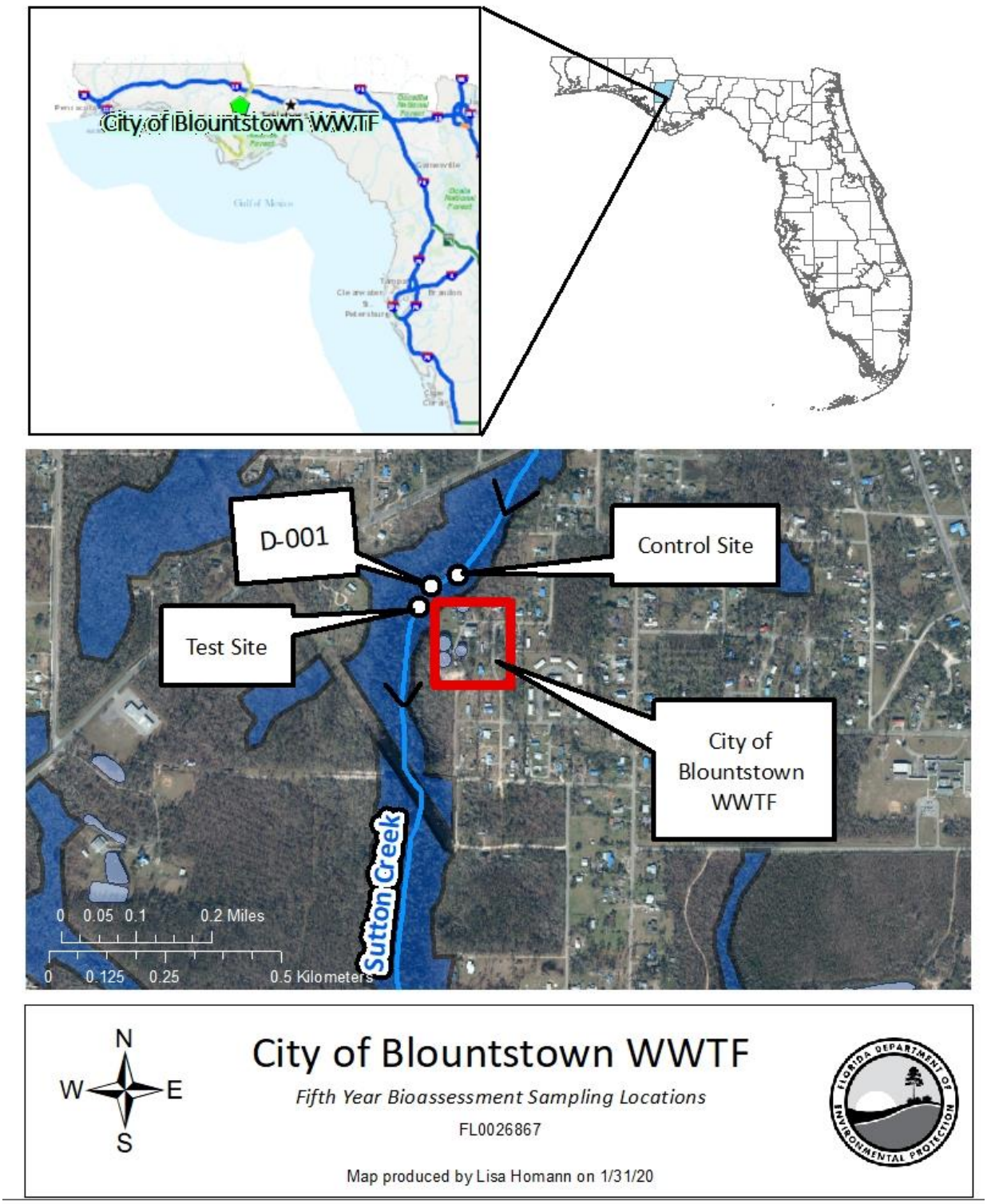


Figure 1. Map of Facility and Sampling Locations

Results

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

- A habitat assessment was not conducted at the Test Site or the Control Site. The stream was inaccessible due to the number of fallen trees covering the waterbody from Hurricane Michael.

- A YSI meter was not present during the sampling event, therefore field parameters were not taken at the Test Site or the Control Site.

- The pH of the effluent grab sample complied with the effluent permit limits and Class III Freshwater Quality Criteria.

- It was observed that pieces of plastic were coming out of the effluent discharge pipe and plastic debris was stuck to and around the Hester-Dendy sampler at the Test Site but not the Control Site.

Analytical Water Chemistry (See Table 2 and Appendix E)

- Total phosphorus detected and total nitrogen calculated for the effluent composite sample complied with the respective permit limits. For comparative purposes only, the total phosphorus and calculated total nitrogen in the effluent composite, effluent grab, and Test Site samples was greater than the annual geometric mean limit for NNC in the Panhandle West Nutrient Watershed Region. Although the calculated total nitrogen for the Control Site sample was also above the limit, it was at minimum, 3 times lower than the values for the other 3 samples.

- Total phosphorus, ortho-phosphate, total ammonia, nitrate and nitrite, chloride, fluoride, and sulfate were greatest in the effluent and elevated in the Test Site samples compared to the Control Site sample.

- Alkalinity at the Control Site was below the Class III Freshwater Quality Criterion (62-302.530(1), F.A.C.).

Microbiology (See Table 2 and Appendix B)

- Fecal coliforms were detected in the effluent sample at levels which complied with facility permit limits. Although not considered an exceedance of the permit, it should be noted that *Escherichia coli* in the effluent grab sample was greater than the Class III Freshwater Criterion (62-302.530(6)(b), F.A.C.).

- *Escherichia coli* and fecal coliforms were detected in both the Control and Test 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)

- Tests were performed June 11 through June 19, 2019.

- During the chronic definitive bioassay, the effluent composite sample IC25 for the water flea, *Ceriodaphnia dubia*, and the IC25 for the fish, *Pimephales promelas*, were 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 FDEP Laboratory Biology Program at 850-245-8177.

Metals (See Table 3 and Appendix E)

- Effluent metals were either undetected or detected at levels that complied with Class III Freshwater Quality Criteria (62-302.530, F.A.C.). There are no permit limits for metals.

- In the Control Site sample, iron and lead were detected at levels above the Class III Freshwater Quality Criterion (62-302.530(38) and (39), F. A. C., respectively). All metals in the Test Site sample were either undetected or detected at levels that complied with Class III Freshwater Quality Criteria (62-302.530, F.A.C.).

Algal Growth Potential (See Table 4 and Appendix B)

- The freshwater unicellular green alga, *Pseudokirchneriella subcapitata*, was used to determine the AGP values in the effluent, Test Site, and Control Site samples. The AGP values were highest in the effluent grab sample and lowest in the Control Site sample.

- The nitrogen to phosphate ratios were similar between the effluent grab sample and the Test Site sample. The analytical chemistry suggests that the effluent and the Test Site are nitrogen-phosphorus co-limited, and the Control Site is ortho-phosphate limited (Miller et al. 1978).

- The AGP results of the effluent grab and Test Site samples are greater than the AGP range (6.10 to 20.0 mg dry wt/L) suggested to be representative of high productivity for freshwater (Miller et al. 1978).

Macroinvertebrates (See Tables 5 and 6 and Appendices B and D)

- Quantitative macroinvertebrate data were collected from Hester-Dendy samplers deployed for 28 days within the flow of the effluent and the river at the Test and Control Sites. The Hester-Dendy samplers were weighted down on the bed of the creek with cinder blocks. Each floating sampler was equipped with four condos for colonization. The Shannon-Weaver diversity score calculated for the Test Site was only 68% of the score calculated for the Control Site and therefore, exceeds the Class III Freshwater Quality Criterion 62.302.530(10)(a), F.A.C. Both the Test Site and Control Site were dominated by dipterans, with the Test Site having a higher percent of dominance than the Control Site. The dominant taxon at the Test Site, *Dicrotendipes simpsoni* is generally

more tolerant than the dominant taxon at the Control Site, *Tanytarsus sepp*. Amphipods, a tolerant taxa, were abundant at the Test Site and Control Site as well, with a greater number at the Test Site. Surface deposit feeders made up the majority of the functional feeding groups at both sites. Both samples contained sensitive taxa, such as Ephemeroptra.

- For more information or to obtain a copy of the taxa lists, please contact the Biology Program at 850-245-8177.

Literature Cited

Fore, L.S., Frydenborg, R., Miller, D., Frick, T., Whiting, D., Espy, J., and Wolfe, L. 2007. Development and Testing of Biomonitoring Tools for Macroinvertebrates in Florida Streams (Stream Condition Index and Biorecon). Florida Department of Environmental Protection. 110 pp.

Karr, J.R. and Chu, E.W. 1998. Restoring life in running waters: Better biological monitoring. Island Press. Covelo, California. 200 p.

Magurran, A. E. 1988. Ecological diversity and its measurement. Princeton University Press, Princeton, New Jersey.

Miller, W. E., Maloney, T. E. and Greene, J. C. 1978. The *Selenastrum capricornutum* Printz algal assay bottle test. EPA600/978-018. U. S. EPA, Cincinnati, Ohio. 126 p.

Plafkin, J. L., Barbour, M. T., Porter, K. D., Gross S. K., and Hughes, R. M. 1989. Rapid bioassessment protocols for use in streams and rivers: Benthic macroinvertebrates and fish. U. S. EPA, Office of Water Regulations and Standards, Washington D.C., EPA 440-4-89-001.

USEPA. 2000. Nutrient Criteria Technical Guidance Manual – River and Streams. EPA-822-B-00-002.

Table 1. Measured field parameters

Effluent limits, Class III Freshwater Criteria, and field parameters

Parameter	Units	Class III Criteria	Effluent Permit Limits	Effluent Grab
Temperature	C	-	-	29.0
pH	SU	6.0 - 8.5 s	6.5 - 8.5 s	6.7
Dissolved Oxygen	% saturation	≥ 67	-	94.5 c
Dissolved Oxygen	mg/L	-	-	7.2

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
c - The value is calculated
s – Single sample

Table 2. Analytical water chemistry, microbiological, and toxicological data

Effluent limits, Class III Freshwater Criteria, and analytical water chemistry, microbiological, and toxicological data

Analyte	Units	Class III Criteria	Effluent Permit Limits	Effluent Composite	Effluent Grab	Test Site	Control Site
Ortho-phosphate	mg P/L	-	-	-	0.31	0.18	0.005 I
Total Phosphorus	mg P/L	≤ 0.06 [1]	≤ 2.0 p	0.41	0.41	0.25	0.03
Total Ammonia Nitrogen	mg N/L	≤ 2.85 [2] c	-	0.19	0.19	0.12	0.046
Un-ionized Ammonia (calculated salinity)	mg N/L	≤ 0.02 s	-	-	< 0.02 c	-	-
Nitrate and Nitrite	mg N/L	-	-	3.8	3.4	2.0	0.12
Total Kjeldahl Nitrogen	mg N/L	-	-	0.84	0.76	1.3	0.82
Organic Nitrogen	mg N/L	-	-	0.65 c	0.57 c	1.2 c	0.77 c
Total Nitrogen	mg N/L	≤ 0.67 [1]	≤ 6.0 p	4.6 c	4.2 c	3.3 c	0.94 c
Total Organic Carbon	mg C/L	-	-	3.9	3.7	9.3	18
Chlorophyll *a* - Corrected	µg/L	-	-	-	0.96 U	2.4 U	3.3 I
Phaeophytin	µg/L	-	-	-	1.0 U	2.6 U	2.2 U
CBOD, 5 day, N - inhibited	mg/L	-	≤ 10.0 p	8.0 AJV	-	5.5 JV	5.3 JV
Total Suspended Solids	mg/L	-	≤ 10.0 p	3 I	-	4 I	4 I
Turbidity	NTU	< 29 t	-	-	1.3	3.1	4.4
Color (true)	PCU	-	-	-	14	90	180
Alkalinity	mg CaCO3/L	≥ 20	-	-	73 A	41	8.3 e
Chloride	mg Cl/L	-	-	-	100	52	5.7
Fluoride	mg F/L	≤ 10.0	-	-	0.43	0.22	0.035 U
Sulfate	mg SO4/L	-	-	-	140 A	75	3.5
Fecal Coliforms	cfu/100 mL	-	≤ 800 s	-	240	740 B	200 B
Escherichia coli	MPN/100 mL	≤ 410 s	-	-	504.3 A e	290.9	161.6
Bioassay - Water flea *(Ceriodaphnia dubia)*	% effluent	-	≥ 100 p	> 100	-	-	-
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 flow proportioned composite
s - Single sample - 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 the laboratory practical quantitation limit
J - Estimated value
V - Analyte was detected in both sample and method blank
U - Material analyzed for but not detected; value reported is the method detection limit
1- Numeric Nutrient Criteria for Panhandle West Nutrient Watershed Region expressed as annual geometric means
2 - Calculated TAN Criteria applicable to the effluent grab sample only

Table 3. Analytical metals data

Effluent limits, Class III Freshwater, and analytical metals data

Analyte	Units	Effluent Grab Class III Criteria	Effluent Grab	Test Site Class III Criteria	Test Site	Control Site Class III Criteria	Control Site
Hardness	mg CaCO3/L	-	188 c	-	91.9 c	-	19.4 c
Aluminum	µg/L	-	137	-	267	-	364
Arsenic	µg/L	≤ 50	0.47	≤ 50	0.55	≤ 50	0.59
Cadmium	µg/L	≤ 0.431 b	0.020 U	≤ 0.254 b	0.020 U	≤ 0.097 b	0.020 U
Calcium	mg/L	-	42.8	-	21.6	-	5.79
Chromium, Total [3]	µg/L	≤ 144 b	0.40 U	≤ 80.4 b	0.41 I	≤ 27.7 b	0.89 I
Copper	µg/L	≤ 16 b	0.85	≤ 8.68 b	0.69 I	≤ 2.85 b	0.53 I
Iron	µg/L	≤ 1,000	40 I	≤ 1,000	590	≤ 1,000	1020 e
Lead	µg/L	≤ 7.09 b	0.20 U	≤ 2.86 b	0.39 I	≤ 0.545 b	0.59 e
Magnesium	mg/L	-	19.6	-	9.21	-	1.21
Nickel	µg/L	≤ 88.8 b	1.3 I	≤ 48.5 b	0.77 I	≤ 16.1 b	0.50 U
Potassium	mg/L	-	13.7	-	6.5	-	1.1 I
Selenium	µg/L	≤ 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
Sodium	mg/L	-	86.6	-	39.5	-	3.5
Zinc	µg/L	≤ 204 b	25	≤ 112 b	14 I	≤ 37 b	6.3 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
e - Value exceeds the Class III Freshwater Quality Criteria or permit limits
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. Algal Growth Potential (AGP)

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

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	*Pseudokirchneriella subcapitata*	213	136.4 ± 27.3	133.3 ± 26.7	158.1 ± 31.6	176.3 ± 35.3	11.6	10.1
Test Site	*Pseudokirchneriella subcapitata*	75.7	80.6 ± 16.1	77.4 ± 15.5	125.4 ± 25.1	107.5 ± 21.5	11.8	13.2
Control Site	*Pseudokirchneriella subcapitata*	1.07 A	6.3 ± 1.3	2.2 ± 0.4	35.7 ± 7.1	12.9 ± 2.6	33.2	31.3

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

Table 5. Macroinvertebrate Hester-Dendy samples – quantitative

Blountstown WWTP	Test Site	Control Site
Summary Statistics		
Shannon-Weaver Diversity	3.0	4.4
Number of Taxa	46	58
Number of EPT Taxa	5	8
Percent Dominant Taxon	36.6	17.4
Dominant Taxon Name	*Dicrotendipes simpsoni*	*Tanytarsus sepp*
	(Diptera)	(Diptera)
Total Number of Individuals (counted)	1,781	1,093
Total Number of Individuals (#/m^2)	3,536	2,172
Community Composition: Percent of total		
Amphipoda	29.4	12.9
Bivalvia	0.1	0.8
Diptera	53.3	58.3
Ephemeroptera	9.1	8.1
Gastropoda	5.6	13.2
Odonata	0.6	2.2
Oligochaeta	0.3	0.0
Plecoptera	0.0	0.0
Trichoptera	1.6	4.5
Other	0.2	0.1
Functional Feeding Groups: Percent of total		
Burrowing Deposit Feeders	0.3	0.0
Parasite	0.1	0.1
Piercers	1.3	3.3
Predators	2.2	4.8
Scrapers	10.1	16.6
Shredders	19.4	9.2
Surface Deposit Feeders	46.1	41.4
Suspension Feeders	20.7	24.7

Appendix A. Facility Summary

State of Florida

Department of Environmental Protection

Facility Introduction & 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): **Blountstown WWTP**	Former Names: **Blountstown, City of - WWTF**
NPDES Permit Number: **FL0026867**	Permit Expiration Date: **November 1, 2020**
Physical Address: **16140 SE Johnson Street, Blountstown, FL 32424-2480**	
District: **Northwest**	County: **Calhoun**
Function of Facility: **Domestic wastewater treatment facility (AWT)**	
Facility Type: **Domestic**	Permitted Capacity (MGD): **1.500 MGD monthly average daily flow**
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): **D-001 0.767 MGD April 2018 – March 2019.**	
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:	

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

Monitoring Site Number	Description of Monitoring Site
FLW-01	Flow-meter/ totalizer at weir at old Chlorine Contact Chamber
EFF-01	Sample point at weir at old Chlorine Contact Chamber prior to discharge
EFF-03	End of Discharge Pipe at Sutton Creek
PPI-01	UV monitoring system measured intensity Channel 1
PPI-02	UV monitoring system measured intensity Channel 2

Description of Permitted Outfall(s): **D-001 – 2 feet in length and discharges at the surface to Sutton Creek, located approximately at latitude 30°26'3"N, longitude 85°2'59"W.**

Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility):
Advanced wastewater treatment (AWT) facility using Sequential Batch Reactors (SBR) with phosphorus removal. The system includes an influent pumping station, mechanical and automatic bar screens, a grit separator, two 975,000-gallons SBR units, alum injection, a post equalization tank, two 646 SF cloth disk filters, dual channel ultraviolet light system with four UV modules, effluent gravity flows via a 16-inch pipe to Sutton Creek. Class B biosolids are aerobically digested and dewatered by a belt filter press.

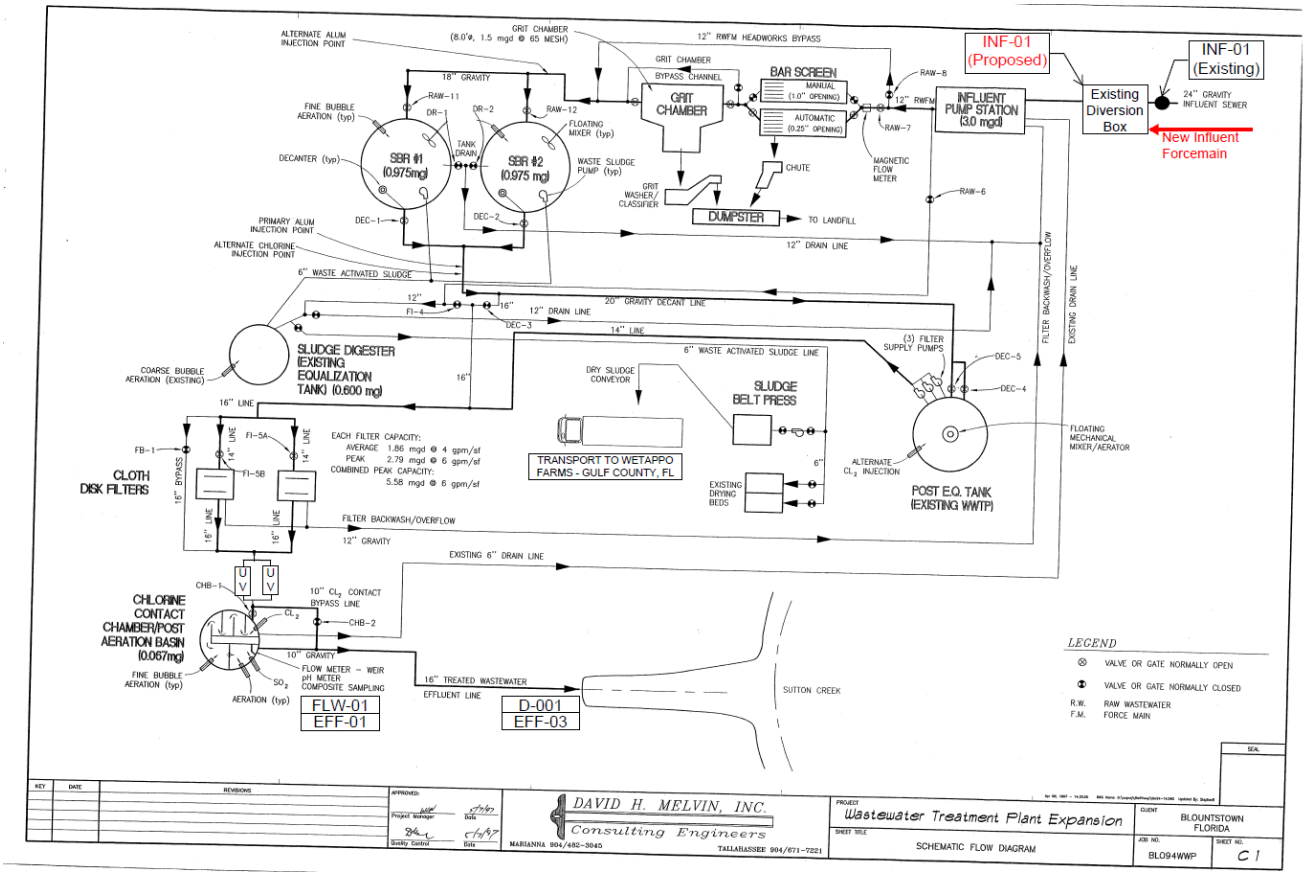


Figure 2 - Facility's Updated Schematic Flow Diagram

PART I: Continued

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

			Effluent Limitations			Monitoring Requirements		
Parameter	Units	Max/ Min	Limit	Statistical Basis	Frequency of Analysis	Sample Type	Monitoring Site Number	Notes
Flow	MGD	Max	1.5	Monthly Average	Continuous	Recording Flow Meter with Totalizer	FLW-01	See I.A.4
BOD, Carbonaceous 5 day, 20C	mg/L	Max Max Max Max	5.0 6.25 7.5 10.0	Annual Average Monthly Average Weekly Average Single Sample	Weekly	16-hr FPC	EFF-01	
Solids, Total Suspended	mg/L	Max Max Max Max	5.0 6.25 7.5 10.0	Annual Average Monthly Average Weekly Average Single Sample	Weekly	16-hr FPC	EFF-01	
Nitrogen, Total	mg/L	Max Max Max Max	3.0 3.75 4.5 6.0	Annual Average Monthly Average Weekly Average Single Sample	Weekly	16-hr FPC	EFF-01	See I.A.10
Phosphorus, Total (as P)	mg/L	Max Max Max Max	1.0 1.25 1.5 2.0	Annual Average Monthly Average Weekly Average Single Sample	Weekly	16-hr FPC	EFF-01	See I.A.10
pH	s.u.	Min Max	6.5 8.5	Single Sample Single Sample	Continuous	Meter	EFF-01	
Coliform, Fecal	#/100mL	Max Max Max	200 200 800	Annual Average Monthly Geo Mean Single Sample	Weekly	Grab	EFF-01	See I.A.5
Oxygen, Dissolved Percent Saturation	Percent samples in compliance (% smpcmpln)	Min	90	Monthly Total	Daily; 24 hours	Calculated	EFF-01	See I.A.9
Ultraviolet Light Intensity (report %)	uW/sqcm	Min	25	Single Sample	Continuous	Meter	PPI-01	See I.A.11 I.A.12
Ultraviolet Light Intensity (report %)	uW/sqcm	Min	25	Single Sample	Continuous	Meter	PPI-02	See I.A.11 I.A.12
Chronic Whole Effluent Toxicity, 7-Day IC25 (Ceriodaphnia dubia)	percent	Min	100	Single Sample	Quarterly	24-hr FPC	EFF-01	See I.A.6

Chronic Whole Effluent Toxicity, 7-Day IC25 (Pimephales promelas)	percent	Min	100	Single Sample	Quarterly	24-hr FPC	EFF-01	See I.A.6

I.A.4.: A recording flow meter with totalizer shall be utilized to measure flow and calibrated at least once every 12 months.

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 to be used to calculate the annual average.

I.A.6.: Toxicity testing requirements – See below.

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).

I.A.10.: Discharge from D-001 to Sutton Creek shall:

a. Comply with the nutrient water quality criteria for streams in Paragraph 62-302.531(2)(c), F.A.C.; and

b. Provide for compliance with applicable nutrient criteria in downstream waters pursuant to Subsection 62-302.531(4), F.A.C.

I.A.11.: The UV disinfection system shall be operated in compliance with the approved operating protocol and the Operation and Maintenance Manual, such that the permit limitations for fecal coliform bacteria shall be achieved.

I.A.12.: The measured UV Intensity shall be monitored and logged continuously in each active reactor. The lowest daily UV Intensity percentage reading for each reactor shall be recorded on the appropriate DMR day sheet column. Although the reported value is a percentage, the DMR will show units of µW/cm2.

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

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

3. 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) for reproduction or growth shall not be less than 100% effluent. [Rules 62- 302.530(61) and 62-4.241(1)(b), F.A.C.]

      (2) For acute whole effluent toxicity, the 96-hour LC50 shall not be less than 100% effluent in any test. [Rule 62-302.500(1)(a)4. and 62-4.241(1)(a), F.A.C.]

   b. Monitoring Frequency

      (1) Routine toxicity tests shall be conducted once every three months, the first starting within 60 days of the effective date of this permit and lasting for the duration of this permit.

      (2) Upon completion of four consecutive valid routine tests that demonstrate compliance with the effluent limitation in 6.a.(1) above, the permittee may submit a written request to the Department for a reduction in monitoring frequency to once every six months. The request shall include a summary of the data and the complete bioassay laboratory reports for each test used to demonstrate compliance. The Department shall act on the request within 45 days of receipt. Reductions in monitoring shall only become effective upon the Department's written confirmation that the facility has completed four consecutive valid routine tests that demonstrate compliance with the effluent limitation in 6.a.(1) above.

      (3) If a test within the sequence of the four is deemed invalid based on the acceptance criteria in EPA-821- R-02-013, but is replaced by a repeat valid test initiated within 21 days after the last day of the invalid test, the invalid test will not be counted against the requirement for four consecutive valid tests for the purpose of evaluating the reduction of monitoring frequency.

   c. Sampling Requirements

      (1) For each routine test or additional follow-up test conducted, a total of three flow proportional 24-hr composite samples of final effluent shall be collected and used in accordance with the sampling protocol discussed in EPA-821-R-02-013, Section 8.

      (2) The first sample shall be used to initiate the test. The remaining two samples shall be collected according to the protocol and used as renewal solutions on Day 3 (48 hours) and Day 5 (96 hours) of the test.

      (3) Samples for routine and additional follow-up tests shall not be collected on the same day.

   d. Test Requirements

      (1) Routine Tests: All routine tests shall be conducted using a control (0% effluent) and a minimum of five test dilutions: **100%**, **50%**, **25%**, **12.5%**, and **6.25%** final effluent.

      (2) The permittee shall conduct a daphnid, **Ceriodaphnia dubia**, Survival and Reproduction Test and a fathead minnow, **Pimephales promelas**, Larval Survival and Growth Test, concurrently.

      (3) All test species, procedures and quality assurance criteria used shall be in accordance with **Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms**, 4th Edition, EPA-821-R-02-013. Any deviation of the bioassay procedures outlined herein shall be submitted in writing to the Department for review and approval prior to use. In the event the above method is revised, the permittee shall conduct chronic toxicity

testing in accordance with the revised method.

(4) The control water and dilution water shall be moderately hard water as described in EPA-821-R-02- 013, Section 7.2.3.

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 reproduction or growth 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 32502-5740

g. Test Failures

(1) A test fails when the test results do not meet the limits in 6.a.(1).

(2) Additional Follow-up Tests:

(a) If a routine test does not meet the chronic toxicity limitation in 6.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 6.d.

(a) 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.

(b) 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 6.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 6.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 6.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 6.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.

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

The facility's permit was issued with an Administrative Order AO-098NW ("AO"). The AO is to allow for the facility to comply with new effluent limits for dissolved oxygen ("DO") and numeric nutrient criteria ("NNC"). The AO provides interim limits for DO until January 1, 2018, and NNC until June 30, 2020. The second semi-annual 2018 report shows compliance with the DO final limit in the permit.

Consent Order OGC File No. 14-0057 was executed on March 13, 2014 ("CO") related to the facility's reported chronic toxicity failures from 2011 to 2013. The long-term planned corrective action was to remove the facility's surface water discharge. The most recent CO extension letter was issued on December 27, 2017. The final compliance deadline in the extension is August 31, 2020. There is a plan to amend the current Consent Order for other issues at the facility. The plan for toxicity is to work under the toxicity correction plan condition in the permit.

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:

Monitoring Group	Date	Monitoring Location	Parameter	Result	Limit	Units	Statistical Base
D-001	May-18	EFF-01	Coliform, Fecal	1600	800.0	#/100mL	Maximum
D-001	April-18	EFF-01	IC25 Statre 7day Chr Ceriodaphnia	68	100.0	percent	Minimum
D-001	May-18	EFF-01	IC25 Statre 7day Chr Ceriodaphnia	9.7	100.0	percent	Minimum
D-001	May-18	EFF-01	IC25 Statre 7day Chr Ceriodaphnia	16.7	100.0	percent	Minimum
D-001	December-18	EFF-01	IC25 Statre 7day Chr Ceriodaphnia	2.64	100.0	percent	Minimum
D-001	May-18	EFF-01	Nitrogen, Total	8.38	6.0	mg/L	Maximum
D-001	October-18	EFF-01	Nitrogen, Total	9.3	6.0	mg/L	Maximum
D-001	November-18	EFF-01	Nitrogen, Total	6.2	6.0	mg/L	Maximum
D-001	January-19	EFF-01	Nitrogen, Total	6.7	6.0	mg/L	Maximum
D-001	March-19	EFF-01	Nitrogen, Total	7.2	6.0	mg/L	Maximum
D-001	October-18	EFF-01	Nitrogen, Total	4.3	3.75	mg/L	Monthly Average

D-001	**January-19**	**EFF-01**	**Nitrogen, Total**	**4.24**	**3.75**	**mg/L**	**Monthly Average**
D-001	**March-19**	**EFF-01**	**Nitrogen, Total**	**4.35**	**3.75**	**mg/L**	**Monthly Average**
D-001	**September-18**	**EFF-01**	**pH**	**6.4**	**6.5**	**s.u.**	**Minimum**
D-001	**October-18**	**EFF-01**	**Phosphorus, Total (as P)**	**9.3**	**2.0**	**mg/L**	**Maximum**
D-001	**November-18**	**EFF-01**	**Phosphorus, Total (as P)**	**5**	**2.0**	**mg/L**	**Maximum**
D-001	**October-18**	**EFF-01**	**Solids, Total Suspended**	**21**	**10.0**	**mg/L**	**Maximum**
D-001	**January-19**	**EFF-01**	**Solids, Total Suspended**	**16**	**10.0**	**mg/L**	**Maximum**
D-001	**February-19**	**EFF-01**	**Solids, Total Suspended**	**11**	**10.0**	**mg/L**	**Maximum**
D-001	**October-18**	**EFF-01**	**Solids, Total Suspended**	**9.8**	**6.25**	**mg/L**	**Monthly Average**
D-001	**December-18**	**EFF-01**	**Solids, Total Suspended**	**7.3**	**6.25**	**mg/L**	**Monthly Average**
D-001	**January-19**	**EFF-01**	**Solids, Total Suspended**	**9.9**	**6.25**	**mg/L**	**Monthly Average**
D-001	**February-19**	**EFF-01**	**Solids, Total Suspended**	**7**	**6.25**	**mg/L**	**Monthly Average**
D-001	**October-18**	**EFF-01**	**Solids, Total Suspended**	**9.8**	**7.5**	**mg/L**	**Monthly Average**
D-001	**January-19**	**EFF-01**	**Solids, Total Suspended**	**9.9**	**7.5**	**mg/L**	**Monthly Average**

Describe previous FYI and WQBEL study: **DEP's last Biological Assessment for sampling performed April 7, 2014 concluded that "Fecal coliforms detected in the effluent and Test Site samples did not comply with the Class III Freshwater Quality Criterion (62-302.530(6), F.A.C.) and/or the permit limit. Iron and lead amounts in the Test Site and the Control Site samples exceeded the Class III Freshwater Quality Criteria (62-302.530(38), F.A.C.) and were much higher than the amounts of each metal detected in the effluent, suggesting they may originate from another source. The effluent sample IC25 for the fish, Pimephales promelas, showed inhibition of growth, although it did comply with a report only interim permit limit effected by the Consent Order, OGC No. 14-0057. Effluent total nitrogen represents an excursion above the permit limit. Evidence of nutrient enrichment at the Test Site due to the effluent is supported by the elevated sample nutrient amounts and AGP values of the effluent and the Test Site. There were no adverse effects apparent on the periphyton community in Sutton Creek from the effluent. There were differences in the macroinvertebrate communities that suggest some level of degradation at the Test Site due to the effluent, which achieved an SCI score that was lower, and in a lower category, than the Control Site SCI score."**

Describe previous or current Enforcement Actions (including WLs): **See above for current CO.**
Describe any violations or problems noted in previous inspection: **During the last facility inspection on December 7, 2017, the following violations were noted: The schedule item in the permit for the Mercury Minimization Plan had not yet been completed; The sampling item for influent samples were being collected as time proportionate samples due to no influent flow meter; For operation and maintenance the post equalization tank was not in use at the time of the inspection and vegetation was growing inside, the facility did not have a generator log book to track run times of auxiliary power, vegetation mats were present in both SBR units; For effluent quality exceedances were reported between January 31, 2015 through November 31, 2017 for fecal coliform, pH, total nitrogen, total phosphorus, and total suspended solids.**
Discuss whether DMR trends within previous five years are improving or declining: **About the same. In 2016 18 exceedances were reported, 2017 12 exceedances, 2018 20 exceedances, and so far in 2019 9 exceedances.**
Additional Comments (this should include a trend of the Effluent, i.e. if the facility is now Reuse): **Nothing further to add.**

PART II: Sampling Event Information	
Date(s) sample collected: **June 10, 2019**	Sampler(s): **Larry Couch, Tanya Welborn, Adrienne Pennington, Lucas Grantham**
Temperature (Deg C): **29.0°**	pH (SU): **6.74**
Dissolved Oxygen (mg/L): **7.2**	Conductivity (umhos/cm): **NA**
Total Residual Chlorine (mg/L): **Not applicable**	Total Residual Chlorine - after Disinfection (mg/L): **Not applicable**
Method of Chlorination: **Not applicable**	Method of De-chlorination: **Not applicable**
Flow During Sample Collection for each outfall (MGD): **D-001 - 0.486 MGD**	
Mean Flow for each outfall for previous 12 months based on sampling date (If samples are taken on more than one day, indicate Mean Flow for each day): **D-011 - 0.776 MGD for previous 12 months (June 2018 - May 2019)**	
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: **NA**	

Appendix B. Explanations 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.

- **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.

- **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(62) 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(62) and/or facility permit limits. Standard reference toxicant (SRT) tests are conducted monthly to ensure quality in toxicity testing.

- **Bacteriological Testing**

  High levels of fecal coliform bacteria may constitute an exceedance of 62-302.530(6) and/or facility permit limits. Fecal coliform 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.

- **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(47), F.A.C., 62-302.530(48)(a), F.A.C. and/or 62-302.530(48)(b), F.A.C..

  The concentration of nutrients in a water sample may be used to calculate the expected yield of AGP under the assumption that other required nutrients (e.g. silicon, micronutrients) are present in excess (Miller *et al*. 1978). The expected amount of production is calculated as 38 times the total soluble inorganic nitrogen (nitrate and nitrite plus ammonia) under nitrogen limitation or 430 times the ortho-phosphate (OP) concentration under phosphorus limitation with an error of ± 20%. When the ratio of nitrogen to phosphorus (N: P) is less than 10:1, nitrogen limitation of algal production is likely. When the N: P ratio is 20:1 or greater,

phosphorus limitation is likely (USEPA 2000). For ratios in-between, co-limitation may occur. Production of lower biomass than expected may be evidence of growth inhibition related to toxic compounds present in the water sample tested and may constitute an exceedance of 62-302.530(62), F.A.C.

- **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(47), F.A.C., 62-302.530(48)(a), F.A.C., 62-302.530(48)(b), F.A.C. and/or 62-302.530(62), F.A.C.
  - 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(47), F.A.C., 62-302.530(48)(a), F.A.C. and/or 62-302.530(48)(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(47) F.A.C., 62-302.530(48)(a), F.A.C., 62-302.530(48)(b), F.A.C. and/or 62-302.530(62), F.A.C.
  - 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(47), F.A.C., 62-302.530(48)(a), F.A.C., 62-302.530(48)(b), F.A.C. and/or 62-302.530(62), F.A.C..
  - 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.

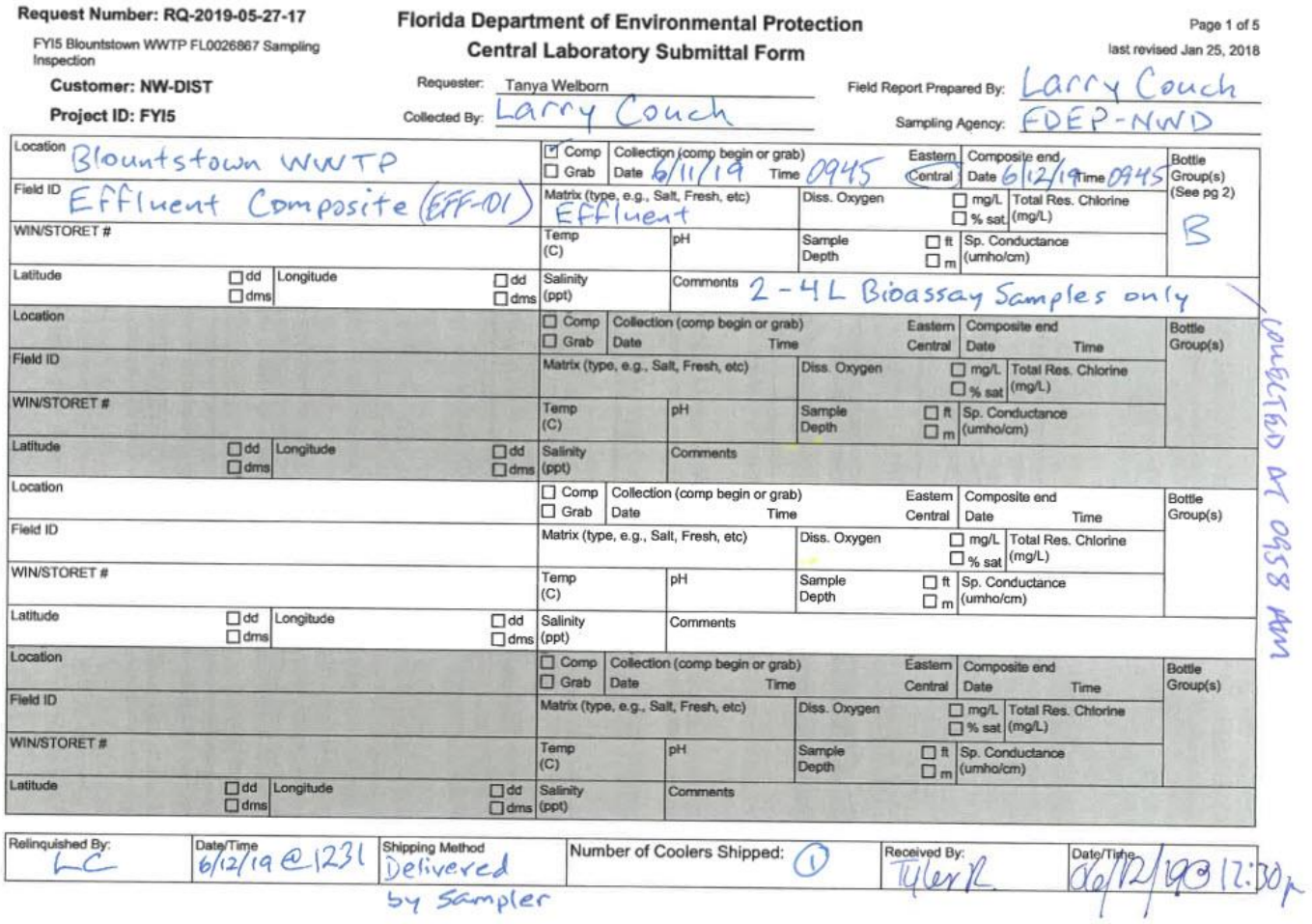
  The SCI can be used to determine faunal health associated with Chapter 62-302.531, F.A.C. An average SCI score of 40 or higher from at least two temporally independent SCIs, performed at representative locations and times indicates a balanced faunal community. Neither of the two most recent SCI scores 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(47), F.A.C., 62-302.530(48)(a), F.A.C., 62-302.530(48)(b), F.A.C., or of 62-302.530(62).

- **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



Request Number: RQ-2019-05-27-17

FY15 Blountstown WWTP FL0026867 Sampling Inspection

Customer: NW-DIST

Project ID: FY15

Florida Department of Environmental Protection

Central Laboratory Submittal Form

Page 1 of 5

last revised Jan 25, 2018

Requester: Tanya Welborn

Collected By: Larry Couch

Field Report Prepared By: Larry Couch

Sampling Agency: FDEP-NWD

Location: Blountstown WWTP	☑ Comp ☐ Grab	Collection (comp begin or grab) Date 6/11/19 Time 0945	Eastern Central	Composite end Date 6/12/19 Time 0945			Bottle Group(s) (See pg 2): B
Field ID: Effluent Composite (EFF-01)	Matrix (type, e.g., Salt, Fresh, etc): Effluent		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: 2 - 4L Bioassay Samples only				
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				
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				
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
LC	6/12/19 @1231	Delivered by Sampler	1	Tyler R.	06/12/19 12:30p

COLLECTED AT 0958 AM

Request Number: RQ-2019-05-27-17

FYI5 Blountstown WWTP FL0026867 Sampling Inspection

Customer: NW-DIST

Project ID: FYI5

Florida Department of Environmental Protection
Central Laboratory Submittal Form

Page 1 of 5
last revised Jan 25, 2018

Requester: Tanya Welborn
Collected By: Larry Couch
Field Report Prepared By: Larry Couch
Sampling Agency: FDEP-NWD

Location: Blountstown WWTP	☒ Comp ☐ Grab	Collection (comp begin or grab) Date 6/13/19 Time 1030 Eastern Central	Composite end Date 6/14/19 Time 1030	Bottle Group(s) (See pg 2): B		
Field ID: Effluent Composite (EFF-01)	Matrix (type, e.g., Salt, Fresh, etc): effluent	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: Day 3 of Bioassay Sampling; time on bottle is sample pour time (1036AM)			
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			
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			
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
LC	6/14/19 @1215 (EST)	Delivered by sampler	2	SK	6-14-19/1120

3 jars 6.14.19 JJ 1405

Request Number: RQ-2019-05-27-17

FYI5 Blountstown WWTP FL0026867 Sampling Inspection

Customer: NW-DIST

Project ID: FYI5

Florida Department of Environmental Protection
Central Laboratory Submittal Form

last revised Jan 25, 2018

Requester: Tanya Welborn

Field Report Prepared By: Adrienne Pennington

Collected By: LC, TW, AP, LG

Sampling Agency: FDEP-NWD

Location: Blountstown WWTP	☐ Comp ☒ Grab	Collection (comp begin or grab) Date 6/10/19 Time 9:10 AM	Eastern Central	Composite end Date	Time	Bottle Group(s) (See pg 2): A					
Field ID: Effluent Grab	Matrix (type, e.g., Salt, Fresh, etc): Effluent			Diss. Oxygen: 7.2	☒ mg/L ☐ % sat	Total Res. Chlorine (mg/L)					
WIN/STORET #	Temp (C): 29.0	pH: 6.74		Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)					
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments: No TRC measurement, facility uses OV								
Location: Blountstown WWTP	☒ Comp ☐ Grab	Collection (comp begin or grab) Date 6/9/19 Time 8:40 AM	Eastern Central	Composite end Date 6/10/19 Time 8:40 AM		Bottle Group(s): B					
Field ID: Effluent composite	Matrix (type, e.g., Salt, Fresh, etc): Effluent			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: samples taken at 8:50 AM								
Location: Blountstown WWTP	☐ Comp ☒ Grab	Collection (comp begin or grab) Date 6/10/19 Time 9:40 AM	Eastern Central	Composite end Date	Time	Bottle Group(s): E					
Field ID: Blanks-Field	Matrix (type, e.g., Salt, Fresh, etc): DI water			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
Adrienne Pennington	6/10/19	N/A		KK	12:26 6.10.19

Sample times should have been posted 1 hour earlier and Central chosen, to match other event documentation.

Request Number: RQ-2019-05-27-17

FYI5 Blountstown WWTP FL0026867 Sampling Inspection

Customer: NW-DIST

Project ID: FYI5

Florida Department of Environmental Protection jhw 6/14/2019

Central Laboratory Submittal Form

last revised Jan 25, 2018

Requester: Tanya Welborn

Field Report Prepared By: Todd Risk

Collected By: Todd Risk, Rachael Dragon, Jessica

Sampling Agency: FDEP

Location: Blountstown WWTP ~~TEST Site~~ TR 6/10	☐ Comp ☑ Grab	Collection (comp begin or grab) Date 6/10/19 Time 10:15	Eastern Central	Composite end Date	Time	Bottle Group(s) (See pg 2): C/D				
Field ID: TEST site	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)					
WIN/STORET #	Temp (C)	pH	Sample Depth .1	☐ ft ☑ m	Sp. Conductance (umho/cm)					
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments: NO YSI meter							
Location: Blountstown WWTP	☐ Comp ☑ Grab	Collection (comp begin or grab) Date 6/10/19 Time 10:55	Eastern Central	Composite end Date	Time	Bottle Group(s): C/D				
Field ID: Control Site	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)					
WIN/STORET #	Temp (C)	pH	Sample Depth .1	☐ ft ☑ m	Sp. Conductance (umho/cm)					
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments: NO YSI meter							
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							
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
Todd	6/10/19 1:26pm	Hand Delivered	2		

Appendix D. Chemical Analysis of Effluent and Receiving Water

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
6/10/2019 9:40	Effluent Comp	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	8.0 AJV	mg/L	0.2	2
6/10/2019 9:40	Effluent Comp	Toxicology	Bioassay-Chron-Def-FW-Fish, NOEC	100	NOEC		
6/10/2019 9:40	Effluent Comp	Toxicology	Bioassay-Chron-Def-FW-Fish, IC25	100 L	IC25		
6/10/2019 9:40	Effluent Comp	Toxicology	Bioassay-Chron-Def-FW-C.dubia, NOEC	100	NOEC		
6/10/2019 9:40	Effluent Comp	Toxicology	Bioassay-Chron-Def-FW-C.dubia, IC25	100 L	IC25		
6/10/2019 9:40	Effluent Comp	Nutrients	Kjeldahl Nitrogen	0.84	mg N/L	0.08	0.2
6/10/2019 9:40	Effluent Comp	Nutrients	Organic Carbon	3.9	mg C/L	0.5	1
6/10/2019 9:40	Effluent Comp	Nutrients	Ammonia-N	0.19	mg N/L	0.02	0.05
6/10/2019 9:40	Effluent Comp	Nutrients	Total-P	0.41	mg P/L	0.005	0.05
6/10/2019 9:40	Effluent Comp	Nutrients	NO2NO3-N	3.8	mg N/L	0.04	0.1
6/10/2019 9:40	Effluent Comp	Nutrients	TSS	3 I	mg/L	2	10
6/10/2019 10:10	Effluent Grab	AGP/LN	Algal Growth Potential	213	mg DryWt/L	0.3	0.9
6/10/2019 10:10	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.96 U	ug/L	0.96	2.9
6/10/2019 10:10	Effluent Grab	Chlorophyll/Grain Size/BOD	Phaeophytin-a	1.0 U	ug/L	1	3.2
6/10/2019 10:10	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	0.70 U	ug/L	0.7	2.1
6/10/2019 10:10	Effluent Grab	Microbiology	Fecal Coliforms-Membrane Filter	240	cfu/100 mL	10	10
6/10/2019 10:10	Effluent Grab	Microbiology	Escherichia Coli-Quanti-Tray	504.3 A	MPN/100 mL	1	1
6/10/2019 10:10	Effluent Grab	Metals	Selenium	0.20 U	ug/L	0.2	0.8
6/10/2019 10:10	Effluent Grab	Metals	Nickel	1.3 I	ug/L	0.5	2
6/10/2019 10:10	Effluent Grab	Metals	Cadmium	0.020 U	ug/L	0.02	0.08
6/10/2019 10:10	Effluent Grab	Metals	Sodium	86.6	mg/L	0.5	2
6/10/2019 10:10	Effluent Grab	Metals	Lead	0.20 U	ug/L	0.2	0.4
6/10/2019 10:10	Effluent Grab	Metals	Silver	0.010 U	ug/L	0.01	0.04
6/10/2019 10:10	Effluent Grab	Metals	Iron	40 I	ug/L	30	120
6/10/2019 10:10	Effluent Grab	Metals	Zinc	25	ug/L	5	20
6/10/2019 10:10	Effluent Grab	Metals	Magnesium	19.6	mg/L	0.04	0.16
6/10/2019 10:10	Effluent Grab	Metals	Copper	0.85	ug/L	0.4	0.8
6/10/2019 10:10	Effluent Grab	Metals	Chromium	0.40 U	ug/L	0.4	1.6
6/10/2019 10:10	Effluent Grab	Metals	Arsenic	0.47	ug/L	0.05	0.2
6/10/2019 10:10	Effluent Grab	Metals	Calcium	42.8	mg/L	0.075	0.3
6/10/2019 10:10	Effluent Grab	Metals	Potassium	13.7	mg/L	0.3	1.2
6/10/2019 10:10	Effluent Grab	Metals	Aluminum	137	ug/L	5	20
6/10/2019 10:10	Effluent Grab	Nutrients	Chloride	100	mg Cl/L	0.4	1.2

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
6/10/2019 10:10	Effluent Grab	Nutrients	Color (true)	14	PCU	2.5	6
6/10/2019 10:10	Effluent Grab	Nutrients	Total-P	0.41	mg P/L	0.005	0.05
6/10/2019 10:10	Effluent Grab	Nutrients	NO2NO3-N	3.4	mg N/L	0.04	0.1
6/10/2019 10:10	Effluent Grab	Nutrients	Organic Carbon	3.7	mg C/L	0.5	1
6/10/2019 10:10	Effluent Grab	Nutrients	Ammonia-N	0.19	mg N/L	0.02	0.05
6/10/2019 10:10	Effluent Grab	Nutrients	O-Phosphate-P	0.31	mg P/L	0.04	0.1
6/10/2019 10:10	Effluent Grab	Nutrients	Kjeldahl Nitrogen	0.76	mg N/L	0.08	0.2
6/10/2019 10:10	Effluent Grab	Nutrients	Turbidity	1.3	NTU	0.1	0.13
6/10/2019 10:10	Effluent Grab	Nutrients	Sulfate	140 A	mg SO4/L	2	6
6/10/2019 10:10	Effluent Grab	Nutrients	Fluoride	0.43	mg F/L	0.035	0.1
6/10/2019 10:10	Effluent Grab	Nutrients	Total Alkalinity	73 A	mg CaCO3/L	0.65	2.5
6/10/2019 10:10	Effluent Grab	Pesticides	Butylate	0.092 U	ug/L	0.092	0.36
6/10/2019 10:10	Effluent Grab	Pesticides	Demeton	0.024 U	ug/L	0.024	0.097
6/10/2019 10:10	Effluent Grab	Pesticides	Metalaxyl	0.18 UJ	ug/L	0.18	0.73
6/10/2019 10:10	Effluent Grab	Pesticides	Norflurazon	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Pesticides	Phorate	0.0051 U	ug/L	0.0051	0.02
6/10/2019 10:10	Effluent Grab	Pesticides	Azinphos Methyl	0.091 U	ug/L	0.091	0.36
6/10/2019 10:10	Effluent Grab	Pesticides	Bromacil	0.040 U	ug/L	0.04	0.16
6/10/2019 10:10	Effluent Grab	Pesticides	Disulfoton	0.0051 U	ug/L	0.0051	0.02
6/10/2019 10:10	Effluent Grab	Pesticides	Malathion	0.010 U	ug/L	0.01	0.04
6/10/2019 10:10	Effluent Grab	Pesticides	Metolachlor	0.12 U	ug/L	0.12	0.49
6/10/2019 10:10	Effluent Grab	Pesticides	Naled	0.081 U	ug/L	0.081	0.32
6/10/2019 10:10	Effluent Grab	Pesticides	Simazine	0.010 U	ug/L	0.01	0.04
6/10/2019 10:10	Effluent Grab	Pesticides	Atrazine Desethyl	0.010 U	ug/L	0.01	0.04
6/10/2019 10:10	Effluent Grab	Pesticides	Fonofos	0.010 U	ug/L	0.01	0.04
6/10/2019 10:10	Effluent Grab	Pesticides	Mevinphos	0.010 U	ug/L	0.01	0.04
6/10/2019 10:10	Effluent Grab	Pesticides	Ametryn	0.010 U	ug/L	0.01	0.04
6/10/2019 10:10	Effluent Grab	Pesticides	Chlorpyrifos Methyl	0.010 U	ug/L	0.01	0.04
6/10/2019 10:10	Effluent Grab	Pesticides	Diazinon	0.010 U	ug/L	0.01	0.04
6/10/2019 10:10	Effluent Grab	Pesticides	Hexazinone	0.071 U	ug/L	0.071	0.28
6/10/2019 10:10	Effluent Grab	Pesticides	Chlorpyrifos Ethyl	0.010 U	ug/L	0.01	0.04
6/10/2019 10:10	Effluent Grab	Pesticides	Parathion Methyl	0.010 U	ug/L	0.01	0.04
6/10/2019 10:10	Effluent Grab	Pesticides	Sucralose	11	ug/L	0.01	0.04
6/10/2019 10:10	Effluent Grab	Pesticides	Ethoprop	0.0051 U	ug/L	0.0051	0.02
6/10/2019 10:10	Effluent Grab	Pesticides	Fenamiphos	0.030 UJ	ug/L	0.03	0.12
6/10/2019 10:10	Effluent Grab	Pesticides	Parathion Ethyl	0.020 U	ug/L	0.02	0.081

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
6/10/2019 10:10	Effluent Grab	Pesticides	Atrazine Desisopropyl	0.010 U	ug/L	0.01	0.04
6/10/2019 10:10	Effluent Grab	Pesticides	Ethion	0.010 U	ug/L	0.01	0.04
6/10/2019 10:10	Effluent Grab	Pesticides	Metribuzin	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Pesticides	Prometon	0.020 U	ug/L	0.02	0.081
6/10/2019 10:10	Effluent Grab	Pesticides	Prometryn	0.020 U	ug/L	0.02	0.081
6/10/2019 10:10	Effluent Grab	Pesticides	Ibuprofen	0.020 U	ug/L	0.02	0.08
6/10/2019 10:10	Effluent Grab	Pesticides	Alachlor	0.061 U	ug/L	0.061	0.24
6/10/2019 10:10	Effluent Grab	Pesticides	Atrazine	0.010 U	ug/L	0.01	0.04
6/10/2019 10:10	Effluent Grab	Pesticides	Naproxen	0.0080 U	ug/L	0.008	0.032
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	2,4-Dinitrophenol	10 U	ug/L	10	40
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Phenanthrene	0.10 U	ug/L	0.1	0.4
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Nitrobenzene	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Hexachloroethane	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.025 U	ug/L	0.025	0.1
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	5.1 U	ug/L	5.1	20
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Benzo(k)fluoranthene	0.025 U	ug/L	0.025	0.1
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.0 U	ug/L	3	12
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	3,3'-Dichlorobenzidine	10 U	ug/L	10	40
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Anthracene	0.025 U	ug/L	0.025	0.1
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Benzidine	10 U	ug/L	10	40
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Di-n-butyl phthalate	2.0 U	ug/L	2	8.1
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	2,4-Dimethylphenol	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	2-Nitrophenol	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	4-Nitrophenol	10 U	ug/L	10	40
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Benzo(b)fluoranthene	0.025 U	ug/L	0.025	0.1
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Fluoranthene	0.025 U	ug/L	0.025	0.1
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.025 U	ug/L	0.025	0.1
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Pyrene	0.10 U	ug/L	0.1	0.4
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Benzo(a)pyrene	0.025 U	ug/L	0.025	0.1
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Di-n-octyl phthalate	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Hexachlorobenzene	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	1,4-Dioxane	0.088	ug/L	0.02	0.08

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Acenaphthene	0.025 U	ug/L	0.025	0.1
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Acenaphthylene	0.025 U	ug/L	0.025	0.1
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Hexachlorocyclopentadiene	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Phenol	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.025 U	ug/L	0.025	0.1
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Chrysene	0.025 U	ug/L	0.025	0.1
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Dimethyl phthalate	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Fluorene	0.025 U	ug/L	0.025	0.1
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Hexachlorobutadiene	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Isophorone	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	N-Nitrosodimethylamine	2.0 U	ug/L	2	8.1
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	2,4-Dichlorophenol	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	2-Chloronaphthalene	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Butyl benzyl phthalate	1.0 U	ug/L	1	4
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	0.10 U	ug/L	0.1	0.4
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	2,4-Dinitrotoluene	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	2,6-Dinitrotoluene	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Diethyl phthalate	2.0 U	ug/L	2	8.1
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Naphthalene	0.10 U	ug/L	0.1	0.4
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Pentachlorophenol	0.51 U	ug/L	0.51	2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.051 U	ug/L	0.051	0.2
6/10/2019 10:10	Effluent Grab	Priority Organic Pollutants	Benzo(a)anthracene	0.025 U	ug/L	0.025	0.1
6/10/2019 10:10	Effluent Grab	Nutrients	Dissolved Oxygen	7.2	mg/L		
6/10/2019 10:10	Effluent Grab	Nutrients	Temperature	29	C		
6/10/2019 10:10	Effluent Grab	Nutrients	pH	6.74	SU		
6/10/2019 10:15	Test Site	AGP/LN	Algal Growth Potential	75.7	mg DryWt/L	0.3	0.9
6/10/2019 10:15	Test Site	Chlorophyll/Grain Size/BOD	Phaeophytin-a	2.6 U	ug/L	2.6	7.9
6/10/2019 10:15	Test Site	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	5.5 JV	mg/L	0.2	2
6/10/2019 10:15	Test Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	2.4 U	ug/L	2.4	7.2
6/10/2019 10:15	Test Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	2.3 I	ug/L	1.8	5.2
6/10/2019 10:15	Test Site	Microbiology	Fecal Coliforms-Membrane Filter	740 B	cfu/100 mL	9	9
6/10/2019 10:15	Test Site	Microbiology	Escherichia Coli-Quanti-Tray	290.9	MPN/100 mL	1	1

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
6/10/2019 10:15	Test Site	Metals	Arsenic	0.55	ug/L	0.05	0.2
6/10/2019 10:15	Test Site	Metals	Copper	0.69 I	ug/L	0.4	0.8
6/10/2019 10:15	Test Site	Metals	Aluminum	267	ug/L	5	20
6/10/2019 10:15	Test Site	Metals	Selenium	0.20 U	ug/L	0.2	0.8
6/10/2019 10:15	Test Site	Metals	Silver	0.010 U	ug/L	0.01	0.04
6/10/2019 10:15	Test Site	Metals	Calcium	21.6	mg/L	0.075	0.3
6/10/2019 10:15	Test Site	Metals	Lead	0.39 I	ug/L	0.2	0.4
6/10/2019 10:15	Test Site	Metals	Zinc	14 I	ug/L	5	20
6/10/2019 10:15	Test Site	Metals	Potassium	6.5	mg/L	0.3	1.2
6/10/2019 10:15	Test Site	Metals	Cadmium	0.020 U	ug/L	0.02	0.08
6/10/2019 10:15	Test Site	Metals	Iron	590	ug/L	30	120
6/10/2019 10:15	Test Site	Metals	Magnesium	9.21	mg/L	0.04	0.16
6/10/2019 10:15	Test Site	Metals	Sodium	39.5	mg/L	0.5	2
6/10/2019 10:15	Test Site	Metals	Chromium	0.41 I	ug/L	0.4	1.6
6/10/2019 10:15	Test Site	Metals	Nickel	0.77 I	ug/L	0.5	2
6/10/2019 10:15	Test Site	Nutrients	O-Phosphate-P	0.18	mg P/L	0.004	0.01
6/10/2019 10:15	Test Site	Nutrients	NO2NO3-N	2	mg N/L	0.04	0.1
6/10/2019 10:15	Test Site	Nutrients	Total Alkalinity	41	mg CaCO3/L	0.65	2.5
6/10/2019 10:15	Test Site	Nutrients	TSS	4 I	mg/L	2	10
6/10/2019 10:15	Test Site	Nutrients	Sulfate	75	mg SO4/L	0.2	0.6
6/10/2019 10:15	Test Site	Nutrients	Fluoride	0.22	mg F/L	0.035	0.1
6/10/2019 10:15	Test Site	Nutrients	Organic Carbon	9.3	mg C/L	0.5	1
6/10/2019 10:15	Test Site	Nutrients	Turbidity	3.1	NTU	0.1	0.13
6/10/2019 10:15	Test Site	Nutrients	Color (true)	90	PCU	2.5	6
6/10/2019 10:15	Test Site	Nutrients	Total-P	0.25	mg P/L	0.005	0.05
6/10/2019 10:15	Test Site	Nutrients	Kjeldahl Nitrogen	1.3	mg N/L	0.08	0.2
6/10/2019 10:15	Test Site	Nutrients	Chloride	52	mg Cl/L	0.2	0.6
6/10/2019 10:15	Test Site	Nutrients	Ammonia-N	0.12	mg N/L	0.002	0.005
6/10/2019 10:15	Test Site	Pesticides	Ibuprofen	0.020 U	ug/L	0.02	0.08
6/10/2019 10:15	Test Site	Pesticides	Sucralose	11	ug/L	0.01	0.04
6/10/2019 10:15	Test Site	Pesticides	Naproxen	0.0080 U	ug/L	0.008	0.032
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Acenaphthylene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Benzo(b)fluoranthene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	5.2 U	ug/L	5.2	21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Hexachlorobutadiene	0.052 U	ug/L	0.052	0.21

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:15	Test Site	Priority Organic Pollutants	2,4-Dichlorophenol	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Acenaphthene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Dimethyl phthalate	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Isophorone	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	0.10 U	ug/L	0.1	0.41
6/10/2019 10:15	Test Site	Priority Organic Pollutants	1,4-Dioxane	0.035 I	ug/L	0.02	0.08
6/10/2019 10:15	Test Site	Priority Organic Pollutants	2,4-Dimethylphenol	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Chrysene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Fluorene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Hexachloroethane	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	2,4-Dinitrophenol	10 U	ug/L	10	41
6/10/2019 10:15	Test Site	Priority Organic Pollutants	2,6-Dinitrotoluene	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Benzo(k)fluoranthene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:15	Test Site	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1 U	ug/L	3.1	12
6/10/2019 10:15	Test Site	Priority Organic Pollutants	3,3'-Dichlorobenzidine	10 U	ug/L	10	41
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Di-n-butyl phthalate	2.1 U	ug/L	2.1	8.2
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Hexachlorobenzene	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	2-Chloronaphthalene	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	4-Nitrophenol	10 U	ug/L	10	41
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Anthracene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Benzo(a)anthracene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Diethyl phthalate	2.1 U	ug/L	2.1	8.2
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Fluoranthene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:15	Test Site	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1 U	ug/L	2.1	8.2
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Phenanthrene	0.10 U	ug/L	0.1	0.41
6/10/2019 10:15	Test Site	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Di-n-octyl phthalate	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Hexachlorocyclopentadiene	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Naphthalene	0.10 U	ug/L	0.1	0.41
6/10/2019 10:15	Test Site	Priority Organic Pollutants	2,4-Dinitrotoluene	0.052 U	ug/L	0.052	0.21

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
6/10/2019 10:15	Test Site	Priority Organic Pollutants	2-Chlorophenol	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	2-Nitrophenol	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Benzidine	10 U	ug/L	10	41
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Benzo(a)pyrene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Butyl benzyl phthalate	1.0 U	ug/L	1	4.1
6/10/2019 10:15	Test Site	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Nitrobenzene	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Pyrene	0.10 U	ug/L	0.1	0.41
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Pentachlorophenol	0.52 U	ug/L	0.52	2.1
6/10/2019 10:15	Test Site	Priority Organic Pollutants	Phenol	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.052 U	ug/L	0.052	0.21
6/10/2019 10:15	Test Site	Nutrients	Sample Depth	0.1	m		
6/10/2019 10:15	Test Site	Nutrients	Sample Depth	0.1	m		
6/10/2019 10:15	Test Site	Nutrients	Sample Depth	0.1	m		
6/10/2019 10:55	Control Site	AGP/LN	Algal Growth Potential	1.07 A	mg DryWt/L	0.3	0.9
6/10/2019 10:55	Control Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	3.8 I	ug/L	1.5	4.5
6/10/2019 10:55	Control Site	Chlorophyll/Grain Size/BOD	Phaeophytin-a	2.2 U	ug/L	2.2	6.8
6/10/2019 10:55	Control Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	3.3 I	ug/L	2.1	6.2
6/10/2019 10:55	Control Site	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	5.3 JV	mg/L	0.2	2
6/10/2019 10:55	Control Site	Microbiology	Fecal Coliforms-Membrane Filter	200 B	cfu/100 mL	9	9
6/10/2019 10:55	Control Site	Microbiology	Escherichia Coli-Quanti-Tray	161.6	MPN/100 mL	1	1
6/10/2019 10:55	Control Site	Metals	Lead	0.59	ug/L	0.2	0.4
6/10/2019 10:55	Control Site	Metals	Zinc	6.3 I	ug/L	5	20
6/10/2019 10:55	Control Site	Metals	Selenium	0.20 U	ug/L	0.2	0.8
6/10/2019 10:55	Control Site	Metals	Iron	1.02E+03	ug/L	30	120
6/10/2019 10:55	Control Site	Metals	Silver	0.010 U	ug/L	0.01	0.04
6/10/2019 10:55	Control Site	Metals	Aluminum	364	ug/L	5	20
6/10/2019 10:55	Control Site	Metals	Calcium	5.79	mg/L	0.075	0.3
6/10/2019 10:55	Control Site	Metals	Arsenic	0.59	ug/L	0.05	0.2
6/10/2019 10:55	Control Site	Metals	Chromium	0.89 I	ug/L	0.4	1.6
6/10/2019 10:55	Control Site	Metals	Nickel	0.50 U	ug/L	0.5	2
6/10/2019 10:55	Control Site	Metals	Magnesium	1.21	mg/L	0.04	0.16
6/10/2019 10:55	Control Site	Metals	Potassium	1.1 I	mg/L	0.3	1.2
6/10/2019 10:55	Control Site	Metals	Copper	0.53 I	ug/L	0.4	0.8

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
6/10/2019 10:55	Control Site	Metals	Cadmium	0.020 U	ug/L	0.02	0.08
6/10/2019 10:55	Control Site	Metals	Sodium	3.5	mg/L	0.5	2
6/10/2019 10:55	Control Site	Nutrients	Sulfate	3.5	mg SO4/L	0.2	0.6
6/10/2019 10:55	Control Site	Nutrients	Kjeldahl Nitrogen	0.82	mg N/L	0.08	0.2
6/10/2019 10:55	Control Site	Nutrients	Organic Carbon	18	mg C/L	0.5	1
6/10/2019 10:55	Control Site	Nutrients	Color (true)	180	PCU	5	12
6/10/2019 10:55	Control Site	Nutrients	Turbidity	4.4	NTU	0.1	0.13
6/10/2019 10:55	Control Site	Nutrients	Chloride	5.7	mg Cl/L	0.2	0.6
6/10/2019 10:55	Control Site	Nutrients	O-Phosphate-P	0.005 I	mg P/L	0.004	0.01
6/10/2019 10:55	Control Site	Nutrients	NO2NO3-N	0.12	mg N/L	0.004	0.01
6/10/2019 10:55	Control Site	Nutrients	Ammonia-N	0.046	mg N/L	0.002	0.005
6/10/2019 10:55	Control Site	Nutrients	TSS	4 I	mg/L	2	10
6/10/2019 10:55	Control Site	Nutrients	Total Alkalinity	8.3	mg CaCO3/L	0.65	2.5
6/10/2019 10:55	Control Site	Nutrients	Total-P	0.03	mg P/L	0.002	0.005
6/10/2019 10:55	Control Site	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.1
6/10/2019 10:55	Control Site	Pesticides	Ibuprofen	0.020 U	ug/L	0.02	0.08
6/10/2019 10:55	Control Site	Pesticides	Sucralose	0.47	ug/L	0.01	0.04
6/10/2019 10:55	Control Site	Pesticides	Naproxen	0.0080 U	ug/L	0.008	0.032
6/10/2019 10:55	Control Site	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Acenaphthene	0.026 U	ug/L	0.026	0.11
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Butyl benzyl phthalate	1.1 U	ug/L	1.1	4.2
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Dimethyl phthalate	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Hexachlorobutadiene	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	2,4-Dimethylphenol	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	2,4-Dinitrophenol	11 U	ug/L	11	42
6/10/2019 10:55	Control Site	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.2 U	ug/L	3.2	13
6/10/2019 10:55	Control Site	Priority Organic Pollutants	3,3'-Dichlorobenzidine	11 U	ug/L	11	42
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Benzo(k)fluoranthene	0.026 U	ug/L	0.026	0.11
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Hexachlorocyclopentadiene	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1 U	ug/L	2.1	8.4
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Nitrobenzene	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Pentachlorophenol	0.53 U	ug/L	0.53	2.1
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Phenol	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	0.053 U	ug/L	0.053	0.21

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
6/10/2019 10:55	Control Site	Priority Organic Pollutants	4-Nitrophenol	11 U	ug/L	11	42
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Benzo(a)pyrene	0.026 U	ug/L	0.026	0.11
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.026 U	ug/L	0.026	0.11
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Pyrene	0.11 U	ug/L	0.11	0.42
6/10/2019 10:55	Control Site	Priority Organic Pollutants	2-Chloronaphthalene	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Acenaphthylene	0.026 U	ug/L	0.026	0.11
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Benzo(b)fluoranthene	0.026 U	ug/L	0.026	0.11
6/10/2019 10:55	Control Site	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	0.11 U	ug/L	0.11	0.42
6/10/2019 10:55	Control Site	Priority Organic Pollutants	2,6-Dinitrotoluene	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Benzo(a)anthracene	0.026 U	ug/L	0.026	0.11
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Di-n-butyl phthalate	2.1 U	ug/L	2.1	8.4
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Phenanthrene	0.11 U	ug/L	0.11	0.42
6/10/2019 10:55	Control Site	Priority Organic Pollutants	2,4-Dinitrotoluene	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	2-Nitrophenol	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.026 U	ug/L	0.026	0.11
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Di-n-octyl phthalate	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Fluorene	0.026 U	ug/L	0.026	0.11
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Hexachloroethane	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	2-Chlorophenol	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Anthracene	0.026 U	ug/L	0.026	0.11
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Benzidine	11 U	ug/L	11	42
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Chrysene	0.026 U	ug/L	0.026	0.11
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Diethyl phthalate	2.1 U	ug/L	2.1	8.4
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Fluoranthene	0.026 U	ug/L	0.026	0.11
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Naphthalene	0.11 U	ug/L	0.11	0.42
6/10/2019 10:55	Control Site	Priority Organic Pollutants	1,4-Dioxane	0.020 U	ug/L	0.02	0.08
6/10/2019 10:55	Control Site	Priority Organic Pollutants	2,4-Dichlorophenol	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	5.3 U	ug/L	5.3	21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.026 U	ug/L	0.026	0.11
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Hexachlorobenzene	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	Isophorone	0.053 U	ug/L	0.053	0.21
6/10/2019 10:55	Control Site	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	0.053 U	ug/L	0.053	0.21

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
6/10/2019 10:55	Control Site	Nutrients	Sample Depth	0.1	m		
6/10/2019 10:55	Control Site	Nutrients	Sample Depth	0.1	m		
6/10/2019 10:55	Control Site	Nutrients	Sample Depth	0.1	m		
6/10/2019 10:40	Field Blank	Metals	Potassium	0.30 U	mg/L	0.3	1.2
6/10/2019 10:40	Field Blank	Metals	Zinc	5.0 U	ug/L	5	20
6/10/2019 10:40	Field Blank	Metals	Sodium	0.50 U	mg/L	0.5	2
6/10/2019 10:40	Field Blank	Metals	Iron	30 U	ug/L	30	120
6/10/2019 10:40	Field Blank	Metals	Nickel	0.50 U	ug/L	0.5	2
6/10/2019 10:40	Field Blank	Metals	Magnesium	0.040 U	mg/L	0.04	0.16
6/10/2019 10:40	Field Blank	Metals	Lead	0.20 U	ug/L	0.2	0.4
6/10/2019 10:40	Field Blank	Metals	Selenium	0.20 U	ug/L	0.2	0.8
6/10/2019 10:40	Field Blank	Metals	Arsenic	0.050 U	ug/L	0.05	0.2
6/10/2019 10:40	Field Blank	Metals	Calcium	0.075 U	mg/L	0.075	0.3
6/10/2019 10:40	Field Blank	Metals	Silver	0.010 U	ug/L	0.01	0.04
6/10/2019 10:40	Field Blank	Metals	Copper	0.40 U	ug/L	0.4	0.8
6/10/2019 10:40	Field Blank	Metals	Chromium	0.40 U	ug/L	0.4	1.6
6/10/2019 10:40	Field Blank	Metals	Aluminum	5.0 U	ug/L	5	20
6/10/2019 10:40	Field Blank	Metals	Cadmium	0.020 U	ug/L	0.02	0.08
6/10/2019 10:40	Field Blank	Nutrients	Ammonia-N	0.002 U	mg N/L	0.002	0.005
6/10/2019 10:40	Field Blank	Nutrients	Chloride	0.20 U	mg Cl/L	0.2	0.6
6/10/2019 10:40	Field Blank	Nutrients	Organic Carbon	0.50 U	mg C/L	0.5	1
6/10/2019 10:40	Field Blank	Nutrients	Total-P	0.002 U	mg P/L	0.002	0.005
6/10/2019 10:40	Field Blank	Nutrients	Color (true)	2.5 U	PCU	2.5	6
6/10/2019 10:40	Field Blank	Nutrients	Total Alkalinity	0.65 U	mg CaCO3/L	0.65	2.5
6/10/2019 10:40	Field Blank	Nutrients	NO2NO3-N	0.004 U	mg N/L	0.004	0.01
6/10/2019 10:40	Field Blank	Nutrients	O-Phosphate-P	0.004 U	mg P/L	0.004	0.01
6/10/2019 10:40	Field Blank	Nutrients	Sulfate	0.20 U	mg SO4/L	0.2	0.6
6/10/2019 10:40	Field Blank	Nutrients	Kjeldahl Nitrogen	0.080 U	mg N/L	0.08	0.2
6/10/2019 10:40	Field Blank	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.1
6/10/2019 10:40	Field Blank	Nutrients	Turbidity	0.10 U	NTU	0.1	0.13
6/10/2019 10:40	Field Blank	Nutrients	TSS	2 U	mg/L	2	10
6/10/2019 10:40	Field Blank	Pesticides	Prometon	0.020 U	ug/L	0.02	0.081
6/10/2019 10:40	Field Blank	Pesticides	Naproxen	0.0080 U	ug/L	0.008	0.032
6/10/2019 10:40	Field Blank	Pesticides	Fenamiphos	0.030 UJ	ug/L	0.03	0.12
6/10/2019 10:40	Field Blank	Pesticides	Simazine	0.010 U	ug/L	0.01	0.041
6/10/2019 10:40	Field Blank	Pesticides	Atrazine Desethyl	0.010 U	ug/L	0.01	0.041

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
6/10/2019 10:40	Field Blank	Pesticides	Ethion	0.010 U	ug/L	0.01	0.041
6/10/2019 10:40	Field Blank	Pesticides	Malathion	0.010 U	ug/L	0.01	0.041
6/10/2019 10:40	Field Blank	Pesticides	Parathion Ethyl	0.020 U	ug/L	0.02	0.081
6/10/2019 10:40	Field Blank	Pesticides	Fonofos	0.010 U	ug/L	0.01	0.041
6/10/2019 10:40	Field Blank	Pesticides	Prometryn	0.020 U	ug/L	0.02	0.081
6/10/2019 10:40	Field Blank	Pesticides	Atrazine Desisopropyl	0.010 U	ug/L	0.01	0.041
6/10/2019 10:40	Field Blank	Pesticides	Bromacil	0.041 U	ug/L	0.041	0.16
6/10/2019 10:40	Field Blank	Pesticides	Diazinon	0.010 U	ug/L	0.01	0.041
6/10/2019 10:40	Field Blank	Pesticides	Disulfoton	0.0051 U	ug/L	0.0051	0.02
6/10/2019 10:40	Field Blank	Pesticides	Metolachlor	0.12 U	ug/L	0.12	0.49
6/10/2019 10:40	Field Blank	Pesticides	Naled	0.081 U	ug/L	0.081	0.33
6/10/2019 10:40	Field Blank	Pesticides	Parathion Methyl	0.010 U	ug/L	0.01	0.041
6/10/2019 10:40	Field Blank	Pesticides	Ibuprofen	0.020 U	ug/L	0.02	0.08
6/10/2019 10:40	Field Blank	Pesticides	Ametryn	0.010 U	ug/L	0.01	0.041
6/10/2019 10:40	Field Blank	Pesticides	Atrazine	0.010 U	ug/L	0.01	0.041
6/10/2019 10:40	Field Blank	Pesticides	Chlorpyrifos Ethyl	0.010 U	ug/L	0.01	0.041
6/10/2019 10:40	Field Blank	Pesticides	Hexazinone	0.071 U	ug/L	0.071	0.28
6/10/2019 10:40	Field Blank	Pesticides	Metribuzin	0.051 U	ug/L	0.051	0.2
6/10/2019 10:40	Field Blank	Pesticides	Alachlor	0.061 U	ug/L	0.061	0.24
6/10/2019 10:40	Field Blank	Pesticides	Butylate	0.051 U	ug/L	0.051	0.2
6/10/2019 10:40	Field Blank	Pesticides	Chlorpyrifos Methyl	0.010 U	ug/L	0.01	0.041
6/10/2019 10:40	Field Blank	Pesticides	Norflurazon	0.051 U	ug/L	0.051	0.2
6/10/2019 10:40	Field Blank	Pesticides	Sucralose	0.010 U	ug/L	0.01	0.04
6/10/2019 10:40	Field Blank	Pesticides	Azinphos Methyl	0.091 U	ug/L	0.091	0.37
6/10/2019 10:40	Field Blank	Pesticides	Demeton	0.024 U	ug/L	0.024	0.098
6/10/2019 10:40	Field Blank	Pesticides	Ethoprop	0.0051 U	ug/L	0.0051	0.02
6/10/2019 10:40	Field Blank	Pesticides	Metalaxyl	0.18 UJ	ug/L	0.18	0.73
6/10/2019 10:40	Field Blank	Pesticides	Mevinphos	0.010 U	ug/L	0.01	0.041
6/10/2019 10:40	Field Blank	Pesticides	Phorate	0.0051 U	ug/L	0.0051	0.02
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	2-Chloronaphthalene	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Phenol	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Isophorone	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.026 U	ug/L	0.026	0.1

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Benzidine	10 U	ug/L	10	41
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Diethyl phthalate	2.1 U	ug/L	2.1	8.2
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1 U	ug/L	2.1	8.2
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	10 U	ug/L	10	41
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	4-Nitrophenol	10 U	ug/L	10	41
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Di-n-butyl phthalate	2.1 U	ug/L	2.1	8.2
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Di-n-octyl phthalate	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Anthracene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Butyl benzyl phthalate	1.0 U	ug/L	1	4.1
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Hexachloroethane	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	2-Nitrophenol	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Dimethyl phthalate	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Hexachlorobutadiene	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Nitrobenzene	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Pyrene	0.10 U	ug/L	0.1	0.41
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	2,4-Dinitrophenol	10 U	ug/L	10	41
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Chrysene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Fluoranthene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	0.10 U	ug/L	0.1	0.41
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	2,4-Dimethylphenol	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	2-Chlorophenol	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1 U	ug/L	3.1	12
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Acenaphthene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	10 I	ug/L	5.2	21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Pentachlorophenol	0.52 U	ug/L	0.52	2.1

Date_Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Acenaphthylene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Fluorene	0.026 U	ug/L	0.026	0.1
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Hexachlorobenzene	0.052 U	ug/L	0.052	0.21
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Naphthalene	0.10 U	ug/L	0.1	0.41
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	Phenanthrene	0.10 U	ug/L	0.1	0.41
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	1,4-Dioxane	0.020 U	ug/L	0.02	0.08
6/10/2019 10:40	Field Blank	Priority Organic Pollutants	2,4-Dichlorophenol	0.052 U	ug/L	0.052	0.21