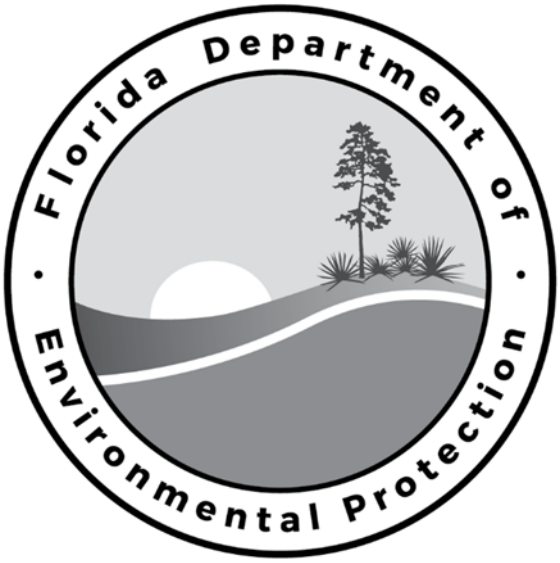


Biological Assessment of

Callahan Wastewater Treatment Facility

Nassau County

NPDES # FL0038407

Sampled June 5, 2017

May 2018

Biology Program

DEP Laboratory

Division of Environmental Assessment and Restoration

DEP Laboratory Quality Manual

NELAC Certification No. E31780

CONTENTS

Facility Overview

Methods

Results

Conclusion

Literature Cited

Tables

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

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

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

Table 4. Effluent limits, Class III Freshwater Criteria and analytical metals data

Table 5. Measured and predicted freshwater algal growth potential (AGP)

Table 6. Macroinvertebrate Hester-Dendy samples – quantitative

Appendices

Appendix A. Map of facility

Appendix B. Facility Summary

Appendix C. Explanation of measurements

Appendix D. Chain of Custody

Appendix E. Physical/Chemical and Habitat Assessment field sheets

Appendix F. Chemical analyses of effluent and receiving water

EPA End Sheet

Facility Overview

The Callahan Wastewater Treatment Facility is a Municipal Domestic Wastewater Treatment Facility. A Facility Summary including a description of the facility, summary of permit limits, any relevant Administrative Order (AO), and Discharge Monitoring Report (DMR) information is provided in Appendix B. Administrative Order 161 NE for toxicity was executed on February 22, 2013. The effluent is discharged continuously into Alligator Creek, a Class III Fresh Water (see map Appendix A).

Alligator Creek falls within the Peninsula Nutrient Watershed Region for Numeric Nutrient Criteria (NNC). For this region, the NNC thresholds, expressed as annual geometric means, are 0.12 mg/L total phosphorus and 1.54 mg/L total nitrogen. This FYI event can only provide single sample results; therefore, compliance should be determined with additional sampling events. http://ca.dep.state.fl.us/mapdirect/?focus=nutrientcriteria

Methods

Effluent samples were taken as grab samples from monitoring location EFD-1, after dechlorination. Chemical and biological comparisons were made between two Control Sites, Alligator Creek 100m above the point of discharge (Alligator Control Site) and Little Mills Creek 400m below US 1 (Little Mills Control Site), and a Test Site, Alligator Creek 100m below the point of discharge. Little Mills Creek was selected as an additional Control Site to determine the contribution and possible influence on the Test Site as it flows into Alligator Creek just above the POD. SCI samples were not collected due to tidal influence.

All field and laboratory methods followed DEP Standard Operating Procedures (see https://floridadep.gov/dear/florida-dep-laboratory/content/dep-laboratory-quality-assurance-manual-and-sops and https://floridadep.gov/dear/quality-assurance/content/dep-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 C.

All references to Rule 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. New limits for *Escherichia coli* (*E. coli*), enterococci, and total ammonia nitrogen have been approved but the updates will not be used in this report as the sampling occurred prior to their approval.

The following were involved in this investigation: Brian Davis and Pat O'Conner (DEP Northeast Regional Operation Center, Jacksonville), and DEP Laboratory in Tallahassee. The report was reviewed by District representatives and the Point Source Studies Review Committee (Mike Tanski, Andrew Tintle, and Adrienne Pennington).

Results

Physical and Chemical Parameters (See Tables 1, 2, 3, and 4 and Appendices D, E, and F)

- Dissolved oxygen levels (% saturation) at Little Mills Control Site did not meet the Class III Freshwater Criteria (62-302.530(30) and 62-302.533, F.A.C.).
- The pH was similar among the effluent and all instream sites and complied with Class III Freshwater Quality Criteria and effluent permit limits.
- Specific conductance of the effluent and all instream sites complied with Class III Freshwater Criteria and effluent permit limits.
- The amount of effluent total residual chlorine, measured by the facility after dechlorination, complied with the effluent permit limits.
- Habitat Assessment scores were similar at Alligator Control Site (101) and Little Mills Control Site (88), which places both sites in the Suboptimal category. The Test Site scored lower (79) placing it in the Marginal category. While the Test Site had better substrate diversity, all three sites had low substrate

availability and experienced habitat smothering. All three sites lost points for lack of bank stability of both banks and the Test Site lost points for riparian zone buffer width of the left bank.

Analytical Water Chemistry (See Table 2 and Appendix F)

- Effluent nutrient levels complied with permit limits.
- Nutrient levels were similar between the Alligator Test and Alligator Control Site samples. There was no detectable nutrient enrichment from the effluent or Little Mills Creek at the Test Site.
- Alkalinity was much greater in in Little Mills Control Site compared to the effluent sample and Alligator Creek in-stream sites.
- Total suspended solids and carbonaceous biochemical oxygen demand of the effluent and all in-stream samples were detected between the MDL and PQL therefore, the effluent samples complied with permit limits.
- Chlorophyll *a* (corrected) was detected between the MDL and PQL in the effluent sample and at a low level in the Test Site sample and both Control Site samples.
- Effluent chloride and sulfate values were approximately 4 to 5 times greater than the in-stream sites' sample values.

Microbiology (See Table 2 and Appendix F)

- Fecal coliform analyses were performed by ALS Environmental Laboratories, Jacksonville, Florida.
- Fecal coliforms were detected in the effluent at levels which complied with Class III Freshwater Quality Criterion (62-302.530(6), F.A.C.).
- Microbiology was not collected at any of the instream sites due to sampler error.

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

- Tests were performed June 6 through 13, 2017.
- The effluent sample IC25 for the fish, *Pimephalas promelas*, during the chronic definitive bioassay was greater than 100% and therefore, complied with effluent permit limits.
- The effluent sample IC25 for the water flea, *Ceriodaphinia dubia*, during the chronic definitive bioassay was 47.0% and exceeded the effluent permit limit.
- NOTE: A 25% inhibition concentration (IC25) is the effluent concentration causing a 25% reduction in a biological response such as biomass or reproduction when compared to a control population. An IC25 of less than 100% in a chronic test may constitute exceedances of 62-302.530(20), 62-302.530(61) and/or facility permit limits.
- For more information or to obtain copies of the toxicity bench sheets, please contact the Biology Laboratory at 850-245-8177.

Organic Constituents (See Table 3 and Appendix F)

- Atrazine was detected in the effluent sample.

Metals (See Table 4 and Appendix F)

- All metals detected in the effluent sample were present at levels that complied with effluent permit limits and Class III Freshwater Quality Criteria (62-302.530, F.A.C.).
- All metals in Control and Test Site samples were either undetected or detected at levels that complied with Class III Freshwater Quality Criteria (62-302.530, F.A.C.).
- Iron levels in the Test Site sample and both Control Site samples complied with Class III Freshwater Quality Criteria (62-302.530, F.A.C.), but were high. Field samplers reported no observable potential sources for the high levels of iron measured in the samples.

Algal Growth Potential (See Table 5 and Appendix F)

- The effluent Algal Growth Potential (AGP) of the unicellular, freshwater green alga, *Pseudokirchneriella subcapitata*, was approximately 2.5 times higher than the value in the Alligator Control Site, and approximately 1.7 times higher than the value in Test Site. The AGP value in Little Mills Control Site was similar to the value of the effluent.
- The analytical chemistry suggests that the effluent and all instream sites are nitrogen limited (Miller et al. 1978; USEPA 2000).

Bioassessment

Flora (See Appendix E)

- Two temporally independent Linear Vegetation Survey (LVS) samplings showing a Coefficient of Conservatism score ≥ 2.5 and the frequency of occurrence of Florida Exotic Plant Pest Council (FLEPPC) exotic taxa ≤ 25% are needed to achieve NNC floral metrics. Sites with no observed macrophytes are considered to achieve the LVS component of the NNC. Two temporally independent Rapid Periphyton survey (RPS) samplings with ≤ 25% rank 4-6 (algae > 6mm thick) coverage are needed to achieve NNC floral metrics. This FYI event can only provide single sample results; therefore, Numeric Nutrient Criteria (NNC) compliance should be determined with additional sampling events.
- For the LVS, the Test site had less than $2m^2$ of vegetation. Both Control Sites lacked aquatic macrophytes.
- The Rapid Periphyton Survey (RPS) conducted at the Test Site showed little evidence of nutrient enrichment in comparison with the RPS of both Control Sites. Filamentous mat-forming algae were found at 12.5% of the sampled points at the Test Site and were found at 1% of the sampled points at Alligator Control Site. Algae was not found at Little Mills Control Site. The canopy was mostly open at all three sites. The Test Site was 74% open, Alligator Creek Control Site was 91% open, and Little Mills Control Site was 94% open.

Macroinvertebrates (See Table 6)

- Quantitative macroinvertebrate data were collected from Hester Dendy sampling racks which consisted of 3 replicates per rack. The Shannon-Weaver diversity score was 3.09 at the Test Site compared to 3.67 and 3.18 at Alligator Creek Control Site and Little Mills Control Site, respectively. However, the Test Site calculation was based on fewer than 300 organisms. Amphipods were dominant at the Test Site, while Dipterans were dominant at both Control Sites. Sensitive taxa, such as Ephemeroptera, were present at all three sites. The Test Site had fewer than half the number of macroinvertebrates of the other two sites. This reduction may be a response to higher specific conductance at the Test Site, which is under the influence of the higher specific conductance of the effluent and Little Mills Creek, in comparison to the Control Sites.
- For more information or to obtain a copy of the taxa lists, please contact the Biology Laboratory at 850-245-8177.

Conclusion

The bioassay samples were chronically toxic to the test organism *Ceriodaphnia dubia* and did not meet the permit limits. Nutrient, chlorophyll *a*, and AGP values detected in the Test Site samples showed no indication of nutrient enrichment from the effluent. In-stream floral metrics showed no indication of nutrient enrichment at the Test Site. The macroinvertebrate data suggest that specific conductance levels from the effluent and Little Mills Creek may be having a negative impact in Alligator Creek.

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. 110pp.

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

Lande, R. 1996. Statistics and partitioning of species diversity, and similarity among multiple communities. Oikos 76: 5-13.

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

Miller, W. E., T. E. Maloney, and J. C. Greene. 1978. The *Selenastrum capricornutum* Printz algal assay bottle test. EPA-600/9-78-018. U. S. EPA, Cincinnati, Ohio. 126 p.

Plafkin, J. L., M. T. Barbour, K. D. Porter, S. K. Gross and R. M. Hughes. 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

Raschke, R. L. and D. A. Schultz. 1987. The use of the algal growth potential test for data assessment. J. Wat. Poll. Cont. Fed. 59(4): 222-227.

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

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

Callahan WWTF	Units	Class III Criteria	Effluent Permit Limits	Effluent Grab	Effluent Grab (Group B)	Test Site	Alligator Control Site	Little Mills Control Site
Habitat Assessment	-	-	-	-	-	79	101	88
Sample Depth	m	-	-	0.3	0.3	0.1	0.2	0.1
Temperature	C	-	Report	27.2	27.2	25.7	24.5	24.0
pH	SU	6.0 - 8.5	6.0 - 8.5	7.1	7.1	7.7	7.7	7.5
Specific Conductance	µmhos/cm	≤ 1,275	-	767	767	350	188	596
Dissolved Oxygen	% saturation	≥ 34	-	-	-	65.9	60.2	18.1 e
Dissolved Oxygen	mg/L	-	≥ 6.0 s	8.0	8.0	5.4	5.0	1.6
Flow	MGD	-	-	0.104 [1]	-	-	-	-
Total Residual Chlorine		-	≤ 0.01 s	0.00 [1]	-	-	-	-

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
Value exceeds the Class III Water Quality Criteria or permit limits
a - Annual average
e - Value exceeds the Class III Water Quality Criteria or permit limit
s - Single sample
[1] - Values measured by facility

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

Callahan WWTF	Units	Class III Criteria	Effluent Permit Limits	Effluent Grab	Effluent Grab (Group B)	Test Site	Alligator Control Site	Little Mills Control Site
Ortho-phosphate	mg P/L	-	Report	0.078	-	0.091	0.091	0.15
Total Phosphorus	mg P/L	-	≤ 2.0 s	0.097	0.10	0.14	0.13	0.22
Total Ammonia-N	mg N/L	-	Report	0.021	0.021	0.046	0.048	0.18
Un-ionized Ammonia (calculated salinity)	mg N/L	≤ 0.02 s	-	< 0.02 c	< 0.02 c	< 0.02 c	< 0.02 c	< 0.02 c
Nitrate and Nitrite	mg N/L	-	-	0.22	0.22	0.056	0.045	0.091
Total Kjeldahl Nitrogen	mg N/L	-	Report	0.42	0.47	1.1	1.2	0.81
Organic Nitrogen	mg N/L	-	Report	0.4 c	0.45 c	1.1 c	1.2 c	0.63 c
Total Nitrogen	mg N/L	-	≤ 6.0 s	0.64 c	0.69 c	1.2 c	1.2 c	0.9 c
Total Organic Carbon	mg C/L	-	-	5.2	5.8	25	30	10
Chlorophyll *a* - Corrected	ug/L	-	-	1.1 I	-	2.3	2.0	4.1
Phaeophytin	ug/L	-	-	0.40 U	-	1.3 I	.99 I	2.0
CBOD, 5-day, N - inhibited	mg/L	-	≤ 10.0 s	-	1.9 I	1.3 I	0.87 I	1.5 I
Total Suspended Solids	mg/L	-	≤ 10.0 s	-	2 I	4 I	3 I	6 I
Turbidity	NTU	< 29 t	-	0.45	-	4.1	3.8	4.0
Color (true)	PCU	-	-	5.8 I	-	300 A	280	65 A
Alkalinity	mg CaCO3/L	≥ 20	-	120 A	-	33 A	27	269
Chloride	mg Cl/L	-	-	71 A	-	22	19	22
Fluoride	mg F/L	≤ 10.0	-	0.43	-	0.086 I	0.068 I	0.37
Sulfate	mg SO4/L	-	-	140 A	-	30	25	15
Microbiology								
Fecal Coliforms [2]	cfu/100 mL	≤ 400s #	-	5.0 B	-	-	-	-
Toxicity (IC25, Chronic definitive, % effluent)								
Bioassay - Water flea *(Ceriodaphnia dubia)*	% effluent	-	≥ 100 p	-	47.0 e	-	-	-
Bioassay - Fish *(Primephales promelas)*	% effluent	-	≥ 100 p	-	100 L	-	-	-

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
Value exceeds the Class III Water Quality Criteria or permit limits
c - Value is calculated
e- Value exceeds the Class III Water Quality Criteria or permit limits
p - 24-hour time-proportioned composite
s - Single sample
t - Shall not exceed 29 NTUs above background
A - Value reported is the mean of two or more determinations
B - Results based on colony counts outside the acceptance range
I - The reported value is between the laboratory method detection limit and laboratory practical quantitation limit
L - Actual value is known to be greater than value given
U - Material analyzed for but not detected; value reported is the method detection limit
[2] - Fecal coliform analysis performed by ALS Environmental lab
- If 10 or fewer samples are taken within a month, the single sample limit is 400 CFU (62-302.530(6), F.A.C.)

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

Callahan WWTF	Units	Class III Criteria	Effluent Permit Limits	Effluent Grab	Effluent Grab (Group B)	Test Site	Alligator Control Site	Little Mills Control Site
Atrazine	ug/L	-	-	0.076	-	-	-	-

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

Table 4. Effluent limits, Class III Freshwater Criteria and analytical metals data

Callahan WWTF	Units	Effluent Permit Limits	Effluent Grab Class III Criteria	Effluent Grab	Test Site Class III Criteria	Test Site	Alligator Control Site Class III Criteria	Alligator Control Site	Little Mills Control Site Class III Criteria	Little Mills Control Site
Hardness	mg CaCO3	-	-	256 c	-	80.7 c	-	66.2 c	-	295 c
Aluminum	ug/L	-	-	116	-	290	-	293	-	85
Arsenic	ug/L	-	≤ 50	0.25	≤ 50	0.85	≤ 50	0.87	≤ 50	1.04
Cadmium	ug/L	-	≤ 0.544 b	0.020 U	≤ 0.199 b	0.020 U	≤ 0.231 b	0.020 U	≤ 0.604 b	0.020 U
Calcium	mg/L	-	-	63.3	-	21.6	-	18.2	-	76.5
Chromium, Total [3]	ug/L	-	≤ 186 b	0.40 U	≤ 61.5 b	0.50 I	≤ 72.3 b	0.52 I	≤ 209 b	0.40 U
Copper	ug/L	-	≤ 20.9 b	0.52 I	≤ 6.56 b	0.92	≤ 7.77 b	0.98	≤ 23.5 b	0.25 I
Iron	ug/L	-	≤ 1,000	30 U	≤ 1,000	870	≤ 1,000	920	≤ 1,000	580
Lead	ug/L	-	≤ 10.6 b	0.064 I	≤ 1.88 b	0.48	≤ 2.42 b	0.50	≤ 12.6 b	0.22
Magnesium	mg/L	-	-	23.9	-	6.50	-	5.05	-	25.3
Nickel	ug/L	-	≤ 116 b	1.43	≤ 36.8 b	0.64 I	≤ 43.5 b	0.61 I	≤ 130 b	0.30 I
Potassium	mg/L	-	-	9.6	-	3.9	-	3.6	-	2.8
Selenium	ug/L	-	≤ 5.0	0.20 U	≤ 5.0	0.20 U	≤ 5.0	0.20 U	≤ 5.0	0.20 U
Silver	ug/L	-	≤ 0.07	0.010 U	≤ 0.07	0.010 U	≤ 0.07	0.010 U	≤ 0.07	0.010 U
Sodium	mg/L	-	-	51.2	-	14.1	-	11.6	-	15.7
Zinc	ug/L	-	≤ 266 b	35	≤ 84.5 b	9.0 I	≤ 99.9 b	7.7 I	≤ 300 b	5.0 U

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

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

b - Value is calculated based on hardness

c - Value is calculated

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

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

Table 5. 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.

Callahan WWTF						
Location	**Test Species**	**AGP (measured)**	**Predicted AGP (TSIN) ± 20%**	**Predicted AGP (TN) ± 20%**	**Inorganic N:P ratio**	**Total N:P ratio**
Effluent Grab	*Pseudokirchneriella subcapitata*	13.5	9.2 ± 1.8	24.3 ± 4.9	3.1	6.6
Test Site	*Pseudokirchneriella subcapitata*	7.81	3.9 ± 0.8	43.9 ± 8.8	1.1	8.3
Alligator Control Site	*Pseudokirchneriella subcapitata*	5.26	3.5 ± 0.7	47.3 ± 9.5	1.0	9.6
Little Mills Control Site	*Pseudokirchneriella subcapitata*	13.4 A	10.3 ± 2.1	34.2 ± 6.8	1.8	4.1

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

Table 6. Macroinvertebrate Hester-Dendy samples – quantitative

Callahan WWTF	Test Site	Alligator Control Site	Little Mills Control Site
Summary Statistics			
Shannon-Weaver Diversity	3.09	3.67	3.18
Number of Taxa	23	33	27
Number of EPT Taxa	3	1	1
Percent Dominant Taxon	35.3	26.4	32.3
Dominant Taxon Name	*Gammarus* sp. (Amphipoda)	*Tanytarsus* sp. *t* Epler (Diptera)	*Tanytarsus* sp. *t* Epler (Diptera)
Total Number of Individuals (counted)	144*	306	387
Total Number of Individuals (#/m^2)	383	810	1025
Community Composition: Percent of total			
Acariformes	0.0	0.0	0.3
Amphipoda	35.3	4.0	2.3
Coleoptera	4.9	14.7	0.8
Diptera	52.8	75.9	62.2
Ephemeroptera	2.1	0.3	1.3
Gastropoda	3.5	4.9	23.5
Odonata	0.7	0.0	1.0
Oligochaeta	0.0	0.3	7.8
Plecoptera	0.0	0.0	0.0
Trichoptera	0.7	0.0	0.0
Functional Feeding Groups: Percent of total			
Burrowing Deposit Feeders	0.0	0.3	7.8
Parasite	0.0	0.0	0.5
Predators	3.7	1.8	2.8
Scavengers	19.4	2.6	0.9
Scrapers	5.9	11.6	24.5
Shredders	0.8	4.2	0.5
Surface Deposit Feeders	55.3	49.3	42.7
Suspension Feeders	14.8	30.2	20.2

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

Appendix A

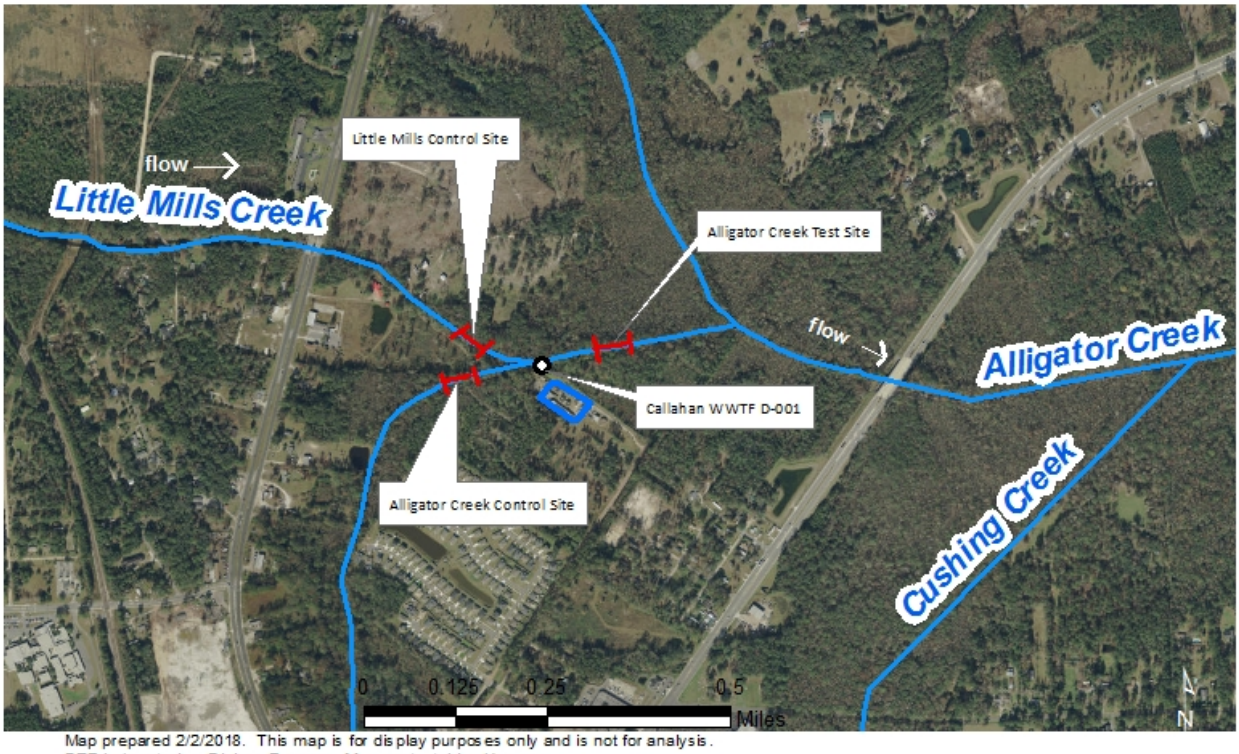
Map of Facility

Callahan WWTF
Nassau County, Florida

Fifth Year Bioassessment Sampling Locations







Map prepared 2/2/2018. This map is for display purposes only and is not for analysis.
DEP Laboratories, Biology Program. Map contact: Lisa Homann

Appendix B

Facility Summary

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event

Prepared By: Nick Williams	**Contact Number:** (904) 256-1608
Facility Name (as it appears on permit): Callahan WWTF	**Former Names:** N/A
NPDES Permit Number: FL0038407	**Permit Expiration Date:** February 21, 2018
Physical Address: 618628 Dr. Martin Luther King Jr Avenue, Callahan, Florida 32001	
District: Northeast	**County:** Nassau
Function of Facility: Domestic wastewater treatment plant	
Facility Type: Domestic Wastewater	**Permitted Capacity (MGD):** 0.5
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): April 2016 – March 2017 D-001 – 0.141 MGD	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months): N/A	
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): EFD-1 Sample point after dechlorination and prior discharge to the creek. CAL-1 Calculated value. EFA-1 Sample point immediately after disinfection. SWB-1 Sample point approximates 300 ft upstream of the outfall D-001 in the Alligator Creek. (Approximately at latitude 30º 34' 29.9" N, longitude 81º 49' 47.6" W.) SWB-2 Sample point approximates 300 ft upstream of the outfall D-001 in the Little Mills Creek. (Approximately at latitude 30º 34' 31.9" N, longitude 81º 49' 48.5" W.) SWD-2 Sample point approximates 300 ft downstream of the outfall D-001 in the Alligator Creek. (Approximately at latitude 30º 34' 31.7" N, longitude 81º 49' 39.3" W.)	
Description of Permitted Outfall(s): D-001 – Discharge to Alligator Creek, Class III fresh waters, (WBID# 2153). The point of discharge is located approximately at latitude 30° 34' 30" N, longitude 81° 49' 42" W.	
Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility): Advanced wastewater treatment facility consisting of: • A headwork structure which includes: ◦ A static screen having a minimum capacity of 1,500 gpm; the screen panel is 120 inches wide by 54 inches long as measured on the 80 inche radius and having 0.10 inch screen openings; ◦ A 5,907-gallon aerated grit chamber; ◦ A flow splitting structure. • A biological treatment unit which includes a 0.113-million gallon (Mgal) anoxic basin to be mixed by one	

4.8 HP submersible mixer and 0.591-Mgal Carrousel basin to be aerated by two 40 HP units.

- Two new center-feed, peripheral draw secondary clarifiers; each clarifier is 35 ft in diameter and with a 15 ft in side water depth.

- A new disc-filter that includes 6 discs using woven polyester as the filter media with a total filter area of 224 ft^2, providing a hydraulic loading rate of 4.65 gpm/ft^2.
- A chlorine contact chamber (24,200 gallons)
- A new in-plant lift station.
- A chemical feed facilities for TSS and phosphorous removal.
- An aerobic digester which is 45 ft in diameter, 12 ft side water depth, 0.1422 Mgal.
- Mechanical dewatering equipment.

PART I: Continued

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

			Effluent Limitations				Monitoring Requirements			
Parameter	Units	Max/Min	Annual Average	Monthly Average	Weekly Average	Single Sample	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes
Flow	MGD	Max	0.499	Report			5 Days/Week	Recording Flow Meter with Totalizer	EFD-1	See I.A.3
Percent Capacity, (TMADF/Permitted Capacity) x 100	Percent	Max		Report			Monthly	Calculated	CAL-1	
BOD, Carbonaceous 5 day, 20C	mg/L	Max	5.0	6.25	7.5	10.0	Bi-weekly; every 2 weeks	8-hr FPC	EFD-1	
Solids, Total Suspended	mg/L	Max	5.0	6.25	7.5	10.0	Bi-weekly; every 2 weeks	8-hr FPC	EFD-1	
pH	s.u.	Min				6.0	5 Days/Week	Grab	EFD-1	
		Max				8.5				
Coliform, Fecal	#/100mL	Max	200	200		800	Bi-weekly; every 2 weeks	Grab	EFD-1	See I.A.4
Oxygen, Dissolved (DO)	mg/L	Min				6.0	5 Days/Week	Meter	EFD-1	

Chlorine, Total Residual (For Disinfection)	mg/L	Min				0.5	5 Days/Week	Grab	EFA-1	See I.A.5
Chlorine, Total Residual (For Dechlorination)	mg/L	Max				0.01	5 Days/Week	Grab	EFD-1	
Nitrogen, Ammonia, Toltal (as N)	mg/L	Max				Report	Bi-weekly; every 2 weeks	8-hr FPC	EFD-1	
Nitrogen, Ammonia, Total Unionized (as N)	mg/L	Max				0.02	Bi-weekly; every 2 weeks	Calculated	CAL-1	
Temperature (°C), Water	Deg °C	Max				Report	Bi-weekly; every 2 weeks	Meter	EFD-1	
Nitrogen, Kjeldahl, Total (as N)	mg/L	Max	Report			Report	Quarterly	8-hr FPC	EFD-1	
Nitrogen, Organic, Total (as N)	mg/L	Max	Report			Report	Quarterly	8-hr FPC	EFD-1	
Nitrogen, Total	mg/L	Max	3.0	3.75	4.5	6.0	Bi-weekly; every 2 weeks	8-hr FPC	EFD-1	
Nitrogen, Total	Lbs/yr Lbs/month	Max	Report	Report			Monthly	Calculated	CLA-1	
Phosphorus, Total (as P)	mg/L	Max	1.0	1.25	1.5	2.0	Bi-weekly; every 2 weeks	8-hr FPC	EFD-1	

Phosphorus, Total (as P)	Lbs/yr Lbs/month	Max	Report	Report			Monthly	Calculated	CAL-1	
Phosphate, Ortho (as P)	mg/L	Max	Report			Report	Quarterly	Grab & Filtered	EFD-1	
Chronic Whole Effluent Toxicity, 7-Day IC25 (Ceriodaphnia	percent	Min				100	Semi-Annually; twice per year	24-hr FPC	EFD-1	See I.A.6
Chronic Whole Effluent Toxicity, 7-Day IC25 (Pimephales	Percent	Min				100	Semi-Annually; twice per year	24-hr FPC	EFD-1	See I.A.6
Oxygen, Dissolved (DO)	mg/L	Max				Report	Quarterly	Grab	SWU-1 SWU-2 SWD-2	See I.A.10
pH	s.u.	Max				Report	Quarterly	Grab	SWU-1 SWU-2 SWD-2	See I.A.10
Temperature (ºC), Water	Deg °C	Max				Report	Quarterly	Grab	SWU-1 SWU-2 SWD-2	See I.A.10
Coliform, Fecal	#/100mL	Max				Report	Quarterly	Grab	SWU-1 SWU-2 SWD-2	See I.A.4 See I.A.10
Biochemical Oxygen Demand-5	mg/L	Max				Report	Quarterly	Grab	SWU-1 SWU-2 SWD-2	See I.A.10
Solids, Total Suspended	mg/L	Max				Report	Quarterly	Grab	SWU-1 SWU-2 SWD-2	See I.A.10

Nitrogen, Ammonia, Total (as N)	mg/L	Max				Report	Quarterly	Grab	SWU-1 SWU-2 SWD-2	See I.A.10
Nitrogen, Kjeldahl, Total (as N)	mg/L	Max				Report	Quarterly	Grab	SWU-1 SWU-2 SWD-2	See I.A.10
Total Nitrogen (as N)	mg/L	Max				Report	Quarterly	Grab	SWU-1 SWU-2	
Total Nitrogen (as N)	mg/L	Max		Report		Report	Quarterly	Grab	SWD-2	See I.A.13
Phosphorus, Total (as P)	mg/L	Max		Report		Report	Quarterly	Grab	SWD-2	See I.A.13
Phosphorus, Total (as P)	mg/L	Max				Report	Quarterly	Grab	SWU-1 SWU-2	See I.A.10
Phosphate, Ortho (as P)	mg/L	Max				Report	Quarterly	Grab	SWU-1 SWU-2 SWD-2	See I.A.10

PART I: Continued

Receiving Waters:	Classification (indicate whether fresh or marine):
Alligator Creek	Class III Fresh Water

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

a. Effluent Limitation

(1) Whole effluent chronic toxicity shall not result in an Inhibition Concentration 25% (IC25) less than 100% effluent in any test. [Rule 62-4.241(1)(b), F.A.C.]

(2) Whole effluent acute toxicity shall not result in a 96-hour LC50 less than 100% effluent inany test. [Rule 62-4.241(1)(a), F.A.C.]

b. Monitoring Frequency

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

c. Sampling Requirements

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

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

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

d. Test Requirements

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

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

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

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

e. Quality Assurance Requirements

(1) A standard reference toxicant (SRT) quality assurance (QA) chronic toxicity test shall be conducted with each species used in the required toxicity tests either concurrently or initiated no more than 30 days before the date of each routine or additional follow-up test conducted. Additionally, the SRT test must be conducted concurrently if the test organisms are obtained from outside the test laboratory unless the test organism supplier provides control chart data from at least the last five monthly chronic toxicity tests using the same reference toxicant and test conditions. If the organism supplier provides the required SRT data, the organism supplier's SRT data and the test laboratory's monthly SRT-QA data shall be included in the reports for each companion routine or additional follow-up test required.

(2) If the mortality in the control (0% effluent) exceeds 20% for either species in any test or any other 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 the calculated IC25 for each test species.

(2) A bioassay laboratory report for the routine test shall be prepared according to EPA-821-R- 02-013, Section 12, Report Preparation and Test Review, and **e-mailed** or 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 for both tests shall be prepared according to EPA-821-R-02-013, Section 12, and mailed or ***e-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 mailed or ***e-mailed*** within 30 days to Jacksonville ***only***:

Florida Department of Environmental Protection
Northeast District Office – Domestic Wastewater Section
8800 Baymeadows Way West, Suite 100
Jacksonville, Florida 32256

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.

(b) The first test shall be initiated within 28 days after the last day of the failed routine test. The remaining additional follow-up tests shall be conducted weekly thereafter until a total of two valid additional follow-up tests are completed.

(c) The additional follow-up tests 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 additional follow-up tests to more accurately bracket the toxicity such that at least two dilutions above and two dilutions below the target concentration and a control 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.

(g) 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.):

1) Administrative Order 161 NE was executed on February 22, 2013
   - Sets a more stringent limit for chronic WET and IC25
   - Time limit of 40 months after permit issue date to enter compliance
2) Consent Order 12-1648 was executed on December 3, 2012.
   - Due to Total Nitrogen and Total Unionized Ammonia exceedances
   - All corrective actions due by July 1, 2014
   - Closure letter sent on August 15, 2014

Facility Mixing Zone Details (if applicable):

Facility is not currently granted a mixing zone.

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

Date	Parameter and Units	Limit	Result
12/31/2016	Total Unionized Ammonia (mg/L)	0.02	0.29
12/31/2016	Total Nitrogen (mg/L)	6.0	22
12/31/2016	Total Nitrogen (mg/L)	3.75	11.47
11/30/2016	CBOD 5day/20C (mg/L)	6.25	9.2
11/30/2016	CBOD 5day/20C (mg/L)	10.0	24
11/30/2016	Total Unionized Ammonia (mg/L)	0.02	0.83
11/30/2016	Total Nitrogen (mg/L)	3.75	12.96
11/30/2016	Total Nitrogen (mg/L)	6.0	35
11/30/2016	Total Phosphorus (mg/L)	2.0	4.9
11/30/2016	Total Phosphorus (mg/L)	1.25	2.01
8/31/2016	Total Phosphorus (mg/L)	2.0	8.87
2/29/2016	Total Unionized Ammonia (mg/L)	0.02	0.042

Describe previous FYI and WQBEL study:

3/5/2012 – CSI/XSI/WQI – significant out-of-compliance due to Total N

Describe previous or current Enforcement Actions (including WLs):

No open enforcement actions. Previous enforcement actions include WLs issued on 4/16/2012 for Total Nitrogen exceedances and 10/10/2012 for Total Nitrogen and Total Unionized Ammonia. Both lead to SFCOs and the facility paid a penalty.

Describe any violations or problems noted in previous inspection:

Most recent CEI completed on 9/26/2013 found no site issues other than existing Total N exceedance.

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

Facility has had spikes for Total Nitrogen and CBOD over the five-year period but there does not appear to any overall improvement or decline. Values are relatively stable baring some exceedances for certain parameters.

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

N/A

PART II: Sampling Event Information	
Date(s) sample collected: 6/5/17, 6/7/17, & 6/9/17	**Sampler(s):** Nick Williams, Ed Jamro, & Brittany Dion
Temperature (Deg C): 27.2, 26.1, & 35.4	**pH (SU):** 7.09, 7.29, & 7.26
Dissolved Oxygen (mg/L): 8.0, 6.7, & 9.9	**Conductivity (umhos/cm):** 767, 760, & 695
Total Residual Chlorine (mg/L): Not Recorded	**Total Residual Chlorine - after Disinfection (mg/L):** Not Recorded
Method of Chlorination: Chlorine Gas	**Method of De-chlorination:** Sulfur Dioxide
Flow During Sample Collection for each outfall(MGD): 0.104 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): 0.139 MGD	
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: N/A	

Appendix C

Explanation of Measurements

(1) Quality Assurance and Quality Control

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

(2) Chemical Analyses of the Effluent

The effluent was analyzed for nutrients, metals, organic constituents (base, neutral, and acid extractables) and pesticides following DEP SOPs. The results from these analyses were compared with Water Quality Criteria (62-302, F.A.C.) and facility permit limits.

(3) Toxicity Bioassays

Greater than 50% mortality in an acute toxicity test may constitute an exceedance of 62-302.500(1)a and/or facility permit limits. A 25% inhibition concentration (IC25) is the effluent concentration causing a 25% reduction in a biological response such as biomass or reproduction when compared to a control population. An IC25 of less than 100% in a chronic test may constitute exceedances of 62-302.530(20), 62-302.530(61) and/or facility permit limits. A no observed effect concentration (NOEC) less than 100% effluent in a chronic test may constitute an exceedance of 62-302.530(61) and/or facility permit limits. Standard reference toxicant (SRT) tests are conducted monthly to ensure quality in toxicity testing.

(4) Bacteriological Testing

High levels of fecal coliform bacteria may constitute an exceedance of 62-302.530(6) and/or facility permit limits. Fecal coliform and enterococci results often are based on colony counts outside the acceptable range (B-qualifier). The dilutions performed on the sample did not yield results within the method acceptable range of 20-60 colony forming units per plate. The B-qualifier does not affect data quality.

(5) Habitat Assessment

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

(6) Algal Growth Potential (AGP)

The algal growth potential (AGP) value is the peak growth of the alga within that 14-day period, recorded as mg dry weight/L. Raschke and Shultz (1987) found that an AGP above 5.0 mg dry weight/L represents a “problem” threshold for fresh receiving waters, implying nutrient enrichment. High AGP values may constitute exceedances of 62-302.530(46), F.A.C., 62-302.530(47)(a), F.A.C. and/or 62-302.530(47)(b), F.A.C..

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

nitrogen limitation of algal production is likely. When the N: P ratio is 20:1 or greater, phosphorus limitation is likely (USEPA 2000). For ratios in-between, co-limitation may occur. Production of lower biomass than expected may be evidence of growth inhibition related to toxic compounds present in the water sample tested and may constitute an exceedance of 62-302.530(61), F.A.C.

(7) Benthic Macroinvertebrate Assemblages

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

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

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

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

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

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

(8) Rapid Periphyton Survey

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

(9) Linear Vegetation Survey

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

(10) Definition of Qualifiers

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

Appendix D

Chain of Custody

06-05-31

Request Number: RQ-2017-~~12-04-38~~ PO

Gville Make up

Florida Department of Environmental Protection

Central Laboratory Submittal Form

Page 1 of 3

last revised Apr 7, 2016

Customer: NE-DIST

Project ID: SMP

Requester: Nicole Frederick

Collected By: B DAUS, P O'Connor

Field Report Prepared By: P. O'Connor

Sampling Agency: DEAR NED ROC

Location

Field ID: G1NE000106052017

Field ID: Little Mills Creek 400m below USI

STORET: G1NE0001

STORET

Latitude ☐ dd ☐ dms | Longitude ☐ dd ☐ dms

☐ Comp ☒ Grab | Collection (comp begin or grab) Date 06-05-17 Time 1050 | Eastern Central | Composite end Date Time | Bottle Group(s) (See pg 2): C+D

Matrix (type, e.g., Salt, Fresh, etc): Surface Water Fresh | Diss. Oxygen 1.59 ☐ mg/L ☐ % sat | Total Res. Chlorine (mg/L)

Temp (C) 24.0 | pH 7.45 | Sample Depth 0.1 ☐ ft ☒ m | Sp. Conductance (umho/cm) 596

Salinity (ppt) 0.29 | Comments DO% 18.1

Location

Field ID: G4NE028406052017

Field ID

STORET #: Alligator Creek above Callahan WWTP POD

STORET: G4NE0284

Latitude ☐ dd ☐ dms | Longitude ☐ dd ☐ dms

☐ Comp ☒ Grab | Collection (comp begin or grab) Date 06-05-17 Time 1120 | Eastern Central | Composite end Date Time | Bottle Group(s): C+D

Matrix (type, e.g., Salt, Fresh, etc): Surface Water Fresh | Diss. Oxygen 5.02 ☒ mg/L ☐ % sat | Total Res. Chlorine (mg/L)

Temp (C) 24.5 | pH 7.7 | Sample Depth 0.2 ☐ ft ☒ m | Sp. Conductance (umho/cm) 188

Salinity (ppt) 0.09 | Comments DO% 60.2

Location

Field ID: G4NE028306052017

Field ID

STORET #: Alligator Creek below Callahan WWTP POD

STORET: G4NE0283

Latitude ☐ dd ☐ dms | Longitude ☐ dd ☐ dms

☐ Comp ☒ Grab | Collection (comp begin or grab) Date 06-05-17 Time 1240 | Eastern Central | Composite end Date Time | Bottle Group(s): C+D

Matrix (type, e.g., Salt, Fresh, etc): Surface Water Fresh | Diss. Oxygen 5.35 ☒ mg/L ☐ % sat | Total Res. Chlorine (mg/L)

Temp (C) 25.65 | pH 7.67 | Sample Depth 0.1 ☐ ft ☒ m | Sp. Conductance (umho/cm) 350

Salinity (ppt) | Comments DO% 65.9

Location

Field ID

STORET #

Latitude ☐ dd ☐ dms | Longitude ☐ dd ☐ dms

☐ Comp ☐ Grab | Collection (comp begin or grab) Date Time | Eastern Central | Composite end Date Time | Bottle Group(s)

Matrix (type, e.g., Salt, Fresh, etc) | Diss. Oxygen ☐ mg/L ☐ % sat | Total Res. Chlorine (mg/L)

Temp (C) | pH | Sample Depth ☐ ft ☐ m | Sp. Conductance (umho/cm)

Salinity (ppt) | Comments

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
P O'Connor	06-05-17	Fed Ex	3		

Request Number: RQ-2017-06-05-31

FYI5 Callahan WWTF Sampling Inspection

Customer: NE-DIST

Project ID: FYI5

Florida Department of Environmental Protection
Central Laboratory Submittal Form

last revised Apr 7, 2016

Requester: Adrienne E. Pennington

Field Report Prepared By: Nick Williams

Collected By: Nick Williams, Ed Jamro

Sampling Agency: FDEP

Location: Callahan Effluent	☐ Comp ☒ Grab	Collection (comp begin or grab) Date 6/5/17 Time 12:00	Eastern / Central	~~Composite end~~ Date Time	Bottle Group(s) (See pg 2): A/B				
Field ID	Matrix (type, e.g., Salt, Fresh, etc): Fresh	Diss. Oxygen 8.0 ☒ mg/L ☐ % sat	~~Total Res. Chlorine~~ (mg/L)						
STORET #	Temp (C) 27.2	pH 7.09	Sample Depth <1 ft ☒ ft ☐ m	Sp. Conductance (umho/cm) 767					
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt) 0.37	Comments: all samples were grab/no comp						
Location: Field Blank	☐ Comp ☐ Grab	Collection (comp begin or grab) Date 6-5-17 SR 6-6-17 Time 11:00 SR 6-6-17	Eastern / Central	Composite end Date Time	Bottle Group(s): E				
Field ID: DI Water	Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)						
STORET #	Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)					
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments						
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern / Central	Composite end Date Time	Bottle Group(s)				
Field ID	Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)						
STORET #	Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)					
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments						
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern / Central	Composite end Date Time	Bottle Group(s)				
Field ID	Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)						
STORET #	Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)					
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments						

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
Nick Williams	6/5/17 13:15	FDEX	4	SR	6-6-17 9:45

2 jugs for tox
6.6.17 1011 MP

Request Number: RQ-2017-06-05-31

FYI5 Callahan WWTF Sampling Inspection

Florida Department of Environmental Protection
Central Laboratory Submittal Form

last revised Apr 7, 2016

Customer: NE-DIST

Project ID: FYI5

Requester: Adrienne E. Pennington

Collected By: Nick Williams, Brittany Dion

Field Report Prepared By: Nick Williams

Sampling Agency: FDEP

Location: Callahan Effluent	☐ Comp ☒ Grab	Collection (comp begin or grab) Date 6/7/17 Time 10:00	Eastern / Central	~~Composite end~~ Date Time	Bottle Group(s) (See pg 2): B					
Field ID	Matrix (type, e.g., Salt, Fresh, etc): Fresh	Diss. Oxygen: 6.68 ☒ mg/L ☐ % sat	~~Total Res. Chlorine~~ (mg/L)							
STORET #	Temp (C): 26.1	pH: 7.2	Sample Depth: 3 ☒ ft ☐ m	Sp. Conductance (umho/cm): 760						
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt): 0.39	Comments: all grab, no comp							
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern / Central	Composite end Date Time	Bottle Group(s)					
Field ID	Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)							
STORET #	Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)						
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments							
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern / Central	Composite end Date Time	Bottle Group(s)					
Field ID	Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)							
STORET #	Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)						
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments							
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern / Central	Composite end Date Time	Bottle Group(s)					
Field ID	Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)							
STORET #	Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)						
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments							

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
	6/7/17 1115	FEDEX	1	Tyler Reynolds	6/08/17 @ 10:00

V2 Tox order #qs for 6.8.17 1023

last revised Apr 7, 2016

Request Number: RQ-2017-06-05-31

FYI5 Callahan WWTF Sampling Inspection

Customer: NE-DIST

Project ID: FYI5

Florida Department of Environmental Protection
Central Laboratory Submittal Form

Requester: Adrienne E. Pennington

Collected By: Nick Williams, Brittany Dion

Field Report Prepared By: Nick Williams

Sampling Agency: FDEP

Location: Callahan Effluent	☐ Comp ☒ Grab	Collection (comp begin or grab) Date: 6/9/17 Time: 10:00	Eastern Central	~~Composite end~~ Date	Time	Bottle Group(s) (See pg 2): B					
Field ID	Matrix (type, e.g., Salt, Fresh, etc): Fresh		Diss. Oxygen: 9.97	☒ mg/L ☐ % sat	~~Total Res. Chlorine~~ (mg/L)						
STORET #	Temp (C): 25.3	pH: 7.26	Sample Depth: 1	☒ ft ☐ m	Sp. Conductance (umho/cm): 695						
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt): 0.34	Comments: all Grab, no comp								
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date	Time	Bottle Group(s)					
Field ID	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)						
STORET #	Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)						
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments								
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date	Time	Bottle Group(s)					
Field ID	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)						
STORET #	Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)						
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments								
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date	Time	Bottle Group(s)					
Field ID	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)						
STORET #	Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)						
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments								

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
	6/9/17 11:20	Fedex	2		6.10.17 0903

✓ 2 coolers red cooler 1.5°C blue cooler 1.4°C/1.7°C J.D. 6/12/17 9:55

ALS Environmental

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

SR# J1703871

CAS Contract

9143 Phillips Highway, Ste 200 • Jacksonville, FL 32256 (904) 739-2277 • 800-695-7222 x06 • FAX (904) 739-2011 PAGE _____ OF _____

Project Name: Callahan FYIS	Project Number: RQ-2017-06-05-31
Project Manager: Nick Williams	Email Address: ~~Nick~~ nick.williams@dep.state.fl.us
Company/Address: FDEP Jax Office	
Phone #: 904-256-1608	FAX #
Sampler's Signature: Nick Williams	Sampler's Printed Name: Nick Williams

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE

NUMBER OF CONTAINERS

Fecal Coliform

J1703871 5
Florida Department of Environmental Protection
Callahan FYIS

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

REMARKS/ ALTERNATE DESCRIPTION

CLIENT SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	Fecal Coliform	REMARKS/ ALTERNATE DESCRIPTION
NFO-COL-FC		6/5/17	11:10	WW	2	X	

SPECIAL I NSTRUCTIONS/COMMENTS

See QAPP ☐ 8.6°C Sample received on ice directly from the field

SAMPLE RECEIPT: CONDITION/COOLER TEMP: CUSTODY SEALS: Y N

TURNAROUND REQUIREMENTS
___ RUSH (SURCHARGES APPLY)
X STANDARD
REQUESTED FAX DATE
REQUESTED REPORT DATE

REPORT REQUIREMENTS
___ I. Results Only
___ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
___ III. Results + QC and Calibration Summaries
___ IV. Data Validation Report with Raw Data
___ V. Specialized Forms / Custom Report
Edata ___ Yes ___ No

INVOICE INFORMATION
PO #
BILL TO:

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Nick Williams	Signature: [signature]	Signature	Signature	Signature	Signature
Printed Name: FDEP	Printed Name: [signature]	Printed Name	Printed Name	Printed Name	Printed Name
Firm: Nick Williams	Firm: ALS	Firm	Firm	Firm	Firm
Date/Time: 6/5/17 13:05	Date/Time: 6.5.17 1730	Date/Time	Date/Time	Date/Time	Date/Time

Distribution: White - Return to Originator; Yellow - Retained by Client

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Appendix E

Physical/Chemical and Habitat Assessment field sheets

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

SAMPLE ID _____ ORG ID _____ LATITUDE _____
COUNTY NASSAU STORET # GINE0001 LONGITUDE _____
DATE 06-05-17 TIME 1050 SAMPLING AGENCY DEAR NED ROC
SITE NAME Little Mills Creek below US1
FIELD ID/NAME _____ RECEIVING BODY OF WATER Alligator Creek

RIPARIAN ZONE / STREAM FEATURES Meter ID: QUANTA #1

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

Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industry	Other (Specify)
20		40	20	20			

Landscape Development Intensity Index (LDI): _____

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

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

Hydrologic Modification Score (per FT 3101) _____

High Water Mark: 0.3 (m) + 0.2 (above present water level) = 0.5 (present depth) (above bed)

Artificially Impounded ☐ Yes ☒ No

Typical Width (m) Depth (m)/Velocity (m/sec) Transect
1.5 m wide
_____ m/s 0.15 m/s _____ m/s
_____ m deep 0.2 m deep _____ m deep

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

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

SEDIMENT / SUBSTRATE

Sediment Oils ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse

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

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

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

	% Coverage	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)	5		
Undercut Banks / Roots			
Leaf Packs or Mat			
Aquatic Vegetation			
Rock or Shell Rubble..			
Sand.....	85		
Mud / Muck / Silt	10		
Other			
Other			

WATER QUALITY

	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
Top :								VOB 0.25
Mid:	0.1	24.0	7.45	1.59	18.1	596	0.29	TOTAL DEPTH
Bottom								0.2

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

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

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

Water Sample Taken? ☒ Yes ☐ No
Sample Preserved? ☒ Yes ☐ No
Lot Number: 7090310 Exp: 04-03-18

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

Algae Sample Taken? ☐ Yes ☒ No
Sample Preserved? ☐ Yes ☐ No
Lot Number: ~~7090310~~ Exp: ~~04-03-18~~ PO

Clarity Clear ☒ Slightly Turbid ☐ Turbid ☐ Opaque ☐

ABUNDANCE

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

AMBIENT FIELD CONDITIONS / NOTES:
Very Little flow Lot # HRSOY 7090310
MAY have been Dry before Recent RAIN
Hydrologic Disturbance Scoring ☐ 1-2 ☐ 3-4 ☐ 5-6 ☐ 7-8 ☐ 9-10
☐ The antecedent hydrologic conditions have been met to my best knowledge.

SAMPLING TEAM OConnor SIGNATURE OConnor

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

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

SAMPLING AGENCY: NE ROC		STORET STATION NUMBER: GI NE0001	DATE (MMDDYY): 06-05-17	RECEIVING BODY OF WATER: ~~Mill~~ Alligator Cr
REMARKS:	COUNTY: NASSAU	LOCATION: Little Mills Cr 400m below US1		FIELD ID/NAME:

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 5	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 12 11	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed 10 9 8 7 6	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered. 5 4 3 2 1
Substrate Availability 5	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 8 7 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity 10	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25 20 19 18 17 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.01 5 4 3 2 1
Habitat Smothering 10 Primary Score 30	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 15 14 13 12 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components **Artificial Channelization** 10	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks. 20 19 18 17 16	Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered. 15 14 13 12 11	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area. 10 9 8 7 6	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks. 5 4 3 2 1
Bank Stability Right Bank 5 Left Bank 5	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankful to top of bank. Bankfull is within or above the root zone with few raw, eroded areas. 10 9	Only meets 2 of the 3 requirements for optimal bank stability. 8 7 6	Only meets 1 of the 3 requirements for optimal bank stability. 5 4	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank 8 Left Bank 10	Width of vegetation greater than 18 m 10 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities close to system 5 4	Less than 6 m of buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank 10 Left Bank 10 Secondary Score ~~88~~ 58	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance. 10 9	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. 8 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

88 **TOTAL SCORE**

Date: 06-05-17	Analyst: PO'Connor	Signature: Patrick O'Connor

62-160.800, F.A.C.

Revision Date. March 1, 2014

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site:	County:	Date:	Investigators:
Little Mills Creek below US1	NASSAU	06-05-17	POConnor

STORET Station Number: 9INE0001

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
0	1	N		
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
10	1	N		
	2			
	3			
	4			
	5			88
	6			
	7			
	8			
	9			
20	1	N		
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
30	1	N		
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
40	1	N		
	2			
	3			
	4			
	5			82
	6			
	7			
	8			
	9			
50	1	N		
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
60	1	N		
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
70	1	N		
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
80	1	N		
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
90	1	N		
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
100	1	N		
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			

Secchi depth	0.2
Estimated?	✓

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

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

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

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

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

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

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

62-160.800, F.A.C.

Revision Date: March 1, 2014

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

Waterbody: Little Mills Creek 400m bel. US1 | Date: 06-05-1 | County: NASSAU | Storet Number: G INE001

Analyst: P O'Connor | Signature: Patricia Connor

Comments:

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

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

HERBACEOUS SPECIES	Meter Mark 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Micranthemum glomeratum											
Micranthemum umbrosum											
Myriophyllum aquaticum											
Najas guadelupensis											
Nuphar luteum											
Orontium aquaticum											
Panicum hemitomon											
Panicum repens											
Panicum rigidulum											
Pistia stratioides											
Polygonum glabra											
Polygonum hydropiperoides											
Polygonum punctatum											
Pontedaria cordata											
Potamogeton illinoensis											
Ruellia simplex											
Sacciolepis striata											
Sagittaria kurziana											
Sagittaria lancifolia											
Sagittaria latifolia											
Salvinia minima											
Samolus parviflora											
Saururus cernuus											
Sparganium americanum											
Typha											
Vallisneria americana											
Zizania aquatica											
NO AQUATIC											
VEGETATION											

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

SAMPLE ID _____ ORG ID _____ LATITUDE _____
COUNTY NASSAU STORET # G4NE0284 LONGITUDE _____
DATE 06-05-17 TIME 1120 SAMPLING AGENCY DEAR NED ROC
SITE NAME Alligator Creek @ 100 M Above CALLAHAN WWTP POD
FIELD ID/NAME _____ RECEIVING BODY OF WATER Mills Creek

RIPARIAN ZONE / STREAM FEATURES

Meter ID: QUANTA #1

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

Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industry	Other (Specify)
35				40	25		

Landscape Development Intensity Index (LDI):

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

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

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

Hydrologic Modification Score (per FT 3101):

High Water Mark: 0.7 (m) + 0.3 (above present water level) = 1.0 (present depth) (above bed)

Artificially Impounded ☐ Yes ☒ No

Typical Width (m) Depth (m)/Velocity (m/sec) Transect
3 m wide
m/s | 0.15 m/s | m/s
m deep | 0.3 m deep | m deep

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

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

SEDIMENT / SUBSTRATE

Sediment Oils ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse

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

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

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

	% Coverage	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)	10		
Undercut Banks / Roots	2		
Leaf Packs or Mat			
Aquatic Vegetation			
Rock or Shell Rubble..			
Sand.....	80		
Mud / Muck / Silt	8		
Other			
Other			

ABUNDANCE

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

WATER QUALITY

	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
Top :								0.35 VOB
Mid:	0.2	24.5	7.71	5.02	60.2	188	0.09	TOTAL DEPTH
Bottom								0.3

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

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

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

Water Sample Taken? ☒ Yes ☐ No
Sample Preserved? ☒ Yes ☐ No
Lot Number: 1093010 Exp: 04-03-18

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

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

Clarity Clear ☒ Slightly Turbid ☐ Turbid ☐ Opaque ☐

AMBIENT FIELD CONDITIONS / NOTES:
This portion of Creek MAY be TIDAL

Hydrologic Disturbance Scoring ☐ 1-2 ☐ 3-4 ☐ 5-6 ☐ 7-8 ☐ 9-10

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

SAMPLING TEAM PO'Connor SIGNATURE PO'Conn

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

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

SAMPLING AGENCY: NE ROC		STORET STATION NUMBER: GNE0284	DATE (MM/DD/YY): 06-05-17	RECEIVING BODY OF WATER: Mills Cr.
REMARKS:	COUNTY: NASSAU	LOCATION: Alligator Cr Above POD		FIELD ID/NAME:

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 9	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 12 11	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed 10 9 8 7 6	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered 5 4 3 2 1
Substrate Availability 8	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 8 7 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity 13	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25 20 19 18 17 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.01 5 4 3 2 1
Habitat Smothering 11 Primary Score 41	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 15 14 13 12 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components **Artificial Channelization** 10	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks. 20 19 18 17 16	Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered. 15 14 13 12 11	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area. 10 9 8 7 6	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks. 5 4 3 2 1
Bank Stability Right Bank 5 Left Bank 5	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankful to top of bank. Bankfull is within or above the root zone with few raw, eroded areas. 10 9	Only meets 2 of the 3 requirements for optimal bank stability. 8 7 6	Only meets 1 of the 3 requirements for optimal bank stability. 5 4	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank 10 Left Bank 10	Width of vegetation greater than 18 m 10 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities close to system 5 4	Less than 6 m of buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank 10 Left Bank 10 Secondary Score 60	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance. 10 9	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. 8 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

101 **TOTAL SCORE**

Date: 06-05-17	Analyst: PO'Connor	Signature: PO'Connor

62-160.800, F.A.C.

Revision Date: March 1, 2014

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Alligator Creek Above POD | County: NASSAU | Date: 06-05-17 | Investigators: PO Connor

STORET Station Number: G4NE0284

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
0	1	2		
	2	2		
	3	2		
	4	2		
	5	3		86
	6	2		
	7	3		
	8	3		
	9	3		
10	1	3		
	2	3		
	3	3		
	4	2		
	5	N		92
	6	N		
	7	N		
	8	3		
	9	N		
20	1	N		
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
30	1	N		
	2			
	3			
	4			
	5			88
	6			
	7			
	8			
	9	3		
40	1	N		
	2			
	3			
	4			
	5			90
	6			
	7			
	8			
	9			
50	1	N		
	2			
	3			
	4			
	5			96
	6	3		
	7	N		
	8			
	9			
60	1	N		
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
70	1	N		
	2			
	3			
	4			
	5			80
	6			
	7			
	8			
	9			
80	1	N		
	2			
	3			
	4			
	5			90
	6			
	7			
	8			
	9			
90	1	4		
	2	N		
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
100	1	N		
	2			
	3			
	4			
	5			88
	6			
	7			
	8			
	9			

Secchi depth	0.3
Estimated?	

# points ranked 4-6	1
total points assessed	99
% points ranked 4-6	1

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

RQ-

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

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

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

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

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

62-160.800, F.A.C.

Revision Date: March 1, 2014

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

Waterbody: Alligator Creek Above POD | Date: 06054 | County: NASSAU | Storet Number: G4NE0284

Analyst: POOMA | Signature: POOMA

Comments: CALLAHAN WWTP FY15

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

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

HERBACEOUS SPECIES	Meter Mark 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Micranthemum glomeratum											
Micranthemum umbrosum											
Myriophyllum aquaticum											
Najas guadelupensis											
Nuphar luteum											
Orontium aquaticum											
Panicum hemitomon											
Panicum repens											
Panicum rigidulum											
Pistia stratioides											
Polygonum glabra											
Polygonum hydropiperoides											
Polygonum punctatum											
Pontedaria cordata											
Potamogeton illinoensis											
Ruellia simplex											
Sacciolepis striata											
Sagittaria kurziana											
Sagittaria lancifolia											
Sagittaria latifolia											
Salvinia minima											
Samolus parviflora											
Saururus cernuus											
Sparganium americanum											
Typha											
Vallisneria americana											
Zizania aquatica											
NO AQUATIC Vegetation											

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

SAMPLE ID _____ ORG ID 21 FLA _____ LATITUDE _____

COUNTY NASSAU STORET # G4NE0283 LONGITUDE _____

DATE 06-05-17 TIME 1240 SAMPLING AGENCY NE ROC

SITE NAME Alligator Cr. below CALLAHAN W/WTP POD

FIELD ID/NAME _____ RECEIVING BODY OF WATER _____

RIPARIAN ZONE / STREAM FEATURES

Meter ID:

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

Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industry	Other (Specify)
35				40	25		

Landscape Development Intensity Index (LDI):

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

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

Width of Riparian Vegetation (m) on Each Buffer Side

Left Bank : 6m Right Bank : 218m

Hydrologic Modification Score (per FT 3101):

High Water Mark: 0.8 (m) + 0.2 (above present water level) = 1.0 (present depth) (above bed)

Artificially Impounded ☐ Yes ☒ No

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

4-5 m wide

	m/s	0.15	m/s	m/s
m deep		0.2	m deep	m deep

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

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

SEDIMENT / SUBSTRATE

Sediment Oils ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse

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

Smothering of Substrates

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

SUBSTRATE TYPE

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

	% Coverage	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)	5		
Undercut Banks / Roots	<1		
Leaf Packs or Mat	<1		
Aquatic Vegetation			
Rock or Shell Rubble..			
Sand.....	15		
Mud / Muck / Silt	80		
Other			
Other			

ABUNDANCE

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

WATER QUALITY

	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
Top :								
Mid:	0.1	25.65	7.67	5.35	65.9	350		TOTAL DEPTH
Bottom								

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

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

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

Water Sample Taken? ☒ Yes ☐ No

Sample Preserved? ☒ Yes ☐ No

Lot Number: _____ Exp: _____

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

Algae Sample Taken? ☐ Yes ☒ No

Sample Preserved? ☐ Yes ☒ No

Lot Number: _____ Exp: _____

Clarity Clear ☐ Slightly Turbid ☒ Turbid ☐ Opaque ☐

AMBIENT FIELD CONDITIONS / NOTES:

Tidal Ditch

Hydrologic Disturbance Scoring ☐ 1-2 ☐ 3-4 ☐ 5-6 ☐ 7-8 ☐ 9-10

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

SAMPLING TEAM B Davis, PO'Connor

SIGNATURE :

62-160.800, F.A.C.

Revision Date: March 1, 2014

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

SAMPLING AGENCY: NE ROC		STORET STATION NUMBER: G4NE0283	DATE (MM/DD/YY): 06-05-17	RECEIVING BODY OF WATER: Mills Cr.
REMARKS: CALLAHAN WWTP FY15	COUNTY: NASSAU	LOCATION: Alligator Cr. ~~100m~~ 25 below POD		FIELD ID/NAME:

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 11	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 12 11	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed 10 9 8 7 6	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered 5 4 3 2 1
Substrate Availability 6	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 8 7 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity 12	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25 20 19 18 17 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.01 5 4 3 2 1
Habitat Smothering 11 Primary Score 40	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 15 14 13 12 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components **Artificial Channelization** 5	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks. 20 19 18 17 16	Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered. 15 14 13 12 11	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area. 10 9 8 7 6	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks. 5 4 3 2 1
Bank Stability Right Bank 4 Left Bank 4	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankful to top of bank. Bankfull is within or above the root zone with few raw, eroded areas. 10 9	Only meets 2 of the 3 requirements for optimal bank stability. 8 7 6	Only meets 1 of the 3 requirements for optimal bank stability. 5 4	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank 10 Left Bank 3	Width of vegetation greater than 18 m 10 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities close to system 5 4	Less than 6 m of buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank 10 Left Bank 3 Secondary Score 39	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance. 10 9	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. 8 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

79 TOTAL SCORE

Date: 06-05-17	Analyst: P O'Connor	Signature: Patricia M O'Connor

62-160.800, F.A.C.

Revision Date: March 1, 2014

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Alligator Cr. Below CALLAHAN RD | County: NASSAU | Date: 06-05-17 | Investigators: POConnor

STORET Station Number: G4NE0283

Transect (m)	Point 1=right	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
0	1	3		
	2	3		
	3	3		
	4	3		
	5	4		75
	6	N	✓	
	7	N	✓	
	8	N	✓	
	9	3		
10	1	3		
	2	3		
	3	4		
	4	3		
	5	3		85
	6	3		
	7	N	✓	
	8	N	✓	
	9	N	✓	
20	1	3		
	2	3		
	3	3		
	4	3		
	5	3		88
	6	3		
	7	N	✓	
	8	N	✓	
	9	N	✓	
30	1	3		
	2	3		
	3	3		
	4	N	✓	
	5	N	✓	90
	6	N	✓	
	7	3		
	8	3		
	9	3		
40	1	4		
	2	3		
	3	3		
	4	3		
	5	N	✓	70
	6	3		
	7	3		
	8	N	✓	
	9	N	✓	
50	1	3		
	2	3		
	3	2		
	4	3		
	5	3		80
	6	3		
	7	N	✓	
	8	N	✓	
	9	N	✓	

Transect (m)	Point 1=right	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
60	1	3		
	2	3		
	3	3		
	4	N	✓	
	5	N	✓	80
	6	3		
	7	3		
	8	3		
	9	3		
70	1	3		
	2	3		
	3	3		
	4	2		
	5	3		88
	6	N	✓	
	7	3		
	8	3		
	9	2		
80	1	3		
	2	3		
	3	4		
	4	4		
	5	N		78
	6	3		
	7	3		
	8	3		
	9	4		
90	1	3		
	2	4		
	3	3		
	4	N	✓	
	5	N	✓	60
	6	N	✓	
	7	4		
	8	3		
	9	3		
100	1	3		
	2	3		
	3	4		
	4	4		
	5	N	✓	70
	6	N	✓	
	7	5		
	8	3		
	9	3		

Secchi depth	0.4
Estimated?	
# points ranked 4-6	10
total points assessed	80
% points ranked 4-6	12.5

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

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

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

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

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

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

62-160.800, F.A.C.

Revision Date: March 1, 2014

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

Waterbody: Alligator Creek below POD | Date: 06-05-17 | County: NASSAU | Storet Number: G4NF0283

Analyst: P O'Connor | Signature: Patrick O'Connor

Comments: CAllAhAN WWTP EYES

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if ≥ m² of taxa present). Note in the boxes below if no dominant are selected, and note total macrophyte abundance rank for each section. Only the most common taxa are listed, so use blank spaces for additional taxa names.

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

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

< 2 m² Aquatic vegetation

Appendix F

Chemical analysis of effluent and receiving water

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
6/5/2017 12:00	Effluent Grab	AGP/LN	Algal Growth Potential	13.5	mg DryWt/L	0.3	0.9
6/5/2017 12:00	Effluent Grab	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.40 U	ug/L	0.4	1.2
6/5/2017 12:00	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	1.1 I	ug/L	0.4	1.2
6/5/2017 12:00	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	1.1 I	ug/L	0.55	1.7
6/5/2017 12:00	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll/Phaeophytin Ratio	1.8		0	0
6/5/2017 12:00	Effluent Grab	Metals	Copper	0.52 I	ug/L	0.2	0.8
6/5/2017 12:00	Effluent Grab	Metals	Arsenic	0.25	ug/L	0.05	0.2
6/5/2017 12:00	Effluent Grab	Metals	Potassium	9.6	mg/L	0.3	1.2
6/5/2017 12:00	Effluent Grab	Metals	Chromium	0.40 U	ug/L	0.4	1.6
6/5/2017 12:00	Effluent Grab	Metals	Magnesium	23.9	mg/L	0.04	0.16
6/5/2017 12:00	Effluent Grab	Metals	Zinc	35	ug/L	5	20
6/5/2017 12:00	Effluent Grab	Metals	Silver	0.010 U	ug/L	0.01	0.04
6/5/2017 12:00	Effluent Grab	Metals	Nickel	1.43	ug/L	0.2	0.8
6/5/2017 12:00	Effluent Grab	Metals	Lead	0.064 I	ug/L	0.05	0.2
6/5/2017 12:00	Effluent Grab	Metals	Cadmium	0.020 U	ug/L	0.02	0.08
6/5/2017 12:00	Effluent Grab	Metals	Iron	30 U	ug/L	30	120
6/5/2017 12:00	Effluent Grab	Metals	Selenium	0.20 U	ug/L	0.2	0.8
6/5/2017 12:00	Effluent Grab	Metals	Sodium	51.2	mg/L	0.5	2
6/5/2017 12:00	Effluent Grab	Metals	Calcium	63.3	mg/L	0.075	0.3
6/5/2017 12:00	Effluent Grab	Metals	Aluminum	116	ug/L	3	12
6/5/2017 12:00	Effluent Grab	Nutrients	Ammonia-N	0.021	mg N/L	0.002	0.005
6/5/2017 12:00	Effluent Grab	Nutrients	Total-P	0.097	mg P/L	0.005	0.05
6/5/2017 12:00	Effluent Grab	Nutrients	Fluoride	0.43	mg F/L	0.035	0.1
6/5/2017 12:00	Effluent Grab	Nutrients	Total Alkalinity	120 A	mg CaCO3/L	0.65	2.5
6/5/2017 12:00	Effluent Grab	Nutrients	NO2NO3-N	0.22	mg N/L	0.004	0.01
6/5/2017 12:00	Effluent Grab	Nutrients	Color (true)	5.8 I	PCU	2.5	6
6/5/2017 12:00	Effluent Grab	Nutrients	O-Phosphate-P	0.078	mg P/L	0.004	0.01
6/5/2017 12:00	Effluent Grab	Nutrients	Organic Carbon	5.2	mg C/L	0.5	1
6/5/2017 12:00	Effluent Grab	Nutrients	Kjeldahl Nitrogen	0.42	mg N/L	0.08	0.2
6/5/2017 12:00	Effluent Grab	Nutrients	Turbidity	0.45	NTU	0.1	0.1
6/5/2017 12:00	Effluent Grab	Nutrients	Sulfate	140 A	mg SO4/L	2	5
6/5/2017 12:00	Effluent Grab	Nutrients	Chloride	71 A	mg Cl/L	2	5
6/5/2017 12:00	Effluent Grab	Pesticides	Ametryn	0.0094 U	ug/L	0.0094	0.038
6/5/2017 12:00	Effluent Grab	Pesticides	Ethoprop	0.0047 U	ug/L	0.0047	0.019

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
6/5/2017 12:00	Effluent Grab	Pesticides	Malathion	0.0094 U	ug/L	0.0094	0.038
6/5/2017 12:00	Effluent Grab	Pesticides	Carbamazepine	0.018	ug/L	0.0004	0.0016
6/5/2017 12:00	Effluent Grab	Pesticides	Alachlor	0.057 U	ug/L	0.057	0.23
6/5/2017 12:00	Effluent Grab	Pesticides	Bromacil	0.038 U	ug/L	0.038	0.15
6/5/2017 12:00	Effluent Grab	Pesticides	Phorate	0.0047 U	ug/L	0.0047	0.019
6/5/2017 12:00	Effluent Grab	Pesticides	Acetaminophen	0.0080 U	ug/L	0.008	0.032
6/5/2017 12:00	Effluent Grab	Pesticides	Butylate	0.019 U	ug/L	0.019	0.076
6/5/2017 12:00	Effluent Grab	Pesticides	Chlorpyrifos Methyl	0.0094 U	ug/L	0.0094	0.038
6/5/2017 12:00	Effluent Grab	Pesticides	Fonofos	0.0094 U	ug/L	0.0094	0.038
6/5/2017 12:00	Effluent Grab	Pesticides	Metalaxyl	0.038 U	ug/L	0.038	0.15
6/5/2017 12:00	Effluent Grab	Pesticides	Metolachlor	0.057 U	ug/L	0.057	0.23
6/5/2017 12:00	Effluent Grab	Pesticides	Norflurazon	0.028 U	ug/L	0.028	0.11
6/5/2017 12:00	Effluent Grab	Pesticides	Simazine	0.0094 U	ug/L	0.0094	0.038
6/5/2017 12:00	Effluent Grab	Pesticides	Sucralose	40	ug/L	0.01	0.04
6/5/2017 12:00	Effluent Grab	Pesticides	Atrazine Desethyl	0.0094 U	ug/L	0.0094	0.038
6/5/2017 12:00	Effluent Grab	Pesticides	Chlorpyrifos Ethyl	0.0094 U	ug/L	0.0094	0.038
6/5/2017 12:00	Effluent Grab	Pesticides	Demeton	0.023 U	ug/L	0.023	0.091
6/5/2017 12:00	Effluent Grab	Pesticides	Ethion	0.0094 U	ug/L	0.0094	0.038
6/5/2017 12:00	Effluent Grab	Pesticides	Metribuzin	0.019 U	ug/L	0.019	0.076
6/5/2017 12:00	Effluent Grab	Pesticides	Prometryn	0.019 U	ug/L	0.019	0.076
6/5/2017 12:00	Effluent Grab	Pesticides	Disulfoton	0.0047 U	ug/L	0.0047	0.019
6/5/2017 12:00	Effluent Grab	Pesticides	Mevinphos	0.0094 U	ug/L	0.0094	0.038
6/5/2017 12:00	Effluent Grab	Pesticides	Parathion Ethyl	0.019 U	ug/L	0.019	0.076
6/5/2017 12:00	Effluent Grab	Pesticides	Atrazine	0.076	ug/L	0.0094	0.038
6/5/2017 12:00	Effluent Grab	Pesticides	Azinphos Methyl	0.019 U	ug/L	0.019	0.076
6/5/2017 12:00	Effluent Grab	Pesticides	Fenamiphos	0.028 UJ	ug/L	0.028	0.11
6/5/2017 12:00	Effluent Grab	Pesticides	Atrazine Desisopropyl	0.0094 U	ug/L	0.0094	0.038
6/5/2017 12:00	Effluent Grab	Pesticides	Hexazinone	0.028 UJ	ug/L	0.028	0.11
6/5/2017 12:00	Effluent Grab	Pesticides	Parathion Methyl	0.0094 U	ug/L	0.0094	0.038
6/5/2017 12:00	Effluent Grab	Pesticides	Prometon	0.019 U	ug/L	0.019	0.076
6/5/2017 12:00	Effluent Grab	Pesticides	Diazinon	0.0094 U	ug/L	0.0094	0.038
6/5/2017 12:00	Effluent Grab	Pesticides	Naled	0.038 U	ug/L	0.038	0.15
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	2,4-Dinitrophenol	14 U	ug/L	14	57
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Naphthalene	0.19 U	ug/L	0.19	0.75
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38 U	ug/L	38	150
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9 U	ug/L	1.9	7.5
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Acenaphthene	0.19 U	ug/L	0.19	0.75

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19 U	ug/L	0.19	0.75
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	1.9 U	ug/L	1.9	7.5
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19 U	ug/L	0.19	0.75
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Fluoranthene	0.19 U	ug/L	0.19	0.75
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Isophorone	0.94 U	ug/L	0.94	3.8
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9 U	ug/L	1.9	7.5
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Pentachlorophenol	0.94 U	ug/L	0.94	3.8
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	2-Chloronaphthalene	0.94 U	ug/L	0.94	3.8
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	2-Chlorophenol	0.94 U	ug/L	0.94	3.8
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Anthracene	0.19 U	ug/L	0.19	0.75
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Benzo(a)pyrene	0.19 U	ug/L	0.19	0.75
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.94 U	ug/L	0.94	3.8
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.8 U	ug/L	2.8	11
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9 U	ug/L	1.9	7.5
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Phenol	0.94 U	ug/L	0.94	3.8
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	2,4-Dinitrotoluene	0.94 U	ug/L	0.94	3.8
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Hexachloroethane	2.8 U	ug/L	2.8	11
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Hexachlorobutadiene	2.8 U	ug/L	2.8	11
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Hexachlorobenzene	0.94 U	ug/L	0.94	3.8
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.94 U	ug/L	0.94	3.8
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Benzo(a)anthracene	0.19 U	ug/L	0.19	0.75
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.94 U	ug/L	0.94	3.8
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	2,6-Dinitrotoluene	0.94 U	ug/L	0.94	3.8
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	4-Nitrophenol	14 U	ug/L	14	57
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19 U	ug/L	0.19	0.75
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Di-n-butyl phthalate	1.9 U	ug/L	1.9	7.5
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Phenanthrene	0.19 U	ug/L	0.19	0.75
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	1,4-Dioxane	0.35	ug/L	0.02	0.1
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Butyl benzyl phthalate	0.94 U	ug/L	0.94	3.8
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Di-n-octyl phthalate	0.94 U	ug/L	0.94	3.8
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Dimethyl phthalate	0.94 U	ug/L	0.94	3.8
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.94 U	ug/L	0.94	3.8
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.94 U	ug/L	0.94	3.8
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Benzidine	94 U	ug/L	94	380
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19 U	ug/L	0.19	0.75
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Chrysene	0.19 U	ug/L	0.19	0.75
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.8 U	ug/L	2.8	11

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19 U	ug/L	0.19	0.75
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Nitrobenzene	1.9 U	ug/L	1.9	7.5
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Pyrene	0.19 U	ug/L	0.19	0.75
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.94 U	ug/L	0.94	3.8
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Acenaphthylene	0.19 U	ug/L	0.19	0.75
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Diethyl phthalate	1.9 U	ug/L	1.9	7.5
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	Fluorene	0.19 U	ug/L	0.19	0.75
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.8 U	ug/L	2.8	11
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	2,4-Dichlorophenol	0.94 U	ug/L	0.94	3.8
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	2,4-Dimethylphenol	9.4 U	ug/L	9.4	38
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.8 U	ug/L	2.8	11
6/5/2017 12:00	Effluent Grab	Priority Organic Pollutants	2-Nitrophenol	0.94 U	ug/L	0.94	3.8
6/5/2017 12:00	Effluent Grab	Nutrients	Temperature	27.2	C		
6/5/2017 12:00	Effluent Grab	Nutrients	Specific Conductance	767	umhos/cm		
6/5/2017 12:00	Effluent Grab	Nutrients	Sample Depth	1	ft		
6/5/2017 12:00	Effluent Grab	Nutrients	pH	7.09			
6/5/2017 12:00	Effluent Grab	Nutrients	Dissolved Oxygen	8.0	mg/L		
6/5/2017 12:00	Effluent Grab (B)	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	1.9 I	mg/L	0.2	2
6/5/2017 12:00	Effluent Grab (B).	Toxicology	Bioassay-Chron-Def-FW-Fish, NOEC	100	NOEC		
6/5/2017 12:00	Effluent Grab (B)	Toxicology	Bioassay-Chron-Def-FW-C.dubia, NOEC	100	NOEC		
6/5/2017 12:00	Effluent Grab (B)	Toxicology	Bioassay-Chron-Def-FW-C.dubia, IC25	47.0	IC25		
6/5/2017 12:00	Effluent Grab (B)	Toxicology	Bioassay-Chron-Def-FW-Fish, IC25	100 L	IC25		
6/5/2017 12:00	Effluent Grab (B)	Nutrients	Organic Carbon	5.8	mg C/L	0.5	1
6/5/2017 12:00	Effluent Grab (B)	Nutrients	Ammonia-N	0.021	mg N/L	0.002	0.005
6/5/2017 12:00	Effluent Grab (B)	Nutrients	TSS	2 I	mg/L	2	10
6/5/2017 12:00	Effluent Grab (B)	Nutrients	Kjeldahl Nitrogen	0.47	mg N/L	0.08	0.2
6/5/2017 12:00	Effluent Grab (B).	Nutrients	Total-P	0.10	mg P/L	0.005	0.05
6/5/2017 12:00	Effluent Grab (B).	Nutrients	NO2NO3-N	0.22	mg N/L	0.004	0.01

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
6/5/2017 12:00	Effluent Grab (B)	Nutrients	pH	7.09			
6/5/2017 12:00	Effluent Grab (B)	Nutrients	Dissolved Oxygen	8.0	mg/L		
6/5/2017 12:00	Effluent Grab (B)	Nutrients	Specific Conductance	767	umhos/cm		
6/5/2017 12:00	Effluent Grab (B)	Nutrients	Temperature	27.2	C		
6/5/2017 12:00	Effluent Grab (B)	Nutrients	Sample Depth	1	ft		
6/5/2017 11:10	Effluent Grab	Overflow	Fecal Coliforms-Membrane Filter	5.0 B	cfu/100 mL	1.6	1.6
6/5/2017 10:50	LM400	AGP/LN	Algal Growth Potential	13.4 A	mg DryWt/L	0.3	0.9
6/5/2017 10:50	LM400	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	5.4	ug/L	0.4	1.2
6/5/2017 10:50	LM400	Chlorophyll/Grain Size/BOD	Chlorophyll/Phaeophytin Ratio	1.5		0	0
6/5/2017 10:50	LM400	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	1.5 I	mg/L	0.2	2
6/5/2017 10:50	LM400	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	4.1	ug/L	0.55	1.7
6/5/2017 10:50	LM400	Chlorophyll/Grain Size/BOD	Phaeophytin-a	2.0	ug/L	0.4	1.2
6/5/2017 10:50	LM400	Metals	Aluminum	85	ug/L	3	12
6/5/2017 10:50	LM400	Metals	Potassium	2.8	mg/L	0.3	1.2
6/5/2017 10:50	LM400	Metals	Iron	580	ug/L	30	120
6/5/2017 10:50	LM400	Metals	Copper	0.25 I	ug/L	0.2	0.8
6/5/2017 10:50	LM400	Metals	Sodium	15.7	mg/L	0.5	2
6/5/2017 10:50	LM400	Metals	Magnesium	25.3	mg/L	0.04	0.16
6/5/2017 10:50	LM400	Metals	Chromium	0.40 U	ug/L	0.4	1.6
6/5/2017 10:50	LM400	Metals	Lead	0.22	ug/L	0.05	0.2
6/5/2017 10:50	LM400	Metals	Calcium	76.5	mg/L	0.075	0.3
6/5/2017 10:50	LM400	Metals	Silver	0.010 U	ug/L	0.01	0.04
6/5/2017 10:50	LM400	Metals	Cadmium	0.020 U	ug/L	0.02	0.08
6/5/2017 10:50	LM400	Metals	Zinc	5.0 U	ug/L	5	20
6/5/2017 10:50	LM400	Metals	Nickel	0.30 I	ug/L	0.2	0.8
6/5/2017 10:50	LM400	Metals	Selenium	0.20 U	ug/L	0.2	0.8
6/5/2017 10:50	LM400	Metals	Arsenic	1.04	ug/L	0.05	0.2
6/5/2017 10:50	LM400	Nutrients	Organic Carbon	10	mg C/L	0.5	1
6/5/2017 10:50	LM400	Nutrients	Kjeldahl Nitrogen	0.81	mg N/L	0.08	0.2
6/5/2017 10:50	LM400	Nutrients	Total-P	0.22	mg P/L	0.005	0.05
6/5/2017 10:50	LM400	Nutrients	O-Phosphate-P	0.15	mg P/L	0.004	0.01
6/5/2017 10:50	LM400	Nutrients	Turbidity	4.0	NTU	0.1	0.1
6/5/2017 10:50	LM400	Nutrients	Ammonia-N	0.18	mg N/L	0.002	0.005

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
6/5/2017 10:50	LM400	Nutrients	Chloride	22	mg Cl/L	0.2	0.5
6/5/2017 10:50	LM400	Nutrients	NO2NO3-N	0.091	mg N/L	0.004	0.01
6/5/2017 10:50	LM400	Nutrients	TSS	6 I	mg/L	2	10
6/5/2017 10:50	LM400	Nutrients	Color (true)	65 A	PCU	2.5	6
6/5/2017 10:50	LM400	Nutrients	Fluoride	0.37	mg F/L	0.035	0.1
6/5/2017 10:50	LM400	Nutrients	Sulfate	15	mg SO4/L	0.2	0.5
6/5/2017 10:50	LM400	Nutrients	Total Alkalinity	269	mg CaCO3/L	0.65	2.5
6/5/2017 10:50	LM400	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.0 U	ug/L	2	8.1
6/5/2017 10:50	LM400	Priority Organic Pollutants	Benzo(a)pyrene	0.20 U	ug/L	0.2	0.81
6/5/2017 10:50	LM400	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.0 U	ug/L	3	12
6/5/2017 10:50	LM400	Priority Organic Pollutants	Pyrene	0.20 U	ug/L	0.2	0.81
6/5/2017 10:50	LM400	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.0 U	ug/L	1	4
6/5/2017 10:50	LM400	Priority Organic Pollutants	2,4-Dimethylphenol	10 U	ug/L	10	40
6/5/2017 10:50	LM400	Priority Organic Pollutants	4-Nitrophenol	15 U	ug/L	15	61
6/5/2017 10:50	LM400	Priority Organic Pollutants	Benzo(a)anthracene	0.20 U	ug/L	0.2	0.81
6/5/2017 10:50	LM400	Priority Organic Pollutants	Benzo(b)fluoranthene	0.20 U	ug/L	0.2	0.81
6/5/2017 10:50	LM400	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.0 U	ug/L	1	4
6/5/2017 10:50	LM400	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.0 U	ug/L	2	8.1
6/5/2017 10:50	LM400	Priority Organic Pollutants	Butyl benzyl phthalate	1.0 U	ug/L	1	4
6/5/2017 10:50	LM400	Priority Organic Pollutants	Hexachlorobutadiene	3.0 U	ug/L	3	12
6/5/2017 10:50	LM400	Priority Organic Pollutants	Hexachlorobenzene	1.0 U	ug/L	1	4
6/5/2017 10:50	LM400	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.0 U	ug/L	3	12
6/5/2017 10:50	LM400	Priority Organic Pollutants	N-Nitrosodimethylamine	2.0 U	ug/L	2	8.1
6/5/2017 10:50	LM400	Priority Organic Pollutants	Phenol	1.0 U	ug/L	1	4
6/5/2017 10:50	LM400	Priority Organic Pollutants	1,4-Dioxane	0.020 UY	ug/L	0.02	0.1
6/5/2017 10:50	LM400	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.0 U	ug/L	1	4
6/5/2017 10:50	LM400	Priority Organic Pollutants	2,6-Dinitrotoluene	1.0 U	ug/L	1	4
6/5/2017 10:50	LM400	Priority Organic Pollutants	2-Chlorophenol	1.0 U	ug/L	1	4
6/5/2017 10:50	LM400	Priority Organic Pollutants	Benzo(k)fluoranthene	0.20 U	ug/L	0.2	0.81
6/5/2017 10:50	LM400	Priority Organic Pollutants	Diethyl phthalate	2.0 U	ug/L	2	8.1
6/5/2017 10:50	LM400	Priority Organic Pollutants	Fluorene	0.20 U	ug/L	0.2	0.81
6/5/2017 10:50	LM400	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.0 U	ug/L	3	12
6/5/2017 10:50	LM400	Priority Organic Pollutants	Phenanthrene	0.20 U	ug/L	0.2	0.81
6/5/2017 10:50	LM400	Priority Organic Pollutants	2-Chloronaphthalene	1.0 U	ug/L	1	4
6/5/2017 10:50	LM400	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.0 U	ug/L	1	4
6/5/2017 10:50	LM400	Priority Organic Pollutants	Anthracene	0.20 U	ug/L	0.2	0.81
6/5/2017 10:50	LM400	Priority Organic Pollutants	Di-n-octyl phthalate	1.0 U	ug/L	1	4

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
6/5/2017 10:50	LM400	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.0 U	ug/L	2	8.1
6/5/2017 10:50	LM400	Priority Organic Pollutants	Naphthalene	0.20 U	ug/L	0.2	0.81
6/5/2017 10:50	LM400	Priority Organic Pollutants	Nitrobenzene	2.0 U	ug/L	2	8.1
6/5/2017 10:50	LM400	Priority Organic Pollutants	2,4-Dinitrotoluene	1.0 U	ug/L	1	4
6/5/2017 10:50	LM400	Priority Organic Pollutants	2-Nitrophenol	1.0 U	ug/L	1	4
6/5/2017 10:50	LM400	Priority Organic Pollutants	3,3'-Dichlorobenzidine	40 U	ug/L	40	160
6/5/2017 10:50	LM400	Priority Organic Pollutants	Acenaphthene	0.20 U	ug/L	0.2	0.81
6/5/2017 10:50	LM400	Priority Organic Pollutants	Benzidine	100 U	ug/L	100	400
6/5/2017 10:50	LM400	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.20 U	ug/L	0.2	0.81
6/5/2017 10:50	LM400	Priority Organic Pollutants	Dimethyl phthalate	1.0 U	ug/L	1	4
6/5/2017 10:50	LM400	Priority Organic Pollutants	Isophorone	1.0 U	ug/L	1	4
6/5/2017 10:50	LM400	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.0 U	ug/L	1	4
6/5/2017 10:50	LM400	Priority Organic Pollutants	Chrysene	0.20 U	ug/L	0.2	0.81
6/5/2017 10:50	LM400	Priority Organic Pollutants	Di-n-butyl phthalate	2.0 U	ug/L	2	8.1
6/5/2017 10:50	LM400	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.20 U	ug/L	0.2	0.81
6/5/2017 10:50	LM400	Priority Organic Pollutants	Hexachloroethane	3.0 U	ug/L	3	12
6/5/2017 10:50	LM400	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.20 U	ug/L	0.2	0.81
6/5/2017 10:50	LM400	Priority Organic Pollutants	Pentachlorophenol	1.0 U	ug/L	1	4
6/5/2017 10:50	LM400	Priority Organic Pollutants	2,4-Dichlorophenol	1.0 U	ug/L	1	4
6/5/2017 10:50	LM400	Priority Organic Pollutants	2,4-Dinitrophenol	15 U	ug/L	15	61
6/5/2017 10:50	LM400	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.0 U	ug/L	3	12
6/5/2017 10:50	LM400	Priority Organic Pollutants	Acenaphthylene	0.20 U	ug/L	0.2	0.81
6/5/2017 10:50	LM400	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.0 U	ug/L	1	4
6/5/2017 10:50	LM400	Priority Organic Pollutants	Fluoranthene	0.20 U	ug/L	0.2	0.81
6/5/2017 10:50	LM400	Nutrients	Temperature	24.0	C		
6/5/2017 10:50	LM400	Nutrients	Dissolved Oxygen	18.1	%Sat		
6/5/2017 10:50	LM400	Nutrients	Sample Depth	0.1	m		
6/5/2017 10:50	LM400	Nutrients	Specific Conductance	59	umhos/cm		
6/5/2017 10:50	LM400	Nutrients	pH	7.45			
6/5/2017 10:50	LM400	Nutrients	Dissolved Oxygen	18.1	%Sat		
6/5/2017 10:50	LM400	Nutrients	pH	7.45			
6/5/2017 10:50	LM400	Nutrients	Temperature	24.0	C		
6/5/2017 10:50	LM400	Nutrients	Sample Depth	0.1	m		
6/5/2017 10:50	LM400	Nutrients	Specific Conductance	59	umhos/cm		
6/5/2017 10:50	LM400	Nutrients	Dissolved Oxygen	18.1	%Sat		
6/5/2017 10:50	LM400	Nutrients	pH	7.45			
6/5/2017 10:50	LM400	Nutrients	Temperature	24.0	C		

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
6/5/2017 10:50	LM400	Nutrients	Sample Depth	0.1	m		
6/5/2017 10:50	LM400	Nutrients	Specific Conductance	59	umhos/cm		
6/5/2017 10:50	LM400	Nutrients	Sample Depth	0.1	m		
6/5/2017 10:50	LM400	Nutrients	pH	7.45			
6/5/2017 10:50	LM400	Nutrients	Specific Conductance	59	umhos/cm		
6/5/2017 10:50	LM400	Nutrients	Dissolved Oxygen	18.1	%Sat		
6/5/2017 10:50	LM400	Nutrients	Temperature	24.0	C		
6/5/2017 12:40	Test Site	AGP/LN	Algal Growth Potential	7.81	mg DryWt/L	0.3	0.9
6/5/2017 12:40	Test I Site	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	1.3 I	mg/L	0.2	2
6/5/2017 12:40	Test Site	Chlorophyll/Grain Size/BOD	Phaeophytin-a	1.2 I	ug/L	0.4	1.2
6/5/2017 12:40	Test Site	Chlorophyll/Grain Size/BOD	Chlorophyll/Phaeophytin Ratio	1.5		0	0
6/5/2017 12:40	Test Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	2.3	ug/L	0.55	1.7
6/5/2017 12:40	Test Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	3.1	ug/L	0.4	1.2
6/5/2017 12:40	Test Site	Metals	Copper	0.92	ug/L	0.2	0.8
6/5/2017 12:40	Test Site	Metals	Aluminum	290	ug/L	3	12
6/5/2017 12:40	Test Site	Metals	Potassium	3.9	mg/L	0.3	1.2
6/5/2017 12:40	Test Site	Metals	Iron	870	ug/L	30	120
6/5/2017 12:40	Test Site	Metals	Chromium	0.50 I	ug/L	0.4	1.6
6/5/2017 12:40	Test Site	Metals	Cadmium	0.020 U	ug/L	0.02	0.08
6/5/2017 12:40	Test Site	Metals	Zinc	9.0 I	ug/L	5	20
6/5/2017 12:40	Test Site	Metals	Sodium	14.1	mg/L	0.5	2
6/5/2017 12:40	Test Site	Metals	Calcium	21.6	mg/L	0.075	0.3
6/5/2017 12:40	Test Site	Metals	Nickel	0.64 I	ug/L	0.2	0.8
6/5/2017 12:40	Test Site	Metals	Magnesium	6.50	mg/L	0.04	0.16
6/5/2017 12:40	Test Site	Metals	Silver	0.010 U	ug/L	0.01	0.04
6/5/2017 12:40	Test Site	Metals	Lead	0.48	ug/L	0.05	0.2
6/5/2017 12:40	Test Site	Metals	Selenium	0.20 U	ug/L	0.2	0.8
6/5/2017 12:40	Test Site	Metals	Arsenic	0.85	ug/L	0.05	0.2
6/5/2017 12:40	Test Site	Nutrients	NO2NO3-N	0.056	mg N/L	0.004	0.01
6/5/2017 12:40	Test Site	Nutrients	Total-P	0.14	mg P/L	0.005	0.05
6/5/2017 12:40	Test Site	Nutrients	Turbidity	4.1	NTU	0.1	0.1
6/5/2017 12:40	Test Site	Nutrients	O-Phosphate-P	0.091	mg P/L	0.004	0.01
6/5/2017 12:40	Test Site	Nutrients	Organic Carbon	25	mg C/L	0.5	1
6/5/2017 12:40	Test Site	Nutrients	Ammonia-N	0.046	mg N/L	0.002	0.005
6/5/2017 12:40	Test Site	Nutrients	Total Alkalinity	33 A	mg CaCO3/L	0.65	2.5
6/5/2017 12:40	Test Site	Nutrients	Fluoride	0.086 I	mg F/L	0.035	0.1
6/5/2017 12:40	Test Site	Nutrients	Chloride	22	mg Cl/L	0.2	0.5

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
6/5/2017 12:40	Test Site	Nutrients	Color (true)	300	PCU	7.5	18
6/5/2017 12:40	Test Site	Nutrients	Kjeldahl Nitrogen	1.1	mg N/L	0.08	0.2
6/5/2017 12:40	Test Site	Nutrients	TSS	4 I	mg/L	2	10
6/5/2017 12:40	Test Site	Nutrients	Sulfate	30	mg SO4/L	0.2	0.5
6/5/2017 12:40	Test Site	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9 U	ug/L	1.9	7.4
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Pentachlorophenol	0.93 U	ug/L	0.93	3.7
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Pyrene	0.19 U	ug/L	0.19	0.74
6/5/2017 12:40	Test Site	Priority Organic Pollutants	2,4-Dimethylphenol	9.3 U	ug/L	9.3	37
6/5/2017 12:40	Test Site	Priority Organic Pollutants	2-Chlorophenol	0.93 U	ug/L	0.93	3.7
6/5/2017 12:40	Test Site	Priority Organic Pollutants	3,3'-Dichlorobenzidine	37 U	ug/L	37	150
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Acenaphthene	0.19 U	ug/L	0.19	0.74
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Anthracene	0.19 U	ug/L	0.19	0.74
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Di-n-butyl phthalate	1.9 U	ug/L	1.9	7.4
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.8 U	ug/L	2.8	11
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Isophorone	0.93 U	ug/L	0.93	3.7
6/5/2017 12:40	Test Site	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.93 U	ug/L	0.93	3.7
6/5/2017 12:40	Test Site	Priority Organic Pollutants	2,4-Dichlorophenol	0.93 U	ug/L	0.93	3.7
6/5/2017 12:40	Test Site	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.93 U	ug/L	0.93	3.7
6/5/2017 12:40	Test Site	Priority Organic Pollutants	4-Nitrophenol	14 U	ug/L	14	56
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Benzidine	93 U	ug/L	93	370
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19 U	ug/L	0.19	0.74
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Butyl benzyl phthalate	0.93 U	ug/L	0.93	3.7
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Chrysene	0.19 U	ug/L	0.19	0.74
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19 U	ug/L	0.19	0.74
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Fluoranthene	0.19 U	ug/L	0.19	0.74
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Hexachloroethane	2.8 U	ug/L	2.8	11
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Benzo(a)anthracene	0.19 U	ug/L	0.19	0.74
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.93 U	ug/L	0.93	3.7
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.8 U	ug/L	2.8	11
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Di-n-octyl phthalate	0.93 U	ug/L	0.93	3.7
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Dimethyl phthalate	0.93 U	ug/L	0.93	3.7
6/5/2017 12:40	Test Site	Priority Organic Pollutants	1,4-Dioxane	0.020 U	ug/L	0.02	0.08
6/5/2017 12:40	Test Site	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.93 U	ug/L	0.93	3.7
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Acenaphthylene	0.19 U	ug/L	0.19	0.74
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.93 U	ug/L	0.93	3.7
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Hexachlorobenzene	0.93 U	ug/L	0.93	3.7
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Nitrobenzene	1.9 U	ug/L	1.9	7.4

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Phenanthrene	0.19 U	ug/L	0.19	0.74
6/5/2017 12:40	Test Site	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.93 U	ug/L	0.93	3.7
6/5/2017 12:40	Test Site	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.8 U	ug/L	2.8	11
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19 U	ug/L	0.19	0.74
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19 U	ug/L	0.19	0.74
6/5/2017 12:40	Test Site	Priority Organic Pollutants	2,4-Dinitrophenol	14 U	ug/L	14	56
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	1.9 U	ug/L	1.9	7.4
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Diethyl phthalate	1.9 U	ug/L	1.9	7.4
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Fluorene	0.19 U	ug/L	0.19	0.74
6/5/2017 12:40	Test Site	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9 U	ug/L	1.9	7.4
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19 U	ug/L	0.19	0.74
6/5/2017 12:40	Test Site	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.8 U	ug/L	2.8	11
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Naphthalene	0.19 U	ug/L	0.19	0.74
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Phenol	0.93 U	ug/L	0.93	3.7
6/5/2017 12:40	Test Site	Priority Organic Pollutants	2,4-Dinitrotoluene	0.93 U	ug/L	0.93	3.7
6/5/2017 12:40	Test Site	Priority Organic Pollutants	2,6-Dinitrotoluene	0.93 U	ug/L	0.93	3.7
6/5/2017 12:40	Test Site	Priority Organic Pollutants	2-Chloronaphthalene	0.93 U	ug/L	0.93	3.7
6/5/2017 12:40	Test Site	Priority Organic Pollutants	2-Nitrophenol	0.93 U	ug/L	0.93	3.7
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Benzo(a)pyrene	0.19 U	ug/L	0.19	0.74
6/5/2017 12:40	Test Site	Priority Organic Pollutants	Hexachlorobutadiene	2.8 U	ug/L	2.8	11
6/5/2017 12:40	Test Site	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9 U	ug/L	1.9	7.4
6/5/2017 12:40	Test Site	Nutrients	Specific Conductance	350	umhos/cm		
6/5/2017 12:40	Test Site	Nutrients	Temperature	25.65	C		
6/5/2017 12:40	Test Site	Nutrients	pH	7.67			
6/5/2017 12:40	Test Site	Nutrients	Dissolved Oxygen	65.9	%Sat		
6/5/2017 12:40	Test Site	Nutrients	Sample Depth	0.1	m		
6/5/2017 12:40	Test Site	Nutrients	Dissolved Oxygen	65.9	%Sat		
6/5/2017 12:40	Test Site	Nutrients	Sample Depth	0.1	m		
6/5/2017 12:40	Test Site	Nutrients	Specific Conductance	350	umhos/cm		
6/5/2017 12:40	Test Site	Nutrients	pH	7.67			
6/5/2017 12:40	Test Site	Nutrients	Temperature	25.65	C		
6/5/2017 12:40	Test Site	Nutrients	Specific Conductance	350	umhos/cm		
6/5/2017 12:40	Test Site	Nutrients	Dissolved Oxygen	65.9	%Sat		
6/5/2017 12:40	Test Site	Nutrients	Temperature	25.65	C		
6/5/2017 12:40	Test Site	Nutrients	pH	7.67			
6/5/2017 12:40	Test Site	Nutrients	Sample Depth	0.1	m		
6/5/2017 12:40	Test Site	Nutrients	Specific Conductance	350	umhos/cm		

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
6/5/2017 12:40	Test Site	Nutrients	Dissolved Oxygen	65.9	%Sat		
6/5/2017 12:40	Test Site	Nutrients	Sample Depth	0.1	m		
6/5/2017 12:40	Test Site	Nutrients	pH	7.67			
6/5/2017 12:40	Test Site	Nutrients	Temperature	25.65	C		
6/5/2017 11:20	Control Site	AGP/LN	Algal Growth Potential	5.26	mg DryWt/L	0.3	0.9
6/5/2017 11:20	Control Site	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	0.87 I	mg/L	0.2	2
6/5/2017 11:20	Control Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	2.0	ug/L	0.55	1.7
6/5/2017 11:20	Control Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	2.7	ug/L	0.4	1.2
6/5/2017 11:20	Control Site	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.99 I	ug/L	0.4	1.2
6/5/2017 11:20	Control Site	Chlorophyll/Grain Size/BOD	Chlorophyll/Phaeophytin Ratio	1.5		0	0
6/5/2017 11:20	Control Site	Metals	Silver	0.010 U	ug/L	0.01	0.04
6/5/2017 11:20	Control Site	Metals	Aluminum	293	ug/L	3	12
6/5/2017 11:20	Control Site	Metals	Chromium	0.52 I	ug/L	0.4	1.6
6/5/2017 11:20	Control Site	Metals	Calcium	18.2	mg/L	0.075	0.3
6/5/2017 11:20	Control Site	Metals	Selenium	0.20 U	ug/L	0.2	0.8
6/5/2017 11:20	Control Site	Metals	Iron	920	ug/L	30	120
6/5/2017 11:20	Control Site	Metals	Magnesium	5.05	mg/L	0.04	0.16
6/5/2017 11:20	Control Site	Metals	Copper	0.98	ug/L	0.2	0.8
6/5/2017 11:20	Control Site	Metals	Nickel	0.61 I	ug/L	0.2	0.8
6/5/2017 11:20	Control Site	Metals	Lead	0.50	ug/L	0.05	0.2
6/5/2017 11:20	Control Site	Metals	Cadmium	0.020 U	ug/L	0.02	0.08
6/5/2017 11:20	Control Site	Metals	Arsenic	0.87	ug/L	0.05	0.2
6/5/2017 11:20	Control Site	Metals	Potassium	3.6	mg/L	0.3	1.2
6/5/2017 11:20	Control Site	Metals	Zinc	7.7 I	ug/L	5	20
6/5/2017 11:20	Control Site	Metals	Sodium	11.6	mg/L	0.5	2
6/5/2017 11:20	Control Site	Nutrients	Organic Carbon	30	mg C/L	0.5	1
6/5/2017 11:20	Control Site	Nutrients	Chloride	19	mg Cl/L	0.2	0.5
6/5/2017 11:20	Control Site	Nutrients	Kjeldahl Nitrogen	1.2	mg N/L	0.08	0.2
6/5/2017 11:20	Control Site	Nutrients	Turbidity	3.8	NTU	0.1	0.1
6/5/2017 11:20	Control Site	Nutrients	NO2NO3-N	0.045	mg N/L	0.004	0.01
6/5/2017 11:20	Control Site	Nutrients	Total Alkalinity	27	mg CaCO3/L	0.65	2.5
6/5/2017 11:20	Control Site	Nutrients	TSS	3 I	mg/L	2	10
6/5/2017 11:20	Control Site	Nutrients	Color (true)	280 A	PCU	7.5	18
6/5/2017 11:20	Control Site	Nutrients	Ammonia-N	0.048	mg N/L	0.002	0.005
6/5/2017 11:20	Control Site	Nutrients	Total-P	0.13	mg P/L	0.005	0.05
6/5/2017 11:20	Control Site	Nutrients	Sulfate	25	mg SO4/L	0.2	0.5
6/5/2017 11:20	Control Site	Nutrients	Fluoride	0.068 I	mg F/L	0.035	0.1

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
6/5/2017 11:20	Control Site	Nutrients	O-Phosphate-P	0.091	mg P/L	0.004	0.01
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	1.9 U	ug/L	1.9	7.5
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Hexachloroethane	2.8 U	ug/L	2.8	11
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Fluorene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Hexachlorobenzene	0.94 U	ug/L	0.94	3.8
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Naphthalene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Phenol	0.94 U	ug/L	0.94	3.8
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Fluoranthene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.8 U	ug/L	2.8	11
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Benzidine	94 U	ug/L	94	380
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Anthracene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:20	Control Site	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.8 U	ug/L	2.8	11
6/5/2017 11:20	Control Site	Priority Organic Pollutants	2-Chlorophenol	0.94 U	ug/L	0.94	3.8
6/5/2017 11:20	Control Site	Priority Organic Pollutants	2,4-Dimethylphenol	9.4 U	ug/L	9.4	38
6/5/2017 11:20	Control Site	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.94 U	ug/L	0.94	3.8
6/5/2017 11:20	Control Site	Priority Organic Pollutants	2,4-Dinitrophenol	14 U	ug/L	14	57
6/5/2017 11:20	Control Site	Priority Organic Pollutants	2-Nitrophenol	0.94 U	ug/L	0.94	3.8
6/5/2017 11:20	Control Site	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38 U	ug/L	38	150
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Nitrobenzene	1.9 U	ug/L	1.9	7.5
6/5/2017 11:20	Control Site	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.94 U	ug/L	0.94	3.8
6/5/2017 11:20	Control Site	Priority Organic Pollutants	2,4-Dichlorophenol	0.94 U	ug/L	0.94	3.8
6/5/2017 11:20	Control Site	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.94 U	ug/L	0.94	3.8
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Acenaphthene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Benzo(a)anthracene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Benzo(a)pyrene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Di-n-octyl phthalate	0.94 U	ug/L	0.94	3.8
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Hexachlorobutadiene	2.8 U	ug/L	2.8	11
6/5/2017 11:20	Control Site	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.94 U	ug/L	0.94	3.8
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.8 U	ug/L	2.8	11
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Butyl benzyl phthalate	0.94 U	ug/L	0.94	3.8
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Di-n-butyl phthalate	1.9 U	ug/L	1.9	7.5
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Diethyl phthalate	1.9 U	ug/L	1.9	7.5
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Dimethyl phthalate	0.94 U	ug/L	0.94	3.8
6/5/2017 11:20	Control Site	Priority Organic Pollutants	1,4-Dioxane	0.020 U	ug/L	0.02	0.1
6/5/2017 11:20	Control Site	Priority Organic Pollutants	2,4-Dinitrotoluene	0.94 U	ug/L	0.94	3.8

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
6/5/2017 11:20	Control Site	Priority Organic Pollutants	2,6-Dinitrotoluene	0.94 U	ug/L	0.94	3.8
6/5/2017 11:20	Control Site	Priority Organic Pollutants	2-Chloronaphthalene	0.94 U	ug/L	0.94	3.8
6/5/2017 11:20	Control Site	Priority Organic Pollutants	4-Nitrophenol	14 U	ug/L	14	57
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Acenaphthylene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Isophorone	0.94 U	ug/L	0.94	3.8
6/5/2017 11:20	Control Site	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9 U	ug/L	1.9	7.5
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Phenanthrene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:20	Control Site	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9 U	ug/L	1.9	7.5
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.94 U	ug/L	0.94	3.8
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:20	Control Site	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9 U	ug/L	1.9	7.5
6/5/2017 11:20	Control Site	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.8 U	ug/L	2.8	11
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Pentachlorophenol	0.94 U	ug/L	0.94	3.8
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.94 U	ug/L	0.94	3.8
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Chrysene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:20	Control Site	Priority Organic Pollutants	Pyrene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:20	Control Site	Nutrients	pH	7.7			
6/5/2017 11:20	Control Site	Nutrients	Dissolved Oxygen	60.2	%Sat		
6/5/2017 11:20	Control Site	Nutrients	Temperature	24.5	C		
6/5/2017 11:20	Control Site	Nutrients	Specific Conductance	188	umhos/cm		
6/5/2017 11:20	Control Site	Nutrients	Sample Depth	0.2	m		
6/5/2017 11:20	Control Site	Nutrients	pH	7.7			
6/5/2017 11:20	Control Site	Nutrients	Specific Conductance	188	umhos/cm		
6/5/2017 11:20	Control Site	Nutrients	Temperature	24.5	C		
6/5/2017 11:20	Control Site	Nutrients	Sample Depth	0.2	m		
6/5/2017 11:20	Control Site	Nutrients	Dissolved Oxygen	60.2	%Sat		
6/5/2017 11:20	Control Site	Nutrients	Dissolved Oxygen	60.2	%Sat		
6/5/2017 11:20	Control Site	Nutrients	Sample Depth	0.2	m		
6/5/2017 11:20	Control Site	Nutrients	Temperature	24.5	C		
6/5/2017 11:20	Control Site	Nutrients	pH	7.7			
6/5/2017 11:20	Control Site	Nutrients	Specific Conductance	188	umhos/cm		
6/5/2017 11:20	Control Site	Nutrients	Dissolved Oxygen	60.2	%Sat		
6/5/2017 11:20	Control Site	Nutrients	Specific Conductance	188	umhos/cm		
6/5/2017 11:20	Control Site	Nutrients	pH	7.7			
6/5/2017 11:20	Control Site	Nutrients	Sample Depth	0.2	m		

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
6/5/2017 11:20	Control Site	Nutrients	Temperature	24.5	C		
6/5/2017 11:00	Field Blank	Metals	Calcium	0.075 U	mg/L	0.075	0.3
6/5/2017 11:00	Field Blank	Metals	Cadmium	0.020 U	ug/L	0.02	0.08
6/5/2017 11:00	Field Blank	Metals	Sodium	0.50 U	mg/L	0.5	2
6/5/2017 11:00	Field Blank	Metals	Selenium	0.20 U	ug/L	0.2	0.8
6/5/2017 11:00	Field Blank	Metals	Nickel	0.20 U	ug/L	0.2	0.8
6/5/2017 11:00	Field Blank	Metals	Arsenic	0.050 U	ug/L	0.05	0.2
6/5/2017 11:00	Field Blank	Metals	Copper	0.20 U	ug/L	0.2	0.8
6/5/2017 11:00	Field Blank	Metals	Lead	0.050 U	ug/L	0.05	0.2
6/5/2017 11:00	Field Blank	Metals	Silver	0.010 U	ug/L	0.01	0.04
6/5/2017 11:00	Field Blank	Metals	Potassium	0.30 U	mg/L	0.3	1.2
6/5/2017 11:00	Field Blank	Metals	Chromium	0.40 U	ug/L	0.4	1.6
6/5/2017 11:00	Field Blank	Metals	Magnesium	0.040 U	mg/L	0.04	0.16
6/5/2017 11:00	Field Blank	Metals	Zinc	5.0 U	ug/L	5	20
6/5/2017 11:00	Field Blank	Metals	Aluminum	3.0 U	ug/L	3	12
6/5/2017 11:00	Field Blank	Metals	Iron	30 U	ug/L	30	120
6/5/2017 11:00	Field Blank	Nutrients	Turbidity	0.10 U	NTU	0.1	0.1
6/5/2017 11:00	Field Blank	Nutrients	Total-P	0.002 U	mg P/L	0.002	0.005
6/5/2017 11:00	Field Blank	Nutrients	Kjeldahl Nitrogen	0.080 U	mg N/L	0.08	0.2
6/5/2017 11:00	Field Blank	Nutrients	Organic Carbon	0.50 U	mg C/L	0.5	1
6/5/2017 11:00	Field Blank	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.1
6/5/2017 11:00	Field Blank	Nutrients	Color (true)	2.5 U	PCU	2.5	6
6/5/2017 11:00	Field Blank	Nutrients	Ammonia-N	0.002 U	mg N/L	0.002	0.005
6/5/2017 11:00	Field Blank	Nutrients	Sulfate	0.20 U	mg SO4/L	0.2	0.5
6/5/2017 11:00	Field Blank	Nutrients	Total Alkalinity	0.65 U	mg CaCO3/L	0.65	2.5
6/5/2017 11:00	Field Blank	Nutrients	O-Phosphate-P	0.004 U	mg P/L	0.004	0.01
6/5/2017 11:00	Field Blank	Nutrients	NO2NO3-N	0.004 U	mg N/L	0.004	0.01
6/5/2017 11:00	Field Blank	Nutrients	Chloride	0.20 U	mg Cl/L	0.2	0.5
6/5/2017 11:00	Field Blank	Pesticides	Butylate	0.019 U	ug/L	0.019	0.076
6/5/2017 11:00	Field Blank	Pesticides	Chlorpyrifos Methyl	0.0095 U	ug/L	0.0095	0.038
6/5/2017 11:00	Field Blank	Pesticides	Hexazinone	0.029 UJ	ug/L	0.029	0.11
6/5/2017 11:00	Field Blank	Pesticides	Diazinon	0.0095 U	ug/L	0.0095	0.038
6/5/2017 11:00	Field Blank	Pesticides	Malathion	0.0095 U	ug/L	0.0095	0.038
6/5/2017 11:00	Field Blank	Pesticides	Phorate	0.0048 U	ug/L	0.0048	0.019
6/5/2017 11:00	Field Blank	Pesticides	Carbamazepine	4.0E-04 U	ug/L	0.0004	0.0016
6/5/2017 11:00	Field Blank	Pesticides	Ethoprop	0.0048 U	ug/L	0.0048	0.019
6/5/2017 11:00	Field Blank	Pesticides	Naled	0.038 U	ug/L	0.038	0.15

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
6/5/2017 11:00	Field Blank	Pesticides	Parathion Ethyl	0.019 U	ug/L	0.019	0.076
6/5/2017 11:00	Field Blank	Pesticides	Prometryn	0.019 U	ug/L	0.019	0.076
6/5/2017 11:00	Field Blank	Pesticides	Chlorpyrifos Ethyl	0.0095 U	ug/L	0.0095	0.038
6/5/2017 11:00	Field Blank	Pesticides	Demeton	0.023 U	ug/L	0.023	0.091
6/5/2017 11:00	Field Blank	Pesticides	Ethion	0.0095 U	ug/L	0.0095	0.038
6/5/2017 11:00	Field Blank	Pesticides	Fonofos	0.0095 U	ug/L	0.0095	0.038
6/5/2017 11:00	Field Blank	Pesticides	Mevinphos	0.0095 U	ug/L	0.0095	0.038
6/5/2017 11:00	Field Blank	Pesticides	Norflurazon	0.029 U	ug/L	0.029	0.11
6/5/2017 11:00	Field Blank	Pesticides	Parathion Methyl	0.0095 U	ug/L	0.0095	0.038
6/5/2017 11:00	Field Blank	Pesticides	Sucralose	0.010 U	ug/L	0.01	0.04
6/5/2017 11:00	Field Blank	Pesticides	Disulfoton	0.0048 U	ug/L	0.0048	0.019
6/5/2017 11:00	Field Blank	Pesticides	Metalaxyl	0.038 U	ug/L	0.038	0.15
6/5/2017 11:00	Field Blank	Pesticides	Prometon	0.019 U	ug/L	0.019	0.076
6/5/2017 11:00	Field Blank	Pesticides	Acetaminophen	0.0080 U	ug/L	0.008	0.032
6/5/2017 11:00	Field Blank	Pesticides	Atrazine Desethyl	0.0095 U	ug/L	0.0095	0.038
6/5/2017 11:00	Field Blank	Pesticides	Bromacil	0.038 U	ug/L	0.038	0.15
6/5/2017 11:00	Field Blank	Pesticides	Simazine	0.0095 U	ug/L	0.0095	0.038
6/5/2017 11:00	Field Blank	Pesticides	Atrazine Desisopropyl	0.0095 U	ug/L	0.0095	0.038
6/5/2017 11:00	Field Blank	Pesticides	Metolachlor	0.057 U	ug/L	0.057	0.23
6/5/2017 11:00	Field Blank	Pesticides	Alachlor	0.057 U	ug/L	0.057	0.23
6/5/2017 11:00	Field Blank	Pesticides	Ametryn	0.0095 U	ug/L	0.0095	0.038
6/5/2017 11:00	Field Blank	Pesticides	Atrazine	0.0095 U	ug/L	0.0095	0.038
6/5/2017 11:00	Field Blank	Pesticides	Azinphos Methyl	0.019 U	ug/L	0.019	0.076
6/5/2017 11:00	Field Blank	Pesticides	Fenamiphos	0.029 UJ	ug/L	0.029	0.11
6/5/2017 11:00	Field Blank	Pesticides	Metribuzin	0.019 U	ug/L	0.019	0.076
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9 U	ug/L	1.9	7.5
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	1,4-Dioxane	0.020 U	ug/L	0.02	0.08
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.8 U	ug/L	2.8	11
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9 U	ug/L	1.9	7.5
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Fluoranthene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	1.9 U	ug/L	1.9	7.5
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	2,4-Dimethylphenol	9.3 U	ug/L	9.3	37
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	0.93 U	ug/L	0.93	3.7
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	2-Nitrophenol	0.93 U	ug/L	0.93	3.7

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Butyl benzyl phthalate	0.93 U	ug/L	0.93	3.7
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Diethyl phthalate	1.9 U	ug/L	1.9	7.5
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Fluorene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Isophorone	0.93 U	ug/L	0.93	3.7
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	37 U	ug/L	37	150
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Acenaphthene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Dimethyl phthalate	0.93 U	ug/L	0.93	3.7
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Hexachlorobutadiene	2.8 U	ug/L	2.8	11
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Hexachloroethane	2.8 U	ug/L	2.8	11
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Nitrobenzene	1.9 U	ug/L	1.9	7.5
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	2-Chloronaphthalene	0.93 U	ug/L	0.93	3.7
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.8 U	ug/L	2.8	11
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.93 U	ug/L	0.93	3.7
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.8 U	ug/L	2.8	11
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Naphthalene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Phenol	0.93 U	ug/L	0.93	3.7
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Pyrene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.93 U	ug/L	0.93	3.7
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	2,4-Dichlorophenol	0.93 U	ug/L	0.93	3.7
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Anthracene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.93 U	ug/L	0.93	3.7
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Chrysene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Hexachlorobenzene	0.93 U	ug/L	0.93	3.7
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9 U	ug/L	1.9	7.5
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Pentachlorophenol	0.93 U	ug/L	0.93	3.7
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Phenanthrene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	2-Chlorophenol	0.93 U	ug/L	0.93	3.7
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Acenaphthylene	0.19 U	ug/L	0.19	0.75
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Di-n-butyl phthalate	1.9 U	ug/L	1.9	7.5
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Di-n-octyl phthalate	0.93 U	ug/L	0.93	3.7
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	0.93 U	ug/L	0.93	3.7
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	4-Nitrophenol	14 U	ug/L	14	56
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Benzidine	93 U	ug/L	93	370

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.8 U	ug/L	2.8	11
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.93 U	ug/L	0.93	3.7
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	2,4-Dinitrophenol	14 U	ug/L	14	56
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.93 U	ug/L	0.93	3.7
6/5/2017 11:00	Field Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.93 U	ug/L	0.93	3.7

EPA End Sheet

The Bioassay of the Callahan WWTF effluent sampled on June 5, 2017, NPDES #FL0038407

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 FL0038407 11	12 170605	# B	# S	# 1

Remarks

#

The Priority Pollutants Analysis for the Callahan WWTF effluent sampled on June 5, 2017, NPDES #FL0038407

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 FL0038407 11	12 170605	# X	# S	# 1

Remarks

#

Biological Analyses of the Callahan WWTF effluent sampled on June 5, 2017, NPDES #FL0038407

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 FL0038407 11	12 170605	# S	# S	# 1

Remarks