Biological Assessment of

Pace Water System

Santa Rosa County

NPDES # FL0102202

Sampled May 7, 8, 9, and 11, 2018

December 2019

Biology Program

DEP Laboratory

Division of Environmental Assessment and Restoration

DEP Laboratory Quality Manual

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Summary of Results

Rule 62-611.500(1), F.A.C., exempts natural treatment and receiving wetlands from the following general and specific water quality standards established in Chapter 62-302, F.A.C.: dissolved oxygen; nutrients; chronic toxicity; turbidity; total coliforms; biological integrity; and transparency. However, Rule 62-611.500, F.A.C., establishes alternate criteria for dissolved oxygen, nutrients, biological integrity, and chronic toxicity. Also, Rule 62-611.500(3), F.A.C., establishes additional criteria for fish and vegetation beyond the standards in Chapter 62-302, F.A.C. At the time of this inspection, the facility was sending all effluent to reuse and was not discharging to surface waters however, the facility discharged to surface waters over the course of the day on both May 7 and 8. The percent saturation dissolved oxygen measured at the Wetland Control Site was below the minimum levels for Class III Freshwater Quality Criterion for the Panhandle West bioregion (62-302.530(30), F.A.C.), although this may be a natural condition for the wetland. Alkalinity measured at the Test and Control Wetland sites exceeded Class III Freshwater Quality Criterion (62-302.530(1), F.A.C.). *Escherichia coli* was found in the Test Wetland sample at levels which exceeded the Class III Freshwater Quality Criterion (62-302.530(6)(b), F.A.C.). The Algal Growth Potential (AGP) data indicate that the effluent is nitrogen limited and the Wetland sites are ortho-phosphate limited. The effluent sample contained Bis(2-chloroethoxy)methane and Hexachlorocyclopentadiene at levels between the MDL and PQL. The presence of the effluent in the Test Wetland was indicated by the level of sucralose measured in the effluent and the elevated sucralose level in the Test Wetland sample compared to the lower sucralose level measured in the Control Wetland sample. Both the Test and Control Wetlands had three exotic plant species present: *Ligustrum sinense* (Wild Privet), *Murdannia nudiflora* (Doveweed), and *Sapium sebiferum* (Chinese tallow). *Ligustrum sinense* was present in all transects in the Test Wetland, and in two transects in the Control Wetland. The average similarity of the plant community between the Control Wetland and Test Wetland was 48%.

Facility Overview

The Pace Water System Facility is a domestic wastewater treatment facility. A Facility Summary, including a description of the facility, summary of permit limits, Consent Order (CO), and Discharge Monitoring Report (DMR) information is provided in Appendix A. The Pace Swamp has a Site-Specific Alternative Criteria for pH where discharge occurs via a spreader system, https://floridadep.gov/dear/water-quality-standards/content/waters-site-specific-alternative-criteria. The effluent is permitted to discharge continuously into the Pace Wetland System (Pace Swamp) which flows into the Simpson River, a Class III Freshwater (see Map of Facility and Sampling Locations).

Methods

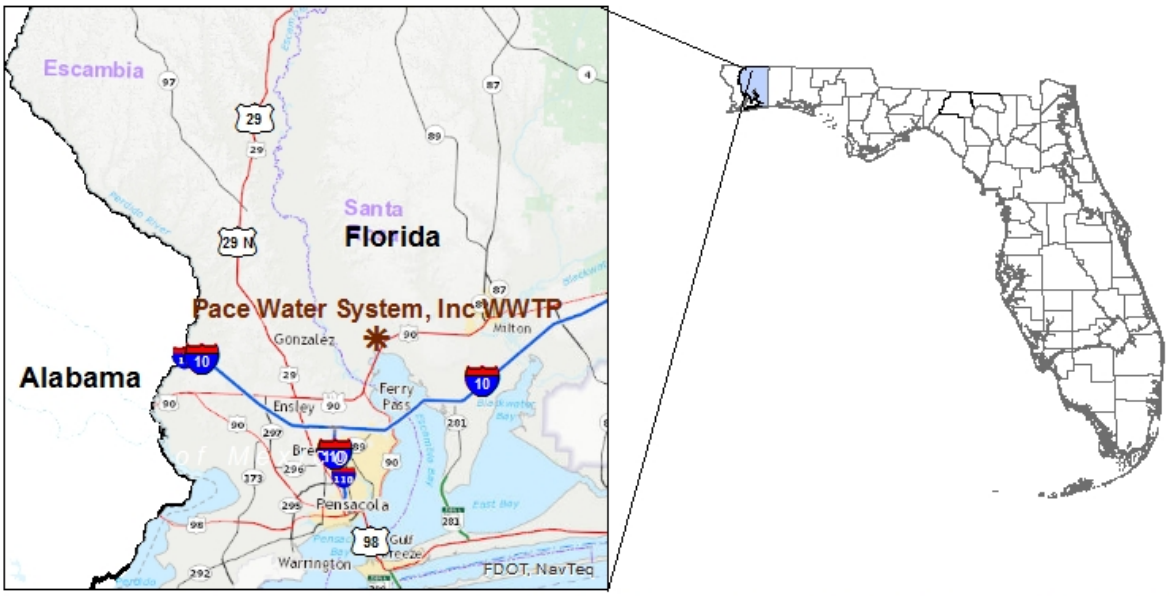
Effluent samples were taken as grab and composite samples from monitoring site location EFF-02, prior to dechlorination. At the time of inspection, the facility was sending all effluent to reuse so no dechlorination was required. The facility discharged to surface water over the course of the day on both May 7 and 8. Chemical and biological comparisons were made between a Control Wetland (located approximately 1.9 km southeast of the point of discharge near Highway 90) and a Test Wetland (located approximately 500 meters northwest of the point of discharge). The Test Wetland sampling point is in the center of the Test Wetland transects, approximately 800m from WEP-01. The effluent composite, effluent grab, and Test Wetland samples were collected May 7, 2018 and the Control Wetland samples were collected May 8, 2018. Effluent composite samples were collected for toxicity renewal on May 9 and 11, 2018.

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

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

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

Map of facility and sampling locations





Pace Water System

Fifth Year Bioassessment Sampling Locations

FL0102202

Florida Department of Environmental Protection
2600 Blair Stone Road Tallahassee, Fl 32399
https://.floridadep.gov.

N W E S

Map produced on 4/4/19 by Lisa Homann

Results

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

- The measured dissolved oxygen of the effluent complied with the permit limit. The Control Wetland's measured dissolved oxygen was below the minimum levels for Class III Freshwater Quality Criterion for the Panhandle West bioregion (62-302.530(30), F.A.C.), although this may be a natural condition for the wetland. Rule 62-611.500, F.A.C., establishes alternate criteria for dissolved oxygen for natural treatment and receiving wetlands.
- The measured pH at the Test Wetland Site is consistent with the Type II Site Specific Alternative Criteria (SSAC). The pH at the Control Wetland Site is presumed indicative of natural background.

Analytical Water Chemistry (See Table 2 and Appendix E)

- Total phosphorus was detected in both the grab and composite effluent samples at levels greater than in the Test and Control Wetland samples. The calculated total nitrogen value for the Control Wetland sample was greater than for the Test Wetland sample. Total Kjeldahl Nitrogen (TKN) was greater in the Control Wetland sample than in the Test Wetland and effluent samples. The effluent ortho-phosphate sample was received unfiltered because, per the samplers, the filter was leaking during the sampling event. The result is qualified. Ortho phosphate was not detected in the Test and Control Wetland samples.
- The alkalinity measured in both the Test and Control Wetland samples exceeded the Class III Water Quality Criterion (62.302(530)(1), F.A.C.).
- Chlorophyll-*a* was found in a greater amount in the Control Wetland sample than in either the Test Wetland or effluent samples.

Microbiology (See Table 2 and Appendix E)

- Fecal coliforms were undetected in the effluent sample and therefore, complied with the permit limit.
- *Escherichia coli* was not detected in the effluent sample but was detected in the Test Wetland sample at levels which exceeded the Class III Freshwater Quality Criterion (62-302.530(6)(b), F.A.C.).

Toxicity Whole Effluent Test (See Table 2)

- Tests were performed May 8-12, 2018 for the acute definitive test and May 8-14, 2018 for the chronic screen. Samples were collected from EFF-02 and effluent permit limits apply to EFD-01.
- Total residual chlorine (TRC; 1.59 mg/L) was detected in the bioassay composite sample (LIMS # 1990784) in the laboratory. An aliquot of this sample was dechlorinated by the addition of sodium thiosulfate (0.025 N) at a rate of 1.76 mL per liter of sample to neutralize the chlorine. Chronic screen bioassays were performed on the dechlorinated aliquot in addition to the chlorinated acute definitive bioassays performed on the original sample. The same concentration of sodium thiosulfate was added to the dechlorinated test controls. The purpose of the dechlorinated test controls was to confirm that there was no adverse effect of adding sodium thiosulfate to the sample. There was 100% *P. promelas* survival and 90% *C. dubia* survival in the dechlorinated controls.
- The acute, definitive bioassay was toxic to the water flea, *Ceriodaphnia dubia*, and to the fish, *Pimephales promelas.* The cause of toxicity was attributed to the residual chlorine in the sample.
- The dechlorinated effluent composite sample chronic screen IC25 bioassay for the fish, *Pimephales promelas,* was calculated as being greater than 100% effluent, and therefore is expected to meet effluent permit limits.
- The dechlorinated effluent composite sample chronic screen IC25 for the water flea, *Ceriodaphnia dubia,* was calculated as being greater than 100% effluent, and therefore is expected to meet effluent permit limits.
- For more information or to obtain copies of the toxicity bench sheets, please contact the Biology Laboratory at 850-245-8177.

Metals (See Table 3 and Appendix E)

- Effluent and Test Wetland sample metals were detected at levels that complied with effluent permit limits and Class III Freshwater Quality Criteria (62-302.530, F.A.C.).
- Iron and lead were detected in the Control Wetland sample at levels that exceeded Class III Freshwater Quality Criteria (62-302.530, F.A.C.).

- Copper was detected in the field blank between the method detection limit (MDL) and practical quantitation limit (PQL).

Algal Growth Potential (See Table 4 and Appendix E)

- The AGP values in the effluent, Test Wetland, and Control Wetland samples were performed using the freshwater algae species, *Pseudokirchneriella subcapitata*.
- The effluent AGP result is greater than the AGP range (6.10 to 20.0 mg dry wt/L) suggested to be representative of high productivity for freshwater (Miller et al. 1978). The AGP values were undetected in the Test and Control Wetland samples. Nitrate and nitrite were not detected in the Control Wetland sample and orthophosphate was not detected in the Test and Control Wetland samples, therefore, half the method detection level (MDL) for nitrate, nitrite and ortho-phosphate were used in the calculation for AGP and nitrogen to phosphorus ratio. The calculated predicted AGP values and N:P ratios are qualified per the data qualifiers of the input values. The analytical chemistry suggests that the effluent is nitrogen-limited, and the Test and Control Wetland sites are ortho-phosphate limited.
- By comparing the laboratory AGP result to the predicted AGP values for inorganic nitrogen, total nitrogen, ortho-phosphate, and total phosphorus, an inference can be made that not all the nitrogen in the effluent was bio-available to the test species, providing additional evidence the effluent is nitrogen limited. To determine actual nutrient limitation, a limiting-nutrient algal growth potential test should be performed (Maloney et al. 1978).
- There was at least an order of magnitude difference between the actual and predicted AGP values for the effluent ortho-phosphate and total phosphate. Differences greater than an order of magnitude between actual and predicted AGP values are considered sufficient evidence to warrant follow up testing with the algal growth inhibition bioassay. 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. True algal growth inhibition can only be determined by performing a *Pseudokirchneriella subcapitata* chronic toxicity test. This test is most beneficial to determine if toxic compounds are a problem and if the chronic toxicity water quality standard is exceeded. Should algal growth inhibition be suspected, the district should request that the algal toxicity test be performed as a follow-up to the inspection.

Organic Constituents (See Table 5 and Appendix E)

- Bis(2-chloroethoxy)methane and hexachlorocyclopentadiene were detected in the effluent grab sample at levels between the MDL and PQL.
- Atrazine and atrazine desethyl were detected in the effluent grab sample.
- Sucralose levels measured in the effluent, Test Wetland, and Control Wetland samples are indicative that the effluent is reaching the Test Wetland.

Bioassessment

Wetland Condition Index – Vegetation (See Tables 6-1 through 6-5)

- The Wetland Condition Index – Vegetation (WCI-V) method was conducted at Pace Swamp wetlands on May 7 and May 8, 2018. The taxa list from the WCI-V was used to compare the macrophyte communities of the Test and Control Wetlands. Bray-Curtis similarity percentages with species contributions were calculated. Community composition was also compared.
- Both the Test and Control Wetlands had three exotic species present: *Ligustrum sinense* (Chinese privet), *Murdannia nudiflora* (Doveweed), and *Sapium sebiferum (*Chinese tallow). *Ligustrum sinense* was present in all transects in the Test Wetland, and in two transects in the Control Wetland. *Murdannia nudiflora* was present in one control transect and three test transects. *Sapium sebiferum* was only present in two control transects.
- The average similarity among the Control Wetland transects was 62.4% and among the Test Wetland transects was 69.9%. The average similarity between Control Wetland transects and Test Wetland transects was 48%.
- The similarity percentages with species contribution (SIMPER) analysis (PRIMER software version 7, PRIMER-E, Ltd.) determines which species are contributing to the difference between groups and which species are contributing to the similarity within a group. Results of the SIMPER analysis show that the Test and Control Wetlands are 52.1% dissimilar, but this does not indicate that the quality if the macrophyte

communities is significantly different. No particular species or group of species contributed substantially to the differences. *Ligustrum sinense* (an exotic species) contributed the most to the dissimilarity.

- The similarity profile (SIMPROF) permutation test checks that samples that cluster together by similarity are statistically significant groups (Figure 1). The SIMPROF test indicated statistical differences in the composition of the Test and Control Wetland macrophyte taxa. The community composition of the Control Wetland transects differed from each other more so than the transects of the Test Wetland, in which all transects were at least 60% similar.
- The final WCI-V scores are not presented because this wetland type and region of the Panhandle were not well represented in the original WCI-V development dataset. The following macrophyte community metrics from the index are applicable across wetland community types and region and are indicators of change: % exotic, % native perennial, % wetland status, and mean Coefficient of Conservatism. The results for these four metrics are within the expected variation and therefore did not differ between the Control and Test Wetlands.
- Compared to wetland plant data collected in October 2012, the 4 sampled transects within both the Test and Control Wetlands showed an increase in variability. The exotic species, *Ligustrum sinense,* was recorded as present in one additional Control Wetland transect for this event, which contributed to the increase in overall similarity of taxa between the Test Wetland and Control Wetland. The presence of *Ligustrum sinense* in an additional transect in the Control Wetland, while in the same number of transects in the Test Wetland, suggests that factors other than the effluent are contributing to the establishment and spread of this species.

Literature Cited

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

Reiss, K.C. and M.T. Brown. 2005. The Florida Wetland Condition Index (FWCI): Developing Biological Indicators for Isolated Depressional Forested Wetlands. Howard T. Odum Center for Wetlands. University of Florida. 168 pp.

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

Parameter	Units	Class III Criteria	Effluent Permit Limits	Effluent Composite 5/7/18	Effluent Grab 5/7/18	Wetland Test 5/7/18	Wetland Control 5/8/18
Sample Depth	m	-	-	-	-	0.1	0.3
Temperature	C	-	-	5.0	25.5	23.0	19.5
pH	SU	6.0 - 8.5[1] s	6.0 - 8.5 s	7.5	7.0	6.4	5.6
Specific Conductance	µmhos/cm	≤ 1,275	-	-	-	37	56
Salinity	ppt	-	-	-	-	0.02	0.03
Dissolved Oxygen	% Saturation	> 67 (Control)	-	54.0 c	-	79.7	9.4 e
Dissolved Oxygen	mg/L	-	≥ 6.0 s	6.9	-	6.8	0.9
Total Residual Chlorine - disinfection	mg/L	-	≥ 1.0 s	3.6	2.1	-	-
Total Residual Chlorine - dechlorination	mg/L	≤ 0.01 s	≤ 0.01 s	-	-	-	-

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
c - Value is calculated
e- Value exceeds the Class III Freshwater Quality Criteria or permit limits
p – 24-hour flow proportioned composite
s - Single sample
1 - Pace Swamp Site Specific Alternative Criteria (SSAC) states that for the area including the Test Wetland sampled for this event, pH shall not exceed 7.0 standard units in more than 10 percent of the measurements collected in a calendar year, nor vary below natural background.

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

Parameter	Units	Class III Criteria	Effluent Permit Limits	Effluent Composite 5/7/18	Effluent Grab 5/7/18	Wetland Test 5/7/18	Wetland Control 5/8/18
Ortho-phosphate	mg P/L	-	-	-	3.2 YQ	0.004 U	0.004 U
Total Phosphorus	mg P/L	-	Report p	3.5	3.4	0.007	0.066
Total Ammonia	mg N/L	≤ 4.39 (Test) ≤ 5.50 (Ctrl)	≤ 2.0 p	-	0.009	0.019	0.006
Un-ionized Ammonia (calculated salinity)	mg N/L	≤ 0.02 s	-	-	< 0.02 c	< 0.02 c	< 0.02 c
Nitrate and Nitrite	mg N/L	-	-	6.0	5.1	0.30	0.004 U
Total Kjeldahl Nitrogen	mg N/L	-	-	0.73	0.62	0.15 I	1.4
Organic Nitrogen	mg N/L	-	-	-	0.61 c	0.13 c	1.4 c
Total Nitrogen	mg N/L	-	Report p	6.7 c	5.7 c	0.45 c	1.4 c
Total Organic Carbon	mg C/L	-	-	4.5 A	4.5	1.5	13
Chlorophyll *a* - Corrected	µg/L	-	-	-	0.55 U	1.4 I	30
Phaeophytin	µg/L	-	-	-	0.40 U	0.42 U	8.1
CBOD, 5-day, N - inhibited	mg/L	-	≤ 20.0 sp	1.2 I	-	0.65 I	2.3 A
Total Suspended Solids	mg/L	-	≤ 20.0 sp	2 I	-	4 IA	23 I
Turbidity	NTU	< 29 t (Ctrl)	-	-	0.55	1.7 A	12
Color (true)	PCU	-	-	-	2.9 I	4.8 I	270
Alkalinity	mg CaCO3/L	≥ 20	-	-	82 A	3.6 e	14 e
Chloride	mg Cl/L	-	-	-	55 A	6.3 A	5.1
Fluoride	mg F/L	≤ 10.0	-	-	0.035 I	0.035 U	0.035 U
Sulfate	mg SO4/L	-	-	-	30 A	0.75 A	0.20 U
Fecal Coliforms	cfu/100 mL	-	≤ 86 s	-	2 U	1191 B	16 B
Escherichia coli	MPN/100 mL	≤ 410 s	-	-	10 U	1789 e	31
Ceriodaphnia dubia (acute), LC50	% effluent	-	≥ 100 p	33.3	-	-	-
Pimephales promelas (acute), LC50	% effluent	-	≥ 100 p	32.5	-	-	-
Ceriodaphnia dubia dechlorinated (chronic), IC25	% effluent	-	≥ 100 p	> 100	-	-	-
Pimephales promelas dechlorinated (chronic), IC25	% effluent	-	≥ 100 p	> 100	-	-	-

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

p – 24-hour flow 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 the laboratory practical quantitation limit
Q - Sample held beyond normal holding time
U - Material analyzed for but not detected; value reported is the method detection limit
Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.

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

Parameter	Units	Effluent Composite Class III Criteria	Effluent Composite 5/7/18	Wetland Test Class III Criteria	Wetland Test 5/7/18	Wetland Control Class III Criteria	Wetland Control 5/8/18
Hardness	CaCo3/L	Report p	99.6 c	-	8.06 c	-	17.8 c
Aluminum	µg/L	-	60 U	-	60 U	-	280
Arsenic	µg/L	≤ 50	0.31	≤ 50	0.25	≤ 50	1.79
Cadmium	µg/L	≤ 0.27 b	0.024 I	≤ 0.097 b	0.020 U	≤ 0.097 b	0.020 U
Calcium[2]	mg/L	-	34.7	-	1.20	-	4.65
Chromium, Total[3]	µg/L	≤ 85.9 b	0.40 U	≤ 27.7 b	0.40 U	≤ 27.7 b	0.66 I
Copper[4]	µg/L	≤ 9.3 b	1.82	≤ 2.85 b	0.26 I	≤ 2.85 b	0.35 I
Iron	µg/L	≤ 1,000	30 U	≤ 1,000	150	≤ 1,000	10,600 e
Lead	µg/L	≤ 3.17 b	0.095 I	≤ 0.545 b	0.064 I	≤ 0.545 b	0.64 e
Magnesium	mg/L	-	3.15	-	1.23	-	1.51
Nickel	µg/L	≤ 52 b	1.72	≤ 16.1 b	0.20 U	≤ 16.1 b	0.70 I
Potassium	mg/L	-	13.6	-	0.84 I	-	0.30 U
Selenium	µg/L	≤ 5.0	0.20 U	≤ 5.0	0.20 U	≤ 5.0	0.20 U
Silver	µg/L	≤ 0.07	0.010 U	≤ 0.07	0.010 U	≤ 0.07	0.010 U
Sodium	mg/L	-	42.8	-	3.6	-	3.9
Zinc	µg/L	≤ 119 b	55	≤ 37 b	5.0 U	≤ 37 b	5.0 U

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
b - Value is calculated based on hardness, (62-302.530(3))
c - Value is calculated
e- Value exceeds the Class III Water Quality Criteria or permit limits
p - 24-hour flow proportioned composite
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
2 – Calcium was detected in the field blank at 0.093 mg/L
3 - Class III Freshwater Quality Criterion (62-302.530(19)(a), F.A.C.) is for chromium-III
4 – Copper was detected in the field blank at 0.63 µg/L

Table 4. Algal Growth Potential (AGPs). Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN), ortho-phosphate (OP), total nitrogen (TN) and total phosphorus (TP) limitation and ratios of nitrogen to phosphorus

Location	*Test Species*	AGP (**measured)**	Predicted AGP (TSIN**) ± 20%**	Predicted AGP (OP**) ± 20%**	Predicted AGP (TN**) ± 20%**	Predicted AGP (TP**) ± 20%**	Inorganic **N:P ratio**	Total **N:P ratio**
Effluent Grab	*Pseudokirchneriella subcapitata*	150	194.1 ± 38.8	1376 ± 275.2 YQ	217.4 ± 43.5	1462 ± 292.4	1.6 YQ	1.7
Wetland Test	*Pseudokirchneriella subcapitata*	0.300 U	12.1 ± 2.4	1.7 ± 0.3 YQ [6]	17.1 ± 3.4 I	3 ± 0.6	79.8 YQ [6]	64.3 I
Wetland Control	*Pseudokirchneriella subcapitata*	0.300 U	0.4 ± 0.1 [6]	1.7 ± 0.3 YQ [6]	53.4 ± 10.7 [6]	28.4 ± 5.7	2.5 YQ [6]	21.3 [6]

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

Q - Sample held beyond normal holding time

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

Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.

5 – Orthophosphate was not detected in the Wetland Test and Control samples and nitrate-nitrite were not detected in the Wetland Control sample; N:P ratios calculated using ½ method detection level (MDL) for the non-detect values.

Table 5. Effluent limits, Class III Freshwater Criteria and analytical organic and pesticide data

Parameter	Units	Class III Criteria	Effluent Permit Limits	Effluent Grab 5/7/18	Test Wetland 5/7/18	Control Wetland 5/8/18
Atrazine	µg/L	-	-	0.12 J	-	-
Atrazine Desethyl	µg/L	-	-	0.10 J	-	-
Bis(2-chloroethoxy)methane	µg/L	-	-	0.12 I	0.050 U	0.050 U
Hexachlorocyclopentadiene	µg/L	-	-	0.10 I	0.050 U	0.050 U
Sucralose	µg/L	-	-	88	0.50	0.050

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J - Estimated value
U - Material analyzed for but not detected; value reported is the method detection limit

Table 6-1. Bray-Curtis similarities for wetland macrophyte communities

Pace Water System, Inc. WWTP	Control Occurrence Average	Control Occurrence Transect 1	Control Occurrence Transect 2	Control Occurrence Transect 3	Control Occurrence Transect 4	Test Occurrence Transect 1	Test Occurrence Transect 2	Test Occurrence Transect 3	Test Occurrence Transect 4
Control Occurrence Average	62.38								
Control Occurrence Transect 1		55.30							
Control Occurrence Transect 2		69.09	65.86						
Control Occurrence Transect 3		47.93	72.22	59.03					
Control Occurrence Transect 4		47.15	43.04	53.23	43.72				
Test Occurrence Transect 1		52.36	42.57	54.62	41.41	72.58			
Test Occurrence Transect 2		58.74	41.98	55.12	42.53	65.29	67.72		
Test Occurrence Transect 3		52.08	37.40	51.28	34.17	63.60	67.40	71.91	
Test Occurrence Transect 4									69.90
Occurrence Average	47.93								

Table 6-2. Control Wetland percent species contributions to similarity

Species	Average Abundance	Average Similarity	Similarity/Standard Deviation	Contribution %	Cumulative %
Magnolia virginiana	3.16	5.34	11.12	8.56	8.56
Woodwardia areolata	3.12	5.19	15.40	8.32	16.88
Acer rubrum	2.90	4.60	13.50	7.37	24.25
Vitis rotundifolia	2.72	4.23	13.86	6.78	31.03
Toxicodendron radicans	2.66	3.93	11.15	6.30	37.33
Osmunda cinnamonmoea	2.60	3.83	3.92	6.14	43.47
Smilax laurifolia	1.80	2.92	11.12	4.69	48.15
Rubus pensilvanicus Poir.	2.06	2.82	6.25	4.52	52.67
Illicium floridanum	2.02	2.65	2.21	4.25	56.92
Arundinaria gigantea	1.83	2.65	3.37	4.24	61.16
Quercus nigra	1.77	2.39	11.12	3.83	64.99
Myrica cerifera	1.60	2.16	4.53	3.46	68.45
Rhododendron viscosum var. *serrulatum*	1.31	2.04	4.43	3.28	71.73

Table 6-3. Test Wetland percent species contributions to similarity

Species	Average Abundance	Average Similarity	Similarity/Standard Deviation	Contribution %	Cumulative %
Woodwardia areolata	3.16	5.52	21.51	7.90	7.90
Acer rubrum	2.99	4.96	18.19	7.10	15.00
Toxicodendron radicans	2.91	4.94	21.51	7.07	22.07
Magnolia virginiana	2.95	4.88	10.46	6.98	29.05
Itea virginica	2.90	4.76	8.17	6.81	35.86
Decumaria barbara	2.60	3.98	3.69	5.7	41.56
Ligustrum sinense	2.51	3.82	4.24	5.47	47.03
Rubus sp.	2.15	3.33	7.35	4.77	51.8
Osmunda regalis	2.16	3.04	3.15	4.34	56.14
Sphagnum moss	2.31	3.01	2.03	4.31	60.45
Smilax laurifolia	1.91	2.98	5.08	4.27	64.72
Boehmeria cylindrica	1.85	2.98	5.10	4.27	68.98
Bidens sp.	1.68	2.39	3.34	3.41	72.40

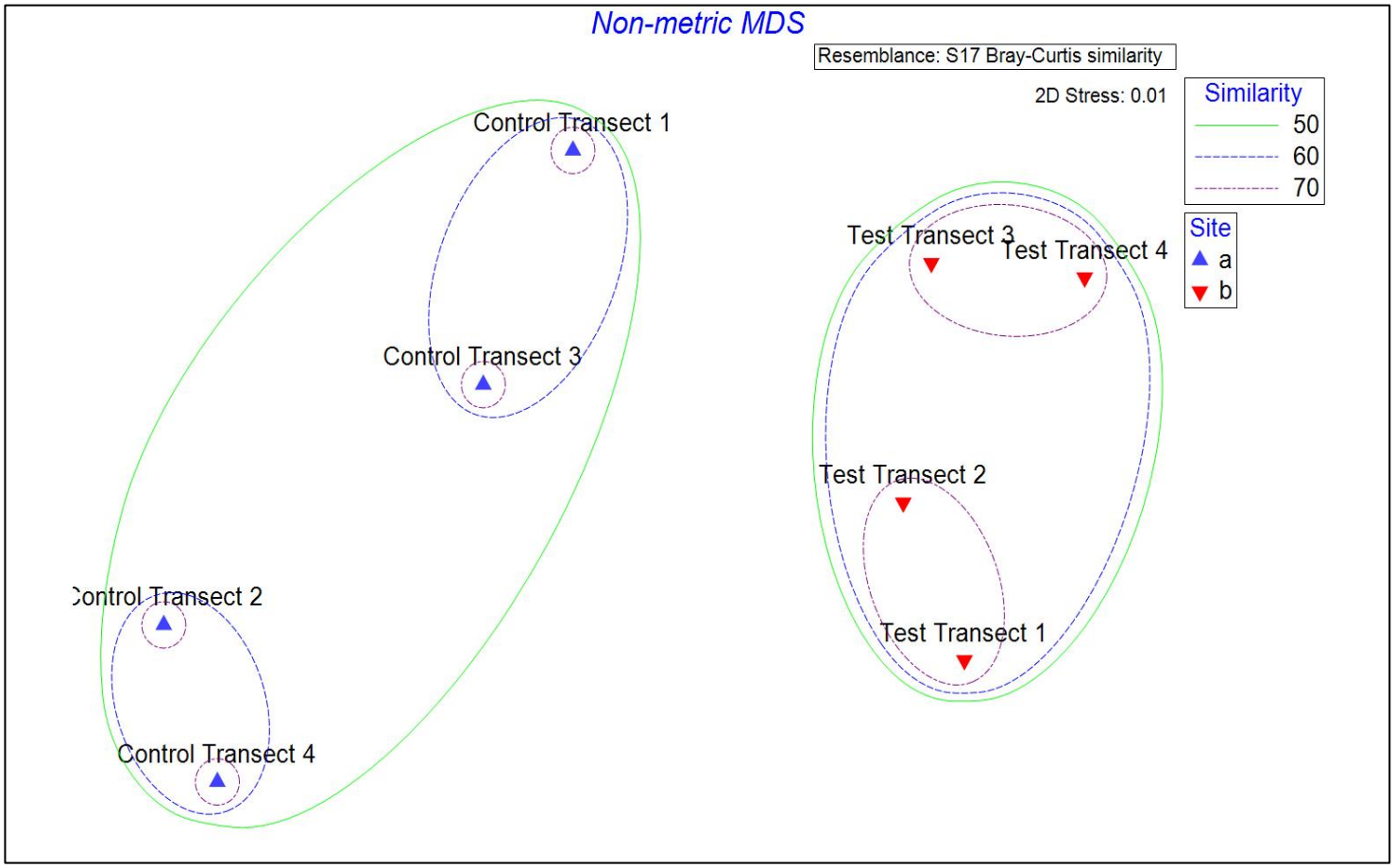
Table 6-4. Control Wetland vs. Test Wetland percent species contribution to dissimilarity

Species	Control Average Abundance	Test Average Abundance	Average Dissimilarity	Dissimilarity/ Standard Deviation	Contribution %	Cumulative %
Rubus sp.	0.00	2.15	1.85	5.40	3.56	3.56
Decumaria barbara	0.50	2.60	1.78	3.05	3.42	6.99
Rubus pensilvanicus Poir.	2.06	0.00	1.74	5.12	3.35	10.33
Vitis rotundifolia	2.72	0.71	1.71	2.74	3.28	13.61
Sambucus canadensis	0.35	2.20	1.70	1.81	3.26	16.88
Ligustrum sinense	0.60	2.51	1.67	2.14	3.21	20.08
Arundinaria gigantea	1.83	0.00	1.59	3.37	3.06	23.14
Sphagnum moss	0.60	2.31	1.53	1.69	2.94	26.08
Quercus nigra	1.77	0.00	1.52	2.77	2.92	29.00
Itea virginica	1.27	2.90	1.49	1.21	2.86	31.85
Illicium floridanum	2.02	0.50	1.44	1.64	2.77	34.63
Leucothoe axillaris	0.00	1.52	1.31	3.12	2.51	37.14
Carex leptalea	1.51	0.00	1.24	1.54	2.38	39.52
Mikania scandens	0.25	1.52	1.22	1.46	2.35	41.87
Rhododendron viscosum var. *serrulatum*	1.31	0.00	1.13	5.52	2.17	44.04
Dichanthelium scabriusculum	1.29	0.00	1.10	4.09	2.12	46.16
Ilex coriacea	1.66	0.93	1.10	1.41	2.11	48.27
Ilex opaca	1.35	0.25	1.07	1.54	2.05	50.32
Centella asiatica	1.41	1.66	1.05	1.23	2.01	52.33
Saururus cernuus	1.27	0.00	1.04	1.56	1.99	54.32
Osmunda regalis	1.36	2.16	1.01	1.23	1.94	56.26
Carex striata	1.18	0.56	1.00	1.48	1.92	58.17
Peltandra virginica	0.35	1.27	0.93	1.29	1.79	59.96
Bidens sp.	0.68	1.68	0.91	1.49	1.75	61.71
Osmunda cinnamonmoea	2.60	1.72	0.84	1.48	1.61	63.32
Vitis sp.	0.00	0.99	0.83	0.95	1.59	64.91
Carex lupulina	1.14	0.35	0.83	1.31	1.59	66.51
Liriodendron tulipifera	1.14	1.26	0.80	1.27	1.53	68.03
Boehmeria cylindrica	1.04	1.85	0.78	1.16	1.49	69.53
Murdannia nudiflora	0.25	0.96	0.73	1.37	1.40	70.93

Table 6-5. Wetland Condition Index – Vegetation community composition percentages

Pace Water System	Test Wetland	Control Wetland
% Tolerant Taxa	2.2	1.7
% Sensitive Taxa	2.2	1.7
% Exotic Taxa	3.3	5.0
Average CC of Taxa	4.6	3.3
% Native Perennial Taxa	91.3	93.3
% Wetland Status Taxa	84.4	88.1

Figure 1. Non-metric multi-dimensional scaling plot



Appendix A

Facility Summary

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: Kevin Holler	**Contact Number:** 850-595-0701
Facility Name (as it appears on permit): Pace Water System	**Former Names:** NA
NPDES Permit Number: FL0102202	**Permit Expiration Date:** March 27, 2019
Physical Address: 4401 Woodbine Road, Pace, Florida 32571	
District: NWD	**County:** Santa Rosa
Function of Facility: Domestic Wastewater Treatment Facility	
Facility Type: WWTP	**Permitted Capacity (MGD):** 5.0 MGD (AADF); (Surface water discharge D-001 1.0 MGD)
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): 03/01/2017 thru 02/28/2018: FLW-03 (wetlands): 0.632 MGD	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months): 03/01/2017 thru 02/28/2018: FLW-02: 0.839 MGD	
Description of type of Discharge: ☒ **Continuous** ☐ **Intermittent** ☐ **Seasonal** ☐ **Rainfall Dependent** ☐ **Other, please specify**	

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

Monitoring Site Number	Description of Monitoring Site
FLW-03	Calculated flow to wetlands (FLW-01 minus FLW-02)
EFF-02	Composite Sampler at the Reclaimed Water Pumping Station
EFA-01	Continuous TRC Meter at the Chlorine Contact Chamber #1
EFA-02	Continuous TRC Meter at the Chlorine Contact Chamber #2
EFD-01	Effluent Splitter Box
CAL-01	Calculated number
WEP-01	Wetland compliance monitoring point, at the point of discharge from the wetland
WIM-01	Wetland internal monitoring station, immediately downstream of the flow into the wetland
WIM-02	Wetland internal monitoring station, in the approximate geographic middle of the wetland

Description of Permitted Outfall(s):

Surface Water Discharge D-001: An existing 1.0 MGD annual average daily flow discharge to approximately 144 acres of the Pace Swamp wetlands. Effluent is discharged through galvanized diffusers that are distributed along 2,400 LF, onto rip-rap rocks dispersing the effluent into Pace Swamp. Pace Swamp's water flows to the Simpson River, Class III fresh waters, (WBID# 10E) which is a tributary of Escambia Bay.

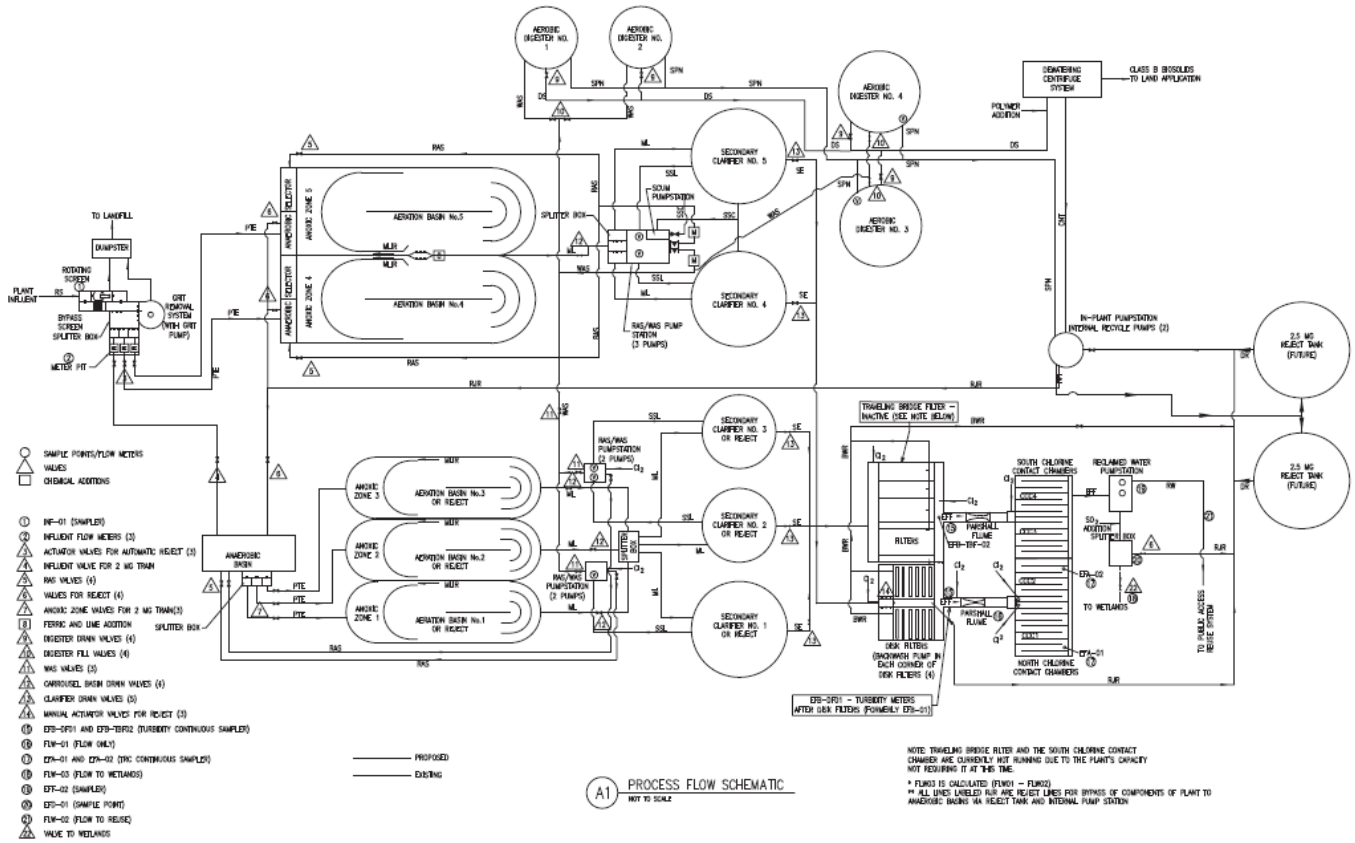
Land Application R-001: An existing 5.0 MGD annual average daily flow permitted capacity slow-rate public access system. The boundaries of the general reuse area are defined by the boundaries of the utility franchise area.

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

An existing wastewater treatment facility with a permitted treatment capacity of 5.0 MGD annual average daily flow (AADF).

The facility receives flow from an off-site pump stations through a force main and a gravity sewer. The common headworks treatment consists of a rotating screen and press and a bypass bar screen, grit removal system, grit pump, and grit classifier; with flow divided to either of two treatment plants each with several treatment trains, as follows:
The 2.0 MGD AADF capacity treatment plant consists of a single anaerobic basin with a flow splitter box to three oxidation ditch systems each with an anoxic zone and an aeration basin, a mixed liquor splitter box to three secondary clarifiers, two return and waste activated sludge pump stations, three traveling bridge filters, a Parshall flume and two chlorine contact chambers. This plant is currently inactive.
The 3.0 MGD AADF capacity treatment plant consists of two 3-stage biological nutrient removal basins each with an anaerobic selector tank, anoxic zone and aeration basin, a mixed liquor splitter box to two secondary clarifiers, return and waste activated sludge pump station, two rotating stainless-steel mesh disk filters, a Parshall flume and two chlorine contact chambers.
An in-plant duplex submersible pump station to return plant sewer and reject water.

Class B Biosolids are treated in four aerobic digesters and dewatered in a centrifuge system; with three polymer assisted drying beds to provide redundancy for dewatering of biosolids.
Reclaimed water flows by gravity to the wetlands, pumped to storage tanks for public ac



cess irrigation or to reject storage.
See Process Flow Schematic and Site Plan of the WWTP attached.

PART I: Continued

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

			Effluent Limitations		Monitoring Requirements			
Parameter	Units	Max/ Min	Limit	Statistical Basis	Frequency of Analysis	Sample Type	Monitoring Site Number	Notes
Flow (to wetlands)	MGD	Max Max	1.0 Report	Annual Average Monthly Average	Continuous	Calculated	FLW-03	
BOD, Carbonaceous 5 day, 20C	mg/L	Max Max Max Max	10.0 12.5 15.0 20.0	Annual Average Monthly Average Weekly Average Single Sample	Weekly	24-hr FPC	EFF-02	
Solids, Total Suspended	mg/L	Max Max Max Max	10.0 12.5 15.0 20.0	Annual Average Monthly Average Weekly Average Single Sample	4 Days/Week	24-hr FPC	EFF-02	
pH	s.u.	Min Max	4.35 5.35	Single Sample Single Sample	Continuous	Meter	EFF-02	See I.A.3
Coliform, Fecal	#/100mL	Max Max Max	14 14 86	Annual Average Monthly Median Single Sample	4 Days/Week	Grab	EFF-02	See I.A.4
Chlorine, Total Residual (For Disinfection CCC#1)	mg/L	Min	1.0	Single Sample	Continuous	Meter	EFA-01	See I.A.3 and I.A.5
Chlorine, Total Residual (For Disinfection CCC#2)	mg/L	Min	1.0	Single Sample	Continuous	Meter	EFA-02	See I.A.3 and I.A.5
Chlorine, Total Residual (For Dechlorination)	mg/L	Max	0.01	Single Sample	Daily; 24 hours	Grab	EFD-01	
Nitrogen, Total	mg/L	Max	Report	Monthly Average	Weekly	24-hr FPC	EFF-02	
Nitrogen, Total	lb/mth	Max	Report	Monthly Total	Monthly	Calculated	CAL-01	
Nitrogen, Total	lbs/year	Max	32,052	Annual Total	Monthly	Calculated	CAL-01	
Phosphorus, Total (as P)	mg/L	Max	Report	Monthly Average	Weekly	24-hr FPC	EFF-02	

			Effluent Limitations		Monitoring Requirements			
Parameter	Units	Max/ Min	Limit	Statistical Basis	Frequency of Analysis	Sample Type	Monitoring Site Number	Notes
Phosphorus, Total (as P)	lbs/mth	Max	Report	Monthly Total	Monthly	Calculated	CAL-01	
Phosphorus, Total (as P)	lbs/years	Max	3,852	Annual Total	Monthly	Calculated	CAL-01	
Nitrogen, Ammonia, Total (as N)	mg/L	Max	2.0	Monthly Average	Weekly	24-hr FPC	EFF-02	
Oxygen, Dissolved (DO)	mg/L	Min	6.0	Single Sample	Daily; 24 hours	Grab	EFD-01	
Hardness, Total (as CaCO3)	mg/L	Max	Report	Single Sample	Quarterly	24-hr FPC	EFF-02	
Copper, Total Recoverable	ug/L	Max	-	Single Sample	Quarterly	24-hr FPC	EFF-02	See I.A.6
Zinc, Total Recoverable	ug/L	Max	-	Single Sample	Quarterly	24-hr FPC	EFF-02	See I.A.6
Chronic Whole Effluent Toxicity, 7-Day IC25 (Ceriodaphnia dubia)	percent	Min	100	Single Sample	Annually	24-hr FPC	EFD-01	See I.A.7
Chronic Whole Effluent Toxicity, 7-Day IC25 (Pimephales promelas)	percent	Min	100	Single Sample	Annually	24-hr FPC	EFD-01	See I.A.7
Stream Stage	ft	Max	Report	Annual Average	Continuous	Recorded	WEP-01	
Nitrogen, Total	mg/L	Max	3.0 Report	Annual Average Single Sample	Quarterly	Grab	WEP-01	
Nitrogen, Ammonia, Total unionized (as N)	mg/L	Max	0.02 Report	Annual Average Single Sample	Quarterly	Calculated	WEP-01	
Phosphorus, Total (as P)	mg/L	Max	0.2 Report	Annual Average Single Sample	Quarterly	Grab	WEP-01	
Temperature (C), Water	Deg C	Max	Report	Single Sample	Quarterly	Meter	WEP-01, WIM-01, WIM-02	
Oxygen, Dissolved (DO)	mg/L	Max	Report	Single Sample	Quarterly	Meter	WEP-01, WIM-01, WIM-02	

Nitrogen, Kjeldahl, Total (as N)	mg/L	Max	Report	Single Sample	Quarterly	Grab	WEP-01, WIM-01, WIM-02	
Nitrogen, Ammonia, Total (as N)	mg/L	Max	Report	Single Sample	Quarterly	Grab	WEP-01, WIM-01, WIM-02	
Nitrite plus Nitrate, Total 1 det. (as N)	mg/L	Max	Report	Single Sample	Quarterly	Grab	WEP-01, WIM-01, WIM-02	
Coliform, Fecal	#/100mL	Max	Report	Single Sample	Quarterly	Grab	WEP-01, WIM-01, WIM-02	
pH	s.u.	Max	Report	Single Sample	Quarterly	Grab	WEP-01, WIM-01, WIM-02	
Specific Conductance	umhos/cm	Max	Report	Single Sample	Quarterly	Grab	WEP-01, WIM-01, WIM-02	
BOD, Carbonaceous 5 day, 20C	mg/L	Max	Report	Single Sample	Quarterly	Grab	WEP-01, WIM-01, WIM-02	
Solids, Total Suspended	mg/L	Max	Report	Single Sample	Quarterly	Grab	WEP-01, WIM-01, WIM-02	
Chlorophyll a	g/L	Max	Report	Single Sample	Semi-Annual	Grab	WEP-01, WIM-01, WIM-02	
Herbaceous Vegetation	Yes/No	Max	Report	Single Sample	Semi-Annual (Summer-Winter)	Visual Observation	WEP-01, WIM-01, WIM-02	
Fish Presence	Yes/No	Max	Report	Single Sample	Annually (>6" of water)	Documents	WEP-01, WIM-01, WIM-02	
Woody Vegetation	Yes/No	Max	Report	Single Sample	Annually	Documents	WEP-01, WIM-01, WIM-02	
Threatened and Endangered Species	Yes/No	Max	Report	Single Sample	Annually	Documents	WEP-01, WIM-01, WIM-02	

11/16/2015: Minor permit revision (file number FL0102202-022-DWF/MM). Revised monitoring is to start December 1, 2015:

Permit condition I.A.1. D-001 effluent limits is revised changing the pH limits from 4.4 to 5.4 s.u. to 6.0 to 8.5 s.u. with a new condition I.A.17

			Effluent Limitations		Monitoring Requirements			
Parameter	Units	Max/ Min	Limit	Statistical Basis	Frequency of Analysis	Sample Type	Monitoring Site Number	Notes
pH	s.u.	Min Max	6.0 8.5	Single Sample Single Sample	Continuous	Meter	EFF-02	See I.A.3 and I.A.17

17. Effluent pH shall not cause the Pace Swamp wetland pH to exceed 7.0 standard units in more than 10 measurements collected in a calendar year, nor vary below natural background.

02/22/2016: Consent Order OGC#16-1394: By March 31, 2021, Respondent shall take corrective actions to comply with its annual average permit limit for Total Phosphorous at Monitoring Location WEP-01 or obtain approval of a moderating provision for Total Phosphorous or cease discharge to the Pace Swamp wetlands. This Consent Order provides an interim limit for total phosphorous at Outfall D-001 until March 31, 2021.

Parameter	Units	Max/Min	Annual Average	Monitoring Location Site Number
Phosphorus, Total (as P)	MG/L	Maximum	Report	WEP-01

PART I: Continued

Receiving Waters: Pace Swamp Wetlands to the Simpson River	**Classification (indicate whether fresh or marine):** Class III Fresh

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

7. Test Requirements
   a. 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.
   b. The permittee shall conduct a daphnid, Ceriodaphnia dubia, Survival and Reproduction Test and a fathead minnow, Pimephales promelas, Larval Survival and Growth Test, concurrently.
   c. 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.
   d. The control water and dilution water shall be moderately hard water as described in EPA-821-R-02-013, Section 7.2.3.

Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.): 02/22/2016: Consent Order OGC#16-1394; By March 31, 2021, Respondent shall take corrective actions to comply with its annual average permit limit for Total Phosphorous at Monitoring Location WEP-01 or obtain approval of a moderating provision for Total Phosphorous or cease discharge to the Pace Swamp wetlands. This Consent Order provides an interim limit for total phosphorous of "Report Only" at Outfall D-001 until March 31, 2021.

https://depedms.dep.state.fl.us:443/Oculus/servlet/shell?command=getEntity&[guid=38.564890.1]&[profile=Enforcement_Legal]

Facility Mixing Zone Details (if applicable): Not Applicable

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

Date	Description	Result	Limit	Units	Statistical Base
12/31/2017	Nitrogen, Ammonia, Total unionized (as N)	0.05	0.02	mg/L	AB - Annual Average
7/31/2017	Coliform, Fecal	200.5	86.0	#/100mL	MB - Maximum
7/31/2017	Coliform, Fecal	200.5	25.0	#/100mL	MB - Maximum
6/30/2017	Solids, Total Suspended	24.06	15.0	mg/L	WA - Weekly Average
6/30/2017	Solids, Total Suspended	38	20.0	mg/L	MB - Maximum
6/30/2017	Coliform, Fecal	33	25.0	#/100mL	MB - Maximum
3/31/2017	Zinc, Total Recoverable	20.38	0.0	ug/L	MB - Maximum
3/31/2017	Nitrogen, Ammonia, Total unionized (as N)	0.04	0.02	mg/L	AB - Annual Average

Describe previous FYI and WQBEL study:
01/30/2015 FYI- Out of Compliance
Missed repeat pathogen monitoring, no certification for no new non-domestic dischargers, reuse report non-submittal, phosphorus and ammonia exceedances, missing reuse advisory sign, O&M manual for the Wastewater collection and Transmission system not complete.
https://depedms.dep.state.fl.us:443/Oculus/servlet/shell?command=getEntity&[guid=38.372198.1]&[profile=Discovery_Compliance]

WQBEL 11/18/2013:
The Level I WQBEL process applies to the renewal of existing permits when data are sufficient to determine that the receiving waters currently meet standards and are expected to continue to meet standards with the discharge [Rule 62-650.400(1)].

Pace WWTP discharges to a Class III fresh water wetland section of Escambia River, Water Body ID (WBID) 10E. WBID 10E is on the FDEP's 303(d) list of impaired waters for mercury in fish tissue. WBID 10E is within the watershed of North Escambia Bay (WBID 548AA) which is listed as impaired for nutrients. See link to Florida's 303(d) Master Verified List:
http://www.dep.state.fl.us/water/watersheds/assessment/docs/303d/Master-Verified-List-2013.xls
Mercury: DEP Mercury TMDL for the State of Florida, October 29, 2012, was approved by EPA http://www.dep.state.fl.us/water/tmdl/docs/tmdls/mercury/florida-merc-tmdl-draft-110812.pdf, states that "Florida has determined that the mercury contribution from NPDES-permitted point source discharges are minor relative to the loads being deposited on Florida's land and waters (fresh and marine) from atmospheric deposition." The TMDL proposes no TMDL permit conditions for NPDES facilities permitted to discharge 1.0 MGD or less. Pace's expanded effluent testing for the renewal application performed three mercury analysis; two of which were non-detect and the third was less than the PQL. Therefore, there are no mercury TMDL permit conditions applicable to the Pace Water System WWTP Permit.
DEP's FINAL TMDL Report: Pensacola Bay Basin; North Escambia Bay (WBID 548AA) (Nutrients) is dated June 7, 2013.
http://www.dep.state.fl.us/water/tmdl/final_tmdl.htm#Group4
The TMDL establishes a WLA wastewater for Pace Water System, Inc. (NPDES Permit FL0102202), TP is 10.5 lbs./day (3,852 lbs./yr.) and 87.8 lbs./day (32,052 lbs./yr.) for TN. The last permit effluent limits for TP was 321 lbs/month and TN 2,671 lbs/month. The renewal will match the annual allocation vice monthly.
DEP's Biological Assessment of Pace WWTP, report dated May 2013 was based upon samples taken from October to December 2012. ftp://ftp.dep.state.fl.us/pub/labs/lds/reports/13141.pdf
The report concluded,
1. All metals detected in the effluent grab, composite samples, and wetland grab sample were present at levels that complied with effluent permit limits and Class III Freshwater Quality Criteria (62-302.530 F.A.C.).
2. The toxicity whole effluent test conducted passed for the Pimephales Promelas (flat head minnow) at 100% but the Ceriodaphnia dubia (water flea) failed at 50% which constitutes an exceedance of Class
III Fresh Water Quality Criterion (62-302.530(61)), F.A.C.) and the permit limit. The facility has Not had a history of toxicity. However, the renewal permit will continue to require Chronic Whole Effluent Toxicity testing with an effluent limit of IC25 ≥ 100 percent effluent.
3. The pH of the Test wetland exceeded the naturally low pH limit for the Class III Freshwater Quality Criterion (62-302.530(51)(c), F.A.C.). The facility has an existing compliance schedule through Consent Order 08-1611 to comply or seek relief for discharging a pH neutral effluent into a naturally low pH of the wetlands.
4. The results of the Wetland Condition Index – Vegetation (WCI-V) method did not demonstrate that the effluent is having a detrimental effect on the vascular plant community in the receiving

waters. No limits, other than those included in this permit are needed to maintain Florida water quality standards.

Describe previous or current Enforcement Actions (including WLs):
Consent Order OGC#16-1394, 5. By March 31, 2021, Respondent shall take corrective actions to comply with its annual average permit limit for Total Phosphorous at Monitoring Location WEP-01 or obtain approval of a moderating provision for Total Phosphorous or cease discharge to the Pace Swamp wetlands. This Consent Order provides an interim limit for total phosphorous of "Report Only" at Outfall D-001 until March 31, 2021.

https://depedms.dep.state.fl.us:443/Oculus/servlet/shell?command=getEntity&[guid=38.564890.1]&[profile=Enforcement_Legal]

Describe any violations or problems noted in previous inspection:
01/2015 FYI: Missed repeat pathogen monitoring, no certification for no new non-domestic dischargers, reuse report non- submittal, phosphorus and ammonia exceedances, missing reuse advisory sign, O&M manual for the Wastewater collection and Transmission system not complete.

https://depedms.dep.state.fl.us:443/Oculus/servlet/shell?command=getEntity&[guid=38.372198.1]&[profile=Discovery_Compliance]

Discuss whether DMR trends within previous five years are improving or declining:
The facility did not meet its effluent limits of several parameters through 12/2017. 01/18 and 02/18 show no exceedances. Phosphorus continues to be an issue in the facility's effluent. While the current limit is "Report Only" for phosphorus at WEP-01, results are ranging between 0.14 mg/L and 0.74mg/L from 03/2017 to 02/2018.

Additional Comments (this should include a trend of the Effluent, i.e. if the facility is now Reuse):
The facility is currently proposing a new land application site to include both RIBs and spray fields to limit future surface water discharges.

PART II: Sampling Event Information	
Date(s) sample collected: **05/07/18 (Tox & grab), 05/09/18 (Tox), 05/11/18 (Tox)**	**Sampler(s):** **Kevin Holler, Dana Vestal**
Temperature (Deg C): ***See additional comments below for all sampling results**	**pH (SU):** *
Dissolved Oxygen (mg/L): *	**Conductivity (umhos/cm):** **NA**
Total Residual Chlorine (mg/L): *	**Total Residual Chlorine - after Disinfection (mg/L):** **NA**
Method of Chlorination: **Cl^2**	**Method of De-chlorination:** **SO^2**
Flow During Sample Collection for each outfall(MGD): **FLW-02: 0.71mgd**	
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): **Ending July 31, 2018: FLW-03: 0.435 MGD, FLW-002: 0.954 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:

Just prior to the inspection we found out that the facility was taking Toxicity samples at Eff-01 instead of EFD-01. This resulted in Toxicity samples having a chlorine residual when sent off to the lab. The facility was discharging to its reuse system and not the wetlands while pulling grab samples.

Sampling results:

05/07/2018 Composite
pH: 7.52su
DO: 6.92 mg/L
Cl: 3.6 mg/L
Temp: 5.0° C.

05/07/2018 Grab
pH: 7.02 su
DO: NA
Cl: 2.12 mg/L
Temp: NA

05/09/2018 Composite
pH: 7.43su
DO: 7.37 mg/L
Cl: 5.3 mg/L
Temp: DNS

05/11/2018 Composite
pH: 6.97su
DO: 6.67 mg/L
Cl: 5.5 mg/L
Temp: 14.8° C. (grab/comp)

Appendix B

Explanation of Measurements

Biological assessments are prepared by DEP staff to provide information for review of NPDES permit renewal applications. Biological assessments, in conjunction with other information concerning the subject facility and its receiving-water body, are used to determine appropriate permit conditions. References to Rule 62-302.530, F.A.C., are to the currently applicable surface water quality criteria table with an effective date of 02/17/2016 and a notice identification number of 17115667.

1) Quality Assurance and Quality Control

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

2) Chemical Analyses of the Effluent

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

3) Toxicity Bioassays

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

4) Bacteriological Testing

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

The algal growth potential (AGP) value is the peak growth of the alga within that 14-day period, recorded as mg dry weight/L. AGP results within the range 6.10 to 20.0 mg dry wt/L are suggested to be representative of high productivity for freshwaters (Miller et al. 1978). High AGP values may constitute exceedances of 62-302.530(46), F.A.C., 62-302.530(47)(a), F.A.C. and/or 62-302.530(47)(b), F.A.C..

The concentration of nutrients in a water sample may be used to calculate the expected yield of AGP under the assumption that other required nutrients (e.g. silicon, micronutrients) are present in excess (Miller *et al*. 1978). The expected amount of production is calculated as 38 times the total soluble inorganic nitrogen (nitrate and nitrite plus ammonia) under nitrogen limitation or 430 times the ortho-phosphate (OP) concentration under phosphorus limitation with an error of $\pm$ 20%. When the ratio of nitrogen to phosphorus (N: P) is less than 10:1, nitrogen limitation of algal production is likely. When the N: P ratio is 20:1 or greater, phosphorus limitation is likely (USEPA 2000). For ratios in-between, co-limitation may occur. Production of lower biomass than expected may be evidence of growth inhibition related to toxic compounds present in the water sample tested and may constitute an exceedance of 62-302.530(61), F.A.C.

6) Florida Wetland Condition Index-Vegetation

The Florida Wetland Condition Index-Vegetation (WCI-VI) for isolated, forested wetlands is a biological assessment of wetland health conducted by sampling vascular plants along transects, identifying them to the species level, and calculating metric values based on attributes of the plant community that change predictably along an independent gradient of human disturbance. The index is calculated based on six metrics: percent tolerant indicator species, percent sensitive indicator

species, percent exotic macrophyte species, average Coefficient of Conservatism (CC) score, percent native perennial species, and percent wetland status species. These metrics are calibrated for four ecoregions within the state including the Panhandle, North, Central, and South regions. The score is based on a 0-60 scale, with 60 representing high biological integrity. This current index is based on the Florida Wetland Condition Index (FWCI) developed by Reiss and Brown (2005) to provide a quantitative measure of the biological integrity of a wetland system.

7) Definition of Qualifiers

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

Appendix C
Chain of Custody

Request Number: RQ-2018-04-30-31

FYI5 Pace Water System WWTP FL0102202 Sampling Inspection

Customer: NW-DIST

Project ID: FYI5

Florida Department of Environmental Protection
Central Laboratory Submittal Form

Page 1 of 5
last revised Jan 25, 2018

Requester: Lillian Haynes
Collected By: Kevin Holler
Field Report Prepared By: Kevin Holler
Sampling Agency: FDEP-NWD

Location: Pace WWTP	☒ Comp ☐ Grab	Collection (comp begin or grab) Date 5/6/18 Time 5/7/18 11:00	Eastern Central	Composite end Date 5/7/18 Time 10:00	Bottle Group(s) (See pg 2): B
Field ID: Effluent Composite EFF-02	Matrix (type, e.g., Salt, Fresh, etc): Wastewater	Diss. Oxygen 6.92 ☒ mg/L ☐ % sat	Total Res. Chlorine (mg/L) 3.6 mg/L	
WIN/STORET #	Temp (C) 5.0°C	pH 7.52	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments		
Location: Pace WWTP	☐ Comp ☒ Grab	Collection (comp begin or grab) Date 5/7/18 Time 10:31	Eastern Central	Composite end Date — Time —	Bottle Group(s): A
Field ID: Effluent Grab EFF-02	Matrix (type, e.g., Salt, Fresh, etc): Waste Water	Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L) 2.12	
WIN/STORET #	Temp (C) 25.5°	pH 7.02	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments		
Location: Pace WWTP	☐ Comp ☒ Grab	Collection (comp begin or grab) Date 5/7/18 Time 10:50	Eastern Central	Composite end Date — Time —	Bottle Group(s): D
Field ID: Field Blank	Matrix (type, e.g., Salt, Fresh, etc): DI Water	Diss. Oxygen — ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L) —	
WIN/STORET #	Temp (C) —	pH —	Sample Depth — ☐ ft ☐ m	Sp. Conductance (umho/cm) —	
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments		
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time	Bottle Group(s)
Field ID	Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
WIN/STORET #	Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments		

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
				Tyler R	05/08/18 10:05

Request Number: RQ-2018-04-30-31

FYI5 Pace Water System WWTP FL0102202 Sampling Inspection

Customer: NW-DIST

Project ID: FYI5

Florida Department of Environmental Protection
Central Laboratory Submittal Form

last revised Jan 25, 2018

Requester: Lillian Haynes

Collected By: Kevin Holler

Field Report Prepared By: Kevin Holler

Sampling Agency: FDEP

Location: Pace WWTP FL0102202	☒ Comp ☐ Grab	Collection (comp begin or grab) Date 5/8/18 Time 11:00 am	Eastern (Central)	Composite end Date 5/9/18 Time 10:00 am (Central)					Bottle Group(s) (See pg 2) B
Field ID: EFF-02 Composite	Matrix (type, e.g., Salt, Fresh, etc): ~~Fresh~~ WasteWater			Diss. Oxygen	☒ mg/L ☐ % sat	Total Res. Chlorine (mg/L) 5.3 mg/L			
WIN/STORET #	Temp (C) 5.0°	pH 7.43		Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)			
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments: Sample is Chlorinated						
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time					Bottle Group(s)
Field ID	Matrix (type, e.g., Salt, Fresh, etc)			Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)			
WIN/STORET #	Temp (C)	pH		Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)			
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments						
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time					Bottle Group(s)
Field ID	Matrix (type, e.g., Salt, Fresh, etc)			Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)			
WIN/STORET #	Temp (C)	pH		Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)			
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments						
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time					Bottle Group(s)
Field ID	Matrix (type, e.g., Salt, Fresh, etc)			Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)			
WIN/STORET #	Temp (C)	pH		Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)			
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments						

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
				Tyler R	05/10/18 @ 9:45

VABR ≤ 0.19
105
2 BSY jugs

Request Number: RQ-2018-04-30-31

FYI5 Pace Water System WWTP FL0102202 Sampling Inspection

Customer: NW-DIST

Project ID: FYI5

Florida Department of Environmental Protection

Central Laboratory Submittal Form

last revised Jan 25, 2018

Requester: Lillian Haynes

Collected By: Nathan Mulkey

Field Report Prepared By: N. Mulkey

Sampling Agency: FDEP DWROC

Location: Pace Wetland Control	☐ Comp ☑ Grab	Collection (comp begin or grab) Date: 5/8/18 Time: 1030	Eastern (Central)	Composite end Date	Time	Bottle Group(s) (See pg 2): C			
Field ID: Pace Wetland Control	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen: 0.86 ☑ mg/L ☐ % sat	Total Res. Chlorine (mg/L)					
WIN/STORET #	Temp (C): 19.51	pH: 5.61	Sample Depth: 0.3 ☐ ft ☑ m	Sp. Conductance (umho/cm): 56					
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments: intermittent flow, minimal						
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date	Time	Bottle Group(s)			
Field ID	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)					
WIN/STORET #	Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)					
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments						
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date	Time	Bottle Group(s)			
Field ID	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)					
WIN/STORET #	Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)					
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments						
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date	Time	Bottle Group(s)			
Field ID	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)					
WIN/STORET #	Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)					
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments						

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
[signature]	5/8/18	Fed Ex	1	J.2.	5/9/19 9:45

Request Number: RQ-2018-04-30-31

FYI5 Pace Water System WWTP FL0102202 Sampling Inspection

Customer: NW-DIST

Project ID: FYI5

Florida Department of Environmental Protection
Central Laboratory Submittal Form

last revised Jan 25, 2018

Requester: Lillian Haynes

Collected By: Nathan Mulkey

Field Report Prepared By: N. Mulkey

Sampling Agency: FDEP NWROC

Location: Pace Water System Wetlands	☐ Comp ☑ Grab	Collection (comp begin or grab) Date: 5/7/18 Time: 1010	Eastern (Central)	Composite end Date	Time	Bottle Group(s) (See pg 2): C					
Field ID: Pace Wetland Test	Matrix (type, e.g., Salt, Fresh, etc):		Diss. Oxygen: 6.83	☑ mg/L ☐ % sat	Total Res. Chlorine (mg/L)						
WIN/STORET #	Temp (C): 22.99	pH: 6.36	Sample Depth: 0.1	☐ ft ☑ m	Sp. Conductance (umho/cm): 37						
Latitude: 30.59835 ☑ dd ☐ dms	Longitude: 87.19072 ☑ dd ☐ dms	Salinity (ppt):	Comments: flowing								
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date	Time	Bottle Group(s)					
Field ID	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)						
WIN/STORET #	Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)						
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments								
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date	Time	Bottle Group(s)					
Field ID	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)						
WIN/STORET #	Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)						
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments								
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date	Time	Bottle Group(s)					
Field ID	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)						
WIN/STORET #	Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)						
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments								

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
	5/7/18	Fed Ex	1	Tyler R	05/08/18 @ 10:08

2 Biomass Inga 5/8/18 1048 m. fairbeth

Request Number: RQ-2018-04-30-31

FYI5 Pace Water System WWTP FL0102202 Sampling Inspection

Customer: NW-DIST

Project ID: FYI5

Florida Department of Environmental Protection
Central Laboratory Submittal Form

last revised Jan 25, 2018

Requester: Lillian Haynes

Collected By: Dana Vestal

Field Report Prepared By: Dana Vestal

Sampling Agency: FDEP

Location: City of Pace WWTP FL0102202	☒ Comp ☐ Grab	Collection (comp begin or grab) Date: 5/10/18 Time: 11A	Eastern ☐ Central	Composite end Date: 5/11/18 Time: 10A	Bottle Group(s) (See pg 2): B				
Field ID: EFF-02 Composite	Matrix (type, e.g., Salt, Fresh, etc): Wastewater		Diss. Oxygen ☒ mg/L ☐ % sat: 6.67	Total Res. Chlorine (mg/L): 5.5					
WIN/STORET #	Temp (C): 14.8	pH: 6.97	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)					
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments						
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date: Time:	Eastern ☐ Central	Composite end Date: Time:	Bottle Group(s)				
Field ID	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)					
WIN/STORET #	Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)					
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments						
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date: Time:	Eastern ☐ Central	Composite end Date: Time:	Bottle Group(s)				
Field ID	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)					
WIN/STORET #	Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)					
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments						
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date: Time:	Eastern ☐ Central	Composite end Date: Time:	Bottle Group(s)				
Field ID	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)					
WIN/STORET #	Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)					
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments						

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
Dana Vestal	5/11/18 10:47	FedEx	2		5.12.18 10904

1 cooler one 1.3°C
2 cooler 2 3.3°C
3 cooler 2 0.8°C

ABR 5-14-18 9:00

Appendix D

Physical/Chemical and Habitat Assessment field sheets

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

SAMPLE ID _____ ORG ID 21FLPNS LATITUDE 30.58813
COUNTY Santa Rosa STORET # _____ LONGITUDE 87.17342
DATE 5/8/18 TIME 1030 SAMPLING AGENCY FDEP NWROC
SITE NAME Pace Wetland (Control)
FIELD ID/NAME Pace Wetland (Control) RECEIVING BODY OF WATER Escambia Bay

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category) :
Forest/Natural | Silviculture | Field/Pasture | Agricultural | Residential | Commercial | Industry | Other (Specify)

Landscape Development Intensity Index (LDI)

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

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

Hydrologic Modification Score (per FT 3101) _____

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

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

Artificially Impounded ☐ Yes ☐ No

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

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

SEDIMENT / SUBSTRATE

Sediment Oils ☐ Absent ☐ Slight ☒ Moderate ☐ Profuse

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

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

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

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

WATER QUALITY

	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
Top :	0.3	19.51	5.61	0.86	9.4	56	0.03	
Mid:								☒ VOB
Bottom								TOTAL DEPTH

Meter ID: 113529 — TOTAL DEPTH 0.5

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

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

Water Sample Taken? ☒ Yes ☐ No
Sample Preserved? ☒ Yes ☐ No
Lot Number: 227810 Exp: 10/2/18
226120 9/18/18

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 ☐

ABUNDANCE

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

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

AMBIENT FIELD CONDITIONS / NOTES:
intermittent wetland
*little to no flow

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

SAMPLING TEAM Nathan Mulky / Frank Butera / Mike King SIGNATURE : _____ DATE : 5/8/18

62-160.800, F.A.C. Ref: Dep: Date: 25Apr18 Wgt: 10.00 LBS DV: SHIPPING: 0.00 SPECIAL: 0.00 HANDLING: 0.00 0.00 TOTAL: 0.00 Revision Date: January 2017

Fuel: PRIORITY OVERNIGHT Master 4385 5028 7630

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

SAMPLE ID _____ ORG ID 21FLPNS LATITUDE 30.59835
COUNTY Santa Rosa STORET # _____ LONGITUDE 87.19072
DATE 5/7/18 TIME 1010 SAMPLING AGENCY FDEP NWROC
SITE NAME Pace Wetland Test
FIELD ID/NAME Pace Wetland Test RECEIVING BODY OF WATER Simpson River

RIPARIAN ZONE / STREAM FEATURES

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

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

Landscape Development Intensity Index (LDI): _____

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

Width of Riparian Vegetation (m) on Each Buffer Side — Left Bank : _____ Right Bank : _____

Hydrologic Modification Score (per FT 3101) : _____

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

Artificially Impounded ☐ Yes ☐ No

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

_____ m wide

_____ m/s	_____ m/s	_____ m/s
_____ m deep	_____ 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 WCI

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

WATER QUALITY

	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
Top :	0.1	22.99	6.36	6.83	79.7	37	0.02	
Mid:								☒ VOB
Bottom								TOTAL DEPTH
								0.1

Meter ID: 113529

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: Z79010 Exp: 10/2/18
Z61120 9/18/18

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 ☐

ABUNDANCE

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

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

AMBIENT FIELD CONDITIONS / NOTES:

WCI for FYI5 Pace Water *Test site flowing

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

SAMPLING TEAM Nathan Mutka / Frank Betsa / Mike King SIGNATURE: _____ DATE: 5/7/18

62-160.800, F.A.C. Ref: Dep: Date: 25Apr18 Wgt: 10.00 LBS DV: 0.00 SHIPPING: 0.00 SPECIAL: 0.00 HANDLING: 0.00 TOTAL: 0.00 Revision Date: January 2017

Test Site Wetland Taxa List

	Taxa	Transect 1	Transect 2	Transect 3	Transect 4
1	*Carex albolutescens*		1		
2	*Carex cherokeensis*			1	
3	*Carex lupulina*	1			
4	*Carex lurida*				1
5	*Carex striata*				1
6	*Juncus effusus*			1	1
7	*Murdannia nudiflora*	1	1	1	
8	*Peltandra virginica*	1	1	1	1
9	*Smilax glauca*			1	
10	*Smilax laurifolia*	1	1	1	1
11	*Bidens* sp.	1	1	1	1
12	*Boehmeria cylindrica*	1	1	1	1
13	*Centella asiatica*		1	1	1
14	*Decumaria barbara*	1	1	1	1
15	*Eutrochium fistulosum*				1
16	*Hydrocotyle* sp.		1	1	1
17	*Lycopus* sp.	1	1		
18	*Mikania scandens*	1	1		1
19	*Rubus* sp.	1	1	1	1
20	*Sambucus canadensis*	1	1	1	1
21	*Toxicodendron radicans*	1	1	1	1
22	*Toxicodendron vernix*			1	
23	*Vitis rotundifolia*	1	1	1	1
24	*Acer rubrum*	1	1	1	1
25	*Chamaecyparis thyoides*		1		1
26	*Cliftonia monophylla*		1		
27	*Ilex coriacea*	1		1	1
28	*Ilex opaca*				1
29	*Illicium floridanum*		1		
30	*Itea virginica*	1	1	1	1
31	Leucothoe axillaris	1	1	1	1
32	*Leucothoe racemosa*			1	1
33	*Ligustrum sinense*	1	1	1	1
34	*Liriodendron tulipifera*		1	1	1
35	*Lyonia lucida*		1	1	
36	*Magnolia virginiana*	1	1	1	1
37	*Myrica cerifera*	1	1	1	1
38	*Pinus* sp.	1			
39	*Sapium sebiferum*			1	
40	*Vaccinium* sp.				1
41	*Lycopodium* sp.	1			

42	*Onoclea sensibilis*	1			
43	*Osmunda cinnamonmoea*	1	1	1	1
44	*Osmunda regalis*	1	1	1	1
45	Sphagnum Moss	1	1	1	1
46	*Woodwardia areolata*	1	1	1	1
	Total	**20**	**22**	**21**	**23**

Control Site Wetland Taxa List

	Taxa	**Rep 1**	**Rep 2**	**Rep 3**	**Rep 4**
1	*Arundinaria gigantea*	1	1	1	1
2	*Carex leptalea*	1	1	1	
3	*Carex folliculata !*	1	1	1	1
4	*Carex cherokeensis*	1	1	1	1
5	Cyperaceae (Undetermined)		1		
6	*Dichanthelium scabriusculum*	1	1	1	1
7	*Juncus effusus*	1			
8	*Murdannia nudiflora*			1	
9	*Orontium aquaticum*		1		
10	*Panicum* sp.	1			
11	*Peltandra virginica*	1			
12	Poaceae (Unknown)		1		
13	*Rhynchospora miliacea*		1		
14	*Sacciolepis striata*	1			
	Scleria triglomerata		1		
15	*Sagitaria latifolia*	1		1	
16	*Smilax laurifolia*	1	1	1	1
17	*Sparganium americanum*	1	1		
18	*Bidens* sp.			1	1
19	*Boehmeria cylindrica*	1	1	1	
20	*Centella asiatica*	1	1	1	
21	*Decumaria barbara*		1		1
22	*Eutrochium fistulosum*			1	
23	*Hydrocotyle* sp.	1			
24	*Lycopus* sp.		1		
25	*Mikania scandens*	1			
26	*Rubus pensilvanicus* Poir.	1	1	1	1
27	*Sambucus canadensis*			1	1
28	*Saururus cernuus*	1	1	1	
29	*Toxicodendron radicans*	1	1	1	1
30	*Toxicodendron vernix*	1			
31	Gratiola virginiana **	1			
32	*Viburnum nudum*		1		
33	*Vitis rotundifolia*	1	1	1	1
34	*Acer rubrum*	C	C	C	C
35	*Ilex coriacea*	1	1		C

36	*Ilex opaca*		1	1	1		
37	*Ilex vomitoria*		1	1	1		
38	*Illicium floridanum*	1	1	1	1		
39	*Itea virginica*	1	1	1	1		
40	*Leucothoe racemosa*	1					
41	*Ligustrum sinense*	1		1			
42	*Liquidambar styraciflua*				1		
43	*Liriodendron tulipifera*	1		C	1		
44	*Lyonia lucida*	1					
45	*Magnolia grandiflora*			1			
46	*Magnolia virginiana*	C	C	C	C		
47	*Myrica cerifera*	1	1	1	1		
48	*Nyssa sylvatica* var. *biflora*	1	1				
49	*Persea palustris*	1	1				
50	*Pinus* sp.				1		
51	*Hamamelis virginiana* *		1				
52	*Quercus nigra*	1	C	1	1		
53	*Rhododendron viscosum* var. *serrulatum*	1	1	1	1		
54	*Sabal minor*			1			
55	*Sapium sebiferum*			1	1		
56	*Osmunda cinnamonmoea*	1	1	1	1	Monocot	17
57	*Osmunda regalis*	1	1	1		Dicot	16
58	Sphagnum Moss		1	1		Shrub	22
59	*Woodwardia areolata*	1	1	1	1	Fern	4
	Total	**28**	**26**	**25**	**21**	Total	59

Appendix E

Chemical analysis of effluent and receiving water

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
5/7/2018 11:00	Effluent Comp	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	1.2 I	mg/L	0.2	2
5/7/2018 11:00	Effluent Comp	Toxicology	Bioassay-Acute-Def-FW-C.dubia, LC50	33.3	LC50		
5/7/2018 11:00	Effluent Comp	Toxicology	Bioassay-Chronic-Scrn-FW-Fish, IC25	100 L	IC25		
5/7/2018 11:00	Effluent Comp	Toxicology	Bioassay-Chronic-Scrn-FW-Fish, NOEC	100	NOEC		
5/7/2018 11:00	Effluent Comp	Toxicology	Bioassay-Chronic-Scrn-FW-C.dubia, NOEC	100	NOEC		
5/7/2018 11:00	Effluent Comp	Toxicology	Bioassay-Chronic-Scrn-FW-C.dubia, IC25	100 L	IC25		
5/7/2018 11:00	Effluent Comp	Toxicology	Bioassay-Acute-Def-FW-Fish, LC50	32.5	LC50		
5/7/2018 11:00	Effluent Comp	Metals	Cadmium	0.024 I	ug/L	0.02	0.08
5/7/2018 11:00	Effluent Comp	Metals	Zinc	55	ug/L	5	20
5/7/2018 11:00	Effluent Comp	Metals	Arsenic	0.31	ug/L	0.05	0.2
5/7/2018 11:00	Effluent Comp	Metals	Selenium	0.20 U	ug/L	0.2	0.8
5/7/2018 11:00	Effluent Comp	Metals	Magnesium	3.15	mg/L	0.04	0.16
5/7/2018 11:00	Effluent Comp	Metals	Hardness	99.7	mg/L	0.35	1.4
5/7/2018 11:00	Effluent Comp	Metals	Nickel	1.72	ug/L	0.2	0.8
5/7/2018 11:00	Effluent Comp	Metals	Lead	0.095 I	ug/L	0.05	0.2
5/7/2018 11:00	Effluent Comp	Metals	Calcium	34.7	mg/L	0.075	0.3
5/7/2018 11:00	Effluent Comp	Metals	Copper	1.82	ug/L	0.2	0.8
5/7/2018 11:00	Effluent Comp	Metals	Potassium	13.6	mg/L	0.3	1.2
5/7/2018 11:00	Effluent Comp	Metals	Iron	30 U	ug/L	30	120
5/7/2018 11:00	Effluent Comp	Metals	Sodium	42.8	mg/L	0.5	2
5/7/2018 11:00	Effluent Comp	Metals	Aluminum	60 U	ug/L	60	240
5/7/2018 11:00	Effluent Comp	Metals	Silver	0.010 U	ug/L	0.01	0.04
5/7/2018 11:00	Effluent Comp	Metals	Chromium	0.40 U	ug/L	0.4	1.6
5/7/2018 11:00	Effluent Comp	Nutrients	TSS	2 I	mg/L	2	10
5/7/2018 11:00	Effluent Comp	Nutrients	Kjeldahl Nitrogen	0.73	mg N/L	0.08	0.2
5/7/2018 11:00	Effluent Comp	Nutrients	Total-P	3.5	mg P/L	0.025	0.25
5/7/2018 11:00	Effluent Comp	Nutrients	NO2NO3-N	6.0	mg N/L	0.2	0.5
5/7/2018 11:00	Effluent Comp	Nutrients	Organic Carbon	4.5 A	mg C/L	0.5	1
5/7/2018 11:00	Effluent Comp	Nutrients	pH	7.2			
5/7/2018 11:00	Effluent Comp	Nutrients	Temperature	5.0	C		
5/7/2018 11:00	Effluent Comp	Nutrients	Dissolved Oxygen	6.92	mg/L		
5/7/2018 11:31	Effluent Grab	AGP/LN	Algal Growth Potential	150	mg DryWt/L	0.3	0.9

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
5/7/2018 11:31	Effluent Grab	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.40 U	ug/L	0.4	1.2
5/7/2018 11:31	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.55 U	ug/L	0.55	1.7
5/7/2018 11:31	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	0.40 U	ug/L	0.4	1.2
5/7/2018 11:31	Effluent Grab	Overflow	Escherichia Coli-Quanti-Tray	10 U	MPN/100 mL	10	10
5/7/2018 11:31	Effluent Grab	Overflow	Fecal Coliforms-Membrane Filter	2 U	cfu/100 mL	2	2
5/7/2018 11:31	Effluent Grab	Nutrients	Fluoride	0.035 I	mg F/L	0.035	0.1
5/7/2018 11:31	Effluent Grab	Nutrients	Total Alkalinity	82 A	mg CaCO3/L	0.65	2.5
5/7/2018 11:31	Effluent Grab	Nutrients	Turbidity	0.55	NTU	0.1	0.13
5/7/2018 11:31	Effluent Grab	Nutrients	NO2NO3-N	5.1	mg N/L	0.2	0.5
5/7/2018 11:31	Effluent Grab	Nutrients	Ammonia-N	0.009	mg N/L	0.002	0.005
5/7/2018 11:31	Effluent Grab	Nutrients	Organic Carbon	4.5	mg C/L	0.5	1
5/7/2018 11:31	Effluent Grab	Nutrients	O-Phosphate-P	3.2 YQ	mg P/L	0.2	0.5
5/7/2018 11:31	Effluent Grab	Nutrients	Kjeldahl Nitrogen	0.62	mg N/L	0.08	0.2
5/7/2018 11:31	Effluent Grab	Nutrients	Sulfate	30 A	mg SO4/L	2	5
5/7/2018 11:31	Effluent Grab	Nutrients	Color (true)	2.9 I	PCU	2.5	6
5/7/2018 11:31	Effluent Grab	Nutrients	Chloride	55 A	mg Cl/L	2	5
5/7/2018 11:31	Effluent Grab	Nutrients	Total-P	3.4	mg P/L	0.025	0.25
5/7/2018 11:31	Effluent Grab	Pesticides	Chlorpyrifos Methyl	0.010 U	ug/L	0.01	0.04
5/7/2018 11:31	Effluent Grab	Pesticides	Disulfoton	0.0050 UJ	ug/L	0.005	0.02
5/7/2018 11:31	Effluent Grab	Pesticides	Malathion	0.010 U	ug/L	0.01	0.04
5/7/2018 11:31	Effluent Grab	Pesticides	Sucralose	88	ug/L	0.4	1.6
5/7/2018 11:31	Effluent Grab	Pesticides	Atrazine	0.12 J	ug/L	0.01	0.04
5/7/2018 11:31	Effluent Grab	Pesticides	Phorate	0.0050 UJ	ug/L	0.005	0.02
5/7/2018 11:31	Effluent Grab	Pesticides	Atrazine Desisopropyl	0.010 U	ug/L	0.01	0.04
5/7/2018 11:31	Effluent Grab	Pesticides	Demeton	0.024 U	ug/L	0.024	0.096
5/7/2018 11:31	Effluent Grab	Pesticides	Fenamiphos	0.030 U	ug/L	0.03	0.12
5/7/2018 11:31	Effluent Grab	Pesticides	Ametryn	0.010 U	ug/L	0.01	0.04
5/7/2018 11:31	Effluent Grab	Pesticides	Mevinphos	0.010 U	ug/L	0.01	0.04
5/7/2018 11:31	Effluent Grab	Pesticides	Parathion Ethyl	0.020 U	ug/L	0.02	0.08
5/7/2018 11:31	Effluent Grab	Pesticides	Prometon	0.020 U	ug/L	0.02	0.08
5/7/2018 11:31	Effluent Grab	Pesticides	Chlorpyrifos Ethyl	0.010 U	ug/L	0.01	0.04
5/7/2018 11:31	Effluent Grab	Pesticides	Fonofos	0.010 U	ug/L	0.01	0.04
5/7/2018 11:31	Effluent Grab	Pesticides	Azinphos Methyl	0.020 U	ug/L	0.02	0.08
5/7/2018 11:31	Effluent Grab	Pesticides	Naproxen	0.0080 U	ug/L	0.008	0.032
5/7/2018 11:31	Effluent Grab	Pesticides	Metalaxyl	0.040 U	ug/L	0.04	0.16

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
5/7/2018 11:31	Effluent Grab	Pesticides	Ethoprop	0.0050 U	ug/L	0.005	0.02
5/7/2018 11:31	Effluent Grab	Pesticides	Atrazine Desethyl	0.10 J	ug/L	0.01	0.04
5/7/2018 11:31	Effluent Grab	Pesticides	Alachlor	0.060 U	ug/L	0.06	0.24
5/7/2018 11:31	Effluent Grab	Pesticides	Ibuprofen	0.020 U	ug/L	0.02	0.08
5/7/2018 11:31	Effluent Grab	Pesticides	Simazine	0.010 U	ug/L	0.01	0.04
5/7/2018 11:31	Effluent Grab	Pesticides	Parathion Methyl	0.010 U	ug/L	0.01	0.04
5/7/2018 11:31	Effluent Grab	Pesticides	Norflurazon	0.030 U	ug/L	0.03	0.12
5/7/2018 11:31	Effluent Grab	Pesticides	Metribuzin	0.020 U	ug/L	0.02	0.08
5/7/2018 11:31	Effluent Grab	Pesticides	Bromacil	0.040 U	ug/L	0.04	0.16
5/7/2018 11:31	Effluent Grab	Pesticides	Prometryn	0.020 U	ug/L	0.02	0.08
5/7/2018 11:31	Effluent Grab	Pesticides	Naled	0.040 U	ug/L	0.04	0.16
5/7/2018 11:31	Effluent Grab	Pesticides	Metolachlor	0.060 U	ug/L	0.06	0.24
5/7/2018 11:31	Effluent Grab	Pesticides	Ethion	0.010 UJ	ug/L	0.01	0.04
5/7/2018 11:31	Effluent Grab	Pesticides	Hexazinone	0.030 U	ug/L	0.03	0.12
5/7/2018 11:31	Effluent Grab	Pesticides	Butylate	0.020 U	ug/L	0.02	0.08
5/7/2018 11:31	Effluent Grab	Pesticides	Diazinon	0.010 U	ug/L	0.01	0.04
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Acenaphthylene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Fluorene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Fluoranthene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Hexachlorobutadiene	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Isophorone	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Naphthalene	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	1,4-Dioxane	0.63	ug/L	0.02	0.08
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	3,3'-Dichlorobenzidine	9.9 U	ug/L	9.9	40
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Diethyl phthalate	2.0 U	ug/L	2	7.9
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Di-n-butyl phthalate	2.0 U	ug/L	2	7.9
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	N-Nitrosodimethylamine	2.0 U	ug/L	2	7.9
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Pyrene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	2,4-Dinitrophenol	9.9 UJ	ug/L	9.9	40
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	2-Chlorophenol	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	2-Nitrophenol	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Butyl benzyl phthalate	0.99 U	ug/L	0.99	4

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Anthracene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Benzo(a)pyrene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	0.099 U	ug/L	0.099	0.4
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Pentachlorophenol	0.50 U	ug/L	0.5	2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	2,4-Dichlorophenol	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	2,4-Dinitrotoluene	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Acenaphthene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Di-n-octyl phthalate	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Hexachlorobenzene	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Phenanthrene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	2,4-Dimethylphenol	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	2,6-Dinitrotoluene	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	2-Chloronaphthalene	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.12 I	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Hexachlorocyclopentadiene	0.10 I	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Nitrobenzene	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Benzo(a)anthracene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.0 U	ug/L	2	7.9
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Dimethyl phthalate	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Hexachloroethane	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.0 U	ug/L	3	12
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	0.050 U	ug/L	0.05	0.2
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	4-Nitrophenol	9.9 U	ug/L	9.9	40
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Benzidine	9.9 U	ug/L	9.9	40
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Benzo(b)fluoranthene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Benzo(k)fluoranthene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Chrysene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:31	Effluent Grab	Priority Organic Pollutants	Phenol	0.050 U	ug/L	0.05	0.2

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
5/7/2018 11:31	Effluent Grab	Nutrients	pH	7.02			
5/7/2018 11:31	Effluent Grab	Nutrients	Temperature	25.5	C		
5/7/2018 11:10	Wetland Test	AGP/LN	Algal Growth Potential	0.300 U	mg DryWt/L	0.3	0.9
5/7/2018 11:10	Wetland Test	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	1.4 I	ug/L	0.58	1.8
5/7/2018 11:10	Wetland Test	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	1.6	ug/L	0.42	1.3
5/7/2018 11:10	Wetland Test	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	0.65 I	mg/L	0.2	2
5/7/2018 11:10	Wetland Test	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.42 U	ug/L	0.42	1.3
5/7/2018 11:10	Wetland Test	Overflow	Fecal Coliforms-Membrane Filter	1191 B	cfu/100 mL	2	2
5/7/2018 11:10	Wetland Test	Overflow	Escherichia Coli-Quanti-Tray	1789	MPN/100 mL	10	10
5/7/2018 11:10	Wetland Test	Metals	Copper	0.26 I	ug/L	0.2	0.8
5/7/2018 11:10	Wetland Test	Metals	Selenium	0.20 U	ug/L	0.2	0.8
5/7/2018 11:10	Wetland Test	Metals	Hardness	8.1	mg/L	0.35	1.4
5/7/2018 11:10	Wetland Test	Metals	Calcium	1.20	mg/L	0.075	0.3
5/7/2018 11:10	Wetland Test	Metals	Sodium	3.6	mg/L	0.5	2
5/7/2018 11:10	Wetland Test	Metals	Nickel	0.20 U	ug/L	0.2	0.8
5/7/2018 11:10	Wetland Test	Metals	Iron	150	ug/L	30	120
5/7/2018 11:10	Wetland Test	Metals	Cadmium	0.020 U	ug/L	0.02	0.08
5/7/2018 11:10	Wetland Test	Metals	Chromium	0.40 U	ug/L	0.4	1.6
5/7/2018 11:10	Wetland Test	Metals	Arsenic	0.25	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Metals	Zinc	5.0 U	ug/L	5	20
5/7/2018 11:10	Wetland Test	Metals	Potassium	0.84 I	mg/L	0.3	1.2
5/7/2018 11:10	Wetland Test	Metals	Aluminum	60 U	ug/L	60	240
5/7/2018 11:10	Wetland Test	Metals	Magnesium	1.23	mg/L	0.04	0.16
5/7/2018 11:10	Wetland Test	Metals	Lead	0.064 I	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Metals	Silver	0.010 U	ug/L	0.01	0.04
5/7/2018 11:10	Wetland Test	Nutrients	NO2NO3-N	0.30	mg N/L	0.004	0.01
5/7/2018 11:10	Wetland Test	Nutrients	Sulfate	0.75 A	mg SO4/L	0.2	0.5
5/7/2018 11:10	Wetland Test	Nutrients	Organic Carbon	1.5	mg C/L	0.5	1
5/7/2018 11:10	Wetland Test	Nutrients	Turbidity	1.7 A	NTU	0.1	0.13
5/7/2018 11:10	Wetland Test	Nutrients	Color (true)	4.8 I	PCU	2.5	6
5/7/2018 11:10	Wetland Test	Nutrients	TSS	4 IA	mg/L	2	10
5/7/2018 11:10	Wetland Test	Nutrients	Total-P	0.007	mg P/L	0.002	0.005
5/7/2018 11:10	Wetland Test	Nutrients	Ammonia-N	0.019	mg N/L	0.002	0.005
5/7/2018 11:10	Wetland Test	Nutrients	Kjeldahl Nitrogen	0.15 I	mg N/L	0.08	0.2
5/7/2018 11:10	Wetland Test	Nutrients	Total Alkalinity	3.6	mg CaCO3/L	0.65	2.5

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
5/7/2018 11:10	Wetland Test	Nutrients	Chloride	6.3 A	mg Cl/L	0.2	0.5
5/7/2018 11:10	Wetland Test	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.1
5/7/2018 11:10	Wetland Test	Nutrients	O-Phosphate-P	0.004 U	mg P/L	0.004	0.01
5/7/2018 11:10	Wetland Test	Pesticides	Naproxen	0.0080 U	ug/L	0.008	0.032
5/7/2018 11:10	Wetland Test	Pesticides	Sucralose	0.50	ug/L	0.01	0.04
5/7/2018 11:10	Wetland Test	Pesticides	Ibuprofen	0.020 U	ug/L	0.02	0.08
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Chrysene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Phenol	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	2,4-Dinitrophenol	9.9 UJ	ug/L	9.9	40
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	4-Nitrophenol	9.9 U	ug/L	9.9	40
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Benzo(k)fluoranthene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Diethyl phthalate	2.0 U	ug/L	2	7.9
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Hexachlorocyclopentadiene	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Benzidine	9.9 U	ug/L	9.9	40
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Phenanthrene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	2-Nitrophenol	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Anthracene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Nitrobenzene	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Butyl benzyl phthalate	0.99 U	ug/L	0.99	4
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Benzo(a)anthracene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Dimethyl phthalate	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Fluoranthene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Isophorone	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	2-Chlorophenol	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Acenaphthene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Benzo(b)fluoranthene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Hexachlorobutadiene	0.050 U	ug/L	0.05	0.2

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Hexachloroethane	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	0.099 U	ug/L	0.099	0.4
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.0 U	ug/L	3	12
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	3,3'-Dichlorobenzidine	9.9 U	ug/L	9.9	40
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Benzo(a)pyrene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Di-n-octyl phthalate	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Hexachlorobenzene	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	N-Nitrosodimethylamine	2.0 U	ug/L	2	7.9
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	1,4-Dioxane	0.020 U	ug/L	0.02	0.08
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	2,4-Dimethylphenol	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	2,4-Dinitrotoluene	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Acenaphthylene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Naphthalene	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Pentachlorophenol	0.50 U	ug/L	0.5	2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.0 U	ug/L	2	7.9
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Di-n-butyl phthalate	2.0 U	ug/L	2	7.9
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Fluorene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	Pyrene	0.025 U	ug/L	0.025	0.099
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	2,4-Dichlorophenol	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	2,6-Dinitrotoluene	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Priority Organic Pollutants	2-Chloronaphthalene	0.050 U	ug/L	0.05	0.2
5/7/2018 11:10	Wetland Test	Nutrients	Dissolved Oxygen	6.83	mg/L		
5/7/2018 11:10	Wetland Test	Nutrients	Specific Conductance	37	umhos/cm		
5/7/2018 11:10	Wetland Test	Nutrients	pH	6.36			
5/7/2018 11:10	Wetland Test	Nutrients	Sample Depth	0.1	m		
5/7/2018 11:10	Wetland Test	Nutrients	Temperature	22.99	C		
5/8/2018 11:30	Control Site	Chlorophyll/Grain Size/BOD	Phaeophytin-a	8.1	ug/L	2	6
5/8/2018 11:30	Control Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	36	ug/L	2	6
5/8/2018 11:30	Control Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	30	ug/L	2.8	8.5
5/8/2018 11:30	Control Site	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	2.3 A	mg/L	0.2	2
5/8/2018 11:30	Control Site	Overflow	Fecal Coliforms-Membrane Filter	16 B	cfu/100 mL	2	2

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
5/8/2018 11:30	Control Site	Overflow	Escherichia Coli-Quanti-Tray	31	MPN/100 mL	10	10
5/8/2018 11:30	Control Site	Metals	Zinc	5.0 U	ug/L	5	20
5/8/2018 11:30	Control Site	Metals	Lead	0.64	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Metals	Cadmium	0.020 U	ug/L	0.02	0.08
5/8/2018 11:30	Control Site	Metals	Nickel	0.70 I	ug/L	0.2	0.8
5/8/2018 11:30	Control Site	Metals	Silver	0.010 U	ug/L	0.01	0.04
5/8/2018 11:30	Control Site	Metals	Copper	0.35 I	ug/L	0.2	0.8
5/8/2018 11:30	Control Site	Metals	Magnesium	1.51	mg/L	0.04	0.16
5/8/2018 11:30	Control Site	Metals	Chromium	0.66 I	ug/L	0.4	1.6
5/8/2018 11:30	Control Site	Metals	Arsenic	1.79	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Metals	Potassium	0.30 U	mg/L	0.3	1.2
5/8/2018 11:30	Control Site	Metals	Hardness	17.8	mg/L	0.35	1.4
5/8/2018 11:30	Control Site	Metals	Aluminum	280	ug/L	60	240
5/8/2018 11:30	Control Site	Metals	Iron	1.06E+04	ug/L	30	120
5/8/2018 11:30	Control Site	Metals	Sodium	3.9	mg/L	0.5	2
5/8/2018 11:30	Control Site	Metals	Selenium	0.20 U	ug/L	0.2	0.8
5/8/2018 11:30	Control Site	Metals	Calcium	4.65	mg/L	0.075	0.3
5/8/2018 11:30	Control Site	Nutrients	NO2NO3-N	0.004 U	mg N/L	0.004	0.01
5/8/2018 11:30	Control Site	Nutrients	Sulfate	0.20 U	mg SO4/L	0.2	0.5
5/8/2018 11:30	Control Site	Nutrients	Turbidity	12	NTU	0.1	0.13
5/8/2018 11:30	Control Site	Nutrients	Color (true)	270	PCU	7.5	18
5/8/2018 11:30	Control Site	Nutrients	Kjeldahl Nitrogen	1.4	mg N/L	0.08	0.2
5/8/2018 11:30	Control Site	Nutrients	TSS	23 I	mg/L	5	25
5/8/2018 11:30	Control Site	Nutrients	Total-P	0.066	mg P/L	0.005	0.05
5/8/2018 11:30	Control Site	Nutrients	Chloride	5.1	mg Cl/L	0.2	0.5
5/8/2018 11:30	Control Site	Nutrients	O-Phosphate-P	0.004 U	mg P/L	0.004	0.01
5/8/2018 11:30	Control Site	Nutrients	Ammonia-N	0.006	mg N/L	0.002	0.005
5/8/2018 11:30	Control Site	Nutrients	Organic Carbon	13	mg C/L	0.5	1
5/8/2018 11:30	Control Site	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.1
5/8/2018 11:30	Control Site	Nutrients	Total Alkalinity	14	mg CaCO3/L	0.65	2.5
5/8/2018 11:30	Control Site	Pesticides	Naproxen	0.0080 U	ug/L	0.008	0.032
5/8/2018 11:30	Control Site	Pesticides	Sucralose	0.050	ug/L	0.01	0.04
5/8/2018 11:30	Control Site	Pesticides	Ibuprofen	0.020 U	ug/L	0.02	0.08
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Di-n-butyl phthalate	2.0 U	ug/L	2	7.9
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Dimethyl phthalate	0.050 U	ug/L	0.05	0.2

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
5/8/2018 11:30	Control Site	Priority Organic Pollutants	2-Chloronaphthalene	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Acenaphthene	0.025 U	ug/L	0.025	0.099
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Acenaphthylene	0.025 U	ug/L	0.025	0.099
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Butyl benzyl phthalate	0.99 U	ug/L	0.99	4
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Pyrene	0.025 U	ug/L	0.025	0.099
5/8/2018 11:30	Control Site	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	2,4-Dimethylphenol	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	2-Nitrophenol	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Anthracene	0.025 U	ug/L	0.025	0.099
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Benzo(k)fluoranthene	0.025 U	ug/L	0.025	0.099
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Fluorene	0.025 U	ug/L	0.025	0.099
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Hexachlorobenzene	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Hexachlorobutadiene	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Hexachloroethane	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	0.099 U	ug/L	0.099	0.4
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Pentachlorophenol	0.50 U	ug/L	0.5	2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Phenanthrene	0.025 U	ug/L	0.025	0.099
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Chrysene	0.025 U	ug/L	0.025	0.099
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	2,4-Dichlorophenol	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Benzidine	9.9 U	ug/L	9.9	40
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Isophorone	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.025 U	ug/L	0.025	0.099
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Hexachlorocyclopentadiene	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.025 U	ug/L	0.025	0.099
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Benzo(a)pyrene	0.025 U	ug/L	0.025	0.099
5/8/2018 11:30	Control Site	Priority Organic Pollutants	2,4-Dinitrophenol	9.9 UJ	ug/L	9.9	40
5/8/2018 11:30	Control Site	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Benzo(b)fluoranthene	0.025 U	ug/L	0.025	0.099
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Naphthalene	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	1,4-Dioxane	0.020 U	ug/L	0.02	0.08
5/8/2018 11:30	Control Site	Priority Organic Pollutants	2,6-Dinitrotoluene	0.050 U	ug/L	0.05	0.2

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
5/8/2018 11:30	Control Site	Priority Organic Pollutants	2-Chlorophenol	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.0 U	ug/L	3	12
5/8/2018 11:30	Control Site	Priority Organic Pollutants	3,3'-Dichlorobenzidine	9.9 U	ug/L	9.9	40
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Benzo(a)anthracene	0.025 U	ug/L	0.025	0.099
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Di-n-octyl phthalate	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.025 U	ug/L	0.025	0.099
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Diethyl phthalate	2.0 U	ug/L	2	7.9
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Fluoranthene	0.025 U	ug/L	0.025	0.099
5/8/2018 11:30	Control Site	Priority Organic Pollutants	N-Nitrosodimethylamine	2.0 U	ug/L	2	7.9
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Phenol	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	2,4-Dinitrotoluene	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.0 U	ug/L	2	7.9
5/8/2018 11:30	Control Site	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	Nitrobenzene	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.050 U	ug/L	0.05	0.2
5/8/2018 11:30	Control Site	Priority Organic Pollutants	4-Nitrophenol	9.9 U	ug/L	9.9	40
5/8/2018 11:30	Control Site	Nutrients	pH	5.61			
5/8/2018 11:30	Control Site	Nutrients	Sample Depth	0.3	m		
5/8/2018 11:30	Control Site	Nutrients	Dissolved Oxygen	0.86	mg/L		
5/8/2018 11:30	Control Site	Nutrients	Specific Conductance	56	umhos/cm		
5/8/2018 11:30	Control Site	Nutrients	Temperature	19.51	C		
5/8/2018 11:30	Control Site	AGP/LN	Algal Growth Potential	0.300 U	mg DryWt/L	0.3	0.9
5/7/2018 11:50	Field Blank	Overflow	Escherichia Coli-Quanti-Tray	1 U	MPN/100 mL	1	1
5/7/2018 11:50	Field Blank	Overflow	Fecal Coliforms-Membrane Filter	1 U	cfu/100 mL	1	1
5/7/2018 11:50	Field Blank	Metals	Copper	0.63 I	ug/L	0.2	0.8
5/7/2018 11:50	Field Blank	Metals	Silver	0.010 U	ug/L	0.01	0.04
5/7/2018 11:50	Field Blank	Metals	Calcium	0.093 I	mg/L	0.075	0.3
5/7/2018 11:50	Field Blank	Metals	Nickel	0.20 U	ug/L	0.2	0.8
5/7/2018 11:50	Field Blank	Metals	Magnesium	0.040 U	mg/L	0.04	0.16
5/7/2018 11:50	Field Blank	Metals	Arsenic	0.050 U	ug/L	0.05	0.2
5/7/2018 11:50	Field Blank	Metals	Hardness	0.35 U	mg/L	0.35	1.4
5/7/2018 11:50	Field Blank	Metals	Zinc	5.0 U	ug/L	5	20
5/7/2018 11:50	Field Blank	Metals	Selenium	0.20 U	ug/L	0.2	0.8
5/7/2018 11:50	Field Blank	Metals	Potassium	0.30 U	mg/L	0.3	1.2

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
5/7/2018 11:50	Field Blank	Metals	Sodium	0.50 U	mg/L	0.5	2
5/7/2018 11:50	Field Blank	Metals	Iron	30 U	ug/L	30	120
5/7/2018 11:50	Field Blank	Metals	Cadmium	0.020 U	ug/L	0.02	0.08
5/7/2018 11:50	Field Blank	Metals	Lead	0.050 U	ug/L	0.05	0.2
5/7/2018 11:50	Field Blank	Metals	Aluminum	60 U	ug/L	60	240
5/7/2018 11:50	Field Blank	Metals	Chromium	0.40 U	ug/L	0.4	1.6
5/7/2018 11:50	Field Blank	Nutrients	Chloride	0.20 U	mg Cl/L	0.2	0.5
5/7/2018 11:50	Field Blank	Nutrients	Sulfate	0.20 U	mg SO4/L	0.2	0.5
5/7/2018 11:50	Field Blank	Nutrients	Total-P	0.002 U	mg P/L	0.002	0.005
5/7/2018 11:50	Field Blank	Nutrients	Color (true)	2.5 U	PCU	2.5	6
5/7/2018 11:50	Field Blank	Nutrients	Turbidity	0.10 U	NTU	0.1	0.13
5/7/2018 11:50	Field Blank	Nutrients	Ammonia-N	0.002 U	mg N/L	0.002	0.005
5/7/2018 11:50	Field Blank	Nutrients	O-Phosphate-P	0.004 UYQ	mg P/L	0.004	0.01
5/7/2018 11:50	Field Blank	Nutrients	Organic Carbon	0.50 U	mg C/L	0.5	1
5/7/2018 11:50	Field Blank	Nutrients	Kjeldahl Nitrogen	0.080 U	mg N/L	0.08	0.2
5/7/2018 11:50	Field Blank	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.1
5/7/2018 11:50	Field Blank	Nutrients	NO2NO3-N	0.004 U	mg N/L	0.004	0.01
5/7/2018 11:50	Field Blank	Nutrients	Total Alkalinity	0.65 U	mg CaCO3/L	0.65	2.5
5/7/2018 11:50	Field Blank	Pesticides	Naled	0.040 U	ug/L	0.04	0.16
5/7/2018 11:50	Field Blank	Pesticides	Sucralose	0.010 U	ug/L	0.01	0.04
5/7/2018 11:50	Field Blank	Pesticides	Ametryn	0.010 U	ug/L	0.01	0.04
5/7/2018 11:50	Field Blank	Pesticides	Malathion	0.010 U	ug/L	0.01	0.04
5/7/2018 11:50	Field Blank	Pesticides	Metolachlor	0.060 U	ug/L	0.06	0.24
5/7/2018 11:50	Field Blank	Pesticides	Prometon	0.020 U	ug/L	0.02	0.081
5/7/2018 11:50	Field Blank	Pesticides	Disulfoton	0.0050 U	ug/L	0.005	0.02
5/7/2018 11:50	Field Blank	Pesticides	Fonofos	0.010 U	ug/L	0.01	0.04
5/7/2018 11:50	Field Blank	Pesticides	Mevinphos	0.010 U	ug/L	0.01	0.04
5/7/2018 11:50	Field Blank	Pesticides	Phorate	0.0050 U	ug/L	0.005	0.02
5/7/2018 11:50	Field Blank	Pesticides	Atrazine Desethyl	0.010 U	ug/L	0.01	0.04
5/7/2018 11:50	Field Blank	Pesticides	Atrazine Desisopropyl	0.010 U	ug/L	0.01	0.04
5/7/2018 11:50	Field Blank	Pesticides	Azinphos Methyl	0.020 U	ug/L	0.02	0.081
5/7/2018 11:50	Field Blank	Pesticides	Demeton	0.024 U	ug/L	0.024	0.097
5/7/2018 11:50	Field Blank	Pesticides	Diazinon	0.010 U	ug/L	0.01	0.04
5/7/2018 11:50	Field Blank	Pesticides	Ethion	0.010 U	ug/L	0.01	0.04
5/7/2018 11:50	Field Blank	Pesticides	Ethoprop	0.0050 U	ug/L	0.005	0.02

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
5/7/2018 11:50	Field Blank	Pesticides	Prometryn	0.020 U	ug/L	0.02	0.081
5/7/2018 11:50	Field Blank	Pesticides	Alachlor	0.060 U	ug/L	0.06	0.24
5/7/2018 11:50	Field Blank	Pesticides	Parathion Ethyl	0.020 U	ug/L	0.02	0.081
5/7/2018 11:50	Field Blank	Pesticides	Parathion Methyl	0.010 U	ug/L	0.01	0.04
5/7/2018 11:50	Field Blank	Pesticides	Bromacil	0.040 U	ug/L	0.04	0.16
5/7/2018 11:50	Field Blank	Pesticides	Chlorpyrifos Ethyl	0.010 U	ug/L	0.01	0.04
5/7/2018 11:50	Field Blank	Pesticides	Metalaxyl	0.040 U	ug/L	0.04	0.16
5/7/2018 11:50	Field Blank	Pesticides	Simazine	0.010 U	ug/L	0.01	0.04
5/7/2018 11:50	Field Blank	Pesticides	Atrazine	0.010 U	ug/L	0.01	0.04
5/7/2018 11:50	Field Blank	Pesticides	Butylate	0.020 U	ug/L	0.02	0.081
5/7/2018 11:50	Field Blank	Pesticides	Chlorpyrifos Methyl	0.010 U	ug/L	0.01	0.04
5/7/2018 11:50	Field Blank	Pesticides	Fenamiphos	0.030 U	ug/L	0.03	0.12
5/7/2018 11:50	Field Blank	Pesticides	Hexazinone	0.030 U	ug/L	0.03	0.12
5/7/2018 11:50	Field Blank	Pesticides	Metribuzin	0.020 U	ug/L	0.02	0.081
5/7/2018 11:50	Field Blank	Pesticides	Norflurazon	0.030 U	ug/L	0.03	0.12
5/7/2018 11:50	Field Blank	Pesticides	Ibuprofen	0.020 U	ug/L	0.02	0.08
5/7/2018 11:50	Field Blank	Pesticides	Naproxen	0.0080 U	ug/L	0.008	0.032
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.026 U	ug/L	0.026	0.1
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Butyl benzyl phthalate	1.0 U	ug/L	1	4.2
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Chrysene	0.026 U	ug/L	0.026	0.1
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Di-n-butyl phthalate	2.1 U	ug/L	2.1	8.3
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Di-n-octyl phthalate	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	10 U	ug/L	10	42
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	4-Nitrophenol	10 U	ug/L	10	42
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.026 U	ug/L	0.026	0.1
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Diethyl phthalate	2.1 U	ug/L	2.1	8.3
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Hexachlorobenzene	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Pentachlorophenol	0.52 U	ug/L	0.52	2.1
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	2-Chlorophenol	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Benzidine	10 U	ug/L	10	42
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.026 U	ug/L	0.026	0.1
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Isophorone	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Phenanthrene	0.026 U	ug/L	0.026	0.1
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Pyrene	0.026 U	ug/L	0.026	0.1

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Fluoranthene	0.026 U	ug/L	0.026	0.1
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Fluorene	0.026 U	ug/L	0.026	0.1
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Naphthalene	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	2,4-Dinitrophenol	10 UJ	ug/L	10	42
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	2-Chloronaphthalene	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.026 U	ug/L	0.026	0.1
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Hexachloroethane	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1 U	ug/L	2.1	8.3
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	2,4-Dichlorophenol	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	2-Nitrophenol	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Acenaphthylene	0.026 U	ug/L	0.026	0.1
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.026 U	ug/L	0.026	0.1
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Dimethyl phthalate	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Phenol	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Anthracene	0.026 U	ug/L	0.026	0.1
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.026 U	ug/L	0.026	0.1
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Hexachlorobutadiene	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Nitrobenzene	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	1,4-Dioxane	0.020 U	ug/L	0.02	0.08
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.1 U	ug/L	2.1	8.3
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	0.10 U	ug/L	0.1	0.42
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	2,4-Dimethylphenol	0.052 U	ug/L	0.052	0.21
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1 U	ug/L	3.1	12
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Acenaphthene	0.026 U	ug/L	0.026	0.1

Date Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
5/7/2018 11:50	Field Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.026 U	ug/L	0.026	0.1