Effluent Quality Assessment of Macclenny WWTF Baker County NPDES # FL0040495 Sampled September 8, 12, 14, & 16, 2022

Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection
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Summary of Results

All analytes measured in the effluent grab and time-proportioned composite samples complied with Class III Water Quality Criteria for Fresh Waters and effluent flow-proportioned permit limits. The effluent sample was not toxic to either *Ceriodaphnia dubia* or *Pimephales promelas,* complying with effluent permit limits. The algal growth potential (AGP) and nutrients results do not suggest a potential for nutrient enrichment of the receiving waters. Twenty organic constituents were detected in the effluent grab sample.

Facility Overview

The Macclenny Wastewater Treatment Facility is a domestic wastewater treatment facility. A Facility Summary, including a description of the facility, summary of permit limits, and any relevant Administrative Order (AO), Consent Order (CO), and Discharge Monitoring Report (DMR) information is provided in Appendix A. The effluent is continuously discharged into Turkey Creek, a Class III Fresh Water [waterbody identification (WBID) 2318] (Figure 1).

The Turkey Creek falls within the Peninsular Nutrient Watershed Region for Numeric Nutrient Criteria (NNC). For this region, the NNC, expressed as annual geometric means, are 0.12 mg/L total phosphorus and 1.54 mg/L total nitrogen (Paragraph 62-302.531(2)(c), F.A.C.). The Turkey Creek falls within the Northeast bioregion; the daily average dissolved oxygen (DO) saturation shall not be below 34 percent in more than 10 percent of the values (Paragraph 62-302.533(1)(a), F.A.C.). This FYI event only provides single sample results. It should be noted that waterbody impairment assessments are based on longer-term data, and individual exceedances of a criterion do not indicate use impairment. http://ca.dep.state.fl.us/mapdirect/?focus=nutrientcriteria

Methods

Effluent samples were taken as grab and a 24-hour time proportioned composite from monitoring site location EFD-1, for outfall D-001 on September 12, 2022. Effluent renewal composite samples were collected on September 14 and 16. Equipment blank samples were collected on September 8, 2022. The permit specifies flow-proportioned composite samples and time-proportioned composite samples were collected.

Samples were collected by Conor Lucey, Taylor Parks, and Abhi Maturi (Northeast District). Analyses were performed Eurofins Test America Laboratories in Pensacola, Savannah, and Tampa, as well as DEP Laboratory in Tallahassee.

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.

Class III Water Quality Criteria for Fresh and Marine Waters are found in Chapter 62-302, F.A.C. All references to Rule 62-302.530, F.A.C. are to the surface water quality criteria table with an effective date of 02/17/2016 and a notice identification number of 17115667.

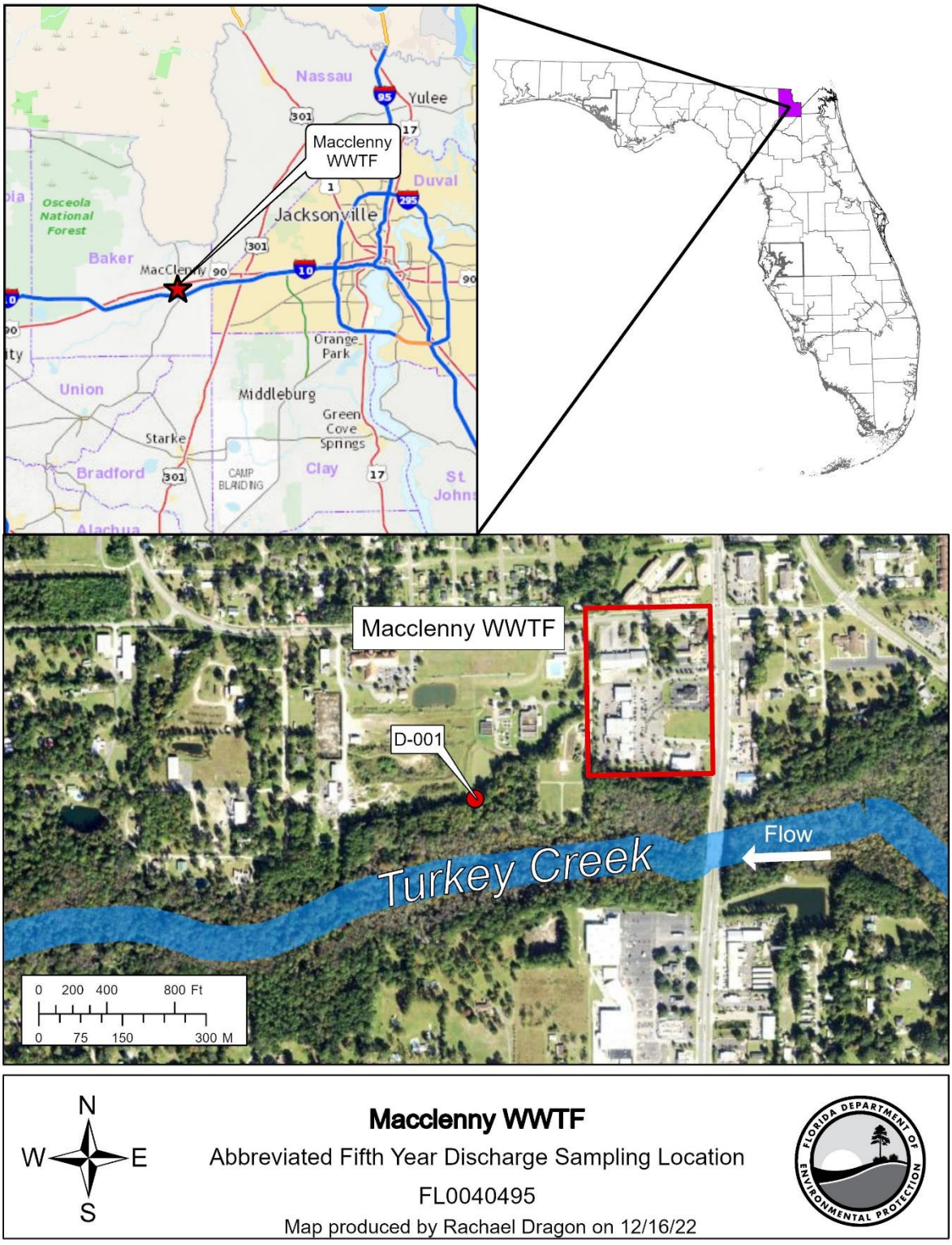


Figure 1. Map of Facility and Discharge Locations

Results

Physical and Chemical (See Table 1 and Appendices C and D)

- All effluent water quality parameters complied with Class III Water Quality Criteria for Fresh Waters and effluent permit limits.

Analytical Water Chemistry (See Table 2 and Appendix D)

- All water chemistry analytes detected in the effluent grab and composite sample complied with Class III Water Quality Criteria for Fresh Waters and effluent permit limits.

- Total phosphorus, total ammonia, nitrate and nitrite, and total organic carbon were detected in the equipment blanks.

- For comparative purposes only, the effluent grab single sample values for total phosphorus and total nitrogen were greater than the annual geometric mean limit for NNC in the Peninsular Nutrient Watershed Region.

Microbiology (See Table 2 and Appendix B)

- Effluent *Escherichia coli* (*E. coli*) levels complied with Class III Water Quality Criteria for Fresh Waters. Effluent *E. coli* and fecal coliform levels complied with effluent permit limits.

Toxicity Whole Effluent Test (See Table 2)

- Tests were performed September 13 through 20, 2022.

- During the chronic definitive bioassay, the effluent composite sample IC25 for the water flea, *Ceriodaphnia dubia*, and the IC25 for the fish, *Pimephales promelas*, were calculated as being greater than 100% effluent, and therefore complied with effluent permit limits.

- Toxicity results were Y-qualified because one of the renewal samples was received outside the acceptable temperature range.

- 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 D)

- Effluent metals complied with Class III Water Quality Criteria for Fresh Waters and effluent permit limits.

- Calcium, copper, and magnesium were detected in the equipment blanks.

Algal Growth Potential (See Table 4 and Appendix B)

- The freshwater unicellular green alga, *Pseudokirchneriella subcapitata* was used to determine the AGP values in the effluent grab. The analytical chemistry suggests that the effluent is nitrogen-limited (Miller et al. 1978).

- The effluent grab AGP result of 0.501 IJ mg dry wt/L is within the AGP range (0.11 to 0.80 mg dry wt/L) suggested to be representative of moderate productivity for freshwater (Miller et al. 1978).

- The AGP result was I-qualified for being detected between the method detection limit (MDL) and practical quantitation limit (PQL). Result was J-qualified due to estimated result. The volume of algae used for counts is presumed to be slightly less than method requirement.

- 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. True algal growth inhibition can only be determined by performing an actual algal growth inhibition test. Should algal growth inhibition be suspected, the district should request that the algal growth inhibition test be performed as a follow-up to the inspection.

Organic Constituents (See Table 5)

- Atrazine, caffeine, chlorfenapyr, dithiopyr, fipronil, fipronil desulfinyl, fipronil sulfide, fipronil sulfone, fludioxonil, flutolanil, fluxapyroxad, hexazinone, loratadine, myclobutanil, phenytonin, propiconazole, sulfentrazone, tebuconazole, terbufos, and 2, 4, 6-trichlorophenol were detected in the effluent grab sample.

- Dithiopyr and propicanozole were detected in the field blank between the MDL and PQL.

- There are no effluent permit limits for organic constituents.

Literature Cited

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

Stevenson, R. J. and Bahls, L. L. 1999. Periphyton protocols. Pp. 6.1-6.22 in: Rapid bioassessment protocols for use in wadeable streams and rivers. 2nd edition. By: M. T. Barbour, J. Gerritsen, B. D. Snyder and J. B. Stribling. EPA 841-B-99-002. U. S. Environmental Protection Agency, Office of Water, Washington, D. C.

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

Table 1. Measured field parameters

Effluent limits, Class III Water Quality Criteria for Fresh Waters, and field parameters

Parameter	Units	Class III Criteria	Effluent Permit Limits	Effluent EFD-1
Temperature	C	-	Report	28.9
pH	SU	6.0 - 8.5	6.0 - 8.5	7.8
Specific Conductance	umhos/cm	≤ 1,275	Report	469.1
Salinity	ppt	-	-	0.2 c
Dissolved Oxygen	% saturation	≥ 34	-	96.7
Dissolved Oxygen	mg/L	-	≥ 6.0	7.5
Total Residual Chlorine	mg/L	≤ 0.01	-	0.01[1] U

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
c - Value is calculated
U - Material analyzed for but not detected; value reported is the method detection limit
1 - Measurement taken in facility laboratory

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

Effluent limits, Class III Water Quality Criteria for Fresh Waters, and analytical water chemistry, microbiological, and toxicological data

Analyte	Units	Class III Criteria	Effluent Permit Limits	Effluent Composite	Effluent Grab
Ortho-phosphate	mg P/L	-	Report	-	0.76 Y
Total Phosphorus[2]	mg P/L	≤ 0.12 g	Report	1.2	0.83
Total Ammonia Nitrogen[2]	mg N/L	≤ 1.38 cs	Report	0.65 c	0.16 c
Un-ionized Ammonia (calculated salinity)	mg N/L	-	-	-	< 0.02 c
Nitrate and Nitrite[2]	mg N/L	-	Report	0.35	0.16
Total Kjeldahl Nitrogen	mg N/L	-	≤ 2.10 sp	1.5	0.95
Organic Nitrogen	mg N/L	-	Report	0.9 c	0.79 c
Total Nitrogen	mg N/L	≤1.54 g	Report	1.9 c	1.11 c
Total Organic Carbon[2]	mg C/L	-	-	8.8	8.6
Chlorophyll *a* - Corrected	µg/L	-	-	-	2.1 I
Phaeophytin	µg/L	-	-	-	0.90 U
CBOD, 5 day, N - inhibited	mg/L	-	≤ 9.0 sp	2.0 U	-
Total Suspended Solids	mg/L	-	≤ 10.0 sp	2 I	-
Turbidity	NTU	≤ 29 t	-	-	0.90 IA
Color (true)	PCU	-	-	-	23 A
Alkalinity	mg CaCO3/L	≥ 20	-	-	119 A
Chloride	mg Cl/L	-	-	-	47 A
Cyanide	mg/L	≤ 5.2	≤ 5.2 s	-	0.0050 I
Fluoride	mg F/L	≤ 10.0	-	-	0.40
Sulfate	mg SO4/L	-	-	-	36 A
Fecal Coliforms	cfu/100 mL	-	≤ 800 s	-	3 BQ
Escherichia coli	MPN/100 mL	≤ 410	≤ 410	-	6.3 Q
Bioassay - Water flea *(C. dubia)*	% effluent	-	≥ 20 p	> 100 Y	-
Bioassay - Fish *(P. promelas)*	% effluent	-	≥ 20 p	> 100 Y	-

c - Value is calculated
g- Value expressed as annual geometric mean.
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
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.
2 - Analyte detected in equipment blank

Table 3. Analytical metals data

Effluent limits, Class III Water Quality Criteria for Fresh Waters, and analytical metals data

Analyte	Units	Effluent Permit Limits	Effluent Composite Class III Criteria	Effluent Composite	Effluent Grab Class III Criteria	Effluent Grab
Hardness	mg CaCO3/L	Report	-	127	-	135 c
Aluminum	µg/L	-	-	-	-	25
Arsenic	µg/L	-	≤ 50	-	≤ 50	0.70
Cadmium	µg/L	-	≤ 0.32 b	-	≤ 0.339 b	0.020 U
Calcium[2]	mg/L	-	-	-	-	39.6
Chromium, Total	µg/L	-	≤ 104.8 b	-	≤ 110 b	0.43 I
Copper[2]	µg/L	≤ 11.44 sp	≤ 11.44 b	1.48	≤ 12.1 b	2.04
Iron	µg/L	-	≤ 1,000	-	≤ 1,000	220
Lead	µg/L	-	≤ 4.31 b	-	≤ 4.68 b	0.20 U
Magnesium[2]	mg/L	-	-	-	-	8.87
Mercury	µg/L	≤ 0.012	≤ 0.012	-	≤ 0.012	0.00099
Nickel	µg/L	-	≤ 63.85 b	-	≤ 67.4 b	1.1 I
Potassium	mg/L	-	-	-	-	6.9
Selenium	µg/L	-	≤ 5.0	-	≤ 5.0	0.20 U
Silver	µg/L	≤0.07	≤ 0.07	-	≤ 0.07	0.010 U
Sodium	mg/L	-	-	-	-	41.3
Zinc	µg/L	-	≤ 146.7 b	-	≤ 155 b	40

b - Value is calculated based on hardness, (62-302.530(3))

c - Value is calculated

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

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

2- Analyte detected in equipment blank

Table 4. Algal Growth Potential (AGP)

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

Location	Test Species	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (OP) ± 20%	Predicted AGP (TN) ± 20%	Predicted AGP (TP) ± 20%	Inorganic N:P ratio	Total N:P ratio
Effluent Grab	*Pseudokirchneriella subcapitata*	0.501 IJ	12.2 ± 2.4	326.8 ± 65.4	42.2 ± 8.4	356.9 ± 71.4	0.4	1.3

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

J - Estimated value

Table 5. Detected Organic Constituents

Effluent limits, Class III Water Quality Criteria for Fresh Waters, and analytical organic and pesticide data.

Analyte	Units	Class III Criteria	Effluent Permit Limits	Effluent Grab
Atrazine	ng/L	-	-	9.5
Caffeine	ng/L	-	-	64
Chlorfenapyr	ng/L	-	-	0.89
Dithiopyr[3]	ng/L	-	-	0.94 V
Fipronil	ng/L	-	-	7.4 J
Fipronil Desulfinyl	ng/L	-	-	0.87
Fipronil Sulfide	ng/L	-	-	4.3 J
Fipronil Sulfone	ng/L	-	-	5.9
Fludioxonil	ng/L	-	-	1.3
Flutolanil	ng/L	-	-	0.12 I
Fluxapyroxad	ng/L	-	-	0.14 IJ
Hexazinone	ng/L	-	-	18
Loratadine	ng/L	-	-	6.9
Myclobutanil	ng/L	-	-	0.27 I
Phenytoin	ng/L	-	-	12 IJ
Propiconazole[3]	ng/L	-	-	3.5
Sulfentrazone	ng/L	-	-	4.1
Tebuconazole	ng/L	-	-	14
Terbufos	ng/L	-	-	0.12 I
2,4,6-Trichlorophenol	µg/L	-	-	0.11 I

I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J - Estimated value
V - Analyte was detected in both sample and method blank
3 - Analyte detected in the field blank

Appendix A. Facility Summary

PART I: Information gathered prior to sampling event	
Prepared By: Ally Ouellette	**Contact Number:** (904) 256-1519
Facility Name (as it appears on permit): Macclenny WWTF	**Former Names:**
NPDES Permit Number: FL0040495	**Permit Expiration Date:** January 14, 2024
Physical Address: 798 Honeymill Rd Macclenny, FL, 32063-2379	
District: Northeast District	**County:** Baker
Function of Facility: Domestic Wastewater Treatment	
Facility Type: DW NPDES Major	**Permitted Capacity (MGD):** 1.30 million gallons per day (MGD)
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): .7582 MGD	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months): N/A	
Description of type of Discharge: ☒ **Continuous** ☐ **Intermittent** ☐ **Seasonal** ☐ **Rainfall Dependent** ☐ **Other, please specify:**	
Description of Sampling Location(s) - actual permit designation of permitted sampling point(s): Monitoring Site Locations **EFD-1**: Effluent after dechlorination prior to discharge **CAL-1**: Calculated value **EFA-1**: Effluent after disinfection prior to dichlorination **SWB-1**: Located on Turkey Creek about 200-ft downstream of SR-121 bridge. **SWB-2**: 0.95 miles downstream of Outfall D-001 in Turkey Creek **SWB-3**: Located on south prong about 200-ft upstream of the confluence with Turkey	

Creek **SWB-4**: Located on the south prong in the shaded reach upstream of the railroad trestles prior to shallows (about 600-ft upstream of the US-90 bridge)
Description of Permitted Outfall(s): **Surface Water Discharge D-001:** An existing 1.3 MGD annual average daily flow discharge to Turkey Creek, Class III fresh waters, (WBID# 2318) which is approximately 10 feet in length and discharges at a depth of approximately 6 feet. The point of discharge is located approximately at latitude 30° 16' 11" N, longitude 82° 7' 37" W.
Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility): To operate an existing 1.30 million gallons per day (MGD) average annual daily flow (AADF) permitted capacity advanced secondary activated sludge domestic wastewater treatment facility (WWTF) consisting of the following major treatment processes: • Pretreatment Unit Processes: The pretreatment unit processes comprise an influent pumping station, two manually-cleaned influent bar screens, a grit removal chamber, grit classification equipment, • Biological Treatment Processes: The plant utilizes a complete mix activated sludge process via four sequencing batch reactors (SBRs) with a combined volume of approximately 1.668 million gallons (417,000 gallon each); • Filtration system: the filtration system consists of two traveling bridge filters and automatic backwash with a combined surface area of approximately 850 square feet (425 square feet each) • Disinfection System: gas chlorination for disinfection, a chlorine contact chamber with a volume of approximately 31,400 gallons (15,700 gallons each side); • A stilling channel with a flow meter and totalizer with a weir for effluent flow measurement by ultrasonic meter, sodium dioxide gas equipment for the addition of the dechlorination agent in the post-aeration basin with a floating aerator and a volume of approximately 18,145 gallons, two aerobic digesters with a combined volume of approximately 448,000 gallons (224,000 gallons each), and four polymer-assisted sludge drying beds with a combined surface area of approximately 6,400 ft2 (1,600 ft2 each). Biosolids meeting Class B stabilization requirements can be land applied, transported to another DEP facility or landfilled. The permittee is authorized to construct a biosolids dewatering facility, which consists of a concrete containment area, a fiberglass building to house the polymer feed and storage equipment, a magnetic flow meter and pinch valve to control/monitor sludge feed rate, two 30 cubic yard sludge dewatering boxes and yard piping. The biosolids treated to meet Class B stabilization requirements can be land applied on DEP permitted biosolids application sites

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

1. **During the period beginning on the effective date and lasting through the expiration date of this permit, the permittee is authorized to discharge effluent from Outfall D-001 to Turkey Creek. Such discharge shall be limited and monitored by the permittee as specified below and reported in accordance with Permit Condition I.**Error! Reference source not found.**:**

			Effluent Limitations		Monitoring Requirements			
Parameter	**Units**	**Max/Min**	**Limit**	**Statistical Basis**	**Frequency of Analysis**	**Sample Type**	**Monitoring Site Number**	**Notes**
Flow	**MGD**	**Max**	**1.3**	**Annual Average**	**Continuous**	**Recording Flow Meter with Totalizer**	**EFD-1**	**See I.A. 4**
		Max	**Report**	**Monthly Average**				
		Max	**Report**	**Quarterly Average**				
Percent Capacity, (TMADF/Permitted Capacity) x 100	**percent**	**Max**	**Report**	**Monthly Average**	**Monthly**	**Calculated**	**CAL-1**	
BOD, Carbonaceous 5 day, 20C *(Winter Months: December – April)*	**mg/L**	**Max**	**5.0**	**Annual Average**	**Weekly**	**16-hr FPC**	**EFD-1**	
		Max	**6.25**	**Monthly Average**				
		Max	**7.5**	**Weekly Average**				
		Max	**10.0**	**Single Sample**				
Nitrogen, Kjeldahl, Total (as N) *(Winter Months: December – April)*	**mg/L**	**Max**	**Report**	**Annual Average**	**Weekly**	**16-hr FPC**	**EFD-1**	
		Max	**1.75**	**Monthly Average**				
		Max	**2.10**	**Weekly Average**				

			Effluent Limitations		Monitoring Requirements			
Parameter	**Units**	**Max/Min**	**Limit**	**Statistical Basis**	**Frequency of Analysis**	**Sample Type**	**Monitoring Site Number**	**Notes**
		Max	**2.80**	**Single Sample**				
Oxygen, Dissolved (DO) ***(Winter Months: December – April)***	**mg/L**	**Min**	**5.0**	**Single Sample**	**Daily; 24 hours**	**Grab**	**EFD-1**	**See I.A.7**
BOD, Carbonaceous 5 day, 20C ***(Summer Months: May – November)***	**mg/L**	**Max**	**5.0**	**Annual Average**	**Weekly**	**16-hr FPC**	**EFD-1**	
		Max	**6.0**	**Monthly Average**				
		Max	**6.25**	**Weekly Average**				
		Max	**9.0**	**Single Sample**				
Nitrogen, Kjeldahl, Total (as N) ***(Summer Months: May – November)***	**mg/L**	**Max**	**Report**	**Annual Average**	**Weekly**	**16-hr FPC**	**EFD-1**	
		Max	**1.30**	**Monthly Average**				
		Max	**1.40**	**Weekly Average**				
		Max	**2.10**	**Single Sample**				
Oxygen, Dissolved (DO) ***(Summer Months: May – November)***	**mg/L**	**Min**	**6.0**	**Single Sample**	**Daily; 24 hours**	**Grab**	**EFD-1**	**See I.A.7**
Solids, Total Suspended	**mg/L**	**Max**	**5.0**	**Annual Average**	**Weekly**	**16-hr FPC**	**EFD-1**	
		Max	**6.25**	**Monthly Average**				
		Max	**7.5**	**Weekly Average**				

			Effluent Limitations		Monitoring Requirements			
Parameter	**Units**	**Max/Min**	**Limit**	**Statistical Basis**	**Frequency of Analysis**	**Sample Type**	**Monitoring Site Number**	**Notes**
		Max	**10.0**	**Single Sample**				
Coliform, Fecal	**#/100mL**	**Max**	**200**	**Monthly Geometric Mean**	**Weekly**	**Grab**	**EFD-1**	**See I.A.5**
		Max	**200**	**Annual Average**				
		Max	**800**	**Single Sample**				
E.coli	**#/100mL**	**Max**	**126**	**Monthly Geometric Mean**	**Weekly**	**Grab**	**EFD-1**	**See I.A.5**
		Max	**410**	**90th Percentile**				
pH	**s.u.**	**Min**	**6.0**	**Single Sample**	**Continuous**	**Meter**	**EFD-1**	**See I.A.3**
		Max	**8.5**	**Single Sample**				
Chlorine, Total Residual (For Disinfection)	**mg/L**	**Min**	**0.5**	**Single Sample**	**Continuous**	**Meter**	**EFA-1**	**See I.A.3 and I.A.6**
Chlorine, Total Residual (For Dechlorination)	**mg/L**	**Max**	**0.01**	**Single Sample**	**Daily; 24 hours**	**Grab**	**EFD-1**	
Nitrogen, Total	**mg/L**	**Max**	**Report**	**Annual Average**	**Weekly**	**16-hr FPC**	**EFD-1**	
		Max	**Report**	**Monthly Average**				
		Max	**Report**	**Weekly Average**				
		Max	**Report**	**Single Sample**				
Nitrogen, Total *(Mass Load)*	**lb/yr**	**Max**	**12,664**	**Annual Total**	**Monthly**	**Calculated**	**CAL-1**	**See I.A.12**

			Effluent Limitations		Monitoring Requirements			
Parameter	**Units**	**Max/Min**	**Limit**	**Statistical Basis**	**Frequency of Analysis**	**Sample Type**	**Monitoring Site Number**	**Notes**
	lb/mth	**Max**	**Report**	**Monthly Total**				
Temperature (C), Water	**Deg C**	**Max**	**Report**	**Single Sample**	**Monthly**	**Meter**	**EFD-1**	
Nitrogen, Ammonia, Total (as N) ***(Effluent)***	**mg/L**	**Max**	**Report**	**Single Sample**	**Bi-weekly; every 2 weeks**	**Grab**	**EFD-1**	**See I.A.8**
		Max	**Report**	**Monthly Average**				
Nitrogen, Ammonia, Total (as N) ***(Limits)***	**mg/L**	**Max**	**Report**	**Monthly Average**	**Bi-weekly; every 2 weeks**	**Calculated**	**CAL-1**	**See I.A.8**
		Max	**Report**	**Single Sample**				
Nitrogen, Ammonia, Total (as N) ***(Compliance)***	**mg/L**	**Max**	**0.0**	**Monthly Average**	**Bi-weekly; every 2 weeks**	**Calculated**	**CAL-1**	**See I.A.8**
		Max	**0.0**	**Single Sample**				
Phosphorus, Total (as P)	**mg/L**	**Max**	**Report**	**Annual Average**	**Monthly**	**16-hr FPC**	**EFD-1**	
		Max	**Report**	**Monthly Average**				
		Max	**Report**	**Weekly Average**				
		Max	**Report**	**Single Sample**				
Phosphorus, Total (as P)	**lb/yr**	**Max**	**10,685**	**Annual Total**	**Monthly**	**Calculated**	**CAL-1**	**See I.A.12**
	lb/mth	**Max**	**Report**	**Monthly Total**				
Silver, Total Recoverable	**ug/L**	**Max**	**0.07**	**Single Sample**	**Monthly**	**Grab**	**EFD-1**	**See I.A.10**

			Effluent Limitations		Monitoring Requirements			
Parameter	**Units**	**Max/Min**	**Limit**	**Statistical Basis**	**Frequency of Analysis**	**Sample Type**	**Monitoring Site Number**	**Notes**
Mercury, Total Recoverable	**ug/L**	**Max**	**0.012**	**Single Sample**	**Monthly**	**Grab**	**EFD-1**	**See I.A.11**
Cyanide, Total (as CN)	**ug/L**	**Max**	**5.2**	**Single Sample**	**Monthly**	**Grab**	**EFD-1**	
Copper, Total Recoverable	**ug/L**	**Max**	**-**	**Single Sample**	**Monthly**	**16-hr FPC**	**EFD-1**	**See I.A.9**
Hardness, Total (as CaCO3)	**mg/L**	**Max**	**Report**	**Single Sample**	**Monthly**	**16-hr FPC**	**EFD-1**	**See I.A.9**
Nitrogen, Organic, Total (as N)	**mg/L**	**Max**	**Report**	**Single Sample**	**Quarterly**	**16-hr FPC**	**EFD-1**	
Nitrite plus Nitrate, Total 1 det. (as N)	**mg/L**	**Max**	**Report**	**Single Sample**	**Quarterly**	**16-hr FPC**	**EFD-1**	
Phosphate, Ortho (as P)	**mg/L**	**Max**	**Report**	**Single Sample**	**Quarterly**	**Grab**	**EFD-1**	
Oxygen, Dissolved (DO)	**mg/L**	**Min**	**Report**	**Annual Average**	**Monthly**	**Meter**	**SWB-1 SWB-2 SWB-3 SWB-4**	**See I.A.15**
	mg/L	**Min**	**Report**	**Single Sample**				
BOD, Carbonaceous 5 day, 20C	**mg/L**	**Max**	**Report**	**Single Sample**	**Semi-Annually; twice per year**	**Grab**	**SWB-1 SWB-2 SWB-3 SWB-4**	**See I.A.15**
Nitrite plus Nitrate, Total 1 det. (as N)	**mg/L**	**Max**	**Report**	**Single Sample**	**Semi-Annually; twice per year**	**Grab**	**SWB-1 SWB-2 SWB-3 SWB-4**	**See I.A.15**

			Effluent Limitations		Monitoring Requirements			
Parameter	**Units**	**Max/Min**	**Limit**	**Statistical Basis**	**Frequency of Analysis**	**Sample Type**	**Monitoring Site Number**	**Notes**
Nitrogen, Kjeldahl, Total (as N)	**mg/L**	**Max**	**Report**	**Single Sample**	**Semi-Annually; twice per year**	**Grab**	**SWB-1 SWB-2 SWB-3 SWB-4**	**See I.A.15**
Nitrogen, Ammonia, Total (as N)	**mg/L**	**Max**	**Report**	**Single Sample**	**Semi-Annually; twice per year**	**Grab**	**SWB-1 SWB-2 SWB-3 SWB-4**	**See I.A.15**
Nitrogen, Total	**mg/L**	**Max**	**Report**	**Single Sample**	**Semi-Annually; twice per year**	**Grab**	**SWB-1 SWB-2 SWB-3 SWB-4**	**See I.A.15 and I.A.16**
		Max	**Report**	**Annual Geometric Mean**				
Phosphorus, Total (as P)	**mg/L**	**Max**	**Report**	**Single Sample**	**Semi-Annually; twice per year**	**Grab**	**SWB-1 SWB-2 SWB-3 SWB-4**	**See I.A.15 and I.A.16**
		Max	**Report**	**Annual Geometric Mean**				
pH	**s.u.**	**Max**	**Report**	**Single Sample**	**Semi-Annually; twice per year**	**Meter**	**SWB-1 SWB-2 SWB-3 SWB-4**	**See I.A.15**
Temperature (C), Water	**Deg C**	**Max**	**Report**	**Single Sample**	**Semi-Annually; twice per year**	**Meter**	**SWB-1 SWB-2 SWB-3 SWB-4**	**See I.A.15**
Specific Conductance	**umhos/cm**	**Max**	**Report**	**Single Sample**	**Semi-Annually; twice per year**	**Meter**	**SWB-1 SWB-2 SWB-3 SWB-4**	**See I.A.15**

			Effluent Limitations		Monitoring Requirements			
Parameter	**Units**	**Max/Min**	**Limit**	**Statistical Basis**	**Frequency of Analysis**	**Sample Type**	**Monitoring Site Number**	**Notes**
Water Level at sample collection time	**ft**	**Min**	**Report**	**Single Sample**	**Semi-Annually; twice per year**	**Meter**	**SWB-1**	**See I.A.15**
Stream Stage	**ft**	**Min**	**Report**	**Single Sample**	**Semi-Annually; twice per year**	**Meter**	**SWB-1 SWB-2 SWB-3 SWB-4**	**See I.A.15**
Chronic Whole Effluent Toxicity, 7-Day IC25 (Ceriodaphnia dubia)	**percent**	**Min**	**20**	**Single Sample**	**Annually**	**24-hr FPC**	**EFD-1**	**See I.A.14**
Chronic Whole Effluent Toxicity, 7-Day IC25 (Pimephales promelas)	**percent**	**Min**	**20**	**Single Sample**	**Annually**	**24-hr FPC**	**EFD-1**	**See I.A.14**
Biological Assessment and SCI Assessment	**-**	**-**	**Report**	**Single Sample**	**Once every Five Years**	**-**	**SWB-1 SWB-2 SWB-3 SWB-4**	**See I.A.15 and V.I 2**

I.A.*3: Hourly measurement of pH and total residual chlorine for disinfection during the period of required operator attendance may be substituted for continuous measurement. [62-600.660(1)]*

I.A.4: A recording flow meter with totalizer shall be utilized to measure flow and calibrated at least once every 12 months. [62-600.200(25)]

I.A.5: The effluent limitations for the monthly geometric means for fecal coliform and E. coli are only applicable if 10 or more values are reported. If fewer than 10 values are reported, the monthly geometric means shall be calculated and reported on the Discharge Monitoring Report, but shall not be used to determine compliance with the limitations for the monthly geometric means. The monthly geometric mean for fecal coliform shall be used to calculate the annual average. All other fecal coliform and E. coli effluent limitations included in permit condition I.A.1 apply regardless of the number of values reported. (In the table above, reference this condition in the notes column for fecal coliform and E. coli bacteria when the facility is required to provide basic level disinfection and discharges to Class III predominately fresh waters.) *[62-600.440(5)(b)] [62-302.530(11)(c)]*

I.A 6: Reference source not found..Error! Reference source not found.**:** Total residual chlorine must be maintained for a minimum contact time of 15 minutes based on peak hourly flow. *[62-600.440(5)(c), (6)(b), and (7)(c)]*

I.A.7: The discharge from the Outfall D-001 shall not cause violations to the Site Specific Alternative Criterion (SSAC) for Dissolved Oxygen (DO) concentration in the Turkey Creek and the South Prong of the St. Marys River in Baker County. Pursuant to the SSAC, Dissolved Oxygen in the stream reaches shall be maintained at or above 3.0 mg/L as an annual average, with no more than 10% of the individual measurements below 1.35 mg/L on an annual basis. *[62-302.800]*

I.A.8: Effluent shall be monitored for pH and temperature at the same time and location as total ammonia nitrogen (TAN). The monthly average TAN value shall not exceed the average of the values calculated from the below equation, with no single value exceeding 2.5 times the value from the equation. To determine compliance with the monthly average and single sample limits for TAN is following calculations steps below:

(1) Calculate TAN Criterion Value for a collected sample using the below equation:

$$TAN\ Criterion = 0.8876 \left(\frac{0.0278}{1+10^{7.688-pH}} + \frac{1.1994}{1+10^{pH-7.688}}\right) \text{ x } (2.126\ x\ 10^{0.028(20-T)})$$

Where:

- T and pH are the paired temperature (in degrees Celsius) and pH associated with the effluent TAN sample, i.e., measured at the same time and location as the effluent TAN sample is collected.
- For purposes of TAN criterion calculations, pH is subject to the range of 6.5 to 9.0. In the TAN criterion equation, the pH shall be set to 6.5 if the measured pH is less than 6.5 and set to 9.0 if the measured pH is greater than 9.0.
- The value of T shall be set to 7 if the measured temperature is less than 7°C.

(2) Calculate TAN Limits:

- Monthly Average TAN Limit = Average TAN Criterion Values of the Month = $\frac{\sum TAN\ Criterion\ Value}{\sum \#\ of\ values}$
- Single Sample TAN limit = 2.5 x Calculated TAN Criterion Value

(3) Calculate TAN Compliances:

- Monthly Average TAN Compliance = Mon Avg TAN Effluent – Mon Avg TAN Limit ≤ 0.0
- Single Sample TAN Compliance = Single Sample TAN Effluent– Single Sample TAN Limit ≤ 0.0

[62-302.530(7)]

1. **I.A.9:** The limit for "Copper, Total Recoverable" shall be calculated using the following equation(s):

$$Cu \leq e^{(0.8545[\ln H]-1.702)}$$

Total hardness shall be measured at the time of the effluent sample. The "ln H" means the natural logarithm of total hardness expressed as mg/L of $CaCO_3$. For metals criteria involving equations with hardness, the hardness shall be set at 25 mg/L if actual hardness is <25 mg/L and set at 400 mg/L if actual hardness is >400 mg/L.

The measured effluent value shall be recorded on the DMR in the parameter row for "(effluent)." The calculated effluent limit shall be recorded on the DMR in the parameter row for "(calculated limit)." Compliance with the effluent limitation is determined by calculating the difference between the measured effluent value and the calculated. The compliance value shall be recorded on the DMR in the parameter row for "(effluent minus calculated limit)." The compliance value shall not exceed 0.00. *[62-302.530(23)]*

I.A.10: If Silver, Total Recoverable is not detected at or above the MDL for the test method used, the permittee shall report "BDL" on the DMR. A value of one-half the effluent limit shall be used for that sample when necessary to calculate an average for the parameter. Test methods used shall be in accordance with applicable Department rules, including Rule 62-4.246 and Chapter 62-160, F.A.C., and Permit Condition I.B.4. For all other parameters not detected at or above the MDL for the test method used, the DMR shall be completed following the directions in the "Instructions for Completing the Wastewater Discharge Monitoring Report" attached to the DMR.

I.A.11: EPA Method 1631E shall be used to analyze for mercury. Method 245.1 or another approved method with a MDL below the water quality standards for mercury operated in the high sensitivity mode can be used as for initial screening for mercury. If mercury is not detected (e.g., the results are less than the MDL), then mercury is in compliance with the water quality criterion of Rule 62-302.530(41), FAC. However, for any sample results that have a value greater than the MDL but less than the PQL, the permittee shall conduct an additional evaluation for mercury using Method 1631E. [BPJ; 62-620.620(1)]

I.A.12: The permittee shall calculate for monthly and total annual mass loads of total nitrogen (TN) and total phosphorus (TP) discharge from Outfall D-001 to the receiving waterbody. Monthly mass load and annually mass loads of total nitrogen shall be calculated as follows:

a. Monthly Mass Load (ML)

$$\textbf{ML (Lbs/Mon)} = \textbf{[Flow}\left(\frac{MG}{Mon}\right)\textbf{ x (TN or TP)}\left(\frac{mg}{L}\right)\textbf{ x 8.34 }\left(\frac{L}{MG}\right)\left(\frac{Lbs}{mg}\right)\textbf{]}$$

Where:

ML = Monthly mass load of total nitrogen or total phosphorus (Lbs/Mon)

Flow = Monthly volume of effluent discharged from Outfall D-001; (MG)

TN = Monthly average concentration of TN collected at EFD-1; (mg/L)

TP = Monthly average concentration of TN collected at EFD-1; (mg/L)

b. Annual Mass Load (AL): The annual mass load is computed using a rolling twelve (12) – month period. The calculation shall be the sum of the twelve most recent monthly mass loading of total nitrogen (TN) or total phosphorus (TP).

2. **I.A.14:** The permittee shall comply with the following requirements to evaluate chronic whole effluent toxicity of the discharge from outfall D-001.

a. Effluent Limitation
(1) In any routine or additional follow-up test for chronic whole effluent toxicity, the 25 percent inhibition concentration (IC25) for reproduction or growth shall not be less than 20% effluent. [Rules 62-302.530(61) and 62-4.241(5), F.A.C.]
(2) For acute whole effluent toxicity, the 96-hour LC50 shall not be less than 20% effluent in any test. [Rules 62-302.500(1)(a)4 and 62-4.241(5), F.A.C.]

b. Monitoring Frequency
(1) Routine toxicity tests shall be conducted once every 12 months (annually), the first starting within 60 days of the effective date of this permit and lasting for the duration of this permit.

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

d. Test Requirements
(1) Routine Tests: All routine tests shall be conducted using a control (0% effluent) and a minimum of five test dilutions: **100%, 50%, 30%, 20%, and 10%** final effluent.
(2) The permittee shall conduct a daphnid, **Ceriodaphnia dubia**, Survival and Reproduction Test and a fathead minnow, **Pimephales promelas**, Larval Survival and Growth Test, concurrently.
(3) All test species, procedures and quality assurance criteria used shall be in accordance with **Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms**, 4th Edition, EPA-821-R-02-013. Any deviation of the bioassay procedures outlined herein shall be submitted in writing to the Department for review and approval prior to use. In the event the above method is revised, the permittee shall conduct chronic toxicity testing in accordance with the revised method.
(4) The control water and dilution water shall be moderately hard water as described in EPA-821-R-02-013, Section 7.2.3.

e. Quality Assurance Requirements
(1) A standard reference toxicant (SRT) quality assurance (QA) chronic toxicity test shall be conducted with each species used in the required toxicity tests either concurrently or initiated no more than 30 days before the date of each routine or

additional follow-up test conducted. Additionally, the SRT test must be conducted concurrently if the test organisms are obtained from outside the test laboratory unless the test organism supplier provides control chart data from at least the last five monthly chronic toxicity tests using the same reference toxicant and test conditions. If the organism supplier provides the required SRT data, the organism supplier's SRT data and the test laboratory's monthly SRT-QA data shall be included in the reports for each companion routine or additional follow-up test required.

(2) If the mortality in the control (0% effluent) exceeds 20% for either species in any test or the "test acceptability criteria" are not met, the test for that species (including the control) shall be invalidated and the test repeated. Test acceptability criteria for each species are defined in EPA-821-R-02-013, Section 13.12 (**Ceriodaphnia dubia**) and Section 11.11 (**Pimephales promelas**). The repeat test shall be started within 21 days after the last day of the invalid test.

(3) If 100% mortality occurs in all effluent concentrations for either species prior to the end of any test and the control mortality is less than 20% at that time, the test (including the control) for that species shall be terminated with the conclusion that the test fails and constitutes non-compliance.

(4) Routine and additional follow-up tests shall be evaluated for acceptability based on the observed dose-response relationship as required by EPA-821-R-02-013, Section 10.2.6., and the evaluation shall be included with the bioassay laboratory reports.

f. Reporting Requirements

(1) Results from all required tests shall be reported on the Discharge Monitoring Report (DMR) as follows:

(a) Routine and Additional Follow-up Test Results: The calculated IC25 for reproduction or growth for each test species shall be entered on the DMR.

(2) A bioassay laboratory report for each routine test shall be prepared according to EPA-821-R-02-013, Section 10, Report Preparation and Test Review, and mailed to the Department at the address below within 30 days after the last day of the test.

(3) For additional follow-up tests, a single bioassay laboratory report shall be prepared according to EPA-821-R-02-013, Section 10, and mailed within 30 days after the last day of the second valid additional follow-up test.

(4) Data for invalid tests shall be included in the bioassay laboratory report for the repeat test.

(5) The same bioassay data shall not be reported as the results of more than one test.

(6) All bioassay laboratory reports shall be sent to:
Florida Department of Environmental Protection
Northeast District Office
8800 Baymeadows Way West, Suite 100
Jacksonville, Florida 32256-7577

g. Test Failures

(1) A test fails when the test results do not meet the limits in **Error! Reference source not found.**.a.(1).

(2) Additional Follow-up Tests:

(a) If a routine test does not meet the chronic toxicity limitation in **Error! Reference source not found.**.a.(1) above, the permittee shall notify the Department at the address above within 21 days after the last day of the failed routine test and conduct two additional follow-up tests according to **Error! Reference source not found.**.d. on each species that failed the test.

(b) The first test shall be initiated within 28 days after the last day of the failed routine test. The remaining additional follow-up tests shall be conducted weekly

thereafter until a total of two valid additional follow-up tests are completed.

(c) The first additional follow-up test shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 50%, 30%, 20%, and 10% effluent. The permittee may modify the dilution series in the second additional follow-up test to more accurately bracket the toxicity such that at least two dilutions above and two dilutions below the target concentration and a control (0% effluent) are run. All test results shall be analyzed according to the procedures in EPA-821-R-02-013.

(3) In the event of three valid test failures (whether routine or additional follow-up tests) within a 12-month period, the permittee shall notify the Department within 21 days after the last day of the third test failure.

(a) The permittee shall submit a plan for correction of the effluent toxicity within 60 days after the last day of the third test failure.

(b) The Department shall review and approve the plan before initiation.

(c) The plan shall be initiated within 30 days following the Department's written approval of the plan.

(d) Progress reports shall be submitted quarterly to the Department at the address above.

(e) During the implementation of the plan, the permittee shall conduct quarterly routine whole effluent toxicity tests in accordance with **Error! Reference source not found.**.d. Additional follow-up tests are not required while the plan is in progress. Following completion or termination of the plan, the frequency of monitoring for routine and additional follow-up tests shall return to the schedule established in **Error! Reference source not found.**.b.(1). If a routine test is invalid according to the acceptance criteria in EPA-821-R-02-013, a repeat test shall be initiated within 21 days after the last day of the invalid routine test.

(f) Upon completion of four consecutive quarterly valid routine tests that demonstrate compliance with the effluent limitation in **Error! Reference source not found.**.a.(1) above, the permittee may submit a written request to the Department to terminate the plan. The plan shall be terminated upon written verification by the Department that the facility has passed at least four consecutive quarterly valid routine whole effluent toxicity tests. If a test within the sequence of the four is deemed invalid, but is replaced by a repeat valid test initiated within 21 days after the last day of the invalid test, the invalid test will not be counted against the requirement for four consecutive quarterly valid routine tests for the purpose of terminating the plan.

(4) If chronic toxicity test results indicate greater than 50% mortality within 96 hours in an effluent concentration equal to or less than the effluent concentration specified as the acute toxicity limit in **Error! Reference source not found.**.a.(2), the Department may revise this permit to require acute definitive whole effluent toxicity testing.

(5) The additional follow-up testing and the plan do not preclude the Department taking enforcement action for acute or chronic whole effluent toxicity failures.

[62-4.241, 62-620.620(3)]

I.A.15: The permittee shall conduct regular monitoring of the Turkey Creek for maintaining data on the impact of the discharge to the water quality of the surface water body. Monitoring shall be conducted on a semi-annual basis during the quarterly monitoring periods noted in condition I.B.6 and shall coincide with the quarterly nutrient monitoring of the facility effluent discharge. Test results showing parameters and corresponding concentrations in mg/L shall be submitted to the Department with the discharge monitoring report (DMR) corresponding to the month during which the samples were taken. [62-620.320(6)]

I.A.16: The Permittee shall monitor for concentrations of total nitrogen (TN) and total phosphorus (TP) of the ambient water body near the point of discharge and calculate the annual geometric mean concentrations of TN and TP. The annual geometric mean concentrations of TN or TP shall be calculated once per calendar year using all data collected during the period. [62-302.531(6)]

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

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

(1) Routine Tests: All routine tests shall be conducted using a control (0% effluent) and a minimum of five test dilutions: **100%**, **50%**, **30%**, **20%**, and **10%** final effluent.

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

(3) All test species, procedures and quality assurance criteria used shall be in accordance with **Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms**, 4th Edition, EPA-821-R-02-013.

Any deviation of the bioassay procedures outlined herein shall be submitted in writing to the Department for review and approval prior to use. In the event the above method is revised, the permittee shall conduct chronic toxicity testing in accordance with the revised method.

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

e. Quality Assurance Requirements

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

(2) If the mortality in the control (0% effluent) exceeds 20% for either species in any test or the "test acceptability criteria" are not met, the test for that species (including the control) shall be invalidated and the test repeated. Test acceptability criteria for each species are defined in EPA-821-R-02-013, Section 13.12 (**Ceriodaphnia dubia**) and Section 11.11 (**Pimephales promelas**). The repeat test shall be started within 21 days after the last day of the invalid test.

(3) If 100% mortality occurs in all effluent concentrations for either species prior to the end of any test and the control mortality is less than 20% at that time, the test (including the control) for that species shall be terminated with the conclusion that the test fails and constitutes non-compliance.

(4) Routine and additional follow-up tests shall be evaluated for acceptability based on the observed dose-response relationship as required by EPA-821-R-02-013, Section 10.2.6., and the evaluation shall be included with the bioassay laboratory reports.

f. Reporting Requirements

(1) Results from all required tests shall be reported on the Discharge Monitoring Report (DMR) as follows:
(a) st Results: The calculated IC25 for

reproduction or growth for each test species shall be entered on the DMR.

) A bioassay laboratory report for each routine test shall be prepared according to EPA-821-R-02-013, Section 10, Report Preparation and Test Review, and mailed to the Department at the address below within 30 days after the last day of the test.

(5) For additional follow-up tests, a single bioassay laboratory report shall be prepared according to EPA-821-R-02-013, Section 10, and mailed within 30 days after the last day of the second valid additional follow-up test.

(6) Data for invalid tests shall be included in the bioassay laboratory report for the repeat test.

(7) The same bioassay data shall not be reported as the results of more than one test.

(8) All bioassay laboratory reports shall be sent to: Florida Department of Environmental Protection Northeast District Office

8800 Baymeadows Way West, Suite 100 Jacksonville, Florida 32256-7577

g. Test Failures

(1) A test fails when the test results do not meet the limits in 10.a.(1).
(2) Additional Follow-up Tests:

(a) If a routine test does not meet the chronic toxicity limitation in 10.a.(1) above, the permittee shall notify the Department at the address above within 21 days after the last day of the failed routine test and conduct two additional follow-up tests according to 10.d. on each species that failed the test. The first test shall be initiated within 28 days after the last day of the failed routine test. The remaining additional follow-up tests shall be conducted weekly thereafter until a total of two valid additional follow-up tests are completed.

(c) The first additional follow-up test shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 50%, 30%, 20%, and 10% effluent. The permittee may modify the dilution series in the second additional follow-up test to more accurately bracket the toxicity such that at least two dilutions above and two dilutions below the target concentration and a control run. All test results shall be analyzed according to the procedures in EPA-821-R-02-013.

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

Facility Mixing Zone Details (if applicable):
N/A

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

Monitoring Group	Date	Monitoring Location	Description	Result	Limit	Units
D-001	10/31/2021	EFD-1	BOD, Carbonaceous 5 day, 20C	7	6.25	mg/L

Describe previous FYI and WQBEL study:

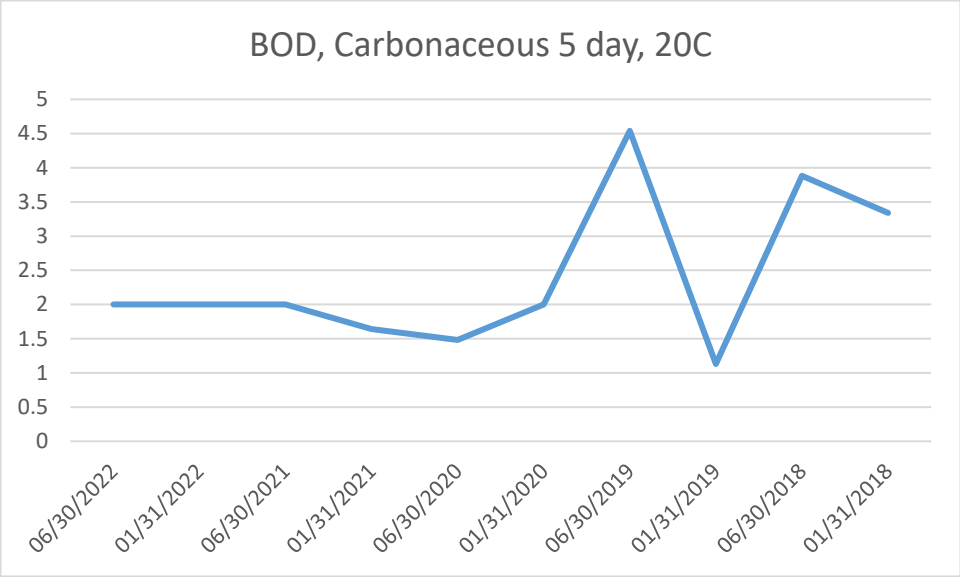
The last sampling event was conducted on 08/14/2017 and was determined to be out of compliance.

Describe previous or current Enforcement Actions (including WLs):
Facility had a WL issued on 05/12/2021 for a SSO.
Facility had a CO that was issued in 2020 and was closed on 06/21/2022.

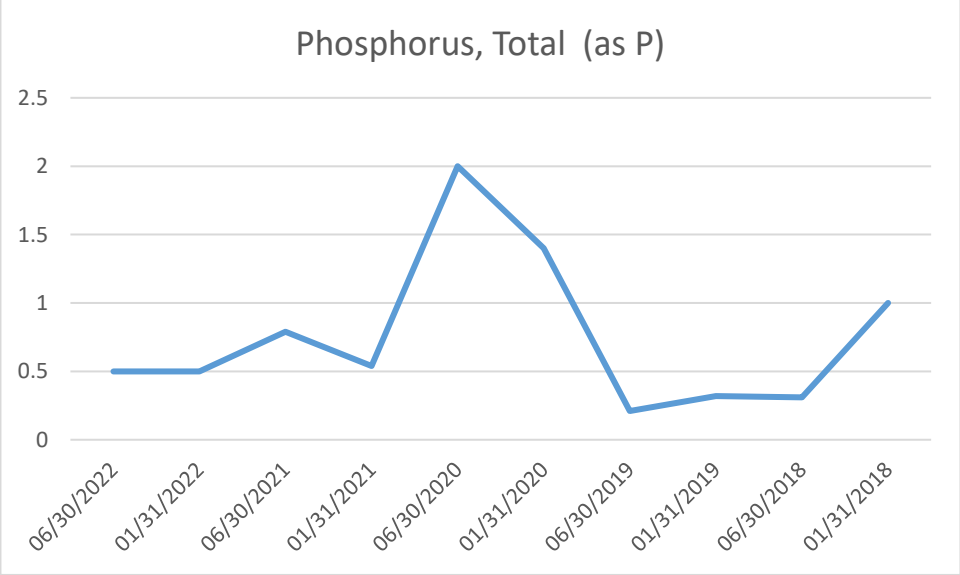
Describe any violations or problems noted in previous inspection:

During the last inspection conducted on 03/10/2021 the facility was determined to be out of compliance. This due to Backflow Prevention annual certification was not available and DMR exceedances that were also addressed in the CO.

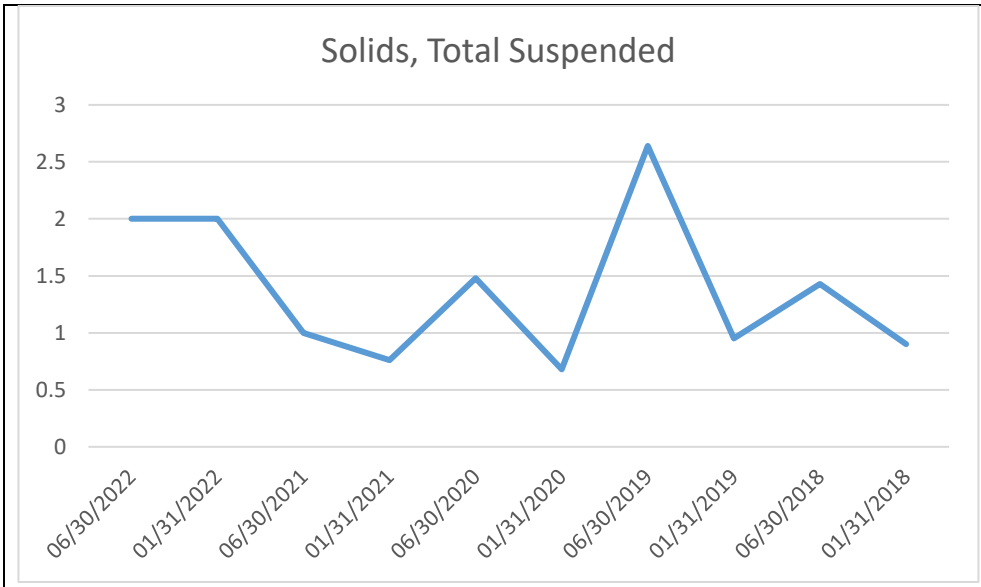
Discuss whether DMR trends within previous five years are improving or declining:



As seen above the CBOD levels have decreased since 2018 with one spike in 2019.



It appears that the Total Phosphorus has increased slightly since 2018 with a spike in 2020.



The Total Suspended Solids have had an increase since 2018. The highest it's gone was in 2019.

Appendix B. Explanations of Measurements

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

- **Chemical Analyses of the Effluent**

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

- **Toxicity Bioassays**

  Greater than 50% mortality in an acute toxicity test may constitute an exceedance of Paragraph 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 Subsection 62-302.530(20), Subsection 62-302.530(62) and/or facility permit limits. A no observed effect concentration (NOEC) less than 100% effluent in a chronic test may constitute an exceedance of Subsection 62-302.530(62) and/or facility permit limits. Standard reference toxicant (SRT) tests are conducted monthly to ensure quality in toxicity testing.

- **Bacteriological Testing**

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

- **Algal Growth Potential (AGP)**

  The algal growth potential (AGP) value is the peak growth of the alga within that 14-day period, recorded as mg dry weight/L. AGP results within the range 6.10 to 20.0 mg dry wt/L are suggested to be representative of high productivity for freshwaters (Miller et al. 1978). High AGP values may constitute exceedances of Subsection 62-302.530(47), F.A.C., Paragraph 62-302.530(48)(a), F.A.C. and/or Paragraph 62-302.530(48)(b), F.A.C.

  The concentration of nutrients in a water sample may be used to calculate the expected yield of AGP under the assumption that other required nutrients (e.g. silicon, micronutrients) are present in excess (Miller *et al*. 1978). The expected amount of production is calculated as 38 times the total soluble inorganic nitrogen (nitrate and nitrite plus ammonia) under nitrogen limitation or 430 times the ortho-phosphate (OP) concentration under phosphorus limitation

with an error of ± 20%. When the ratio of nitrogen to phosphorus (N: P) is less than 10:1, nitrogen limitation of algal production is likely. When the N: P ratio is 20:1 or greater, phosphorus limitation is likely (USEPA 2000). For ratios in-between, co-limitation may occur. Production of lower biomass than expected may be evidence of growth inhibition related to toxic compounds present in the water sample tested and may constitute an exceedance of Subsection 62-302.530(62), F.A.C.

- **Chlorophyll** *a* Content

  Chlorophyll *a* content is an estimate of algal biomass. High algal biomass implies nutrient stress (Stevenson and Bahls 1999) and may be constitute exceedances of Subsection 62-302.530(47), F.A.C., Paragraph 62-302.530(48)(a) F.A.C. and/or Paragraph 62-302.530(48)(b) F.A.C..

- **Definition of Qualifiers** (Rule 62-160.700, F.A.C.)

  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-2022-08-29-35

FYI3 Macclenny WWTF Sampling Inspection

Customer: NE-DIST

Project ID: FYI3

Florida Department of Environmental Protection

Central Laboratory Submittal Form

last revised Jan 25, 2018

Requester: Benjamin Nomann

Collected By: CL AM PD

Field Report Prepared By: Conor Lucas

Sampling Agency: FDEP NED

Location: FYI3 Macclenny WWTF			☐ Comp ☑ Grab	Collection (comp begin or grab) Date 9/8/22 Time 8:20 am	Eastern Central	Composite end Date	Time			Bottle Group(s) (See pg 2) D
Field ID: EQUIP BLANK D			Matrix (type, e.g., Salt, Fresh, etc): Blank (DI)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)			
WIN/ST			Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)			
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)	Comments: DI water from Lab					
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					
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					

H2SO4 LOT# SH2145160 EXP: 06/02/2023

HNO3 LOT# NR1105100 EXP: 06/07/2023

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
CL	9/8/22 3:00pm	FedEX	1	JR	9-9-2022 9:21

Request Number: RQ-2022-08-29-35

FY13 Macclenny WWTF Sampling Inspection

Florida Department of Environmental Protection
Central Laboratory Submittal Form

Page 1 of 4
last revised Jan 25, 2018

Customer: NE-DIST

Project ID: FYI3

Requester: Benjamin Nomann

Collected By: Taylor Parks, Conor Lucey, Adrian Mateu

Field Report Prepared By: Taylor Parks, Conor Lucey

Sampling Agency: DEP

Location: FYI3 Macclenny WWTF
Field ID / WIN/STO: EFF GRAB A
Latitude ☐dd ☐dms | Longitude ☐dd ☐dms

☐ Comp ☒ Grab | Collection (comp begin or grab) Date 9/12/22 Time 10:47 am | Eastern ~~Central~~ | Composite end Date N/A Time | Bottle Group(s) (See pg 2): A

Matrix (type, e.g., Salt, Fresh, etc): WW | Diss. Oxygen 7.51 → 96.7 ☒ mg/L ☐ % sat | Total Res. Chlorine (mg/L)

Temp (C) 28.9 | pH 7.83 | Sample Depth ☐ ft ☐ m | Sp. Conductance (umho/cm) 4691

Salinity (ppt) N/A | Comments: Back sample - condensation observed inside bottle before seal broken, did not observe powder. *

Location: FYI3 Macclenny WWTF
Field ID / WIN/STOR: EFF COMP B
Latitude ☐dd ☐dms | Longitude ☐dd ☐dms

☒ Comp ☐ Grab | Collection (comp begin or grab) Date 9/11 Time 1000 | Eastern Central | Composite end Date 9/12 Time 1000 | Bottle Group(s): B

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

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

Salinity (ppt) NA | Comments

Location: FYI3 Macclenny WWTF
Field ID / WIN/STO: FIELD BLANK C
Latitude ☐dd ☐dms | Longitude ☐dd ☐dms

☐ Comp ☒ Grab | Collection (comp begin or grab) Date 9/12/22 Time ~~1105~~ 1105 | Eastern Central | Composite end Date Time | Bottle Group(s): C

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

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

Salinity (ppt) NA | 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
Taylor Parks	9/12/22 1630	Fed Ex	4	ABS	9-13-22 1000

Comments cont'd (A): PO4 Sample & field blank done @ lab b/c forget pump in field. Bact + Gnd B4 sample NO Powder obs Devon Witzgall 9.13.22/1013

Request Number: RQ-2022-08-29-35

FYI3 Macclenny WWTF Sampling Inspection

Customer: NE-DIST

Project ID: FYI3

Florida Department of Environmental Protection

Central Laboratory Submittal Form

Page 1 of 4

last revised Jan 25, 2018

Requester: Benjamin Nomann

Field Report Prepared By: Taylor Parks

Collected By: Taylor Parks, Conor Lancey

Sampling Agency: DEP

Location: FYI3 Macclenny WWTF	☒ Comp ☐ Grab	Collection (comp begin or grab) Date 9/13/22 Time 1000	Eastern Central	Composite end Date 9/14/22 Time 1000	Bottle Group(s) (See pg 2): B				
Field ID: EFF COMP B	Matrix (type, e.g., Salt, Fresh, etc): WW eff	Diss. Oxygen —	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)					
WIN/STORET	Temp (C) —	pH —	Sample Depth —	☐ ft ☐ m	Sp. Conductance (umho/cm) —				
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt) —	Comments: Day 2 toxicity						
Loc: Ref: Dep: Date: 25Aug22 Wgt: 10.00 LBS DV: 0.00 SHIPPING: 0.00 SPECIAL: 0.00 HANDLING: 0.00 TOTAL: 0.00 Fiel GHT Matter 5659 4728 5353	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time	Bottle Group(s)				
WIN/STORET #	Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)					
	Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)				
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
Taylor Parks	9/14 1630	Fed Ex	1	JR	9-15-2022 9:30

Request Number: RQ-2022-08-29-35

FYI3 Macclenny WWTF Sampling Inspection

Customer: NE-DIST

Project ID: FYI3

Florida Department of Environmental Protection
Central Laboratory Submittal Form

last revised Jan 25, 2018

Requester: Benjamin Nomann

Field Report Prepared By: Taylor Parks

Collected By: Taylor Parks, Conor Lucey

Sampling Agency: DEP

Location: FYI3 Macclenny WWTF	☒ Comp ☐ Grab	Collection (comp begin or grab) Date 9/15/22 Time 1000	Eastern / Central	Composite end Date 9/16/22 Time 1000	Bottle Group(s) (See pg 2): B					
Field ID	Matrix (type, e.g., Salt, Fresh, etc): WW eff	Diss. Oxygen – ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L): –							
WIN/STORET: EFF COMP B	Temp (C): –	pH: –	Sample Depth: – ☐ ft ☐ m	Sp. Conductance (umho/cm): –						
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt): –	Comments: Day 3 tox.							
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
		FeDex	1	Kala Pleffle	9/17/22 9:50

Receiving temp = 3.9°C

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
TASK ASSIGNMENT/NOTIFICATION FORM: LAB145

Contract Manager: Linda Allen/Magan Bowden (850)-245-8084 / (850) 245-8095
2600 Blair Stone Rd., MS 6512
Tallahassee, FL 32399-2400

Contractor: Eurofins Environmental Testing Southeast, LLC
5102 LaRoche Ave
Savannah, GA 31404
ATTN: Noel Savoie

DEP Approval By: Linda S. Allen Contractor Approval By: Noel Savoie
Project Manager

Contractor Representatives Contacted: Noel Savoie

Date: 8/17/2022
Means of Contact: Email

Task Assignment Number: OV380 Maximum Cost: **$41.50** Turnaround Time: 5 BD

Sample Delivery Date: 9/13/2022

Project Name/Description:
RQ-2022-08-29-35;FYI3 MacClenny WWTF

Deliverable Number/ Parameter Group/ Method	**Sample Matrix**	**# of Samples**	**# of Containers**	**DEP ID #**	**Unit Cost**	**% Mark-up (if any)**	**Cost**
Quote/OV-CBOD-IN CBOD, nitrogen-inhibited 5210B-2011	W	1	1		$39.00		$39.00
217/Sample Disposal Fee:	1				$2.50		$2.50
Total Number of Containers Shipped:	1					**Total:**	**$41.50**

660-123659 Chain of Custody

Loc: 660
123659

QC Instructions:

Comments: Quote # 66018208 - 0

Samples released to Contract Lab by: Taylor Power Date/Time: 9/12/22 1630

Delivery Method: _____ Shipping: FedEx

Samples Accepted by: _____ Date/Time 9/13/22 9:30

*** Please sign and return by email to** Linda.S.Allen@FloridaDEP.gov and Magan.Bowden@dep.state.fl.us

3.2/3.1

640 Tallahassee

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
TASK ASSIGNMENT/NOTIFICATION FORM: LAB145

Contract Manager: Linda Allen /Devan Cobb (850) 245-8084/ (850) 245-8078
2600 Blair Stone Rd., MS 6512
Tallahassee, FL 32399-2400

Contractor: Eurofins Environmental Testing Southeast, LLC
5102 LaRoche Ave
Savannah, GA 31404
ATTN: Noel Savoie

DEP Approval By: Linda S. Allen Contractor Approval By: Project Manager

Contractor Representatives Contacted: Noel Savoie

Date: 9/14/2022
Means of Contact: Email

Task Assignment Numl OV386 Maximum Cost: **$224.00** Turnaround Time: 10 BD

Sample Delivery Date: 9/14/2022

Project Name/Description:
RQ-2022-08-29-35; NE-DIST-2022-09-13-01;FYI3 MacClenny WWTF; TLH-2022-09-13-63

Deliverable Number/ Parameter Group/	Sample Matrix	# of Samples	# of Containers	DEP ID #	Unit Cost	% Mark-up (if any)	Cost
Method							
58/ Cyanide OV-CN-W EPA 335.4	W	2	2	2355904 - 2355906	$37.00		$74.00
65/mercury, Low Level (LL CVAFS)1631E	W	2	8 vials	2355905 - 2355907	$70.00		$140.00
217/Sample Disposal Fe	4				$2.50		$10.00
otal Number of Containers Shippe		10				**Total:**	**$224.00**

400-225946 COC

QC Instructions:

Comments:

Samples released to Contract Lab by: Date/Time: 9/14/22 1553

Delivery Method: HD

Samples Accepted by: Date/Time 9/14/22 1553

* **Please sign and return by email to** Linda.S.Allen@FloridaDEP.gov and Devan.R.Cobb@dep.state.fl.us

9.15.22 08.55

Page 16 of 20 Temp 0.5°c IR10 9/26/2022

Appendix D. Chemical Analysis of Effluent Water

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
9/12/2022 10:00	Effluent Composite	Overflow	Carbonaceous Biochemical Oxygen Demand	2.0 U	mg/L	2.0	2.0
9/12/2022 10:00	Effluent Composite	Toxicology	Bioassay-Chron-Def-FW-C.dubia, IC25	100 LY	IC25		
9/12/2022 10:00	Effluent Composite	Toxicology	Bioassay-Chron-Def-FW-Fish, IC25	100 LY	IC25		
9/12/2022 10:00	Effluent Composite	Toxicology	Bioassay-Chron-Def-FW-Fish, NOEC	100 Y	NOEC		
9/12/2022 10:00	Effluent Composite	Toxicology	Bioassay-Chron-Def-FW-C.dubia, NOEC	100 Y	NOEC		
9/12/2022 10:00	Effluent Composite	Metals	Copper	1.48	µg/L	0.40	0.80
9/12/2022 10:00	Effluent Composite	Metals	Hardness	127	mg/L	0.35	1.4
9/12/2022 10:00	Effluent Composite	Nutrients	TSS	2 I	mg/L	2.0	10
9/12/2022 10:00	Effluent Composite	Nutrients	Kjeldahl Nitrogen	1.5	mg N/L	0.080	0.20
9/12/2022 10:00	Effluent Composite	Nutrients	NO2NO3-N	0.35	mg N/L	0.0040	0.010
9/12/2022 10:00	Effluent Composite	Nutrients	Ammonia-N	0.65	mg N/L	0.020	0.050
9/12/2022 10:00	Effluent Composite	Nutrients	Organic Carbon	8.8	mg C/L	0.50	1.0
9/12/2022 10:00	Effluent Composite	Nutrients	Total-P	1.2	mg P/L	0.050	0.25
9/12/2022 10:47	Effluent Grab	AGP/LN	Algal Growth Potential	0.501 IJ	mg DryWt/L	0.300	0.900
9/12/2022 10:47	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	2.1	µg/L	0.60	1.8
9/12/2022 10:47	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	2.1 I	µg/L	0.82	2.5
9/12/2022 10:47	Effluent Grab	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.90 U	µg/L	0.90	2.7
9/12/2022 10:47	Effluent Grab	Microbiology	Fecal Coliforms-Membrane Filter	3 BQ	cfu/100 mL	2	2
9/12/2022 10:47	Effluent Grab	Microbiology	Escherichia Coli-Quanti-Tray	6.3 Q	MPN/100 mL	1.0	1.0
9/12/2022 10:47	Effluent Grab	Metals	Nickel	1.1 I	µg/L	0.50	2.0
9/12/2022 10:47	Effluent Grab	Metals	Lead	0.20 U	µg/L	0.20	0.40
9/12/2022 10:47	Effluent Grab	Metals	Iron	220	µg/L	30	120
9/12/2022 10:47	Effluent Grab	Metals	Arsenic	0.70	µg/L	0.050	0.20
9/12/2022 10:47	Effluent Grab	Metals	Potassium	6.9	mg/L	0.30	1.2
9/12/2022 10:47	Effluent Grab	Metals	Selenium	0.20 U	µg/L	0.20	0.80
9/12/2022 10:47	Effluent Grab	Metals	Zinc	40	µg/L	5.0	20
9/12/2022 10:47	Effluent Grab	Metals	Silver	0.010 U	µg/L	0.010	0.040
9/12/2022 10:47	Effluent Grab	Metals	Cadmium	0.020 U	µg/L	0.020	0.080
9/12/2022 10:47	Effluent Grab	Metals	Aluminum	25	µg/L	5.0	20
9/12/2022 10:47	Effluent Grab	Metals	Sodium	41.3	mg/L	0.50	2.0
9/12/2022 10:47	Effluent Grab	Metals	Magnesium	8.87	mg/L	0.040	0.16
9/12/2022 10:47	Effluent Grab	Metals	Copper	2.04	µg/L	0.40	0.80

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
9/12/2022 10:47	Effluent Grab	Metals	Chromium	0.43 I	µg/L	0.40	1.6
9/12/2022 10:47	Effluent Grab	Metals	Calcium	39.6	mg/L	0.075	0.30
9/12/2022 10:47	Effluent Grab	Nutrients	Chloride	47 A	mg Cl/L	0.20	0.50
9/12/2022 10:47	Effluent Grab	Nutrients	Total Alkalinity	119 A	mg CaCO3/L	0.65	2.5
9/12/2022 10:47	Effluent Grab	Nutrients	Ammonia-N	0.16	mg N/L	0.020	0.050
9/12/2022 10:47	Effluent Grab	Nutrients	Color (true)	23 A	PCU	2.5	6.0
9/12/2022 10:47	Effluent Grab	Nutrients	Organic Carbon	8.6	mg C/L	0.50	1.0
9/12/2022 10:47	Effluent Grab	Nutrients	Total-P	0.83	mg P/L	0.010	0.050
9/12/2022 10:47	Effluent Grab	Nutrients	Kjeldahl Nitrogen	0.95	mg N/L	0.080	0.20
9/12/2022 10:47	Effluent Grab	Nutrients	NO2NO3-N	0.16	mg N/L	0.0040	0.010
9/12/2022 10:47	Effluent Grab	Nutrients	O-Phosphate-P	0.76 Y	mg P/L	0.080	0.20
9/12/2022 10:47	Effluent Grab	Nutrients	Fluoride	0.40	mg F/L	0.035	0.10
9/12/2022 10:47	Effluent Grab	Nutrients	Sulfate	36 A	mg SO4/L	0.20	0.50
9/12/2022 10:47	Effluent Grab	Nutrients	Turbidity	0.90 IA	NTU	0.10	1.0
9/12/2022 10:47	Effluent Grab	Overflow	Mercury	0.99	ng/L	0.20	0.50
9/12/2022 10:47	Effluent Grab	Overflow	Cyanide	0.0050 I	mg/L	0.0025	0.010
9/12/2022 10:47	Effluent Grab	Pesticides	Thiobencarb	0.59 U	ng/L	0.59	2.4
9/12/2022 10:47	Effluent Grab	Pesticides	Bromacil	0.49 U	ng/L	0.49	2.0
9/12/2022 10:47	Effluent Grab	Pesticides	Caffeine	64	ng/L	7.4	29
9/12/2022 10:47	Effluent Grab	Pesticides	Carbophenothion	0.20 U	ng/L	0.20	0.79
9/12/2022 10:47	Effluent Grab	Pesticides	Dimethenamid	0.098 U	ng/L	0.098	0.39
9/12/2022 10:47	Effluent Grab	Pesticides	Disulfoton	0.49 U	ng/L	0.49	2.0
9/12/2022 10:47	Effluent Grab	Pesticides	Ethoprop	0.098 U	ng/L	0.098	0.39
9/12/2022 10:47	Effluent Grab	Pesticides	Fipronil Desulfinyl	0.87	ng/L	0.12	0.49
9/12/2022 10:47	Effluent Grab	Pesticides	Iprodione	0.59 U	ng/L	0.59	2.4
9/12/2022 10:47	Effluent Grab	Pesticides	Mevinphos	1.0 U	ng/L	1.0	4.1
9/12/2022 10:47	Effluent Grab	Pesticides	Sucralose	50	µg/L	0.10	0.40
9/12/2022 10:47	Effluent Grab	Pesticides	Dimethomorph	0.17 U	ng/L	0.17	1.0
9/12/2022 10:47	Effluent Grab	Pesticides	Phenytoin	12 IJ	ng/L	3.4	14
9/12/2022 10:47	Effluent Grab	Pesticides	Propargite	1.5 U	ng/L	1.5	5.9
9/12/2022 10:47	Effluent Grab	Pesticides	Pyridaben	0.44 U	ng/L	0.44	2.2
9/12/2022 10:47	Effluent Grab	Pesticides	Acetochlor	0.25 U	ng/L	0.25	0.98
9/12/2022 10:47	Effluent Grab	Pesticides	Butylate	0.39 U	ng/L	0.39	1.6
9/12/2022 10:47	Effluent Grab	Pesticides	Demeton	1.5 U	ng/L	1.5	5.9

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
9/12/2022 10:47	Effluent Grab	Pesticides	Diazinon	0.12 U	ng/L	0.12	0.49
9/12/2022 10:47	Effluent Grab	Pesticides	Dithiopyr	0.94 V	ng/L	0.17	0.69
9/12/2022 10:47	Effluent Grab	Pesticides	Fipronil	7.4 J	ng/L	0.25	0.98
9/12/2022 10:47	Effluent Grab	Pesticides	Fluxapyroxad	0.14 IJ	ng/L	0.098	0.39
9/12/2022 10:47	Effluent Grab	Pesticides	Metolachlor	0.34 U	ng/L	0.34	1.4
9/12/2022 10:47	Effluent Grab	Pesticides	Myclobutanil	0.27 I	ng/L	0.25	0.98
9/12/2022 10:47	Effluent Grab	Pesticides	Oxyfluorfen	0.15 UJ	ng/L	0.15	0.59
9/12/2022 10:47	Effluent Grab	Pesticides	Propiconazole	3.5	ng/L	0.49	2.0
9/12/2022 10:47	Effluent Grab	Pesticides	Chlorfenapyr	0.89	ng/L	0.17	0.69
9/12/2022 10:47	Effluent Grab	Pesticides	Cyprodinil	0.098 U	ng/L	0.098	0.49
9/12/2022 10:47	Effluent Grab	Pesticides	Loratadine	6.9	ng/L	0.098	0.39
9/12/2022 10:47	Effluent Grab	Pesticides	Triadimefon	0.25 U	ng/L	0.25	0.98
9/12/2022 10:47	Effluent Grab	Pesticides	Azinphos Methyl	2.0 U	ng/L	2.0	7.9
9/12/2022 10:47	Effluent Grab	Pesticides	Chlorpyrifos Methyl	0.049 U	ng/L	0.049	0.20
9/12/2022 10:47	Effluent Grab	Pesticides	Fenbuconazole	0.12 U	ng/L	0.12	0.49
9/12/2022 10:47	Effluent Grab	Pesticides	Fipronil Sulfone	5.9	ng/L	0.15	0.59
9/12/2022 10:47	Effluent Grab	Pesticides	Fonofos	0.20 U	ng/L	0.20	0.79
9/12/2022 10:47	Effluent Grab	Pesticides	Molinate	0.29 U	ng/L	0.29	1.2
9/12/2022 10:47	Effluent Grab	Pesticides	Norflurazon	0.49 U	ng/L	0.49	2.0
9/12/2022 10:47	Effluent Grab	Pesticides	Parathion Ethyl	0.25 U	ng/L	0.25	0.98
9/12/2022 10:47	Effluent Grab	Pesticides	Simazine	0.49 U	ng/L	0.49	2.0
9/12/2022 10:47	Effluent Grab	Pesticides	Sulfentrazone	4.1	ng/L	0.49	2.0
9/12/2022 10:47	Effluent Grab	Pesticides	Ibuprofen	0.080 U	µg/L	0.080	0.32
9/12/2022 10:47	Effluent Grab	Pesticides	Coumaphos	0.49 U	ng/L	0.49	2.0
9/12/2022 10:47	Effluent Grab	Pesticides	Atrazine	9.5	ng/L	0.25	0.98
9/12/2022 10:47	Effluent Grab	Pesticides	Difenoconazole	0.59 U	ng/L	0.59	2.4
9/12/2022 10:47	Effluent Grab	Pesticides	Fipronil Sulfide	4.3 J	ng/L	0.15	0.59
9/12/2022 10:47	Effluent Grab	Pesticides	Hexazinone	18	ng/L	0.49	2.0
9/12/2022 10:47	Effluent Grab	Pesticides	Naled	1.5 U	ng/L	1.5	5.9
9/12/2022 10:47	Effluent Grab	Pesticides	Pendimethalin	0.98 U	ng/L	0.98	3.9
9/12/2022 10:47	Effluent Grab	Pesticides	Phorate	0.52 U	ng/L	0.52	2.1
9/12/2022 10:47	Effluent Grab	Pesticides	Prodiamine	0.17 U	ng/L	0.17	0.69
9/12/2022 10:47	Effluent Grab	Pesticides	Tebuconazole	14	ng/L	0.49	2.0
9/12/2022 10:47	Effluent Grab	Pesticides	Napropamide	0.39 U	ng/L	0.39	1.6

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
9/12/2022 10:47	Effluent Grab	Pesticides	Ametryn	0.59 U	ng/L	0.59	2.4
9/12/2022 10:47	Effluent Grab	Pesticides	Fluazifop-P-butyl	0.098 U	ng/L	0.098	0.39
9/12/2022 10:47	Effluent Grab	Pesticides	Malathion	0.34 U	ng/L	0.34	1.4
9/12/2022 10:47	Effluent Grab	Pesticides	Metalaxyl	0.74 U	ng/L	0.74	2.9
9/12/2022 10:47	Effluent Grab	Pesticides	Oxadiazon	0.29 U	ng/L	0.29	1.2
9/12/2022 10:47	Effluent Grab	Pesticides	Prometon	0.88 U	ng/L	0.88	3.5
9/12/2022 10:47	Effluent Grab	Pesticides	Prometryn	0.20 UJ	ng/L	0.20	0.79
9/12/2022 10:47	Effluent Grab	Pesticides	Pyraflufen Ethyl	0.25 U	ng/L	0.25	0.98
9/12/2022 10:47	Effluent Grab	Pesticides	Stirophos	0.12 UJ	ng/L	0.12	0.49
9/12/2022 10:47	Effluent Grab	Pesticides	Azoxystrobin	0.49 U	ng/L	0.49	2.0
9/12/2022 10:47	Effluent Grab	Pesticides	Carfentrazone Ethyl	0.098 U	ng/L	0.098	0.39
9/12/2022 10:47	Effluent Grab	Pesticides	Fenamiphos	0.49 U	ng/L	0.49	2.0
9/12/2022 10:47	Effluent Grab	Pesticides	Imazalil	0.74 U	ng/L	0.74	2.9
9/12/2022 10:47	Effluent Grab	Pesticides	Terbufos	0.12 I	ng/L	0.098	0.39
9/12/2022 10:47	Effluent Grab	Pesticides	Etridiazole	0.15 U	ng/L	0.15	0.59
9/12/2022 10:47	Effluent Grab	Pesticides	Alachlor	0.25 U	ng/L	0.25	0.98
9/12/2022 10:47	Effluent Grab	Pesticides	Atrazine Desethyl	1.5 U	ng/L	1.5	5.9
9/12/2022 10:47	Effluent Grab	Pesticides	Cyanazine	3.2 U	ng/L	3.2	13
9/12/2022 10:47	Effluent Grab	Pesticides	Ethion	0.15 U	ng/L	0.15	0.59
9/12/2022 10:47	Effluent Grab	Pesticides	Fludioxonil	1.3	ng/L	0.12	0.49
9/12/2022 10:47	Effluent Grab	Pesticides	Flumioxazin	1.7 U	ng/L	1.7	6.9
9/12/2022 10:47	Effluent Grab	Pesticides	Parathion Methyl	0.54 U	ng/L	0.54	2.2
9/12/2022 10:47	Effluent Grab	Pesticides	Pronamide	0.15 U	ng/L	0.15	0.59
9/12/2022 10:47	Effluent Grab	Pesticides	Naproxen	0.13	µg/L	0.0080	0.032
9/12/2022 10:47	Effluent Grab	Pesticides	Chlorpyrifos Ethyl	0.25 U	ng/L	0.25	0.98
9/12/2022 10:47	Effluent Grab	Pesticides	EPTC	1.2 U	ng/L	1.2	4.9
9/12/2022 10:47	Effluent Grab	Pesticides	Flutolanil	0.12 I	ng/L	0.098	0.39
9/12/2022 10:47	Effluent Grab	Pesticides	Metribuzin	2.5 U	ng/L	2.5	9.8
9/12/2022 10:47	Effluent Grab	Pesticides	Pyriproxyfen	0.12 U	ng/L	0.12	0.49
9/12/2022 10:47	Effluent Grab	Pesticides	Terbuthylazine	0.42 U	ng/L	0.42	1.7
9/12/2022 10:47	Effluent Grab	Pesticides	Propanil	0.12 U	ng/L	0.12	0.49
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Phenol	0.052 U	µg/L	0.052	0.21

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Naphthalene	0.10 U	µg/L	0.10	0.42
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Chrysene	0.026 U	µg/L	0.026	0.10
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Nitrobenzene	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Fluoranthene	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Di-n-octyl phthalate	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	5.2 U	µg/L	5.2	21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.026 U	µg/L	0.026	0.10
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Isophorone	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	2-Chloronaphthalene	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	2-Chlorophenol	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Acenaphthylene	0.026 U	µg/L	0.026	0.10
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Benzo(a)anthracene	0.026 U	µg/L	0.026	0.10
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.026 U	µg/L	0.026	0.10
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Fluorene	0.026 U	µg/L	0.026	0.10
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Hexachlorobenzene	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Hexachlorocyclopentadiene	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Pyrene	0.10 U	µg/L	0.10	0.42
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	2,4-Dinitrophenol	10 U	µg/L	10	42
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Anthracene	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Benzo(b)fluoranthene	0.026 U	µg/L	0.026	0.10
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Benzo(k)fluoranthene	0.026 U	µg/L	0.026	0.10
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Diethyl phthalate	2.1 UJ	µg/L	2.1	8.3
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Hexachloroethane	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Phenanthrene	0.10 U	µg/L	0.10	0.42
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1 U	µg/L	3.1	12
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	3,3'-Dichlorobenzidine	10 U	µg/L	10	42
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	4-Nitrophenol	10 U	µg/L	10	42
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Butyl benzyl phthalate	1.0 U	µg/L	1.0	4.2
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.026 U	µg/L	0.026	0.10
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Dimethyl phthalate	0.21 U	µg/L	0.21	0.83
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	0.052 U	µg/L	0.052	0.21

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Di-n-butyl phthalate	2.1 U	µg/L	2.1	8.3
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Hexachlorobutadiene	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Pentachlorophenol	0.52 U	µg/L	0.52	2.1
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	2,4-Dichlorophenol	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.11 I	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	2,6-Dinitrotoluene	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Benzo(a)pyrene	0.026 U	µg/L	0.026	0.10
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1 U	µg/L	2.1	8.3
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	2-Nitrophenol	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	2,4-Dimethylphenol	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	2,4-Dinitrotoluene	0.052 U	µg/L	0.052	0.21
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Acenaphthene	0.026 U	µg/L	0.026	0.10
9/12/2022 10:47	Effluent Grab	Priority Organic Pollutants	Benzidine	10 UJ	µg/L	10	42
9/12/2022 10:47	Effluent Grab	Nutrients	Specific Conductance	469.1	umhos/cm		
9/12/2022 10:47	Effluent Grab	Nutrients	pH	7.83			
9/12/2022 10:47	Effluent Grab	Nutrients	Dissolved Oxygen %Sat	96.7	%Sat		
9/12/2022 10:47	Effluent Grab	Nutrients	Temperature	28.9	C		
9/12/2022 11:05	Field Blank	Metals	Copper	0.40 U	µg/L	0.40	0.80
9/12/2022 11:05	Field Blank	Metals	Chromium	0.40 U	µg/L	0.40	1.6
9/12/2022 11:05	Field Blank	Metals	Zinc	5.0 U	µg/L	5.0	20
9/12/2022 11:05	Field Blank	Metals	Magnesium	0.040 U	mg/L	0.040	0.16
9/12/2022 11:05	Field Blank	Metals	Iron	30 U	µg/L	30	120
9/12/2022 11:05	Field Blank	Metals	Selenium	0.20 U	µg/L	0.20	0.80
9/12/2022 11:05	Field Blank	Metals	Cadmium	0.020 U	µg/L	0.020	0.080
9/12/2022 11:05	Field Blank	Metals	Nickel	0.50 U	µg/L	0.50	2.0
9/12/2022 11:05	Field Blank	Metals	Potassium	0.30 U	mg/L	0.30	1.2
9/12/2022 11:05	Field Blank	Metals	Sodium	0.50 U	mg/L	0.50	2.0
9/12/2022 11:05	Field Blank	Metals	Arsenic	0.050 U	µg/L	0.050	0.20
9/12/2022 11:05	Field Blank	Metals	Lead	0.20 U	µg/L	0.20	0.40
9/12/2022 11:05	Field Blank	Metals	Silver	0.010 U	µg/L	0.010	0.040
9/12/2022 11:05	Field Blank	Metals	Calcium	0.075 U	mg/L	0.075	0.30
9/12/2022 11:05	Field Blank	Metals	Aluminum	5.0 U	µg/L	5.0	20

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
9/12/2022 11:05	Field Blank	Nutrients	Sulfate	0.20 U	mg SO4/L	0.20	0.50
9/12/2022 11:05	Field Blank	Nutrients	Turbidity	0.10 U	NTU	0.10	1.0
9/12/2022 11:05	Field Blank	Nutrients	Chloride	0.20 U	mg Cl/L	0.20	0.50
9/12/2022 11:05	Field Blank	Nutrients	Ammonia-N	0.002 U	mg N/L	0.0020	0.0050
9/12/2022 11:05	Field Blank	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.10
9/12/2022 11:05	Field Blank	Nutrients	Color (true)	2.5 U	PCU	2.5	6.0
9/12/2022 11:05	Field Blank	Nutrients	NO2NO3-N	0.004 U	mg N/L	0.0040	0.010
9/12/2022 11:05	Field Blank	Nutrients	Total Alkalinity	0.65 U	mg CaCO3/L	0.65	2.5
9/12/2022 11:05	Field Blank	Nutrients	O-Phosphate-P	0.004 UY	mg P/L	0.0040	0.010
9/12/2022 11:05	Field Blank	Nutrients	Kjeldahl Nitrogen	0.080 U	mg N/L	0.080	0.20
9/12/2022 11:05	Field Blank	Nutrients	Organic Carbon	0.50 U	mg C/L	0.50	1.0
9/12/2022 11:05	Field Blank	Nutrients	Total-P	0.002 U	mg P/L	0.0020	0.0050
9/12/2022 11:05	Field Blank	Overflow	Mercury	0.20 U	ng/L	0.20	0.50
9/12/2022 11:05	Field Blank	Overflow	Cyanide	0.0025 U	mg/L	0.0025	0.010
9/12/2022 11:05	Field Blank	Pesticides	Cyprodinil	0.097 U	ng/L	0.097	0.49
9/12/2022 11:05	Field Blank	Pesticides	Pyraflufen Ethyl	0.24 U	ng/L	0.24	0.97
9/12/2022 11:05	Field Blank	Pesticides	Naled	1.5 U	ng/L	1.5	5.8
9/12/2022 11:05	Field Blank	Pesticides	Chlorpyrifos Methyl	0.049 U	ng/L	0.049	0.19
9/12/2022 11:05	Field Blank	Pesticides	Dimethenamid	0.097 U	ng/L	0.097	0.39
9/12/2022 11:05	Field Blank	Pesticides	Fenamiphos	0.49 U	ng/L	0.49	1.9
9/12/2022 11:05	Field Blank	Pesticides	Fipronil	0.24 UJ	ng/L	0.24	0.97
9/12/2022 11:05	Field Blank	Pesticides	Fipronil Sulfide	0.15 UJ	ng/L	0.15	0.58
9/12/2022 11:05	Field Blank	Pesticides	Fipronil Sulfone	0.15 U	ng/L	0.15	0.58
9/12/2022 11:05	Field Blank	Pesticides	Fluxapyroxad	0.097 U	ng/L	0.097	0.39
9/12/2022 11:05	Field Blank	Pesticides	Prometon	0.88 U	ng/L	0.88	3.5
9/12/2022 11:05	Field Blank	Pesticides	Fenbuconazole	0.12 U	ng/L	0.12	0.49
9/12/2022 11:05	Field Blank	Pesticides	Flumioxazin	1.7 U	ng/L	1.7	6.8
9/12/2022 11:05	Field Blank	Pesticides	Malathion	0.34 U	ng/L	0.34	1.4
9/12/2022 11:05	Field Blank	Pesticides	Metolachlor	0.34 U	ng/L	0.34	1.4
9/12/2022 11:05	Field Blank	Pesticides	Sucralose	0.010 U	µg/L	0.010	0.040
9/12/2022 11:05	Field Blank	Pesticides	Demeton	1.5 U	ng/L	1.5	5.8
9/12/2022 11:05	Field Blank	Pesticides	Disulfoton	0.49 U	ng/L	0.49	1.9
9/12/2022 11:05	Field Blank	Pesticides	Fipronil Desulfinyl	0.12 U	ng/L	0.12	0.49
9/12/2022 11:05	Field Blank	Pesticides	Flutolanil	0.097 U	ng/L	0.097	0.39

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
9/12/2022 11:05	Field Blank	Pesticides	Imazalil	0.73 U	ng/L	0.73	2.9
9/12/2022 11:05	Field Blank	Pesticides	Parathion Methyl	0.54 U	ng/L	0.54	2.1
9/12/2022 11:05	Field Blank	Pesticides	Caffeine	7.3 U	ng/L	7.3	29
9/12/2022 11:05	Field Blank	Pesticides	Carfentrazone Ethyl	0.097 U	ng/L	0.097	0.39
9/12/2022 11:05	Field Blank	Pesticides	Ethoprop	0.097 U	ng/L	0.097	0.39
9/12/2022 11:05	Field Blank	Pesticides	Metalaxyl	0.73 U	ng/L	0.73	2.9
9/12/2022 11:05	Field Blank	Pesticides	Metribuzin	2.4 U	ng/L	2.4	9.7
9/12/2022 11:05	Field Blank	Pesticides	Prodiamine	0.17 U	ng/L	0.17	0.68
9/12/2022 11:05	Field Blank	Pesticides	Pronamide	0.15 U	ng/L	0.15	0.58
9/12/2022 11:05	Field Blank	Pesticides	Pyriproxyfen	0.12 U	ng/L	0.12	0.49
9/12/2022 11:05	Field Blank	Pesticides	Terbuthylazine	0.41 U	ng/L	0.41	1.7
9/12/2022 11:05	Field Blank	Pesticides	Acetochlor	0.24 U	ng/L	0.24	0.97
9/12/2022 11:05	Field Blank	Pesticides	Alachlor	0.24 U	ng/L	0.24	0.97
9/12/2022 11:05	Field Blank	Pesticides	Butylate	0.39 U	ng/L	0.39	1.6
9/12/2022 11:05	Field Blank	Pesticides	Ibuprofen	0.080 U	µg/L	0.080	0.32
9/12/2022 11:05	Field Blank	Pesticides	Naproxen	0.0080 U	µg/L	0.0080	0.032
9/12/2022 11:05	Field Blank	Pesticides	Chlorfenapyr	0.17 U	ng/L	0.17	0.68
9/12/2022 11:05	Field Blank	Pesticides	Coumaphos	0.49 U	ng/L	0.49	1.9
9/12/2022 11:05	Field Blank	Pesticides	Etridiazole	0.15 U	ng/L	0.15	0.58
9/12/2022 11:05	Field Blank	Pesticides	Loratadine	0.097 U	ng/L	0.097	0.39
9/12/2022 11:05	Field Blank	Pesticides	Myclobutanil	0.24 U	ng/L	0.24	0.97
9/12/2022 11:05	Field Blank	Pesticides	Norflurazon	0.49 U	ng/L	0.49	1.9
9/12/2022 11:05	Field Blank	Pesticides	Chlorpyrifos Ethyl	0.24 U	ng/L	0.24	0.97
9/12/2022 11:05	Field Blank	Pesticides	Difenoconazole	0.58 U	ng/L	0.58	2.3
9/12/2022 11:05	Field Blank	Pesticides	Fludioxonil	0.12 U	ng/L	0.12	0.49
9/12/2022 11:05	Field Blank	Pesticides	Oxadiazon	0.29 U	ng/L	0.29	1.2
9/12/2022 11:05	Field Blank	Pesticides	Oxyfluorfen	0.15 U	ng/L	0.15	0.58
9/12/2022 11:05	Field Blank	Pesticides	Parathion Ethyl	0.24 U	ng/L	0.24	0.97
9/12/2022 11:05	Field Blank	Pesticides	Pendimethalin	0.97 U	ng/L	0.97	3.9
9/12/2022 11:05	Field Blank	Pesticides	Carbophenothion	0.19 U	ng/L	0.19	0.78
9/12/2022 11:05	Field Blank	Pesticides	Propanil	0.12 U	ng/L	0.12	0.49
9/12/2022 11:05	Field Blank	Pesticides	Triadimefon	0.24 U	ng/L	0.24	0.97
9/12/2022 11:05	Field Blank	Pesticides	Molinate	0.29 U	ng/L	0.29	1.2
9/12/2022 11:05	Field Blank	Pesticides	Diazinon	0.12 U	ng/L	0.12	0.49

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
9/12/2022 11:05	Field Blank	Pesticides	Fonofos	0.19 U	ng/L	0.19	0.78
9/12/2022 11:05	Field Blank	Pesticides	Hexazinone	0.49 U	ng/L	0.49	1.9
9/12/2022 11:05	Field Blank	Pesticides	Mevinphos	1.0 U	ng/L	1.0	4.1
9/12/2022 11:05	Field Blank	Pesticides	Terbufos	0.097 U	ng/L	0.097	0.39
9/12/2022 11:05	Field Blank	Pesticides	Atrazine Desethyl	1.5 U	ng/L	1.5	5.8
9/12/2022 11:05	Field Blank	Pesticides	Azoxystrobin	0.49 U	ng/L	0.49	1.9
9/12/2022 11:05	Field Blank	Pesticides	Dimethomorph	0.17 U	ng/L	0.17	1.0
9/12/2022 11:05	Field Blank	Pesticides	Phenytoin	3.4 U	ng/L	3.4	14
9/12/2022 11:05	Field Blank	Pesticides	Stirophos	0.12 U	ng/L	0.12	0.49
9/12/2022 11:05	Field Blank	Pesticides	Thiobencarb	0.58 U	ng/L	0.58	2.3
9/12/2022 11:05	Field Blank	Pesticides	Ethion	0.15 U	ng/L	0.15	0.58
9/12/2022 11:05	Field Blank	Pesticides	Fluazifop-P-butyl	0.097 U	ng/L	0.097	0.39
9/12/2022 11:05	Field Blank	Pesticides	Prometryn	0.19 U	ng/L	0.19	0.78
9/12/2022 11:05	Field Blank	Pesticides	Tebuconazole	0.49 U	ng/L	0.49	1.9
9/12/2022 11:05	Field Blank	Pesticides	Ametryn	0.58 U	ng/L	0.58	2.3
9/12/2022 11:05	Field Blank	Pesticides	Azinphos Methyl	1.9 U	ng/L	1.9	7.8
9/12/2022 11:05	Field Blank	Pesticides	Napropamide	0.39 U	ng/L	0.39	1.6
9/12/2022 11:05	Field Blank	Pesticides	Propargite	1.5 U	ng/L	1.5	5.8
9/12/2022 11:05	Field Blank	Pesticides	Pyridaben	0.44 U	ng/L	0.44	2.2
9/12/2022 11:05	Field Blank	Pesticides	Cyanazine	3.2 U	ng/L	3.2	13
9/12/2022 11:05	Field Blank	Pesticides	Dithiopyr	0.57 IV	ng/L	0.17	0.68
9/12/2022 11:05	Field Blank	Pesticides	EPTC	1.2 U	ng/L	1.2	4.9
9/12/2022 11:05	Field Blank	Pesticides	Iprodione	0.58 U	ng/L	0.58	2.3
9/12/2022 11:05	Field Blank	Pesticides	Phorate	0.51 U	ng/L	0.51	2.0
9/12/2022 11:05	Field Blank	Pesticides	Propiconazole	1.4 I	ng/L	0.49	1.9
9/12/2022 11:05	Field Blank	Pesticides	Simazine	0.49 U	ng/L	0.49	1.9
9/12/2022 11:05	Field Blank	Pesticides	Sulfentrazone	0.49 U	ng/L	0.49	1.9
9/12/2022 11:05	Field Blank	Pesticides	Atrazine	0.24 U	ng/L	0.24	0.97
9/12/2022 11:05	Field Blank	Pesticides	Bromacil	0.49 U	ng/L	0.49	1.9
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	2-Chloronaphthalene	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Pyrene	0.11 U	µg/L	0.11	0.43
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Anthracene	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.027 U	µg/L	0.027	0.11
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	2.2 U	µg/L	2.2	8.7

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	2,4-Dinitrophenol	11 U	µg/L	11	43
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Hexachloroethane	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	2,4-Dimethylphenol	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	2,4-Dichlorophenol	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	2-Nitrophenol	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.3 U	µg/L	3.3	13
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.027 U	µg/L	0.027	0.11
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Di-n-butyl phthalate	2.2 U	µg/L	2.2	8.7
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Dimethyl phthalate	0.22 U	µg/L	0.22	0.87
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Fluorene	0.027 U	µg/L	0.027	0.11
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.027 U	µg/L	0.027	0.11
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Pentachlorophenol	0.54 U	µg/L	0.54	2.2
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	11 U	µg/L	11	43
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.027 U	µg/L	0.027	0.11
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.027 U	µg/L	0.027	0.11
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	5.4 U	µg/L	5.4	22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Chrysene	0.027 U	µg/L	0.027	0.11
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	4-Nitrophenol	11 U	µg/L	11	43
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Acenaphthene	0.027 U	µg/L	0.027	0.11
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Butyl benzyl phthalate	1.1 U	µg/L	1.1	4.3
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Di-n-octyl phthalate	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Diethyl phthalate	4.8 IVJ	µg/L	2.2	8.7
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Hexachlorobenzene	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Hexachlorobutadiene	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Phenanthrene	0.11 U	µg/L	0.11	0.43
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Phenol	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Acenaphthylene	0.027 U	µg/L	0.027	0.11
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Benzidine	11 U	µg/L	11	43

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.027 U	µg/L	0.027	0.11
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Isophorone	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	2-Chlorophenol	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Naphthalene	0.11 U	µg/L	0.11	0.43
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Nitrobenzene	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.027 U	µg/L	0.027	0.11
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Fluoranthene	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	0.054 U	µg/L	0.054	0.22
9/12/2022 11:05	Field Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.054 U	µg/L	0.054	0.22
9/8/2022 8:20	Equipment Blank	Metals	Hardness	6.3	mg/L	0.35	1.4
9/8/2022 8:20	Equipment Blank	Metals	Magnesium	0.65	mg/L	0.040	0.16
9/8/2022 8:20	Equipment Blank	Metals	Copper	0.86	µg/L	0.40	0.80
9/8/2022 8:20	Equipment Blank	Metals	Calcium	1.44	mg/L	0.075	0.30
9/8/2022 8:20	Equipment Blank	Nutrients	NO2NO3-N	0.11	mg N/L	0.0040	0.010
9/8/2022 8:20	Equipment Blank	Nutrients	Ammonia-N	0.003 I	mg N/L	0.0020	0.0050
9/8/2022 8:20	Equipment Blank	Nutrients	Total-P	0.014	mg P/L	0.0020	0.0050
9/8/2022 8:20	Equipment Blank	Nutrients	Organic Carbon	0.65 I	mg C/L	0.50	1.0
9/8/2022 8:20	Equipment Blank	Nutrients	Kjeldahl Nitrogen	0.080 U	mg N/L	0.080	0.20