Effluent Quality Assessment of Buckman Wastewater Treatment Facility Duval County NPDES # FL0026000 Sampled March 28, March 30, & April 1, 2022

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

The effluent grab sample's dissolved oxygen did not meet the effluent permit limit. The facility reported two 7-day chronic toxicity bioassay failures in 2021 for the mysid, *Americamysis bahia*. For this sampling event, the effluent sample was not chronically toxic to the fish, *Menidia beryllina*, but was chronically toxic to the mysid shrimp, *Americamysis bahia*, during the bioassays. The algal growth potential (AGP) and nutrient results for the effluent grab sample suggest a potential for nutrient enrichment of the receiving waters due to effluent discharge. There were twentyseven organic constituents detected in the effluent sample.

Facility Overview

The Buckman 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. Buckman is operating under Administrative Order 200 NE that was issued on August 23, 2021. The AO requires the facility comply with the chronic whole effluent toxicity final permit limits for the marine species or obtain Department approved regulatory relief by December 31, 2021. The effluent is continuously discharged into St. Johns River, a Class III Marine Water [waterbody identification (WBID) 2213D] (Figure 1).

Receiving waters for this facility fall under the Estuary-Specific Numeric Interpretations of the Narrative Nutrient Criteria for the Lower St. Johns River and Tributaries. For this region, the NNC, expressed as an annual load, is 722,834 kg/yr total phosphorus. The NNC for chlorophyll *a*, expressed as an long-term average of annual means, is 5.4 µg/L chlorophyll *a* (Paragraph 62-302.532(1)(bb), F.A.C.). There is a total maximum daily load (TMDL) for total nitrogen for this waterbody. The TMDL, expressed as annual load, is 1,376,855 kg/yr total nitrogen (Subsection 62-304.415(2), F.A.C.). For Class III predominantly marine waters, the daily average dissolved oxygen (DO) saturation shall not be below 42 percent in more than 10 percent of the values (Subsection 62-302.533(2), 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 grab and 24-hour time proportioned composite samples were collected from monitoring site location EFD-01, for outfall D-001 on March 28, 2022. Effluent renewal composite samples were collected on March 30 and April 1, 2022. Limits are based on a flow proportioned composite sample; however, a time-proportioned composite sample was collected.

Samples were collected by Paul Duff, Abhi Maturi, Jaena Bernard, and Antonio Cruz (Northeast District Office). Analyses were performed by Eurofins Test America Laboratories in Pensacola, Eurofins Test America Laboratories in Tampa, and 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.

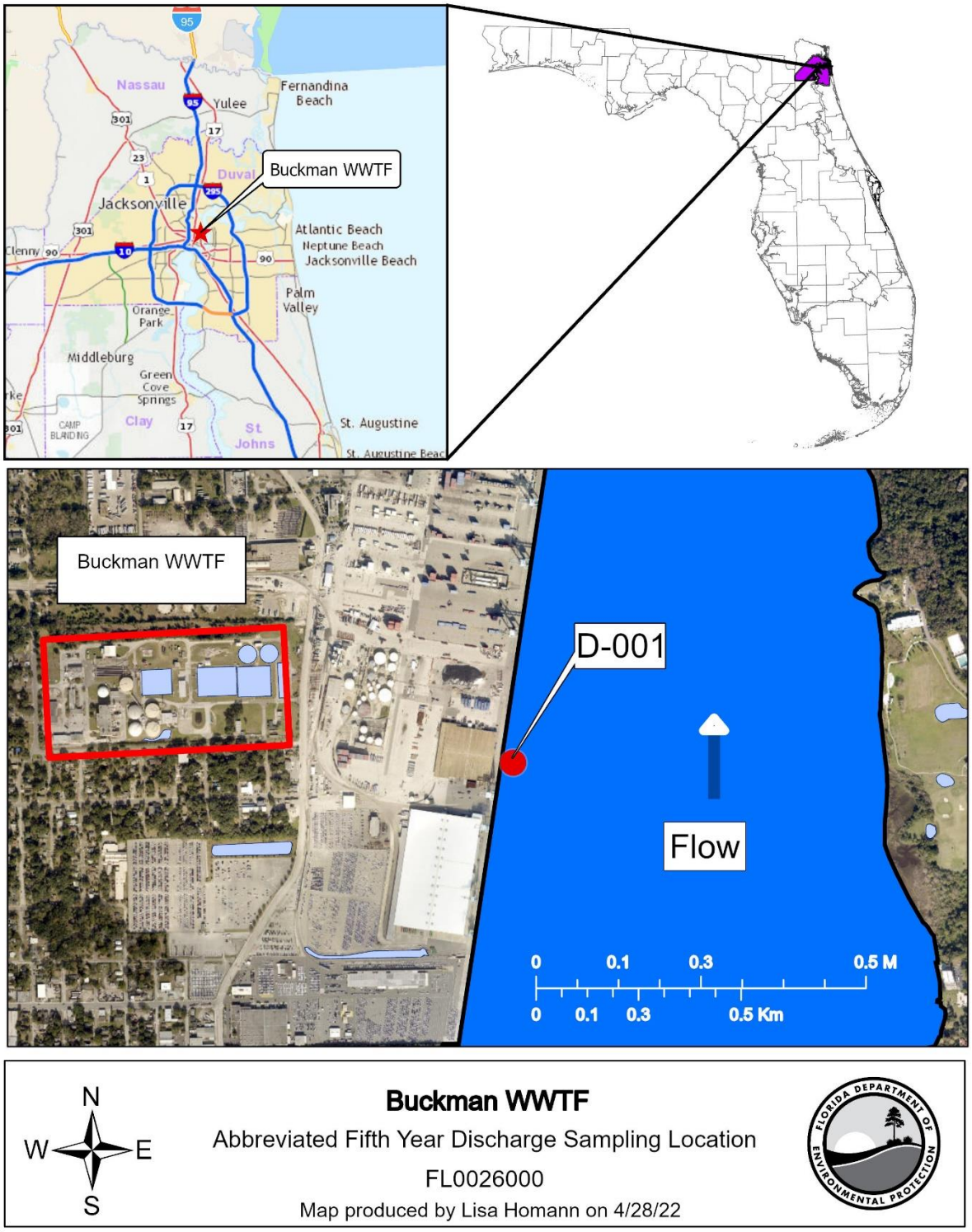


Figure 1. Map of Facility and Discharge Location

Results

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

- Dissolved oxygen of the effluent did not meet the effluent permit limit.

Analytical Water Chemistry (See Table 2 and Appendix D)

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

- Total phosphorus was detected in the equipment blank. Total organic carbon and total ammonia were detected in the equipment blank between the MDL and PQL.

Microbiology (See Table 2 and Appendix B)

- Effluent enterococci levels complied with Class III Water Quality Criteria for Marine Waters. Effluent enterococci and fecal coliform levels complied with effluent permit limits.

- Fecal coliform and enterococci results were qualified for hold time exceedance.

Toxicity Whole Effluent Test (See Table 2)

- Tests were performed March 29 through April 5, 2022.

- The sample was aerated for 55 minutes at a rate of approximately 100 bubbles per minute to decrease the dissolved oxygen (DO) from 15.5 mg/L to 7.9 mg/L.

- Chronic bioassay results are reported as the 25% Inhibition Concentration (IC25). 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 62-302.200(5), Subsection 62-302.530(20) and/or facility permit limits.

- During the chronic definitive bioassay, the effluent composite sample IC25 for the fish, *Menidia beryllina*, was calculated as being greater than 100% effluent, and therefore complied with effluent permit limits.

- During the chronic definitive bioassay, the effluent composite sample IC25 for the mysid, *Americamysis bahia,* was calculated as 51.6% effluent and did not comply with effluent permit limits.

- Aliquots of the bioassay sample were salinity-adjusted according to method requirements from an apparent salinity of approximately 0.5 parts per thousand (ppth) to a salinity of approximately 20 ppth for the *Americamysis bahia* test and to a salinity of approximately

5 ppth for the *Menidia beryllina test*. Control mortality, for both the test controls and salt-adjusted control, were within method acceptance criteria.

- 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)

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

- Copper was detected in the equipment blank. Calcium and magnesium were detected in the equipment blank between the MDL and PQL.

Algal Growth Potential (See Table 4 and Appendix B)

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

- The effluent grab sample AGP result of 13.3 mg dry wt/L is within the AGP range (6.10 to 20.0 mg dry wt/L) suggested to be representative of high productivity for freshwater (Miller et al. 1978).

- An aliquot of the AGP sample was salinity adjusted from an apparent salinity of approximately 0.5 parts per thousand (ppth) to a salinity of approximately 7 ppth by the addition of artificial sea salts to meet the salinity requirements of the test species *Dunaliella tertiolecta*.

- 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 7 and Appendix D)

- Atrazine, caffeine, chlorfenapyr, chlorpyrifos ethyl, dimethomorph, dithiopyr, fipronil, fipronil desulfinyl, fipronil sulfide, fipronil sulfone, fludioxonil, hexazinone, iprodione, loratadine, metolachlor, metribuzin, myclobutanil, oxadiazon, oxyfluorfen, phenytoin, prodiamine, propanil, propiconazole, stirophos, sulfentrazone, tebuconazole, and 2,4,6-trichlorophenol were detected in the effluent grab sample.

- Propiconazole was detected in the field blank between the MDL and PQL.

- Aldrin levels complied with the effluent permit limits.

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 Marine Waters, and field parameters

Parameter	Units	Class III Criteria	Effluent Permit Limits	Effluent Grab
Temperature	C	-	Report	25.1
pH	SU	6.5 - 8.5	6.5 - 8.5	7.0
Specific Conductance	umhos/cm	-	-	1,056
Salinity	ppth	-	-	0.5 c
Dissolved Oxygen	% saturation	≥ 42	-	50
Dissolved Oxygen	mg/L	-	≥ 5.0 s	4.1 e

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

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

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

Analyte	Units	Class III Criteria	Effluent Permit Limits	Effluent Grab	Effluent Composite
Ortho-phosphate	mg P/L	-	Report	3.2	-
Total Phosphorus[1]	mg P/L	-	Report	3.7	2.1
Total Ammonia[1]	mg N/L	-	-	0.54	1.3
Un-ionized Ammonia	mg N/L	-	-	< 0.02 c	-
Nitrate and Nitrite	mg N/L	-	-	1.9	2.8
Total Kjeldahl Nitrogen	mg N/L	-	-	2.3	2.9
Organic Nitrogen	mg N/L	-	-	1.8 c	1.6 c
Total Nitrogen	mg N/L	-	Report	4.2 c	5.7 c
Total Organic Carbon[1]	mg C/L	-	-	15	20
Chlorophyll *a* - Corrected	µg/L	≤ 5.4 a	-	4.6	-
Phaeophytin	µg/L	-	-	0.90 U	-
CBOD, 5 day, N - inhibited	mg/L	-	≤ 60 s p	-	7.8
Hardness	mg CaCO3/L	-	-	-	267 c
Total Suspended Solids	mg/L	-	≤ 60 s p	-	4 I
Turbidity	NTU	≤ 29 t	-	1.8 A	-
Color (true)	PCU	-	-	41	-
Alkalinity	mg CaCO3/L	-	-	181 A	-
Chloride	mg Cl/L	-	-	130 A	-
Cyanide	mg/L	≤ 1.0	≤ 1.0 s	0.0035 U	-
Fluoride	mg F/L	≤ 5.0	-	0.99	-
Sulfate	mg SO4/L	-	-	130 A	-
Fecal Coliforms	cfu/100 mL	-	≤ 800 s	100 Q	-
Enterococci	MPN/100 mL	≤ 130	≤ 130	25.3 Q	-
Bioassay - Mysid (*A. bahia*)	% effluent	-	≥ 100 s p	-	51.6 e
Bioassay - Fish *(M. beryllina)*	% effluent	-	≥ 100 s p	-	> 100

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

a - Annual average
c - Value is calculated
e - Value exceeds the Class III Water Quality Criteria or permit limits
p - 24-hr timed proportioned composite
s - Single sample
t - Shall not exceed 29 NTUs above background
A - Value reported is the mean of two or more determinations
Q - Sample held beyond normal holding time
U - Material analyzed for but not detected; value reported is the method detection limit
1 - Analyte detected in the equipment blank

Table 3. Analytical metals data

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

Analyte	Units	Class III Criteria	Effluent Permit Limits	Effluent Composite
Aluminum	µg/L	≤ 1500	-	32
Arsenic	µg/L	≤ 50	-	1.56
Cadmium	µg/L	≤ 8.8	-	0.02 U
Calcium[1]	mg/L	-	-	70.5
Chromium, Total [2]	µg/L	≤ 50	-	0.83 I
Copper[1]	µg/L	≤ 3.7	≤ 7.45 s p	1.05
Iron	µg/L	≤ 300	≤ 300 s p	130
Lead	µg/L	≤ 8.5	-	0.2 U
Magnesium[1]	mg/L	-	-	22.2
Mercury	ng/L	≤ 25	≤ 25	0.65
Nickel	µg/L	≤ 8.3	≤ 13.0 s p	6.2
Potassium	mg/L	-	-	14.4
Selenium	µg/L	≤ 71	-	0.3 I
Silver	µg/L	≤ 2.3	-	0.01 U
Sodium	mg/L	-	-	120
Zinc	µg/L	≤ 86	-	8.4 I

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
p - 24-hr timed proportioned composite
s - Single sample

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
1 - Analyte detected in the equipment blank
2 - Class III Marine Water Quality Criterion (Paragraph 62-302.530(19)(b), F.A.C.) is for chromium-VI

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*	13.3 A	93 ± 19	1400 ± 280	160 ± 32	1600 ± 320	0.8	1.1
Effluent Grab	*Dunaliella tertiolecta*	4.82 A *	not applicable [3]	not applicable [3]	not applicable [3]	not applicable [3]	0.8	1.1

* - sample salinity adjusted to 7 ppth

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

3 - predictions not applicable to marine matrix

Table 5. Detected Organic Constituents

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

Analyte	Units	Class III Criteria	Effluent Permit Limits	Effluent Grab
Aldrin	µg/L	≤ 1.3	≤ 1.3 s	0.71 U
Atrazine	ng/L	-	-	23
Caffeine	ng/L	-	-	12 IQ
Chlorfenapyr	ng/L	-	-	1.5
Chlorpyrifos Ethyl	ng/L	-	-	6.6
Dimethomorph	ng/L	-	-	0.48 I
Dithiopyr	ng/L	-	-	0.61 I
Fipronil	ng/L	-	-	18
Fipronil Desulfinyl	ng/L	-	-	0.35 I
Fipronil Sulfide	ng/L	-	-	3.6
Fipronil Sulfone	ng/L	-	-	5.1
Fludioxonil	ng/L	-	-	1.7
Hexazinone	ng/L	-	-	1.8 I
Iprodione	ng/L	-	-	140
Loratadine	ng/L	-	-	4.8
Metolachlor	ng/L	-	-	73
Metribuzin	ng/L	-	-	2,200
Myclobutanil	ng/L	-	-	1.7
Oxadiazon	ng/L	-	-	920
Oxyfluorfen	ng/L	-	-	110
Phenytoin	ng/L	-	-	24
Prodiamine	ng/L	-	-	3,000
Propanil	ng/L	-	-	0.61
Propiconazole [1]	ng/L	-	-	830
Stirophos	ng/L	-	-	0.29 I
Sulfentrazone	ng/L	-	-	9.7
Tebuconazole	ng/L	-	-	1,700
2,4,6-Trichlorophenol	µg/L	≤ 6.5 a	-	0.20 I

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
a - Annual average
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
Q - Sample held beyond normal holding time
1 - Analyte detected in the field blank

Appendix A. Facility Summary

PART I: Information gathered prior to sampling event	
Prepared By: Shannon Taylor	Contact Number: (904) 256-1617
Facility Name (as it appears on permit): Buckman WWTF	Former Names: N/A
NPDES Permit Number: FL0026000	Permit Expiration Date: June 12, 2024
Physical Address: 2221 Buckman Street, Jacksonville, Florida 32202	
District: NED	County: Duval
Function of Facility: Wastewater Treatment Facility	
Facility Type: Domestic Wastewater	Permitted Capacity (MGD): 52.50

Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months):The only external outfall is D-001, monitoring location EFD-1. The Monthly Average is listed as report only. Mean flow = 26.926

Date	Description	Result	Statistical Base
01/31/2022	Flow	23.672 MGD	MK - Monthly Average
12/31/2021	Flow	25.09 MGD	MK - Monthly Average
11/30/2021	Flow	27.126 MGD	MK - Monthly Average
10/31/2021	Flow	25.832 MGD	MK - Monthly Average
09/30/2021	Flow	28.797 MGD	MK - Monthly Average
08/31/2021	Flow	28.797 MGD	MK - Monthly Average
07/31/2021	Flow	28.797 MGD	MK - Monthly Average

06/30/2021	Flow	28.797 MGD	MK - Monthly Average
05/31/2021	Flow	28.797 MGD	MK - Monthly Average
04/30/2021	Flow	28.797 MGD	MK - Monthly Average
03/31/2021	Flow	28.797 MGD	MK - Monthly Average
02/28/2021	Flow	28.797 MGD	MK - Monthly Average
01/31/2021	Flow	28.797 MGD	MK - Monthly Average

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	Description of Monitoring Site
EFD-1	**Sample point immediately after final treatment and prior to discharge fromoutfall D-001 to the surface water**
CAL-1	Calculated value
CAL-2	Calculated percent removal of $CBOD_5$ or TSS
EFF-1	Sample point at the ultraviolet (UV) channels
CAL-3	Calculated monthly or annual mass load of total nitrogen and total phosphorus
SWA-BM2	**Ambient surface water site upstream from the Buckman WWTF effluent discharge located at latitude 30° 20' 59" N and longitude 81° 37' 14.3" W.** ***(See Appendix B – Attached Map for sample location)***
SWA-BM1	**Ambient surface water site downstream from the Buckman WWTF effluentdischarge located at latitude 30° 21' 4.4" N and longitude 81° 37' 14.3" W.** ***(See Appendix B – Attached Map for sample location)***
SWB-BM1	**Ambient background surface water site from the Buckman WWTF effluentdischarge located at latitude 30° 21' 0.7" N and longitude 81° 37' 1.5" W.** ***(See Appendix B – Attached Map for sample location)***

Description of Permitted Outfall(s):

An existing 52.5 MGD AADF permitted capacity discharge to St. Johns River,Class III marine waters, (WBID# 2213D) at Outfall D – 001 which is 78 inches in diameter discharges at the riverwall to the river at a depth of approximately 30.5 feet. The point of discharge is located approximately at latitude 30□ 21' 1.55" N, longitude 81□ 37' 15.73" W.

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

The Buckman WWTF is located in the Talleyrand area. It is an existing 52.50 million gallon per day (MGD) annual average daily flow (AADF) permitted capacity activated sludge wastewater treatment facility which canoperate in either plug flow or complete mix mode. The facility consists of the following process units:

- Two 60-MGD capacity mechanical bar screens with ½ inch opening;
- An influent wet well / dry well pump station with four pumps;
- An influent chamber and two influent channels;
- Two grit settling basins with three channels (8.5 ft x 260 ft x 8ft) in each basin. Each channel will be equipped with a dewatering system. The maximum design flow for the grit facility will be 154 MGD. An overhead hoist system for removal of settled grit from each channel to a dumpster using a clamshell. Includes a grit removal system and a 0.151 million gallon (MG) aerated grit chamber consisting of three gritremoval pumps each with a capacity of 200 gpm @ 34 ft total dynamic head (TDH);
- Two (2) new fine screens in the pre-aeration channel. The 6 mm screens are perforated plate, straight-through flow type with a total peak capacity of 100 MGD. Associated equipment includes washer/compactors, reuse water filters, sluice gates for screen isolation, sluice gates at primary clarifier influent ports, weir gates for screen diversion, roll-off containers, platforms, covers, odor control ducting,and a bypass channel;
- Eight primary clarifiers (225 ft long x 18 ft wide x 12 ft side water depth) with a surface loading rate of 1,296 gpd/ft^2 at ADF and 2,593 gpd/ft^2 at PHF; and a weir loading rate of 20,195 gpd/ft at ADF and 40,384gpd/ft; tanks 9 and 10 were modified as part of the first phase of the BNR modification process (sidestreamproject) to reduce the ammonia load from the Biosolids RMF centrate wastestream. The project added concrete baffle walls in both tanks and a fiberglass wall between tanks 9 and 10, two 5.6 HP propeller recirculation pumps, one return waste pump, four floating electrical mixers and nitrate, ammonia and nitritemonitoring equipment, rerouted centrate flow to the East end of tank 9;
- Four aeration tanks operated in series plug flow mode. The structure of basin is 310 ft long x 55 ft wide with a side water depth of 15 ft. Ceramic, fine bubble diffusers are used to aerate and mix each basin and supplied with five-drop pipes per tank. Four sets of Neuros Turbo Blowers, Total SCFM @ 10 PSIG: 18,800 X 4;
- Recycle pumps were added in aeration tanks, replaced sluice gates with electric actuated weir slide gates inaeration tanks, installed new piping, removed sections of air diffusers and air supply header, installed new RAS piping and flow-meter;
- Secondary clarifiers 1 through 4 were modified by demolishing existing clarifier mechanisms and installingnew clarifier mechanisms plus other appurtenances and conversion from square to round clarifiers, installation of new baffle walls in several of the aeration tanks to establish anoxic zones with ten floating electrical mixers and mooring cables. The structure is 120 ft long x 120 ft wide with a side water depth of 12 ft has a hydraulic loading rate of 608 gpd/ft^2. The Two circular peripheral clarifiers have a diameter of 136 ft and a hydraulic loading rate of 602 gpd/ft^2;
- Ultraviolet Disinfection System provides UV dosage of 29 mW-sec/cm^2 at 65% UV Transmittance, 157.5mgd and 26.3 mW-sec/cm^2 at 49% UV Transmittance, 108 mgd capacity;
- Chlorination facility can be used for the return activated sludge;
- A groundwater dewatering system with discharge into the aeration tanks; and
- A new package septage receiving station consisting of metal trap, grinder, screen, auger, and wash watersystem. The station is constructed from 316L stainless steel.

Mixing zones for nickel and copper have been established for the effluent discharge from the Outfall D-001.

Figure 1: Mixing Zone Delineation for Nickel



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

			Effluent Limitations		Monitoring Requirements			
Parameter	**Units**	**Max/ Min**	**Limit**	**Statistical Basis**	**Frequency of Analysis**	**Sample Type**	**Monitoring Site**	**Notes**
Flow	MGD	Max	52.5	Annual Average	Continuous	Recording Flow Meter with Totalizer	EFD-1	See I.A.4
		Max	Report	Monthly Average				
		Max	Report	3-Mon Rolling Average				
Percent Capacity, (TMADF/Permitted Capacity) x 100	percent	Max	Report	Monthly Average	Monthly	Calculated	CAL-1	
BOD, Carbonaceous 5 day, 20C	mg/L	Max	20.0	Annual Average	Daily; 24 hours (7days/week)	24-hr FPC	EFD-1	
	mg/L	Max	25.0	Monthly Average				
	mg/L	Max	40.0	Weekly Average				
	mg/L	Max	60.0	Single Sample				
CBOD, % Removal, 5-day	percent	Min	85.0	Monthly Average	Monthly	Calculated	CAL-2	See I.A.8

			Effluent Limitations		Monitoring Requirements			
Parameter	**Units**	**Max/ Min**	**Limit**	**Statistical Basis**	**Frequency of Analysis**	**Sample Type**	**Monitoring Site**	**Notes**
Solids, Total Suspended	mg/L	Max	20.0	Annual Average	Daily; 24 hours (7days/week)	24-hr FPC	EFD-1	
	mg/L	Max	30.0	Monthly Average				
	mg/L	Max	45.0	Weekly Average				
	mg/L	Max	60.0	Single Sample				
Solids, Total Suspended, % Removal	percent	Min	85.0	Monthly Average	Monthly	Calculated	CAL-2	See I.A.8
Fecal Coliform	#/100mL	Max	200.0	Annual Average	Daily; 24 hours (7days/week)	Grab	EFD-1	See I.A.6
	#/100mL	Max	200.0	Monthly Geometric Mean				
	#/100mL	Max	400.0	90th Percentile				
	#/100mL	Max	800.0	Single Sample				
Enterococci	#/100mL	Max	35.0	Monthly Geometric Mean	Daily; 24 hours (5days/week)	Grab	EFD-1	See I.A.7
	#/100mL	Max	130.0	90th Percentile				
pH	s.u.	Min	6.5	Single Sample	Daily; 24 hours (7days/week)	Meter	EFD-1	See I.A.3
		Max	8.5	Single Sample				

			Effluent Limitations		Monitoring Requirements			
Parameter	**Units**	**Max/ Min**	**Limit**	**Statistical Basis**	**Frequency of Analysis**	**Sample Type**	**Monitoring Site**	**Notes**
Ultraviolet Light Dosage *(After placing the new UV disinfection into service)*	mW-s/ sqcm	Min	30	Single Sample	Continuous	Meter	EFF–1	See I.A.9 & I.A.17
Ultraviolet Light Transmittance *(After placing the new UV disinfection into service)*	percent	Min	Report	Single Sample	Continuous	Meter	EFF–1	See I.A.9 & I.A.16
Ultraviolet Light Intensity *(After placing the new UV disinfection into service)*	mW/sqcm	Min	Report	Single Sample	Continuous	Meter	EFF–1	See I.A.9 & I.A.15
Reactor Status[(a)] *(After placing the new UV disinfection into service)*	On/Off	-	Report[(b)]	Single Sample	Continuous	Sensor/Meter	EFF-1	See I.A.9 & I.A.10
Lamp Status[(a)] *(After placing the new UV disinfection into service)*	On/Off	-	Report[(b)]	Single Sample	Continuous	Sensor	EFF-1	See I.A.9 & I.A.11
Lamp Age[(a)] *(After placing the UV disinfection into service)*	Hour	Max	Report[(b)]	Single Sample	Continuous	Meter *(Interface Elapsed Time Meter)*	EFF-1	See I.A.9 & I.A.12
Reactor On/Off Cycles[(a)] *(After placing the new UV disinfection into service)*	Total Number	Min	Report[(b)]	Single Sample	Continuous	Meter	EFF-1	See I.A.9 & I.A.18
Reactor Power Setpoint[(a)] *(After placing the new UV disinfection into service)*	Percent	-	Report[(b)]	Single Sample	Continuous	Meter	EFF-1	See I.A.9 & I.A.18

			Effluent Limitations		Monitoring Requirements			
Parameter	**Units**	**Max/ Min**	**Limit**	**Statistical Basis**	**Frequency of Analysis**	**Sample Type**	**Monitoring Site**	**Notes**
Water Level in Reactors[a] *(After placing the new UV disinfection into service)*	Feet	Range	Report[b]	Single Sample	Continuous	Gate/Meter	EFF-1	See I.A.9 & I.A.18
Oxygen, Dissolved (DO)	mg/L	Min	5.0	Single Sample	Daily; 24 hours (7days/week)	Meter	EFD-1	See I.A.22
Nitrogen, Total, as N	mg/L	Max	Report	Annual Average	Daily; 24 hours (7days/week)	24-hr FPC	EFD-1	See I.A.23 & I.A.24
	mg/L	Max	Report	Monthly Average				
	mg/L	max	Report	Single Sample				
Nitrogen, Total, as N	lb/month	Max	Report	Monthly Total	Monthly	Calculated	CAL-3	See I.A.23 & I.A.24
	lb/year	Max	Report	Annual Total				
Phosphorus, Total (as P)	mg/L	Max	Report	Annual Average	Daily; 24 hours (7days/week)	24-hr FPC	EFD-1	See I.A.23 & I.A.24
	mg/L	Max	Report	Monthly Average				
	mg/L	max	Report	Single Sample				
Phosphorus, Total (as P)	lb/month	Max	Report	Monthly Total	Monthly	Calculated	CAL-3	See I.A.23 & I.A.24
	lb/year	Max	Report	Annual Total				
Cyanide, Total (as CN)	µg/L	Max	1.0	Single Sample	Monthly	Grab	EFD-1	See I.A.21

			Effluent Limitations		Monitoring Requirements			
Parameter	**Units**	**Max/ Min**	**Limit**	**Statistical Basis**	**Frequency of Analysis**	**Sample Type**	**Monitoring Site**	**Notes**
Copper, Total Recoverable (Mixing Zone)	µg/L	Max	7.45	Single Sample	Monthly	24-hr FPC	EFD-1	See I.A.29
Nickel, Total Recoverable (Mixing Zone)	µg/L	Max	13.0	Single Sample	Monthly	24-hr FPC	EFD-1	See I.A.28
Mercury, Total Recoverable	µg/L	Max	0.025	Single Sample	Monthly	Grab	EFD-1	See I.A.20
Iron, Total Recoverable	µg/L	Max	300.0	Single Sample	Monthly	24-hr TPC	EFD-1	
Aldrin	µg/L	Max	0.00014	Annual Average	Quarterly	24-hr FPC	EFD-1	See I.A.21
	µg/L	Max	1.3	Single Sample				
Nitrogen, Organic, Total (as N)	mg/L	Max	Report	Single Sample	Bi-monthly; every 2 months	24-hr FPC	EFD-1	See I.A.24
Nitrogen, Kjeldahl, Total (as N)	mg/L	Max	Report	Single Sample	Bi-monthly; every 2 months	24-hr FPC	EFD-1	See I.A.24
Nitrite plus Nitrate, Total 1 det. (as N)	mg/L	Max	Report	Single Sample	Bi-monthly; every 2 months	24-hr FPC	EFD-1	See I.A.24
Nitrogen, Ammonia, Total (as N)	mg/L	Max	Report	Single Sample	Bi-monthly; every 2 months	24-hr FPC	EFD-1	See I.A.24

			Effluent Limitations		Monitoring Requirements			
Parameter	**Units**	**Max/ Min**	**Limit**	**Statistical Basis**	**Frequency of Analysis**	**Sample Type**	**Monitoring Site**	**Notes**
Temperature (C), Water	Deg C	Max	Report	Single Sample	Bi-monthly; every 2 months	Meter	EFD-1	See I.A.24
Phosphate, Ortho (as P)	mg/L	Max	Report	Single Sample	Bi-monthly; every 2 months	Grab	EFD-1	See I.A.24
St. Johns River – Ambient Monitoring	-	Min/ Max	Report	Single Sample	Monthly or Bi-monthly	Grab/Meter	SWA-BM1 SWA-BM2 SWB-BM1	See I.A.24
Chronic Whole Effluent Toxicity, 7-Day IC25 (*Americamysis bahia*)	percent	Min	100	Single Sample	Semi-Annually; twice per year	24-hr FPC	EFD-1	See I.A.27
Chronic Whole Effluent Toxicity, 7-Day IC25 (*Menidia beryllina)*	percent	Min	100	Single Sample	Semi-Annually; twice per year	24-hr FPC	EFD-1	See I.A.27

		Effluent Limitations			Monitoring Requirements			
Parameter	**Units**	**Max/Min**	**Limit**	**Statistical Basis**	**Monitoring Frequency**	**Sample Type**	**Monitoring Site**	**Notes**
Chronic Whole Effluent Toxicity	percent	Min	Report IC_{25}	Single Sample	Quarterly	24-hr FPC	EFD-1	See I.C.3
Acute Whole Effluent Toxicity	percent	Min	96-hr $LC_{50} \geq$ 100% (derived from chronictest data)	Single Sample	Quarterly	24-hr FPC	EFD-1	See I.C.3

Receiving Waters: St. Johns River	Classification (indicate whether fresh or marine): Class III Marine Waters

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

1. The permittee shall comply with the following requirements to evaluate chronic whole effluent toxicity of the discharge from outfall D-001.

   a. Effluent Limitation

      (1) In any routine or additional follow-up test for chronic whole effluent toxicity, the 25 percent inhibition concentration (IC25) shall not be less than 100% effluent. *[Rules 62-302.530(61) and 62-4.241(1)(b), F.A.C.]*

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

   b. Monitoring Frequency

      (1) Routine toxicity tests shall be conducted once every six months, the first starting within6 months of the most recent toxicity tests 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 sameday.

   d. Test Requirements

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

      (2) The permittee shall conduct 7-day survival and growth chronic toxicity tests with a mysid shrimp, Americamysis (Mysidopsis) bahia, Method 1007.0, and an inland silverside, Menidia beryllina, Method 1006.0, 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 Marine and Estuarine Organisms, 3rd Edition, EPA-821-R-02-014. Any deviation of the bioassay procedures outlined herein shall be submitted in writing tothe 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 used shall be artificial sea salts as described in EPA-821-R-02-014, Section 7.2. The test salinity shall be determined as follows:

         (a) For the Americamysis bahia bioassays, the effluent shall be adjusted to a salinity of20 parts per thousand (ppt) with artificial sea salts. The salinity of the control/dilution water (0% effluent) shall be 20 ppt. If the salinity of the effluent isgreater than 20 ppt, no salinity adjustment shall be made to the effluent and the testshall be run at the

effluent salinity. The salinity of the control/dilution water shall match the salinity of the effluent.

(b) For the Menidia beryllina bioassays, if the effluent salinity is less that 5 ppt, the salinity shall be adjusted to 5 ppt with artificial sea salts. The salinity of the control/dilution water (0% effluent) shall be 5 ppt. If the salinity of the effluent is greater than 5 ppt, no salinity adjustment shall be made to the effluent and the test shall be run at the effluent salinity. The salinity of the control/dilution water shall match the salinity of the effluent.

(c) If the salinity of the effluent requires adjustment, a salinity adjustment control should be prepared and included with each bioassay. The salinity adjustment controlis intended to identify toxicity resulting from adjusting the effluent salinity with artificial sea salts. To prepare the salinity adjustment control, dilute the control/dilution water to the salinity of the effluent and adjust the salinity of the salinity adjustment control at the same time and to the same salinity that the salinityof the effluent is adjusted using the same artificial sea salts.

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 supplierprovides control chart data from at least the last five monthly chronic toxicity tests usingthe 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 exceeds 20% for either species in any test, or any of the test acceptability criteria are not met, then the test for that species (including the control)shall be invalidated and the test repeated. Test acceptability criteria for each species are defined in EPA-821-R-02-013, Section 13.12 (*Ceriodaphnia dubia*) and Section 11.11 (*Pimephales promelas*). The repeat test shall begin within 21 days after the last day of the invalid test.

(3) If 100% mortality occurs in all effluent concentrations for either test species prior to the end of any test and the control mortality is less than 20% at that time, the test (includingthe 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 entered on the Discharge Monitoring Report (DMR) as the calculated IC_{25} for each test species.

(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 e-mailed or mailedto 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 e-mailed or mailed within 30 daysafter 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 e-mailed or mailed within 30 days to FDEP NED

g. Test Failures

(1) A test fails when the test results do not meet the limits in 27.a.(1).

(2) Additional Follow-up Tests:

(a) If a routine test does not meet the chronic toxicity limitation in 27.a.(1) above, thenthe permittee shall notify the Department at the address above within 21 days after the last day of the failed routine test and conduct two additional follow-up tests on each species that failed the test in accordance with 27.d.

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

(c) The additional follow-up tests shall be conducted using a control and a minimum of five dilutions: 100%, 50%, 25%, 12.5%, and 6.25% effluent. The permittee may modify the dilution series in the additional follow-up tests to more accurately bracket the toxicity such that at least two dilutions above and two dilutions below the target concentration and a control (0% effluent) are run. All test results shall beanalyzed 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 afterthe 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 27.d. Additional follow-up tests arenot 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 shallreturn to the schedule established in 27.b.(1). If a routine test is invalid according tothe 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 27.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 atleast four consecutive quarterly valid routine whole effluent toxicity tests.

(g) If a test within the sequence of the four is deemed invalid but is replaced by a repeat valid test initiated within 21 days after the last day of the invalid test, then 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 27.a.(2), then the Department may revise this permit to require acute definitive whole effluent toxicity testing.

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

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

WL 21-138 for Aldrin Exceedances

CO Spills 06-1796 Aug. 2006

AO 200 NE Aug. 23, 2021, requires them to comply with the final permit limits for chronic whole effluent toxicity with marine species or obtain Department approved regulatory relief by December 31, 2021

		Effluent Limitations			Monitoring Requirements			
Parameter	**Units**	**Max/Min**	**Limit**	**Statistical Basis**	**Monitoring Frequency**	**Sample Type**	**Monitoring Site**	**Notes**
Chronic WholeEffluent Toxicity	%	Min	Report IC_{25}	Single Sample	Quarterly	24-hr FPC	EFD-1	See I.C.3
Acute Whole Effluent Toxicity	%	Min	96-hr $LC_{50} \geq$ 100% (derived from chronic test data)	Single Sample	Quarterly	24-hr FPC	EFD-1	See I.C.3

Facility Mixing Zone Details (if applicable):

1. A mixing zone for concentration of nickel (total recoverable) in the effluent discharged through the existing outfall D-001 to St. Johns River has been established. The mixing zone is a half- circle with a radius of 26 feet (7.8 meter) of which the largest area of the mixing zone is approximate 1062 square feet (96 square meters) centered at the point of discharge. In critical/worse case hydrologic scenarios, the centerline dilution of the mixing zone is 1.67. Themaximum concentration limit at the end-of-pipe for nickel (total recoverable) is 13.0 µg/L. Thedischarger shall meet the water quality criterion of 8.3 µg/L for nickel at the edge of the mixing zone area. The coordinates of the vertices of the nickel mixing zone and the Outfall D-001 are listed in the Table 1. Mixing zone delineation is shown on Figure 1.

Table 1: Coordinates of the Vertices of Mixing Zone Polygon for Nickel

Point	Latitude	Longitude
Outfall D-001	30° 21´ 1.55´´ N	81° 37´ 15.73´´ W
Point A	30° 21´ 1.82´´ N	81° 37´ 15.67´´ W
Point B	30° 21´ 1.30´´ N	81° 37´ 15.77´´ W
Point C	30° 21´ 1.53´´ N	81° 37´ 15.43´´ W
SWA-BM1	30° 21´ 4.40´´ N	81° 37´ 14.33´´ W
SWA-BM2	30° 20´ 59´´ N	81° 37´ 14.30´´ W

2. A mixing zone for the concentration of copper (total recoverable) in the effluent discharged through the existing outfall D-001 to St. Johns River has been established. The mixing zone is a half-circle with a radius of 39 feet (11.9 meter) of which the largest area of the mixing zone is approximate 2,389 square feet (223 square meters) centered at the point of discharge. In critical/worse case hydrologic scenarios, the centerline dilution of the mixing zone is 3.0. The maximum concentration limit at the end-of-pipe for copper (total recoverable) is 7.45 µg/L. Thedischarger shall meet the water quality criterion of 3.7 µg/L for copper at the edge of the mixingzone area. The coordinates of the vertices of the copper mixing zone and the Outfall D-001 are listed in the Table 2. Mixing zone delineation is shown on Figure 2.

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

Date	Monitoring Location	Description	Result	Limit	Units	Statistical Base
12/31/2021	EFD-1	Aldrin	0.007813	1.4E-4	ug/L	AB
10/31/2021	EFD-1	IC25 Statre 7day Chr Mysid Bahia	15.3	100	percent	ME
09/30/2021	EFD-1	Aldrin	0.009263	1.4E-4	ug/L	AB
07/31/2021	EFD-1	Solids, Total Suspended	72.4	60	mg/L	MB
06/30/2021	EFD-1	Aldrin	0.009275	1.4E-4	ug/L	AB
03/31/2021	EFD-1	Aldrin	0.00375	1.4E-4	ug/L	AB
01/31/2021	EFD-1	IC25 Statre 7day Chr Mysid Bahia	57.8	100	percent	AB

Describe previous FYI and WQBEL study:

(a) Parameters Evaluations:

(i)Bacteriological Qualities

- **Enterococci**: In 2004, EPA promulgated bacteriological water quality criteria for Florida in 40 CFR 131.41. A requirement for discharges from theOutfall D-001 to meet the federal criteria was adopted in subsection 62-600.520(5), F.A.C, but the facility discharges to WBID 2213D which is distances from coastal recreation waters of the U.S. Thus, in the previous permit cycle, monitoring requirement for enterococci was exempted.

In July 2017, EPA approved Florida's bacteriological water quality standardsin Rule 62-302.530, F.A.C., superseding the criteria in 40 CFR 131.41.

Therefore, the exemption of enterococci limitations previously has been removed and replaced with enterococci effluent limitations consistent withthe bacteriological water quality standards for enterococci in Rule 62- 302.530, F.A.C.

- **Fecal Coliform**: Because there is no established relationship between fecal coliform and enterococci bacteria, limitations based on both the disinfectionrequirements for fecal coliform from Rule 62-600.440, F.A.C., and based onthe bacteriological water quality standards for enterococci for discharges to Class III predominately marine waters under Rule 62-302.530, F.A.C., havebeen included in the permit

(ii) Dissolved Oxygen: Site Specific Alternative Criteria (SSACs) for dissolved oxygenhas established for the St. Johns River marine portions of the lower St. Johns River and its tributaries (between Julington Creek and the mouth of the river). Pursuant to the SSAC, Dissolved Oxygen shall not be less than a minimum concentration of 4.0 mg/L, and a Total Fractional Exposure not greater than 1.0 over an annualevaluation period as defined by the following equation:

The effluent limitations for CBOD5, TN and DO have been established such the water quality criterion for DO concentration of the segment of waterbody is met. Inaddition, the permittee shall continue to monitor for dissolved oxygen for the segment waterbody where the discharge/outfall located to confirm that the discharge would not impact to the dissolve oxygen level of the waterbody.

(iii) Iron: Iron is an impaired parameter of the three segments of the river: WBID2213C, 2213D (outfall location), 2213E.

JEA has monitored for iron in the effluent discharge on a monthly basis. Sampling results show that the average, median, 95th percentile, maximum concentrations of iron were 141.6 mg/L, 131.2 mg/L, 270.9 mg/L and 613.0 mg/L During the last five years operations and discharge, 3 out of 59 (approximate 5.1%) samples had exceeded the water quality criterion of 300 ug/L for iron. JEA is required to monitor for iron and meet the water quality criterion.

(V) Lead: The Department Third Year Inspection Report showed that the maximum concentrations of lead was below the WQS. In addition, results of the expanded effluent testing showed that concentration of lead in the effluent sample was belowthe Florida water quality criterion. There is no evidence to show that the lead concentration in the effluent is impacting the lead level of the water body upstreamof the outfall. The facility will not be required to monitor for lead at this time.

(vi) Mercury: The analytical results indicate that the discharge has complied with the permit limit for mercury. Based on the Statewide mercury TMDL, the permittee is required to continue to monitor for mercury. EPA Method 1631E is recommended.However, an alternative EPA approved method such as Method 245.1 or 245.7 with a MDL of 14.0 ng/L or less 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 of 14.0 ng/L), 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 clean sampling techniques such as Method 1631E. If test results show quantifiable mercury levels in the effluent, the permittee shall prepare and implement a mercury minimization plan addressingsources of mercury

(vii) Copper:

- JEA, the permittee, has monitored for copper, total recoverable in the effluent discharge to the river. The discharge is required to comply with thewater quality standards (WQS) of 3.7µg/L for copper, except within an approved mixing zone area.

- Copper Mixing Zone – Evaluation*:*

1. Existing Mixing Zone

The mixing zone for copper has been established in the previous permit. The mixing zone is a half-circle with a radius of 39 feet (11.9 meter) of which the largest area of the mixing zone is approximate 2,389 square feet (223 square meters) centered at the point of discharge. In critical/worse case hydrologic scenarios, the centerline dilution of the mixing zone is 3.0. The maximum concentration limit at the end-of-pipefor copper (total recoverable) is 7.45 µg/L. The discharger shall meet thewater quality criterion of 3.7 µg/L for copper at the edge of the mixing zone area.

2. Evaluation of Existing Mixing Zone:

a. Ambient Water Conditions:

- Buoyancy effects caused by density differences between the effluent and the receiving water can be an important factor in near-field dilution of the discharges to the receiving waterbody (St. Johns River). Any differences in density between the effluent discharge from Buckman WWTF and the St. Johns River were assumed to be wholly due to temperature and salinity differences.

The density of ambient or effluent water depends upon three variables: temperature, salinity, and pressure. At atmospheric pressure and at temperature of 0°C the density is a function of the salinity only, or, as a simple relationship exists between salinity andchlorinity, the density can be considered a function of chlorinity (Cl) or salinity (S) can be expressed as Knudsen's equation:

$$\sigma_o = -0.093 + 0.8149\ S - 0.000482\ S^2 + 0.0000068\ S^3$$

$$\sigma_o = -0.069 + 1.4708\ Cl - 0.001570\ Cl^2 + 0.0000398\ Cl^3$$

To include effect of temperature on density, Knudsen's table used the thermal expansion data at 1 atmosphere, σ_t then calculated usingσ_o.

- Ambient Copper Concentration:

The permittee has monitored for ambient/river Copper concentration in monthly basis from June 2009 through December 2018. Three stations (north, south west of the POD) were sampled.Over 300 samples were collected and analyzed for Copper, total recoverable. Analytical results for copper were below the laboratory detection limit (MDL) of 2.5 µg/L. In pursuance of Rule 62-4.246(7), FAC, an ambient concentration of half the MDL (1.25 µg/L) can be used as background concentration for Copper inthe dilution calculation.

b. Outfall D-001:

- Outfall location: The Outfall D-001 was located in the segment of the St. Johns River designated as WBID 2213Dwhich was not listed as impaired for copper.

➢ Outfall Configurations:

The Outfall, which is a 78-inch diameter, open-ended reinforced concrete pipe, was constructed in 1959, and since them it has not been modified. The depth of the invert of thepipe is at -30.92 feet NGVD1929, or about 31.2 ft below the mean low water level. The river bank has been filled for the Talleyrand Marine Terminal and bulkhead is located near theOutfall pipe exit. The wharf extends about 50 feet beyond the bulkhead and is supported by piers. Consequently, the buoyant plume could surface behind the edge of the wharf and travel near the bulkhead, partially obscured by the wharf.

The river is deep along the wharf edge since it is regularlydredged for shipping

c. Effluent Characteristics:

➢ Flow Rate

- Permitted Flow Rate: 52.0 MGD AADF.
- Current Flow Rate: *(From January 2014 throughDecember 2018)*

Flow	Average (MGD)	Maximum (MGD)	Minimum (MGD)
Monthly Average Daily	29.80	45.65	22.61
Three Month Average Daily	30.14	39.83	23.61
Annual Average Daily	27.96	32.18	25.25

➢ Concentration of Copper

The permittee has monitored for Copper concentration ofthe effluent in monthly basis for the permit cycle.

Analytical results (in µg/L) are summarized below:

# Observation	Max	Mean	Geo.Mean	Skewness	CV	Percentile			
						75^{th}	80^{th}	90^{th}	95^{th}
59	16.7	2.64	2.04	3.58	0.95	2.62	3.41	5.01	6.30

Approximate 83.0% concentrations of copper below the WQS of 3.7µg/L; 10.16% concentrations of copper were between the 3.7 µg/L (WQS for copper) to 7.45 µg/L (mixing zone limit); and 6.8 % concentrations of copper were between 7.45 µg/L and 16.7 µg/L (maximum value).

d. Calculation of Target Dilution:

Dilution Ratio: D = (C_e- C_m)/(C_m- C_a)Dilution Factor: S = (C_e- C_a)/(C_m- C_a)

Then S = D + 1

Cm = Ce(1/S) + Ca(1 - 1/S)

Where:

Ce = Effluent/discharge concentration Ca = Ambient/background concentration

Cm = concentration of the constituent in the mixing area

Design target dilutions are calculated such that provide minimumdilutions to allow the discharge to meet the water quality standards. In accordance with Chapter 62-303, FAC, a waterbody is considered impaired if more than 10% of samples do not meet the WQS. Therefore, the target dilution values are selected such that the percent of time the mixed concentration is less than the WQS is greater than 90%. Results of calculations are summary in the table below:

	% of time Concentration of Cu is less than the WQS of 3.7 µg/L		% of time Concentration of Cu is less than the MZ conc. of 7.45 µg/L
Dilution Factor, (S)	Existing Evaluation (in previous permit cycle)	New Evaluation (based on up-to-datemonitoring data)	
1	87.00	83.0	96.00
1.5	91.45	90.1	98.02
1.8	92.81	93.16	99.02
2.0	94.10	95.08	99.02
2.3	94.82	96.42	99.36
2.5	96.43	96.77	100.00
2.8	97.06	98.04	100.00
3.0	97.41	98.04	100.00

a. Conclusion of Copper Mixing Zone Evaluation:

The existing mixing zone area was established based on the target dilution of 3.0 which for approximately 97.41% of time that concentration of copper would be below the WQS of 3.7 µg/L. Based on the current (up-to-date) data, at a dilution factor (S) of 3.0, is approximately 98.04% of time that concentration of copper will be below the WQS of 3.7 µg/L and 100.0 % of time that concentration ofcopper will be below the MZ concentration of 7.45 µg/L. Results of the new calculations are closed to the existing calculation. Therefore, the existing copper mixing zone is proposed to remain in the new permit. The copper mixing zone is recommended to be re-evaluated prior to the next permit renewal or a substantial modification of expansion, whichever comes first.

(vi) Nickel:

- JEA, the permittee, has monitored for nickel, total recoverable in the effluentdischarge to the river. The discharge is required to comply with the water quality standards (WQS) of 8.3µg/L for nickel, except within an approved mixing zone area.
- Nickel Mixing Zone – Evaluation*:*

1. Existing Mixing Zone

The mixing zone for nickel has been established in the previous permit. The mixing zone is a half-circle with a radius of 26 feet (7.8 meter) of which the largest area of the mixing zone is approximate 1,062 square feet (96

square meters) centered at the point of discharge. The maximumconcentration limit at the end-of-pipe for nickel (total recoverable) is

13.0 µg/L. The discharger shall meet the water quality criterion of 8.3µg/L for nickel at the edge of the mixing zone area.

2. Evaluation of Existing Mixing Zone:

a. Ambient Water Conditions:

- Ambient Nickel Concentration:

The permittee has monitored for ambient/river nickel concentrationin monthly basis since June 2009. Three stations (north, south westof the POD) were sampled. Over 300 samples were collected and analyzed for Copper, total recoverable. Analytical results for copper were below the laboratory detection limit (MDL) of 2.5 µg/L. In pursuance of Rule 62-4.246(7), FAC, an ambient concentration of half the MDL (1.25 µg/L) can be used as background concentration for Copper in the dilution calculation.

b. Outfall D-001:

- Outfall location: The Outfall D-001 was located in the segment of the St. Johns River designated as WBID 2213Dwhich was not listed as impaired for either copper.

- Outfall Configurations:

The Outfall, which is 78-inch diameter, open-ended reinforced concrete pipe, was constructed in 1959, and since then it has not been modified. The depth of the invert of the pipe is at -30.92 feet NGVD1929, or about 31.2 ft below the mean low water level. The river bank has been filled for the Talleyrand Marine Terminal and bulkhead is located near theOutfall pipe exit. The wharf extends about 50 feet beyond the bulkhead and is supported by piers. Consequently, the buoyant plume could surface behind the edge of the wharf and travel near the bulkhead, partially obscured by the wharf.

The river is deep along the wharf edge since it is regularlydredged for shipping

c. Effluent Characteristics:

- Flow Rate: Permitted Flow Rate: 52.0 MGD AADF.

- Concentration of Nickel

The permittee has monitored for nickel concentration ofthe effluent in monthly basis for the permit cycle.

Analytical results (in µg/L) are summarized below:

# Observation	Max	Mean	Geo.Mean	Skewness	CV	Percentile			
						75^{th}	80^{th}	90^{th}	95^{th}
59	14.0	6.94	6.61	0.27	0.29	8.26	8.31	8.97	9.72

Approximate 90.0% concentrations of nickel below the WQS of 8.7 µg/L; 8.5% concentrations of copper were between the 8.3 µg/L (WQS for nickel) to 13.0 µg/L (mixing zone limit); and 1.5 % concentrations ofcopper were between 13.0 µg/L and 14.0 µg/L (maximum value).

d. Calculation of Target Dilution:

Design target dilutions are calculated such that provide minimum dilutions to allow the discharge to meet the water quality standards. In accordance with Chapter 62-303, FAC, a waterbody is considered impaired if more than 10% of samplesdo not meet the WQS. Therefore, the target dilution values are selected such that the percent

of time the mixed concentration is less than the WQS is greater than 90%. Results of calculations are summary in the table below

	% of time Concentration of Ni is less than the WQS of 8.3 µg/L		% of time Concentration of Ni is less than the MZ conc. of 13.0 µg/L
Dilution Factor, (S)	Existing Evaluation (in previous permit cycle)	New Evaluation (based on up-to-datemonitoring data)	
1	82.0	78.0	99.00
1.2	93.0	96.04	100.00
1.3	95.0	98.02	100.00
1.4	96.0	98.04	100.00
1.5	97.0	99.02	100.00
1.6	99.0	99.02	100.00
1.7	100.0	100.00	100.00
2.0	100.0	100.00	100.00

e. Conclusion of Nickel Mixing Zone Evaluation:

The existing mixing zone area was established based on the target dilution of 1.67 which for approximately 99.00% of time that concentration of nickel would be below the WQS of 8.3 µg/L. Based on the current (up-to-date) data, at a dilution factor (S) of 1.67, is approximately 99.02% of time that concentration of nickel is below the WQS of 8.3 µg/L and 100.0 % of time that concentration of nickelwill be below the MZ concentration of 13.0 µg/L. Results of the new calculations are closed to the existing calculation. Therefore, the existing nickel mixing zone is proposed to remain in the new permit. The nickel mixing zone is recommended to be re-evaluated prior to the next permit renewal or a substantial modification of expansion,whichever comes first.

(viii) Whole Effluent Toxicity:

- Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on water quality standards that the water shall be free from pollutants in concentrations or combinations that are toxic to humans, aquaticlife or wildlife.

- In order to provide reasonable assurance that the discharge will not adverselyaffect the designated use of the receiving water, whole effluent toxicity testing is required. In accordance with requirement of Rule 62-620.620(3)(b),FAC, the facility is required to conduct chronic definitive tests starting with 100% effluent using a minimum of five dilution concentrations.

- Based on the segment waterbody classification, WET is conducted, and during the term of the past permit (2014-2019), the Permittee was required toevaluate chronic whole effluent toxicity of the wastewater discharge from Outfall D-001 in accordance with EPA Method 821-R-02-013, which sets forth procedures for estimating chronic toxicity of effluents to freshwater species. The draft permit requires the Permittee to continue to meet the stringent limit for chronic whole effluent toxicity specified in Rule 62- 620.620(3)(b) FAC.

- However, as discussed in Section 2.a.ii(2) above, Administrative Order, AO200 NED, is issued to incorporate into the permit allowing time for JEA to investigate whole effluent toxicity testing options including increasing the test frequency to quarterly, the use of marine test species, as well as consideration of the need for a toxicity mixing zone.

(ix) Ambient Sampling

The Permittee shall conduct regular monitoring of the segment of the waterbodynear the outfall D-001 for maintaining data on the impact of the discharge to thewater quality of the surface water body. Details monitoring requirements are addressed in the JEA – Nutrient Aggregate Permit (Permit ID: FL0620564)

(x) Benthic Macroinvertebrate Communities:

At the present time the facility is not required to conduct bio-integrity monitoring. If the future studies reveal that benthic monitoring is necessary, thefacility will be required to conduct additional regular monitoring of the segmentof the St. Johns River near the outfall.

(xi) Downstream Waterbodies Protection:

The effluent discharging from the Outfall D-001 includes limitations that protectsthe downstream waterbodies. The discharge should not adversely affect the designated use of the downstream waterbodies.

(xii) Specific conditions include the following:

- JEA will provide annual reports concerning the integrity of the outfall and will determine and propose an evaluation and analysis method. These annualreports are due to the Department on or before January 1 of each year.
- JEA will provide a back-up power load evaluation, as new units are placedon-line in order to determine and demonstrate that full backup power is adequate and available.
- JEA will conduct ambient stream monitoring in accordance with the locations, frequencies and parameters in the latest Department approved version of JEA's Ambient Stream Monitoring Plan. JEA will submit to the Department's Northeast district office an annual report with stream sample data results and graphical analyses for each sampling location. These annualreports are to be submitted to the Department by March 1 of the following year.

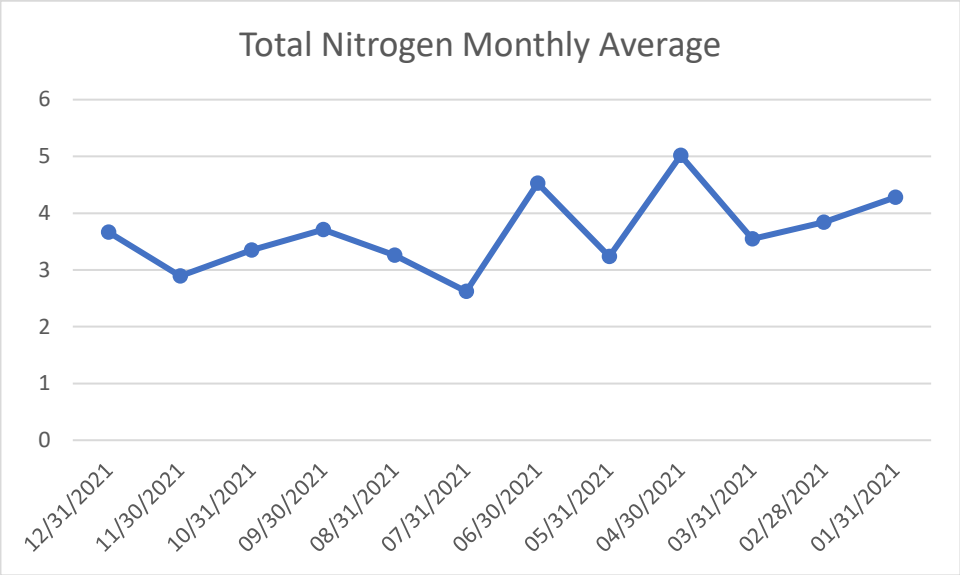
i. Conclusion

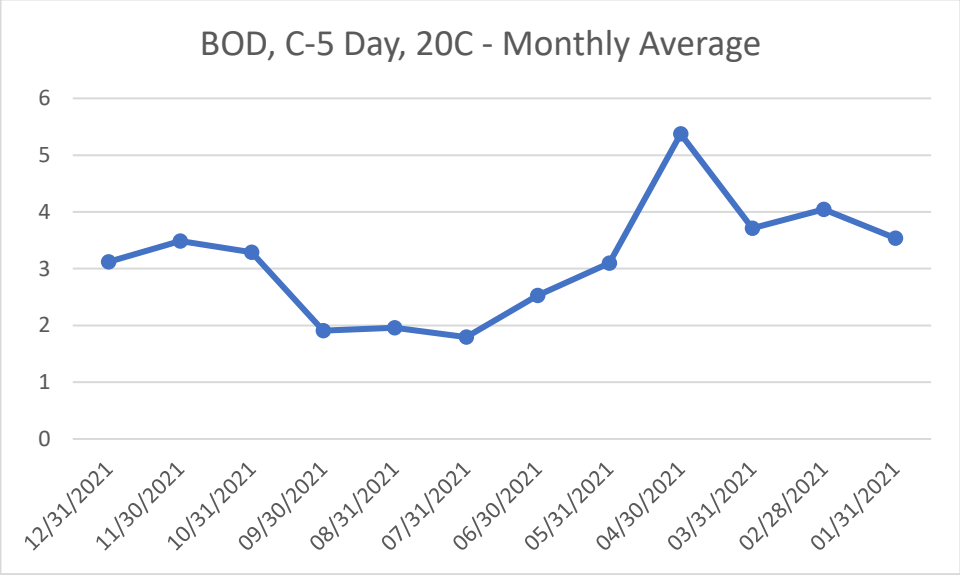
Pollutants of concern were identified for WQBEL development based on an evaluation of allavailable information, including a characterization of the pollutants that may be discharged, the sources of pollutants, existing controls on pollutants, available dilution, background pollutant levels in the receiving waters, and the toxicity of pollutants.

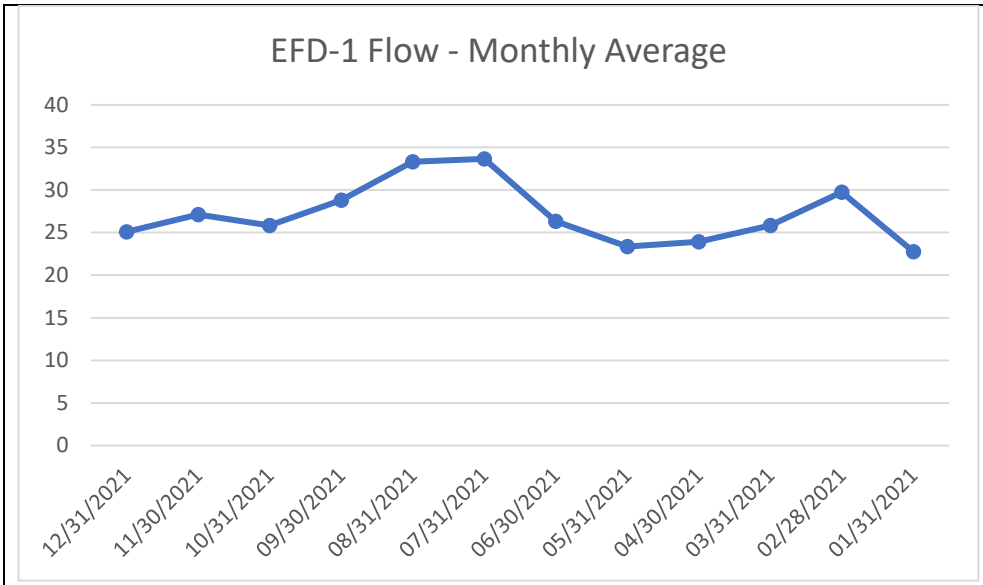
This facility has provided reasonable assurance that the discharge will not adversely affect thedesignated use of the receiving water. The effluent characterization of the discharge, historical discharge monitoring results, inspection sampling data, flow information and effluent characterizations of existing discharges to the receiving body, water quality data for the receiving body, etc. have been evaluated in accordance with the Department's reasonable assurance procedures to ensure that no limits other than those included in this permit are needed to maintain Florida water quality standards.

Describe previous or current Enforcement Actions (including WLs): WLs for SSOs and Aldrin
Describe any violations or problems noted in previous inspection: SSOs, exceedances of Iron, cyanide, and Toxicity 2019.

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







All parameters appear to be fairly consistent

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

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-2022-03-14-12

FYI3 FL0026000 Buckman WWTF Sampling Inspection

Customer: NE-DIST

Project ID: FYI3

Florida Department of Environmental Protection

Central Laboratory Submittal Form

last revised Jan 25, 2018

Requester: Herbert Johnson

Field Report Prepared By: Paul Duff

Collected By: Paul Duff, Jaena Bernard, Abhi Maturi

Sampling Agency: FDEP

Location: Buckman WWTF FYI3	☐ Comp ☑ Grab	Collection (comp begin or grab) Date 3/24/22 Time 9:30 AM	Eastern Central	Composite end Date ~~Time~~			Bottle Group(s) (See pg 2): D
Field ID: EQUIP BLANK	Matrix (type, e.g., Salt, Fresh, etc): DI water			Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)		
WIN/STOR	Temp (C)	pH		Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)		
Latitude ☐ dd ☐ dms	Salinity (ppt)	Comments: DI 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					

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
	3/24/22 3:00pm PWD	FEDEX	1	KH	3.25.22 0925

Request Number: RQ-2022-03-14-12

FYI3 FL0026000 Buckman WWTF Sampling Inspection

Customer: NE-DIST

Project ID: FYI3

Florida Department of Environmental Protection
Central Laboratory Submittal Form

last revised Jan 25, 2018

Requester: Herbert Johnson

Collected By: Paul Duff, Abhi Maturi

Field Report Prepared By: Paul Duff

Sampling Agency: FDEP

Location: Buckman WWTF FYI3	☐ Comp ☑ Grab	Collection (comp begin or grab) Date 3/28/22 Time 10:20	Eastern / Central	Composite end Date Time	Bottle Group(s) (See pg 2): A			
Field I	Matrix (type, e.g., Salt, Fresh, etc): Effluent	Diss. Oxygen 50% / 4.1mg	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)				
WIN/S	Temp (C) 25.1	pH 7.00	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm) 1056				
Latituc ☐ dd ☐ dms	Salinity (ppt)	Comments						
Location: Buckman WWTF FYI3	☐ Comp ☐ Grab	Collection (comp begin or grab) Date 3/27/22 Time 10:00	Eastern / Central	Composite end Date 3/28/22 Time 10:00	Bottle Group(s): B			
Field	Matrix (type, e.g., Salt, Fresh, etc): Effluent	Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)				
WIN/S	Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)				
Latitu ☐ dd ☐ dms	Salinity (ppt)	Comments						
Location: Buckman WWTF FYI3	☐ Comp ☑ Grab	Collection (comp begin or grab) Date 3/28/22 Time 9:58	Eastern / Central	Composite end Date Time	Bottle Group(s): C			
Field ID	Matrix (type, e.g., Salt, Fresh, etc): DI water	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	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
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Request Number: RQ-2022-03-14-12

FYI3 FL0026000 Buckman WWTF Sampling Inspection

Customer: NE-DIST

Project ID: FYI3

Florida Department of Environmental Protection

Central Laboratory Submittal Form

last revised Jan 25, 2018

Requester: Herbert Johnson

Field Report Prepared By: Joana Bernard

Collected By: Paul Dutt Joana Bernard

Sampling Agency: DEP

Location	Buckman WWTF FYI3	☑ Comp ☐ Grab	Collection (comp begin or grab) Date 03/29/2022 Time 10:00AM	Eastern Central	Composite end Date 03/30/22 Time 10:00		Bottle Group(s) (See pg 2) B
Field ID		Matrix (type, e.g., Salt, Fresh, etc) Effluent		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
WIN/STC	EFF COMP	Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐ dms	☐ dd ☐ dms	Salinity (ppt)	Comments				
Location		☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time		Bottle Group(s)
Field ID		Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
WIN/STORET #		Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments				
Location		☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time		Bottle Group(s)
Field ID		Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
WIN/STORET #		Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments				
Location		☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time		Bottle Group(s)
Field ID		Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
WIN/STORET #		Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments				

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
	03/30/22/ 3:00PM	Fed Ex	3	Devon Kitczak	3.31.22/1020

03/31/22 10:03

Request Number: RQ-2022-03-14-12

FYI3 FL0026000 Buckman WWTF Sampling Inspection

Customer: NE-DIST

Project ID: FYI3

Florida Department of Environmental Protection

Central Laboratory Submittal Form

last revised Jan 25, 2018

Requester: Herbert Johnson

Field Report Prepared By: Jaena Bernard

Collected By: Jaena Bernard, Abhi Maturi, Antonio Cruz

Sampling Agency: DEP

Location: Buckman WWTF FYI3	☑ Comp ☐ Grab	Collection (comp begin or grab) Date 03/31/22 Time 10:00AM	Eastern Central	Composite end Date 04/01/22 Time 10:00AM			Bottle Group(s) (See pg 2) B
Field ID: EFF COMP	Matrix (type, e.g., Salt, Fresh, etc): Effluent			Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
WIN/S	Temp (C)	pH		Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐ dd ☐ dms	Salinity (ppt)	Comments					
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time			Bottle Group(s)
Field ID	Matrix (type, e.g., Salt, Fresh, etc)			Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
WIN/STORET #	Temp (C)	pH		Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐ dd ☐ dms Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments					
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time			Bottle Group(s)
Field ID	Matrix (type, e.g., Salt, Fresh, etc)			Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
WIN/STORET #	Temp (C)	pH		Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐ dd ☐ dms Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments					
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time			Bottle Group(s)
Field ID	Matrix (type, e.g., Salt, Fresh, etc)			Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
WIN/STORET #	Temp (C)	pH		Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐ dd ☐ dms Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments					

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
	04/01/22 12:00pm	FedEx	2	Devon Whitegal	4.2.22/0905

04-04-22

14:45

Temp Blank 1) 0.6°C

Temp Blank 2) 0.6°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: Devan R Cobb-Williams Contractor Approval By: Noel Savoie
Project Manager

Contractor Representatives Contacted: Noel Savoie

Date: 3/3/2022
Means of Contact: Email

Task Assignment Number: OV337 Maximum Cost: $108.75 Turnaround Time: 5 BD

Sample Delivery Date: 3/29/2022

Project Name/Description:
RQ-2022-03-14-12;FY15 FL0026000 Buckman WWTF Sampling Inspection

Deliverable Number/ Parameter Group/ Method	Sample Matrix	# of Samples	# of Containers	DEP ID #	Unit Cost	% Mark-up (if any)	Cost
Quote/OV-CBOD-IN	W	3	3		$33.75		$101.25
CBOD, nitrogen-inhibited 5210B-2011							
217/Sample Disposal Fee	3				$2.50		$7.50
Total Number of Containers Shipped:		3				**Total:**	**$108.75**

660-112025 Chain of Custody

Loc: 660
119025

QC Instructions:

Comments: Quote # 6601/169 - 0

Samples released to Contract Lab by: Joana Bernard Date/Time: 03/30/22 3:00 pm

Delivery Method: FEDEX Shipping: 1

Samples Accepted by: Date/Time 3/31/22 9:11

LOR $110

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

1.2/1.8

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

640-Tallahassee

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: 3/30/2022
Means of Contact: Email

400-217810 COC

Task Assignment Number: OV346 Maximum Cost: **$215.00** Turnaround Time: 10 BD

Sample Delivery Date: 3/31/2022

Project Name/Description:
RQ-2022-03-14-12;NE-DIST-2022-03-29-02;FY13 FL0026000 Buckman WWTF;TLH-2022-03-29-71

Deliverable Number/ Parameter Group/	* Include Additional Matrix Spikes	Sample Matrix	# of Samples	# of Containers	DEP ID #	Unit Cost	% Mark-up (if any)	Cost
Method 65/mercury, Low Level (LL CVAFS) 1631E	Y	W	2	8 vials	2315082, 2315084	$70.00		$210.00
217/Sample Disposal Fee:		2				$2.50		$5.00
Total Number of Containers Shipped:			8				**Total:**	**$215.00**

0.5°C IR10 4/1/22@825

QC Instructions: * Run matrix spike duplicate (MSD) for this analysis | Cost adjusted to reflect QA/QC samples

Comments: Two vials submitted for matrix spike duplicate (MSD)

Samples released to Contract Lab by: [signature] Date/Time: 3-31-22 @ 15:46

Delivery Method: _____HD_____

Samples Accepted by: Noel Savoie Date/Time 3-31-2022 1542

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

Relinquished by Noel Savoie 3-31-2022 @ 1435

Appendix D. Chemical Analysis of Effluent

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
3/28/2022 10:20	EFF GRAB	AGP/LN	Algal Growth Potential	13.3 A	mg DryWt/L	0.300	0.900
3/28/2022 10:20	EFF GRAB	AGP/LN	Algal Growth Potential-Salinity Adjusted	4.82 A	mg DryWt/L	3.000	3.000
3/28/2022 10:20	EFF GRAB	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.90 U	µg/L	0.90	2.7
3/28/2022 10:20	EFF GRAB	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	4.6	µg/L	0.82	2.5
3/28/2022 10:20	EFF GRAB	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	4.5	µg/L	0.60	1.8
3/28/2022 10:20	EFF GRAB	Microbiology	Enterococci-Quanti-Tray	25.3 Q	MPN/100 mL	1.0	1.0
3/28/2022 10:20	EFF GRAB	Microbiology	Fecal Coliforms-Membrane Filter	100 Q	cfu/100 mL	2	2
3/28/2022 10:20	EFF GRAB	Nutrients	Organic Carbon	15	mg C/L	0.50	1.0
3/28/2022 10:20	EFF GRAB	Nutrients	Total Alkalinity	181 A	mg CaCO3/L	0.65	2.5
3/28/2022 10:20	EFF GRAB	Nutrients	NO2NO3-N	1.9	mg N/L	0.040	0.10
3/28/2022 10:20	EFF GRAB	Nutrients	Chloride	130 A	mg Cl/L	2.0	5.0
3/28/2022 10:20	EFF GRAB	Nutrients	Color (true)	41	PCU	2.5	6.0
3/28/2022 10:20	EFF GRAB	Nutrients	Fluoride	0.99	mg F/L	0.035	0.10
3/28/2022 10:20	EFF GRAB	Nutrients	Total-P	3.7	mg P/L	0.0050	0.050
3/28/2022 10:20	EFF GRAB	Nutrients	Turbidity	1.8 A	NTU	0.10	1.0
3/28/2022 10:20	EFF GRAB	Nutrients	Ammonia-N	0.54	mg N/L	0.040	0.10
3/28/2022 10:20	EFF GRAB	Nutrients	Kjeldahl Nitrogen	2.3	mg N/L	0.080	0.20
3/28/2022 10:20	EFF GRAB	Nutrients	O-Phosphate-P	3.2	mg P/L	0.20	0.50
3/28/2022 10:20	EFF GRAB	Nutrients	Sulfate	130 A	mg SO4/L	2.0	5.0
3/28/2022 10:20	EFF GRAB	Overflow	Cyanide	0.0035 U	mg/L	0.0035	0.0050
3/28/2022 10:20	EFF GRAB	Overflow	Mercury	0.65	ng/L	0.20	0.50
3/28/2022 10:20	EFF GRAB	Pesticides	Etridiazole	0.14 U	ng/L	0.14	0.56
3/28/2022 10:20	EFF GRAB	Pesticides	Phenytoin	24	ng/L	3.3	13
3/28/2022 10:20	EFF GRAB	Pesticides	Atrazine	23	ng/L	0.24	0.94
3/28/2022 10:20	EFF GRAB	Pesticides	Fenamiphos	0.47 U	ng/L	0.47	1.9
3/28/2022 10:20	EFF GRAB	Pesticides	Fipronil Sulfide	3.6	ng/L	0.14	0.56
3/28/2022 10:20	EFF GRAB	Pesticides	Myclobutanil	1.7	ng/L	0.24	0.94
3/28/2022 10:20	EFF GRAB	Pesticides	Prometon	0.85 U	ng/L	0.85	3.4
3/28/2022 10:20	EFF GRAB	Pesticides	Prometryn	0.19 U	ng/L	0.19	0.75
3/28/2022 10:20	EFF GRAB	Pesticides	Pronamide	0.14 U	ng/L	0.14	0.56

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
3/28/2022 10:20	EFF GRAB	Pesticides	Sulfentrazone	9.7	ng/L	0.47	1.9
3/28/2022 10:20	EFF GRAB	Pesticides	Tebuconazole	1.7E+03	ng/L	94	380
3/28/2022 10:20	EFF GRAB	Pesticides	Pyraflufen Ethyl	0.24 UJ	ng/L	0.24	0.94
3/28/2022 10:20	EFF GRAB	Pesticides	Chlorfenapyr	1.5	ng/L	0.16	0.66
3/28/2022 10:20	EFF GRAB	Pesticides	Azinphos Methyl	1.9 U	ng/L	1.9	7.5
3/28/2022 10:20	EFF GRAB	Pesticides	Bromacil	0.47 U	ng/L	0.47	1.9
3/28/2022 10:20	EFF GRAB	Pesticides	Butylate	0.38 U	ng/L	0.38	1.5
3/28/2022 10:20	EFF GRAB	Pesticides	EPTC	1.2 U	ng/L	1.2	4.7
3/28/2022 10:20	EFF GRAB	Pesticides	Ethoprop	0.094 U	ng/L	0.094	0.38
3/28/2022 10:20	EFF GRAB	Pesticides	Fenbuconazole	0.12 U	ng/L	0.12	0.47
3/28/2022 10:20	EFF GRAB	Pesticides	Loratadine	4.8	ng/L	0.094	0.38
3/28/2022 10:20	EFF GRAB	Pesticides	Propanil	0.61	ng/L	0.12	0.47
3/28/2022 10:20	EFF GRAB	Pesticides	Alachlor	0.24 U	ng/L	0.24	0.94
3/28/2022 10:20	EFF GRAB	Pesticides	Azoxystrobin	0.47 U	ng/L	0.47	1.9
3/28/2022 10:20	EFF GRAB	Pesticides	Demeton	1.4 U	ng/L	1.4	5.6
3/28/2022 10:20	EFF GRAB	Pesticides	Difenoconazole	0.56 U	ng/L	0.56	2.3
3/28/2022 10:20	EFF GRAB	Pesticides	Fipronil	18	ng/L	0.24	0.94
3/28/2022 10:20	EFF GRAB	Pesticides	Imazalil	0.71 U	ng/L	0.71	2.8
3/28/2022 10:20	EFF GRAB	Pesticides	Malathion	0.33 U	ng/L	0.33	1.3
3/28/2022 10:20	EFF GRAB	Pesticides	Propargite	1.4 U	ng/L	1.4	5.6
3/28/2022 10:20	EFF GRAB	Pesticides	Fluazifop-P-butyl	0.094 U	ng/L	0.094	0.38
3/28/2022 10:20	EFF GRAB	Pesticides	Iprodione	140	ng/L	5.6	23
3/28/2022 10:20	EFF GRAB	Pesticides	Metalaxyl	0.71 U	ng/L	0.71	2.8
3/28/2022 10:20	EFF GRAB	Pesticides	Norflurazon	0.47 U	ng/L	0.47	1.9
3/28/2022 10:20	EFF GRAB	Pesticides	Prodiamine	3.0E+03	ng/L	33	130
3/28/2022 10:20	EFF GRAB	Pesticides	Propiconazole	830	ng/L	94	380
3/28/2022 10:20	EFF GRAB	Pesticides	Stirophos	0.29 I	ng/L	0.12	0.47
3/28/2022 10:20	EFF GRAB	Pesticides	Atrazine Desethyl	1.4 U	ng/L	1.4	5.6
3/28/2022 10:20	EFF GRAB	Pesticides	Chlorpyrifos Methyl	0.047 U	ng/L	0.047	0.19
3/28/2022 10:20	EFF GRAB	Pesticides	Flumioxazin	1.6 U	ng/L	1.6	6.6
3/28/2022 10:20	EFF GRAB	Pesticides	Flutolanil	0.094 U	ng/L	0.094	0.38
3/28/2022 10:20	EFF GRAB	Pesticides	Fluxapyroxad	0.094 U	ng/L	0.094	0.38
3/28/2022 10:20	EFF GRAB	Pesticides	Hexazinone	1.8 I	ng/L	0.47	1.9
3/28/2022 10:20	EFF GRAB	Pesticides	Metribuzin	2.2E+03	ng/L	240	940

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
3/28/2022 10:20	EFF GRAB	Pesticides	Naled	1.4 U	ng/L	1.4	5.6
3/28/2022 10:20	EFF GRAB	Pesticides	Thiobencarb	0.56 U	ng/L	0.56	2.3
3/28/2022 10:20	EFF GRAB	Pesticides	Napropamide	0.38 U	ng/L	0.38	1.5
3/28/2022 10:20	EFF GRAB	Pesticides	Acetochlor	0.24 U	ng/L	0.24	0.94
3/28/2022 10:20	EFF GRAB	Pesticides	Fipronil Desulfinyl	0.35 I	ng/L	0.12	0.47
3/28/2022 10:20	EFF GRAB	Pesticides	Oxyfluorfen	110	ng/L	1.4	5.6
3/28/2022 10:20	EFF GRAB	Pesticides	Parathion Methyl	0.52 U	ng/L	0.52	2.1
3/28/2022 10:20	EFF GRAB	Pesticides	Terbuthylazine	0.40 U	ng/L	0.40	1.6
3/28/2022 10:20	EFF GRAB	Pesticides	Caffeine	12 IQ	ng/L	7.1	28
3/28/2022 10:20	EFF GRAB	Pesticides	Cyprodinil	0.094 U	ng/L	0.094	0.47
3/28/2022 10:20	EFF GRAB	Pesticides	Coumaphos	0.47 U	ng/L	0.47	1.9
3/28/2022 10:20	EFF GRAB	Pesticides	Cyanazine	3.1 U	ng/L	3.1	12
3/28/2022 10:20	EFF GRAB	Pesticides	Disulfoton	0.47 U	ng/L	0.47	1.9
3/28/2022 10:20	EFF GRAB	Pesticides	Fonofos	0.19 U	ng/L	0.19	0.75
3/28/2022 10:20	EFF GRAB	Pesticides	Metolachlor	73	ng/L	0.33	1.3
3/28/2022 10:20	EFF GRAB	Pesticides	Mevinphos	0.99 U	ng/L	0.99	4.0
3/28/2022 10:20	EFF GRAB	Pesticides	Oxadiazon	920	ng/L	56	230
3/28/2022 10:20	EFF GRAB	Pesticides	Pyriproxyfen	0.12 U	ng/L	0.12	0.47
3/28/2022 10:20	EFF GRAB	Pesticides	Simazine	0.47 U	ng/L	0.47	1.9
3/28/2022 10:20	EFF GRAB	Pesticides	Pyridaben	0.42 U	ng/L	0.42	2.1
3/28/2022 10:20	EFF GRAB	Pesticides	Dimethomorph	0.48 I	ng/L	0.16	0.99
3/28/2022 10:20	EFF GRAB	Pesticides	Sucralose	34	µg/L	0.10	0.40
3/28/2022 10:20	EFF GRAB	Pesticides	Ibuprofen	0.020 U	µg/L	0.020	0.080
3/28/2022 10:20	EFF GRAB	Pesticides	Ametryn	0.56 U	ng/L	0.56	2.3
3/28/2022 10:20	EFF GRAB	Pesticides	Carbophenothion	0.19 U	ng/L	0.19	0.75
3/28/2022 10:20	EFF GRAB	Pesticides	Carfentrazone Ethyl	0.094 U	ng/L	0.094	0.38
3/28/2022 10:20	EFF GRAB	Pesticides	Diazinon	0.12 U	ng/L	0.12	0.47
3/28/2022 10:20	EFF GRAB	Pesticides	Dimethenamid	0.094 U	ng/L	0.094	0.38
3/28/2022 10:20	EFF GRAB	Pesticides	Dithiopyr	0.61 I	ng/L	0.16	0.66
3/28/2022 10:20	EFF GRAB	Pesticides	Ethion	0.14 U	ng/L	0.14	0.56
3/28/2022 10:20	EFF GRAB	Pesticides	Fipronil Sulfone	5.1	ng/L	0.14	0.56
3/28/2022 10:20	EFF GRAB	Pesticides	Parathion Ethyl	0.24 U	ng/L	0.24	0.94
3/28/2022 10:20	EFF GRAB	Pesticides	Pendimethalin	0.94 U	ng/L	0.94	3.8
3/28/2022 10:20	EFF GRAB	Pesticides	Naproxen	0.0080 U	µg/L	0.0080	0.032

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
3/28/2022 10:20	EFF GRAB	Pesticides	Chlorpyrifos Ethyl	6.6	ng/L	0.24	0.94
3/28/2022 10:20	EFF GRAB	Pesticides	Fludioxonil	1.7	ng/L	0.12	0.47
3/28/2022 10:20	EFF GRAB	Pesticides	Molinate	0.28 U	ng/L	0.28	1.1
3/28/2022 10:20	EFF GRAB	Pesticides	Phorate	0.49 U	ng/L	0.49	2.0
3/28/2022 10:20	EFF GRAB	Pesticides	Terbufos	0.094 U	ng/L	0.094	0.38
3/28/2022 10:20	EFF GRAB	Pesticides	Triadimefon	0.24 U	ng/L	0.24	0.94
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Acenaphthene	0.026 U	µg/L	0.026	0.10
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Acenaphthylene	0.026 U	µg/L	0.026	0.10
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Benzo(a)anthracene	0.026 U	µg/L	0.026	0.10
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Chrysene	0.026 U	µg/L	0.026	0.10
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Fluorene	0.026 U	µg/L	0.026	0.10
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Hexachlorobutadiene	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Pentachlorophenol	0.51 UJ	µg/L	0.51	2.0
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	2-Chloronaphthalene	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	2,6-Dinitrotoluene	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.026 U	µg/L	0.026	0.10
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	5.1 U	µg/L	5.1	20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Hexachloroethane	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.026 U	µg/L	0.026	0.10
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Naphthalene	0.10 U	µg/L	0.10	0.41
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Phenanthrene	0.10 U	µg/L	0.10	0.41
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	2-Chlorophenol	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	2,4-Dinitrophenol	10 UJ	µg/L	10	41
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Di-n-butyl phthalate	2.0 U	µg/L	2.0	8.2
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Hexachlorocyclopentadiene	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	1,4-Dioxane	0.54	µg/L	0.040	0.16
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	2-Nitrophenol	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	3,3'-Dichlorobenzidine	10 U	µg/L	10	41
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Di-n-octyl phthalate	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Hexachlorobenzene	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Pyrene	0.10 U	µg/L	0.10	0.41

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.20 I	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Anthracene	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Benzidine	10 U	µg/L	10	41
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Dimethyl phthalate	0.20 U	µg/L	0.20	0.82
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Fluoranthene	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Nitrobenzene	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1 U	µg/L	3.1	12
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	2,4-Dichlorophenol	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	4-Nitrophenol	10 U	µg/L	10	41
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Benzo(b)fluoranthene	0.026 U	µg/L	0.026	0.10
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Butyl benzyl phthalate	1.0 U	µg/L	1.0	4.1
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	N-Nitrosodimethylamine	2.0 U	µg/L	2.0	8.2
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Phenol	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	2,4-Dimethylphenol	0.051 UJ	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Benzo(a)pyrene	0.026 U	µg/L	0.026	0.10
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	2,4-Dinitrotoluene	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Benzo(k)fluoranthene	0.026 U	µg/L	0.026	0.10
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.026 U	µg/L	0.026	0.10
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Diethyl phthalate	2.0 U	µg/L	2.0	8.2
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	Isophorone	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	0.051 U	µg/L	0.051	0.20
3/28/2022 10:20	EFF GRAB	Nutrients	Specific Conductance	1056	umhos/cm		
3/28/2022 10:20	EFF GRAB	Nutrients	pH	7.00			
3/28/2022 10:20	EFF GRAB	Nutrients	Dissolved Oxygen %Sat	50	%Sat		
3/28/2022 10:20	EFF GRAB	Nutrients	Temperature	25.1	C		
3/30/2022 10:00	EFF COMP	Overflow	Carbonaceous Biochemical Oxygen Demand	7.8	mg/L	6.0	6.0
3/30/2022 10:00	EFF COMP	Metals	Sodium	120	mg/L	0.50	2.0
3/30/2022 10:00	EFF COMP	Metals	Selenium	0.25 I	µg/L	0.20	0.80
3/30/2022 10:00	EFF COMP	Metals	Silver	0.010 U	µg/L	0.010	0.040
3/30/2022 10:00	EFF COMP	Metals	Nickel	6.2	µg/L	0.50	2.0

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
3/30/2022 10:00	EFF COMP	Metals	Aluminum	32	µg/L	5.0	20
3/30/2022 10:00	EFF COMP	Metals	Arsenic	1.56	µg/L	0.050	0.20
3/30/2022 10:00	EFF COMP	Metals	Magnesium	22.2	mg/L	0.040	0.16
3/30/2022 10:00	EFF COMP	Metals	Potassium	14.4	mg/L	0.30	1.2
3/30/2022 10:00	EFF COMP	Metals	Chromium	0.83 I	µg/L	0.40	1.6
3/30/2022 10:00	EFF COMP	Metals	Copper	1.05	µg/L	0.40	0.80
3/30/2022 10:00	EFF COMP	Metals	Iron	130	µg/L	30	120
3/30/2022 10:00	EFF COMP	Metals	Zinc	8.4 I	µg/L	5.0	20
3/30/2022 10:00	EFF COMP	Metals	Lead	0.20 U	µg/L	0.20	0.40
3/30/2022 10:00	EFF COMP	Metals	Cadmium	0.020 U	µg/L	0.020	0.080
3/30/2022 10:00	EFF COMP	Metals	Calcium	70.5	mg/L	0.075	0.30
3/30/2022 10:00	EFF COMP	Nutrients	Kjeldahl Nitrogen	2.9	mg N/L	0.080	0.20
3/30/2022 10:00	EFF COMP	Nutrients	Total-P	2.1	mg P/L	0.050	0.50
3/30/2022 10:00	EFF COMP	Nutrients	Ammonia-N	1.3	mg N/L	0.20	0.50
3/30/2022 10:00	EFF COMP	Nutrients	NO2NO3-N	2.8	mg N/L	0.040	0.10
3/30/2022 10:00	EFF COMP	Nutrients	TSS	4 I	mg/L	2.0	10
3/30/2022 10:00	EFF COMP	Nutrients	Organic Carbon	20	mg C/L	0.50	1.0
3/30/2022 10:00	EFF COMP	Pesticides	Aldrin	0.71 U	ng/L	0.71	3.6
3/28/2022 10:00	EFF COMP	Toxicology	Bioassay-Chron-Def-SW-Mysid, IC25	51.6	IC25		
3/28/2022 10:00	EFF COMP	Toxicology	Bioassay-Chron-Def-SW-Fish, NOEC	100	NOEC		
3/28/2022 10:00	EFF COMP	Toxicology	Bioassay-Chron-Def-SW-Fish, IC25	100 L	IC25		
3/28/2022 10:00	EFF COMP	Toxicology	Bioassay-Chron-Def-SW-Mysid, NOEC	25	NOEC		
3/28/2022 9:58	FIELD BLANK	Nutrients	Kjeldahl Nitrogen	0.080 U	mg N/L	0.080	0.20
3/28/2022 9:58	FIELD BLANK	Nutrients	Total-P	0.002 U	mg P/L	0.0020	0.0050
3/28/2022 9:58	FIELD BLANK	Nutrients	Turbidity	0.10 U	NTU	0.10	1.0
3/28/2022 9:58	FIELD BLANK	Nutrients	Sulfate	0.20 U	mg SO4/L	0.20	0.50
3/28/2022 9:58	FIELD BLANK	Nutrients	O-Phosphate-P	0.004 U	mg P/L	0.0040	0.010
3/28/2022 9:58	FIELD BLANK	Nutrients	NO2NO3-N	0.004 U	mg N/L	0.0040	0.010
3/28/2022 9:58	FIELD BLANK	Nutrients	Ammonia-N	0.002 U	mg N/L	0.0020	0.0050
3/28/2022 9:58	FIELD BLANK	Nutrients	Organic Carbon	0.50 U	mg C/L	0.50	1.0
3/28/2022 9:58	FIELD BLANK	Nutrients	Chloride	0.20 U	mg Cl/L	0.20	0.50
3/28/2022 9:58	FIELD BLANK	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.10
3/28/2022 9:58	FIELD BLANK	Nutrients	Total Alkalinity	0.65 U	mg CaCO3/L	0.65	2.5
3/28/2022 9:58	FIELD BLANK	Nutrients	Color (true)	2.5 U	PCU	2.5	6.0

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
3/28/2022 9:58	FIELD BLANK	Overflow	Mercury	0.20 U	ng/L	0.20	0.50
3/28/2022 9:58	FIELD BLANK	Overflow	Cyanide	0.0035 U	mg/L	0.0035	0.0050
3/28/2022 9:58	FIELD BLANK	Pesticides	Fenamiphos	0.48 U	ng/L	0.48	1.9
3/28/2022 9:58	FIELD BLANK	Pesticides	Sulfentrazone	0.48 U	ng/L	0.48	1.9
3/28/2022 9:58	FIELD BLANK	Pesticides	Tebuconazole	0.48 U	ng/L	0.48	1.9
3/28/2022 9:58	FIELD BLANK	Pesticides	Etridiazole	0.14 U	ng/L	0.14	0.57
3/28/2022 9:58	FIELD BLANK	Pesticides	Loratadine	0.095 U	ng/L	0.095	0.38
3/28/2022 9:58	FIELD BLANK	Pesticides	Azoxystrobin	0.48 U	ng/L	0.48	1.9
3/28/2022 9:58	FIELD BLANK	Pesticides	Difenoconazole	0.57 U	ng/L	0.57	2.3
3/28/2022 9:58	FIELD BLANK	Pesticides	Dithiopyr	0.17 U	ng/L	0.17	0.67
3/28/2022 9:58	FIELD BLANK	Pesticides	Fipronil	0.24 U	ng/L	0.24	0.95
3/28/2022 9:58	FIELD BLANK	Pesticides	Fluazifop-P-butyl	0.095 U	ng/L	0.095	0.38
3/28/2022 9:58	FIELD BLANK	Pesticides	Flumioxazin	1.7 U	ng/L	1.7	6.7
3/28/2022 9:58	FIELD BLANK	Pesticides	Metolachlor	0.33 U	ng/L	0.33	1.3
3/28/2022 9:58	FIELD BLANK	Pesticides	Metribuzin	2.4 U	ng/L	2.4	9.5
3/28/2022 9:58	FIELD BLANK	Pesticides	Molinate	0.29 U	ng/L	0.29	1.1
3/28/2022 9:58	FIELD BLANK	Pesticides	Oxyfluorfen	0.14 U	ng/L	0.14	0.57
3/28/2022 9:58	FIELD BLANK	Pesticides	Prometon	0.86 U	ng/L	0.86	3.4
3/28/2022 9:58	FIELD BLANK	Pesticides	Prometryn	0.19 U	ng/L	0.19	0.76
3/28/2022 9:58	FIELD BLANK	Pesticides	Pyraflufen Ethyl	0.24 UJ	ng/L	0.24	0.95
3/28/2022 9:58	FIELD BLANK	Pesticides	Triadimefon	0.24 U	ng/L	0.24	0.95
3/28/2022 9:58	FIELD BLANK	Pesticides	Carbophenothion	0.19 U	ng/L	0.19	0.76
3/28/2022 9:58	FIELD BLANK	Pesticides	Ethion	0.14 U	ng/L	0.14	0.57
3/28/2022 9:58	FIELD BLANK	Pesticides	Fenbuconazole	0.12 U	ng/L	0.12	0.48
3/28/2022 9:58	FIELD BLANK	Pesticides	Fludioxonil	0.12 U	ng/L	0.12	0.48
3/28/2022 9:58	FIELD BLANK	Pesticides	Phorate	0.50 U	ng/L	0.50	2.0
3/28/2022 9:58	FIELD BLANK	Pesticides	Pyriproxyfen	0.12 U	ng/L	0.12	0.48
3/28/2022 9:58	FIELD BLANK	Pesticides	Thiobencarb	0.57 U	ng/L	0.57	2.3
3/28/2022 9:58	FIELD BLANK	Pesticides	Caffeine	7.0 UQ	ng/L	7.0	28
3/28/2022 9:58	FIELD BLANK	Pesticides	Chlorpyrifos Methyl	0.048 U	ng/L	0.048	0.19
3/28/2022 9:58	FIELD BLANK	Pesticides	Cyanazine	3.1 U	ng/L	3.1	12
3/28/2022 9:58	FIELD BLANK	Pesticides	Disulfoton	0.48 U	ng/L	0.48	1.9
3/28/2022 9:58	FIELD BLANK	Pesticides	Fipronil Sulfone	0.14 U	ng/L	0.14	0.57
3/28/2022 9:58	FIELD BLANK	Pesticides	Hexazinone	0.48 U	ng/L	0.48	1.9

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
3/28/2022 9:58	FIELD BLANK	Pesticides	Iprodione	0.57 U	ng/L	0.57	2.3
3/28/2022 9:58	FIELD BLANK	Pesticides	Malathion	0.33 U	ng/L	0.33	1.3
3/28/2022 9:58	FIELD BLANK	Pesticides	Myclobutanil	0.24 U	ng/L	0.24	0.95
3/28/2022 9:58	FIELD BLANK	Pesticides	Napropamide	0.38 U	ng/L	0.38	1.5
3/28/2022 9:58	FIELD BLANK	Pesticides	Ametryn	0.57 U	ng/L	0.57	2.3
3/28/2022 9:58	FIELD BLANK	Pesticides	Atrazine	0.24 U	ng/L	0.24	0.95
3/28/2022 9:58	FIELD BLANK	Pesticides	Azinphos Methyl	1.9 U	ng/L	1.9	7.6
3/28/2022 9:58	FIELD BLANK	Pesticides	Chlorpyrifos Ethyl	0.24 U	ng/L	0.24	0.95
3/28/2022 9:58	FIELD BLANK	Pesticides	Diazinon	0.12 U	ng/L	0.12	0.48
3/28/2022 9:58	FIELD BLANK	Pesticides	EPTC	1.2 U	ng/L	1.2	4.8
3/28/2022 9:58	FIELD BLANK	Pesticides	Imazalil	0.72 U	ng/L	0.72	2.9
3/28/2022 9:58	FIELD BLANK	Pesticides	Oxadiazon	0.29 U	ng/L	0.29	1.1
3/28/2022 9:58	FIELD BLANK	Pesticides	Prodiamine	0.17 U	ng/L	0.17	0.67
3/28/2022 9:58	FIELD BLANK	Pesticides	Propiconazole	0.51 I	ng/L	0.48	1.9
3/28/2022 9:58	FIELD BLANK	Pesticides	Coumaphos	0.48 U	ng/L	0.48	1.9
3/28/2022 9:58	FIELD BLANK	Pesticides	Cyprodinil	0.095 U	ng/L	0.095	0.48
3/28/2022 9:58	FIELD BLANK	Pesticides	Dimethomorph	0.17 U	ng/L	0.17	1.0
3/28/2022 9:58	FIELD BLANK	Pesticides	Propargite	1.4 U	ng/L	1.4	5.7
3/28/2022 9:58	FIELD BLANK	Pesticides	Acetochlor	0.24 U	ng/L	0.24	0.95
3/28/2022 9:58	FIELD BLANK	Pesticides	Bromacil	0.48 U	ng/L	0.48	1.9
3/28/2022 9:58	FIELD BLANK	Pesticides	Butylate	0.38 U	ng/L	0.38	1.5
3/28/2022 9:58	FIELD BLANK	Pesticides	Carfentrazone Ethyl	0.095 U	ng/L	0.095	0.38
3/28/2022 9:58	FIELD BLANK	Pesticides	Simazine	0.48 U	ng/L	0.48	1.9
3/28/2022 9:58	FIELD BLANK	Pesticides	Propanil	0.12 U	ng/L	0.12	0.48
3/28/2022 9:58	FIELD BLANK	Pesticides	Stirophos	0.12 U	ng/L	0.12	0.48
3/28/2022 9:58	FIELD BLANK	Pesticides	Demeton	1.4 U	ng/L	1.4	5.7
3/28/2022 9:58	FIELD BLANK	Pesticides	Ethoprop	0.095 U	ng/L	0.095	0.38
3/28/2022 9:58	FIELD BLANK	Pesticides	Fipronil Sulfide	0.14 U	ng/L	0.14	0.57
3/28/2022 9:58	FIELD BLANK	Pesticides	Flutolanil	0.095 U	ng/L	0.095	0.38
3/28/2022 9:58	FIELD BLANK	Pesticides	Fluxapyroxad	0.095 U	ng/L	0.095	0.38
3/28/2022 9:58	FIELD BLANK	Pesticides	Metalaxyl	0.72 U	ng/L	0.72	2.9
3/28/2022 9:58	FIELD BLANK	Pesticides	Mevinphos	1.0 U	ng/L	1.0	4.0
3/28/2022 9:58	FIELD BLANK	Pesticides	Naled	1.4 U	ng/L	1.4	5.7
3/28/2022 9:58	FIELD BLANK	Pesticides	Terbufos	0.095 U	ng/L	0.095	0.38

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
3/28/2022 9:58	FIELD BLANK	Pesticides	Chlorfenapyr	0.17 U	ng/L	0.17	0.67
3/28/2022 9:58	FIELD BLANK	Pesticides	Ibuprofen	0.020 U	µg/L	0.020	0.080
3/28/2022 9:58	FIELD BLANK	Pesticides	Alachlor	0.24 U	ng/L	0.24	0.95
3/28/2022 9:58	FIELD BLANK	Pesticides	Dimethenamid	0.095 U	ng/L	0.095	0.38
3/28/2022 9:58	FIELD BLANK	Pesticides	Fipronil Desulfinyl	0.12 U	ng/L	0.12	0.48
3/28/2022 9:58	FIELD BLANK	Pesticides	Fonofos	0.19 U	ng/L	0.19	0.76
3/28/2022 9:58	FIELD BLANK	Pesticides	Norflurazon	0.48 U	ng/L	0.48	1.9
3/28/2022 9:58	FIELD BLANK	Pesticides	Parathion Ethyl	0.24 U	ng/L	0.24	0.95
3/28/2022 9:58	FIELD BLANK	Pesticides	Parathion Methyl	0.52 U	ng/L	0.52	2.1
3/28/2022 9:58	FIELD BLANK	Pesticides	Pendimethalin	0.95 U	ng/L	0.95	3.8
3/28/2022 9:58	FIELD BLANK	Pesticides	Pronamide	0.14 U	ng/L	0.14	0.57
3/28/2022 9:58	FIELD BLANK	Pesticides	Terbuthylazine	0.41 U	ng/L	0.41	1.6
3/28/2022 9:58	FIELD BLANK	Pesticides	Phenytoin	3.3 U	ng/L	3.3	13
3/28/2022 9:58	FIELD BLANK	Pesticides	Pyridaben	0.43 U	ng/L	0.43	2.1
3/28/2022 9:58	FIELD BLANK	Pesticides	Sucralose	0.010 U	µg/L	0.010	0.040
3/28/2022 9:58	FIELD BLANK	Pesticides	Naproxen	0.0080 U	µg/L	0.0080	0.032
3/28/2022 9:58	FIELD BLANK	Pesticides	Atrazine Desethyl	1.4 U	ng/L	1.4	5.7
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	1,4-Dioxane	0.040 U	µg/L	0.040	0.16
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	2-Chloronaphthalene	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Di-n-butyl phthalate	2.1 U	µg/L	2.1	8.3
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Di-n-octyl phthalate	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1 U	µg/L	2.1	8.3
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Butyl benzyl phthalate	1.0 U	µg/L	1.0	4.2
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Fluorene	0.026 U	µg/L	0.026	0.10
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.026 U	µg/L	0.026	0.10
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	2-Nitrophenol	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	2,4-Dinitrophenol	10 U	µg/L	10	42
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Hexachlorobenzene	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	2,4-Dimethylphenol	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	2,6-Dinitrotoluene	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	4-Nitrophenol	10 U	µg/L	10	42

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Benzo(a)anthracene	0.026 U	µg/L	0.026	0.10
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Benzo(a)pyrene	0.026 U	µg/L	0.026	0.10
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	5.2 U	µg/L	5.2	21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.026 U	µg/L	0.026	0.10
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Hexachloroethane	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Phenanthrene	0.10 U	µg/L	0.10	0.42
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Phenol	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	2-Chlorophenol	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	2,4-Dichlorophenol	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Acenaphthylene	0.026 U	µg/L	0.026	0.10
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Benzo(k)fluoranthene	0.026 U	µg/L	0.026	0.10
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Hexachlorocyclopentadiene	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Isophorone	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Naphthalene	0.10 U	µg/L	0.10	0.42
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Acenaphthene	0.026 U	µg/L	0.026	0.10
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Anthracene	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Benzidine	10 U	µg/L	10	42
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Benzo(b)fluoranthene	0.026 U	µg/L	0.026	0.10
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.026 U	µg/L	0.026	0.10
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Diethyl phthalate	2.1 U	µg/L	2.1	8.3
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1 U	µg/L	3.1	12
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Chrysene	0.026 U	µg/L	0.026	0.10
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Pentachlorophenol	0.52 U	µg/L	0.52	2.1
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Pyrene	0.10 U	µg/L	0.10	0.42
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	2,4-Dinitrotoluene	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	3,3'-Dichlorobenzidine	10 U	µg/L	10	42
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Dimethyl phthalate	0.21 U	µg/L	0.21	0.83
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Fluoranthene	0.052 U	µg/L	0.052	0.21

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Hexachlorobutadiene	0.052 U	µg/L	0.052	0.21
3/28/2022 9:58	FIELD BLANK	Priority Organic Pollutants	Nitrobenzene	0.052 U	µg/L	0.052	0.21
3/24/2022 9:30	EQUIP BLANK	Metals	Arsenic	0.050 U	µg/L	0.050	0.20
3/24/2022 9:30	EQUIP BLANK	Metals	Magnesium	0.086 I	mg/L	0.040	0.16
3/24/2022 9:30	EQUIP BLANK	Metals	Selenium	0.20 U	µg/L	0.20	0.80
3/24/2022 9:30	EQUIP BLANK	Metals	Copper	1.07	µg/L	0.40	0.80
3/24/2022 9:30	EQUIP BLANK	Metals	Sodium	0.50 U	mg/L	0.50	2.0
3/24/2022 9:30	EQUIP BLANK	Metals	Iron	30 U	µg/L	30	120
3/24/2022 9:30	EQUIP BLANK	Metals	Calcium	0.20 I	mg/L	0.075	0.30
3/24/2022 9:30	EQUIP BLANK	Metals	Cadmium	0.020 U	µg/L	0.020	0.080
3/24/2022 9:30	EQUIP BLANK	Metals	Chromium	0.40 U	µg/L	0.40	1.6
3/24/2022 9:30	EQUIP BLANK	Metals	Lead	0.20 U	µg/L	0.20	0.40
3/24/2022 9:30	EQUIP BLANK	Metals	Nickel	0.50 U	µg/L	0.50	2.0
3/24/2022 9:30	EQUIP BLANK	Metals	Aluminum	5.0 U	µg/L	5.0	20
3/24/2022 9:30	EQUIP BLANK	Metals	Silver	0.010 U	µg/L	0.010	0.040
3/24/2022 9:30	EQUIP BLANK	Metals	Potassium	0.30 U	mg/L	0.30	1.2
3/24/2022 9:30	EQUIP BLANK	Metals	Zinc	5.0 U	µg/L	5.0	20
3/24/2022 9:30	EQUIP BLANK	Nutrients	Organic Carbon	0.85 I	mg C/L	0.50	1.0
3/24/2022 9:30	EQUIP BLANK	Nutrients	NO2NO3-N	0.004 U	mg N/L	0.0040	0.010
3/24/2022 9:30	EQUIP BLANK	Nutrients	Ammonia-N	0.003 I	mg N/L	0.0020	0.0050
3/24/2022 9:30	EQUIP BLANK	Nutrients	Kjeldahl Nitrogen	0.080 U	mg N/L	0.080	0.20
3/24/2022 9:30	EQUIP BLANK	Nutrients	Total-P	0.009	mg P/L	0.0020	0.0050
3/24/2022 9:30	EQUIP BLANK	Pesticides	Aldrin	0.66 U	ng/L	0.66	3.3