MUNICIPAL FACILITY FACT SHEET

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT TO DISCHARGE TREATED WASTEWATER
TO WATERS OF THE UNITED STATES**

Permit No.: MS0043494 Last Updated: April 12, 2023

1. Facility Information

A. Name and Address of Permittee: Mississippi Band of Choctaw Indians
Post Office Box 6366
Choctaw, Mississippi 39350

B. Facility Address: Standing Pine Wastewater Treatment Facility
BIA Road 2521, Standing Pine Community
Walnut Grove, Mississippi 39189

C. Type of Facility: Municipal Wastewater Treatment Plant
Publicly-Owned Treatment Works (POTW)
Standard Industrial Classification Code: 4952

D. Location and Description of the discharge (as reported by applicant):

Outfall	Latitude	Longitude	Receiving Waterbody	Watershed
001	32°39'22.5" N	89°26'58.5" W	Pottock Creek	Upper Pearl Basin HUC 03180001

E. Permitted Capacity: 0.05 MGD

F. Description of Wastewater Treatment Facility:

Outfall	Operation Description	Treatment Description
1	Sanitary Wastewater	Treatment consists of physical treatment with influent screening, followed by biological treatment with aeration and clarification. Sludge is to pass through an aerobic digester and a belt press before disposal. Before discharge, the effluent passes through a chlorine contact chamber and dechlorination and post-treatment aeration chamber. Population served is approximately 554.

G. Type of Wastewater Discharge:

☐ Process Wastewater ☐ Stormwater
☒ Domestic Wastewater ☐ Combined (describe)

☐ Other (describe)

H. Characterization of Effluent

Outfall No. 001 (As reported on application)

Effluent Characteristic	**Minimum Daily Value**	**Average Daily Value**	**Maximum Daily Value**
Flow, MGD	---	0.05	0.05
Carbonaceous Biochemical Oxygen Demand, 5-day ($CBOD_5$), mg/L	---	5.8	8.5
Total Suspended Solids, mg/L	---	16.5	34.00
Fecal Coliform Bacteria, #/100mL	---	263.0	2420.0
pH, S.U.	7.3	---	8.1

Outfall No. 001 (Summary of DMR data from reports 01/31/2018-11/30/2022; See Appendix 2)

Effluent Characteristic	**Minimum Daily Minimum**	**Average Monthly Average**	**Maximum Daily /Maximum Weekly Average**
Flow (MGD)	---	0.03	0.07[2]
Carbonaceous Biochemical Oxygen Demand, 5-day ($CBOD_5$), mg/L	---	5.8	23[2]
$CBOD_5$ Percent Removal, %	---	96.46	---
Total Suspended Solids (TSS), mg/L	---	20.05	79.00[2]
TSS Percent Removal, %	4.80	80.56	---
E. Coli, #/100mL	---	573.98	594.01[1]
pH	6.7	---	8.5[1]
Total Ammonia as Nitrogen, Summer, mg/L	---	0.20	.64[2]
Total Ammonia as Nitrogen, Winter, mg/L	---	0.42	5.72[2]
Total Residual Chlorine (TRC), mg/L	---	0.38[a]	2.2[1]
Dissolved Oxygen (DO), mg/L	5.10	8.95	---

[a] Average of the reported Daily Maximum Values
[1] Daily Maximum Average
[2] Daily Weekly Average

2. Water Quality Standards & Receiving Waterbody Information

A. Receiving Waterbody Classification and Information – The Mississippi Band of Choctaw has not promulgated their own Water Quality Standards, therefore there are no Water Quality Standards applicable to the Tribal waters at this time. The discharge into Pottock Creek is within the Tribal land, enters Mississippi just downstream, re-enters Tribal land, then finally enters Mississippi before the confluence with the Pearl River. The EPA used Mississippi Water Quality Standards (part 6, chapter 2, Rule 2.4) to determine reasonable potential at the State/Tribal Boundary and for state waters. Pottock Creek has a designated use of Fish and Wildlife in the State of Mississippi. This permit is protective of designated uses of state waters in the State of Mississippi.

B. Critical flows were estimated using data from the Pearl River near Lena, MS gage #02483500.

Pottock Creek: 7Q10 = 0 cfs

C. 303(d) Status – Pottock Creek has not been assessed for water quality by the Mississippi Band of Choctaw, nor does it appear on the State of Mississippi 2020 303(d) List.

D. Total Maximum Daily Loads – TMDLs exist in The Pearl River for mercury, nutrients (total nitrogen and total phosphorous), pesticides, pH, and sediment. Standing Pine Wastewater Treatment Facility (WWTF) is not expected to contain mercury or pesticides in its effluent nor is it expected to cause or contribute to the pH or sediment impairments. MDEQ approved the *TMDL for Total Nitrogen and Total Phosphorus For the Pearl River* in 2009. Discharges from Tribal lands, including from the Standing Pine WWTF, were not included in the TMDL as a source of total nitrogen or total phosphorus, and due to the small size of the facility, we presume that Standing Pine WWTF is a de minimus source of nutrients at the state line.

3. Effluent Limits and Permit Conditions

A. Proposed Effluent Limitations

PARAMETERS	DISCHARGE LIMITATIONS			MONITORING REQUIREMENTS		
	MONTHLY AVG	WEEKLY AVG	DAILY MAXIMUM	SAMPLING LOCATION	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow, MGD	Report	Report	---	Effluent	2/month	Instantaneous
Dissolved Oxygen (DO), mg/l	DO shall not be less than 6.0 mg/l			Effluent	1/month	Grab
Carbonaceous Biochemical Oxygen Demand 5-Day ($CBOD_5$), mg/l	15.0	22.5	---	Effluent	1/month	Grab
Carbonaceous Biochemical Oxygen Demand 5-Day ($CBOD_5$) Percent Removal, %	85%[a]			Influent/Effluent	1/month	Calculated
Total Suspended Solids (TSS), mg/l	Report 30.0	--- 45.0	--- ---	Influent Effluent	1/month	Grab
Total Suspended Solids (TSS) Percent Removal, %	85%[a]			Influent/Effluent	1/month	Calculated
pH, standard units (SU)	6.0 - 9.0			Effluent	1/month	Instantaneous
E. coli, #/100 mL	126	---	410	Effluent	1/month	Grab
Total Residual Chlorine (TRC), mg/l	---	---	0.011	Effluent	1/month	Grab
Total Nitrogen, (TN), mg/l	Report	Report	---	Effluent	Quarterly	Grab
Total Phosphorus, (TP), mg/l	Report	Report	---	Effluent	Quarterly	Grab
Additional Limits during the Summer (May 1st through October 31st)						
Total Ammonia as Nitrogen, mg/l	2.0	3.0	---	Effluent	1/month	Grab
Additional Limits during the Winter (November1st through April 30th)						
Total Ammonia as Nitrogen, mg/l	3.0	4.5	---	Effluent	1/month	Grab

[a] Each month, the average effluent $CBOD_5$ and TSS concentrations shall not exceed 15% of the average of their respective influent concentration values (85% removal). The percent removal shall be reported on the Discharge Monitoring Report (DMR) form (EPA No. 3320-1)

B. Reasonable Potential (RP)

Reasonable Potential was performed using facility DMR data from January 31, 2018 thru November 30, 2022.

C. Total Nitrogen and Total Phosphorus

This permit requires monitoring year round for the nutrient-related parameters of Total Phosphorus (TP) and Total Nitrogen (NO_2 + NO_3-N + TKN). Monitoring for these nutrient-related parameters is required so that sufficient information will be available regarding the nutrient contribution from this point source, should it be necessary at some later time to develop nutrient limits for this discharge.

D. Basis for Conventional Pollutants Limits

Pollutant of Concern	**Basis**
pH, SU	The effluent limitation range for pH was based on minimum level of effluent quality requirements of 40 CFR § 133.102 for discharges of wastewater from POTWs.
5-Day Carbonaceous Biochemical Oxygen Demand ($CBOD_5$), mg/l	The monthly average and weekly average effluent limitations for $CBOD_5$ are protective of instream DO based on WASP model results. (See Appendix 1). The percent removal limitation for $CBOD_5$ is based on the minimum level of effluent quality requirements of 40 CFR § 133.102 for discharge of waters from POTWs.
Total Suspended Solids (TSS), mg/l	The effluent limitations for TSS are based on minimum level of effluent quality requirements of 40 CFR § 133.102 for discharges of wastewater from POTWs.
E. coli, #/100 ml	Monitoring requirements are consistent with the previous NPDES permit and the anti-backsliding provisions of 40 CFR § 122.44(l).
Dissolved Oxygen (DO), mg/l	The effluent limitation for dissolved oxygen is protective of instream DO based on WASP model results. (See Appendix 1)

E. Basis for Nonconventional Pollutants Limits

Pollutant of Concern	**Basis**
Ammonia, mg/l	The effluent limitations for ammonia are protective of instream DO based on WASP model results. (See Appendix 1) The limits are protective of Mississippi's NH_3 toxicity-based Water Quality Standard (EPA 1999 Update of Ambient Water Quality Criteria for Ammonia)
Total Nitrogen, mg/l	Monitoring for Total Nitrogen is being required so that sufficient information will be available from this point source should it be necessary at some later time to impose limits on this discharge.
Total Phosphorus, mg/l	Monitoring for Total Phosphorus is being required so that sufficient information will be available from this point source should it be necessary at some later time to impose limits on this discharge.

F. Calculations for Water Quality-Based Effluent Limits (WQBELs)

i. Instream Waste Concentration (IWC)

$$IWC\ (\%) = \frac{\text{Design Flow (gpd)}}{\text{Design Flow (gpd)+7Q10(gpd)}} x\ 100\%$$

$$IWC\ (\%) = \frac{50{,}000\ \text{gpd}}{50{,}000\ \text{gpd} + 0\ \text{gpd}}\ x\ 100\%$$

$IWC\ (\%) = 100\%$ in the Pottock Creek

ii. Dissolved Oxygen (DO)

The Tribal Band of Choctaw has not promulgated water quality standards. The State of Mississippi has promulgated a DO standard that states that DO concentrations shall be maintained at a minimum daily average of at least 5.0 mg/L and an instantaneous minimum of at least 4.0 mg/L. A WASP model was developed to analyze the effect of the facility's effluent on the receiving waterbody and determine $CBOD_5$, ammonia, and DO limits that are protective of these criteria. A minimum DO limit of 6.0 mg/L in the effluent was determined to be protective. See Appendix 1 for a detailed description of the WASP model.

Permit Limit: DO shall not be less than 6.0 mg/L

iii. Carbonaceous Biochemical Oxygen Demand (5-day) ($CBOD_5$)

A monthly average $CBOD_5$ WQBEL of 15.0 mg/L was developed using the WASP model to be protective of instream DO. See Appendix 1 for more information about the WASP model.

Monthly average $CBOD_5$ limit = 15.0 mg/L

A weekly average $CBOD_5$ limit was developed using the following equation:

Weekly average $CBOD_5$ limit = Monthly average $CBOD_5$ limit x 1.5

Weekly average $CBOD_5$ limit = 15.0 mg/L x 1.5

Weekly average $CBOD_5$ limit = 22.5 mg/L

iv. Ammonia

a. Ammonia Toxicity Analysis

The Tribal Band of Choctaw has not promulgated water quality standards. The State of Mississippi has adopted the *1999 Update of Ambient Water Quality Criteria for Ammonia; EPA document number EPA-822-R-99-014* for ammonia toxicity. Toxicity-based ammonia limits have been developed for this permit so that these criteria will be met at the State/Tribal boundary and in state waters.

Criterion Maximum Concentration (CMC) - Salmonid Fish Present

$$CMC = \frac{0.0577}{1+10^{(7.204 - pH)}} + \frac{39.0}{1+10^{(pH - 7.204)}}$$

CMC = Instream criterion maximum concentration for total ammonia

pH = 7 SU

Instream CMC = 24.10 mg/L

$$C_E = \frac{[CMC \times (Design\ Flow + 7Q10)] - (7Q10 \times C_B)}{Design\ Flow}$$

Where:

C_B = Upstream ammonia concentration = 0 mg/L

C_E = Allowable ammonia effluent concentration, mg/L

C_E = 24.10 mg/L

Criterion Continuous Concentration (CCC) – Early Life Stages Present

$$CCC = \left(\frac{0.0577}{1+10^{(7.688 - \mathrm{pH})}} + \frac{2.487}{1+10^{(\mathrm{pH} - 7.688)}}\right) \times MIN(2.85, 1.45 \times 10^{[0.028 \times (25 - T)]})$$

CCC = Instream criterion continuous concentration for total ammonia

$$C_E = \frac{[CCC \times (Design\ Flow + 7Q10)] - (7Q10 \times C_B)}{Design\ Flow}$$

Where:

C_B = Upstream ammonia concentration = 0 mg/L

C_E = Allowable ammonia effluent concentration, mg/L

Summer (May 1st – Oct 31st)

pH = 7 SU, T = 30 ºC

CCC (Summer) = 2.18 mg/L

C_E (Summer) = 2.18 mg/L

Winter (Nov 1st – Apr 30th)

pH = 7 SU, T = 20 ºC

CCC (Winter) = 4.15 mg/L

C_E (Winter) = 4.15 mg/L

The seasonal limits based on the Instream CCC criteria are more stringent than the limit based on the Instream CMC criteria. Therefore, the limits of 2.18 mg/L (Summer) and 4.15 mg/L (Winter) will be used to compare against the DO-based ammonia WQBELs developed in the WASP model as discussed in Section iv.b.

b. DO-Based Ammonia Limits

Monthly average ammonia WQBELs of 2.0 mg/L (Summer) and 3.0 (Winter) were developed using the WASP model to be protective of instream DO. (See Appendix 1 for more information about the WASP model.) These WQBELs are more stringent than those developed to be protective of toxicity (2.18 mg/L Summer, 4.15 mg/L Winter). Therefore, the DO-based ammonia WQBELs will be used to protect against toxicity while protecting instream DO.

Monthly average total ammonia limit (Summer) = 2.0 mg/L

Monthly average total ammonia limit (Winter) = 3.0 mg/L

Weekly average total ammonia limits were developed using the following equation:

Weekly average total ammonia limit = Monthly average total ammonia limit x 1.5

Weekly average total ammonia limit (Summer) = 2.0 mg/L x 1.5

Weekly average total ammonia limit (Summer) = 3.0 mg/L

Weekly average total ammonia limit (Winter) = 3.0 mg/L x 1.5

Weekly average total ammonia limit (Winter) = 4.5 mg/L

v. Total Residual Chlorine (TRC)

The Tribal Band of Choctaw has not promulgated WQS. The State of Mississippi has promulgated Fresh Water chlorine chronic criteria of 0.011 mg/L and acute criteria of 0.019 mg/L. A total residual chlorine limit has been developed for this permit so that these criteria will be met at the State/Tribal boundary and in state waters.

$$C_D = \frac{(Q_R \times C_R) + (Q_E \times C_E)}{Q_D}$$

Q_R = Critical streamflow = 7Q10 = 0 cfs
C_R = Upstream concentration = 0 mg/L
Q_E = Effluent design flow = 0.05 MGD
C_E = Effluent concentration
Q_D = Combined downstream flow = $Q_D + Q_E$ = 0.05 MGD
C_D = Downstream concentration = 0.011 mg/L

$$0.011\ mg/L = \frac{(0\ cfs \times 0\ mg/L) + (0.05\ MGD \times C_E)}{0.05\ MGD}$$

$$C_E = 0.011\ mg/L$$

Daily Maximum Limit = 0.011 mg/L

G. Applicable Technology-Based Effluent Limits (TBELs)

Technology-based effluent limitations aim to prevent pollution by requiring a minimum level of effluent quality that is attainable using demonstrated technologies for reducing discharges of pollutants or pollution into the waters of the United States.

i. Secondary Treatment Standards

Parameter	**Secondary Treatment Standard**
BOD_5 ($CBOD_5$)	30 mg/L (25 mg/L) Monthly Average 45 mg/L (37.5 mg/L) Weekly Average
TSS	30 mg/L Monthly Average 45 mg/L Weekly Average
Removal	85% BOD_5 (or $CBOD_5$) and TSS
pH	Maintained within the limits of 6.0-9.0 standard units

H. Comparison & Summary of Water Quality-Based vs. Technology-Based Effluent Limits

Parameter	Previous Permit Limit			Proposed Permit					Explanation
				WQBELs			TBELs		
	Monthly Average	Weekly Average	Daily Max	Monthly Average	Weekly Average	Daily Max	Monthly Average	Weekly Average	
$CBOD_5$	15 mg/L	22.5 mg/L	---	15 mg/L	22.5 mg/L	---	25 mg/L	37.5 mg/L	WQBELs are more stringent than the TBELs
$CBOD_5$ % Removal	---		---	---	---	---	85%		TBEL is protective of WQS
TSS	30 mg/L	45 mg/L	---	---	---	---	30 mg/L	45 mg/L	TBELs are protective of WQS
TSS % Removal	85%		---	---	---	---	85%		TBEL is protective of WQS
Total Ammonia as Nitrogen (Summer)	2.0 mg/L	3.0 mg/L	---	2.0 mg/L	3.0 mg/L	---	---	---	WQBELs are protective of WQS. There are no TBELs.
Total Ammonia as Nitrogen (Winter)	3.0 mg/L	4.5 mg/L	---	3.0 mg/L	4.5 mg/L	---	---	---	WQBELs are protective of WQS. There are no TBELs.
E. coli	126 #/100 mL	---	410 #/100 mL	126 #/100 mL	---	410 #/100 mL	---	---	WQBELs are end of pipe criteria.
Dissolved Oxygen	>6.0 mg/L			> 6.0 mg/L			---		WQBEL is protective of WQS. There are no TBELs.
pH	6.0 – 9.0			---			6.0 – 9.0		TBELs are protective of WQS.
TRC	0.011 mg/L		---	0.011 mg/L		---	---		WQBEL is protective of WQS. There are no TBELs.
TN	Report		---	Report		---	---		Provides data for use at a later date
TP	Report		---	Report		---	---		Provides data for use at a later date

4. 401 Certification

The Clean Water Act (CWA) §401 statute and regulations stipulate that no federal permit or license can be issued that may result in a discharge to waters of the United States unless the state or authorized tribe certifies that the discharge is consistent with water quality standards and other water quality goals, or waives its certification authority. Section 401(a)(1) states, "In any case where a State or interstate agency has no authority to give such a certification, such

certification shall be from the Administrator [EPA]. As a result, EPA typically acts as the certifying authority on tribal lands when the tribe lacks certification authority.
EPA Regional offices are directed to certify on behalf of tribes without CWA §401 program authority.

The CWA §401 regulations direct certifying agencies to conclude that the permitted activity will be consistent with effluent limitations for conventional and non-conventional pollutants, water quality standards, new source performance standards, and toxic pollutant limitations, and any other appropriate state and/or tribal requirements. A second component of the scope of the CWA §401 review is determining whether an activity requiring certification in one state or tribe (i.e., in the location where the discharge originates) may potentially impact the water quality of a neighboring state or tribe. In those instances, the EPA is directed to notify the state or tribe whose water quality may be affected and other review processes may be triggered. A preliminary copy of the draft has been provided to the state during the public notice period and no water quality concerns were raised by the state.

The Tribal Band of Choctaw has not promulgated water quality standards, and discharges from the Standing Pine WWTF will occur just upstream of the Mississippi state boundary. The subject permit was developed to be consistent with the State of Mississippi's Water Quality Standards (part 6, chapter 2, Rule 2.4). It is protective of designated uses of state waters and with the other applicable provisions of the CWA (i.e., §§ 301, 302, 303, 306, and 307).

The EPA certifies that the subject NPDES permit is protective of the State of Mississippi's Water Quality Standards, and that discharges associated with operation of the Standing Pine WWTF will not violate any applicable provisions of the CWA.

5. Services Consultation

In accordance with 40 CFR § 122.49(c) the EPA is required to ensure, in consultation with the U.S. Fish and Wildlife Service (Service), that "any action authorized EPA is not likely to jeopardize the continued existence of any endangered or threatened species or adversely affect its critical habitat". In a letter dated March 16, 2018, the Service concurred with the EPA determination that the proposed project "May affect, but [is] not likely to adversely affect" federally listed species or critical habitat.

6. National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA), and implementing regulations 36 CFR Part 800 require the EPA, before issuing a license (permit), to identify the area of potential effect of a permitted discharge and, if historic or cultural resources within that area would be adversely affected by the discharge, to adopt measures when feasible to mitigate potential adverse effects of the licensed activity and properties listed or eligible for listing in the National Register of Historic Places. The MBCI are responsible for administering the NHPA within tribal boundaries. The NHPA consultation for this facility is pending.

7. Public Participation

In accordance with 40 CFR § 124.10(d)(1) the Public Notice was listed on EPA's website from April 12, 2023, and open until May 12, 2023.

Appendix 1

Model Selection:
EPA's Advanced Eutro WASP (Water Quality Analysis Simulation Program) Model (version 8.1) was parameterized to evaluate fate and transport of oxygen demanding substances from the discharger into downstream receiving waters.

Key Model Assumptions:
The one-dimensional longitudinally-segmented model was run in a steady-state mode with the following assumptions:

- Primary drivers for dissolved oxygen concentration in receiving streams are reaeration, CBOD and NBOD demand, SOD demand, and boundary conditions.
- Receiving stream was modeled at critical 7Q10 drought flows. (0.00 cfs for Pottock Creek)
- Simulated effluent at full design flow (0.05 MGD) and effluent monthly average limits for CBOD (45 mg/l $CBOD_u$ assuming a $CBOD_5/CBOD_u$ ratio of 0.33 and $CBOD_5$ of 15 mg/l) and NH_3 (2 mg/l summer, 3 mg/L winter), and a minimum effluent DO limit of 6.0 mg/L.
- Assumed constant receiving stream background water temperature of 30 °C for summer and 20 °C for winter.
- Model segmentation was developed using the WASP preprocessor in EPA BASINS software based on USGS NHD dataset. Modeling files are available upon request.

Table A1. Boundary Conditions

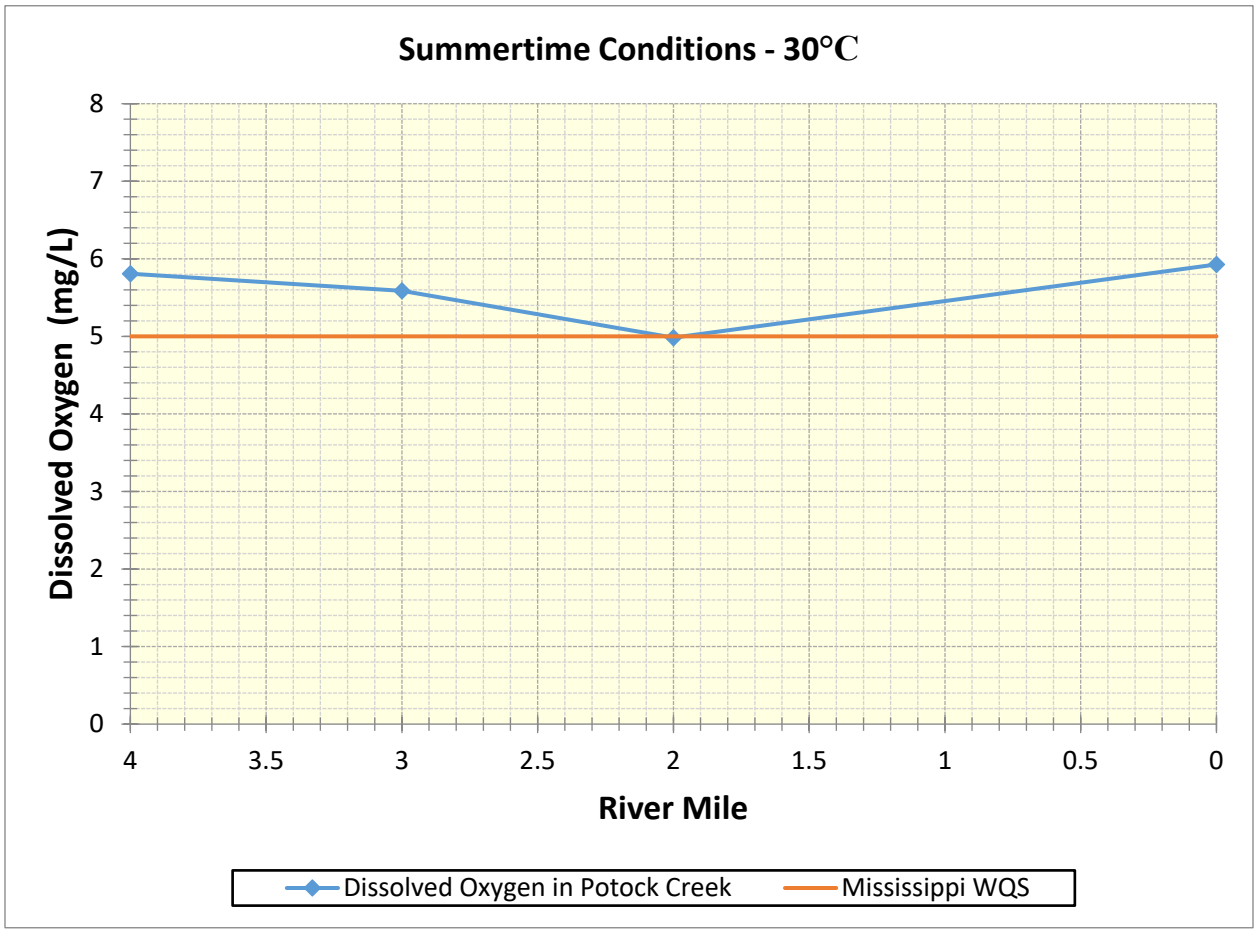
	Flow	**$CBOD_u$ mg/L**	**NH3-N mg/L**	**DO mg/L**
Pottock Creek (Effluent)				
Summer – 30 °C	0.05 MGD	45	2.0	6
Winter – 20 °C	0.05 MGD	45	3.0	6

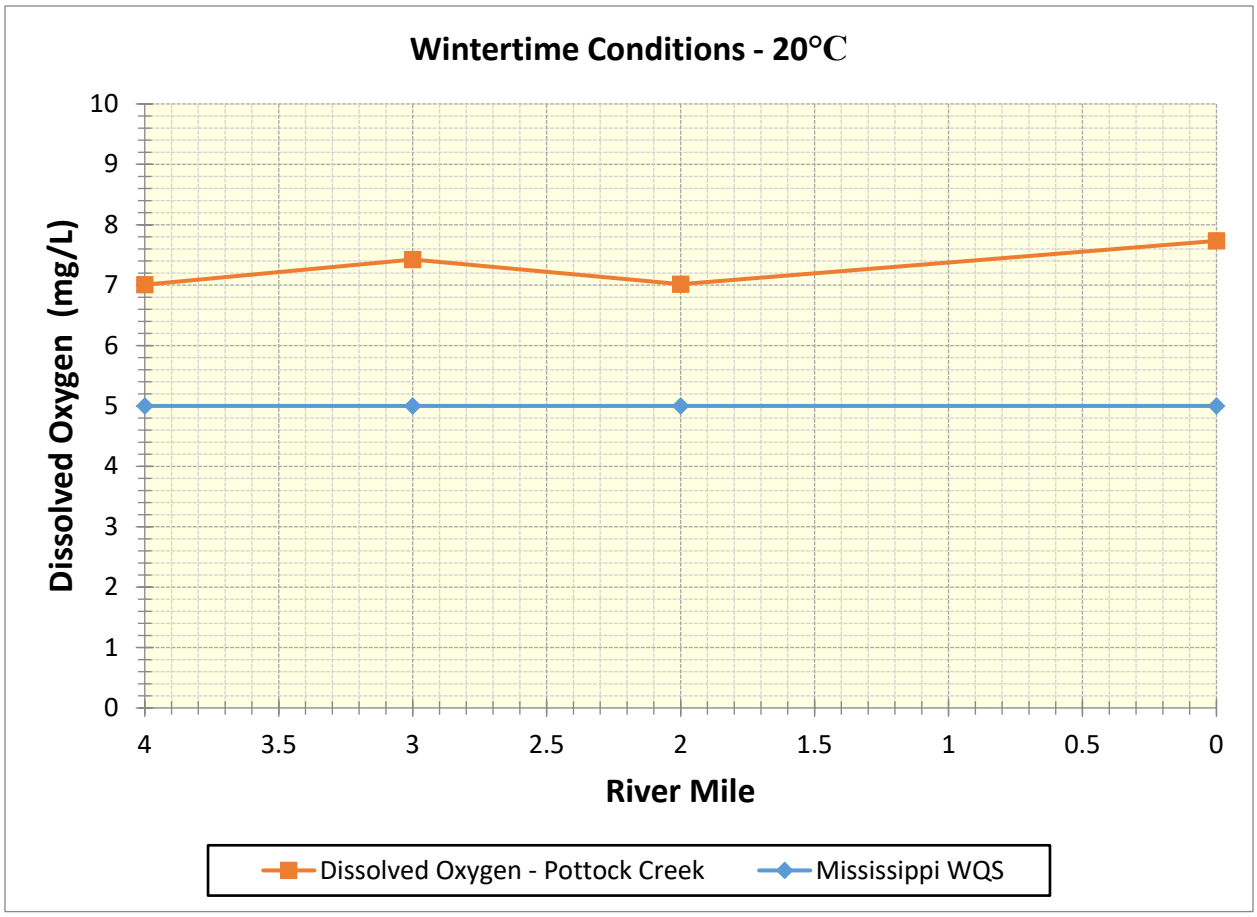
Table A2. Parameters and Constants

CBOD Decay Rate Constant @ 20°C	0.05	1/day
CBOD Half Saturation Oxygen Limit	0.1	mg O_2/L
CBOD Decay Rate Temperature Correction Coefficient	1.047	
$CBOD_5/CBOD_u$ ratio		
Effluent	0.33	
Nitrification Rate Constant @ 20°C	0.5	1/day
Nitrification Half Saturation Constant for Nitrification Oxygen Limit	1e-6	mg O_2/L
Nitrification Temperature Coefficient	1.07	
Sediment Oxygen Demand		
Theta -- SOD Temperature Correction	1.05	
Dissolved Oxygen Reaeration	O'Conner	
Theta -- Reaeration Temperature Correction	1.024	

Longitudinal Plots of Unnamed Tributary and Standing Pine Creek:

The following are longitudinal plots showing simulated dissolved oxygen (DO) concentrations within the segments of Pottock Creek from the point of effluent discharge to its confluence with the Pearl River. Model scenarios included discharge of the effluent at full design flow (0.0022 cms) at critical 7Q10 flows and summertime (30 ºC) and wintertime (20ºC) conditions. (Note: In these plots, streamflow is left to right where River Mile 0 is downstream Pearl River). In both scenarios, the DO sag occurs in Mississippi state waters in Pottock Creek and does not pass below the Mississippi WQS that states that DO concentrations shall be maintained at a minimum daily average of at least 5.0 mg/L and an instantaneous minimum of at least 4.0 mg/L.




Wintertime Conditions - 20°C
Dissolved Oxygen (mg/L)
10
9
8
7
6
5
4
3
2
1
0
4
3.5
3
2.5
2
1.5
1
0.5
0
River Mile
Dissolved Oxygen - Pottock Creek
Mississippi WQS

Appendix 2 – Summary of DMR Data

Effluent Flow

Monitoring Period End Date	**Weekly Average, MGD**
01/31/2018	.067
02/28/2018	.037
03/31/2018	.03
04/30/2018	**
05/31/2018	.03
06/30/2018	.06
07/31/2018	.03
08/31/2018	.03
09/30/2018	.03
10/31/2018	.04
11/30/2018	.02
12/31/2018	.03
01/31/2019	0.04
02/28/2019	0.03
03/31/2019	**
04/30/2019	**
05/31/2019	**
06/30/2019	**
07/31/2019	**
08/31/2019	**
09/30/2019	**
10/31/2019	0.02
11/30/2019	0.03
12/31/2019	0.03
01/31/2020	0.02
02/29/2020	0.03
03/31/2020	0.03
04/30/2020	0.02
05/31/2020	0.02
06/30/2020	0.05
07/31/2020	0.04
08/31/2020	0.03
09/30/2020	0.05
10/31/2020	0.03
11/30/2020	0.02
12/31/2020	0.03
01/31/2021	0.04
02/28/2021	0.03
03/31/2021	0.04
04/30/2021	**
05/31/2021	0.03
06/30/2021	0.05
07/31/2021	0.04
08/31/2021	0.03
09/30/2021	0.03
10/31/2021	0.03
11/30/2021	0.02
12/31/2021	0.02
01/31/2022	0.03
02/28/2022	0.04
03/31/2022	0.02
04/30/2022	0.04
05/31/2022	0.03
06/30/2022	0.02
07/31/2022	0.03
08/31/2022	0.07
09/30/2022	0.02
10/31/2022	0.03
11/30/2022	0.02

Data Points, n	50
Average	0.03
Maximum	0.07

** Data Unavailable

$CBOD_5$

Monitoring Period End Date	Monthly Average, mg/L	Weekly Average, mg/L
01/31/2018	10.00	10.00
02/28/2018	15.00	15.00
03/31/2018	4.00	4.00
04/30/2018	4.00	4.00
05/31/2018	2.00	2.00
06/30/2018	3.00	3.00
07/31/2018	4.00	4.00
08/31/2018	4.00	4.00
09/30/2018	7.00	7.00
10/31/2018	3.00	3.00
11/30/2018	2.00	2.00
12/31/2018	4.00	4.00
01/31/2019	23.00	23.00
02/28/2019	6.00	6.00
03/31/2019	7.00	7.00
04/30/2019	8.00	8.00
05/31/2019	3.00	3.00
06/30/2019	4.00	4.00
07/31/2019	6.00	6.00
08/31/2019	8.60	8.60
09/30/2019	3.20	3.20
10/31/2019	4.30	4.30
11/30/2019	5.20	5.20
12/31/2019	2.20	2.20
01/31/2020	7.60	7.60
02/29/2020	6.50	6.50
03/31/2020	4.20	4.20
04/30/2020	4.30	4.30
05/31/2020	7.40	7.40
06/30/2020	4.60	4.60
07/31/2020	6.90	6.90
08/31/2020	3.40	3.40
09/30/2020	4.70	4.70
10/31/2020	4.30	4.30
11/30/2020	10.00	7.80
12/31/2020	15.00	5.40
01/31/2021	4.00	4.90
02/28/2021	4.00	5.90
03/31/2021	2.00	6.10
04/30/2021	3.00	2.90
05/31/2021	4.00	5.80
06/30/2021	4.00	6.70
07/31/2021	7.00	2.80
08/31/2021	3.00	6.30
09/30/2021	2.00	5.20
10/31/2021	4.00	7.00
11/30/2021	23.00	5.30
12/31/2021	6.00	7.10
01/31/2022	7.00	4.80
02/28/2022	8.00	8.50
03/31/2022	3.00	7.00
04/30/2022	4.00	5.60
05/31/2022	6.00	4.00
06/30/2022	8.60	2.60
07/31/2022	3.20	2.30
08/31/2022	4.30	2.00
09/30/2022	5.20	4.70
10/31/2022	2.20	4.00
11/30/2022	7.60	4.70

Data Points, n	59	59
Average	5.8	5.5
Maximum	23.00	23.00

** Data Unavailable

TSS

Monitoring Period End Date	Weekly Average, mg/L	Montly Average, mg/L	TSS Removal, %
01/31/2018	24.00	24.00	76.00
02/28/2018	47.00	47.00	57.30
03/31/2018	15.00	15.00	81.50
04/30/2018	11.00	11.00	91.10
05/31/2018	14.00	14.00	91.50
06/30/2018	11.00	11.00	80.70
07/31/2018	**	**	**
08/31/2018	7.00	7.00	92.90
09/30/2018	52.00	52.00	57.40
10/31/2018	31.00	31.00	87.00
11/30/2018	10.00	10.00	81.10
12/31/2018	12.00	12.00	87.10
01/31/2019	79.00	79.00	4.80
02/28/2019	39.00	39.00	43.50
03/31/2019	37.00	37.00	58.40
04/30/2019	27.00	27.00	70.30
05/31/2019	21.00	21.00	72.00
06/30/2019	19.00	19.00	79.30
07/31/2019	6.00	6.00	92.70
08/31/2019	5.00	5.00	97.20
09/30/2019	4.00	4.00	96.00
10/31/2019	12.00	12.00	91.40
11/30/2019	21.00	21.00	82.50
12/31/2019	4.00	4.00	96.00
01/31/2020	47.00	47.00	60.80
02/29/2020	12.00	12.00	80.00
03/31/2020	26.00	26.00	60.00
04/30/2020	17.00	17.00	73.80
05/31/2020	10.00	10.00	87.50
06/30/2020	4.00	4.00	98.70
07/31/2020	13.00	13.00	91.90
08/31/2020	12.00	12.00	95.10
09/30/2020	12.00	12.00	94.50
10/31/2020	8.00	8.00	95.30
11/30/2020	2.00	2.00	97.10
12/31/2020	20.00	20.00	77.80
01/31/2021	12.00	12.00	97.00
02/28/2021	9.00	9.00	91.40
03/31/2021	14.00	14.00	86.70
04/30/2021	13.00	13.00	94.20
05/31/2021	25.00	19.00	86.70
06/30/2021	23.00	23.00	75.80
07/31/2021	5.00	5.00	95.20
08/31/2021	8.00	8.00	91.60
09/30/2021	19.00	19.00	89.70
10/31/2021	7.00	7.00	87.30
11/30/2021	16.00	16.00	84.00
12/31/2021	22.00	22.00	83.70
01/31/2022	25.00	25.00	66.70
02/28/2022	34.00	34.00	81.10
03/31/2022	8.00	8.00	87.70
04/30/2022	22.00	22.00	93.90
05/31/2022	19.00	19.00	88.10
06/30/2022	7.00	7.00	96.70
07/31/2022	73.00	73.00	-32.70
08/31/2022	9.00	9.00	87.50
09/30/2022	21.00	21.00	72.40
10/31/2022	9.00	9.00	96.60
11/30/2022	78.00	78.00	91.50
Data Point, n	58	58	58
Average	20.15	20.05	80.56
Max	79.00	79.00	98.7

** Data Unavailable

Total Ammonia as N

Monitoring Period End Date, Summer	**Weekly Average, mg/L**	**Monthly Average, mg/L**	**Monitoring Period End Date, Winter**	**Weekly Average, mg/L**	**Monthly Average, mg/L**
05/31/2018	0.06	0.06	01/31/2018	0.60	0.60
06/30/2018	0.08	0.08	02/28/2018	0.26	0.26
07/31/2018	0.13	0.13	03/31/2018	0.05	0.05
08/31/2018	0.09	0.09	04/30/2018	0.13	0.13
09/30/2018	0.05	0.05	11/30/2018	1.07	1.07
10/31/2018	0.24	0.24	12/31/2018	0.08	0.08
05/31/2019	0.05	0.05	01/31/2019	0.35	0.35
06/30/2019	0.28	0.28	02/28/2019	0.78	0.78
07/31/2019	0.03	0.03	03/31/2019	0.71	0.71
08/31/2019	0.64	0.64	04/30/2019	0.17	0.17
09/30/2019	0.60	0.60	11/30/2019	0.07	0.07
10/31/2019	0.05	0.05	12/31/2019	0.05	0.05
05/31/2020	0.05	0.05	01/31/2020	5.72	5.72
06/30/2020	0.56	0.56	02/29/2020	0.40	0.40
07/31/2020	0.41	0.41	03/31/2020	0.21	0.21
08/31/2020	0.07	0.07	04/30/2020	0.09	0.09
09/30/2020	0.06	0.06	11/30/2020	0.12	0.12
10/31/2020	0.02	0.02	12/31/2020	0.07	0.07
05/31/2021	0.20	0.19	01/31/2021	0.02	0.02
06/30/2021	0.15	0.15	02/28/2021	0.06	0.06
07/31/2021	0.02	0.02	03/31/2021	0.03	0.03
08/31/2021	0.06	0.06	04/30/2021	0.20	0.20
09/30/2021	0.03	0.03	11/30/2021	0.10	0.10
10/31/2021	0.11	0.11	12/31/2021	0.07	0.07
05/31/2022	0.20	0.20	01/31/2022	0.00	0.00
06/30/2022	0.50	0.50	02/28/2022	0.10	0.10
07/31/2022	0.10	0.10	03/31/2022	0.00	0.00
08/31/2022	0.00	0.00	04/30/2022	0.20	0.20
09/30/2022	0.60	0.60	11/30/2022	0.70	0.70
10/31/2022	0.60	0.60	** Data Unavailable		

Data Points, n	30	30	Data Points, n	29	29
Average	0.20	0.20	Average	0.42	0.42
Maximum	0.64	0.64	Maximum	5.72	5.72

Total Residual Chlorine (TRC)

Total Residual Chlorine	**Daily Max, mg/L**
01/31/2018	**
02/28/2018	**
03/31/2018	**
04/30/2018	0.12
05/31/2018	1.23
06/30/2018	**
07/31/2018	**
08/31/2018	0.01
09/30/2018	**
10/31/2018	0.01
11/30/2018	**
12/31/2018	**
01/31/2019	**
02/28/2019	**
03/31/2019	0.00
04/30/2019	**
05/31/2019	**
06/30/2019	**
07/31/2019	**
08/31/2019	**
09/30/2019	**
10/31/2019	0.13
11/30/2019	0.38
12/31/2019	**
01/31/2020	0.34
02/29/2020	**
03/31/2020	0.19
04/30/2020	0.14
05/31/2020	**
06/30/2020	**
07/31/2020	**
08/31/2020	**
09/30/2020	**
10/31/2020	0.22
11/30/2020	**
12/31/2020	**
01/31/2021	**
02/28/2021	**
03/31/2021	**
04/30/2021	**
05/31/2021	**
06/30/2021	**
07/31/2021	**
08/31/2021	**
09/30/2021	**
10/31/2021	**
11/30/2021	**
12/31/2021	**
01/31/2022	2.20
02/28/2022	0.15
03/31/2022	**
04/30/2022	**
05/31/2022	**
06/30/2022	**
07/31/2022	**
08/31/2022	**
09/30/2022	**
10/31/2022	**
11/30/2022	0.23

Data Point, n	14
Average	0.382
Maximum	2.2

**Data Unavailable

pH

Monitoring Period End Date	Daily Max, SU	Daily Min, SU
01/31/2018	8.50	8.50
02/28/2018	7.20	7.20
03/31/2018	7.90	7.90
04/30/2018	6.90	6.90
05/31/2018	8.10	8.10
06/30/2018	7.10	7.10
07/31/2018	7.40	7.40
08/31/2018	6.70	6.70
09/30/2018	7.80	7.80
10/31/2018	7.70	7.70
11/30/2018	7.60	7.60
12/31/2018	7.60	7.60
01/31/2019	7.30	7.30
02/28/2019	6.90	6.90
03/31/2019	6.80	6.80
04/30/2019	6.90	6.90
05/31/2019	7.50	7.50
06/30/2019	7.80	7.80
07/31/2019	7.80	7.80
08/31/2019	7.30	7.30
09/30/2019	7.50	7.50
10/31/2019	7.10	7.10
11/30/2019	6.90	6.90
12/31/2019	7.90	7.90
01/31/2020	8.20	8.20
02/29/2020	8.00	8.00
03/31/2020	7.60	7.60
04/30/2020	7.90	7.90
05/31/2020	7.90	7.90
06/30/2020	7.80	7.80
07/31/2020	8.20	8.20
08/31/2020	7.90	7.90
09/30/2020	8.10	8.10
10/31/2020	7.60	7.60
11/30/2020	7.50	7.50
12/31/2020	7.80	7.80
01/31/2021	7.40	7.40
02/28/2021	7.90	7.90
03/31/2021	7.30	7.30
04/30/2021	7.10	7.10
05/31/2021	7.20	7.10
06/30/2021	8.00	8.00
07/31/2021	7.50	7.50
08/31/2021	8.00	8.00
09/30/2021	8.10	8.10
10/31/2021	7.90	7.90
11/30/2021	7.70	7.70
12/31/2021	7.80	7.80
01/31/2022	7.70	7.70
02/28/2022	7.30	7.30
03/31/2022	7.50	7.50
04/30/2022	7.90	7.90
05/31/2022	7.60	7.60
06/30/2022	8.10	8.10
07/31/2022	8.40	8.40
08/31/2022	8.30	8.30
09/30/2022	8.30	8.30
10/31/2022	8.40	8.40
11/30/2022	7.30	7.30

Data Points, n	59	59
Average	7.65	7.64
Min/Max	6.7	8.5

**Data Unavailable

Dissolved Oxygen (DO)

Monitoring Period End Date	**Daily Minimum, mg/L**
01/31/2018	10.00
02/28/2018	8.78
03/31/2018	10.10
04/30/2018	8.80
05/31/2018	8.60
06/30/2018	8.10
07/31/2018	7.60
08/31/2018	7.20
09/30/2018	7.20
10/31/2018	7.40
11/30/2018	7.90
12/31/2018	10.50
01/31/2019	10.80
02/28/2019	5.10
03/31/2019	5.90
04/30/2019	8.90
05/31/2019	8.30
06/30/2019	8.00
07/31/2019	7.90
08/31/2019	8.50
09/30/2019	8.00
10/31/2019	9.00
11/30/2019	10.80
12/31/2019	10.40
01/31/2020	12.00
02/29/2020	10.70
03/31/2020	8.50
04/30/2020	10.10
05/31/2020	9.50
06/30/2020	8.40
07/31/2020	7.90
08/31/2020	7.90
09/30/2020	9.10
10/31/2020	9.60
11/30/2020	8.90
12/31/2020	10.70
01/31/2021	11.00
02/28/2021	10.20
03/31/2021	9.80
04/30/2021	9.50
05/31/2021	8.30
06/30/2021	8.80
07/31/2021	8.50
08/31/2021	8.00
09/30/2021	8.40
10/31/2021	8.70
11/30/2021	10.40
12/31/2021	10.10
01/31/2022	11.30
02/28/2022	9.60
03/31/2022	10.90
04/30/2022	9.40
05/31/2022	8.20
06/30/2022	7.60
07/31/2022	7.70
08/31/2022	7.90
09/30/2022	8.70
10/31/2022	8.90
11/30/2022	9.20

Data Points, n	59
Average	8.9522
Minimum	5.1

** Data Unavailable

E. Coli

Monitoring Period End Date	Monthly Average #/100mL	Daily Max #/100mL	Monitoring Period End Date	Monthly Average #/100mL	Daily Max #/100mL
06/30/2018	40.00	40.00	12/31/2020	24.00	24.00
07/31/2018	168.00	168.00	01/31/2021	27.00	27.00
08/31/2018	808.00	808.00	02/28/2021	8.00	8.00
09/30/2018	**	**	03/31/2021	4.00	4.00
10/31/2018	**	**	04/30/2021	1,733.00	1,733.00
11/30/2018	160.00	160.00	05/31/2021	955.00	1,733.00
12/31/2018	216.00	216.00	06/30/2021	13.00	13.00
01/31/2019	126.00	410.00	07/31/2021	204.00	204.00
02/28/2019	8,000.00	8,000.00	08/31/2021	11.00	11.00
03/31/2019	4.00	4.00	09/30/2021	291.00	291.00
04/30/2019	26.00	26.00	10/31/2021	12.00	12.00
05/31/2019	116.00	116.00	11/30/2021	162.00	162.00
06/30/2019	13.00	13.00	12/31/2021	172.00	172.00
07/31/2019	21.00	21.00	01/31/2022	6.00	6.00
08/31/2019	9.00	9.00	02/28/2022	25.00	25.00
09/30/2019	461.00	461.00	03/31/2022	43.00	43.00
10/31/2019	12.00	12.00	04/30/2022	36.00	36.00
11/30/2019	111.00	111.00	05/31/2022	2,420.00	2,420.00
12/31/2019	3.00	3.00	06/30/2022	30.00	30.00
01/31/2020	548.00	548.00	07/31/2022	2,420.00	2,420.00
02/29/2020	4.00	4.00	08/31/2022	1.00	1.00
03/31/2020	56.00	56.00	09/30/2022	345.00	345.00
04/30/2020	1.00	1.00	10/31/2022	48.00	48.00
05/31/2020	18.00	18.00	11/30/2022	2,420.00	2,420.00
06/30/2020	2.00	2.00	12/31/2022	8,000.00	8,000.00
07/31/2020	15.00	15.00			
08/31/2020	10.00	10.00			
09/30/2020	10.00	10.00			
10/31/2020	19.00	19.00			
11/30/2020	34.00	34.00			

Data Points, n	53	53
Average	573.98	594.01
Maximum	8000	8000

Total Nitrogen as N

Monitoring Period End Date	**Daily Max, mg/L**
03/31/2018	22.94
05/31/2018	22.94
09/30/2018	**
12/31/2018	**
03/31/2019	**
05/31/2019	**
09/30/2019	**
12/31/2019	**
03/31/2020	**
05/31/2020	**
09/30/2020	**
12/31/2020	**
03/31/2021	**
05/31/2021	**
09/30/2021	**
12/31/2021	**
03/31/2022	**
05/31/2022	**

Data Points, n	2
Average	22.94
Maximum	22.94

** Data Unavailable

Total Phosphorous as P

Monitoring Period End Date	**Daily Max, mg/L**
03/31/2018	3.56
05/31/2018	3.56
09/30/2018	**
12/31/2018	**
03/31/2019	**
05/31/2019	**
09/30/2019	**
12/31/2019	**
03/31/2020	**
05/31/2020	**
09/30/2020	**
12/31/2020	**
03/31/2021	**
05/31/2021	**
09/30/2021	**
12/31/2021	**
03/31/2022	**
05/31/2022	**

Data Points, n	2
Average	3.56
Maximum	3.56