pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0052663**
Facility Type	**Non-Municipal**	APS ID	**985565**
Major / Minor	**Minor**	Authorization ID	**1260062**

Applicant and Facility Information

Applicant Name	**Knights Bridge Corporation**	Facility Name	**Knights Bridge STP**
Applicant Address	112 Chesley Drive Suite 200	Facility Address	Brandywine Drive & Endo Boulevard
	Media, PA 19063-1762		Chads Ford, PA 19317
Applicant Contact	Brian Smith	Facility Contact	Brian Smith
Applicant Phone	(610) 627-3641	Facility Phone	(610) 627-3641
Client ID	62670	Site ID	573809
Ch 94 Load Status	Not Overloaded	Municipality	Chadds Ford Township
Connection Status	No Limitations	County	Delaware
Date Application Received	January 9, 2019	EPA Waived?	No
Date Application Accepted	February 4, 2019	If No, Reason	Christina River Basin TMDL

Purpose of Application: Permit Renewal.

Summary of Review

The PA Department of Environmental Protection (PADEP/Department) received an NPDES permit renewal application from Knight's Bridge Corporation (Permittee) for their Knight's Bridge STP (facility) on January 9, 2019. The facility is located in Chadds Ford Township, Delaware County. This is a minor sewer facility. The facility discharges into an UNT to Harvey Run, WWF/MF. The existing permit expired on July 31, 2019. The terms and conditions were automatically extended since the renewal application was received at least 180 days prior to the permit expiration date. Renewal NPDES permit applications under Clean Water program are not covered by PADEP's PDG per 021-2100-001.

This fact sheet is developed in accordance with 40 CFR §124.56

Changes in this renewal: TP limit is changed with a compliance schedule. TRC limit will be replaced by UV monitoring.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Approve	Deny	Signatures	Date
√		Reza H. Chowdhury, E.I.T. / Environmental Engineering Specialist	September 27, 2019
		Pravin C. Patel, P.E. / Environmental Engineer Manager	

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.09
Latitude	39º 52' 56.00"	Longitude	-75º 33' 10"
Quad Name	West Chester	Quad Code	1941
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Harvey Run (WWF, MF)	Stream Code	00035
NHD Com ID	26108372	RMI	0.7596
Drainage Area	0.0353	Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)	0.00464	Q_{7-10} Basis	StreamStats
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-H	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use	None	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	FLOW REGIME MODIFICATION, SILTATION		
Source(s) of Impairment	AGRICULTURE, URBAN RUNOFF/STORM SEWERS		
TMDL Status	Final, revised 07/07/2006	Name	Christina River Basin

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake	None prior to the DE border		
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: None

Other Comments:

Stream Flow: The ratio of stream flow to facility discharge is 0.00464 : (0.09 MGD*1.547 cfs/MGD) or 0.033:1 which is much lower than minimum of 3:1, therefore, the receiving stream is considered as dry/effluent dominant stream and the limitations stated in "*Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers" (DEP document ID: 391-2000-014)* will be applied, subject to other requirements, i.e. TMDL. A Point of First Use Survey (POFU) was conducted by the permit writer, aquatic biologist, and water quality specialist in January 14, 2019 at the receiving stream which indicated the stream to be intermittent at the discharge point and perennial at station 2 where two channels meet.

PWS Intake:
There is no nearby downstream PWS intake structure prior to the border of the state of Delaware. The distance to the PWS intake couldn't be determined.

303d Listed Streams:
The discharge from this facility is in UNT to Harvey Run in state watershed 3-H at RMI 0.7596 per eMapPa. The stream is attaining its designated use of fish consumption but not attaining aquatic life use due to siltation and water/flow variability from urban runoff/storm sewers and agriculture.

Christina River Basin TMDL:
There are Wasteload Allocation (WLA) for this facility in the Christina River Basin TMDL for Nutrients and Dissolved Oxygen for Low-Flow Conditions, issued by the Environmental Protection Agency (EPA) on January 19, 2001, and revised on October 2002, April 2006, and June 2012. In the TMDL document, Table 15 Summary for Brandywine Creek Main Stem listed approved WLAs for the following parameters:

Waste Load Allocations														
	Flow	$CBOD_5$	NH_3-N	TN	TP	DO	$CBOD_5$	NH_3-N	TN	TP	DO	TMDL % Reduction		
NPDES	MGD	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	Lb/day	Lb/day	Lb/day	Lb/day	Lb/day	$CBOD_5$	NH_3-N	TP
PA0052663	0.09	10.0	1.0	10.0	2.0	5.0	7.511	0.751	7.511	1.502	3.755	0.0%	0.0%	0.0%

The Christina River Basin High-Flow TMDL for Bacteria and Sediment was issued on September 2006. This discharge is listed on table 2-2. Fecal Coliform, *enterococci*, and TSS loads for NPDES facilities. Listed under Brandywine Creek Main Stem with TSS of 10 mg/l and 7.5 lbs./day, and Fecal Coliform of 200 CFU/100 ml. These limits will be carried over, subject to other requirements.

Class A Wild Trout Fisheries:
No Class A Wild Trout Fisheries are impacted by this discharge.

Treatment Facility Summary

Treatment Facility Name: Knights Bridge STP (existing treatment plant)

WQM Permit No.	Issuance Date
2318404	02/14/2019
2300407	02/29/2008
2307401	04/06/2007

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Total Nitrogen Reduction	Extended Aeration	Chlorine With Dechlorination	0.09

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.09		Not Overloaded		

The proposed treatment plant under WQM permit number 2318404 will have the following treatment process:

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Activated Sludge with Solids Removal	Ultraviolet	0.09

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.09	225	Not Overloaded	Holding Tank	Other WWTP

Changes Since Last Permit Issuance: The new treatment plant (Membrane Bioreactor, MBR) is scheduled to be constructed within 2020. A Preliminary Treatment Requirement (PTR) letter was issued to the permittee that listed the

pollutants to be monitored. A schedule will be provided in the permit to allow sufficient time to complete the construction and system startup.

Other Comments: None

Treatment Plant Description

Knight's Bridge Corporation (KBC/permittee) owns and operates a Wastewater Treatment Plant (WWTP) named Knights Bridge WWTP located in Chadds Ford Township, Delaware County, under the NPDES permit number PA0052663. The treated effluent is discharged into an UNT to Harvey Run in state watershed 3-H. The receiving stream is classified as WWF/MF. The plant receives sewage from a nearby shopping center and offices. Several restaurants are connected to the plant as well. The existing WWTP is rated to treat 0.09 MGD as average annual flow. The permit application indicated an average flow of 0.018 MGD, 0.017 MGD, and 0.023 MGD for the years 2016, 2017, and 2018 with highest monthly average flow of 0.025 MGD.

An inspection to the treatment plant listed the following treatment units currently present at the plant:

1. One EQ tank
2. Two anoxic tanks
3. Two aeration tanks
4. Four clarifiers
5. One sand filter/mud well
6. One chlorine contact tank
7. One sludge holding tank

The recently issued WQM permit approved the construction of a new treatment plant consisting the following units:

1. Coarse bar screen
2. Grease interceptor
3. Equalization tank and mechanical fine screens
4. Two treatment trains, each with anoxic tank #1, aerobic tank, anoxic tank #2, and a membrane tank.
5. UV disinfection
6. Sludge holding tank

Some of the existing precast modules/tanks will be refurbished and reused as new treatment units.

The following chemicals are used at the plant as wastewater treatment chemicals:

Chemical name	Purpose	Maximum use rate	Units
Aluminum Sulfate, 50% solution	Precipitation of Phosphorus	11	GPD
Sodium Hypochlorite, 12% solution	Disinfection	0.3	GPD
Aquafix	Larvicide/control of Red Worms	0.05	Lbs./day

Biosolids Management:
Sewage sludge and biosolids are transported from Knight's Bridge WWTP by a licensed hauler to the DELCORA STP which operates under NPDES permit number PA0027103 for further processing and treatment.

Compliance History

DMR Data for Outfall 001 (from August 1, 2018 to July 31, 2019)

Parameter	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18
Flow (MGD) Average Monthly	0.0275	0.037	0.0271	0.024	0.03	0.027	0.029	0.029	0.030	0.023	0.023	0.024
pH (S.U.) Instantaneous Minimum	6.5	6.6	6.8	6.99	7.0	7.0	7.1	7.1	7.2	7.2	6.9	7.1
pH (S.U.) IMAX	7.7	8.9	7.6	7.83	7.6	7.5	7.6	7.8	7.7	7.8	7.9	7.7
DO (mg/L) Instantaneous Minimum	6.2	5.1	7.8	7.1	7.8	8.8	6.8	5.5	7.5	7.5	7.2	6.8
TRC (mg/L) Average Monthly	0.47	0.40	0.35	0.24	0.17	0.30	0.4	0.4	0.3	0.4	0.40	0.4
CBOD5 (lbs/day) Average Monthly	< 0.5	< 0.6	< 1.4	< 0.8	2	< 0.6	5.3	3.2	< 1	< 0.4	< 0.3	< 0.7
CBOD5 (mg/L) Average Monthly	< 2	< 2	< 7	< 5	7	< 3	24	35	< 5	< 2	< 2	< 4
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	125	93	148	57	84	88	89	5	76	32	228	48
BOD5 (mg/L) Raw Sewage Influent Average Monthly	501	310	681	286	345	361	395	51	319	154	1340	237
TSS (lbs/day) Average Monthly	2.7	0.3	1.9	3.8	3.9	4.1	4.3	2.0	1.2	1.6	0.4	0.8
TSS (lbs/day) Raw Sewage Influent Average Monthly	25	42	49	64	54	43	61	2	36	17	12	40
TSS (mg/L) Average Monthly	11	1	8	21	17	17	19	21	6	7	3	4
TSS (mg/L) Raw Sewage Influent Average Monthly	100	140	227	314	224	182	270	20	155	81	76	195
Fecal Coliform (No./100 ml) Geometric Mean	463	8	< 5	7	2	< 2	> 20000	100	< 5	7	11	7
Fecal Coliform (No./100 ml) IAMX	580	8	13	11	2	20000	> 20000	100	11	24	41	11
Nitrate-Nitrite (lbs/day) Average Monthly	7.0	6.7	5.6	0.1	0.1	< 0.2	0.07	0.03	2.1	2.3	1.2	1.0
Nitrate-Nitrite (mg/L) Average Monthly	28	22.3	23	0.83	0.53	< 0.7	0.3	0.32	0.5	11	8.2	5.2

Total Nitrogen (lbs/day) Average Monthly	7.5	6.9	< 5.9	4.1	7.3	< 6.9	5.3	2.0	3.0	3.0	1.0	1.0
Total Nitrogen (mg/L) Average Monthly	30.0	23.1	< 23.9	21.4	30.4	< 30.0	23.4	17.7	15.2	12.3	9.3	6.3
Ammonia (lbs/day) Average Monthly	0.1	< 0.03	< 0.1	3.4	3.2	3.2	3.5	1.2	2.3	< 0.02	< 0.01	< 0.02
Ammonia (mg/L) Average Monthly	0.42	< 0.1	< 0.4	18.0	13.5	13.1	15.5	13.2	11.6	< 0.1	< 0.1	< 0.1
Total Phosphorus (lbs/day) Average Monthly	0.5	0.3	0.1	0.2	0.1	0.06	0.1	0.07	0.07	0.1	0.06	0.2
Total Phosphorus (mg/L) Average Monthly	2.2	1.0	0.6	1.2	0.43	0.25	0.54	0.7	0.32	0.3	0.4	0.9

Compliance History

Effluent Violations for Outfall 001, from: September 1, 2018 To: July 31, 2019

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
CBOD5	01/31/19	Avg Mo	24	mg/L	20	mg/L
CBOD5	01/31/19	Avg Mo	24	mg/L	20	mg/L
CBOD5	12/31/18	Avg Mo	35	mg/L	20	mg/L
TSS	07/31/19	Avg Mo	11	mg/L	10	mg/L
TSS	01/31/19	Avg Mo	19	mg/L	10	mg/L
TSS	02/28/19	Avg Mo	17	mg/L	10	mg/L
TSS	01/31/19	Avg Mo	19	mg/L	10	mg/L
TSS	04/30/19	Avg Mo	21	mg/L	10	mg/L
TSS	03/31/19	Avg Mo	17	mg/L	10	mg/L
TSS	12/31/18	Avg Mo	21	mg/L	10	mg/L
Fecal Coliform	01/31/19	Geo Mean	> 20000	No./100 ml	200	No./100 ml
Fecal Coliform	01/31/19	Geo Mean	> 20000	No./100 ml	200	No./100 ml
Fecal Coliform	07/31/19	Geo Mean	463	No./100 ml	200	No./100 ml

Fecal Coliform	01/31/19	IMAX	> 20000	No./100 ml	1000	No./100 ml
Fecal Coliform	01/31/19	IMAX	> 20000	No./100 ml	1000	No./100 ml
Fecal Coliform	02/28/19	IMAX	20000	No./100 ml	1000	No./100 ml
Nitrate-Nitrite	09/30/18	Avg Mo	10.6	lbs/day	7.5	lbs/day
Nitrate-Nitrite	10/31/18	Avg Mo	11	mg/L	10	mg/L
Nitrate-Nitrite	06/30/19	Avg Mo	22.3	mg/L	10	mg/L
Nitrate-Nitrite	05/31/19	Avg Mo	23	mg/L	10	mg/L
Nitrate-Nitrite	07/31/19	Avg Mo	28	mg/L	10	mg/L
Total Nitrogen	05/31/19	Avg Mo	< 23.9	mg/L	10.0	mg/L
Total Nitrogen	12/31/18	Avg Mo	17.7	mg/L	10.0	mg/L
Total Nitrogen	02/28/19	Avg Mo	< 30.0	mg/L	10.0	mg/L
Total Nitrogen	11/30/18	Avg Mo	15.2	mg/L	10.0	mg/L
Total Nitrogen	06/30/19	Avg Mo	23.1	mg/L	10.0	mg/L
Total Nitrogen	03/31/19	Avg Mo	30.4	mg/L	10.0	mg/L
Total Nitrogen	01/31/19	Avg Mo	23.4	mg/L	10.0	mg/L
Total Nitrogen	10/31/18	Avg Mo	12.3	mg/L	10.0	mg/L
Total Nitrogen	07/31/19	Avg Mo	30.0	mg/L	10.0	mg/L
Total Nitrogen	01/31/19	Avg Mo	23.4	mg/L	10.0	mg/L
Total Nitrogen	04/30/19	Avg Mo	21.4	mg/L	10.0	mg/L
Ammonia	01/31/19	Avg Mo	3.5	lbs/day	2.3	lbs/day
Ammonia	01/31/19	Avg Mo	3.5	lbs/day	2.3	lbs/day
Ammonia	04/30/19	Avg Mo	3.4	lbs/day	2.3	lbs/day

Ammonia	03/31/19	Avg Mo	3.2	lbs/day	2.3	lbs/day
Ammonia	02/28/19	Avg Mo	3.2	lbs/day	2.3	lbs/day
Ammonia	11/30/18	Avg Mo	11.6	mg/L	3.0	mg/L
Ammonia	04/30/19	Avg Mo	18.0	mg/L	3.0	mg/L
Ammonia	01/31/19	Avg Mo	15.5	mg/L	3.0	mg/L
Ammonia	02/28/19	Avg Mo	13.1	mg/L	3.0	mg/L
Ammonia	01/31/19	Avg Mo	15.5	mg/L	3.0	mg/L
Ammonia	03/31/19	Avg Mo	13.5	mg/L	3.0	mg/L
Ammonia	12/31/18	Avg Mo	13.2	mg/L	3.0	mg/L
Total Phosphorus	07/31/19	Avg Mo	2.2	mg/L	2.0	mg/L

Other Comments: There were several effluent violations, mostly for NH3-N, TN, TSS, and Fecal Coliform. The operator was adjusting the treatment process or repairing the failing equipment to resolve the non-compliances. The permittee will construct a new treatment plant which is expected to meet the effluent limitations consistently without significant non-compliance. Currently, there is no open violation against the treatment plant.

Summary of Inspections:
02-14-2019: CEI conducted. No violations identified during the inspection. All treatment units seemed to be functioning properly. No obvious areas of concern were observed in the receiving stream.

02-28-2018: CEI conducted. No violations identified during the inspection. Recommendation made to flow proportion the effluent samples.

09-19-2017: RTPT conducted. No violations identified during the inspection. The outfall area and receiving stream was inspected. Effluent appeared clear entering the stream. Upstream and downstream conditions appeared similar.

11-09-16: CEI conducted. No violations identified. No obvious areas of concern were observed.

08-03-2016: RTPT conducted. No violations identified during inspection. The outfall and receiving stream were inspected, which resulted no obvious concern.

No samples were taken during the inspections since August 2016.

Existing Effluent Limitations and Monitoring Requirements

The table below summarizes effluent limitations and monitoring requirements specified in the existing final NPDES permit that was in effect between August 1, 2014 to July 31, 2019.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly		Instant. Minimum	Average Monthly		Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.6	XXX	1.5	1/day	Grab
CBOD5 May 1 - Oct 31	7.5	XXX	XXX	10	XXX	20	2/month	24-Hr Composite
CBOD5 Nov 1 - Apr 30	15	XXX	XXX	20	XXX	40	2/month	24-Hr Composite
BOD5 Sewage (Influent)	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Total Suspended Solids	7.5	XXX	XXX	10	XXX	20	2/month	24-Hr Composite
Total Suspended Solids Sewage (Influent)	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Nitrate-Nitrite as N	7.5	XXX	XXX	10	XXX	20	2/month	24-Hr Composite
Total Nitrogen	15.0	XXX	XXX	10.0	XXX	20.0	2/month	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	0.8	XXX	XXX	1.0	XXX	2.0	2/month	24-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	2.3	XXX	XXX	3.0	XXX	6.0	2/month	24-Hr Composite
Total Phosphorus	1.5	XXX	XXX	2.0	XXX	4.0	2/month	24-Hr Composite

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .09
Latitude 39º 52' 56.00" **Longitude** -75º 33' 10.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Water Quality-Based Limitations

As stated in page 3 of this report, WLAs were established for this facility in the Christina River Basin TMDL. The following limitations apply from the TMDL:

Parameter	Reported Values of Effluent (mg/l)		Water Quality Based Effluent Limits (mg/l)			Basis
	Average Value	Daily Max.	Monthly Average		Daily Max	
			Conc. (mg/l)	Mass (lb/day)	Conc. (mg/l)	
$CBOD_5$	3.16	16	10	7.5	20	Christina River Basin Low Flow and High Flow (for bacteria and sediment) TMDLs
TSS	4.57	19	10	7.5	20	
NH_3N	<0.4	2.48	1.0	0.8	2.0	
Total P	0.4	2.48	2.0	1.5	4.0	
Total N	9.02	29.7	10.0	15.0	20.0	
Fecal Coliform (CFU/100ml)	<126.44	2420	200	--	1,000	
DO (Min)	---	6.0	---	---	6.0	

Comment: The new treatment plant, once upgraded, will have a Total Phosphorus limit of 0.5 mg/l as monthly average based on dry stream guidance. The corresponding mass-based limit will be 0.37 lbs./day. The permit will have current limit as interim limit and new limit will be effective after the treatment plant is constructed. A schedule will be provided in the permit.

Best Professional Judgment (BPJ) Limitations

Total Residual Chlorine (TRC):
Since the permittee will upgrade the disinfection method from chlorine to ultraviolet irradiation, a schedule will be provided in the permit which will allow current TRC limit as interim and monitoring minimum UV dosage/intensity/transmittance as final requirement.

Flow and influent BOD_5 and TSS monitoring:
The requirement to monitor the volume of effluent will remain in the permit per 40 CFR § 122.44(i)(1)(ii). Influent BOD_5 and TSS monitoring requirements are established in the permit per the requirements set in Pa Code 25 Chapter 94.

Total Dissolved Solids (TDS):
Facilities discharging less than 0.1 MGD are not required to report TDS and its constituents. No TDS limit or monitoring requirement will be placed in the permit.

Monitoring Frequency and Sample Types:
Otherwise specified above, the monitoring frequency and sample type of compliance monitoring for existing parameters are recommended by DEP's SOP and Permit Writers Manual and/or on a case-by-case basis using best professional judgment (BPJ).

Anti-Backsliding
The proposed limits are at least as stringent as are in existing permit, unless otherwise stated; therefore, anti-backsliding is not applicable.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
CBOD5 Nov 1 - Apr 30	15	XXX	XXX	20	XXX	40	2/month	24-Hr Composite
CBOD5 May 1 - Oct 31	7.5	XXX	XXX	10	XXX	20	2/month	24-Hr Composite
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
TSS	7.5	XXX	XXX	10	XXX	20	2/month	24-Hr Composite
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Nitrate-Nitrite	7.5	XXX	XXX	10	XXX	20	2/month	24-Hr Composite
Total Nitrogen	15.0	XXX	XXX	10.0	XXX	20	2/month	24-Hr Composite
Ammonia Nov 1 - Apr 30	2.3	XXX	XXX	3.0	XXX	6	2/month	24-Hr Composite
Ammonia May 1 - Oct 31	0.8	XXX	XXX	1.0	XXX	2	2/month	24-Hr Composite
TRC (Interim)	XXX	XXX	XXX	0.6	XXX	1.5	1/day	Grab
UV Dosage (mJoules/cm^2) (final)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Total Phosphorus (interim)	1.5	XXX	XXX	2.0	XXX	4	2/month	24-Hr Composite
Total Phosphorus (final)	0.37	XXX	XXX	0.5	XXX	1	2/month	24-Hr Composite

Compliance Sampling Location: At Outfall 001

Other Comments: None

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☐	PENTOXSD for Windows Model (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Toxics Screening Analysis Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☒	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☒	Other: Christina River Basin high and low flow TMDL