pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0112127**
Facility Type	**Industrial**	APS ID	**964322**
Major / Minor	**Minor**	Authorization ID	**1221876**

NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

Applicant and Facility Information

Applicant Name	**Pennsylvania Fish and Boat Commission**	Facility Name	**Tylersville State Fish Hatchery**
Applicant Address	1735 Shiloh Road	Facility Address	43 Hatchery Lane
	State College, PA 16801-8400		Loganton, PA 17747-9503
Applicant Contact	Mindy McClenahan	Facility Contact	Justin Signorella (Manager)
Applicant Phone	(814) 353-2229	Facility Phone	570-725-3965
Client ID	135455	Site ID	255368
SIC Code	0921	Municipality	Logan Township
SIC Description	Agriculture - Fish Hatcheries And Preserves	County	Clinton
Date Application Received	March 19, 2018	EPA Waived?	Yes
Date Application Accepted	April 3, 2018	If No, Reason	
Purpose of Application	Renewal of existing NPDES permit		

Summary of Review

The above applicant has submitted an NPDES renewal application for an existing discharge of treated industrial wastewater from the Tylersville State Fish Hatchery (SFH). The coldwater hatchery raises brook, brown, and rainbow trout for stocking streams and lakes in PA. The water used for the hatchery is supplied by a nearby spring on the eastern part of the facility. The maximum fish biomass of up to 290,000 pounds occurs annually in February. Hatchery wastewater is treated by a concrete clarifier, a wastewater lagoon, and micro screens. The discharge is to Fishing Creek, classified as a HQ-CWF by the Department's Chapter 93 regulations. Sludge collected from the clarifiers and the lagoon are stored in the existing sludge storage tank and spread on nearby farm fields.

Unless otherwise noted, all applicable Department Standard Operating Procedures (SOPs) have been followed during this review.

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
X		*Chad A. Fabian* Chad A. Fabian / Project Manager	September 14, 2022
X		Nicholas W. Hartranft, P.E. Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	4.8
Latitude	40º 58' 58.80"	Longitude	-77º 28' 23.05"
Wastewater Description:	IW Process Effluent without ELG		
Receiving Waters	Fishing Creek (HQ-CWF)	Stream Code	22416
NHD Com ID	67177862	RMI	18.36
Drainage Area	55 mi^2	Yield (cfs/mi^2)	n/a
Q_{7-10} Flow (cfs)	7.4 (3000 gpm)	Q_{7-10} Basis	Spring bypass of 3000 gpm
Elevation (ft)	890	Slope (ft/ft)	n/a
Watershed No.	9-C	Chapter 93 Class.	HQ-CWF
Existing Use	HQ-CWF	Existing Use Qualifier	n/a
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Attaining Use(s)		
TMDL Status	None	Name	n/a
Nearest Downstream Public Water Supply Intake	Approximately 70 miles downstream on the West Branch Susquehanna River, near Milton, PA.		

Changes Since Last Permit Issuance:

The design flow of the facility has been changed from 7.38 MGD to 4.8 MGD. The existing NPDES permit implemented monthly discharge flows based on Best Management Practices (BMPs) proposed by the facility, instead of utilizing long term average flows. However, the change in design flow reflects the actual hatchery flows since the Department implemented a minimum spring bypass flow of 3000 gpm in the existing permit cycle.

Other Comments: The Q7,10 represents a minimum spring bypass flow of 3000 gpm. The existing part C condition will remain in the permit requiring 3000 gpm bypass flow from the spring to Fishing Creek.

Compliance History	
Summary of eDMRs:	The permittee utilizes the Department's eDMR reporting system. For TSS exceedances occurred in May of 2022 due to high concentration of TSS influent from the spring that is the source water for the hatchery. These violations can be seen in the compliance history table on the next page.
Summary of Inspections:	The most recent inspection was performed by the Department on 8/17/2022. No other violations were noted other than the 4 TSS exceedances noted above.

Other Comments: The above noted TSS exceedance should not hold the renewal of this permit.

Compliance History

Effluent Violations for Outfall 001, from: September 1, 2021 To: July 31, 2022

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TSS	05/31/22	Avg Mo	438	lbs/day	243	lbs/day
TSS	05/31/22	Wkly Avg	679	lbs/day	486	lbs/day
TSS	05/31/22	Avg Mo	11.4	mg/L	4.5	mg/L
TSS	05/31/22	Daily Max	20.0	mg/L	9.0	mg/L

Development of Effluent Limitations

The existing permit implements technology based effluent limitations for TSS, DO, CBOD5, dissolved phosphorus, and NH3-N. Limitations for CBOD5, dissolved phosphorus, and NH3-N are based on a previous statistical analysis of discharge monitoring report (DMR) data for the hatchery and represent treatment levels achievable by the enhanced operation and maintenance practices at the facility. The existing technology based TSS concentration limitation of 4.5 mg/l (monthly average) was established for TSS at a similar PFBC facilities utilizing a 20 micron micro-screen filtration system. The existing technology-based standard of 6.0 mg/l minimum for dissolved oxygen (DO) was established per the Department's general permit (PAG-11) for CAAP (Concentrated Aquatic Animal Production) facilities.

The WQM7.0 model allows the Department to evaluate point source discharges of dissolved oxygen (DO), carbonaceous BOD (CBOD5), and ammonia nitrogen (NH3-N) into free-flowing streams and rivers. To accomplish this, the model simulates two basic processes. In the NH3-N module, the model simulates the mixing and degradation of NH3-N in the stream and compares calculated instream NH3-N concentrations to NH3-N water quality criteria. In the DO module, the model simulates the mixing and consumption of DO in the stream due to the degradation of CBOD5 and NH3-N, and compares calculated instream DO concentrations to DO water quality criteria. The attached WQM modeling output shows that the above existing technology-based limitations are protective of water quality standards.

The existing water quality limitations for pH are established based on 25 PA Code §95.2.

The existing NPDES permit also has an annual TSS load limitation of 42,705 pounds per year. This effluent limitation is contained within a lengthy Part C condition referred to as "Affirmative Defense." In summary, the affirmative defense condition allows for net TSS to be used during months of high TSS influent from the spring if certain downstream biomonitoring criteria are met. It is proposed in this draft, to eliminate the affirmative defense condition and put the TSS annual load limitation in Part A of the permit as an effluent net limitation. Effluent net limits for coldwater hatcheries are consistent with the Department's general permit (PAG-11) for CAAP (Concentrated Aquatic Animal Production) facilities. It should be noted that as confirmed by the biological monitoring performed downstream of the outfall by the PFBC and DEP, the receiving stream is attaining its 25 PA Code Chapter 93 classification of High Quality-Cold Water Fishes (HQ-CWF).

The above mentioned annual TSS loading limitation is proposed to be converted from the existing fish production year (May-April) to an annual basis of January through December.

This draft permit also proposes to convert the existing CBOD5 limitations to BOD5 limitations, per the applicants request and consistent with the Department's general permit (PAG-11) for CAAP (Concentrated Aquatic Animal Production) facilities. Also consistent with the respective general permit, the Department proposes to make the monthly and weekly limitations for TSS and BOD effluent net limitations. Effluent net limitations are not proposed for instantaneous maximum limits for TSS and BOD5.

The facility uses therapeutic chemicals to treat fish for various diseases. In this renewal process, the Department has evaluated the use of these therapeutic chemicals using the same process that the Department evaluates the use of chemical additives. Using Material Safety Data Sheets (MSDS) for each chemical, aquatic life effect levels for each chemical were input into the Department's Toxic Management Spreadsheet (TMS). The resulting Water Quality Based Effluent Limit (WQBEL) for each therapeutic chemical was used in conjunction with annual average permitted flow (4.8 MGD) to back calculate the allowable usage of each chemical through a mass balance equation (WQBEL in mg/l X 4.8 MGD X 8.34 lbs/gal). The aquatic life criteria for each chemical and the TMS model output are attached.

The following is a summary of the proposed therapeutic chemicals and their allowable usage rate:

Therapeutic Chemical	Proposed Usage Rate	Maximum Allowable Usage Rate (lbs/day)
Florfenicol	0.045 lbs/day, 31 days per year	142
Diquat Dibromide	1.5 gallons/day, 21 days per year	0.67
Chloramine T	15 lbs/day	41.1
Hydrogen Peroxide(1)	57 gallons/day	411
Terramycin TM200	5.3 lbs/day	63.4
Lysol Ammoinium 10%	3.5 gallons/day	0.078
Romet TC	2.0 lbs/day	36.8
Sodium Chloride	6000 lbs/day, 10 days per year	534
Slimy Grimy(2)	4 lbs/day	20.2

*Values must be converted and reported in lbs/day on report form

(1) The TMS shows a maximum daily usage rate of 4.11 pounds. However, per the MSDS sheet, 99% biodegradation of hydrogen peroxide will occur withing 30 minutes of being used within the hatchery. Therefore, the maximum daily usage rate has been adjusted to provide for 4.11 lbs per day to be discharged. See attached email from PFBC confirming the pass-through time after hydrogen peroxide exceeds 30 minutes.

Best Professional Judgement

None.

Anti-Backsliding

This permit does not propose to decrease any existing effluent limitation.

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	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (GPM)	Report	XXX	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Max	XXX	1/week	Grab
DO	XXX	XXX	6.0	XXX	XXX	XXX	1/week	Grab
BOD5 Industrial Influent	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
BOD5 Effluent Net	240	360	XXX	5	7.5	XXX	1/week	Calculation
BOD5	Report	Report	XXX	Report	Report	10	1/week	24-Hr Composite
TSS Industrial Influent	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
TSS Effluent Net	216	324	XXX	4.5	6.7	XXX	1/week	Calculation
TSS	Report	Report	XXX	Report	Report	9	1/week	24-Hr Composite
Total Suspended Solids (lbs) Effluent Net	XXX	42705 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Suspended Solids (lbs)	Report	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia	XXX	XXX	XXX	1.0	2.0 Daily Max	2.5	2/month	24-Hr Composite
Dissolved Phosphorus	XXX	XXX	XXX	0.3	0.6 Daily Max	0.75	2/month	24-Hr Composite
Formaldehyde	XXX	XXX	XXX	0.70	1.4 Daily Max	1.7	2/month	Grab

Compliance Sampling Location: 001

Other Comments:
-All of the above monitoring frequencies are the same as the existing permit.
-The existing permit erroneously used a multiplier to 2.5 for instantaneous maximum limitations for TSS and CBOD5. The correct multiplier should be 2.0, as stated on the previous page.
-A chemical additive Part C condition will contain the maximum daily usage rates for the proposed therapeutic chemicals.

It is recommended the permit be drafted as described herein.