pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0039144**
Facility Type	**Industrial**	APS ID	**1002931**
Major / Minor	**Minor**	Authorization ID	**1290567**

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

Applicant and Facility Information

Applicant Name	**PA Fish & Boat Commission (PFBC)**	Facility Name	**Oswayo State Fish Hatchery**
Applicant Address	1735 Shiloh Road	Facility Address	96 State Route 244 E
	State College, PA 16801-8400		Coudersport, PA 16915-8290
Applicant Contact	Mindy McClenahan	Facility Contact	Mindy McClenahan
Applicant Phone	(814) 353-2229	Facility Phone	(814) 353-2229
Client ID	87637	Site ID	257376
SIC Code	0921	Municipality	Oswayo Township
SIC Description	Agriculture - Fish Hatcheries and Preserves	County	Potter
Date Application Received	September 30, 2019	EPA Waived?	Yes
Date Application Accepted	October 19, 2019	If No, Reason	
Purpose of Application	Renewal of existing NPDES Permit		

Summary of Review

The above applicant has submitted a renewal application to renew their NPDES permit for one existing outfall (001) at the existing Oswayo State Fish Hatchery. The hatchery mainly propagates brook, brown, rainbow, and golden rainbow trout. The trout are raised from eggs to adults. They are fed a dry pellet diet and are stocked into various water bodies across the state. The maximum peak fish biomass occurs during February and March. The wastewater from the hatchery operations is treated by a clarifier and earthen settling pond prior to being discharged through outfall 001 to an effluent channel that leads to Oswayo Creek.

Unless otherwise noted, all applicable Department SOPs were followed during the review of this application.

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	
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)	2.62 MGD
Latitude	41° 55’ 27”	Longitude	-78° 0’ 26”
Quad Name	Oswayo	Quad Code	1-11.1
Wastewater Description:	Fish hatchery wastewater		
Receiving Waters	Oswayo Creek	Stream Code	27116
NHD Com ID	n/a	RMI	27.1
Drainage Area	19.2	Yield (cfs/mi^2)	0.12
Q_{7-10} Flow (cfs)	2.47	Q_{7-10} Basis	Previous Stream Delineation
Elevation (ft)	1700	Slope (ft/ft)	n/a
Watershed No.	16C	Chapter 93 Class.	HQ-CWF
Existing Use	HQ-CWF	Existing Use Qualifier	n/a
Exceptions to Use	None	Exceptions to Criteria	None
Cause(s) of Impairment	See narrative in below		
Source(s) of Impairment	See narrative in below		
TMDL Status	None	Name	None
Nearest Downstream Public Water Supply Intake	PA/NY border approximately 20 miles downstream		

Changes Since Last Permit Issuance: The above design flow has been adjusted to the average annual flow indicated in the application. This number is conservative and protective of the receiving stream since $Q_{7,10}$ flows are not expected to occur during average spring in flows at the facility.

Compliance History	
Summary of DMRs:	The facility utilizes the Department’s eDMR system. The facility has a good compliance history. There have been no effluent violations in the past year.
Summary of Inspections:	The most recent inspection in WMS was conducted by the Department on 6/21/2022. No violations were found during the inspection. There are not any pending compliance actions according to a WMS opens violation query.

Compliance History

DMR Data for Outfall 001 (from October 1, 2023 to September 30, 2024)

Parameter	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23
Flow (MGD) Average Monthly	2.1899	2.7198	2.3269	2.7526	3.3269	3.6971	3.6303	3.3341	3.6801	3.8369	3.1135	2.3253
Flow (MGD) Daily Maximum	2.8714	3.3581	3.001	3.1666	3.6317	3.7786	4.0263	3.6058	4.0263	4.2826	3.8203	2.9002
pH (S.U.) Minimum	6.5	6.4	6.4	6.7	6.4	6.4	6.5	6.6	6.3	6.3	6.3	6.6
pH (S.U.) Instantaneous Maximum	7.0	6.9	7.0	6.9	6.5	6.9	6.8	6.9	7.0	7.0	6.8	6.9
DO (mg/L) Minimum	9.0	8.8	10.0	9.8	10.0	9.4	9.93	8.5	9.4	9.4	10.3	10.4
CBOD5 (lbs/day) Average Monthly	76	< 77	< 64	< 68	< 88	< 99	< 90	< 98	< 94	< 100	< 72	< 55
CBOD5 (lbs/day) Daily Maximum	98	79	< 75	< 69	97	106	91	111	< 101	< 107	< 81	< 59
CBOD5 (mg/L) Average Monthly	3.6	< 3.3	< 3.2	< 3.0	< 3.1	< 3.2	< 3.2	< 3.4	< 3.0	< 3.0	< 3.0	< 3.0
CBOD5 (mg/L) Daily Maximum	4.1	3.6	3.3	< 3.0	3.2	3.4	3.3	3.7	< 3.0	< 3.0	< 3.0	< 3.0
TSS (lbs/day) Average Monthly	56	64	69	42	66	88	69	83	57	85	50	32
TSS (lbs/day) Daily Maximum	62	81	83	54	73	94	69	141	71	93	52	37
TSS (mg/L) Average Monthly	2.7	2.8	3.4	1.9	2.3	2.9	2.4	2.8	1.8	2.6	2.2	1.8
TSS (mg/L) Daily Maximum	2.8	3.7	3.4	2.4	2.4	3.0	2.5	4.7	2.1	2.6	2.5	2.2
Ammonia (lbs/day) Average Monthly	13	11	13	9	12	18	22	20	19	17	13	13
Ammonia (lbs/day) Daily Maximum	16	11	15	10	16	22	22	22	23	18	15	17
Ammonia (mg/L) Average Monthly	0.6	0.5	0.6	0.4	0.4	0.6	0.8	0.7	0.6	0.5	0.6	0.7
Ammonia (mg/L) Daily Maximum	0.7	0.5	0.7	0.4	0.5	0.7	0.8	0.7	0.7	0.5	0.6	0.8

Dissolved Phosphorus (lbs/day) Average Monthly	3	3	4	2	5	6	6	5	4	6	4	2
Dissolved Phosphorus (lbs/day) Daily Maximum	4	4	5	3	6	7	6	6	5	6	5	3
Dissolved Phosphorus (mg/L) Average Monthly	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
Dissolved Phosphorus (mg/L) Daily Maximum	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
Total Phosphorus (lbs/day) Average Monthly	5	5	9	3	6	7	7	6	5	7	5	3
Total Phosphorus (lbs/day) Daily Maximum	4	5	10	4	8	8	7	7	5	7	6	3
Total Phosphorus (mg/L) Average Monthly	0.2	0.2	0.5	0.2	0.2	0.2	0.2	0.2	0.16	0.2	0.2	0.1
Total Phosphorus (mg/L) Daily Maximum	0.2	0.3	0.6	0.2	0.3	0.3	0.3	0.2	0.17	0.2	0.2	0.1
Formaldehyde (lbs/day) Average Monthly	2	3	< 0.7	4	GG	GG	GG	GG	GG	GG	GG	< 1
Formaldehyde (lbs/day) Daily Maximum	2	3	< 1	4	GG	GG	GG	GG	GG	GG	GG	< 1
Formaldehyde (mg/L) Average Monthly	0.1	0.1	< 0.03	0.2	GG	GG	GG	GG	GG	GG	GG	< 0.02
Formaldehyde (mg/L) Daily Maximum	0.1	0.1	0.06	0.2	GG	GG	GG	GG	GG	GG	GG	< 0.02

Technology Based Effluent Limitations

The existing permit implements technology based effluent limitations for TSS, DO, CBOD5, dissolved phosphorus, and NH_3-N. Limitations for $CBOD_5$, dissolved phosphorus, and NH_3-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 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. Consistent with the PAG-11, the existing $CBOD_5$ limitations will be converted to BOD_5 limitations. Also consistent with the PAG-11, TSS and BOD5 limitations are now proposed to be effluent net limitations.

Water Quality-Based Limitations

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 Toxics Management Spreadsheet (TMS). The resulting Water Quality Based Effluent Limit (WQBEL) were used in conjunction with annual average permitted flow (2.62 MGD) to back calculate the allowable usage of each chemical through a mass balance equation (WQBEL in mg/l X 2.62 MGD X 8.34 lbs/gal) calculated by the TMS as a maximum daily usage value. All of the chemical additives' aquatic life values and the TMS are attached.

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

Therapeutic Chemical	Proposed Usage Rate	WQBEL (mg/l)	Allowable Usage Rate (lbs/day)
Terramycin 200	3.5 lbs/day	1.15	39.3
Parasite-S (Formalin)	4,996 gal/day	0.001	0.038
Chloramine-T (Halamid)	6.0 lbs/day	0.54	18.5
35% Hydrogen Peroxide(1)	10 gal/day*	0.017	57
Lysol Professional Brand (No Rinse Sanitizer)	1.08 gal/day		0.027
Florfenicol	0.2 lbs/day	0.0008	62.4
Sodium Chloride	200 lbs/day	6.88	234

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

(1) The TMS shows a maximum daily usage rate of 0.57 pounds. However, per the MSDS sheet, 99% biodegradation of the hydrogen peroxide will occur within 30 minutes of being used in the hatchery. Since the expected pass through time in the facility until discharge is greater than 30 minutes, the maximum daily usage rate has been adjusted to provide for 0.57 pounds per day to be discharged.

In addition to the above therapeutic chemicals, the TMS was also used to verify that the existing WQBEL limitations for formaldehyde are protective of water quality standards. The results of the model show that the existing average monthly limitations for formaldehyde of 0.6 mg/l are adequate. No other toxics are expected to be introduced at the hatchery.

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 previous WQM modeling output shows that the existing technology limitations are protective of water quality standards. Since there have been no changes to the receiving stream or outfall since the previous modeling, the Department SOP does not require additional modeling.

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

Oswayo Creek Considerations

The Department performed a cause and effect study on Oswayo Creek in the vicinity of the Oswayo State Fish Hatchery. The report, dated May 7, 2024, is attached. Several cause and effect studies have been conducted in the past 25 years, all with varying results. This most recent study concludes that the facility does impact Oswayo Creek. The magnitude of

impact seems to vary from year to year. However, as noted, there is a consistent long-term trend of negative biological impacts.

The study concludes that the impact is due to nutrients (ammonia, nitrogen, phosphorus, and orthophosphorus).

Best Professional Judgement (BPJ)

To address the impacts from nutrients to Oswayo Creek as noted above, the Department recommends a similar approach that was used at the Tylersville State Fish Hatchery. Tylersville State Fish Hatchery had previously showed impacts to its receiving stream (Fishing Creek) but no longer does through TSS annual loading limitations, technology-based effluent limitations, BMPs, and advanced treatment (micro screens). It is recommended that the same technology-based effluent limits and sampling frequencies be established at Oswayo as at the Tylersville SFH. The following are the existing and proposed changes to the technology-based concentration effluent limitations and monitoring frequencies at Oswayo:

Parameter	Existing Monthly Avg. (mg/l)	Proposed Monthly Avg. (mg/l)	Existing Monitoring Frequency	Proposed Monitoring Frequency
Total Suspended Solids (effluent net)	6.0	4.5	2/month	1/week
Phosphorus, Dissolved	0.3	0.3	2/month	1/week
Ammonia-Nitrogen (NH_3)	1.0	1.0	2/month	1/week
$CBOD_5$ (effluent net)	6.0	5.0	2/month	1/week

Tylersville's discharge into Fishing Creek is 50% effluent contribution the total flow below the outfall. Fishing Creek has a $Q_{7,10}$ of 7.3 cfs and a discharge flow of 7.4 cfs. The effluent contribution was determined by taking $Q_{Discharge}/(Q_{Discharge}+Q_{7,10})$ or 7.4 cfs/14.7= 50.3%. At Oswayo SFH, the design discharge flow is 2.62 cfs with a $Q_{7,10}$ of 2.47 cfs. Using the same equation, the effluent comprises 62.1% of the downstream flow. In order to place the same nutrient and TSS mass loading on Oswayo Creek that exists on Fishing Creek from the Tylersville SFH, a decrease in loading of 11.9% (62.1%-50.3%) is required. The following recommended TSS and nutrient load limitations are based on the above proposed concentration limits have been calculated as follows:

Parameter	Proposed Average Monthly (mg/l)	Daily Max (mg/l)	Average Monthly (lbs/day)	Daily Max (lbs/day)	Annual Mass Loading (lbs/year)
Total Suspended Solids	4.5 (effluent net)	9	87	173	*18,941
Phosphorus, Dissolved	0.3	0.6	5.7	11.5	n/a
Ammonia-Nitrogen (NH_3)	1.0	2.0	19.2	38.5	n/a
BOD_5	5.0 (effluent net)	10.0	96.2	192	n/a

*Using the discharge flow and Oswayo Creek $Q_{7,10}$, this proposed annual TSS loading limitation is equivalent to the TSS loading limitation of 42,705 pounds per year that exists at Tylersville SFH.

It is recommended that the above proposed effluent limitations be implemented through a 3-year compliance schedule in a special Part C condition of the draft permit. It is recommended the existing limitations be implemented during the 3-year interim period.

Monitoring and reporting of temperature will be required in this draft permit.

Proposed INTERIM Effluent Limitations and Monitoring Requirements-Final

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.

Outfall 001, Effective Period: Permit effective date through 3 years after effective date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	1/week	Metered
pH (Standard Units)	XXX	XXX	6.0	XXX	XXX	9.0	1/week	Grab
Dissolved Oxygen	XXX	XXX	6.0	XXX	XXX	XXX	1/week	Grab
CBOD5	160	320	XXX	6.0	12.0	15.0	2/month	24-Hr Composite
Total Suspended Solids	160	320	XXX	6.0	12.0	15.0	2/month	24-Hr Composite
Ammonia-Nitrogen	26	53	XXX	1.0	2.0	2.5	2/month	24-Hr Composite
Dissolved Phosphorus	8	16	XXX	0.3	0.6	0.75	2/month	24-Hr Composite
Total Phosphorus	Report	Report	XXX	Report	Report	Report	2/month	24-Hr Composite
Formaldehyde	16	32	XXX	0.6	1.2	1.5	2/month	24-Hr Composite
Temperature (ºF)	XXX	XXX	XXX	XXX	Report	XXX	Continuous	I-S
PFAS (PFOS, PFOA, PFBS, HFPO-DA)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite

Proposed Effluent Limitations and Monitoring Requirements-Final

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. Daily Maximum limits were established using multiplier of 2.0, while Instantaneous Maximum (IMAX) limits are determined using multipliers of 2.5 per the Department's Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits (Document No. 362-0400-001). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: 3 Years after effective date through Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	1/week	Metered
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/week	Grab
DO	XXX	XXX	6.0	XXX	XXX	XXX	1/week	Grab
BOD_5 effluent net	96	192	XXX	5.0	10.0	XXX	1/week	24-Hr Composite
BOD_5 influent	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
BOD_5	Report	Report	XXX	Report	Report	12.5	1/week	24-Hr Composite
TSS effluent net	87	173	XXX	4.5	9.0	XXX	1/week	24-Hr Composite
TSS influent	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
TSS	Report	Report	XXX	Report	Report	11.2	1/week	24-Hr Composite
Ammonia-Nitrogen	19.2	38.5	XXX	1.0	2.0	2.5	1/week	24-Hr Composite
Dissolved Phosphorus	5.7	11.5	XXX	0.3	0.6	0.75	1/week	24-Hr Composite
Total Phosphorus	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Formaldehyde	16	32	XXX	0.6	1.2	1.5	1/week	3 Grabs/24 Hours
Temperature (ºF)	XXX	XXX	XXX	XXX	Report	XXX	Continuous	I-S
TSS Annual Load	18,941 lbs/year	XXX	XXX	XXX	XXX	XXX	1/year	Calculation

Outfall 001 , Continued (from 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	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
PFAS (PFOS, PFOA, PFBS, HFPO-DA)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite

Compliance Sampling Location: 001

Per Chapter 2.C of the Department's Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits (Document No. 362-0400-001) and in accordance with the Department's PAG-11 for NPDES Permits relating to Aquaculture, the Department has established Daily Maximum and Instantaneous maximum concentration and load limits using multipliers of 2.0 and 2.5 respectively. Also per Table 6-4 relating to process wastewater in the aforementioned guidance, the Department has established 1/week monitoring for BOD5, total suspended solids, ammonia-nitrogen, dissolved P, and total P. All other monitoring frequencies remain the same as the existing permit.

PFAS monitoring is in accordance with the Department's SOP for PFAS monitoring.

A WMS opens violations report shows that no open violations exist at the facility. Based on the above review, it is recommended that the permit be drafted as described above.

Chemical Additives Results.pdf

WQM 7.0 Modeling.pdf

USGS Stream Stats.pdf

Oswayo TMS.xlsb.pdf