pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0032816**
Facility Type	**Non-Municipal**	APS ID	**978272**
Major / Minor	**Minor**	Authorization ID	**1247244**

Applicant and Facility Information

Applicant Name	**PA DOT Bureau of Project Delivery**	Facility Name	**PA DOT I 80 Rest Area 33 34 STP**
Applicant Address	Bureau of Maintenance & Operations PO Box 3060	Facility Address	Rest Area # 33
	Harrisburg, PA 17105-3060		Lock Haven, PA 17745
Applicant Contact	Nicholaus Sahd	Facility Contact	Jonathan Boop
Applicant Phone	(717) 951-8685	Facility Phone	(570) 726-2200
Client ID	62162	Site ID	261905
Ch 94 Load Status	Not Overloaded	Municipality	Greene Township
Connection Status	No Limitations	County	Clinton
Date Application Received	September 27, 2018	EPA Waived?	Yes
Date Application Accepted	October 11, 2018	If No, Reason	

Purpose of Application: Application for the renewal of the existing individual NPDES permit.

Summary of Review

PA DOT Bureau of Project Delivery has submitted an application for the renewal of the existing NPDES Permit PA0032816 for the Department's review. 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		Jonathan P. Peterman / Project Manager	October 9, 2019
		Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.032
Latitude	41º 3' 0.06"	Longitude	-77º 9' 23.00"
Quad Name	Carroll	Quad Code	1028
Wastewater Description:	Sewage Effluent		

Receiving Waters	Fishing Creek (HQ-CWF)	Stream Code	22416
NHD Com ID	67175460	RMI	40.7
Drainage Area	2.94	Yield (cfs/mi^2)	0.1017
Q_{7-10} Flow (cfs)	0.3	Q_{7-10} Basis	Gage No. 1551500
Elevation (ft)	1,398	Slope (ft/ft)	
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)		
Cause(s) of Impairment	N/A		
Source(s) of Impairment	N/A		
TMDL Status	N/A	Name	N/A

Nearest Downstream Public Water Supply Intake	PA American Water White Deer		
PWS Waters	West Branch of Susquehanna River	Flow at Intake (cfs)	682
PWS RMI	10.5	Distance from Outfall (mi)	105

Changes Since Last Permit Issuance: In order to determine the Q7-10 low flow for Fishing Creek, a comparative stream analysis was previously conducted and the results of which are attached in the Appendix. A comparative stream was determined by using a downstream stream gage (1551500) on the West Branch of the Susquehanna River. The analysis indicates that the Q_{7-10} for Fishing Creek is 0.3 cfs. This estimation of Q_{7-10} is seems appropriate given the known size of the receiving stream and is consistent with a previous Q_{7-10} determination (0.33 cfs).

Other Comments: None.

TMDL Impairment

The Department's Geographic Information System (GIS) shows that Fishing Creek is not impaired and a TMDL doesn't exists for the stream segment. No further review is required.

Chesapeake Bay Requirements

Since this facility's annual average design flow is 0.032 MGD, the permittee will be required to monitor and report TN and TP throughout the permit term at a frequency no less than annually in accordance with the Phase II WIP Chesapeake Bay Strategy for Phase V facilities (0.002 MGD to 0.2 MGD) unless 1) the facility has already conducted at least two years of nutrient monitoring and 2) a summary of the monitoring results are included in the next permit's fact sheet. The previous permit contained the Chesapeake Bay Monitoring requirements and the required sampling has been conducted. However, due to the inconsistencies in the sampling location (Refer to the compliance history section below), this sampling will remain for an additional permit term.

Anti-Backsliding

In accordance with 40 CFR 122.44(l)(1) and (2), this permit does not contain effluent limitations, standards, or conditions that are less stringent than the previous permit.

Treatment Facility Summary

Treatment Facility Name: PA DOT - Rest Area 33 & 34 - I-80

WQM Permit No.	Issuance Date	Comments
1872402	5/2/72	Initial construction.
1884404	11/28/84	Modifications including EQ.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Extended Aeration With Solids Removal	Chlorine With Dechlorination	0.032
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.032	-	Not Overloaded	-	Other WWTP

Treatment System Components:
- One (1) Influent Trash Rack.
- One (1) Influent Equalization Tank.
- Two (2) Raw Sewage Pumps Tanks.
- One (1) Distribution Box with Manual Bar Screen.
- One (1) Sodium Hydroxide Chemical Feed System.
- Two (2) Aeration Tanks.
- Two (2) Clarifiers.
- One (1) Post Aeration Tank.
- One (1) Polishing Clarifiers.
- Two (2) Tertiary Sand Filters.
- One (1) Chlorine Disinfection System.
- One (1) Chlorine Contact Tank.
- One (1) Erosion Dechlorinator.
- One (1) Outfall 001.

- One (1) Aerobic Digestor.

Changes Since Last Permit Issuance: None.

Existing Effluent Limitations and Monitoring Requirements

Existing Limits

Discharge Parameter	Limitations							
	Mass (lb/day)		Concentration (mg/L)				Monitoring Requirements	
	Monthly Average	Daily Maximum	Minimum	Average Monthly	Average Weekly	Instantaneous Maximum	Minimum Frequency	Sample Type
Flow (MGD)	Report						Continuous	Weir
C-BOD_5				10		20	2/ Month	Grab
TSS				10		20	2/ Month	Grab
TRC				Report Daily Max.		0.05	5/ Week	Grab
pH (Std. Units)			6.0			9.0	5/ Week	Grab
NH_3-N (5/1 – 10/31)				3		6	2/ Month	Grab
NH_3-N (11/1 – 4/30)				9		18	2/ Month	Grab
Fecal Coliforms (5/1-9/30)	200 colonies/100 ml as a geometric mean and not greater than 1,000 colonies/100 ml in more than 10% of the samples tested						2/ Month	Grab
Fecal Coliforms (10/1-4/30)	2,000 colonies/100 ml as a geometric mean							
Total Nitrogen		Report Total Annual				Report	1/year	Grab
Total Phosphorus		Report Total Annual				Report	1/year	Grab

*The existing effluent limits for Outfall 001 were based on a design flow of 0.032 MGD.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.032
Latitude 41º 3' 0.00" **Longitude** -77º 9' 23.00"
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
To establish whether or not water-quality based effluent limitations (WQBELs) are required, the Department models in-stream conditions. In order to determine limitations for CBOD5, ammonia-N and dissolved oxygen, the Department utilizes the WQM 7.0 v1.0b model and in order to determine limitations for toxics, the Department utilizes the PENTOXSD v2.0d model.

WQM 7.0 for Windows, Version 1.0b, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen
The model was run using the Q7-10 stream flow, background water quality, average annual design flow, and other discharge characteristics. The previously existing technology-based effluent limit for $CBOD_5$ (10 mg/l) and existing water quality-based effluent limits NH3-N (3 mg/l) were used as inputs for the modeling. The DO minimum daily average criterion from §93.7 (6.0 mg/L for CWF) was used for the in-stream objective for the model. The summary of the output is as follows:

Parameter	Effluent Limit		
	30 Day Average	Maximum	Minimum
CBOD5	10	N/A	N/A
Ammonia-N	3	6	N/A
Dissolved Oxygen	N/A	N/A	3

The model does not recommend more stringent water-quality based effluent limitations with regards to CBOD5 and dissolved oxygen, and ammonia-nitrogen. Refer to Appendix B for the WQM 7.0 inputs and results.

Comments: None.

PENTOXSD v2.0d model / Reasonable Potential Analysis
“Reasonable Potential Analysis” and PENTOXSD v2.0d modeling were not utilized in this review.

Best Professional Judgment (BPJ) Limitations
See Dissolved Oxygen section below.

Additional Considerations
None

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 the abovementioned 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) and/or BPJ.

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

Discharge Parameter	Limitations							
	Mass (lb/day)		Concentration (mg/L)				Monitoring Requirements	
	Monthly Average	Daily Maximum	Minimum	Average Monthly	Average Weekly	Instantaneous Maximum	Minimum Frequency	Sample Type
Flow (MGD)	Report						Continuous	Weir
C-BOD_5				10		20	2/ Month	Grab
TSS				10		20	2/ Month	Grab
TRC				0.02			1/ Day	Grab
pH (Std. Units)			6.0			9.0	1/ Day	Grab
DO			Report				1/ Day	
NH_3-N (5/1 – 10/31)				3		6	2/ Month	Grab
NH_3-N (11/1 – 4/30)				9		18	2/ Month	Grab
Fecal Coliforms (5/1-9/30)	200 colonies/100 ml as a geometric mean and not greater than 1,000 colonies/100 ml in more than 10% of the samples tested						2/ Month	Grab
Fecal Coliforms (10/1-4/30)	2,000 colonies/100 ml as a geometric mean							
Total Nitrogen	Report Annual Average	Report Total Annual			Report Annual Average		1/year	Grab
Total Phosphorus	Report Annual Average	Report Total Annual			Report Annual Average		1/year	Grab

*The proposed effluent limits for Outfall 001 were based on a design flow of 0.032 MGD.

Flow
The existing monitoring frequency (Continuous) and sample type (Weir) for Flow correspond with the *Technical Guidance for the Development and Specification of Effluent Limitations* (362-0400-001) Table 6-3.

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)
The results of the WQM 7.0 model showed that the previously applied advanced treatment requirements for $CBOD_5$ were protective of water quality and will remain.

Total Suspended Solids (TSS)
The previously applied advanced treatment requirements for TSS will remain as well.

pH
CFR Title 40 §133.102(c) and 25 PA Code §95.2(1) provide the basis of effluent limitations for pH.

Fecal Coliforms
The existing fecal coliform limits with I-max limits were updated from the previous Chapter 92 code to correspond with what is specified in the updated 25 PA Code § 92a.47 (a)(4)&(5).

Total Residual Chlorine (TRC)
Under the authority of 25 Pa. Code § 93.4c, the use of chlorine for disinfection will generally not be authorized special protection watersheds. Given that the use of chlorine is approved, the average monthly effluent limitation will be set to 0.02 mg/l ("non-detect") and the associated Part C language will be used. The previous permit established an IMAX non-detect limit of 0.05 mg/l. However, current policy dictates that the average monthly MDL in NPDES permits for TRC should be specified as 0.02 mg/L, which is believed to be reasonable for standardized TRC methods. The permittee is not authorized to discharge chlorine in detectable quantities, therefore, no compliance schedule is required.

Part C 120 "All permits with average monthly TRC limits < 0.02 mg/L" will be placed in the draft permit.

Ammonia-Nitrogen (NH3-N)
The WQM 7.0 model indicated that the existing water quality-based limits for ammonia were adequate. These limits were previously assigned in accordance with the *Implementation Guidance of Section 93.7 Ammonia Criteria* (391-2000-013) which states that a multiplier of 2.0 times the average monthly concentration limit (3 mg/L) was used to establish the I-max concentration limit (6 mg/L). These limits were then rounded down to the nearest 1.0 (3.0 and 6.0) in accordance with the rounding rules established in the *Technical Guidance for the Development and Specification of Effluent Limitations (362-0400-001)*, Chapter 5 - Specifying Effluent Limitations in NPDES Permits. The Implementation Guidance also states that the winter seasonal limits shall be 3.0 times the summer limits. The existing effluent limits will remain.

Dissolved Oxygen (DO)
Given results of the WQM 7.0 model, a discharge of effluent from this facility with a DO concentration of 3 mg/l would not result in an exceedance of water quality requirements for this stream. It is anticipated, that the DO concentration in the effluent would be greater than 3.0 mg/l. Therefore, based on BPJ, only monitoring will be required for this facility.

Sample Types and Monitoring Frequencies
The existing monitoring frequencies and sample types for all parameters correspond with the *Technical Guidance for the Development and Specification of Effluent Limitations* (362-0400-001) Table 6-3. The existing monitoring frequencies (5/ Week) for TRC and pH do not correspond with this guidance and current policies/practices for facilities of this size and type, therefore a monitoring frequency of (1/ Day) will now be required. DO will also be monitored on a daily basis.

Other Comments: None.

Compliance History

Summary of Inspections -The last inspection of the facility was conducted by the Department on 6/5/19. This inspection revealed that the permittee has been sampling from a stormwater pipe in lieu of the proper outfall location. As a result, the permittee was issued an NOV on 7/3/19 for this issue and the permittee is now collecting samples from the proper outfall location.
WMS Query Summary - A WMS Query was run at *Reports - Violations & Enforcements – Open Violations for Client Report* to determine whether there are any unresolved violations associated with the client that will affect issuance of the permit (per CSL Section 609). This query revealed no open violations.
eDMRs Summary - Upon review of the eDMR results, the facility has had exceedances of their effluent limits which are listed below.

Attachments

Appendices

Compliance History

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

Parameter	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18
Flow (MGD) Daily Maximum	0.0094	0.0117	0.0081	0.0095	0.005	0.0045	0.0067	0.0059	0.010	0.0154	0.0077	0.0062
pH (S.U.) Minimum	6.25	6.66	7.08	E	E	E	E	E	E	E	E	E
pH (S.U.) Instantaneous Maximum	7.6	7.89	7.73	E	E	E	E	E	E	E	E	E
TRC (mg/L) Daily Maximum	0.05	0.05	0.05	E	E	E	E	E	E	E	E	E
TRC (mg/L) Instantaneous Maximum	0.05	0.05	0.05	E	E	E	E	E	E	E	E	E
CBOD5 (mg/L) Average Monthly	9	< 2	7	E	E	E	E	E	E	E	E	E
CBOD5 (mg/L) Instantaneous Maximum	11.2	< 2.2	7.2	E	E	E	E	E	E	E	E	E
TSS (mg/L) Average Monthly	7	< 4	7	E	E	E	E	E	E	E	E	E
TSS (mg/L) Instantaneous Maximum	10.4	< 4	10	E	E	E	E	E	E	E	E	E
Fecal Coliform (CFU/100 ml) Geometric Mean	5	602	35	E	E	E	E	E	E	E	E	E
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	12.4	2419.6	46.5	E	E	E	E	E	E	E	E	E
Total Nitrogen (lbs/year) Total Annual									E			
Total Nitrogen (mg/L) Instantaneous Maximum									E			
Ammonia (mg/L) Average Monthly	< 3	< 0.1	< 0.01	E	E	E	E	E	E	E	E	E

Ammonia (mg/L) Instantaneous Maximum	6.163	< 0.1	< 0.01	E	E	E	E	E	E	E	E	E
Total Phosphorus (lbs/year) Total Annual									E			
Total Phosphorus (mg/L) Instantaneous Maximum									E			

Compliance History

Effluent Violations for Outfall 001, from: October 1, 2018 To: August 31, 2019

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	07/31/19	Geo Mean	602	CFU/100 ml	200	CFU/100 ml
Fecal Coliform	07/31/19	IMAX	2419.6	CFU/100 ml	1000	CFU/100 ml
Ammonia	08/31/19	IMAX	6.163	mg/L	6	mg/L

Tools and References Used to Develop Permit	
☒	Q7-10 Analysis and Stream Data (see Appendix **A**)
☒	WQM 7.0 Model Input/Output (see Appendix **B**)
☐	Toxics Screening Analysis v2.4 ( )
☐	PENTOXSD v2.0d Model Input/Output ( )
☒	Facility Map and Schematic (see Appendix C)
☐	TRC Evaluation Spreadsheet ( )
☐	Lake Model Output ( )
☐	WETT Spreadsheet ( )
☒	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: New and Reissuance Sewage Individual NPDES Permit Applications - Version 1.8 – 10/11/13
☒	SOP: Establishing Effluent Limitations for Individual Sewage Permits– Version 1.5 - 8/23/13
☐	Other: