

Application Type Renewal
Facility Type Non-Municipal
Major / Minor Minor

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0060411
APS ID 855242
Authorization ID 1297955

Applicant and Facility Information

Applicant Name	<u>Aqua Pennsylvania Wastewater, Inc.</u>	Facility Name	<u>Thornhurst WWTP</u>
Applicant Address	<u>762 W. Lancaster Avenue</u> <u>Bryn Mawr, PA 19010</u>	Facility Address	<u>184 Magnolia Drive</u> <u>Thornhurst Township, PA 18424</u>
Applicant Contact	<u>Kyle Roberts</u>	Facility Contact	<u>Robert Soltis</u>
Applicant Phone	<u>-</u>	Facility Phone	<u>(570) 443-7099</u>
Client ID	<u>62614</u>	Site ID	<u>445450</u>
Ch 94 Load Status	<u>-</u>	Municipality	<u>Thornhurst Township</u>
Connection Status	<u>-</u>	County	<u>Lackawanna</u>
Date Application Received	<u>November 27, 2019</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>November 27, 2019</u>	If No, Reason	<u>-</u>
Purpose of Application	<u>Renewal of NPDES permit.</u>		

Summary of Review

The applicant is requesting renewal of an NPDES permit to discharge 0.07 MGD of treated sewage to the Pond Creek, an EV/MF designated receiving stream in state water plan basin 02-A (Upper Lehigh River).

A Total Maximum Daily Load (TMDL) for the Lehigh River addresses the three primary metals associated with acid mine drainage (Iron, Manganese and Aluminum) and pH. Treated sewage from the WWTP is not considered a major contributor of the primary metals to the affected streams. Monitoring and reporting requirements are not included in the permit renewal for Total Iron, Total Manganese and Total Aluminum for this minor facility.

The pH, Fecal Coliform, and TSS limits are technology-based limits carried over from the previous permit. The CBOD₅, Ammonia-Nitrogen, Dissolved Oxygen and Total Phosphorus limits are water quality-based and carried over from the previous permit. WQM 7.0 modeling didn't recommend more stringent limitations for Ammonia-Nitrogen, CBOD₅ or Dissolved Oxygen (see WQM Modeling attachments).

For modeling inputs, RMI values were obtained using the "PA Historic Streams" feature of eMapPA as well as the "measure" tool. Drainage areas were delineated using USGS's StreamStats Interactive Map and elevations were obtained using the elevation profile feature of StreamStats (see attachments). The LFY of 0.12 cfs/mi² was calculated using data from historical stream gage 01447300 (Choke Creek near Thornhurst, PA) and carried over from previous renewals.

The 1.2 mg/L monthly average and 2.8 mg/L IMAX limitations for Total Residual Chlorine (TRC) in the previously issued permit were technology-based limitations. As per PA Code 92a.47(a)(8) (which refers to PA Code 92a.48(b)(2)), a monthly average TRC facility-specific BAT effluent limit of 0.5 mg/L and an IMAX limit of 1.1 mg/L is applied to this permit renewal. The TRC Calculation Spreadsheet (attached) did not recommend more stringent water quality-based limitations. The permittee will be required to meet the new technology-based limits for TRC starting one year after the effective date of the permit (see Part C.III.).

Approve	Deny	Signatures	Date
X		<i>Brian Burden</i> Brian Burden, E.I.T. / Project Manager	December 3, 2021
X		Amy M. Bellanca (signed) Amy M. Bellanca, P.E. / Environmental Engineer Manager	12-13-21

Summary of Review

WQM permit 3593408 A-2 approved the installation of an ultraviolet radiation disinfection system at the WWTP. The permit was issued on February 23, 2021 but recent DMRs indicate chlorine is still being used for disinfection at the WWTP, therefore, both monthly average and IMAX limitations remain in the permit for TRC. The permittee shall report operation of the ultraviolet (UV) disinfection system on a daily basis using the Daily Effluent Monitoring Form (3800-FM-BCW0435) and the parameter named "UV Functional" The permittee shall report values of "1" for Yes (i.e., the UV system is functional) and "< 1" for No (i.e., the UV system is not functional).

The previously issued permit included quarterly monitoring/reporting requirements for Total Dissolved Solids. As per the latest DRBC Docket (D-2016-011-3), a quarterly average limitation of 1,000 mg/L is included in the renewal for Total Dissolved Solids. The latest docket also requires monthly monitoring/reporting of the percentage of CBOD₅ removed. Therefore, the monthly influent monitoring for BOD₅ in previous renewals is updated to CBOD₅ for this renewal. Monthly influent monitoring/reporting for TSS is continued.

As per DEP guidance, 1/month E. Coli monitoring/reporting is added to the permit.

Yearly monitoring/reporting requirements for Nitrate-Nitrite as N, TKN and Total Nitrogen are carried over from the previous permit.

Sludge use and disposal description and location(s): The September 2021 DMR supplemental report for sludge/biosolids indicates 12,600 gallons of sludge was disposed of at the Greater Hazleton Joint Sewer Authority WWTP via Environmental Service Corp.

DMR review of the past 2 years revealed the following concentration limitation exceedances:

- June 2020: Fecal Coliform IMAX >2420 CFU/100mL (limitation was 1000 CFU/100mL)
- July 2020: Fecal Coliform IMAX >2420 CFU/100mL (limitation was 1000 CFU/100mL)
- November 2020: Fecal Coliform Geometric Mean 221.71 CFU/100mL (limitation was 200 CFU/100mL)

The previously issued permit expired on May 31, 2020 and the application for permit renewal was submitted on time. There are no open WPC NPDES violations for the client that would warrant withholding the issuance of the final permit:

EPA waiver is in effect.



StreamStats Point
1.pdf



StreamStats Point
2.pdf



Elevations.pdf



TRC Calculation.pdf



WQM 1.pdf



WQM 2.pdf



WQM 3.pdf



WQM 4.pdf



WQM 5.pdf



WQM 6.pdf

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.

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	<u>001</u>	Design Flow (MGD)	<u>0.07</u>
Latitude	<u>41° 12' 27"</u>	Longitude	<u>-75° 36' 0"</u>
Quad Name	<u>Thornhurst</u>	Quad Code	<u>0941</u>
Wastewater Description: <u>Treated sewage.</u>			
Receiving Waters	<u>Pond Creek</u>	Stream Code	<u>4549</u>
NHD Com ID	<u>26277509</u>	RMI	<u>2.5</u>
Drainage Area	<u>6.22 mi²</u>	Yield (cfs/mi ²)	<u>0.12</u>
Q ₇₋₁₀ Flow (cfs)	<u>0.746</u>	Q ₇₋₁₀ Basis	<u>Gauge Station # 01447300</u>
Elevation (ft)	<u>1696</u>	Slope (ft/ft)	<u>0.0075</u>
Watershed No.	<u>2-A</u>	Chapter 93 Class.	<u>EV, MF</u>
Existing Use	<u>-</u>	Existing Use Qualifier	<u>-</u>
Exceptions to Use	<u>-</u>	Exceptions to Criteria	<u>-</u>
Assessment Status	<u>Attaining Use(s)</u>		
Cause(s) of Impairment	<u>-</u>		
Source(s) of Impairment	<u>-</u>		
TMDL Status	<u>Final, 07/07/2009</u>	Name	<u>Lehigh River TMDL</u>
Background/Ambient Data		Data Source	
pH (SU)	<u>-</u>		<u>-</u>
Temperature (°F)	<u>-</u>		<u>-</u>
Hardness (mg/L)	<u>-</u>		<u>-</u>
Other:	<u>-</u>		<u>-</u>
Nearest Downstream Public Water Supply Intake	<u>Hazleton City Authority</u>		
PWS Waters	<u>Lehigh River</u>	Flow at Intake (cfs)	<u>43</u>
PWS RMI	<u>63</u>	Distance from Outfall (mi)	<u>~32.5</u>

Note: The Hazleton City Authority website indicates drinking water is withdrawn from the Roan Reservoir, which receives water from Stony Cabin Creek, Wolfe's Run, and the Quakake and Dreck Creek Reservoirs. DEP's surface water sources GIS map indicates the Authority withdraws from the Lehigh River.

Treatment Facility Summary				
Treatment Facility Name: Thornhurst WWTF				
WQM Permit No.		Issuance Date		
3593408 A-2		2/23/2021		
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Sodium Hypochlorite (see below)	0.028 (2020)
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.07	210	Not Overloaded	Holding Tank	Hauled Away

Changes Since Last Permit Issuance:

WQM permit 3593408 A-2 approved the following:

- Installation of new mechanically cleaned screen and bypass channel with manually cleaned bar rack/isolation gates.
- Installation of new non-potable water system, including effluent storage tank and backup chlorine contact tank.
- Replacement of existing EQ tank pumps and installation of new flow meter and valve vault.
- Replacement in-kind of all five existing blowers.
- Conversion/renovation of the existing control building into a dedicated blower building.
- Construction of new Operation Building.
- Installation of two new chemical feed systems (one for magnesium hydroxide and one for polyaluminum chloride).
- Installation of two complete UV disinfection package systems.
- Modification of the treatment buildings to address NFPA 820 code-related ventilation and electrical issues.
- Various HVAC and electrical upgrades throughout the facility to improve operation, safety, and efficiency of the treatment plant.

Development of Effluent Limitations

Outfall No. 001
 Latitude 41° 12' 27"
 Wastewater Description: Sewage Effluent

Design Flow (MGD) 0.07
 Longitude -75° 36' 0"

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
Total Suspended Solids	30.0	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	60.0	IMAX	-	-
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)
	1.1	IMAX	-	-
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
	1,000 / 100 ml	IMAX	-	92a.47(a)(4)

Comments: The TRC limitations come into effect one year after the permit effective date.

Water Quality-Based Limitations

The following limitations were determined through water quality modeling:

Parameter	Limit (mg/l)	SBC	Model
CBOD ₅	20.0	Average Monthly	1993 Pollution Report
	40.0	IMAX	
Fecal Coliform (10/1 – 4/30)	200 / 100 mL	Geo Mean	* see comment below
	1,000 / 100 mL	IMAX	
Dissolved Oxygen	5.0	Minimum	1993 Pollution Report
Ammonia-Nitrogen (May 1 – Oct 31)	3.0	Average Monthly	1993 Pollution Report
	6.0	IMAX	
Ammonia-Nitrogen (Nov 1 – Apr 30)	9.0	Average Monthly	1993 Pollution Report
	18.0	IMAX	
Total Phosphorus	1.0	Average Monthly	1993 Pollution Report
	2.0	IMAX	
Total Dissolved Solids	1,000	Average Quarterly	DRBC Docket D-2016-011-3

Comments: Although the 1993 pollution report indicated a fecal coliform limit of 2000 CFU/ 100 mL was sufficient for October through April, the 1993 and subsequent permits have applied a year-round limit of 200 CFU/ 100 mL.