

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

**NPDES PERMIT FACT SHEET  
INDIVIDUAL SEWAGE**

Application No. PA0050075  
 APS ID 995366  
 Authorization ID 1276963

**Applicant and Facility Information**

Applicant Name	<u>Aqua Pennsylvania Wastewater, Inc.</u>	Facility Name	<u>Willistown Woods STP</u>
Applicant Address	<u>762 W Lancaster Avenue</u> <u>Bryn Mawr, PA 19010</u>	Facility Address	<u>417 Hamstead Place</u> <u>West Chester, PA 19382-6660</u>
Applicant Contact	<u>Kyle Roberts</u>	Facility Contact	<u>Thomas Cicala</u>
Applicant Phone	<u></u>	Facility Phone	<u>(610) 520-6384</u>
Client ID	<u>62614</u>	Site ID	<u>255896</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Willistown Township</u>
Connection Status	<u></u>	County	<u>Chester</u>
Date Application Received	<u>June 3, 2019</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>June 18, 2019</u>	If No, Reason	<u></u>
Purpose of Application	<u>Permit Renewal.</u>		

**Summary of Review**

The PA Department of Environmental Protection (PADEP/Department) received an NPDES renewal permit application for Willistown Woods Sewage Treatment Plant (STP) of June 3, 2019. The facility is located at 417 Hamstead Place, West Chester, PA 19382.

The applicant requests a renewal of their individual NPDES permit to discharge 0.175 MGD to treated sewage from Willistown Wood STP, to an Unnamed Tributary to Hunters Run in watershed 3G.

This fact sheet is prepared per 40 CFR 124.56.

The permit includes the following changes from the previous permit:

1. New Ultraviolet Disinfection Reporting Requirement.
2. New Total Nitrogen Reporting Requirement.

Act 14 Notifications:

Williston Township Planning and Zoning Department - May 23, 2019  
 Chester County Planning Commission - May 23, 2019

Propose Part C Conditions:

- I. Other Requirements
  - A. No Stormwater
  - B. Acquiring All Necessary Property Rights

Approve	Deny	Signatures	Date
X		Juan J. Vicenty-Gonzalez / Environmental Engineering Specialist /S/	October 7, 2019
X		Pravin C. Patel, P.E. / Environmental Engineer Manager /S/	10/7/2019

**Summary of Review**

- C. Sludge Disposal Requirements
- D. Abandon STP when Public Sewer Become Available
- E. Chlorine Minimization
- F. Notification of the Designation of Responsible Operator
- G. TMDL/WLA Analysis
- H. Develop O&M Plan

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>.175</u>
Latitude	<u>39° 57' 52.02"</u>	Longitude	<u>-75° 30' 33.91"</u>
Quad Name	<u>West Chester</u>	Quad Code	<u>09-21-1</u>
Wastewater Description:		<u>Sewage Effluent</u>	
Receiving Waters	<u>Unnamed Tributary to Hunters Run (HQ-TSF, MF)</u>	Stream Code	<u>00675</u>
NHD Com ID	<u>25621222</u>	RMI	<u>0.60 mi</u>
Drainage Area	<u>0.36 mi<sup>2</sup></u>	Yield (cfs/mi <sup>2</sup> )	<u></u>
Q <sub>7-10</sub> Flow (cfs)	<u>0.104</u>	Q <sub>7-10</sub> Basis	<u>PA USGS StreamStats</u>
Elevation (ft)	<u>385</u>	Slope (ft/ft)	<u>3.7</u>
Watershed No.	<u>3-G (Darby – Crum Creeks) (Ridley Creek Watershed)</u>	Chapter 93 Class.	<u>HQ-TSF, MF</u>
Existing Use	<u>None</u>	Existing Use Qualifier	<u>N/A</u>
Exceptions to Use	<u>None</u>	Exceptions to Criteria	<u>N/A</u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>CAUSE UNKNOWN, FLOW REGIME MODIFICATION, SILTATION</u>		
Source(s) of Impairment	<u>URBAN RUNOFF/STORM SEWERS, URBAN RUNOFF/STORM SEWERS, URBAN RUNOFF/STORM SEWERS</u>		
TMDL Status	<u></u>	Name	<u></u>

Changes Since Last Permit Issuance: Updated using Pennsylvania USGS StreamStats.

Treatment Facility Summary				
<b>Treatment Facility Name:</b> Willistown Woods STP				
<b>WQM Permit No.</b>	<b>Issuance Date</b>			
1500409	August 2, 2000			
WQG02151201	June 28, 2012			
1500409 (T1)	February 28, 2014			
1518405 A-1	April 2, 2019			
<b>Waste Type</b>	<b>Degree of Treatment</b>	<b>Process Type</b>	<b>Disinfection</b>	<b>Avg Annual Flow (MGD)</b>
Sewage	Tertiary	Extended Aeration with Solids Removal	Ultraviolet	0.175
<b>Hydraulic Capacity (MGD)</b>	<b>Organic Capacity (lbs/day)</b>	<b>Load Status</b>	<b>Biosolids Treatment</b>	<b>Biosolids Use/Disposal</b>
0.210	610	Not Overloaded	Holding Tank	Combination of methods

Changes Since Last Permit Issuance: No Changes.

Other Comments:

The treatment processes consist of: comminutor, influent flow meter, EQ tank, two bio-reactors, two secondary clarifiers, sand filters (2 units), ultraviolet disinfection system, and treated effluent basin. Liquid sludge generated at the Willistown Woods WWTP is hauled to DELCORA for further processing. The total sewage sludge/biosolids produce in the previous year was 522,500 gallons.

Compliance History

DMR Data for Outfall 001 (from May 1, 2018 to April 30, 2019)

Parameter	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18	JUL-18	JUN-18	MAY-18
Flow (MGD) Average Monthly	0.1398	0.1494	0.1363	0.1342	0.1345	0.1475	0.1319	0.1317	0.1267	0.1265	0.1301	0.133
Flow (MGD) Daily Maximum	0.1711	0.1868	0.1636	0.1771	0.1634	0.1944	0.148	0.1757	0.2516	0.1553	0.1789	0.1703
pH (S.U.) Minimum	6.21	6.60	6.6	6.49	6.80	6.90	7.05	6.81	6.67	6.54	6.49	6.5
pH (S.U.) Maximum	7.49	7.31	7.6	7.46	7.57	7.68	7.80	7.71	7.84	7.76	7.75	7.55
DO (mg/L) Minimum	7.06	8.44	8.9	7.86	7.14	6.79	6.29	6.02	6.15	6.10	6.35	6.14
TRC (mg/L) Average Monthly	GG	GG	GG	GG	GG	0.04	GG	GG	0.00	0.00	0.00	0.00
TRC (mg/L) Instantaneous Maximum	GG	GG	GG	GG	GG	0.05	GG	GG	0.00	0.00	0.00	0.00
CBOD5 (lbs/day) Average Monthly	3.86	4.25	3.15	2.70	2.09	2.43	8.17	3.41	2.18	2.88	2.22	5.06
CBOD5 (lbs/day) Raw Sewage Influent   Average Monthly	222.69	124.91	121.20	177.99	192.31	182.33	249.65	239.16	216.57	278.97	324.24	326.27
CBOD5 (mg/L) Average Monthly	3.5	3.75	2.7	2.60	2	2	7.53	3.10	2.16	2.65	2.00	4.48
CBOD5 (mg/L) Raw Sewage Influent   Average Monthly	201.75	110.25	103.00	174.6	185.75	150.75	228.20	203.75	217.80	264.33	292	289.40
TSS (lbs/day) Average Monthly	2.15	4.2	5.90	0.916	0.84	0.23	0.48	0.96	1.30	1.55	1.00	1
TSS (lbs/day) Raw Sewage Influent   Average Monthly	186.24	202.34	164.62	261.43	222.02	234.51	228.36	349.17	198.24	262.96	244.19	237.59
TSS (mg/L) Average Monthly	1.9	3.7	1.4	0.88	0.8	0.2	0.45	0.85	1.28	1.45	0.9	0.88

**NPDES Permit Fact Sheet  
Willistown Woods STP**

**NPDES Permit No. PA0050075**

TSS (mg/L) Raw Sewage Influent   Average Monthly	169.50	180.50	193.00	259.2	213	206.0	208.60	290.50	199.40	247.33	219.50	208.20
Fecal Coliform (CFU/100 ml) Geometric Mean	< 1	< 1	< 1.00	< 1	1	3.51	145.25	1	1	15.68	1	3.33
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	< 1	< 1	< 1.00	< 1	1	38	517	1	1	2420	1	411.00
Ammonia (lbs/day) Average Monthly	< 0.55	< 0.57	< 0.60	< 0.52	< 0.52	0.57	0.55	0.55	0.50	0.52	0.56	1.02
Ammonia (mg/L) Average Monthly	< 0.50	< 0.5	< 0.50	< 0.50	< 0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.90
Total Phosphorus (lbs/day) Average Monthly	0.35	0.55	0.34	0.37	0.39	0.42	0.59	0.55	0.35	0.67	0.45	0.36
Total Phosphorus (mg/L) Average Monthly	0.32	0.48	0.29	0.35	0.37	0.39	0.54	0.50	0.34	0.61	0.41	0.32

**Compliance History**

**Effluent Violations for Outfall 001, from: June 1, 2018 To: April 30, 2019**

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	07/31/18	IMAX	2420	CFU/100 ml	1000	CFU/100 ml

Summary of Inspections: The facility was last inspected on June 5, 2019 and October 17, 2018 by DEP water quality specialist. No Violations were Identified During Inspection. Inspection reports are included below:



Willistown Woods  
STP 6-5-19 CEI.pdf



Willistown Wood STP  
10-17-18 RTPT.pdf

**Non-Compliance Reporting**

NC ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value		Permit Limit	Unit	Sampling Frequency	Sampling Type	Cause of Non-Compliance	Corrective Action	External Comments
70634	7/1/2018	7/31/2018	Fecal Coliform	IMAX	2420	>	1000	CFU/100 ml	1/week	Grab	Unknown	Other	Could not determine a cause. Spoke with operator on importance of sample technique.
36867	10/1/2016	10/31/2016	Total Phosphorus	Avg Mo	1.3	>	1	mg/L	1/week	24-Hr Composite	Operator error	Operator training	
30992	4/1/2016	4/30/2016	Total Phosphorus	Avg Mo	1.8	>	1	mg/L	1/week	24-Hr Composite	Equipment malfunction/failure	Equipment repaired	
30281	3/1/2016	3/31/2016	Fecal Coliform	IMAX	1150	>	1000	CFU/100 ml	1/week	Grab	Equipment malfunction/failure	Installed new equipment	
29203	2/1/2016	2/29/2016	Fecal Coliform	IMAX	24640	>	1000	CFU/100 ml	1/week	Grab	See attached comments	See attached comments	
29202	2/1/2016	2/29/2016	TSS	Avg Mo	21.6	>	17	mg/L	1/week	24-Hr Composite	See attached comments	See attached comments	
29201	2/1/2016	2/29/2016	Ammonia-Nitrogen	Avg Mo	2.57	>	2.5	mg/L	1/week	24-Hr Composite	See attached comments	See attached comments	
29200	2/1/2016	2/29/2016	CBOD5	Avg Mo	14.3	>	12	mg/L	1/week	24-Hr Composite	See attached comments	See attached comments	
28116	1/1/2016	1/31/2016	Total Phosphorus	Avg Mo	1.1	>	1	mg/L	1/week	24-Hr Composite	Equipment malfunction/failure	Installed new equipment	
28115	1/1/2016	1/31/2016	TSS	Avg Mo	38.3	>	17	mg/L	1/week	24-Hr Composite	Equipment malfunction/failure	Installed new equipment	
26833	12/1/2015	12/31/2015	Dissolved Oxygen	Min	5.9	<	6	mg/L	1/day	Grab	Operator error	Operator training	
25437	11/1/2015	11/30/2015	TSS	Avg Mo	23.6	>	17	mg/L	1/week	24-Hr Composite	Hydraulic flow exceeding plant or unit design	Decreased chemical feed	
25436	11/1/2015	11/30/2015	Total Phosphorus	Avg Mo	2.2	>	1	mg/L	1/week	24-Hr Composite	Hydraulic flow exceeding plant or unit design	Decreased chemical feed	

**NPDES Permit Fact Sheet  
Willistown Woods STP**

**NPDES Permit No. PA0050075**

7952	7/1/2015	7/31/2015	Ammonia-Nitrogen	Avg Mo	2.3	>	0.9	mg/L	1/week	24-Hr Composite			
7951	7/1/2015	7/31/2015	Ammonia-Nitrogen	Avg Mo	1.6	>	1.3	lbs/day	1/week	24-Hr Composite			
7950	5/1/2015	5/31/2015	Ammonia-Nitrogen	Avg Mo	2.1	>	0.9	mg/L	1/week	24-Hr Composite			
7949	5/1/2015	5/31/2015	Ammonia-Nitrogen	Avg Mo	2.3	>	1.3	lbs/day	1/week	24-Hr Composite			
7948	4/1/2015	4/30/2015	Ammonia-Nitrogen	Avg Mo	3.15	>	2.5	mg/L	1/week	24-Hr Composite			
7947	2/1/2015	2/28/2015	TSS	Avg Mo	18	>	17	mg/L	1/week	24-Hr Composite			
7946	2/1/2015	2/28/2015	Ammonia-Nitrogen	Avg Mo	3.44	>	2.5	mg/L	1/week	24-Hr Composite			
7945	1/1/2015	1/31/2015	Fecal Coliform	IMAX	8600	>	1000	CFU/100 ml	1/week	Grab			
7944	1/1/2015	1/31/2015	TRC	IMAX	0.14	>	0.12	mg/L	1/day	Grab			
7943	1/1/2015	1/31/2015	TSS	Avg Mo	19.3	>	17	mg/L	1/week	24-Hr Composite			



**Development of Effluent Limitations**

<b>Outfall No.</b> <u>001</u>	<b>Design Flow (MGD)</b> <u>.175</u>
<b>Latitude</b> <u>39° 57' 51.56"</u>	<b>Longitude</b> <u>-75° 30' 33.38"</u>
<b>Wastewater Description:</b> <u>Sewage Effluent</u>	

**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
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)

**Best Professional Judgment (BPJ) Limitations**

Parameter	Limit (mg/l)	SBC
Total Nitrogen	Report	Average Monthly
UV intensity	Report	Daily Minimum

Comments: Reporting requirement was added for Total Nitrogen of once per week. This reporting requirement was added in this permit renewal per SOP requirements for permittee discharging over 2,000 gpd. This is done per Standard Operating Procedure (SOP) of Clean Water Program Establishing Effluent Limitations for Individual Sewage Permits, I.A.

Ultraviolet (UV) disinfection intensity monitoring with units microwatts per square centimeter (uWs/cm<sup>2</sup>) at a monitoring frequency of once per day is added in this permit renewal to replace Total Residual Chlorine (TRC) limit. Part C.I. Other Requirements will include language requiring the permittee to submit sampling results as a DMR attachment whenever TRC is used for emergency disinfection.

**Anti-Backsliding**

Parameter	Limit (mg/l)	SBC	Model
CBOD <sub>5</sub>	8.5	Average Monthly	WQM 7.0 less stringent than current limit.
NH <sub>3</sub> -N	0.9	Average Monthly	WQM 7.0 less stringent than current limit.
D.O.	6.0	Average Monthly	WQM 7.0 less stringent than current limit.
TSS	17.0	Average Monthly	BAT
Total Phosphorus	1.0	Average Monthly	BAT
TRC*	0.05	Average Monthly	TRC Evaluation Spreadsheet less stringent than current limit.

\*Monitor only during the use of chlorine.

The current average monthly effluent limits in the existing permit are continued in this permit renewal for: CBOD<sub>5</sub> (8.5 mg/l and 12 lbs/day for period May 1<sup>st</sup> to Oct. 31<sup>st</sup>; 12 mg/l and 18 lbs/day for period Nov. 1<sup>st</sup> to Apr 30<sup>th</sup>), Total Suspended Solids (17 mg/l and 25 lbs/day), NH<sub>3</sub>-N (0.9 mg/l and 1.3 lbs/day for period May 1<sup>st</sup> to Oct. 31<sup>st</sup>; 2.5 mg/l. and 3.6 lbs/day for period Nov. 1<sup>st</sup> to April 30<sup>th</sup>), Total Phosphorus (1.0 mg/l and 1.5 lbs/day), Fecal Coliform (200/100ml and Inst. Max. of 1,000/100ml), pH (6-9), and Dissolved Oxygen (Inst. Min. of 6.0 mg/l).

Total Residual Chlorine limit will remain in this permit renewal to require reporting and not to exceed the limit when the chlorine is used for back up disinfection.

Influent monitoring for Total Suspended Solids and BOD<sub>5</sub> will continue in this permit renewal at a frequency of twice per month and sample type of 24-Hour Composite. This is done per Standard Operating Procedure (SOP) for Clean Water Program, New and Reissuance Sewage Individual NPDES Permit Applications, IV.E.8.

**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) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Daily Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0 Min	XXX	9.0	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	6.0 Min	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)*	XXX	XXX	XXX	0.05	XXX	0.12	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	18	XXX	XXX	12	XXX	24	1/week	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	12	XXX	XXX	8.5	XXX	17	1/week	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids	25	XXX	XXX	17	XXX	34	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Ultraviolet light intensity (µw/cm <sup>2</sup> )	XXX	XXX	Report	XXX	XXX	XXX	1/day	Metered
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite

Outfall 001 , Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Daily Minimum	Average Monthly	Maximum	Instant. Maximum		
Ammonia-Nitrogen Nov 1 - Apr 30	3.6	XXX	XXX	2.5	XXX	5	1/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	1.3	XXX	XXX	0.9	XXX	1.8	1/week	24-Hr Composite
Total Phosphorus	1.5	XXX	XXX	1.0	XXX	2	1/week	24-Hr Composite