

Application Type Renewal  
Facility Type Municipal  
Major / Minor Minor

**NPDES PERMIT FACT SHEET  
INDIVIDUAL SEWAGE**

Application No. PA0025488  
APS ID 1092535  
Authorization ID 1446756

**Applicant and Facility Information**

Applicant Name	<u>Avondale Borough Chester County</u>	Facility Name	<u>Avondale Borough STP</u>
Applicant Address	<u>PO Box 247 110 Pomeroy Avenue</u> <u>Avondale, PA 19311-0247</u>	Facility Address	<u>126 W State Street</u> <u>Avondale, PA 19311-1150</u>
Applicant Contact	<u>Sharon Norris</u>	Facility Contact	<u>Sharon Morris</u>
Applicant Phone	<u>(610) 268-8501</u>	Facility Phone	<u>(610) 268-2501</u>
Client ID	<u>66843</u>	Site ID	<u>457122</u>
Ch 94 Load Status	<u>Existing Hydraulic and Projected Organic</u>	Municipality	<u>Avondale Borough</u>
Connection Status	<u>Dept. Imposed Connection Prohibitions</u>	County	<u>Chester</u>
Date Application Received	<u>May 23, 2023</u>	EPA Waived?	<u>No</u>
Date Application Accepted	<u></u>	If No, Reason	<u>Christina River TMDL</u>
Purpose of Application	<u>Renewal.</u>		

**Summary of Review**

The applicant has submitted NPDES permit renewal application for their treated sewage discharge into Unnamed Tributary (UNT) to East Branch White Clay Creek through outfall 001.

Based on the application: Influent wastewater goes through a grinding screen, aerated grit chamber, and then to the oxidation ditch, after which it is split between the two clarifiers. From the clarifiers, WAS goes to an aerobic digester, sludge holding tank, and sludge disposal, while RAS circulates back to the oxidation ditch. The wastewater from the clarifiers goes to the chlorine contact tank, then post-aeration before being metered at the outfall.

Avondale Borough STP is getting a flow from two townships: Avondale Borough (67%) and New Garden TWP (33%).

There is one industrial contributor: Edlon Industries (Manufacturer of Fluoropolymer coatings).

DEP has conducted site visit on 3/27/2023. No violations noted.

There are no changes in quality and quantity of the discharge flow, therefore previously established effluent limits and requirements will be proposed in the draft permit except for E.coli that is in consistence with new requirements.

Pages 7-8 of this factsheet lists Development of Effluent Limitations.

Act 14 Notifications:

Borough of Avondale and Chester County Board of Commissioners have been notified on May 5, 2023.

Sludge use and disposal description and location(s): DELCORA.

Approve	Deny	Signatures	Date
X		<i>Begay Omuralieva</i> Begay Omuralieva / Environmental Engineering Specialist	March 22, 2024
X		<i>Pravin Patel</i> Pravin C. Patel, P.E. / Environmental Engineer Manager	03/22/2024

**Summary of 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.

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	<u>001</u>	Design Flow (MGD)	<u>0.5</u>
Latitude	<u>39° 49' 18.78"</u>	Longitude	<u>-75° 47' 6.25"</u>
Quad Name	<u>West Grove</u>	Quad Code	<u>09-20-2</u>
Wastewater Description: <u>Sewage Effluent from Avondale Borough STP</u>			
Receiving Waters	<u>Unnamed Tributary to East Branch White Clay Creek (CWF, MF)</u>	Stream Code	<u>00448</u>
NHD Com ID	<u>26108910</u>	RMI	<u></u>
Drainage Area	<u>6.0 mi<sup>2</sup></u>	Yield (cfs/mi <sup>2</sup> )	<u></u>
Q <sub>7-10</sub> Flow (cfs)	<u>1.3</u>	Q <sub>7-10</sub> Basis	<u></u>
Elevation (ft)	<u></u>	Slope (ft/ft)	<u></u>
Watershed No.	<u>3-1</u>	Chapter 93 Class.	<u>CWF, MF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>NUTRIENTS, SILTATION</u>		
Source(s) of Impairment	<u>AGRICULTURE, URBAN RUNOFF/STORM SEWERS</u>		
TMDL Status	<u>Final</u>	Name	<u>Christina River Basin</u>

Changes Since Last Permit Issuance: none

Treatment Facility Summary				
<b>Treatment Facility Name:</b> Avondale Borough STP				
<b>WQM Permit No.</b>	<b>Issuance Date</b>			
1503412	3/19/2004			
1503412 Amended	10/10/2014			
<b>Waste Type</b>	<b>Degree of Treatment</b>	<b>Process Type</b>	<b>Disinfection</b>	<b>Avg Annual Flow (MGD)</b>
Sewage	Secondary with Ammonia And Phosphorus	Oxidation Ditch	Gas Chlorine	0.5
<b>Hydraulic Capacity (MGD)</b>	<b>Organic Capacity (lbs./day)</b>	<b>Load Status</b>	<b>Biosolids Treatment</b>	<b>Biosolids Use/Disposal</b>
0.65	1317	Existing Hydraulic and Projected Organic	Incinerator	DELCORA

Changes Since Last Permit Issuance: none

Compliance History

DMR Data for Outfall 001 (from February 1, 2023 to January 31, 2024)

Parameter	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23
Flow (MGD) Average Monthly	0.6064	0.4969	0.3240	0.2968	0.3072	0.27121 3	0.2982	0.2557	0.30212 3	0.30444	0.3556	0.380
Flow (MGD) Daily Maximum	1.3186	0.9848	0.4761	0.4010	0.4437	0.3672	0.4221	0.3498	0.4163	0.5187	0.4369	0.487
pH (S.U.) Instantaneous Minimum	7.03	6.82	7.00	6.74	7.06	7.20	7.01	7.14	7.03	6.98	7.13	7.25
pH (S.U.) Instantaneous Maximum	8.16	7.63	7.80	7.86	7.82	7.56	7.63	7.54	7.79	7.58	7.72	8.45
DO (mg/L) Instantaneous Minimum	6.77	6.60	6.6	6.1	6.60	6.6	6.60	6.60	4.92	6.17	4.83	6.25
TRC (mg/L) Average Monthly	0.38	0.38	0.38	0.38	0.38	0.38	0.37	0.38	0.38	0.38	0.39	0.37
TRC (mg/L) Instantaneous Maximum	0.42	0.5	0.41	0.40	0.45	0.40	0.39	0.40	0.45	0.59	0.40	0.40
CBOD5 (lbs/day) Average Monthly	15.55	12.43	< 8.11	< 7.43	< 7.7	< 6.6	< 7.5	< 7.04	< 8.8	< 6.9	< 10.7	< 9.5
CBOD5 (lbs/day) Weekly Average	15.55	12.43	< 8.11	< 7.43	< 7.7	< 6.6	< 7.5	< 7.04	< 8.8	< 6.9	10.7	< 9.5
CBOD5 (mg/L) Average Monthly	< 3.08	< 3.0	< 3.0	< 3.0	< 3.0	< 2.9	< 3.0	< 3.3	< 3.5	< 2.7	< 3.6	< 3.0
CBOD5 (mg/L) Weekly Average	< 3.08	< 3.0	< 3.0	< 3.0	< 3.0	< 2.9	< 3.0	< 3.3	< 3.5	< 2.7	< 3.6	< 3.0
BOD5 (lbs/day) Raw Sewage Influent   Average Monthly	925.21	918.03	753.55	555.38	600	602	879	667	763	833	803	847
BOD5 (mg/L) Raw Sewage Influent   Average Monthly	196	211.75	229.5	162.75	217	221	287	247	242	266	245	233
TSS (lbs/day) Average Monthly	25.29	20.72	< 12.57	< 12.01	< 12.8	< 11.3	< 12.4	10.66	< 12.6	< 12.7	< 13.4	< 15.8

**NPDES Permit Fact Sheet  
Avondale Borough STP**

**NPDES Permit No. PA0025488**

TSS (lbs/day) Raw Sewage Influent   Average Monthly	617.22	416.56	467.07	375.64	423	531	594	316	397	457	364	491
TSS (lbs/day) Weekly Average	25.29	20.72	< 12.57	< 12.01	< 12.8	< 11.3	< 12.4	< 10.66	< 12.6	< 12.7	< 13.4	< 15.8
TSS (mg/L) Average Monthly	< 5.0	< 5.0	< 4.65	< 4.85	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 4.5	< 5.0
TSS (mg/L) Raw Sewage Influent   Average Monthly	130	104.0	142.25	140.5	153	195	194	117	126	146	111	135
TSS (mg/L) Weekly Average	< 5.0	< 5.0	< 4.65	< 4.85	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 4.5	< 5.0
Fecal Coliform (No./100 ml) Geometric Mean	< 20.29	< 4.58	< 20.1	40.32	5.98	< 13.5	< 1.65	< 4.49	< 6.5	< 4.3	< 2.3	33.1
Fecal Coliform (No./100 ml) Instantaneous Maximum	125.9	39.9	224.7	40.32	81.3	54.8	7.4	150	44.8	23.3	20.3	117.2
Total Nitrogen (lbs/day) Average Monthly	49.29	34.24	< 22.27	< 17.38	< 18.1	< 15.6	< 18.1	< 19.13	< 22.7	< 22.3	< 26.5	< 31.4
Total Nitrogen (mg/L) Average Monthly	< 9.75	< 8.26	< 8.24	< 7.02	< 7.07	< 6.9	< 7.26	< 8.97	< 9.01	< 8.8	< 8.94	< 9.9
Ammonia (lbs/day) Average Monthly	0.51	0.41	< 0.27	< 0.25	< 0.28	< 0.23	< 0.25	< 0.92	< 1.06	< 0.43	< 0.3	< 0.32
Ammonia (mg/L) Average Monthly	< 0.10	< 0.10	< 0.10	< 0.10	< 0.11	< 0.1	< 0.10	< 0.43	< 0.42	< 0.17	< 0.10	< 0.10
Total Phosphorus (lbs/day) Average Monthly	0.47	1.08	< 2.41	1.39	0.82	1.01	0.57	0.66	0.55	< 0.56	< 0.3	0.48
Total Phosphorus (mg/L) Average Monthly	< 0.09	0.26	< 0.89	0.56	0.32	0.45	0.23	0.31	0.22	< 0.22	< 0.1	0.15

**Development of Effluent Limitations**

<b>Outfall No.</b>	<u>001</u>	<b>Design Flow (MGD)</b>	<u>0.5</u>
<b>Latitude</b>	<u>39° 49' 21.00"</u>	<b>Longitude</b>	<u>-75° 47' 6.00"</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
CBOD <sub>5</sub>	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**

Previous permit had following:

All effluent limits for Nutrients and Dissolved Oxygen are proposed in the draft permit are consistent with the Christina River Basin total maximum daily load (TMDL) for nutrients and dissolved oxygen for low-flow conditions, issued by the Environmental Protection Agency (EPA) in January 2001, and revised in October 2002, April 2006, and March 2012. Revisions to the Christina River Basin TMDL for nutrients and dissolved oxygen for low-flow conditions were made in a letter to EPA dated June 27, 2012 and via a subsequent email dated August 14, 2012.

In April 25, 2013 email EPA agreed that the TMDL changes were based on DEP's correct interpretation of the flexibility provided by the Christina River TMDL. In the TMDL document, Summary Table 20 included waste load allocations (WLA) based on a discharge flow of 0.3 mgd (attached below table).

NPDES	FACILITY NAME	FLOW mg/l	CBOD <sub>5</sub> mg/l	NH <sub>3</sub> -N mg/l	TN mg/l	TP mg/l	DO mg/l	CBOD <sub>5</sub> lb/day	NH <sub>3</sub> -N lb/day	TN lb/day	TP lb/day	DO lb/day
PA0025488	Avondale Borough STP	0.3	25.00	2.00	50.00	4.00	2.00	62.597	5.008	125.195	10.016	5.008



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about TMDI TSS.pdf

Below table revision (dated August 2012) consists loading of flow, TN, TP, DO and CBOD<sub>5</sub>:

NPDES	FACILITY NAME	FLOW mg/l	CBOD <sub>5</sub> mg/l	NH <sub>3</sub> -N mg/l	TN mg/l	TP mg/l	DO mg/l	CBOD <sub>5</sub> lb/day	NH <sub>3</sub> -N lb/day	TN lb/day	TP lb/day	DO lb/day
PA0025488	Avondale Borough STP	0.50	15	1.20	20.00	2.0	2.0	62.591	5.007	83.400	8.00	8.340

*Also, effluent limits for Nutrients and Dissolved Oxygen are proposed in the draft permit are consistent with Total Maximum Daily Loads for Nutrient and Low Dissolved Oxygen Under High-Flow Conditions Christina River Basin, Pennsylvania, Delaware, and Maryland issued by the Environmental Protection Agency (EPA) in September 2006.*

*Table 2-2. NPDES permit flows and loads for nutrients and CBOD5*

<i>NPDES Number</i>	<i>HSPF Subbasin</i>	<i>Flow (mgd)</i>	<i>CBOD5 (mg/L)</i>	<i>NH3-N (mg/L)</i>	<i>TP (mg/L)</i>	<i>CBOD5 (kg/day)</i>	<i>NH3-N (kg/day)</i>	<i>TP (kg/day)</i>
PA0025488	B11	0.3	25.00	2.00	4.00	28.39	2.27	4.54

*Additionally, facility's discharge is listed in Total Maximum Daily Loads for Bacteria and Sediment in the Christina River Basin, issued by the Environmental Protection Agency (EPA) in September 2006.*

*Table 2-2. Fecal coliform, enterococci, and TSS loads for NPDES facilities*

<i>NPDES Number</i>	<i>HSPF Subbasin</i>	<i>Flow (mgd)</i>	<i>TSS (mg/L)</i>	<i>Fecal Coliform (cfu/100mL)</i>	<i>Enterococci (cfu/100mL)</i>	<i>TSS (kg/day)</i>	<i>Flow Fecal Coliform (cfu/day)</i>	<i>Enterococci (cfu/day)</i>
PA0025488	W06	0.3	25	200	100	34.07	2.271 E+09	1.136E+09

*Therefore, current effluent limits for nutrients, dissolved oxygen, sediments, bacteria are consistent with all three Christina River Basin TMDLs WLAs.*

E. Coli is proposed to monitor quarterly.

The following are the new requirements recommended for the draft permit: Monitoring for E. Coli is based on DEP SOP guidance (Chapter 92.a.61) and consistent with the requirements of other similar discharges in the area.

**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" (386-0400-001), 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	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.4	XXX	0.8	1/day	Grab
CBOD5 Nov 1 - Apr 30	104.0	167.0	XXX	25.0	40.0	50	1/week	24-Hr Composite
CBOD5 May 1 - Oct 31	62.5	96.0	XXX	15.0	23.0	30	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS	75.0	112.5	XXX	18.0	27.0	36	1/week	24-Hr Composite
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Total Nitrogen	83.4	XXX	XXX	20.0	XXX	40	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	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
Ammonia Nov 1 - Apr 30	15.0	XXX	XXX	3.6	XXX	7.2	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	5.0	XXX	XXX	1.2	XXX	2.4	1/week	24-Hr Composite
Total Phosphorus	8.0	XXX	XXX	2.0	XXX	4	1/week	24-Hr Composite

Compliance Sampling Location: Outfall 001