pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0246611**
Facility Type	**Municipal**	APS ID	**931379**
Major / Minor	**Minor**	Authorization ID	**1475824**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Upper Tulpehocken Township – Berks County**	Facility Name	**Upper Tulpehocken Township STP**
Applicant Address	6501 Old Route 22 Bernville, PA 19506-8459	Facility Address	593 Bricker Road Bernville, PA 19506
Applicant Contact	Susan Ehrets, Manager	Facility Contact	Susan Ehrets
Applicant Phone	(610) 488-7170 / uptlptwp@comcast.net	Facility Phone	(610) 488-7170
Client ID	62496	Site ID	556102
Ch 94 Load Status		Municipality	Upper Tulpehocken Twp
Connection Status		County	Berks
Date Application Received	March 5, 2024	EPA Waived?	Yes
Date Application Accepted	April 15, 2024	If No, Reason	

Purpose of Application: Renewal of permit for sewage treatment plant

Summary of Review

The existing NPDES permit was issued July 18, 2019, with an expiration date of July 31, 2024. The permit renewal application was received March 5, 2024, via DEP's OnBase electronic upload system (Reference ID # 216471). The existing permit was administratively extended past its expiration date.

This Publicly Owned Treatment Plant (POTW) serves primarily the Village of Strausstown with some flow contribution from Upper Tulpehocken Township.

Design Flow:

The existing NPDES permit's limits were based on a design flow of 0.065 MGD. The renewal application includes the same design flow; it does not request any changes. The facility's eDMR data from January 1, 2022 through January 31, 2025 (see attached) show the facility operating under the design flow.

Combined Sewer Overflows (CSO's):

Not applicable

EPA Pretreatment Program:

Not applicable

Approve	Deny	Signatures	Date
x		*Bonnie Boylan* Bonnie Boylan / Environmental Engineering Specialist	March 20, 2025
x		*Maria D. Bebenek* for Daniel W. Martin, P.E. / Environmental Engineer Manager	April 1, 2025
x		*Maria D. Bebenek* Maria D. Bebenek, P.E. / Environmental Program Manager	April 1, 2025

Summary of Review

Industrial Users:

None. The application represents (as shown below) that they only have commercial contributors and that the wastewater from a Metal Finishing and Foundry business is domestic wastewater only comprising less than 2% of the POTW's total discharge.

Upper Tulpehocken Township
Sewage Treatment Plant
Industrial/Commerical Wastewater Contributors

Business Name	Type of Business	Average Wastewater Flow (GPD)	Significant Industrial User?	Non-Significant Categorical Industrial User?	Hauled-In Waste?
C&C Pizza	Restaurant	400	NO	NO	NO
Power Gas & Food Mart	Gas Station/ Convenience Store	250	NO	NO	NO
Strausstown Volunteer Fire Co.	Engine House & Offices	70	NO	NO	NO
Community Campus & St. Joes Offices*	Offices	320	NO	NO	NO
Post Precision Castings*	Metal Finishing and Foundry	1040	NO	NO	NO
Total Estimated Daily Sewage Flow (GPD) Total Estimated Daily Sewage Flow (MGD)		2080 0.00208			

**Note- The only two (2) metered users are the Community Campus & St. Joes Offices, and Post Precision Castings (domestic waste only). The other users' average flow is estimated.*

Variances:

Not applicable

Hauled-in Wastes:

None and none intended for next 5 years per application.

Sludge use and disposal description and location(s):

Hauled off-site, to another WWTP

Unresolved Violations:

As of the preparation of this Fact Sheet, there are no outstanding violations for this client.

Delaware River Basin Commission (DRBC):

The facility discharges to a waterway within the Delaware River watershed and is thus subject to DRBC requirements. A copy of the draft permit and Fact Sheet will therefore be sent to the DRBC for their review in accordance with State regulations and an interagency agreement. Any comments from DRBC will be considered.

DRBC's Interactive Map shows the most recent docket for this facility was approved by DRBC December 5, 2024 and expires July 31, 2029: D-2005-006 CP-5.

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.	001	Design Flow (MGD)	0.065
Latitude	40º 29' 17" (40.488056)	Longitude	-76º 10' 47" (-76.179722)
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Jackson Creek (CWF)	Stream Code	01918
NHD Com ID	25997374	RMI	0.35
Drainage Area	1.93 sq.mi.	Yield (cfs/mi^2)	0.062
Q_{7-10} Flow (cfs)	0.12	Q_{7-10} Basis	USGS/PA Stream Stats*
Elevation (ft)	approx. 500'	Slope (ft/ft)	
Watershed No.	3-C	Chapter 93 Class.	CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	None	Name	

Secondary Waters:

Jackson Creek empties into Little Northkill Creek (also CWF) at RMI 6.2 which empties into Northkill Creek (CWF in upper stretch, WWF in lower stretch) at RMI 0.67 which empties into Tulpehocken Creek (WWF) at RMI 14.9 which feeds Blue Marsh Lake (WWF) and ends at the Schuylkill River (WWF).

Little Northkill Creek is not impaired at stretch adjacent to Jackson Creek but considered impaired for Recreational use due to pathogens downstream of RMI 5.26. Downstream Northkill Creek is also considered impaired for Recreational use due to pathogens

Background/Ambient Data :	-	Data Source:	-
Nearest Downstream Public Water Supply Intake	Western Berks Water Authority (2 MGD pumping capacity)		
PWS Waters	Tulpehocken Creek	Flow at Intake (cfs)	
PWS RMI	Approx. 6.7 (newest intake)	Distance from Outfall (mi)	➢ 15 miles

The receiving water and the downstream waters do not have an 'existing use' that differs from the 'designated use', and are not subject to Total Maximum Daily Loads (TMDLs)according to DEP's eMapPA & https://www.ahs.dep.pa.gov/TMDL/

-No stream gages or WQN monitoring stations upstream
-No other Sewage Treatment Plants (STPs) upstream
-No stream gages downstream until after Blue Marsh Lake (more than 15 miles away)
-No STPs downstream until after empties into Northkill Creek (more than 6 miles away)

*StreamStats (usgs.gov) ; or https://streamstats.usgs.gov/ss/

Treatment Facility Summary

Treatment Facility Name: Upper Tulpehocken Township WWTP

WQM Permit No.	Issuance Date
0604410 T-1	7/18/2019
0604410	1/10/2005

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Ammonia And Phosphorus	Activated Sludge	Ultraviolet	0.065

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.065	130.1	Not Overloaded	Aerobic Digestion	Other WWTP

Description in permit application:

The facilities consist of an influent grinder pump station, a separate influent pump station with bar screen, a two-chamber aerated equalization tank with influent lift pumps, two extended aeration tanks each with a subsequent clarifier, five sludge holding tanks/aerobic digesters, and an ultraviolet (UV) disinfection unit with post-aeration tank.

EXISTING PERMIT LIMITS, OUTFALL 001:

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous 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	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	13.0	22.0	XXX	25.0	40.0	50.0	2/month	8-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	Report Avg Qrtly	Report Daily Max	XXX	1/quarter	8-Hr Composite
Total Suspended Solids	16.0	24.0	XXX	30.0	45.0	60.0	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Ultraviolet light intensity (mW/cm^2)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Metered
Nitrate-Nitrite as N	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Nitrate-Nitrite as N (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Nitrogen (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ammonia-Nitrogen Nov 1 - Apr 30	6.5	XXX	XXX	12.0	XXX	25.5	2/month	8-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	2.0	XXX	XXX	4.0	XXX	8.5	2/month	8-Hr Composite
Ammonia-Nitrogen (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Kjeldahl Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Kjeldahl Nitrogen (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	0.55	XXX	XXX	1.0	XXX	2.0	2/month	8-Hr Composite
Total Phosphorus (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation

Compliance History

DMR Data for Outfall 001 (from February 1, 2024 to January 31, 2025)

Parameter	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24
Flow (MGD) Average Monthly	0.01905	0.01935	0.02085	0.02644	0.02319	0.02174	0.02166	0.02079	0.0209	0.02242	0.02111	0.02119
Flow (MGD) Daily Maximum	0.03055	0.03055	0.02757	0.04317	0.03381	0.03397	0.03174	0.03625	0.03191	0.06491	0.04152	0.0346
pH (S.U.) Instantaneous Minimum	6.99	7.0	6.94	7.12	7.03	7.04	7.09	6.99	6.77	6.81	6.64	6.65
pH (S.U.) Instantaneous Maximum	7.83	8.08	7.89	7.98	7.7	8.07	8.3	8.66	7.81	7.92	7.58	7.75
DO (mg/L) Instantaneous Minimum	9.54	8.84	6.25	7.3	6.55	6.94	5.75	6.05	6.03	6.86	6.2	5.1
CBOD5 (lbs/day) Average Monthly	0.4	0.3	< 0.3	< 0.6	< 0.3	< 0.3	2.3	0.3	0.7	< 1.3	0.4	< 0.9
CBOD5 (lbs/day) Weekly Average	0.6	0.3	< 0.3	0.8	< 0.3	< 0.3	4.2	0.4	0.8	2.2	0.5	< 0.4
CBOD5 (mg/L) Average Monthly	2.7	2.6	< 2.0	< 2.2	< 2.0	< 2.0	10.8	2.0	4.1	< 3.3	4.0	< 5.0
CBOD5 (mg/L) Weekly Average	3.0	3.0	< 2.0	2.3	< 2.0	< 2.0	19.5	2.0	4.2	4.6	4.9	< 2.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	61	41	37	40	36	38	37	67	58	37	44	39
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	93	51	50	43	44	47	39	98	79	49	59	40
BOD5 (mg/L) Raw Sewage Influent Average Monthly	375	331	231	149	221	219	197	406	329	192	418	215
TSS (lbs/day) Average Monthly	< 0.9	0.8	< 0.6	< 1.1	< 0.7	< 0.8	< 9.0	1.8	1.3	< 5.8	< 0.7	< 1.1
TSS (lbs/day) Raw Sewage Influent Average Monthly	49	41	33	82	50	50	42	72	58	69	19	40

TSS (lbs/day) Raw Sewage Influent Daily Maximum	70	53	54	121	56	56	51	89	67	72	22	43
TSS (lbs/day) Weekly Average	1.5	1.0	< 0.7	< 1.4	< 0.7	< 0.6	33.8	1.9	1.6	10.7	0.9	< 0.8
TSS (mg/L) Average Monthly	< 5.5	7.0	< 4.0	< 4.0	< 4.0	< 4.8	< 41.9	10.4	7.6	< 13.3	< 6.3	6.2
TSS (mg/L) Raw Sewage Influent Average Monthly	320	332	205	272	303	293	217	427	336	235	176	220
TSS (mg/L) Weekly Average	7.0	10.0	< 4.0	< 4.0	< 4.0	< 4.0	155.0	11.6	8.0	22.5	8.5	< 4.0
Total Dissolved Solids (mg/L) Average Quarterly		920			959.3			836			794	
Total Dissolved Solids (mg/L) Daily Maximum		981			1110			1050			831	
Fecal Coliform (No./100 ml) Geometric Mean	35	42	20	10	22	24	103	27	29	< 32	31	6
Fecal Coliform (No./100 ml) Instantaneous Maximum	70	72	23	12	35	29	192	28	39	1000	189	18
UV Intensity (mW/cm²) Instantaneous Minimum	0.1	0.2	0.2	0.3	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.1
Nitrate-Nitrite (mg/L) Average Monthly	55.6	46.8	31.8	33.5	29.9	25.4	27.4	31.4	15.4	11.6	23.4	19.8
Nitrate-Nitrite (lbs) Total Monthly	283	183	149	291	147	130	162	158	78	118	79	106
Total Nitrogen (mg/L) Average Monthly	56.9	47.6	32.3	34.4	30.9	26.7	32.4	32.9	19.5	14.1	25.4	24
Total Nitrogen (lbs) Total Monthly	289	186	152	299	152	137	195	166	100	148	85	126
Ammonia (lbs/day) Average Monthly	< 0.02	< 0.01	< 0.02	< 0.03	< 0.02	< 0.02	< 0.02	< 0.02	0.4	0.6	< 0.02	0.5
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	2.09	1.23	< 0.2	2.85
Ammonia (mg/L) Instantaneous Maximum	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	2.23	2.25	0.3	3.99

Ammonia (lbs) Total Monthly	< 0.5	< 0.4	< 0.5	< 0.9	< 0.5	< 0.5	< 0.6	< 0.5	11.0	16.6	< 0.7	14.4
TKN (mg/L) Average Monthly	1.28	0.89	< 0.87	0.89	0.94	1.27	4.97	1.47	4.06	2.53	1.95	4.15
TKN (lbs) Total Monthly	6	3	< 4	8	5	7	32	7	22	30	7	21
Total Phosphorus (lbs/day) Average Monthly	0.04	0.04	0.07	< 0.10	0.09	0.20	0.20	0.10	0.08	0.20	0.05	0.07
Total Phosphorus (mg/L) Average Monthly	0.24	0.32	0.42	< 0.49	0.55	0.92	1.32	0.67	0.47	0.59	0.5	0.35
Total Phosphorus (mg/L) Instantaneous Maximum	0.32	0.40	0.55	< 0.5	0.7	0.98	3.01	0.7	0.48	0.79	0.51	0.43
Total Phosphorus (lbs) Total Monthly	1.27	1.16	1.98	< 4.31	2.68	4.89	7.55	3.41	2.48	6.90	1.66	1.90

Compliance History

Effluent Non-Compliance (Non-Compliant: 19 ; Compliant: 1) | Unauthorized Discharges (Non-Compliant: 0 ; Compliant: 0) | Other Permit Non-Compliance (Non-Compliant: 0 ; Cor

Refine List

NC ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value		Permit Limit	Unit	Sampling Point	Sampling Frequency	Sampling Type	Cause of NC	Corrective Action	External Comments
222264	07/01/2024	07/31/2024	Total Phosphorus	Instantaneous Maximum	3.01	>	2	mg/L	Final Effluent (001)	2/month	8-Hr Composite	Equipment malfunction/failure	Decreased return solids rate	Clogged RAS
222263	07/01/2024	07/31/2024	Total Suspended Solids	Weekly Average	155	>	45	mg/L	Final Effluent (001)	2/month	8-Hr Composite	Equipment malfunction/failure	Equipment repaired	Clogged RAS
222262	07/01/2024	07/31/2024	Total Phosphorus	Average Monthly	1.32	>	1	mg/L	Final Effluent (001)	2/month	8-Hr Composite	Equipment malfunction/failure	Equipment repaired	Clogged RAS
222261	07/01/2024	07/31/2024	Total Suspended Solids	Average Monthly	<41.9	>	30	mg/L	Final Effluent (001)	2/month	8-Hr Composite	Equipment malfunction/failure	Equipment repaired	Clogged RAS
222260	07/01/2024	07/31/2024	Total Suspended Solids	Weekly Average	33.8	>	24	lbs/day	Final Effluent (001)	2/month	8-Hr Composite	Equipment malfunction/failure	Equipment repaired	Clogged RAS.
158677	01/01/2022	01/31/2022	Ammonia-Nitrogen	Average Monthly	15.71	>	12	mg/L	Final Effluent (001)	2/month	8-Hr Composite	Unknown	None taken	
147897	09/01/2021	09/30/2021	Fecal Coliform	Instantaneous Maximum	1300	>	1000	No./100 ml	Final Effluent (001)	2/month	Grab	Hydraulic flow exceeding plant or unit design	None taken	

DEP Inspections:

9/28/2020 – No violations. (Mobility inspection report, Administrative Review.)
Recent permit limit exceedances were addressed by changing UV bulb, increasing chemical feed (PAC), pumping UV tank regularly to prevent solids accumulation.

5/30/2018 – No violations.
All treatment units are operating normally. All flow to treatment plant is by gravity. Train 1 is active, and train 2 is offline, heavy algae/vegetation growth in offline clarifier The primary sludge holding tank for train 2 is used for additional sludge storage. Ultrasonic flow meter with totalizer and 7-day chart.

No recent permit effluent noncompliance recorded. Field readings were taken and samples were collected for laboratory analysis. All results were within permitted limits.

Strausstown Brough has been absorbed by upper Tulpehocken Township, effective July 1st 2016.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.065
Latitude 40º 29' 17" **Longitude** -76º 10' 47"
Wastewater Description: Sewage Effluent

Permit limits can be Technology Based Effluent Limitations or Water Quality Based Effluent Limitations. Both are discussed in this Fact Sheet, in separate sections. Existing permit limits can also be carried forward in accordance with anti-backsliding provisions [40 CFR 122.44(l)].

Technology-Based Effluent Limitations (TBELs)

The following technology-based limitations apply to sewage dischargers, subject to water quality analysis and BPJ where applicable:

	Limit (mg/l)	Statistical Base Code	Federal Regulation	State Regulation	DRBC*
$CBOD_5$	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 (TSS)	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)	
Ammonia as N	20	Average Monthly	-	-	18 CFR Part 410
Total Dissolved Solids (TDS)	1000 **	Average	-	-	18 CFR Part 410
Total Dissolved Solids (TDS)	2000, applicable to new or expanding mass loadings of > 5000 lbs/day	Average Monthly		95.10 (c) and 95.10(a)	

*DEP has an interagency agreement with the Delaware River Basin Commission and incorporates their requirements (per 18 CFR Part 410 Water Quality Regulations and approved dockets) into our permits where appropriate.

**Or a concentration established by DRBC which is compatible with designated water uses and stream quality objectives and recognizes the need for reserve capacity to serve future dischargers (i.e. a limit based on a TDS Determination submitted to DRBC proving that the discharge will not cause the TDS in the receiving water to exceed the lesser of 500 mg/l or 133% of background).

Except for Ammonia and TDS, the TBELs in the above table were imposed in the existing permit and have been carried forward into the draft renewal permit.

For **Ammonia**, the WQBELs are more stringent than the TBELs in the above table and are discussed in the WQBEL section of the Fact Sheet.

The DRBC docket for this facility does not include a **TDS** variance from the 1000 mg/l limit but states: "The docket holder is required to perform monthly influent and effluent TDS monitoring…. After completing 12 consecutive months of monthly effluent monitoring without exceeding 1,000 mg/l, the docket holder may request in writing to the Executive Director a reduction in the effluent monitoring frequency from monthly to quarterly and may request elimination of the TDS influent monitoring." The DRBC docket includes a TDS limit of 1000 mg/l (without specifying a Statistical Base Code). Because the facility may submit a TDS Determination to DRBC to obtain a variance for their TDS limit, depending on their monitoring results, the draft renewal permit does not include a TDS limit at this time. The facility's DMRs from January 1, 2022 through January 31, 2025 indicate an average TDS discharge concentration of 911 mg/l. Daily Maximum concentrations greater than 1000 mg/l were reported for 5 monitoring periods out of 13. (Summarized DMR data for TDS is attached.) The same monitoring requirements in the existing permit for TDS have been carried forward.

Best Professional Judgment (BPJ) Limitations

None

Water Quality-Based Effluent Limitations (WQBELs)

Total Maximum Daily Loads (TMDLs):

None applicable for the receiving waterway or downstream.

WQBELs other than TMDLs:

DEP uses a model known as **WQM 7.0** to determine appropriate limits for $CBOD_5$, Ammonia (NH3-N), and Dissolved Oxygen (DO). DEP's 'Implementation Guidance for Section 93.7 Ammonia Criteria', document #386-2000-022, provides the methods and calculations contained in the WQM 7.0 model for conducting wasteload allocation and for determining recommended NPDES effluent limits for point source discharges. For more explanation of the WQM 7.0 model, see 'Technical Reference Guide WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen', document #386-2000-016. Because there are no other nearby sewage treatment plants on the receiving stream or on downstream waterways, no other discharges were included in the model simulation.

The source of the River Mile Indices (RMI's) and elevations that were used in the WQM 7.0 model (and TMS model discussed below) was DEP's eMapPA while the source of the Drainage Areas and stream design low-flows ($Q_{7\text{-}10}$, the lowest consecutive 7 days of stream flow over a 10-year period) was the USGS PA Stream Stats online tool (see attached results). Low Flow Yield (LFY) is calculated as stream low-flow $Q_{7\text{-}10}$ divided by Drainage Area.

DEP uses a model called the **Toxics Management Spreadsheet** (TMS) for toxic pollutants. It is a macro-enabled Excel version of DEP's former PENTOX model. It evaluates the reasonable potential for discharges to cause in-stream exceedances of water quality criteria and recommends WQBELs as permit limits, as needed, or recommends monitoring requirements to better evaluate 'reasonable potential' (to cause an in-stream exceedance of a water quality criteria) for some parameters. For more explanation of the TMS / PENTOX model, see Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, document #386-2000-015.

When there are less than 10 discharge sample results, the maximum discharge concentration of the available data (such as from the permit application and from DMRs) is used by DEP as the discharge concentration input value in the TMS for each parameter, with the exception of discharge Hardness for which the average discharge concentration is typically used if available.

The TMS is coded to recommend limits in the draft permit when the discharge concentration of a parameter equals or exceeds 50% of the calculated most stringent WQBEL. The TMS is coded to recommend a monitoring requirement in the draft permit when the discharge concentration is between 25% and 50% of the most stringent WQBEL in the case of non-conservative pollutants or between 10% and 50% of the WQBEL in the case of conservative pollutants.

Some default values were used in the models in the absence of reliable site-specific data including:

Stream Temperature = 20°C
Stream pH = 7 s.u.
Stream Hardness = 100 mg/l
Background $CBOD_5$ in stream = 2 mg/l
Background Ammonia in stream = 0 mg/l
Background DO in stream = 8.24 mg/l
Background stream concentrations for toxic parameters = 0 ug/l
Discharge Temperature = 25°C
Discharge pH = 7 s.u.
Discharge Hardness = 100 mg/l
Coefficient of Variability in data = 0.5

In addition the WQM 7.0 and TMS models estimated the stream width, depth, and velocity of the receiving stream absent site-specific data.

The following limitations and monitoring requirements were determined through water quality modeling (input values used and output files attached). **Also see the discussion after the tables:**

Parameter	Limit (mg/l)	Statistical Base Code	Model
$CBOD_5$	25 *	Average Monthly	WQM 7.0
Dissolved Oxygen (DO)	5.0	Minimum	WQM 7.0
Ammonia	4.0	Average Monthly	WQM 7.0

*the model defaulted to the TBEL meaning no more stringent limit is necessary to protect the receiving water

Parameter	units	Average Monthly	Daily Maximum	Instant. Maximum	Model
Total Copper	mg/l	0.019	0.03	0.048	Toxics Management Spreadsheet
Total Lead	mg/l	Report	Report	Report	Toxics Management Spreadsheet
Total Zinc	mg/l	Report	Report	Report	Toxics Management Spreadsheet

For **Ammonia**, the WQM 7.0 model defaulted to the existing permit limit of 4.0 mg/l (a WQBEL) as a monthly average which has been carried forward into the draft renewal permit in accordance with anti-backsliding provisions [40 CFR 122.44(l)] . DEP often allows less stringent Ammonia limits during the colder months in recognition of the fact that Ammonia is less toxic in cold water. The existing permit also included less stringent Ammonia limits for November through April, applying a multiplier of 3 to the calculated WQBEL, consistent with DEP's Standard Operating Procedure (SOP) Establishing Effluent Limitations for Individual Sewage Permits, for an average monthly limit of 12.0 mg/l. This limit has also been carried forward into the draft renewal permit.

For this facility, there was only one effluent sample result for **Total Copper, Total Lead, and Total Zinc** which is the minimum required by DEP's application. Whereas the TMS recommended a permit limit for Total Copper, there is not enough data at this time to support imposing a permit limit. Also, the Hardness in the stream and in the discharge would affect the calculated WQBELs for these three metals. Absent site-specific data, default values for stream Hardness and discharge Hardness were used in the model. The draft renewal permit therefore includes a monitoring requirement for each of these three metals. The results will allow the DEP to determine in the future if the discharge concentrations demonstrate a reasonable potential to cause an in-stream exceedance of State surface water quality criteria thereby needing permit limits. (Note: the single discharge sample concentrations of Total Copper, Total Lead, and Total Zinc did not exceed the WQBELs calculated by the TMS model.)

Anti-Backsliding

No limits in the renewal permit are less stringent than the previous permit.

Mass Load vs. Concentration Limits

Consistent with the Technical Guidance for the Development and Specification of Effluent Limitations, document #386-0400-001, and the SOP for Establishing Effluent Limitations for Individual Sewage Permits, average monthly mass loading

limits have been established for $CBOD_5$, TSS, and NH3, and average weekly mass loading limits have additionally been established for $CBOD_5$ and TSS.

Sample Types and Monitoring Frequencies

Sample types and monitoring frequencies are consistent with the Technical Guidance for the Development and Specification of Effluent Limitations, document #386-0400-001, and/or carried forward from the previous permit when deemed appropriate. When monitoring is for the purpose of collecting data for future reasonable potential determinations rather than for verifying compliance with permit limits, less frequent monitoring has been proposed. For example, once a month monitoring will yield a minimum of 60 data points for the next renewal permit development.

The existing permit's sample type of 8-hour composites have been changed to 24-hour composites in the draft renewal permit. Most facilities use automatic samplers such that 24-hour composites are feasible. The 2018 DEP Inspection report states that the site is only staffed 2 hours per day on weekdays and ½ hour on weekends so it is assumed that the permittee is currently using automatic samplers to collect their samples.

Flow Monitoring

The requirement to monitor the volume of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii).

Influent BOD & TSS Monitoring

The existing influent monitoring reporting requirement for BOD_5 and TSS will be maintained in the renewal permit, consistent with the permits of other municipal wastewater treatment facilities.

E. Coli Monitoring

Consistent with the SOP Establishing Effluent Limitations for Individual Sewage Permits and due to the regulatory change in the State Water Quality Standards, PA Code Chapter 93, E. Coli monitoring has been included. The statutory basis for this requirement is provided at PA Code § 92a.61.

Total Nitrogen (TN) and Total Phosphorus (TP) Monitoring

In an effort to understand nutrient loading on Pennsylvania streams, sewage dischargers with design flows greater than 2000 gpd are being required to at least monitor for TN and TP in new and reissued permits. The statutory basis for this requirement is provided at PA Code § 92a.61.

TN and TP monthly monitoring was included in the existing permit. The DMR data from January 1, 2022 through January 31, 2025 indicate an average TN concentration in the effluent of 28.9 mg/l and a monthly average TN load of 151 lbs. The DMR data from January 1, 2022 through January 31, 2025 indicate an average TP concentration in the effluent of 0.50 mg/l and a monthly average TP load of 2.7 lbs.

Other Permit Conditions

Included in Part C of the draft renewal permit are conditions that are standard for Sewage facilities: restrictions on quantity of hauled-in wastes, proper handling and disposal of solids, supplemental reports to be submitted, the requirement for an annual sewage sludge management inventory to be submitted with the facility's annual Chapter 94 Municipal Wasteload Management Report.

Parts A and Part B of the draft renewal permit use standard language placed in all individual sewage NPDES permits.

Part B. paragraph I.D. for General Pretreatment Requirements now includes the following **new** language:

4. Each POTW without an approved Pretreatment Program shall, within six (6) months of the permit effective date, develop a list of Industrial Users (IUs) in industry categories expected or suspected of per- and polyfluoroalkyl substance (PFAS) discharges to the POTW and submit the list to EPA at EPA_R3_Pretreatment@epa.gov and to DEP at RA-EPNPDES_PERMITS@pa.gov. These industry categories shall include airports; centralized waste treatment; electroplating; electric and electronic components; fire training; landfills; leather tanning & finishing;

metal finishing; organic chemicals, plastics & synthetic fibers (OCPSF); paint formulating; plastics molding & forming; pulp, paper & paperboard; textile mills; sites known or suspected of PFAS contamination; and any other sources expected or suspected of PFAS discharges. The list must contain the names, addresses, NAICS codes, and industry categories (as listed above) of any IUs identified.

Antidegradation

The permit limits and conditions are intended to protect the designated and existing uses of the receiving stream. No High Quality or Exceptional Value waters are impacted by this discharge.

Trout Waters

Jackson Creek and the downstream Little Northkill Creek are not classified as 'Class A' trout waters, nor are they considered 'Trout Natural Reproduction' waters.

303(d) Listed Streams – Impaired Waters

DEP's Integrated Water Quality Report is forwarded to the US EPA in compliance with Section 303(d) of the federal Clean Water Act for impaired waters. Jackson Creek has not been assessed as an impaired water.

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 as needed and BPJ. Instantaneous Maximum (IMAX) limits are generally determined using models or 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) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous 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	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)	13.0	22.0	XXX	25.0	40.0	50.0	2/month	24-Hr Composite
Biochemical Oxygen Demand (BOD_5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Total Suspended Solids (TSS)	16.0	24.0	XXX	30.0	45.0	60	2/month	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Total Dissolved Solids (TDS)	XXX	XXX	XXX	Report	Report Daily Max	XXX	1/quarter	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
UV Intensity (mW/cm^2)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Metered
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite

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	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Nitrate-Nitrite (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Nitrogen (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia Nov 1 - Apr 30	6.5	XXX	XXX	12.0	XXX	25.5	2/month	24-Hr Composite
Ammonia May 1 - Oct 31	2.0	XXX	XXX	4.0	XXX	8.5	2/month	24-Hr Composite
Ammonia (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
TKN	XXX	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
TKN (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	0.55	XXX	XXX	1.0	XXX	2.0	2/month	24-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Copper	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Lead	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Zinc	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite

Compliance Sampling Location: Outfall 001

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment)
☒	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☒	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☒	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☒	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☒	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☒	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☒	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☒	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 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, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 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, 386-2000-010, 3/1999.
☒	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	EPA Technical Support Document for Water Quality-based Toxics Control (TSD), EPA/505/2-90-001, PB91-127415, March 1991.
☒	SOP: New and Reissuance Sewage Individual NPDES Permit Applications, Version 2.0, February 3, 2022
☒	SOP: Establishing Effluent Limitations in Individual Sewage NPDES Permits, Version 2.0, February 5, 2024
☒	SOP: Establishing Water-Quality Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers. Version 1.5, May 20, 2021.
☒	Other: DRBC docket D-2005-006 CP-5
☐	

PERMIT	PF_NAME	MONITORIN(	MONITORIN(	DMR_VERSIC	OUTFALL	DISCHAR(	MONITORING_I	PARAMETI	LOAD_UN	LOAD_1_V	LOAD_1	LOAD_1_SBC	LOAD_2_V	LOAD_2	LOAD_2_S	CONC_
PA0246611	UPPER TULPEHOCKEN TWP'	1/1/2022	1/31/2022	2	001	Yes	Final Effluent	Flow	MGD	0.01672	Monitor	Average Monthly	0.02495	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	2/1/2022	2/28/2022	1	001	Yes	Final Effluent	Flow	MGD	0.01863	Monitor	Average Monthly	0.02972	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	3/1/2022	3/31/2022	1	001	Yes	Final Effluent	Flow	MGD	0.0163	Monitor	Average Monthly	0.02421	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	4/1/2022	4/30/2022	1	001	Yes	Final Effluent	Flow	MGD	0.01947	Monitor	Average Monthly	0.03904	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	5/1/2022	5/31/2022	1	001	Yes	Final Effluent	Flow	MGD	0.02043	Monitor	Average Monthly	0.03511	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	6/1/2022	6/30/2022	1	001	Yes	Final Effluent	Flow	MGD	0.01923	Monitor	Average Monthly	0.02621	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	7/1/2022	7/31/2022	1	001	Yes	Final Effluent	Flow	MGD	0.01962	Monitor	Average Monthly	0.0316	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	8/1/2022	8/31/2022	1	001	Yes	Final Effluent	Flow	MGD	0.02242	Monitor	Average Monthly	0.03404	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	9/1/2022	9/30/2022	1	001	Yes	Final Effluent	Flow	MGD	0.02038	Monitor	Average Monthly	0.02816	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	10/1/2022	10/31/2022	1	001	Yes	Final Effluent	Flow	MGD	0.02013	Monitor	Average Monthly	0.03454	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	11/1/2022	11/30/2022	1	001	Yes	Final Effluent	Flow	MGD	0.02027	Monitor	Average Monthly	0.02919	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	12/1/2022	12/31/2022	1	001	Yes	Final Effluent	Flow	MGD	0.02124	Monitor	Average Monthly	0.044	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	1/1/2023	1/31/2023	1	001	Yes	Final Effluent	Flow	MGD	0.01974	Monitor	Average Monthly	0.03504	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	2/1/2023	2/28/2023	1	001	Yes	Final Effluent	Flow	MGD	0.0198	Monitor	Average Monthly	0.03603	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	3/1/2023	3/31/2023	1	001	Yes	Final Effluent	Flow	MGD	0.01994	Monitor	Average Monthly	0.03841	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	4/1/2023	4/30/2023	1	001	Yes	Final Effluent	Flow	MGD	0.02039	Monitor	Average Monthly	0.03162	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	5/1/2023	5/31/2023	1	001	Yes	Final Effluent	Flow	MGD	0.0204	Monitor	Average Monthly	0.02735	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	6/1/2023	6/30/2023	1	001	Yes	Final Effluent	Flow	MGD	0.02034	Monitor	Average Monthly	0.03166	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	7/1/2023	7/31/2023	1	001	Yes	Final Effluent	Flow	MGD	0.02257	Monitor	Average Monthly	0.03778	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	8/1/2023	8/31/2023	1	001	Yes	Final Effluent	Flow	MGD	0.02363	Monitor	Average Monthly	0.03381	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	9/1/2023	9/30/2023	1	001	Yes	Final Effluent	Flow	MGD	0.02404	Monitor	Average Monthly	0.03898	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	10/1/2023	10/31/2023	1	001	Yes	Final Effluent	Flow	MGD	0.02404	Monitor	Average Monthly	0.03657	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	11/1/2023	11/30/2023	1	001	Yes	Final Effluent	Flow	MGD	0.02201	Monitor	Average Monthly	0.03275	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	12/1/2023	12/31/2023	1	001	Yes	Final Effluent	Flow	MGD	0.02586	Monitor	Average Monthly	0.09265	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	1/1/2024	1/31/2024	1	001	Yes	Final Effluent	Flow	MGD	0.02531	Monitor	Average Monthly	0.06737	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	2/1/2024	2/29/2024	1	001	Yes	Final Effluent	Flow	MGD	0.02119	Monitor	Average Monthly	0.0346	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	3/1/2024	3/31/2024	1	001	Yes	Final Effluent	Flow	MGD	0.02111	Monitor	Average Monthly	0.04152	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	4/1/2024	4/30/2024	1	001	Yes	Final Effluent	Flow	MGD	0.02242	Monitor	Average Monthly	0.06491	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	5/1/2024	5/31/2024	1	001	Yes	Final Effluent	Flow	MGD	0.0209	Monitor	Average Monthly	0.03191	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	6/1/2024	6/30/2024	1	001	Yes	Final Effluent	Flow	MGD	0.02079	Monitor	Average Monthly	0.03625	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	7/1/2024	7/31/2024	1	001	Yes	Final Effluent	Flow	MGD	0.02166	Monitor	Average Monthly	0.03174	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	8/1/2024	8/31/2024	1	001	Yes	Final Effluent	Flow	MGD	0.02174	Monitor	Average Monthly	0.03397	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	9/1/2024	9/30/2024	1	001	Yes	Final Effluent	Flow	MGD	0.02319	Monitor	Average Monthly	0.03381	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	10/1/2024	10/31/2024	1	001	Yes	Final Effluent	Flow	MGD	0.02644	Monitor	Average Monthly	0.04317	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	11/1/2024	11/30/2024	1	001	Yes	Final Effluent	Flow	MGD	0.02085	Monitor	Average Monthly	0.02757	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	12/1/2024	12/31/2024	1	001	Yes	Final Effluent	Flow	MGD	0.01935	Monitor	Average Monthly	0.03055	Monitor	Daily Maximum	
PA0246611	UPPER TULPEHOCKEN TWP'	1/1/2025	1/31/2025	1	001	Yes	Final Effluent	Flow	MGD	0.01905	Monitor	Average Monthly	0.03055	Monitor	Daily Maximum	
										0.02112	Avg		0.09265	Max		
										0.02644	MMA		0.04350	90th percentile		

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PADEP Chapter 94 Spreadsheet
Sewage Treatment Plants

Reporting Year: 2023

Facility Name: Upper Tulpehocken Township Wastewater Treatment Plant
Permit No.: PA0246611
Persons/EDU: 3.5

Existing Hydraulic Design Capacity: 0.065 MGD
Upgrade Planned in Next 5 Years? NO **Year:**
Future Hydraulic Design Capacity: MGD

Existing Organic Design Capacity: 130 lbs BOD5/day
Upgrade Planned in Next 5 Years? NO **Year:**
Future Organic Design Capacity: lbs BOD5/day

Monthly Average Flows for Past Five Years (MGD)

Month	2019	2020	2021	2022	2023
January	0.03342	0.02443	0.0148	0.01672	0.0197
February	0.03418	0.0261	0.0168	0.01863	0.0198
March	0.03839	0.02707	0.0191	0.0163	0.0199
April	0.03832	0.0283	0.0193	0.01947	0.0204
May	0.03883	0.02664	0.0186	0.0243	0.0204
June	0.04092	0.02825	0.0188	0.01923	0.0203
July	0.03229	0.02734	0.0185	0.01962	0.0226
August	0.03644	0.0294	0.0216	0.02242	0.0236
September	0.03308	0.02682	0.0314	0.02038	0.024
October	0.01869	0.0252	0.0231	0.02013	0.024
November	0.01783	0.02477	0.0203	0.0203	0.022
December	0.02215	0.02061	0.018	0.0212	0.0259
Annual Avg	0.03205	0.02624	0.02	0.01989	0.0219
Max 3-Mo Avg	0.03936	0.02833	0.0254	0.02105	0.024
Max : Avg Ratio	1.23	1.08	1.27	1.06	1.10
Existing EDUs	178.0	180.0	181.0	181.0	181.0
Flow/EDU (GPD)	180.1	145.8	110.5	109.9	121.0
Flow/Capita (GPD)	51.4	41.7	31.6	31.4	34.6
Exist. Overload?	**NO**	**NO**	**NO**	**NO**	**NO**

Monthly Average BOD5 Loads for Past Five Years (lbs/day)

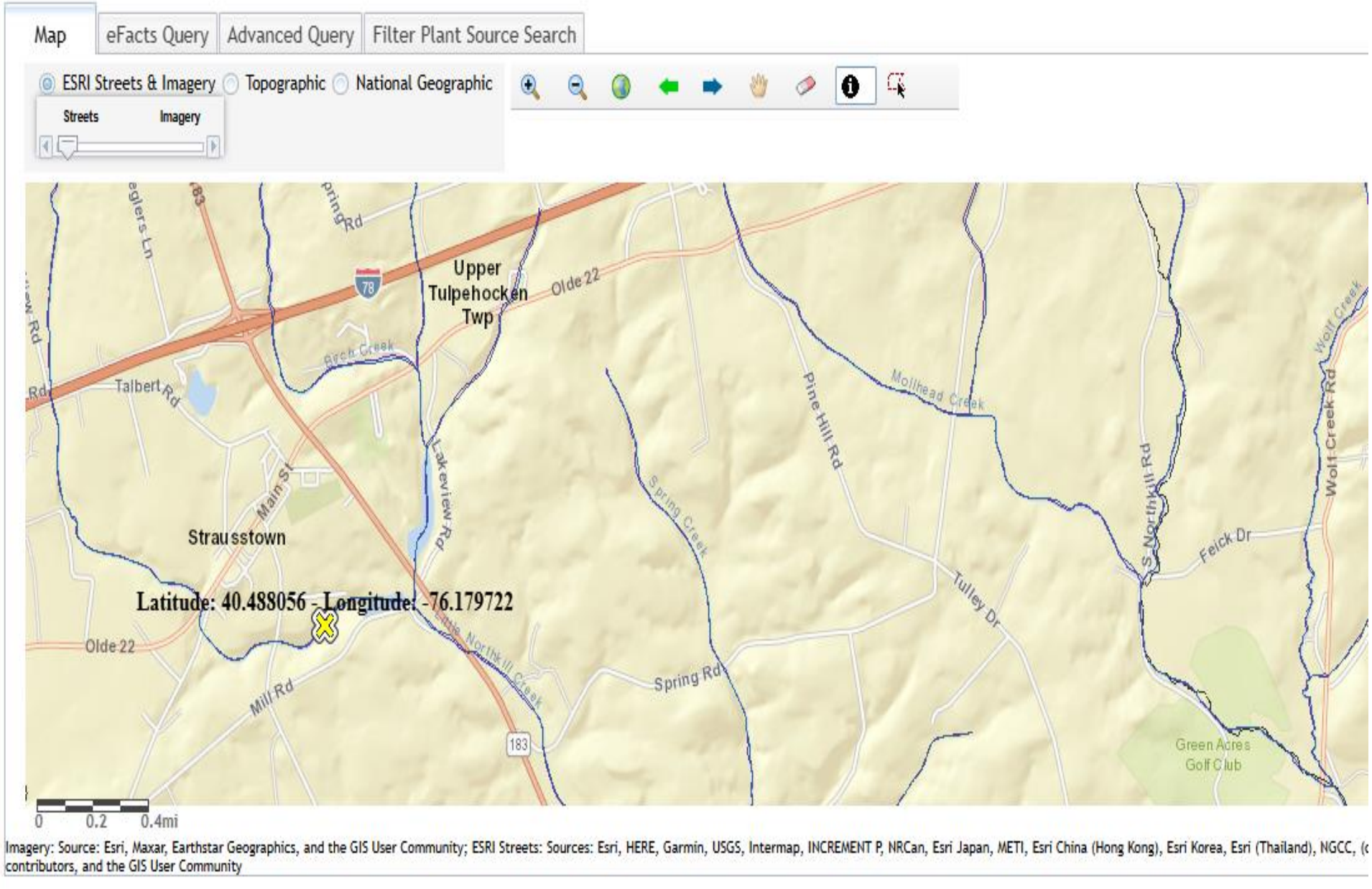
Month	2019	2020	2021	2022	2023
January	23	51	63	44	118
February	64	29	29	88	61
March	49	41	42	37	35
April	50	73	55	52	38
May	40	45	46	40	47
June	54	31	55	35	55
July	36	49	100	23	87
August	30	25	52	41	36
September	39	48	78	44	53
October	9	44	49	27	57
November	27	22	56	37	53
December	75	42	47	60	91
Annual Avg	41	42	56	44	61
Max Mo Avg	75	73	100	88	118
Max : Avg Ratio	1.81	1.75	1.79	2.00	1.94
Existing EDUs	178	180	181	181	181
Load/EDU	0.232	0.231	0.309	0.243	0.337
Load/Capita	0.066	0.066	0.088	0.069	0.096
Exist. Overload?	**NO**	**NO**	**NO**	**NO**	**NO**

Projected Flows for Next Five Years (MGD)

	2024	2025	2026	2027	2028
New EDUs	36.0	2.0	2.0	2.0	2.0
New EDU Flow	0.0048	0.0003	0.0003	0.0003	0.0003
Proj. Annual Avg	0.02882	0.02912	0.02942	0.02972	0.03002
Proj. Max 3-Mo Avg	0.03304	0.03338	0.03373	0.03407	0.03441
Proj. Overload?	**NO**	**NO**	**NO**	**NO**	**NO**

Projected BOD5 Loads for Next Five Years (lbs/day)

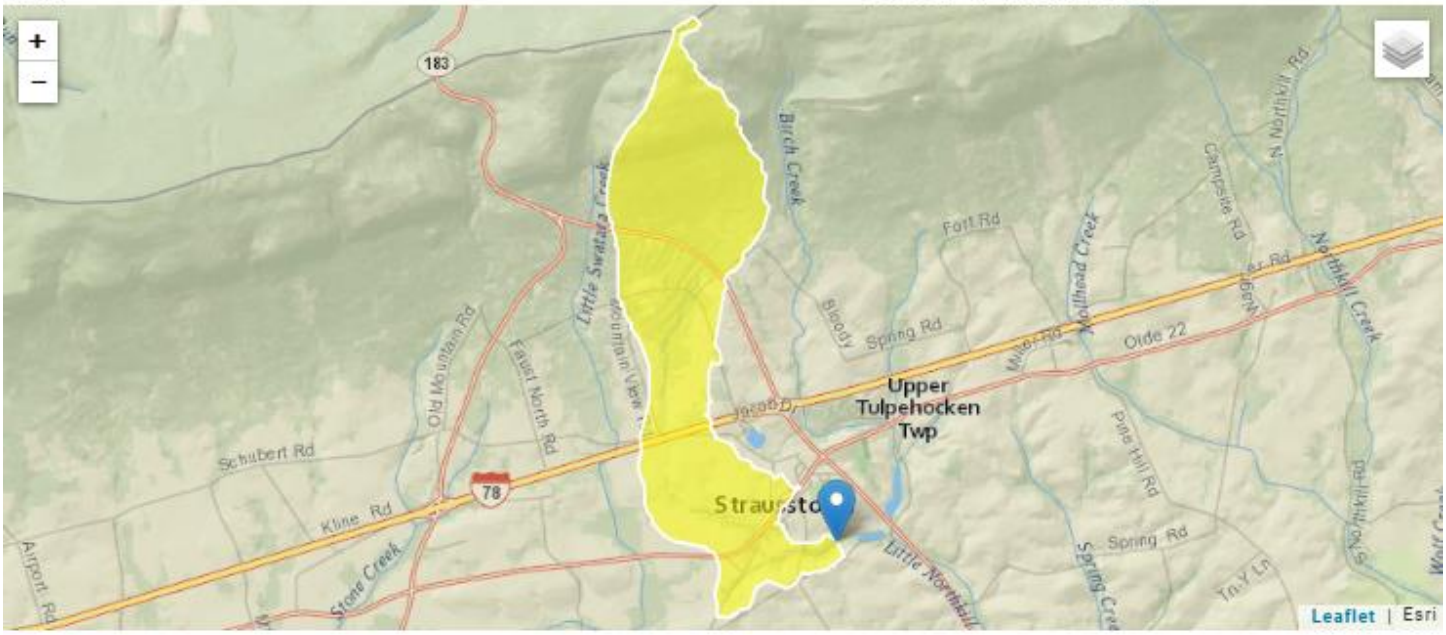
	2024	2025	2026	2027	2028
New EDUs	36	2	2	2	2
New EDU Load	9.740	0.541	0.541	0.541	0.541
Proj. Annual Avg	59	59	60	60	61
Proj. Max Avg	109	110	111	112	113
Proj. Overload?	**NO**	**NO**	**NO**	**NO**	**NO**


Map
eFacts Query
Advanced Query
Filter Plant Source Search
ESRI Streets & Imagery
Topographic
National Geographic
Streets
Imagery
Upper Tulpehocken Twp
Olde 22
Talbert Rd
Birch Creek
Main St
Strausstown
Lakeview Rd
Pine Hill Rd
Mollhead Creek
Spring Creek
Tulley Dr
S Northkill Rd
Felck Dr
Wolf Creek
Wolf Creek Rd
Latitude: 40.488056 - Longitude: -76.179722
Olde 22
Mill Rd
Little Northkill Creek
Spring Rd
183
Green Acres Golf Club
0 0.2 0.4mi
Imagery: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community; ESRI Streets: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC,
contributors, and the GIS User Community

PERMIT	MONITORING	MONITORING	DMR_VERSIC	OUTFALL	PARAMETER	CONC_UN	Q	CONC_2_	CONC_2	CONC_2_SBC	CONC_3_	CONC_3	CONC_3_	SAMPLE_F	SAMPLE_TYPE
PA0246611	1/1/2022	3/31/2022	1	001	Total Dissolved Solids	mg/L		873	Monitor	Average Quarterly	944	Monitor	Daily Maxi	3/quarter	8-Hr Composite
PA0246611	4/1/2022	6/30/2022	1	001	Total Dissolved Solids	mg/L		935	Monitor	Average Quarterly	959	Monitor	Daily Maxi	3/quarter	8-Hr Composite
PA0246611	7/1/2022	9/30/2022	1	001	Total Dissolved Solids	mg/L		990	Monitor	Average Quarterly	1120	Monitor	Daily Maxi	1/quarter	8-Hr Composite
PA0246611	10/1/2022	12/31/2022	1	001	Total Dissolved Solids	mg/L		891.5	Monitor	Average Quarterly	910	Monitor	Daily Maxi	1/quarter	8-Hr Composite
PA0246611	1/1/2023	3/31/2023	1	001	Total Dissolved Solids	mg/L		844	Monitor	Average Quarterly	896	Monitor	Daily Maxi	1/month	8-Hr Composite
PA0246611	4/1/2023	6/30/2023	1	001	Total Dissolved Solids	mg/L		921	Monitor	Average Quarterly	983	Monitor	Daily Maxi	1/quarter	8-Hr Composite
PA0246611	7/1/2023	9/30/2023	1	001	Total Dissolved Solids	mg/L		972	Monitor	Average Quarterly	1030	Monitor	Daily Maxi	1/quarter	8-Hr Composite
PA0246611	10/1/2023	12/31/2023	1	001	Total Dissolved Solids	mg/L		877	Monitor	Average Quarterly	965	Monitor	Daily Maxi	1/quarter	8-Hr Composite
PA0246611	1/1/2024	3/31/2024	1	001	Total Dissolved Solids	mg/L		794	Monitor	Average Quarterly	831	Monitor	Daily Maxi	1/quarter	8-Hr Composite
PA0246611	4/1/2024	6/30/2024	1	001	Total Dissolved Solids	mg/L		836	Monitor	Average Quarterly	1050	Monitor	Daily Maxi	1/quarter	8-Hr Composite
PA0246611	7/1/2024	9/30/2024	1	001	Total Dissolved Solids	mg/L		959.3	Monitor	Average Quarterly	1110	Monitor	Daily Maxi	1/quarter	8-Hr Composite
PA0246611	10/1/2024	12/31/2024	1	001	Total Dissolved Solids	mg/L		920	Monitor	Average Quarterly	981	Monitor	Daily Maxi	1/quarter	8-Hr Composite
PA0246611	1/1/2025	3/31/2025	1	001	Total Dissolved Solids	mg/L		1030	Monitor	Average Quarterly	1030	Monitor	Daily Maxi	1/quarter	8-Hr Composite
								911	Avg		1120	Max			
								1030	MMA						
								986.4	90th Percentile						

StreamStats Report

Region ID:	PA
Workspace ID:	PA20250319183732195000
Clicked Point (Latitude, Longitude):	40.48835, -76.17963
Time:	2025-03-19 14:38:02 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	1.93	square miles
PRECIP	Mean Annual Precipitation	47	inches
ROCKDEP	Depth to rock	4.1	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.33	miles per square mile

Low-Flow Statistics Flow Report [Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.306	ft^3/s
30 Day 2 Year Low Flow	0.43	ft^3/s
7 Day 10 Year Low Flow	0.118	ft^3/s
30 Day 10 Year Low Flow	0.168	ft^3/s
90 Day 10 Year Low Flow	0.282	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.

Application Version: 4.28.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Downstream point, just before confluence of Jackson Creek and Little Northkill Creek (to use in modeling):

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	2.06	square miles
PRECIP	Mean Annual Precipitation	47	inches
ROCKDEP	Depth to rock	4	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.41	miles per square mile

Low-Flow Statistics Flow Report [Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.298	ft^3/s
30 Day 2 Year Low Flow	0.423	ft^3/s
7 Day 10 Year Low Flow	0.111	ft^3/s
30 Day 10 Year Low Flow	0.161	ft^3/s
90 Day 10 Year Low Flow	0.274	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.

Input Data WQM 7.0

General Data

General | Stream | Discharge and Parameters

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	LFY (cfsm)	Slope (ft/ft)	PWS With (mgd)	Apply FC
1918	0.350	500	1.93	0.06	0	0	☑
1918	0.000	460	2.06	0.05	0	0	☑

Add Record
Delete Record

Input Data WQM 7.0

Stream Data

General | Stream | Discharge and Parameters

Design Condition ◉ Q7-10 ○ Q1-10 ○ Q30-10

RMI	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (ºC)	Tributary pH	Stream Temp (ºC)	Stream pH
0.350	0.00	0.00	0.000	0.00	0	0.00	0.00	20.00	7.00	0.000	0.00
0.000	0.00	0.00	0.000	0.00	0	0.00	0.00	20.00	7.00	0.000	0.00

Input Data WQM 7.0

Discharge and Parameter Data

General | Stream | Discharge and Parameters

Discharge Data

RMI	Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (ºC)	Disc pH
0.350	Upper Tulp.STP	PA0246611	0.0000	0.0650	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/day)
CBOD5	25.00	2.00	0.00	1.50
NH3-N	4.00	0.00	0.00	0.70
Dissolved Oxygen	5.00	8.24	0.00	0.00

Record: 1 of 2 | No Filter | Search

Input Data WQM 7.0

Discharge and Parameter Data

General | Stream | Discharge and Parameters

Discharge Data

RMI	Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (ºC)	Disc pH
0.000	downstrm		0.0000	0.0000	0.0000	0.000	20.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/day)
CBOD5	25.00	2.00	0.00	1.50
NH3-N	20.00	0.00	0.00	0.70
Dissolved Oxygen	5.00	8.24	0.00	0.00

Record: 2 of 2 | No Filter | Search

Modeling Specifications WQM 7.0

Select Parameters
- ○ NH3-N
- ○ Dissolved Oxygen
- ◉ Both

Select WLA Method
- ○ Uniform Treatment
- ◉ EMPR
- ○ D.O. Simulation

Q1-10 and Q30-10 Data
- ☑ Use input Q1-10 and Q30-10 data
- Q1-10/Q7-10 ratio: 0.64
- Q30-10/Q7-10 ratio: 1.36

WQAM 6.3 Comparison
- ☐ Input reach W/D ratios *
- ☐ Input reach travel times *
- ☑ Temperature Adjust Kr**

Dissolved Oxygen
- DO Goal: 6.00
- DO Saturation Percent: 90.0%
- ☑ Use Balanced Technology

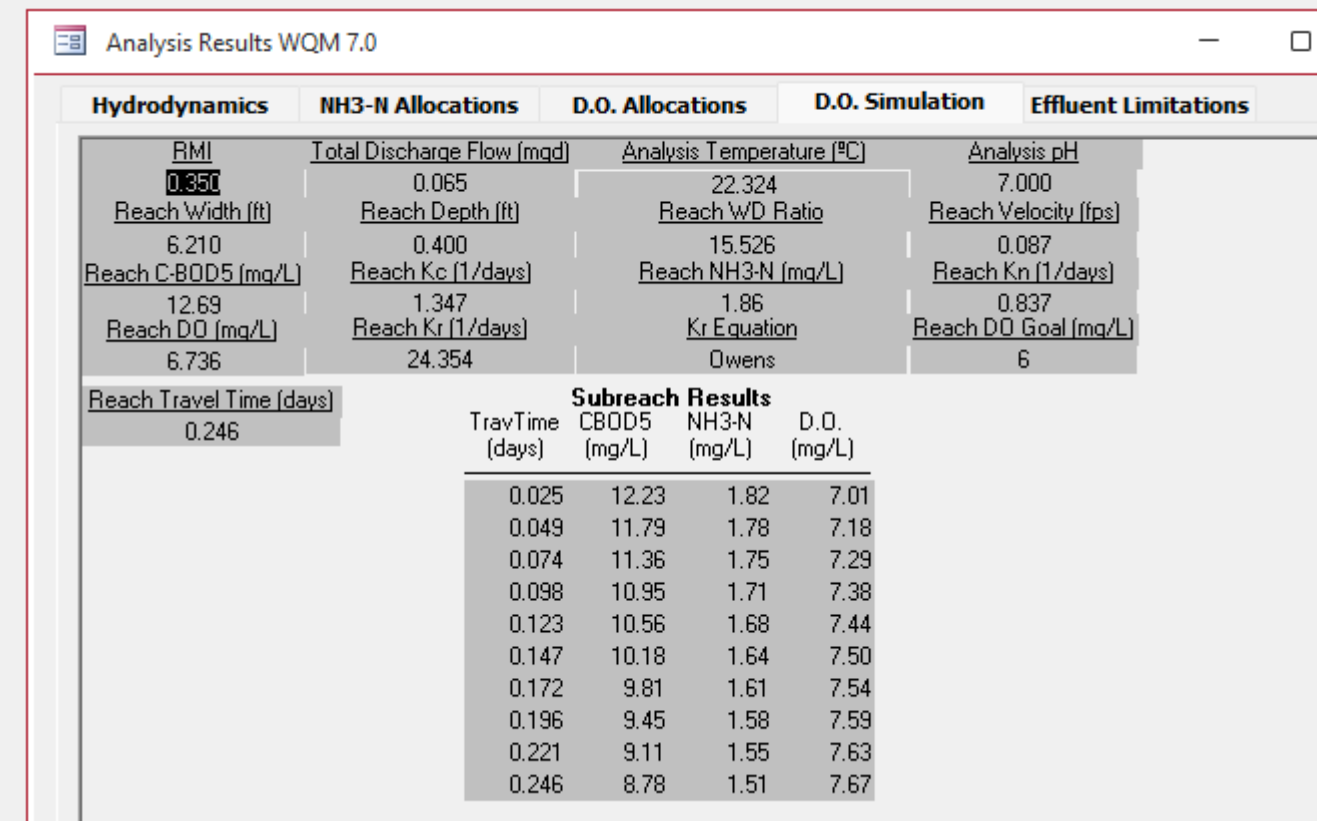
* Check to duplicate WQAM 6.3 results
** Uncheck to duplicate WQAM 6.3 results

Analysis Results WQM 7.0

Hydrodynamics | NH3-N Allocations | D.O. Allocations | D.O. Simulation | Effluent Limitations

Design Condition: ◉ Q7-10 ○ Q1-10 ○ Q30-10

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (ºC)	Analysis pH
0.350	0.12	0.00	0.12	.1006	0.02165	.4	6.21	15.53	0.087	0.246	22.32	7.00



Analysis Results WQM 7.0

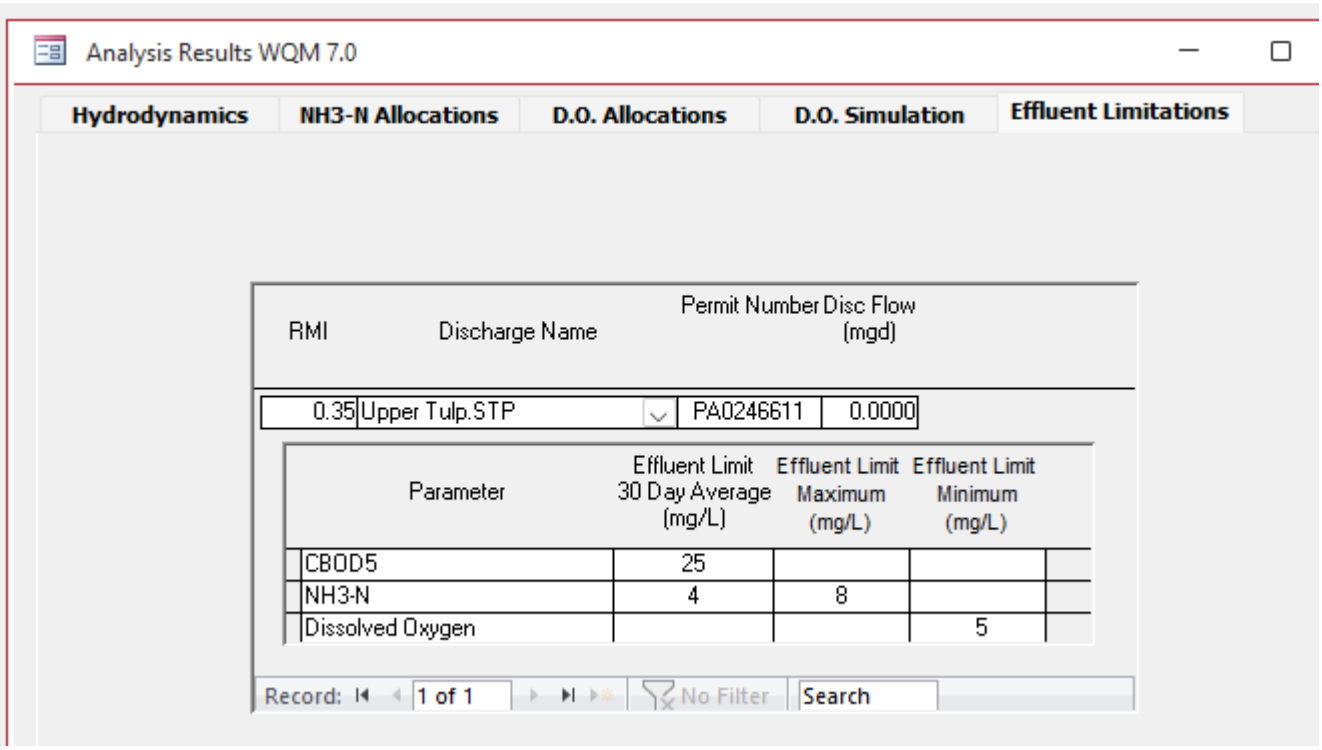
Hydrodynamics | NH3-N Allocations | D.O. Allocations | D.O. Simulation | Effluent Limitations

RMI	Total Discharge Flow (mgd)	Analysis Temperature (ºC)	Analysis pH
0.350	0.065	22.324	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WD Ratio**	**Reach Velocity (fps)**
6.210	0.400	15.526	0.087
Reach C-BOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
12.69	1.347	1.86	0.837
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.736	24.354	Owens	6

Reach Travel Time (days): 0.246

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.025	12.23	1.82	7.01
0.049	11.79	1.78	7.18
0.074	11.36	1.75	7.29
0.098	10.95	1.71	7.38
0.123	10.56	1.68	7.44
0.147	10.18	1.64	7.50
0.172	9.81	1.61	7.54
0.196	9.45	1.58	7.59
0.221	9.11	1.55	7.63
0.246	8.78	1.51	7.67



Analysis Results WQM 7.0

Hydrodynamics | NH3-N Allocations | D.O. Allocations | D.O. Simulation | Effluent Limitations

RMI	Discharge Name	Permit Number	Disc Flow (mgd)
0.35	Upper Tulp.STP	PA0246611	0.0000

Parameter	Effluent Limit 30 Day Average (mg/L)	Effluent Limit Maximum (mg/L)	Effluent Limit Minimum (mg/L)
CBOD5	25		
NH3-N	4	8	
Dissolved Oxygen			5

Record: 1 of 1 | No Filter | Search

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Upper Tulpehocken** NPDES Permit No.: **PA0246611** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **domestic ww**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.065	100	7						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	mg/L		0.01									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L		1									
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	mg/L		0.042									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Upper Tulpehocken, NPDES Permit No. PA0246611, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: **Jackson Creek**

No. Reaches to Model: **1**

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	001918	0.35	500	1.93			Yes
End of Reach 1	001918	0	460	2.06			Yes

$Q_{7\text{-}10}$

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	0.35	0.06										100	7		
End of Reach 1	0	0.05													

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	0.35														
End of Reach 1	0														

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Upper Tulpehocken, NPDES Permit No. PA0246611, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | ◉ All | ○ Inputs | ○ Results | ○ Limits

☑ ***Hydrodynamics***

Q_{7-10}

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
0.35	0.12		0.12	0.101	0.022	0.4	6.21	15.526	0.087	0.246	0.407
0	0.12		0.122								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
0.35	1.13		1.13	0.101	0.022	0.859	6.21	7.229	0.23	0.093	0.38
0	1.184		1.18								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 0.407 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	13.439	14.0	30.1	Chem Translator of 0.96 applied
Total Lead	0	0		0	64.581	81.6	176	Chem Translator of 0.791 applied
Total Zinc	0	0		0	117.180	120	258	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 0.407 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	8.956	9.33	20.1	Chem Translator of 0.96 applied
Total Lead	0	0		0	2.517	3.18	6.85	Chem Translator of 0.791 applied
Total Zinc	0	0		0	118.139	120	258	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 0.407 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 0.380 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	0.01	0.016	0.019	0.03	0.048	mg/L	0.019	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Lead	Report	Report	Report	Report	Report	µg/L	6.85	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	mg/L	0.17	AFC	Discharge Conc > 10% WQBEL (no RP)

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments