Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0031135**
Facility Type	**Municipal**	APS ID	**18661**
Major / Minor	**Major**	Authorization ID	**1490965**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	Kutztown Borough	Facility Name	**Kutztown STP**
Applicant Address	45 Railroad Street Kutztown, PA 19530-1112 Appl says zip 17055-3103?	Facility Address	503 Krumsville Road Kutztown, PA 19530
Applicant Contact	Michael Miller, Plant Manager	Facility Contact	Michael Miller
Applicant Phone	(610) 683-6131 mmiller@kutztownboro.org	Facility Phone	(610) 683-6131 mmiller@kutztownboro.org
Client ID	5972	Site ID	452165
Ch 94 Load Status		Municipality	Maxatawny Township
Connection Status		County	Berks
Date Application Received	July 2, 2024 with additional information received August 28, 2025 and September 26, 2025	EPA Waived?	No
Date Application Accepted	July 24, 2024	If No, Reason	Major Facility
Purpose of Application	NPDES RENEWAL		

*copy to Justin Mendinsky, Herbert, Rowland & Grubic, Inc., jmendinsky@hrg-inc.com 717-564-1121

Summary of Review

The previous NPDES sewage permit was issued December 27, 2019 and administratively extended past the expiration date of December 31, 2024. The renewal NPDES permit application (and subsequent information relevant to the permit renewal) was submitted using DEP's Public Upload electronic system (Reference ID # 243548). The Sewage Treatment Plant (STP) serves the Borough of Kutztown (approximately 49%), Kutztown University (50%), and Maxatawny Township (1%) per the renewal application. The collection system includes 4 pumping stations.

Note: The renewal application identified the client as 'Borough of Kutztown'. The existing permit was issued to 'Kutztown Borough'. In a phone conversation with Michael Miller on August 7, 2025, Mr. Miller confirmed that the renewal permit could also be issued to 'Kutztown Borough'.

Design flow:

The renewal application did not indicate a change in the design flow. The previous permit, the WQM permit, and the renewal application all indicate a design discharge flow of 1.5 MGD. Electronic Discharge Monitoring Reports (DMRs) from January 1, 2022, through June 30, 2025, indicate a Monthly Average flow of 1.0 MGD. There were 3 months out of 42 in which the reported Monthly Average flow exceeded the design flow of 1.5 MGD.

The 2024 Chapter 94 Municipal Wasteload Report submitted to DEP indicated no hydraulic overload at the STP. (See attached.)

Approve	Deny	Signatures	Date
x		*Bonnie Boylan* Bonnie Boylan / Environmental Engineering Specialist	September 30, 2025
x		*Maria D. Bebenek* for Daniel W. Martin, P.E. / Environmental Engineer Manager	October 2, 2025
x		*Maria D. Bebenek* Maria D. Bebenek, P.E. / Environmental Program Manager	October 2, 2025

Summary of Review

Industrial Users:

The NPDES renewal application and the facility's 2024 Chapter 94 Municipal Wasteload Report represented that there were no Industrial Users contributing wastewater to the treatment facility.

Combined Sewer Outfalls:

Not Applicable.

Variances:

None requested.

Hauled in Wastes:

None accepted within the past three years and none anticipated for next five years according to the renewal application.

Sludge Disposal:

Sludge is hauled off-site, such as to Lehigh County Authority's Pretreatment Wastewater Facility in Allentown.

The facility also has reed beds. The renewal application indicated: "a minimum amount of digestate [from the digester] is applied to reed beds at the plant".
Note: The Fact Sheet associated with the 2019 NPDES permit stated that the STP Operator told the DEP permit writer in a phone conversation on August 7, 2019, that the reed beds have a PVC liner.

Unresolved Violations:

None per eFacts and WMS databases.

Delaware River Basin Commission (DRBC):

The DRBC docket for this facility is D-1989-039 CP-5 which was approved September 5, 2024 and expires December 31, 2029. Attached is the excerpted Effluent Table from this docket.

The docket states:
"The docket holder's WWTP will continue to serve Kutztown Borough and Kutztown University located in Berks County, Pennsylvania. The WWTP also diverts portions of influent for Maxatawny Township, in Berks County, through an influent pump station where equal amounts of influent and effluent are diverted to the Maxatawny Township Municipal Authority WWTP (Docket No. D-2007-001 CP-3)."

In accordance with State regulations and an interagency agreement, a copy of the Fact Sheet and draft permit will be sent to the DRBC. Any comments from the DRBC will be considered.

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)	1.5
Latitude	40º 31' 39.85" (DEP eFacts) (40.527778)	Longitude	-75º 47' 2.08" (DEP eFacts) (-75.783889)
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Sacony Creek (CWF (existing use))	Stream Code	2008
NHD Com ID	25978384	RMI	7.4
Drainage Area	21.8	Yield (cfs/mi^2)	0.21
Q_{7-10} Flow (cfs)	4.57 (estimated)	Q_{7-10} Basis	USGS/PA Stream Stats **
Elevation (ft)	395'	Slope (ft/ft)	
Watershed No.	3-B	Chapter 93 Class.	TSF, MF*
Existing Use*	CWF(COLD WATER FISHES), MF	Existing Use Qualifier	Use Attainability Analysis (eMapPA)
Exceptions to Use		Exceptions to Criteria	None
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	TMDL exists downstream	Name	Lake Ontelaunee TMDL

Secondary waters:
Sacony Creek flows into Maiden Creek at RMI 11.0 (TSF, existing use same as designated use, impaired for recreational use due to pathogens); after approximately 1 more mile, Maiden Creek flows into Lake Ontelaunee which is impaired for nutrients, and then into the Schuylkill River.

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake	Reading Area Water Authority		
PWS Waters	Maiden Creek	Flow at Intake (cfs)	
PWS RMI	Approx 3.2	Distance from Outfall (mi)	➢ 14 miles

*DEP has evaluated information indicating that the existing use of the receiving waters is different than the designated use under 25 Pa. Code § 93.9. In developing the draft NPDES permit, DEP is proposing to protect the existing use of the receiving waters. Following DEP's notice of the receipt of the application and the draft permit in the Pennsylvania Bulletin, DEP will accept written comments during the public comment period regarding DEP's tentative determination to protect the existing use. DEP will make a final determination on existing use protection for the receiving waters as part of the final permit action.

**https://streamstats.usgs.gov/ss/
Gage correlation was used in the last Fact Sheet for estimating the Q_{7-10} flow in Sacony Creek at outfall 001's location. However, Q_{7-10} flows are no longer being calculated for the USGS gage 01470756 (on Maiden Creek at Virginville). There were no other upstream or downstream gages with historic low-flow data records available.

Other sewage dischargers in proximity:
Maxatawny STP at RMI 6.8 on Sacony Creek, NPDES permit PA0260151, Drainage Area per Stream Stats of 23 mi^2

Treatment Facility Summary

Treatment Facility Name: Kutztown STP

WQM Permit No.	Issuance Date
0605409	6/5/2005
0605409 A-1	6/29/2012
0605409 A-2	5/16/2018

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Ammonia Reduction	Trickling Filter With Settling	Ultraviolet	1.5

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
1.5	2502	Not Overloaded	Anaerobic Digestion	Other WWTP

There are no pending applications for WQM permits for this client or this site.

DEP issued Approval letter 4/23/2020 for new locations for flow meter. No WQM permit amendment was required.

2 Grinders
1 Grit Removal system
1 Influent Pump Station, wet well with 3 pumps
1 Fine Screen and 1 bar screen in gated channel
4 Primary Clarifiers
2 Trickling Filters
2 Intermediate Clarifiers
2nd wet well with 3 VFD pumps
1 Biotower, plastic media
2 Final Clarifiers
2 Ultraviolet (UV) light disinfection units
2 Recycle/Flood Pumps*
1 Anaerobic Digester, with 3 heat exchangers, 1000-gallon diesel fuel tank
1 Sludge Holding Tank
3 Sludge Dewatering Reed Beds, lined

4 Pump Stations in collection system

Wastewater treatment chemicals used per application: Mastercat 4235 (polyaluminum chloride solution)

*Several of the WWTP facilities are located in the 100-year floodplain.

According to the renewal application:

A Biotower is used to reduce the ammonia in the waste stream. The Mastercat chemical and final settling is used to reduce Phosphorus. Tertiary clarifiers are used to reduce both total nitrogen and total phosphorus.

EXISTING PERMIT'S LIMITS:

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
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.13	XXX	0.41	1/day	Grab
$CBOD_5$ Nov 1 - Apr 30	313	501	XXX	25.0	40.0	50	2/week	24-Hr Composite
$CBOD_5$ May 1 - Oct 31	181	273	XXX	14.5	21.8	29	2/week	24-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Suspended Solids (TSS)	375	563	XXX	30.0	45.0	60	2/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Suspended Solids (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Suspended Solids (lbs)	XXX	136984 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Dissolved Solids	Report	XXX	XXX	1000.0	XXX	2000	1/month	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
UV Intensity (µw/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/month	24-Hr Composite

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 Nov 1 - Apr 30	135	XXX	XXX	10.8	XXX	21.6	2/week	24-Hr Composite
Ammonia May 1 - Oct 31	40	XXX	XXX	3.2	XXX	6.4	2/week	24-Hr Composite
Total Phosphorus (TP)	Report	XXX	XXX	2.0	XXX	XXX	2/week	24-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus (lbs)	XXX	4566 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Copper	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/month	24-Hr Composite
Total Hardness	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/month	24-Hr Composite
Chronic WET - Ceriodaphnia Survival (TUc)	XXX	XXX	XXX	XXX	2.0 Daily Max	XXX	See Permit	24-Hr Composite
Chronic WET - Ceriodaphnia Reproduction (TUc)	XXX	XXX	XXX	XXX	2.0 Daily Max	XXX	See Permit	24-Hr Composite

Compliance History

DMR Data for Outfall 001 (from July 1, 2024 to June 30, 2025)

Parameter	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24
Flow (MGD) Average Monthly	1.1334	1.3248	1.1755	0.9744	1.0455	0.7015	0.7219	0.6617	0.6823	0.7201	0.8904	0.6912
Flow (MGD) Daily Maximum	1.6057	2.4396	1.5431	1.2574	1.8883	0.8689	1.3074	0.7478	0.7988	0.7912	1.6481	0.8962
pH (S.U.) Instantaneous Minimum	7.8	7.6	7.6	7.7	7.6	7.7	7.5	7.6	7.6	7.8	7.8	7.7
pH (S.U.) Instantaneous Maximum	8.1	8.0	8.0	8.0	8.0	8.2	8.0	8.1	8.0	8.1	8.2	8.2
DO (mg/L) Instantaneous Minimum	8.7	7.6	7.9	8.9	9.5	9.9	8.7	8.2	7.6	7.0	7.1	7.4
TRC (mg/L) Average Monthly	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02
TRC (mg/L) Instantaneous Maximum	0.03	0.02	0.02	0.01	0.02	0.02	0.02	0.03	0.06	0.04	0.03	0.03
CBOD5 (lbs/day) Average Monthly	< 20.64	< 38.96	42.21	< 32.68	32.46	19.46	21.87	< 17.63	< 13.92	17.19	< 16.28	< 12.59
CBOD5 (lbs/day) Weekly Average	2.35	5.55	64.43	40.20	45.15	20.45	31.03	22.83	15.12	3.15	< 2.60	2.30
CBOD5 (mg/L) Average Monthly	< 2.10	< 3.69	4.3	< 3.7	3.6	3.2	3.3	< 3.1	< 2.38	2.80	< 2.19	< 2.23
CBOD5 (mg/L) Weekly Average	2.35	5.55	5.6	4.5	4.2	3.4	3.5	4.0	< 2.55	3.15	< 2.60	2.30
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	714.72	1300.73	1912.23	1164.25	1373.95	990.12	978.10	1186.19	1192.80	1600.15	846.69	888.98
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	974.55	2317.68	2377.96	1450.05	1751.12	1068.32	1788.47	1416.32	1688.96	1763.73	1161.40	1124.84

BOD5 (mg/L) Raw Sewage Influent Average Monthly	74.38	126.69	204.22	135.22	162.70	167.23	161.08	208.38	205.22	261.67	113.13	163.70
TSS (lbs/day) Average Monthly	< 61.6	122.0	125.2	101.3	104.0	61.5	82.6	36.8	36.4	43.3	< 36.2	47.6
TSS (lbs/day) Raw Sewage Influent Average Monthly	687.5	2015.3	1606.5	984.6	1008.2	853.4	794.8	1116.3	930.4	1632.6	640.7	1125.1
TSS (lbs/day) Raw Sewage Influent Daily Maximum	1125.3	3738.9	2182.1	1540.2	1950.8	771.9	1911.2	1922.3	1554.8	2316.3	1580.2	1693.6
TSS (lbs/day) Weekly Average	74.4	211.4	155.9	124.4	128.5	100.2	108.2	39.9	48.8	58.9	51.8	80.2
TSS (mg/L) Average Monthly	< 6.2	11.5	12.9	11.6	11.7	10.1	12.9	6.5	6.3	7.1	< 4.7	7.9
TSS (mg/L) Raw Sewage Influent Average Monthly	72.3	184.4	169.6	115.9	123.5	142.8	132.5	196.1	161.5	265.2	82.1	209.9
TSS (mg/L) Weekly Average	7.0	16.7	13.3	14.0	12.3	14.7	16.7	7.3	9.0	9.5	6.5	12.3
Total Suspended Solids (lbs) Total Monthly	< 1848	3782	3755	3142	2912	1906	2560	1105	1128	1298	< 1123	1477
Total Suspended Solids (lbs) Total Annual							29546					
Total Dissolved Solids (lbs/day) Average Monthly	6964.93	8197.59	8579.50	7912.57	8936.62	5666.47	5656.36	5782.32	6079.55	5828.12	5526.24	4948.17
Total Dissolved Solids (mg/L) Average Monthly	716.00	798.00	890.00	913.33	1006.25	958.67	888.89	1016.75	1034.89	951.56	753.88	878.10
Fecal Coliform (No./100 ml) Geometric Mean	< 1.2	< 2.5	< 2	< 1	< 2	< 1	< 1	< 1	< 1	< 1.3	< 2.1	< 1.6
Fecal Coliform (No./100 ml) Instantaneous Maximum	2.0	20.0	8	3	19	2	1	1	3	3.0	6.0	8.0

UV Intensity (µw/cm²) Instantaneous Minimum	682.5	171.2	236.2	278.8	249.2	267.8	254.4	272.2	257.6	233.5	327.0	294.2
Total Nitrogen (mg/L) Daily Maximum	13.00	22.00	20.50	25.70	32.50	17.80	22.40	23.50	18.20	18.60	17.10	20.50
Ammonia (lbs/day) Average Monthly	< 0.9833	< 13.1652	13.0	< 9.4	14.9	< 10.0	< 8.6	< 3.2	< 5.9326	6.4928	< 1.8825	< 1.1488
Ammonia (mg/L) Average Monthly	< 0.1000	< 1.3163	1.36	< 1.06	1.62	< 1.63	< 1.23	< 0.57	< 1.0056	1.0700	< 0.2513	< 0.2200
Total Phosphorus (lbs/day) Average Monthly	5.5	10.8	13.8	10.0	9.7	3.3	5.0	3.9	6.1	8.6	6.5	4.3
Total Phosphorus (mg/L) Average Monthly	0.6	1.0	1.4	1.1	1.1	0.5	0.7	0.7	1.0	1.4	0.9	0.8
Total Phosphorus (lbs) Total Monthly	166	335	414	311	270	104	153	117	190	259	203	135
Total Phosphorus (lbs) Total Annual							2834					
Total Copper (mg/L) Daily Maximum	0.009	0.015	0.014	0.016	0.016	0.011	0.013	0.012	0.011	0.016	0.010	0.010
Total Hardness (mg/L) Daily Maximum	246.0	186.0	204.0	286.0	274.0	292.0	308.0	306.0	304.0	310.0	302.0	318.0
Chronic WET - Ceriodaphnia Survival (TUc) Daily Maximum	GG	GG	GG	GG	GG	GG	2.0	GG	GG	GG	GG	GG
Chronic WET - Ceriodaphnia Reproduction (TUc) Daily Maximum	GG	GG	GG	GG	GG	GG	2.0	GG	GG	GG	GG	GG

Compliance History

Effluent Violations for Outfall 001, from July 1, 2024 to August 31, 2025:

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Total Dissolved Solids	02/28/25	Avg Mo	1006.25	mg/L	1000.0	mg/L
Total Dissolved Solids	11/30/24	Avg Mo	1016.75	mg/L	1000.0	mg/L
Total Dissolved Solids	10/31/24	Avg Mo	1034.89	mg/L	1000.0	mg/L

Summary of Inspections:

February 4, 2025 – No violations. DEP collected samples for analysis: no exceedances of permit limits.

The CCT is no longer in use. The facility maintains two UV banks, which operate in parallel. Each bank contains five racks with eight bulbs per rack. The transition to a UV system is complete. The facility does not accept hauled-in waste. Facility has emergency generator for stand-by power. Facility has a high flow management plan. Effluent flow was very clear, no suspended solids noted. The creek had a clear appearance and showed no signs of floating solids, scum, algae, foam, or buildup. No malodor was detected. The streambed appeared clear with no settled solids observed.

July 27, 2021 – No violations. DEP collected samples for analysis (Fecal, $CBOD_5$, TSS, NH3, TP, TKN, Nitrate, Nitrite): no exceedances of permit limits.

Influent from Kutztown Borough, Maxatawny Twp., and Kutztown University is directed to STP.
Primary clarifiers #1 & #2 are offline due to decrease summer flows. All 4 primaries are operational when schools are in session. Biotower media is damaged in 2 locations and expected to be repaired in the future. Aluminum sulfate is added for phosphorus control. Hydrogen peroxide is being used for algae control. Chemicals are added prior to final clarifiers. UV unit #2 was operational. Display noted that all bulbs were active. Type of Stand-by Power: Portable generator. The facility does not accept hauled-in wastes. Effluent appeared clear. Outfall was clear. Receiving stream was clear. Sludge is applied to reed beds several times throughout the year.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 1.5
Latitude 40º 31' 40" **Longitude** -75º 47' 2"
Wastewater Description: Sewage Effluent

DEP separately determines Technology-Based Effluent Limitations (TBELs), Best Professional Judgement limitations (BPJ), and Water Quality-Based Effluent Limitations (WQBELs), compares them to existing permit limits, then decides which to impose as permit limits for the renewal permit.

Technology-Based Effluent Limitations (TBELs)

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

Pollutant	Limit (units)	Statistical Base Code (SBC)	Federal Regulation	State Regulation	DRBC
$CBOD_5$	25 (mg/l)	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)	
	40 (mg/l)	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)	
$CBOD_5$ or BOD_5	85% Removal	Minimum		92a.47(a)(3))	18 CFR Part 410* ¶4.30.3.B,3.10.4.A, & 3.10.6.D
Total Suspended Solids (TSS)	30 (mg/l)	Average Monthly	133.102(b)(1)	92a.47(a)(1)	18 CFR Part 410* ¶4.30.3.A and 3.10.4.D
	45 (mg/l)	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)	18 CFR Part 410* ¶4.30.5.C.
Fecal Coliform (5/1 – 9/30)	200 (#/100 ml)	Geo Mean	-	92a.47(a)(4)	18 CFR Part 410* ¶4.30.4.A.
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 (TRC)	0.5 (mg/l)	Average Monthly	-	92a.48(b)(2)	
Total Phosphorus (TP)	2.0**	Average Monthly	-	96.5(c)	
Total Dissolved Solids (TDS)	1000 (mg/l) ***	Average			Docket D-1989-039 CP-5 based on 18 CFR Part 410* ¶3.10.4.D.
Ammonia	20 (mg/l)	Average Monthly			18 CFR Part 410* ¶4.30.5.D.

*Administrative Manual-Part III Water Quality Regulations 18 CFR Part 410

**for discharges to nutrient -impaired waters (unless more stringent limits are imposed due to an applicable TMDL). Although the receiving water at this segment of the Sacony Creek has not been identified as impaired, the downstream waters have been. (Also see the discussion of Phosphorus in the TMDL section of this Fact Sheet.)

***Or a concentration established by the Commission 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. The DRBC docket for this facility does not include such a TDS value; it includes the effluent limit of 1000 mg/l.

The above TBELs for **pH, Fecal Coliform, TP, and TDS** are included as limits in the draft renewal permit and are the same limits as in the existing permit.

For **$CBOD_5$**, the above TBELs are included as limits in the draft renewal permit during the cooler months of November through April, consistent with the existing permit. WQBELs were calculated as more stringent than the TBELs for $CBOD_5$ and have been imposed as the permit limits for $CBOD_5$ during the warmer months of May through October, consistent with the existing permit. $CBOD_5$ is also discussed in the WQBEL section of this Fact Sheet.

For **TSS**, the above TBELs are included as limits in the draft renewal permit during the cooler months of November through April, consistent with the existing permit. TSS during the warmer months of May through October match the WQBELs for $CBOD_5$ during the same warmer, consistent with DEP's SOP 'Establishing Effluent Limitations for Individual Sewage Permits' which states:

> II.B.4.d.
> *Establish the average monthly concentration limit for TSS at the same concentration as for $CBOD_5$ using BPJ [Best Professional Judgement], if the $CBOD_5$ limit is a WQBEL.*

The DMRs from the last two years were reviewed, There were no months in which the TSS weekly average was reported as greater than 21.8 mg/l, the proposed TSS weekly average limit for the warm months of May through October. There were no warm months when the TSS monthly average was reported as greater than 14.5 mg/l, the proposed TSS monthly average limit for the warm months of May through October. No compliance schedule is considered necessary.

The requirement for a minimum of 85% removal for $CBOD_5$ or BOD_5 is satisfied by DEP's narrative condition in Part A of NPDES permits, following the limits tables, for municipal sewage treatment plants:

Additional Requirements

2. The monthly average percent removal of BOD_5 or $CBOD_5$ and TSS must be at least 85% for POTW facilities on a concentration basis except where 25 Pa. Code 92a.47(g) and (h) are applicable to facilities with combined sewer overflows (CSOs) or as otherwise specified in this permit. (25 Pa. Code § 92a.47(a)(3))

Note: DMR data from January 1, 2022 through June 30, 2025 demonstrate that the facility is achieving better than 85% removal for $CBOD_5$ and TSS.

The permittee, in a phone conversation on August 7, 2025, relayed that they no longer have the ability to use chlorine disinfection. They solely use UV disinfection. Therefore, **TRC** limits are not included in the draft renewal permit.

The existing permit and the draft renewal permit include more stringent limits for **Ammonia** than the TBELs shown in the preceding TBEL table. Ammonia is discussed in the WQBEL section of the Fact Sheet.

Best Professional Judgement Limitations (TBEL/BPJ)

As discussed above, the TSS permit limits during the months of May through October are BPJ, based on achievable performance at Sewage Treatment Plants.

Water Quality-Based Effluent Limitations (WQBELs)

Total Maximum Daily Load (TMDL):

Downstream Lake Ontelaunee was placed on Pennsylvania's 1996 303(d) list of impaired waterbodies. It is considered impaired due to nutrients and suspended solids. A study of the lake identified phosphorus as the limiting nutrient. A TMDL is a calculation of the maximum amount of a pollutant(s) that a body of water can receive and still safely meet water quality standards. Federal regulations at 40 CFR 122.44(d)(1)(vii)(B), require effluent limitations to be consistent with the assumptions and requirements of any available wasteload allocation (WLA) in an approved TMDL as provided at 40 CFR 130.7.

A TMDL for Nutrients and Suspended Sediment was prepared in August 2004 for Lake Ontelaunee. EPA approved the TMDL and DEP published final Notice in for the TMDL in the April 30, 2005 PA Bulletin. Waste Load Allocations (WLA's) were assigned to Kutztown STP for TSS and TP (see attached). The previous permit imposed limits of 136,984 lbs/year for TSS and 4566 lbs/year for TP, calculated thus:
30 mg/l TSS x 1.5 MGD x 8.34 c.f. x 365 days/year = 136,984.5 lbs/year
1.0 mg/l TP x 1.5 MGD x 8.34 c.f. x 365 days/year = 4566.2 lbs/year

The existing permit limits for TSS and TP have been carried forward.

Note: A request was made by the downstream water supplier and agreed to by DEP in May 2014 to include, as a minimum, the regulatory limit of 2.0 mg/l as a monthly average for TP for designated dischargers upstream of the public water supply intake. Kutztown STP is one of the designated dischargers. The letter agreement dated May 7, 2014, is attached to this Fact Sheet.

WQBELs other than TMDL:

The existing permit limits for TRC were WQBELs. Because chlorine disinfection is no longer used, no WQBELs were calculated for TRC. The draft renewal permit eliminates the TRC limits.

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 Guidance 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 is another Sewage Treatment Plant (STP) in close proximity to the Kutztown facility, it was included in the model simulation: Maxatawny STP, NPDES permit PA0260151.

The source of the River Mile Indices (RMI's) and elevations that were used in the WM 7.0 model (and TMS model discussed below) are DEP's eMapPA while the source of the Drainage Areas and stream design low-flows (Q_{7-10}) are the USGS PA Stream Stats online tool (see attached). The Low Flow Yield (LFY) is calculated as the Q_{7-10} / Drainage Area.

The receiving stream has been classified as 'Trout Natural Reproduction'. Because this is an existing facility who is not increasing their design flow, consistent with DEP's Standard Operating Procedure (SOP) 'Establishing Effluent Limitations for Individual Sewage Permits', the WQM model was not re-run for Dissolved Oxygen (DO) levels of 8 mg/l for the protection of early life stages of salmonids.

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 for toxic parameters and recommends Water Quality-Based Effluent Limitations (WQBELs) as permit limits as needed or recommends monitoring requirements to better evaluate 'reasonable potential' for some parameters. For more explanation of the TMS / PENTOX model, see Technical Reference Guide 'PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics', Version 2.0, document #386-2000-015.

When there are less than 10 effluent sample results, the *maximum* effluent 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 toxic parameter. In this case there were more than 10 effluent sampling results for Total Copper, Hardness, and TDS in the discharge at outfall 001. For TDS, it was not necessary to use DEP's TOXCONC spreadsheet to calculate a statistical average with 99% probability from more than 10 discrete sample results because even using the maximum concentration from the application and the reviewed DMRs (between January 1, 2022 and August 31, 2025), the TMS did not recommend a WQBEL for TDS. For discharge Hardness, DEP typically uses the average concentration rather than the maximum concentration. The average discharge Hardness from the reported values in the DMRs between January 1, 2022 and June 30, 2025 was used: 293 mg/l. For stream Hardness, the value in the application was used: 295 mg/l. The TOXCONC spreadsheet was used for Total Copper and is attached. The discrete sample results were obtained from the facility's Daily Effluent Supplemental DMRs.

Default values used in the models in the absence of site-specific data include:

Stream pH = 7 s.u.
Discharge pH = 7 s.u.
Stream Temperature = 20°C
Discharge Temperature = 25°C
Coefficient of Variability in data = 0.5
Chemical translators for metals [provided in regulations, Title 25 Pa Code Chapter 93.8b]
Background concentration of toxics = 0 mg/l

In addition, the models estimate the stream width, depth, slope, velocity, and partial mix factors.

The following results were determined through water quality modeling (see attached):

Parameter	Model Results	Statistical Base Code	Model
Ammonia, May 1- Oct 31	3.2 mg/l *	Average Monthly	WQM 7.0
Ammonia, May 1- Oct 31	6.4 mg/l *	Maximum	WQM 7.0
$CBOD_5$, May 1- Oct 31	14.5 mg/l *	Average monthly	WQM 7.0
Dissolved Oxygen	5.0 mg/l *	Instant. Minimum	WQM 7.0
Total Aluminum	1.25 mg/l	Average Monthly	Toxics Management Spreadsheet
Total Aluminum	1.95 mg/l	Daily Maximum	Toxics Management Spreadsheet
Total Aluminum	3.13 mg/l	Instant. Maximum	Toxics Management Spreadsheet

*The model did not calculate a more stringent WQBEL but carried forward the existing permit limits (WQBELs) to avoid backsliding. The existing permit limits are WQBELs and were carried forward into the draft renewal permit for **Ammonia** during warm months, **Ammonia** during cool months, **$CBOD_5$** during warm months, and **DO**. (**$CBOD_5$** limits for the cool months are TBELs.)

Note: the **Ammonia** limits for cool months in the existing permit that are being carried forward into the draft renewal permit are WQBELs based on a re-run of the WQM 7.0 model with estimated stream temperature and stream flow that could be expected during cold weather conditions. These model pages are attached to the 2019 permit's Fact Sheet.

The existing permit did not include a limit for **Total Aluminum**. The permit application reported effluent concentrations of 1533 ug/l, as an average of 3 samples, and 1930 ug/l, as the maximum concentration of 3 samples. The TMS calculated a WQBEL of 1250 ug/l as a monthly average and recommended permit limits for Total Aluminum.

It is not evident if the permittee can meet the new WQBELs for Total Aluminum immediately, based on the available data. On August 12, 2025, a Pre-Draft Survey was sent to the permittee as DEP's SOP instructs: SOP 'Establishing Water-Quality Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers'. The permittee responded via DEP's Public Upload system on August 28, 2025. See the attached. The permittee indicated that they were uncertain when they could achieve the proposed WQBELs for Total Aluminum. The permittee responded that the high Aluminum concentrations were potentially due to the chemical(s) they use to reduce Total Phosphorus concentrations in the effluent.

The draft permit includes a compliance schedule, and progress reports as required by federal NPDES regulations, to achieve the final limits for Total Aluminum. Monitoring for Total Aluminum is required in the draft renewal permit until the final limits take effect. The compliance schedule proposed is 2 years based on the permittee's response to the Pre-Draft Survey and a review of other public sewage facilities which are meeting NPDES permit limits for both Total Aluminum and Total Phosphorus.

As with other NPDES permits that impose new permit limits based on WQBELs and include a compliance schedule, 1) a Toxics Reduction Evaluation is required in the draft permit's Part C Conditions, and 2) the option is included to collect site-specific data and forward to the DEP to refine the accuracy of the new WQBELs, consistent with DEP's SOP 'Establishing Water-Quality Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers'. If warranted, the submitted site-specific data could trigger a permit amendment to change the final permit limits for Total Aluminum. Any permit amendment would have to be drafted, public noticed, and include a mandatory 30-day comment period.

Note: The letter sent with the blank Pre-Draft Survey also allowed new effluent sampling to be conducted for Hexachlorobutadiene and 1,2,4-Trichlorobenzene because the samples reported in the permit application used QLs not

as sensitive as DEP's TQLs which resulted in WQBELs being recommended as permit limits in an initial TMS simulation. Three additional effluent samples were received on September 26, 2025. The analyses for Hexachlorobutadiene and 1,2,4-Trichlorobenzene indicated 'non-detect' and achieved QLs lower than DEP's TQLs. The TMS was re-run, using the new data, and did not recommend permit limits or monitoring requirements for these two parameters (see attached).

In addition to the limits shown above, the TMS model recommended **a monitoring requirement** for **Total Copper**. Because the water quality criteria for Total Copper is Hardness-dependent, a more accurate Reasonable Potential analysis can be conducted if **Hardness** is also monitored in the effluent. A monitoring requirement for Total Hardness is included in the draft permit. The existing permit also included a monitoring requirement for Total Copper and Hardness.

Anti-Backsliding

No limits in the draft renewal permit are less stringent than in the existing permit. The TRC limits in the existing permit were dropped because the facility no longer uses Chlorine disinfection. The Toxicity limits from the existing permit were dropped because subsequent test data has not demonstrated a reasonable potential for the discharge to cause an excursion above water quality standards. See the Whole Effluent Toxicity Testing section of this Fact Sheet.

Whole Effluent Toxicity Testing

For Outfall 001, ☐ **Acute** ☒ **Chronic** WET Testing was completed:
☐ For the permit renewal application (4 tests).
☐ Quarterly throughout the permit term.
☐ Quarterly throughout the permit term and a TIE/TRE was conducted.
☒ Other: annually, as allowed by permit

The dilution series used for the tests was: 100%, 75%, 50%, 25%, and 13%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 50%.

Summary of Four Most Recent Test Results

TST Data Analysis *(NOTE – In lieu of recording information below, the application manager may attach the DEP WET Analysis Spreadsheet).*

	***Ceriodaphnia* Results (Pass/Fail)**		***Pimephales* Results (Pass/Fail)**	
Test Termination Date	**Survival**	**Reproduction**	**Survival**	**Growth**
12/24/2024	Pass	Pass	Pass	Pass
7/25/2023			Pass	Pass
7/24/2023	Pass	Pass		
7/11/2022 (re-test)	Pass	Pass		
6/14/2022			Pass	Pass
6/13/2022	Pass	Fail		
3/3/2021	Pass	Pass	Pass	Pass

A "passing" result is that in which the replicate data for the TIWC is not statistically significant from the control condition. This is exhibited when the calculated t value ("T-Test Result") is greater than the critical t value. A "failing" result is exhibited when the calculated t value ("T-Test Result") is less than the critical t value.

Is there reasonable potential for an excursion above water quality standards based on the results of these tests? (*NOTE – In general, reasonable potential is determined anytime there is at least one test failure in the previous four tests).*

☐ **YES** ☒ **NO**

Comments:

Because no reasonable potential for toxicity has been demonstrated, the toxic limits in the existing permit (for Ceriodaphnia Survival and Reproduction) will not be carried forward into the renewal permit.

The permittee has been attaching their WETT results to DMRs. See the following in eDMR: June 2022, July 2022, July 2023, Dec 2024 as well as an email attachment to permit writer on 7/30/2024 for the March 2021 test results.

Evaluation of Test Type, IWC and Dilution Series for Renewed Permit

Acute Partial Mix Factor (PMFa): 0.813 Chronic Partial Mix Factor (PMFc): 1 (PMFs were calculated by the TMS.)

1. Determine IWC – Acute (IWCa):

$(Q_d \times 1.547) / ((Q_{7\text{-}10} \times PMFa) + (Q_d \times 1.547))$

OR …[(1.5 MGD x 1.547) / ((4.57 cfs x 0.813) + (1.5 MGD x 1.547))] x 100 = **IWCa% =** 38%

Is IWCa < 1%? ☐ **YES** ☒ **NO** (YES - Acute Tests Required OR NO - Chronic Tests Required)

Type of Test for Permit Renewal: **Chronic Tests**

2. Determine Target IWCc (If Chronic Tests Required)

(Q_d x 1.547) / (Q_{7-10} x PMFc) + (Q_d x 1.547)

[(1.5 MGD x 1.547) / ((4.57 cfs x 1) + (1.5 MGD x 1.547))] x 100 = **TIWCc% =** 34%

3. Determine Dilution Series

(NOTE – check Attachment C of WET SOP for dilution series based on TIWCa or TIWCc, whichever applies).

Dilution Series = 100%, 67%, 34%, 17%, and 9%.

WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

Will WET limits be established in the permit? ☐ YES ☒ NO

Additional

Per- and Polyfluoroalkyl Substances (PFAS) Monitoring

Given the concern over PFAS in waterways, the NPDES permit applications for major sewage facilities now require sampling for 4 indicator parameters: Perfluorooctanoic acid (PFOA), Perfluorooctane sulfonic acid (PFOS), Perfluorobutane sulfonic acid (PFBS), and Hexafluoropropylene oxide dimer acid (HFPO-DA).

The permit application's sampling results in the effluent at outfall 001 were as follows:

Pollutant	Units	Maximum Concentration	# of Detects out of # samples	EPA Method Used*	QL used by lab
PFOA	ng/l	3.16	3 / 3	1633	1.89
PFOS	ng/l	3.20	3 / 3	1633	1.72
PFBS	ng/l	14.8	2 / 3	1633	1.63
HFPO-DA	ng/l	<1.89	0 / 3	1633	1.89

Due to detections of PFAS indicator parameters, quarterly monitoring for the 4 PFAS indicator parameters has been required in the draft renewal permit, consistent with DEP's SOP 'Establishing Effluent Limitations for Individual Sewage Permits'. The following footnote has also been included with the limits tables:

> *The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detect results at or below Quantitation Limits of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS and 6.4 ng/L for HFPO-DA. When monitoring is discontinued, permittees must enter a No Discharge Indicator (NODI) Code of "GG" on DMRs*

The draft renewal permit also has language in Part B.I.D. relevant to PFAS, shown below. While the facility does not accept industrial wastewater currently, the permittee should be aware, such as for planning purposes, that this language is now included in NPDES permits for Major Sewage facilities.

> *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.*

Mass Loading Limits

Consistent with the Technical Guidance for the Development and Specification of Effluent Limitations, document #386-0400-001, and the SOP '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.

Effluent mass loading limits have been based on the formula: design flow x concentration limit x conversion factor of 8.34.

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 as appropriate. For E. coli, the sampling frequency of once per month is consistent with DEP's SOP 'Establishing Effluent Limitations for Individual Sewage Permits'.

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 at outfall 001 has been included. The statutory basis for this requirement is provided at PA Code § 92a.61.

Total Nitrogen and Total Phosphorus Monitoring

In an effort to understand nutrient loading on Pennsylvania streams, sewage dischargers with design flows greater than 2000 gpd are required to monitor, at a minimum, for Total Nitrogen (TN) and Total Phosphorus (TP) in new and reissued permits. The statutory basis for this requirement is provided at PA Code § 92a.61. Monitoring for TN and TP were also included in the existing permit. The facility's DMRs from January 1, 2022 through June 30, 2025 indicate an average TN concentration of 18.8 mg/l and an average TP concentration of 0.9 mg/l. The same DMRs indicate an average mass load for TP of 7.7 lbs/day.

Note: whereas the existing permit allowed the permittee to add together their results for TKN and NO3-NO2 and report only TN on the DMR, the renewal permit requires each of these parameters be reported separately.

Class A Trout Fisheries

The receiving water (and downstream waters) are not considered Class A Trout Waters.

Trout Natural Reproduction Waters

The receiving water is considered Trout Natural Reproduction Waters. As discussed in the WQBEL section of the Fact Sheet, a model simulation was not run for salmonid early life stages, with higher stream DO concentration, because the facility is an existing discharger.

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.

303(d) Listed Streams – Impaired Waters

Section 303(d) of the federal Clean Water Act requires states to provide a list of impaired waters to EPA and to establish a Total Maximum Daily Load (TMDL) for all pollutants identified as preventing attainment of water quality standards. Downstream Lake Ontelaunee was assessed as an impaired water and a TMDL established as already discussed in this Fact Sheet. The draft renewal permit limits for Total Phosphorus and Total Suspended solids adhere to the Wasteload Allocation assigned to this facility in the TMDL.

TDS Baseline

In order to implement the regulations at Chapter 95.10 relevant to imposing Total Dissolved Solids (TDS) limits if increased TDS loads trigger this requirement in the future, a TDS Baseline needs to be documented. The increase of TDS loads is measured against mass loads, described in Chapter 95.10(a)(1) as "maximum daily discharge loads of TDS…that were authorized by the Department prior to August 21, 2010." The 2013 renewal application did not provide a maximum concentration value in the effluent sampling, only an average of 785.3 mg/l based on three samples. The June 2008 permit application provided no results for TDS concentration in the effluent. Therefore, the following estimate has been made based on the available data:

785.3 mg/l x 1.5 MGD x 8.34 conversion factor = 6549.5 lb/day

Stormwater

There are no stormwater outfalls according to the application and DEP inspection reports.

However, stormwater from treatment works treating domestic sewage with a design flow of 1.0 MGD or more are considered stormwater that need to be authorized by a NPDES permit. (Pennsylvania's stormwater permitting program includes runoff leaving a site, not just stormwater outfalls.)

No limits or monitoring requirements have been imposed for stormwater runoff at this facility but Best Management Practices (BMPs) and a Preparedness, Prevention and Contingency Plan (PPC) has been required in Part C of the draft renewal.

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 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 Effective Date + 2 Years.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)					
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum	Minimum Measurement Frequency	Required Sample Type
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
$CBOD_5$ Nov 1 - Apr 30	313	501	XXX	25.0	40.0	50	2/week	24-Hr Composite
$CBOD_5$ May 1 - Oct 31	181	273	XXX	14.5	21.8	29	2/week	24-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Suspended Solids Nov 1 - Apr 30	375	563	XXX	30.0	45.0	60	2/week	24-Hr Composite
Total Suspended Solids May 1 - Oct 31	181	273	XXX	14.5	21.8	29	2/week	24-Hr Composite
Total Suspended Solids (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Suspended Solids (lbs)	XXX	136,984 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Dissolved Solids	Report	XXX	XXX	1000.0	XXX	2000	1/month	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab

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		
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
UV Light Intensity (µw/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Nitrate-Nitrite as N	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/month	24-Hr Composite
Total Nitrogen**	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/month	Calculation**
Ammonia Nov 1 - Apr 30	135	XXX	XXX	10.8	XXX	21.6	2/week	24-Hr Composite
Ammonia May 1 - Oct 31	40	XXX	XXX	3.2	XXX	6.4	2/week	24-Hr Composite
Total Kjeldahl Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/month	24-Hr Composite
Total Phosphorus	Report	XXX	XXX	2.0	XXX	XXX	2/week	24-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus (lbs)	XXX	4566 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Aluminum	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	1/week	24-Hr Composite
Total Copper	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/month	24-Hr Composite
Total Hardness	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/month	24-Hr Composite
PFOA*	XXX	XXX	XXX	XXX	XXX	Report*	1/quarter	Grab
PFOS*	XXX	XXX	XXX	XXX	XXX	Report*	1/quarter	Grab
PFBS*	XXX	XXX	XXX	XXX	XXX	Report*	1/quarter	Grab
HFPO-DA*	XXX	XXX	XXX	XXX	XXX	Report*	1/quarter	Grab

** The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detect results at or below Quantitation Limits of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS and 6.4 ng/L for HFPO-DA. When monitoring is discontinued, permittees must enter a No Discharge Indicator (NODI) Code of "GG" on DMRs.*

**Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO_2+NO_3-N), where TKN and NO_2+NO_3-N are measured in the same sample.

Compliance Sampling Location: at outfall 001

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 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 + 2 Years through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)					
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum	Minimum Measurement Frequency	Required Sample Type
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
$CBOD_5$ Nov 1 - Apr 30	313	501	XXX	25.0	40.0	50	2/week	24-Hr Composite
$CBOD_5$ May 1 - Oct 31	181	273	XXX	14.5	21.8	29	2/week	24-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Suspended Solids Nov 1 - Apr 30	375	563	XXX	30.0	45.0	60	2/week	24-Hr Composite
Total Suspended Solids May 1 - Oct 31	181	273	XXX	14.5	21.8	29	2/week	24-Hr Composite
Total Suspended Solids (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Suspended Solids (lbs)	XXX	136,984 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Dissolved Solids	Report	XXX	XXX	1000.0	XXX	2000	1/month	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab

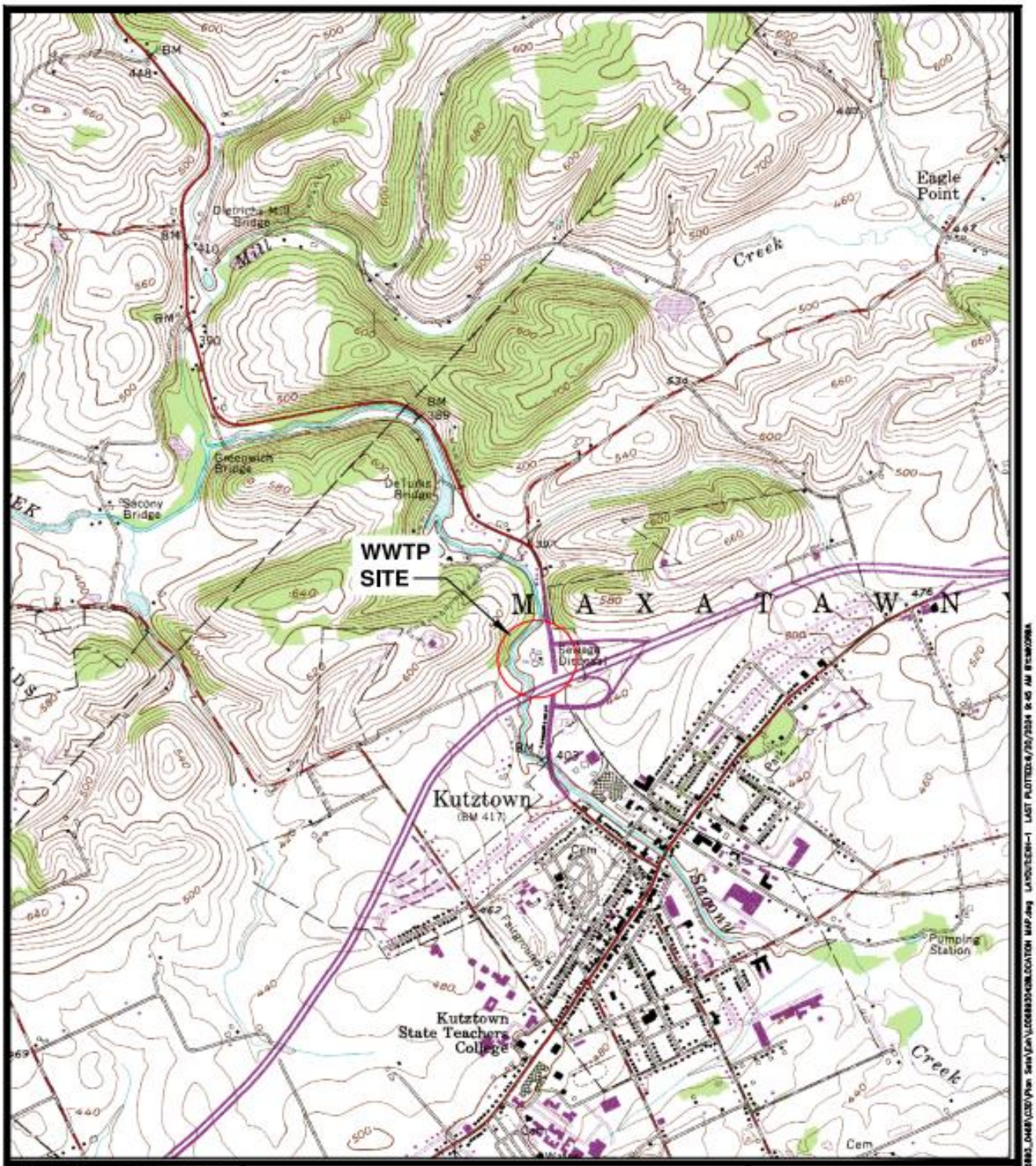
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
UV Light Intensity (µw/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Nitrate-Nitrite as N	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/month	24-Hr Composite
Total Nitrogen**	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/month	Calculation**
Ammonia Nov 1 - Apr 30	135	XXX	XXX	10.8	XXX	21.6	2/week	24-Hr Composite
Ammonia May 1 - Oct 31	40	XXX	XXX	3.2	XXX	6.4	2/week	24-Hr Composite
Total Kjeldahl Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/month	24-Hr Composite
Total Phosphorus	Report	XXX	XXX	2.0	XXX	XXX	2/week	24-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus (lbs)	XXX	4566 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Aluminum	15.6	24.4 Daily Max	XXX	1.25	1.95 Daily Max	3.13	1/week	24-Hr Composite
Total Copper	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/month	24-Hr Composite
Total Hardness	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/month	24-Hr Composite
PFOA*	XXX	XXX	XXX	XXX	XXX	Report*	1/quarter	Grab
PFOS*	XXX	XXX	XXX	XXX	XXX	Report*	1/quarter	Grab
PFBS*	XXX	XXX	XXX	XXX	XXX	Report*	1/quarter	Grab
HFPO-DA*	XXX	XXX	XXX	XXX	XXX	Report*	1/quarter	Grab

** The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detect results at or below Quantitation Limits of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS and 6.4 ng/L for HFPO-DA. When monitoring is discontinued, permittees must enter a No Discharge Indicator (NODI) Code of "GG" on DMRs.*

**Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO_2+NO_3-N), where TKN and NO_2+NO_3-N are measured in the same sample.

Compliance Sampling Location: at 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.
☒	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 1.6, May 5, 2025.
☒	SOP: Whole Effluent Toxicity, Version 1.4, May 13, 2014.
☒	Other: Delaware River Basin Commission docket D-1989 -039 CP-5, September 5, 2024.


WWTP
SITE
Kutztown
(BM 417)
Eagle
Point
Creek
Kutztown
State Teachers
College
Pumping
Station
Cem
PROJECT #: R006893.0428
DATE: 2024.06.20
SCALE: 1"=2000'
PM:
SHEET: LOC-1
01
LOCATION MAP
FOR
KUTZTOWN BOROUGH WWTP
KUTZTOWN BOROUGH, BERKS COUNTY, PENNSYLVANIA
HRG
HERBERT, ROWLAND & GRUBIC, INC.
369 EAST PARK DRIVE
HARRISBURG, PA 17111
717.564.1121 | hrg-inc.com

PERMIT	MONITORING	MONITORING	REPORT_F	DMR_VER	OUTFALL	DISCHARG	PARAMETEF	LOAD_UN	LOAD_1_V	LOAD_1	LOAD_1_SB	LOAD_2_V	LOAD_2	LOAD_2_S	SAMPLE_FF	SAMPLE_TYPE
PA0031135	1/1/2022	1/31/2022	Monthly	1	001	Yes	Flow	MGD	0.8774	Monitor a	Average Mor	1.1622	Monitor	Daily Maxi	Continuous	Measured
PA0031135	2/1/2022	2/28/2022	Monthly	1	001	Yes	Flow	MGD	1.3711	Monitor a	Average Mor	3.1262	Monitor	Daily Maxi	Continuous	Measured
PA0031135	3/1/2022	3/31/2022	Monthly	1	001	Yes	Flow	MGD	1.1157	Monitor a	Average Mor	1.5192	Monitor	Daily Maxi	Continuous	Measured
PA0031135	4/1/2022	4/30/2022	Monthly	1	001	Yes	Flow	MGD	1.7486	Monitor a	Average Mor	3.7418	Monitor	Daily Maxi	Continuous	Measured
PA0031135	5/1/2022	5/31/2022	Monthly	1	001	Yes	Flow	MGD	1.2037	Monitor a	Average Mor	2.566	Monitor	Daily Maxi	Continuous	Measured
PA0031135	6/1/2022	6/30/2022	Monthly	1	001	Yes	Flow	MGD	0.8643	Monitor a	Average Mor	1.1133	Monitor	Daily Maxi	Continuous	Measured
PA0031135	7/1/2022	7/31/2022	Monthly	1	001	Yes	Flow	MGD	0.6836	Monitor a	Average Mor	0.8793	Monitor	Daily Maxi	Continuous	Measured
PA0031135	8/1/2022	8/31/2022	Monthly	1	001	Yes	Flow	MGD	0.6332	Monitor a	Average Mor	0.7766	Monitor	Daily Maxi	Continuous	Measured
PA0031135	9/1/2022	9/30/2022	Monthly	1	001	Yes	Flow	MGD	0.8539	Monitor a	Average Mor	1.1286	Monitor	Daily Maxi	Continuous	Measured
PA0031135	10/1/2022	10/31/2022	Monthly	1	001	Yes	Flow	MGD	1.019	Monitor a	Average Mor	2.0055	Monitor	Daily Maxi	Continuous	Measured
PA0031135	11/1/2022	11/30/2022	Monthly	1	001	Yes	Flow	MGD	0.87	Monitor a	Average Mor	1.208	Monitor	Daily Maxi	Continuous	Measured
PA0031135	12/1/2022	12/31/2022	Monthly	1	001	Yes	Flow	MGD	1.1801	Monitor a	Average Mor	1.9345	Monitor	Daily Maxi	Continuous	Measured
PA0031135	1/1/2023	1/31/2023	Monthly	1	001	Yes	Flow	MGD	1.3222	Monitor a	Average Mor	2.3536	Monitor	Daily Maxi	Continuous	Measured
PA0031135	2/1/2023	2/28/2023	Monthly	1	001	Yes	Flow	MGD	1.0184	Monitor a	Average Mor	1.3602	Monitor	Daily Maxi	Continuous	Measured
PA0031135	3/1/2023	3/31/2023	Monthly	1	001	Yes	Flow	MGD	1.0666	Monitor a	Average Mor	1.9666	Monitor	Daily Maxi	Continuous	Measured
PA0031135	4/1/2023	4/30/2023	Monthly	1	001	Yes	Flow	MGD	0.8719	Monitor a	Average Mor	1.7107	Monitor	Daily Maxi	Continuous	Measured
PA0031135	5/1/2023	5/31/2023	Monthly	1	001	Yes	Flow	MGD	0.8307	Monitor a	Average Mor	1.778	Monitor	Daily Maxi	Continuous	Measured
PA0031135	6/1/2023	6/30/2023	Monthly	1	001	Yes	Flow	MGD	0.5632	Monitor a	Average Mor	0.7903	Monitor	Daily Maxi	Continuous	Measured
PA0031135	7/1/2023	7/31/2023	Monthly	1	001	Yes	Flow	MGD	0.8703	Monitor a	Average Mor	2.2839	Monitor	Daily Maxi	Continuous	Measured
PA0031135	8/1/2023	8/31/2023	Monthly	1	001	Yes	Flow	MGD	0.8442	Monitor a	Average Mor	1.415	Monitor	Daily Maxi	Continuous	Measured
PA0031135	9/1/2023	9/30/2023	Monthly	1	001	Yes	Flow	MGD	1.2674	Monitor a	Average Mor	2.6804	Monitor	Daily Maxi	Continuous	Measured
PA0031135	10/1/2023	10/31/2023	Monthly	1	001	Yes	Flow	MGD	0.8314	Monitor a	Average Mor	1.0754	Monitor	Daily Maxi	Continuous	Measured
PA0031135	11/1/2023	11/30/2023	Monthly	1	001	Yes	Flow	MGD	0.836	Monitor a	Average Mor	1.3553	Monitor	Daily Maxi	Continuous	Measured
PA0031135	12/1/2023	12/31/2023	Monthly	1	001	Yes	Flow	MGD	1.607	Monitor a	Average Mor	3.6696	Monitor	Daily Maxi	Continuous	Measured
PA0031135	1/1/2024	1/31/2024	Monthly	1	001	Yes	Flow	MGD	1.6928	Monitor a	Average Mor	3.7149	Monitor	Daily Maxi	Continuous	Measured
PA0031135	2/1/2024	2/29/2024	Monthly	1	001	Yes	Flow	MGD	1.2485	Monitor a	Average Mor	1.7621	Monitor	Daily Maxi	Continuous	Measured
PA0031135	3/1/2024	3/31/2024	Monthly	1	001	Yes	Flow	MGD	1.6462	Monitor a	Average Mor	3.2497	Monitor	Daily Maxi	Continuous	Measured
PA0031135	4/1/2024	4/30/2024	Monthly	1	001	Yes	Flow	MGD	1.4984	Monitor a	Average Mor	3.7185	Monitor	Daily Maxi	Continuous	Measured
PA0031135	5/1/2024	5/31/2024	Monthly	1	001	Yes	Flow	MGD	0.8884	Monitor a	Average Mor	1.274	Monitor	Daily Maxi	Continuous	Measured
PA0031135	6/1/2024	6/30/2024	Monthly	1	001	Yes	Flow	MGD	0.606	Monitor a	Average Mor	0.7341	Monitor	Daily Maxi	Continuous	Measured
PA0031135	7/1/2024	7/31/2024	Monthly	1	001	Yes	Flow	MGD	0.6912	Monitor a	Average Mor	0.8962	Monitor	Daily Maxi	Continuous	Measured
PA0031135	8/1/2024	8/31/2024	Monthly	1	001	Yes	Flow	MGD	0.8904	Monitor a	Average Mor	1.6481	Monitor	Daily Maxi	Continuous	Measured
PA0031135	9/1/2024	9/30/2024	Monthly	1	001	Yes	Flow	MGD	0.7201	Monitor a	Average Mor	0.7912	Monitor	Daily Maxi	Continuous	Measured
PA0031135	10/1/2024	10/31/2024	Monthly	1	001	Yes	Flow	MGD	0.6823	Monitor a	Average Mor	0.7988	Monitor	Daily Maxi	Continuous	Measured
PA0031135	11/1/2024	11/30/2024	Monthly	1	001	Yes	Flow	MGD	0.6617	Monitor a	Average Mor	0.7478	Monitor	Daily Maxi	Continuous	Measured
PA0031135	12/1/2024	12/31/2024	Monthly	1	001	Yes	Flow	MGD	0.7219	Monitor a	Average Mor	1.3074	Monitor	Daily Maxi	Continuous	Measured
PA0031135	1/1/2025	1/31/2025	Monthly	1	001	Yes	Flow	MGD	0.7015	Monitor a	Average Mor	0.8689	Monitor	Daily Maxi	Continuous	Measured
PA0031135	2/1/2025	2/28/2025	Monthly	1	001	Yes	Flow	MGD	1.0455	Monitor a	Average Mor	1.8883	Monitor	Daily Maxi	Continuous	Measured
PA0031135	3/1/2025	3/31/2025	Monthly	1	001	Yes	Flow	MGD	0.9744	Monitor a	Average Mor	1.2574	Monitor	Daily Maxi	Continuous	Measured
PA0031135	4/1/2025	4/30/2025	Monthly	1	001	Yes	Flow	MGD	1.1755	Monitor a	Average Mor	1.5431	Monitor	Daily Maxi	Continuous	Measured
PA0031135	5/1/2025	5/31/2025	Monthly	1	001	Yes	Flow	MGD	1.3248	Monitor a	Average Mor	2.4396	Monitor	Daily Maxi	Continuous	Measured
PA0031135	6/1/2025	6/30/2025	Monthly	1	001	Yes	Flow	MGD	1.1334	Monitor a	Average Mor	1.6057	Monitor	Daily Maxi	Continuous	Measured
									1.0155	Avg		1.7582	Avg			
									1.7486	Max		3.7418	Max			

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PADEP Chapter 94 Spreadsheet
Sewage Treatment Plants

Reporting Year: 2024

Facility Name: Borough of Kutztown Wastewater Treatment Plant
Permit No.: PA0031135
Persons/EDU: 3.5

Existing Hydraulic Design Capacity:	1.5	MGD		**Existing Organic Design Capacity:**	2,500	lbs BOD5/day
Upgrade Planned in Next 5 Years?	NO	**Year:**		**Upgrade Planned in Next 5 Years?**	NO	**Year:**
Future Hydraulic Design Capacity:		MGD		**Future Organic Design Capacity:**		lbs BOD5/day

Monthly Average Flows for Past Five Years (MGD)

Month	2020	2021	2022	2023	2024
January	1.0358	1.0406	0.8774	1.3222	1.6928
February	1.1591	1.1727	1.3711	1.0184	1.2485
March	1.0067	1.6278	1.1157	1.0666	1.6462
April	1.1192	1.0284	1.7486	0.8719	1.4984
May	0.8357	0.7591	1.2037	0.8307	0.8884
June	0.605	0.8414	0.8643	0.5632	0.606
July	0.841	0.6689	0.6836	0.8703	0.6912
August	1.4856	0.7232	0.6332	0.8442	0.8904
September	0.8149	1.4141	0.8539	1.2674	0.7201
October	0.7677	0.9294	1.019	0.8314	0.6823
November	0.8368	0.9639	0.87	0.836	0.6817
December	1.1081	0.7357	1.1801	1.607	0.7219
Annual Avg	0.968	0.9921	1.0351	0.9941	0.9957
Max 3-Mo Avg	1.095	1.2804	1.4118	1.1736	1.5292
Max : Avg Ratio	1.13	1.29	1.36	1.18	1.54
Existing EDUs	3,191.0	3,191.0	3,192.0	3,196.0	3,212.0
Flow/EDU (GPD)	303.4	310.9	324.3	311.0	310.0
Flow/Capita (GPD)	86.7	88.8	92.7	88.9	88.6
Exist. Overload?	**NO**	**NO**	**NO**	**NO**	**NO**

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

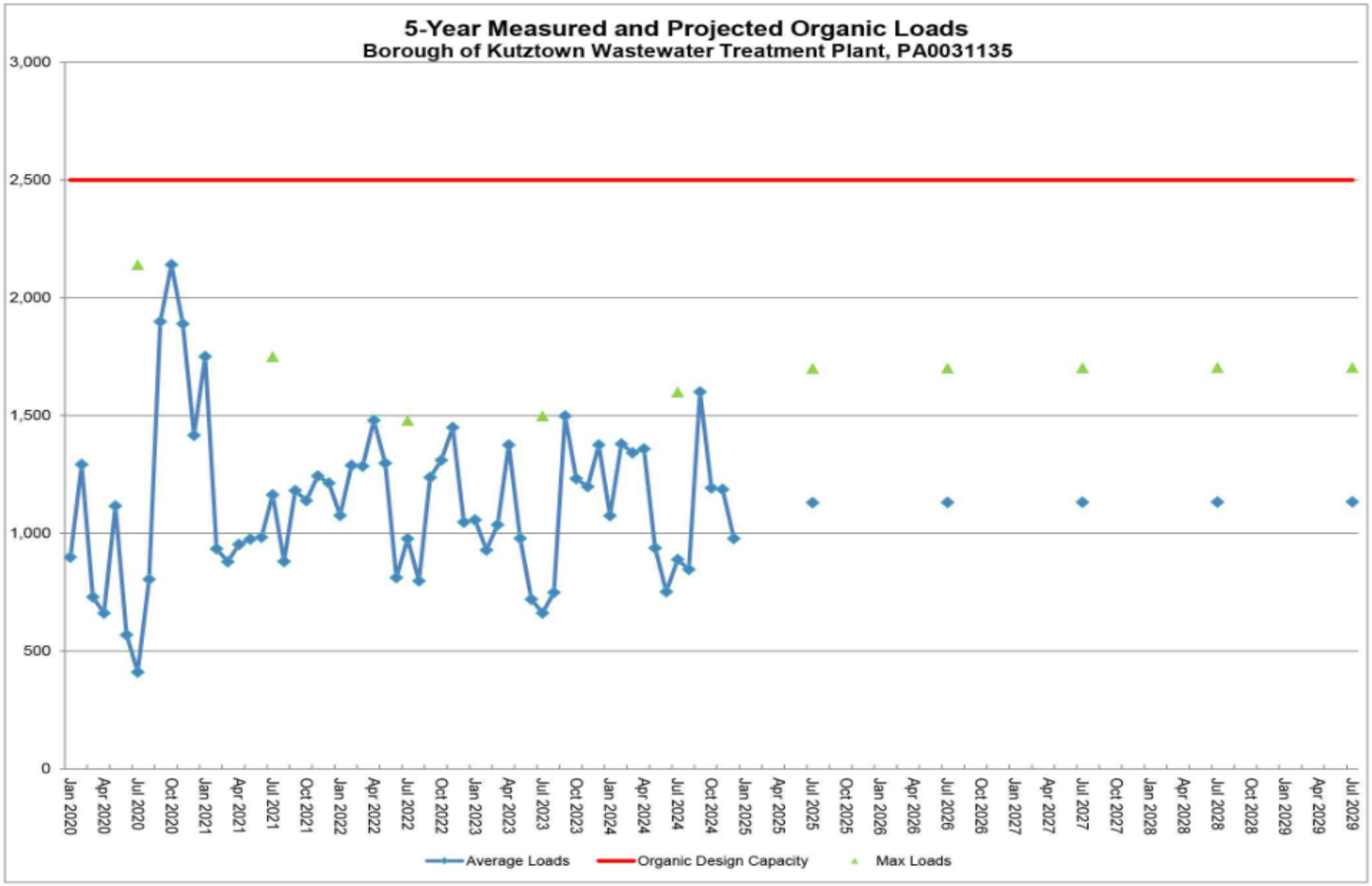
Month	2020	2021	2022	2023	2024
January	899	1,750	1,076	1,057	1,075
February	1,292	934	1,288	929	1,379
March	730	879	1,285	1,036	1,342
April	661	953	1,479	1,375	1,358
May	1,116	975	1,298	979	938
June	569	983	812	720	752
July	411	1,164	977	662	889
August	805	881	798	749	847
September	1,899	1,182	1,238	1,498	1,600
October	2,140	1,139	1,310	1,232	1,193
November	1,889	1,244	1,449	1,198	1,186
December	1,416	1,213	1,047	1,375	978
Annual Avg	1,152	1,108	1,171	1,068	1,128
Max Mo Avg	2,140	1,750	1,479	1,498	1,600
Max : Avg Ratio	1.86	1.58	1.26	1.40	1.42
Existing EDUs	3,191	3,191	3,192	3,196	3,212
Load/EDU	0.361	0.347	0.367	0.334	0.351
Load/Capita	0.103	0.099	0.105	0.095	0.100
Exist. Overload?	**NO**	**NO**	**NO**	**NO**	**NO**

Projected Flows for Next Five Years (MGD)

	2025	2026	2027	2028	2029
New EDUs	14.0	2.0	2.0	2.0	2.0
New EDU Flow	0.0044	0.0006	0.0006	0.0006	0.0006
Proj. Annual Avg	1.0014	1.002	1.0026	1.0032	1.0038
Proj. Max 3-Mo Avg	1.3022	1.303	1.3038	1.3046	1.3054
Proj. Overload?	**NO**	**NO**	**NO**	**NO**	**NO**

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

	2025	2026	2027	2028	2029
New EDUs	14	2	2	2	2
New EDU Load	4.930	0.704	0.704	0.704	0.704
Proj. Annual Avg	1,130	1,131	1,132	1,133	1,133
Proj. Max Avg	1,700	1,701	1,702	1,703	1,705
Proj. Overload?	**NO**	**NO**	**NO**	**NO**	**NO**


5-Year Measured and Projected Organic Loads
Borough of Kutztown Wastewater Treatment Plant, PA0031135
3,000
2,500
2,000
1,500
1,000
500
0
Jan 2020
Apr 2020
Jul 2020
Oct 2020
Jan 2021
Apr 2021
Jul 2021
Oct 2021
Jan 2022
Apr 2022
Jul 2022
Oct 2022
Jan 2023
Apr 2023
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Jul 2027
Oct 2027
Jan 2028
Apr 2028
Jul 2028
Oct 2028
Jan 2029
Apr 2029
Jul 2029
Average Loads
Organic Design Capacity
Max Loads

DOCKET NO. D-1989-039 CP-5

DELAWARE RIVER BASIN COMMISSION

Borough of Kutztown
Wastewater Treatment Plant
Maxatawny Township, Berks County Pennsylvania

PROCEEDINGS

This docket is issued in response to an application submitted to the Delaware River Basin Commission (DRBC or Commission) on July 21, 2023 (Application), for renewal of the docket holder's existing wastewater treatment plant (WWTP) and its discharge. The Pennsylvania Department of Environmental Protection (PADEP) issued National Pollutant Discharge Elimination System (NPDES) Permit No. PA0031135 for this discharge.

The application was reviewed for continuation of the project in the Comprehensive Plan and approval under Section 3.8 of the *Delaware River Basin Compact*. The Berks County Planning Commission has been notified of pending action. A public hearing on this project was held by the DRBC on August 7, 2024.

A. DESCRIPTION

1. Purpose. The purpose of this docket is to renew approval of the docket holder's existing 1.5 million gallons per day (mgd) WWTP and its discharge.

2. Location. The docket holder's WWTP is located at Krumsville Road at the northern boundary of Kutztown Borough in Maxatawny Township, Berks County, Pennsylvania. The WWTP will continue to discharge treated effluent to Sacony Creek, upstream of Lake Ontelaunee, at River Mile 92.5 – 86.2 – 2.9 – 5.4 – 2.1 – 7.1 (Delaware River – Schuylkill River – Maiden Creek – Lake Ontelaunee – Maiden Creek – Sacony Creek).

The location of the WWTP outfall in the Schuylkill River Watershed is as follows:

OUTFALL NO.	LATITUDE (N)	LONGITUDE (W)
001	40° 31' 40"	75° 47' 2"

D-1989-039 CP-5 (Borough of Kutztown, WWTP) **4**

Monitoring and Reporting

1. The docket holder shall comply with the requirements contained in the EFFLUENT TABLE below. The docket holder shall submit the required monitoring results electronically to the DRBC Project Review Section via email **aemr@drbc.gov** on the **Annual Effluent Monitoring Report Form** located at this web address: https://www.nj.gov/drbc/programs/project/docket-app-info.html#3. The monitoring results shall be submitted annually, absent any observed limit violations, by January 31. If a DRBC effluent limit is violated, the docket holder shall submit the result(s) to the DRBC within 30 days of the violation(s) and provide a written explanation that states the action(s) the docket holder has taken to correct the violation(s) and protect against any future violations. The following average monthly effluent limits are among those listed in the NPDES Permit and meet or are more stringent than the effluent requirements of the DRBC.

EFFLUENT TABLE C-1: DRBC Parameters Included in NPDES Permit

OUTFALL 001 (Discharging to Sacony Creek)		
PARAMETER	**LIMIT**	**MONITORING**
pH (Standard Units)	6 to 9 at all times	As required by NPDES Permit
Total Suspended Solids	30 mg/l	As required by NPDES Permit
$CBOD_5$ (at 20° C) (5-1 to 10-31) (11-1 to 4-30)	14.5 mg/l (85% Minimum Removal) 25 mg/l (85% Minimum Removal)	As required by NPDES Permit
Ammonia Nitrogen (5-1 to 10-31) (11-1 to 4-30)	3.2 mg/l 10.8 mg/l	As required by NPDES Permit
Fecal Coliform (5-1 to 9-30) (10-1 to 4-30)	200 colonies per 100 ml as a geo. avg. 2000 colonies per 100 ml as a geo. avg.	As required by NPDES Permit
BOD_5 Influent	Monitor & Report	As required by NPDES Permit
Total Dissolved Solids*	1,000 mg/l *	As required by NPDES Permit

* See DECISION Condition C.4.

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Southcentral Regional Office

May 7, 2014

Dean Miller
Reading Area Water Authority
1801 Kutztown Road
Reading, PA 19604

Re: Maiden Creek/Lake Ontelaunee Watershed
Berks County

Dear Mr. Miller:

Thank you for your letter of April 25, 2014, in which you stated your belief that NPDES permits for treated sewage discharges in the Maiden Creek watershed should include an effluent limit of 2.0 mg/l for Total Phosphorus, consistent with the discussion at a June 25, 2012 meeting between DEP and Jesse Goldberg, representing the Reading Area Water Authority (RAWA). DEP concurs for sewage treatment plants with design flows greater than 2000 gallons per day, but we have not issued any such NPDES permits since the June 25, 2012 meeting. We do have six renewal applications in-house for sewage treatment plants (STPs) in the Lake Ontelaunee watershed. DEP intends to institute the discussed concentration limit of 2.0 mg/l as a monthly average, pursuant to PA Code Title 25 Chapter 96.5. State regulations allow compliance schedules to be included, to give facilities time to achieve the necessary changes to meet new permit limits.

Per our meeting notes, Mr. Goldberg also discussed RAWA's interest in an emergency intake from Willow Creek. Two sewage treatment plants that discharge to Willow Creek, or tributaries, have NPDES permits that will be up for renewal February 28, 2015 and January 31, 2017. They will be evaluated when applications are received.

DEP's eNotice system might be a useful tool for you to stay informed on permits of interest. It is available on the DEP website, www.depweb.state.pa.us. From the home page, select "Tools" in the left-hand column, then "eNotice." After creating an account, you can subscribe to different kinds of notices. One option is based on the county, municipality, and program. The other option (through the "eFACTS Tracked permits" feature) is to track specific permit applications. With this option, you will be alerted by e-mail when specific draft permits are issued for comment. Below is a list of permit numbers and facility names for sewage treatment plant discharges to Lake Ontelaunee (within DEP's Southcentral Regional Office's jurisdiction):

PA0246921	Lenhartsville Borough STP
PA0260151	Maxatawny Township STP

909 Elmerton Avenue | Harrisburg, PA 17110-8200
717.705.4707 | Fax 717.705.4760

www.depweb.state.pa.us

PA0260975	Richmond Township-Virginville STP
PA0031135	Kutztown Borough STP
PA0053708	Gaffney, Hawk Mt. B&B
PA0070122	Highland Estates Mobile Home Park STP
PA0085171	Lyons Borough STP
PA0085430	Robin Hill Campground STP
PA0088021	Christman Lake STP

Below is a list of permit numbers and facility names for sewage treatment plant discharges to Willow Creek:

PA0021636	Fleetwood Borough STP
PA0070271	Maidencreek Township STP

If you have any further questions, please call me at 717.705.4704 or Maria Bebenek at 717.705.4707. Thank you.

Sincerely,

Lynn E. Langer
Regional Director

cc: Jesse Goldberg, Miller Environmental
Brian Trulear, EPA Region III
Mr. Pindar, Delaware River Basin Commission
Shawn Arbaugh, DEP-SCRO
Rod Nesmith, DEP-SCRO
Erick Ammon, DEP-Reading District Office
Cathy Port, DEP-SCRO

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Total Maximum Daily Load
For Nutrients and Suspended Sediment
Lake Ontelaunee
Berks and Lehigh County, Pennsylvania

/s/
Jon M. Capacasa, Director
Water Protection Division

Date: 8-9-04

Table 5-6. WLA for Total Phosphorus, NPDES Facilities

Subbasin	Permit ID	Permitted Facility	WLA, TP [a] (tonne/yr)
12	PA 0031135	Kutztown MA	2.074
18	PA 0031348	Moselem Devl. Corp.	0.007
11	PA 0070122	Highland Estates MHP	0.115
16	PA 0085171	Lyons Borough MA	0.207
4	PA 0085430	Robin Hill Campground	0.014
8	PA 0086878	Hamburg MA	0.041
13	PA 0088021	Christman Lake STP	0.109
8	PA 0246921	Lenhartsville STP	0.058
24	Proposed	Virginville STP (Richmond	0.026
23	PA 0070254	Lynn Township Sewer Authority	0.111
		TOTAL	2.76

[a] based on design flow values and Total Phosphorus limit of 1 mg/L

This reduction strategy results in a volume-weighted lake average chlorophyll-*a* concentration of 19.15 µg/L. Table 5-7 summarizes predicted nutrient and chlorophyll-*a* concentrations for existing conditions and after reductions.

Table 5-7. Volume-Weighted Average Lake Concentrations, Existing and TMDL Conditions.

Condition	TP (µg/L)	TN (µg/L)	Chl-a (µg/L)
Existing Condition (12-yr Average)	83.83	2396.11	83.89
TMDL Condition (87% Loading Reduction, 5 % MOS)	25.35	450.25	19.15

TMDL for the Lake Ontelaunee Watershed

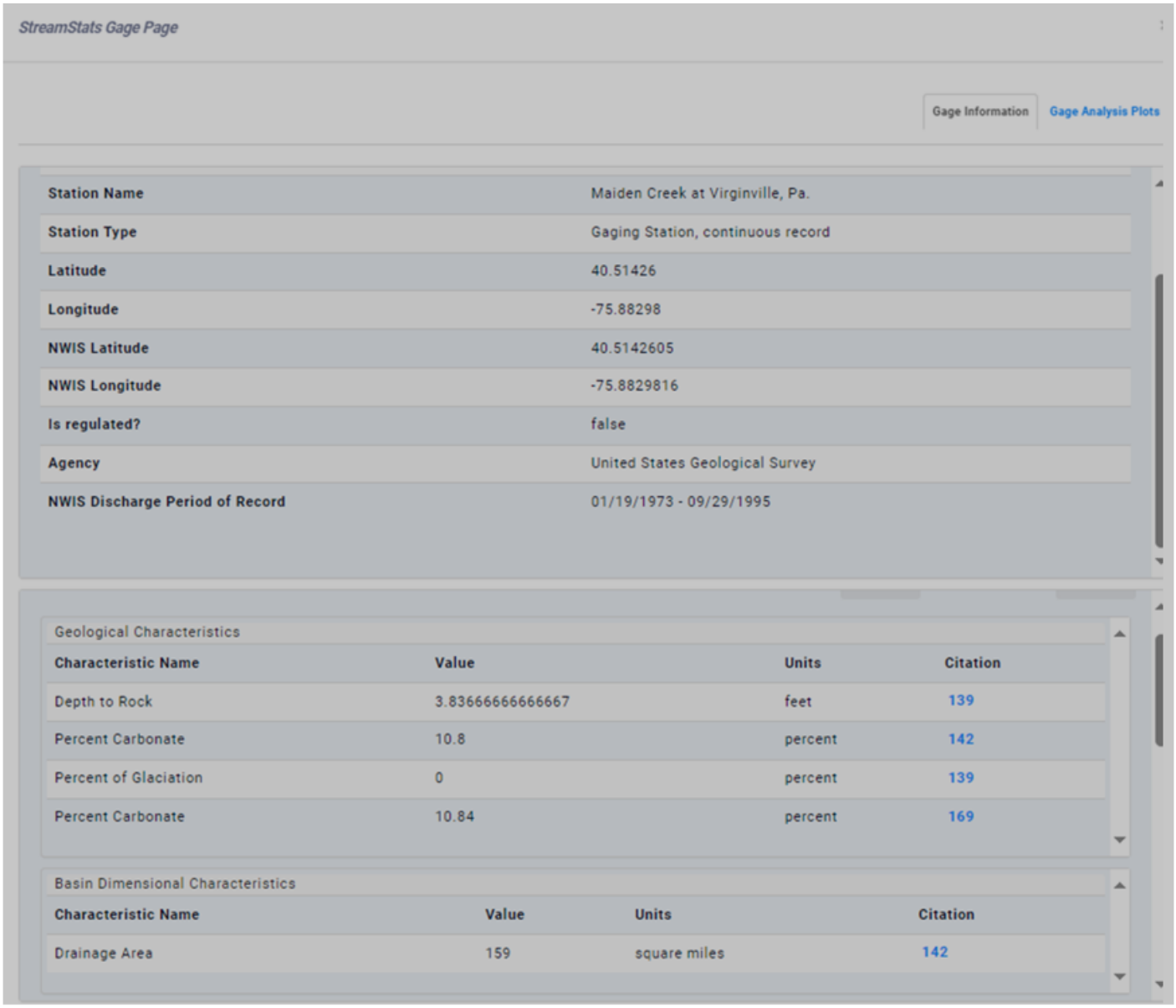
Table 5-12. WLA for TSS, NPDES Facilities (metric tons)

Facility ID	Facility Name	WLA, TSS [a] (ton/yr)
PA 0053708	Hawk Mt. B&B/Gaffney	0.08
PA 0085430	Robin Hill Campground	0.42
PA 0086878	Hamburg MA	1.25
PA 0246921	Borough of Lenhartsville proposed	1.75
PA 0070122	Highland Estates MHP	3.44
PA 0031135	Kutztown MA	62.17
PA 0070335	McConway and Torley, Inc. (outfall 001)	13.18
	McConway and Torley, Inc. (outfall 002)	13.18
PA 0088021	Christman Lake STP	3.25
PA 0085171	Lyons Borough MA	6.21
PA 0031348	Moselem Devl. Corp.	0.21
PA 0088137	Reading Area Water Authority	0.31
PA 0070254	Lynn Township Sewer Authority	3.32
Proposed	Richmond Township (Virginville) STP	0.78
	TOTAL	**109.55**

[a] Based on design flow values and TSS limit of 30 mg/L.

5.5.4 Effect on Dissolved Oxygen

Using BATHTUB model output for the TMDL condition, the diurnal range of dissolved oxygen was calculated to ensure consistency with minimum water quality criteria. Based on an average growing season dissolved oxygen concentration of 9.86 mg/L and a calculated range of +/- 0.075, the minimum dissolved oxygen level under TMDL conditions is predicted to be 9.78 mg/L-day, which satisfies numeric criteria for epilimnetic dissolved oxygen. See Appendix B for more detailed discussion of these calculations.



StreamStats Gage Page

Gage Information | Gage Analysis Plots

Station Name	Maiden Creek at Virginville, Pa.
Station Type	Gaging Station, continuous record
Latitude	40.51426
Longitude	-75.88298
NWIS Latitude	40.5142605
NWIS Longitude	-75.8829816
Is regulated?	false
Agency	United States Geological Survey
NWIS Discharge Period of Record	01/19/1973 - 09/29/1995

Geological Characteristics

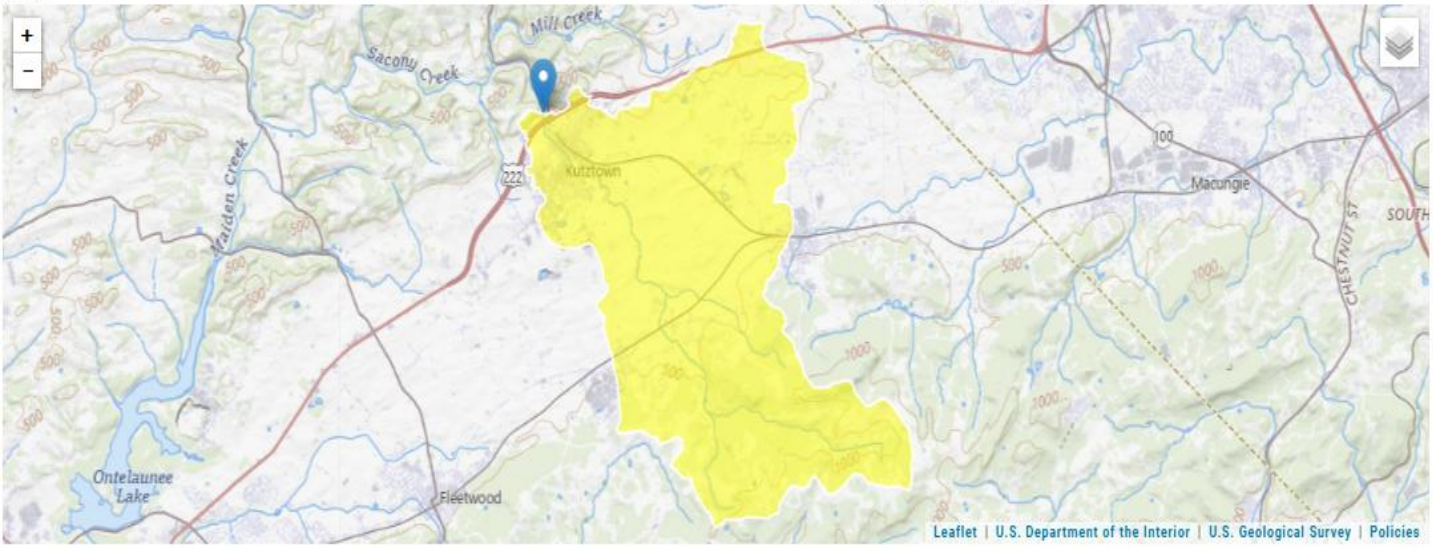
Characteristic Name	Value	Units	Citation
Depth to Rock	3.83666666666667	feet	139
Percent Carbonate	10.8	percent	142
Percent of Glaciation	0	percent	139
Percent Carbonate	10.84	percent	169

Basin Dimensional Characteristics

Characteristic Name	Value	Units	Citation
Drainage Area	159	square miles	142

USGS/PA Stream Stats – Sacony creek at Kutztown STP's Outfall 001 location:

Region ID:	PA
Workspace ID:	PA20250804151048084000
Clicked Point (Latitude, Longitude):	40.52799, -75.78408
Time:	2025-08-04 11:11:08 -0400



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Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	5.1448	degrees
CARBON	Percentage of area of carbonate rock	63.48	percent
DRNAREA	Area that drains to a point on a stream	21.8	square miles
PRECIP	Mean Annual Precipitation	46	inches
ROCKDEP	Depth to rock	5.2	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	0.83	miles per square mile
URBAN	Percentage of basin with urban development	6.0917	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [1.0 Percent (0.114 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
BSLOPD	Mean Basin Slope degrees	5.1448	degrees	1.7	6.4
DRNAREA	Drainage Area	21.8	square miles	4.78	1150
ROCKDEP	Depth to Rock	5.2	feet	4.13	5.21

URBAN	Percent Urban	6.0917	percent	0	89

Low-Flow Statistics Parameters [99.0 Percent (21.7 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	63.48	percent	0	99
DRNAREA	Drainage Area	21.8	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	46	inches	35	50.4
ROCKDEP	Depth to Rock	5.2	feet	3.32	5.65
STRDEN	Stream Density	0.83	miles per square mile	0.51	3.1

Low-Flow Statistics Flow Report [1.0 Percent (0.114 square miles) Low Flow Region 1]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	8.18	ft^3/s	46	46
30 Day 2 Year Low Flow	9.74	ft^3/s	38	38
7 Day 10 Year Low Flow	4.57	ft^3/s	51	51
30 Day 10 Year Low Flow	5.46	ft^3/s	46	46
90 Day 10 Year Low Flow	7.41	ft^3/s	41	41

Low-Flow Statistics Flow Report [99.0 Percent (21.7 square miles) Low Flow Region 2]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	19.8	ft^3/s	38	38
30 Day 2 Year Low Flow	20.9	ft^3/s	33	33
7 Day 10 Year Low Flow	14.5	ft^3/s	51	51
30 Day 10 Year Low Flow	15.2	ft^3/s	46	46
90 Day 10 Year Low Flow	16.1	ft^3/s	36	36

Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	19.7	ft^3/s
30 Day 2 Year Low Flow	20.8	ft^3/s
7 Day 10 Year Low Flow	14.4	ft^3/s
30 Day 10 Year Low Flow	15.1	ft^3/s
90 Day 10 Year Low Flow	16	ft^3/s

Low-Flow Statistics Citations

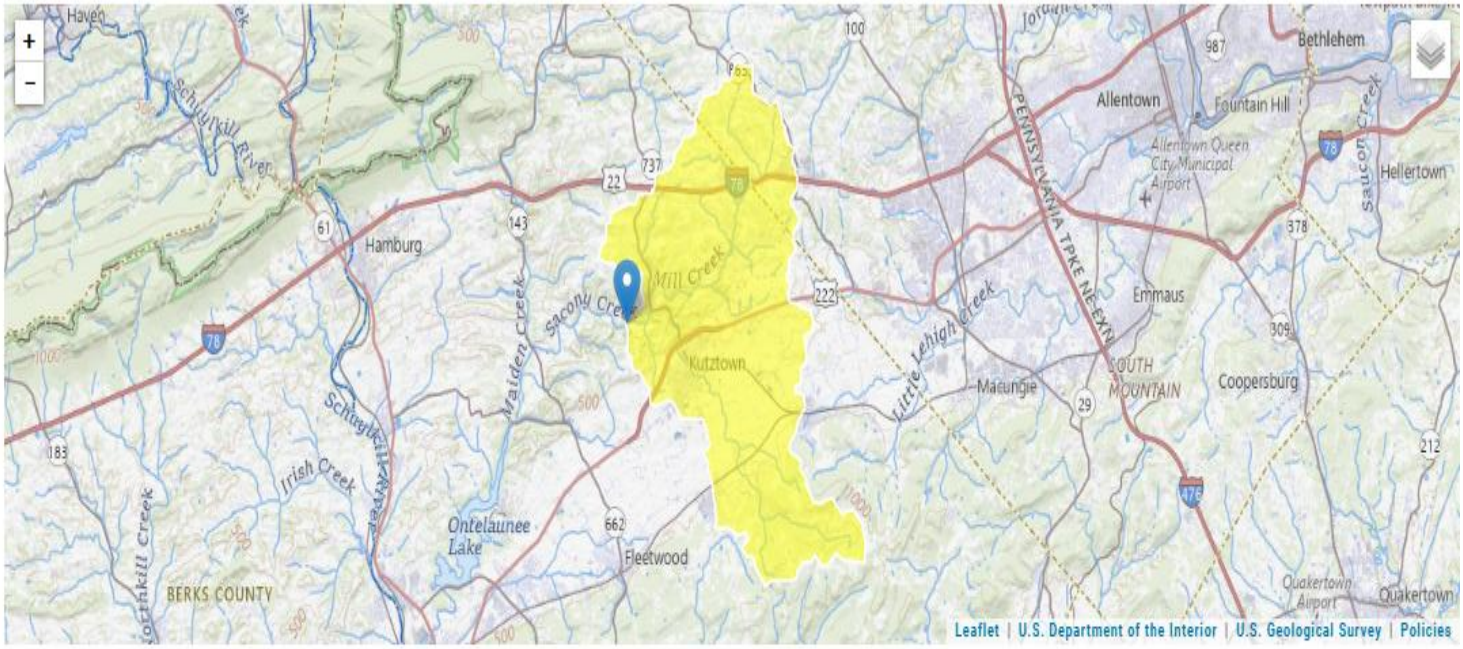
Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.

Using 14.4 cfs as Q_{7-10} does not appear reasonable since upstream location on Sacony Creek has estimated Q_{7-10} of 4.14 cfs and downstream location on Sacony Creek has estimated Q_{7-10} of 7.34 cfs. (See attached pages for downloads from USGS/PA Stream Stats showing other locations.)

USGS /PA Stream Stats : downstream Sacony Creek at confluence with UNT 02014

StreamStats Report

Region ID:	PA
Workspace ID:	PA20250804160424160000
Clicked Point (Latitude, Longitude):	40.53311, -75.81577
Time:	2025-08-04 12:04:46 -0400



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Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	35.03	percent
DRNAREA	Area that drains to a point on a stream	48.6	square miles
PRECIP	Mean Annual Precipitation	46	inches
ROCKDEP	Depth to rock	4.2	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.52	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	35.03	percent	0	99
DRNAREA	Drainage Area	48.6	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	46	inches	35	50.4
ROCKDEP	Depth to Rock	4.2	feet	3.32	5.65
STRDEN	Stream Density	1.52	miles per square mile	0.51	3.1

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

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	14.1	ft^3/s	38	38
30 Day 2 Year Low Flow	17.4	ft^3/s	33	33
7 Day 10 Year Low Flow	7.34	ft^3/s	51	51
30 Day 10 Year Low Flow	9.26	ft^3/s	46	46
90 Day 10 Year Low Flow	12.1	ft^3/s	36	36

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.

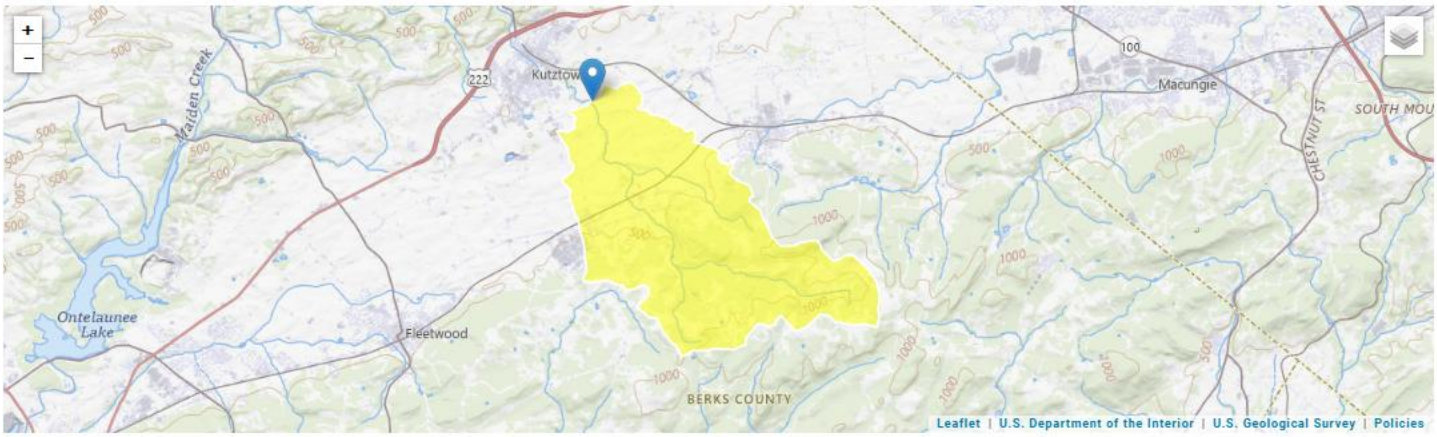
Application Version: 4.29.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

LFY = 7.34 cfs / 48.6 sq.mi. = 0.15 cfs/sq.mi.

upstream location from Kutztown STP on Sacony Creek:

StreamStats Report

Region ID:	PA
Workspace ID:	PA20250804155915615000
Clicked Point (Latitude, Longitude):	40.50997, -75.75721
Time:	2025-08-04 11:59:36 -0400



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Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	5.6143	degrees
CARBON	Percentage of area of carbonate rock	39.42	percent
DRNAREA	Area that drains to a point on a stream	12.7	square miles
PRECIP	Mean Annual Precipitation	46	inches
ROCKDEP	Depth to rock	5.2	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.17	miles per square mile
URBAN	Percentage of basin with urban development	1.6723	percent

Low-Flow Statistics Parameters [1.0 Percent (0.114 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
BSLOPD	Mean Basin Slope degrees	5.6143	degrees	1.7	6.4
DRNAREA	Drainage Area	12.7	square miles	4.78	1150
ROCKDEP	Depth to Rock	5.2	feet	4.13	5.21
URBAN	Percent Urban	1.6723	percent	0	89

Low-Flow Statistics Parameters [99.0 Percent (12.6 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	39.42	percent	0	99
DRNAREA	Drainage Area	12.7	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	46	inches	35	50.4
ROCKDEP	Depth to Rock	5.2	feet	3.32	5.65
STRDEN	Stream Density	1.17	miles per square mile	0.51	3.1

Low-Flow Statistics Flow Report [1.0 Percent (0.114 square miles) Low Flow Region 1]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	4.87	ft^3/s	46	46
30 Day 2 Year Low Flow	5.71	ft^3/s	38	38
7 Day 10 Year Low Flow	2.68	ft^3/s	51	51
30 Day 10 Year Low Flow	3.18	ft^3/s	46	46
90 Day 10 Year Low Flow	4.19	ft^3/s	41	41

Low-Flow Statistics Flow Report [99.0 Percent (12.6 square miles) Low Flow Region 2]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

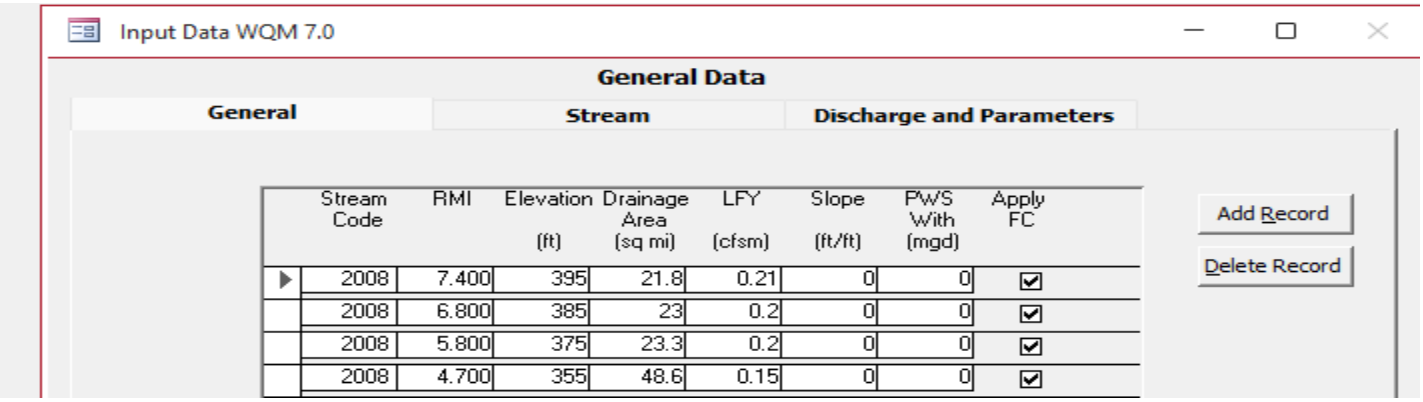
Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	6.34	ft^3/s	38	38
30 Day 2 Year Low Flow	7.17	ft^3/s	33	33
7 Day 10 Year Low Flow	4.15	ft^3/s	51	51
30 Day 10 Year Low Flow	4.59	ft^3/s	46	46
90 Day 10 Year Low Flow	5.33	ft^3/s	36	36

Low-Flow Statistics Flow Report [Area-Averaged]

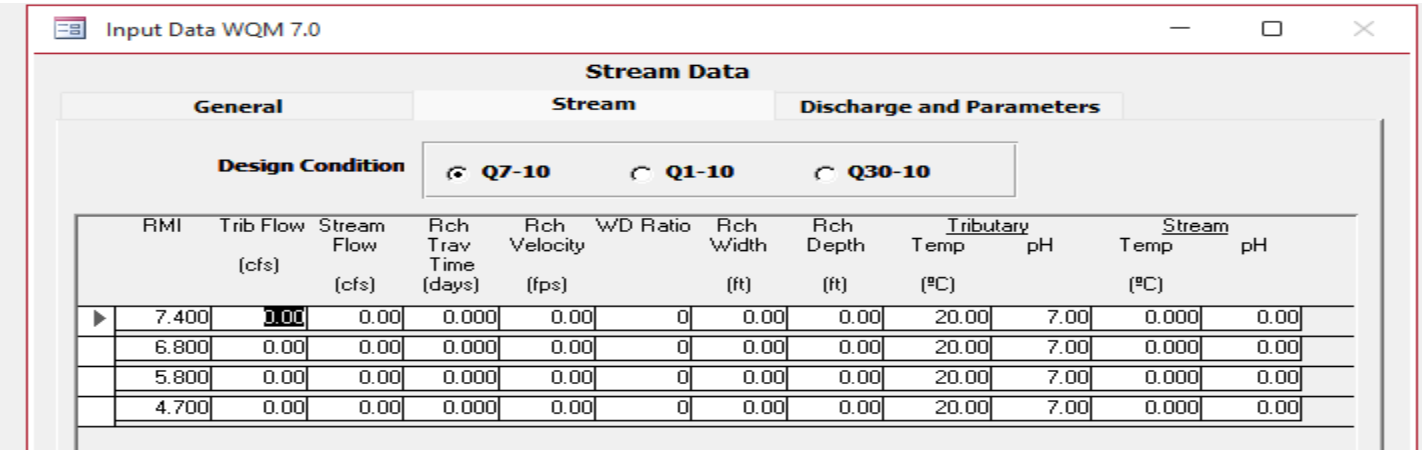
Statistic	Value	Unit
7 Day 2 Year Low Flow	6.33	ft^3/s
30 Day 2 Year Low Flow	7.16	ft^3/s
7 Day 10 Year Low Flow	4.14	ft^3/s
30 Day 10 Year Low Flow	4.58	ft^3/s
90 Day 10 Year Low Flow	5.32	ft^3/s

Low-Flow Statistics Citations

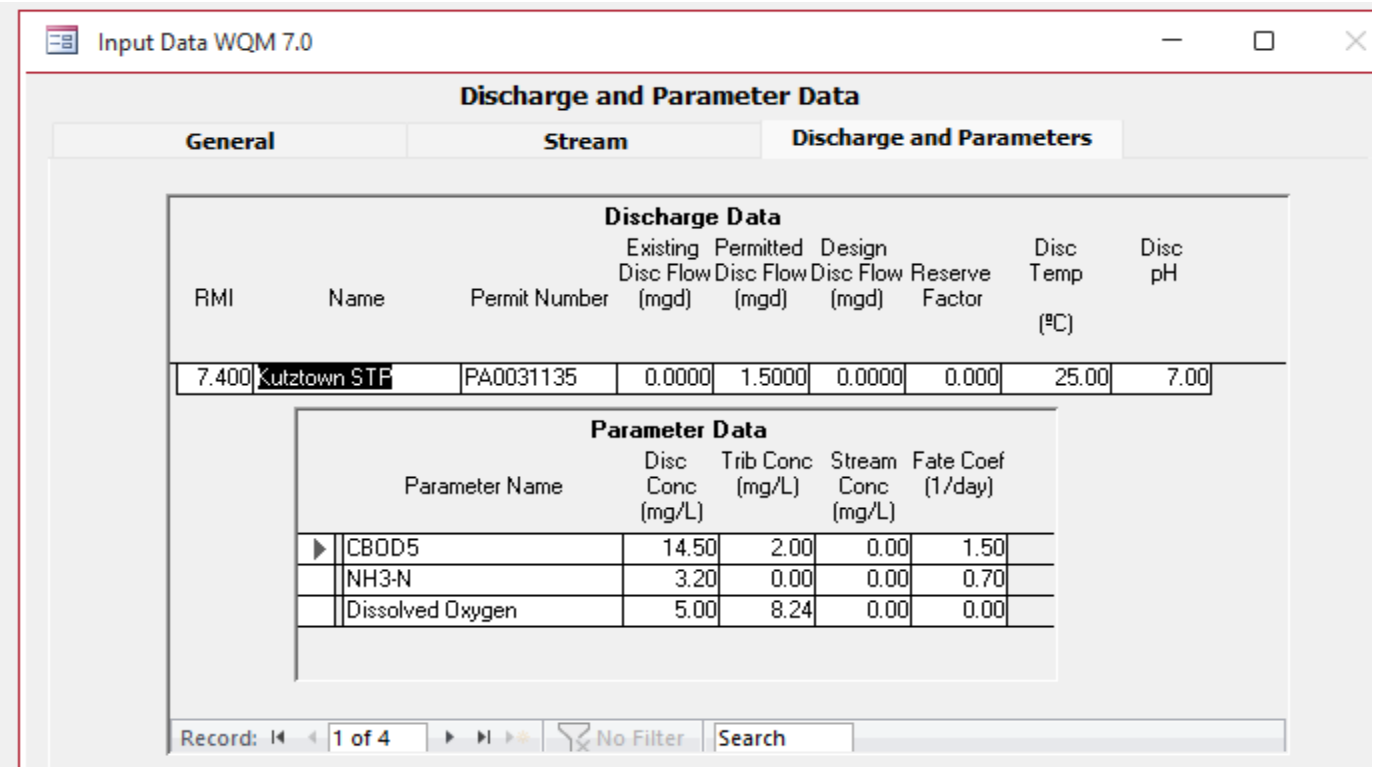
Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.



Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	LFY (cfsm)	Slope (ft/ft)	PWS With (mgd)	Apply FC
2008	7.400	395	21.8	0.21	0	0	☑
2008	6.800	385	23	0.2	0	0	☑
2008	5.800	375	23.3	0.2	0	0	☑
2008	4.700	355	48.6	0.15	0	0	☑

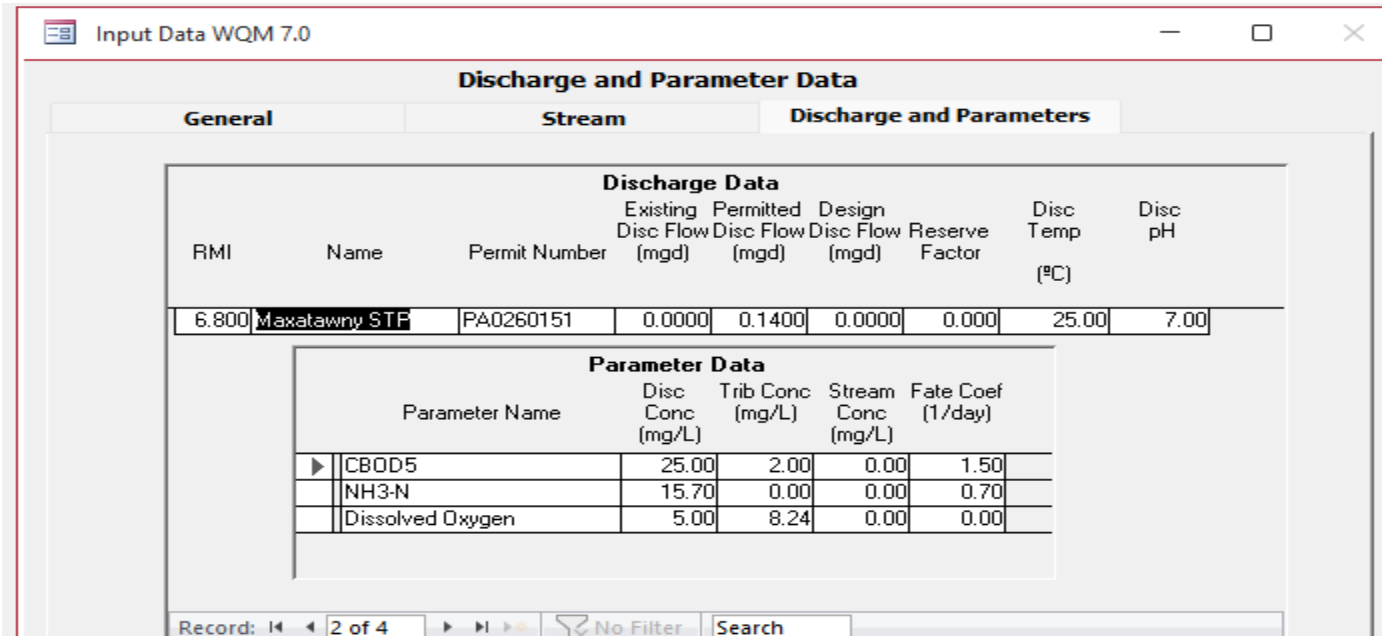


RMI	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (ºC)	Tributary pH	Stream Temp (ºC)	Stream pH
7.400	0.00	0.00	0.000	0.00	0	0.00	0.00	20.00	7.00	0.000	0.00
6.800	0.00	0.00	0.000	0.00	0	0.00	0.00	20.00	7.00	0.000	0.00
5.800	0.00	0.00	0.000	0.00	0	0.00	0.00	20.00	7.00	0.000	0.00
4.700	0.00	0.00	0.000	0.00	0	0.00	0.00	20.00	7.00	0.000	0.00



RMI	Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (ºC)	Disc pH
7.400	Kutztown STP	PA0031135	0.0000	1.5000	0.0000	0.000	25.00	7.00

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/day)
CBOD5	14.50	2.00	0.00	1.50
NH3-N	3.20	0.00	0.00	0.70
Dissolved Oxygen	5.00	8.24	0.00	0.00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General
Stream
Discharge and Parameters
Discharge Data
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Permit Number
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Permitted Disc Flow (mgd)
Design Disc Flow (mgd)
Reserve Factor
Disc Temp (ºC)
Disc pH
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Maxatawny STP
PA0260151
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0.1400
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
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0.70
Dissolved Oxygen
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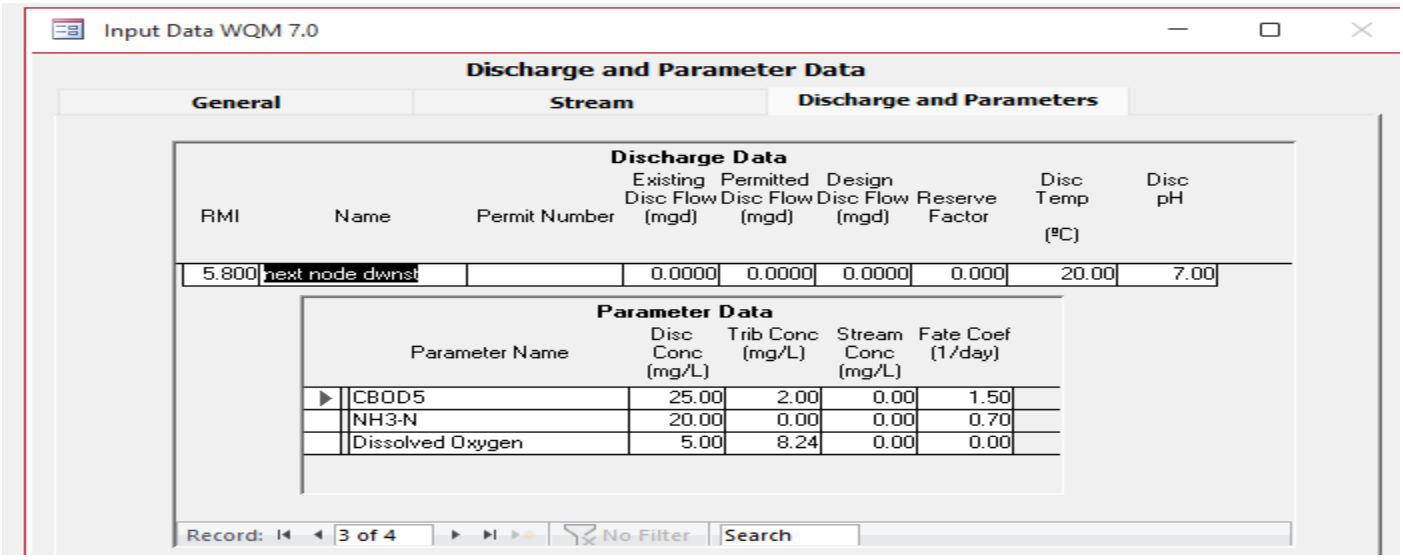
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Design Disc Flow (mgd)
Reserve Factor
Disc Temp (ºC)
Disc pH
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0.0000
0.0000
0.000
20.00
7.00
Parameter Data
Parameter Name
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Trib Conc (mg/L)
Stream Conc (mg/L)
Fate Coef (1/day)
CBOD5
25.00
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1.50
NH3-N
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Dissolved Oxygen
5.00
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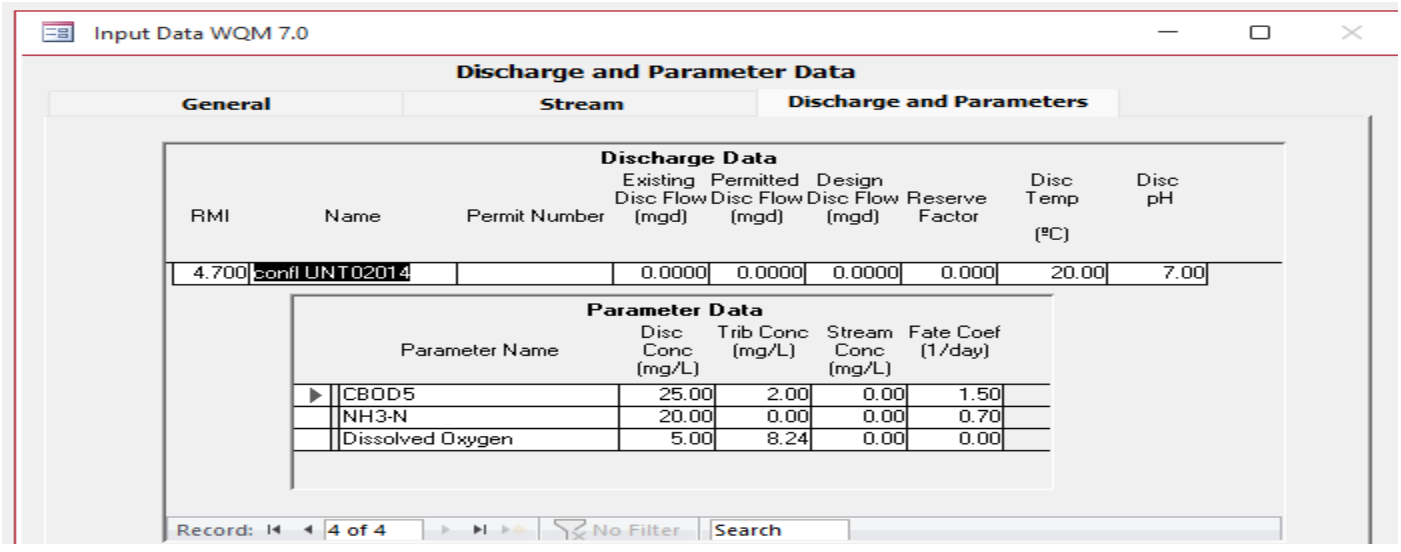
Record: 3 of 4
No Filter
Search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General
Stream
Discharge and Parameters
Discharge Data
RMI
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Permit Number
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Permitted Disc Flow (mgd)
Design Disc Flow (mgd)
Reserve Factor
Disc Temp (ºC)
Disc pH
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confl UNT02014
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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
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0.70
Dissolved Oxygen
5.00
8.24
0.00
0.00
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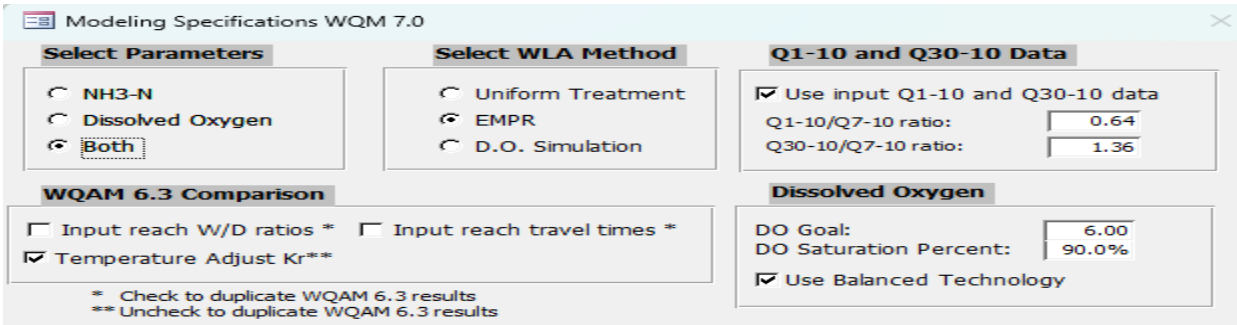
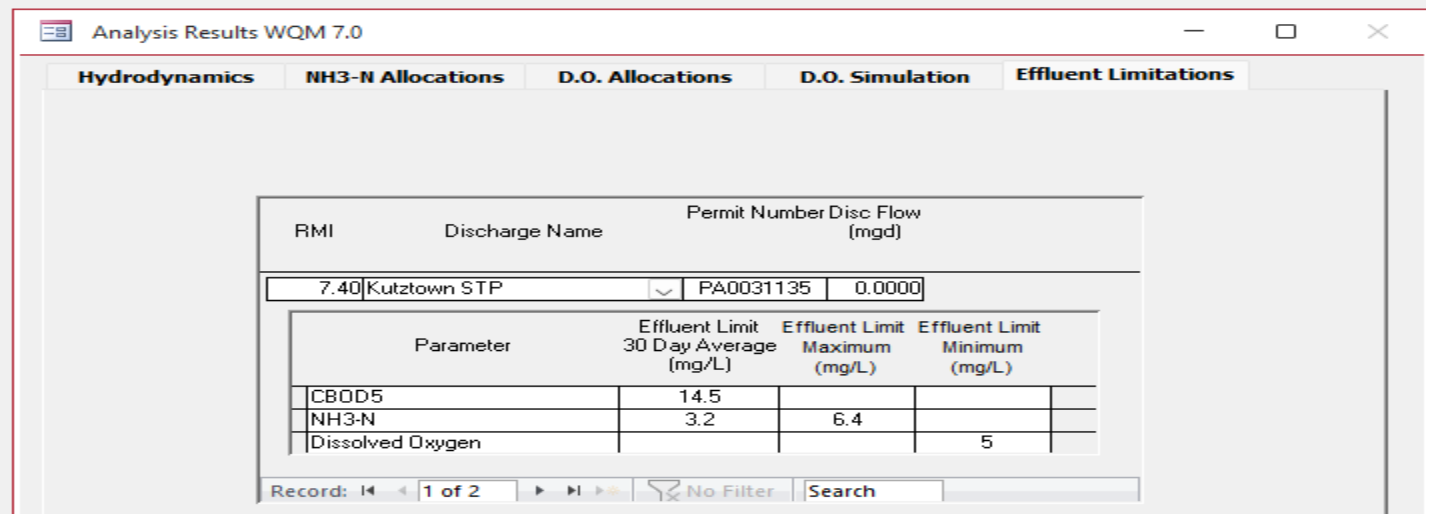
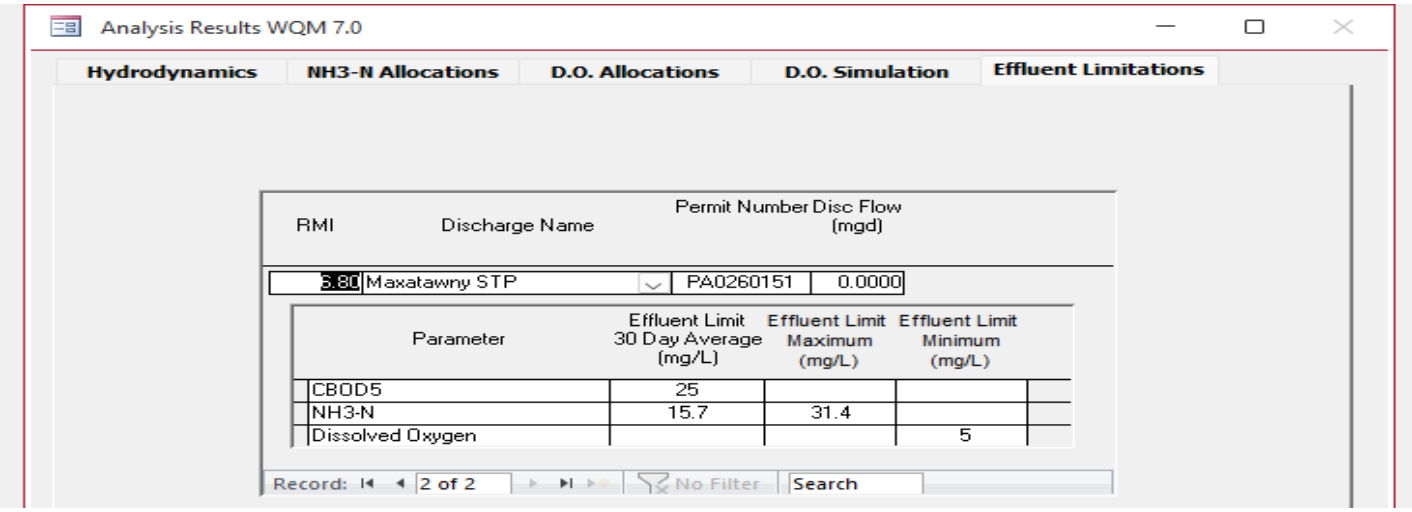
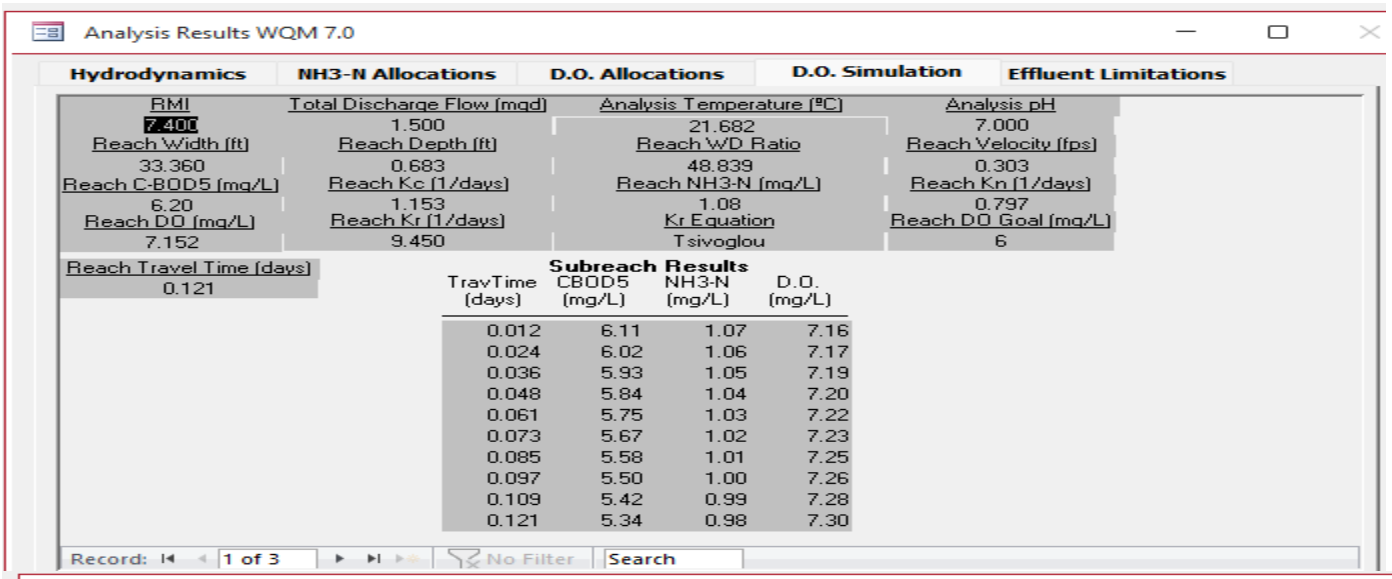
No Filter
Search


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
RMI
Discharge Name
Permit Number
Disc Flow (mgd)
7.40
Kutztown STP
PA0031135
0.0000
Parameter
Effluent Limit 30 Day Average (mg/L)
Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5 14.5
NH3-N 3.2 6.4
Dissolved Oxygen 5
Record: 1 of 2
No Filter
Search


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)
5.80
Maxatawny STP
PA0260151
0.0000
Parameter
Effluent Limit 30 Day Average (mg/L)
Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5 25
NH3-N 15.7 31.4
Dissolved Oxygen 5
Record: 2 of 2
No Filter
Search



Analysis Results WQM 7.0

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

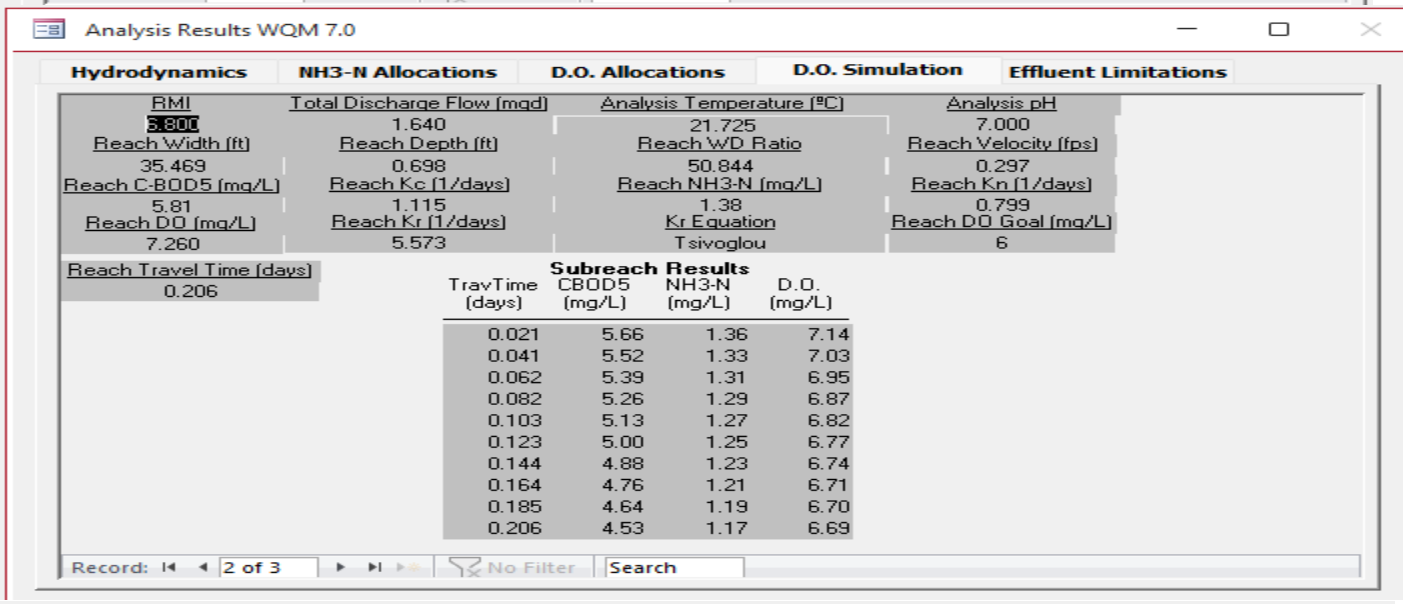
RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
7.400	1.500	21.682	7.000
Reach Width (ft)	Reach Depth (ft)	Reach WD Ratio	Reach Velocity (fps)
33.360	0.683	48.839	0.303
Reach C-BOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
6.20	1.153	1.08	0.797
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
7.152	9.450	Tsivoglou	6

Reach Travel Time (days): 0.121

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.012	6.11	1.07	7.16
0.024	6.02	1.06	7.17
0.036	5.93	1.05	7.19
0.048	5.84	1.04	7.20
0.061	5.75	1.03	7.22
0.073	5.67	1.02	7.23
0.085	5.58	1.01	7.25
0.097	5.50	1.00	7.26
0.109	5.42	0.99	7.28
0.121	5.34	0.98	7.30

Record: 1 of 3 | No Filter | Search



Analysis Results WQM 7.0

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

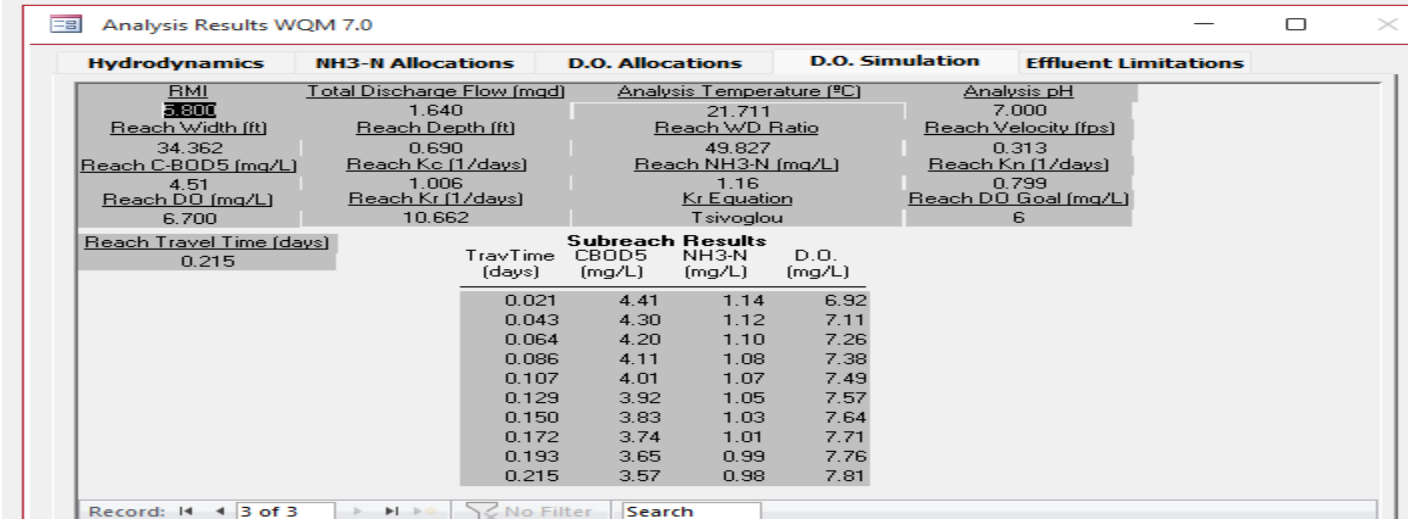
RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
5.800	1.640	21.725	7.000
Reach Width (ft)	Reach Depth (ft)	Reach WD Ratio	Reach Velocity (fps)
35.469	0.698	50.844	0.297
Reach C-BOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
5.81	1.115	1.38	0.799
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
7.260	5.573	Tsivoglou	6

Reach Travel Time (days): 0.206

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.021	5.66	1.36	7.14
0.041	5.52	1.33	7.03
0.062	5.39	1.31	6.95
0.082	5.26	1.29	6.87
0.103	5.13	1.27	6.82
0.123	5.00	1.25	6.77
0.144	4.88	1.23	6.74
0.164	4.76	1.21	6.71
0.185	4.64	1.19	6.70
0.206	4.53	1.17	6.69

Record: 2 of 3 | No Filter | Search



Analysis Results WQM 7.0

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

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
5.800	1.640	21.711	7.000
Reach Width (ft)	Reach Depth (ft)	Reach WD Ratio	Reach Velocity (fps)
34.362	0.690	49.827	0.313
Reach C-BOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
4.51	1.006	1.16	0.799
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
6.700	10.662	Tsivoglou	6

Reach Travel Time (days): 0.215

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.021	4.41	1.14	6.92
0.043	4.30	1.12	7.11
0.064	4.20	1.10	7.26
0.086	4.11	1.08	7.38
0.107	4.01	1.07	7.49
0.129	3.92	1.05	7.57
0.150	3.83	1.03	7.64
0.172	3.74	1.01	7.71
0.193	3.65	0.99	7.76
0.215	3.57	0.98	7.81

Record: 3 of 3 | No Filter | Search

DO Recovered

TOXCONC……

	Outfall No:	001
	n (Samples/Month):	4
	Reviewer/Permit Engineer:	B.Boylan

Parameter Name	Total Copper
Units	mg/L
Detection Limit	
Sample Date	***When entering values below the detection limit, enter "ND" or use the < notation (eg. <0.02)***
Jun-25	0.009
May-25	0.015
Apr-25	0.014
Mar-25	0.016
Feb-25	0.016
Jan-25	0.011
Dec-24	0.013
Nov-24	0.012
Oct-24	0.011
Sep-24	0.016
Aug-24	0.01
Jul-24	0.01
Jun-24	0.016
May-24	0.019
Apr-24	0.016
Mar-24	0.015
Feb-24	0.017
Jan-24	0.009
Dec-23	0.014
Nov-23	0.013
Oct-23	0.012
Sep-23	0.015
Aug-23	0.014
Jul-23	0.01

DATA INPUT SHEET | DOCUMENTATION | OUTPUT SHEET | SUMMARY STATISTICS | DETAILED CALCULATIONS | Z-VALUES

Output Sheet:

		Reviewer/Permit Engineer:	B.Boylan
Facility:			
NPDES #:			
Outfall No:	001		
n (Samples/Month):	4		
Parameter	**Distribution Applied**	**Coefficient of Variation (daily)**	**Avg. Monthly**
Total Copper (mg/L)	Lognormal	0.2162040	0.0172199

	Facility:						
	NPDES #:						
	Outfall No:		001				
	n (Samples/Month):		4				
Parameter Name	Total Copper						
Number of Samples	24						
Samples Nondetected	0						
LOGNORMAL							
Log MEAN	-4.3294375						
Log VAR.	0.0456846						
(LTA) [E(x)]	0.0134794						
Variance [V(x)]	0.0000085						
CV (raw)	0.2162040						
CV (n)	0.1081020						
Monthly Avg. (99%, n-day)	0.0172199						
DELTA-LOGNORMAL							
Delta-Log MEAN	NA						
Delta-Log VAR.							
(LTA) [E(x)]							
Variance [V(x)]							
CV (raw)							
Delta-Log VAR. (n)							
A, Table E-2, TSD							
B, Table E-2, TSD							
C, Table E-2, TSD							
Delta-Log MEAN (n)							
phi (Φ)							
Z*							
Monthly Avg. (99%, n-day)							
NORMAL							
MEAN	NA						
VAR.							
(LTA) [E(x)]							
Variance [V(x)]							
CV (raw)							
CV (n)							
Monthly Avg. (99%, n-day)							

DATA INPUT SHEET | DOCUMENTATION | OUTPUT SHEET | SUMMARY STATISTICS

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2025

Discharge Information

Instructions | Discharge | Stream

Facility: **Kutztown STP** NPDES Permit No.: **PA0031135** 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
1.5	293	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		1160									
	Chloride (PWS)	mg/L		330									
	Bromide	mg/L	<	0.2									
	Sulfate (PWS)	mg/L		45.8									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		1930									
	Total Antimony	µg/L	<	0.4									
	Total Arsenic	µg/L	<	0.1									
	Total Barium	µg/L		12									
	Total Beryllium	µg/L	<	0.4									
	Total Boron	µg/L		119									
	Total Cadmium	µg/L	<	0.1									
	Total Chromium (III)	µg/L	<	1									
	Hexavalent Chromium	µg/L	<	0.1									
	Total Cobalt	µg/L		0.2									
	Total Copper	mg/L		0.01722			0.2162						
	Free Cyanide	µg/L	<	0.5									
	Total Cyanide	µg/L	<	5									
	Dissolved Iron	µg/L		24									
	Total Iron	µg/L		55									
	Total Lead	µg/L		0.3									
	Total Manganese	µg/L		6									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		1									
	Total Phenols (Phenolics) (PWS)	µg/L	<	5									
	Total Selenium	µg/L	<	2									
	Total Silver	µg/L	<	0.2									
	Total Thallium	µg/L	<	0.4									
	Total Zinc	mg/L		0.015									
	Total Molybdenum	µg/L		6									
	Acrolein	µg/L	<	1									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	0.5									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.5									

Group 3	Carbon Tetrachloride	µg/L	<	0.5									
	Chlorobenzene	µg/L	<	0.5									
	Chlorodibromomethane	µg/L	<	0.5									
	Chloroethane	µg/L	<	1									
	2-Chloroethyl Vinyl Ether	µg/L	<	0.5									
	Chloroform	µg/L	<	0.5									
	Dichlorobromomethane	µg/L	<	0.5									
	1,1-Dichloroethane	µg/L	<	0.5									
	1,2-Dichloroethane	µg/L	<	0.5									
	1,1-Dichloroethylene	µg/L	<	0.5									
	1,2-Dichloropropane	µg/L	<	0.5									
	1,3-Dichloropropylene	µg/L	<	0.5									
	1,4-Dioxane	µg/L	<	0.0952									
	Ethylbenzene	µg/L	<	0.5									
	Methyl Bromide	µg/L	<	1									
	Methyl Chloride	µg/L	<	0.5									
	Methylene Chloride	µg/L	<	0.5									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5									
	Tetrachloroethylene	µg/L	<	0.5									
	Toluene	µg/L	<	0.5									
	1,2-trans-Dichloroethylene	µg/L	<	0.5									
	1,1,1-Trichloroethane	µg/L	<	0.5									
	1,1,2-Trichloroethane	µg/L	<	0.5									
	Trichloroethylene	µg/L	<	0.5									
	Vinyl Chloride	µg/L	<	0.5									
Group 4	2-Chlorophenol	µg/L	<	0.952									
	2,4-Dichlorophenol	µg/L	<	0.952									
	2,4-Dimethylphenol	µg/L	<	0.952									
	4,6-Dinitro-o-Cresol	µg/L	<	2.86									
	2,4-Dinitrophenol	µg/L	<	2.86									
	2-Nitrophenol	µg/L	<	0.952									
	4-Nitrophenol	µg/L	<	2.86									
	p-Chloro-m-Cresol	µg/L	<	0.952									
	Pentachlorophenol	µg/L	<	0.952									
	Phenol	µg/L	<	2.86									
	2,4,6-Trichlorophenol	µg/L	<	0.952									
Group 5	Acenaphthene	µg/L	<	0.952									
	Acenaphthylene	µg/L	<	0.952									
	Anthracene	µg/L	<	0.952									
	Benzidine	µg/L	<	4.81									
	Benzo(a)Anthracene	µg/L	<	0.952									
	Benzo(a)Pyrene	µg/L	<	0.952									
	3,4-Benzofluoranthene	µg/L	<	0.952									
	Benzo(ghi)Perylene	µg/L	<	0.952									
	Benzo(k)Fluoranthene	µg/L	<	0.952									
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.952									
	Bis(2-Chloroethyl)Ether	µg/L	<	0.952									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.952									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	2.86									
	4-Bromophenyl Phenyl Ether	µg/L	<	0.952									
	Butyl Benzyl Phthalate	µg/L	<	2.86									
	2-Chloronaphthalene	µg/L	<	0.952									
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.952									
	Chrysene	µg/L	<	0.952									
	Dibenzo(a,h)Anthrancene	µg/L	<	0.952									
	1,2-Dichlorobenzene	µg/L	<	0.5									
	1,3-Dichlorobenzene	µg/L	<	0.5									
	1,4-Dichlorobenzene	µg/L	<	0.5									
	3,3-Dichlorobenzidine	µg/L	<	0.952									
	Diethyl Phthalate	µg/L	<	0.952									
	Dimethyl Phthalate	µg/L	<	0.952									
	Di-n-Butyl Phthalate	µg/L	<	2.86									
	2,4-Dinitrotoluene	µg/L	<	0.952									

	2,6-Dinitrotoluene	µg/L	<	0.952									
	Di-n-Octyl Phthalate	µg/L	<	0.952									
	1,2-Diphenylhydrazine	µg/L	<	0.952									
	Fluoranthene	µg/L	<	0.952									
	Fluorene	µg/L	<	0.952									
	Hexachlorobenzene	µg/L	<	0.952									
	Hexachlorobutadiene	µg/L	<										
	Hexachlorocyclopentadiene	µg/L	<	0.952									
	Hexachloroethane	µg/L	<	0.952									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.952									
	Isophorone	µg/L	<	0.952									
	Naphthalene	µg/L	<	0.952									
	Nitrobenzene	µg/L	<	0.952									
	n-Nitrosodimethylamine	µg/L	<	0.952									
	n-Nitrosodi-n-Propylamine	µg/L	<	0.952									
	n-Nitrosodiphenylamine	µg/L	<	0.952									
	Phenanthrene	µg/L	<	0.952									
	Pyrene	µg/L	<	0.952									
	1,2,4-Trichlorobenzene	µg/L	<										
Group 6	Aldrin	µg/L	<										
	alpha-BHC	µg/L	<										
	beta-BHC	µg/L	<										
	gamma-BHC	µg/L	<										
	delta BHC	µg/L	<										
	Chlordane	µg/L	<										
	4,4-DDT	µg/L	<										
	4,4-DDE	µg/L	<										
	4,4-DDD	µg/L	<										
	Dieldrin	µg/L	<										
	alpha-Endosulfan	µg/L	<										
	beta-Endosulfan	µg/L	<										
	Endosulfan Sulfate	µg/L	<										
	Endrin	µg/L	<										
	Endrin Aldehyde	µg/L	<										
	Heptachlor	µg/L	<										
	Heptachlor Epoxide	µg/L	<										
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<										
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2025

Stream / Surface Water Information

Kutztown STP, NPDES Permit No. PA0031135, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Sacony Creek**

No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	002008	7.4	395	21.8			Yes
End of Reach 1	002008	4.7	355	48.6			Yes

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

Location	RMI	LFY (cfs/mi^2)*	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	7.4	0.21	4.57									295	7		
End of Reach 1	4.7	0.15	7.34												

Q_h

Location	RMI	LFY (cfs/mi^2)	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	7.4														
End of Reach 1	4.7														

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Toxics Management Spreadsheet
Version 1.4, May 2025

Model Results

Kutztown STP, NPDES Permit No. PA0031135, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.813 Analysis Hardness (mg/l): 294.23 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 Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	1,951	
Total Antimony	0	0		0	1,100	1,100	2,861	
Total Arsenic	0	0		0	340	340	884	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	54,626	
Total Boron	0	0		0	8,100	8,100	21,070	
Total Cadmium	0	0		0	5.744	6.39	16.6	Chem Translator of 0.899 applied
Total Chromium (III)	0	0		0	1378.957	4,364	11,351	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	42.4	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	247	
Total Copper	0	0		0	37.151	38.7	101	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	57.2	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	204.404	323	839	Chem Translator of 0.634 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	4.28	Chem Translator of 0.85 applied
Total Nickel	0	0		0	1166.743	1,169	3,041	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	20.586	24.2	63.0	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	169	
Total Zinc	0	0		0	292.398	299	778	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	7.8	

Acrylonitrile	0	0		0	650	650	1,691	
Benzene	0	0		0	640	640	1,665	
Bromoform	0	0		0	1,800	1,800	4,682	
Carbon Tetrachloride	0	0		0	2,800	2,800	7,283	
Chlorobenzene	0	0		0	1,200	1,200	3,121	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	46,822	
Chloroform	0	0		0	1,900	1,900	4,942	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	39,018	
1,1-Dichloroethylene	0	0		0	7,500	7,500	19,509	
1,2-Dichloropropane	0	0		0	11,000	11,000	28,613	
1,3-Dichloropropylene	0	0		0	310	310	806	
Ethylbenzene	0	0		0	2,900	2,900	7,544	
Methyl Bromide	0	0		0	550	550	1,431	
Methyl Chloride	0	0		0	28,000	28,000	72,834	
Methylene Chloride	0	0		0	12,000	12,000	31,215	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	2,601	
Tetrachloroethylene	0	0		0	700	700	1,821	
Toluene	0	0		0	1,700	1,700	4,422	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	17,688	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	7,804	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	8,844	
Trichloroethylene	0	0		0	2,300	2,300	5,983	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	1,457	
2,4-Dichlorophenol	0	0		0	1,700	1,700	4,422	
2,4-Dimethylphenol	0	0		0	660	660	1,717	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	208	
2,4-Dinitrophenol	0	0		0	660	660	1,717	
2-Nitrophenol	0	0		0	8,000	8,000	20,810	
4-Nitrophenol	0	0		0	2,300	2,300	5,983	
p-Chloro-m-Cresol	0	0		0	160	160	416	
Pentachlorophenol	0	0		0	8.723	8.72	22.7	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	1,197	
Acenaphthene	0	0		0	83	83.0	216	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	780	
Benzo(a)Anthracene	0	0		0	0.5	0.5	1.3	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	78,037	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	11,705	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	702	
Butyl Benzyl Phthalate	0	0		0	140	140	364	

2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	2,133	
1,3-Dichlorobenzene	0	0		0	350	350	910	
1,4-Dichlorobenzene	0	0		0	730	730	1,899	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	10,405	
Dimethyl Phthalate	0	0		0	2,500	2,500	6,503	
Di-n-Butyl Phthalate	0	0		0	110	110	286	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	4,162	
2,6-Dinitrotoluene	0	0		0	990	990	2,575	
1,2-Diphenylhydrazine	0	0		0	15	15.0	39.0	
Fluoranthene	0	0		0	200	200	520	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	5	5.0	13.0	
Hexachloroethane	0	0		0	60	60.0	156	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	26,012	
Naphthalene	0	0		0	140	140	364	
Nitrobenzene	0	0		0	4,000	4,000	10,405	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	44,221	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	780	
Phenanthrene	0	0		0	5	5.0	13.0	
Pyrene	0	0		0	N/A	N/A	N/A	

☑ ***CFC*** CCT (min): 22.691 PMF: 1 Analysis Hardness (mg/l): 294.33 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 Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	653	
Total Arsenic	0	0		0	150	150	445	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	12,175	
Total Boron	0	0		0	1,600	1,600	4,751	
Total Cadmium	0	0		0	0.520	0.6	1.79	Chem Translator of 0.864 applied
Total Chromium (III)	0	0		0	179.422	209	620	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	30.9	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	56.4	
Total Copper	0	0		0	22.528	23.5	69.7	Chem Translator of 0.96 applied

Free Cyanide	0	0		0	5.2	5.2	15.4	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	4,454	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	7.968	12.6	37.3	Chem Translator of 0.634 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	2.69	Chem Translator of 0.85 applied
Total Nickel	0	0		0	129.625	130	386	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	14.8	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	38.6	
Total Zinc	0	0		0	294.871	299	888	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	8.91	
Acrylonitrile	0	0		0	130	130	386	
Benzene	0	0		0	130	130	386	
Bromoform	0	0		0	370	370	1,099	
Carbon Tetrachloride	0	0		0	560	560	1,663	
Chlorobenzene	0	0		0	240	240	713	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	10,393	
Chloroform	0	0		0	390	390	1,158	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	9,205	
1,1-Dichloroethylene	0	0		0	1,500	1,500	4,454	
1,2-Dichloropropane	0	0		0	2,200	2,200	6,533	
1,3-Dichloropropylene	0	0		0	61	61.0	181	
Ethylbenzene	0	0		0	580	580	1,722	
Methyl Bromide	0	0		0	110	110	327	
Methyl Chloride	0	0		0	5,500	5,500	16,332	
Methylene Chloride	0	0		0	2,400	2,400	7,127	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	624	
Tetrachloroethylene	0	0		0	140	140	416	
Toluene	0	0		0	330	330	980	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	4,157	
1,1,1-Trichloroethane	0	0		0	610	610	1,811	
1,1,2-Trichloroethane	0	0		0	680	680	2,019	
Trichloroethylene	0	0		0	450	450	1,336	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	327	
2,4-Dichlorophenol	0	0		0	340	340	1,010	
2,4-Dimethylphenol	0	0		0	130	130	386	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	47.5	
2,4-Dinitrophenol	0	0		0	130	130	386	
2-Nitrophenol	0	0		0	1,600	1,600	4,751	
4-Nitrophenol	0	0		0	470	470	1,396	

p-Chloro-m-Cresol	0	0		0	500	500	1,485	
Pentachlorophenol	0	0		0	6.693	6.69	19.9	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	270	
Acenaphthene	0	0		0	17	17.0	50.5	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	175	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.3	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	17,816	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	2,702	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	160	
Butyl Benzyl Phthalate	0	0		0	35	35.0	104	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	475	
1,3-Dichlorobenzene	0	0		0	69	69.0	205	
1,4-Dichlorobenzene	0	0		0	150	150	445	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	2,376	
Dimethyl Phthalate	0	0		0	500	500	1,485	
Di-n-Butyl Phthalate	0	0		0	21	21.0	62.4	
2,4-Dinitrotoluene	0	0		0	320	320	950	
2,6-Dinitrotoluene	0	0		0	200	200	594	
1,2-Diphenylhydrazine	0	0		0	3	3.0	8.91	
Fluoranthene	0	0		0	40	40.0	119	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	1	1.0	2.97	
Hexachloroethane	0	0		0	12	12.0	35.6	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	6,236	
Naphthalene	0	0		0	43	43.0	128	
Nitrobenzene	0	0		0	810	810	2,405	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	10,096	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	175	
Phenanthrene	0	0		0	1	1.0	2.97	
Pyrene	0	0		0	N/A	N/A	N/A	

☑ ***THH*** CCT (min): 22.691 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 Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	16.6	
Total Arsenic	0	0		0	10	10.0	29.7	
Total Barium	0	0		0	2,400	2,400	7,127	
Total Boron	0	0		0	3,100	3,100	9,205	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	4	4.0	11.9	
Dissolved Iron	0	0		0	300	300	891	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	2,969	
Total Mercury	0	0		0	0.050	0.05	0.15	
Total Nickel	0	0		0	610	610	1,811	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	0.71	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	8.91	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	297	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	16.9	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	98.0	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	202	

Methyl Bromide	0	0		0	100	100.0	297	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
Tetrachloroethylene	0	0		0	N/A	N/A	N/A	
Toluene	0	0		0	57	57.0	169	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	297	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	29,694	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	30	30.0	89.1	
2,4-Dichlorophenol	0	0		0	10	10.0	29.7	
2,4-Dimethylphenol	0	0		0	100	100.0	297	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	5.94	
2,4-Dinitrophenol	0	0		0	10	10.0	29.7	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	11,878	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	208	
Anthracene	0	0		0	300	300	891	
Benzidine	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	594	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	0.3	
2-Chloronaphthalene	0	0		0	800	800	2,376	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	2,969	
1,3-Dichlorobenzene	0	0		0	7	7.0	20.8	
1,4-Dichlorobenzene	0	0		0	300	300	891	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	1,782	
Dimethyl Phthalate	0	0		0	2,000	2,000	5,939	
Di-n-Butyl Phthalate	0	0		0	20	20.0	59.4	
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A	

2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
Fluoranthene	0	0		0	20	20.0	59.4	
Fluorene	0	0		0	50	50.0	148	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	11.9	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	34	34.0	101	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	29.7	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	59.4	

☑ ***CRL*** CCT (min): 16.535 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 Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	

Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	0.78	
Benzene	0	0		0	0.58	0.58	7.59	
Bromoform	0	0		0	7	7.0	91.6	
Carbon Tetrachloride	0	0		0	0.4	0.4	5.23	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	10.5	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	12.4	
1,2-Dichloroethane	0	0		0	9.9	9.9	130	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	11.8	
1,3-Dichloropropylene	0	0		0	0.27	0.27	3.53	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	262	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	2.62	
Tetrachloroethylene	0	0		0	10	10.0	131	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	7.2	
Trichloroethylene	0	0		0	0.6	0.6	7.85	
Vinyl Chloride	0	0		0	0.02	0.02	0.26	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	0.39	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	19.6	
Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.001	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.013	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.001	

3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.013	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.13	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.39	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	4.19	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	1.57	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.001	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	0.65	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	0.65	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.65	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.39	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.001	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	1.31	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.013	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.009	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.065	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	43.2	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	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 Aluminum	15.6	24.4	1,250	1,951	3,126	µg/L	1,250	AFC	Discharge Conc ≥ 50% WQBEL (RP)

Total Copper	Report	Report	Report	Report	Report	mg/L	0.048	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
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	7,127	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	4,751	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	1.79	µg/L	Discharge Conc < TQL
Total Chromium (III)	620	µg/L	Discharge Conc < TQL
Hexavalent Chromium	27.2	µg/L	Discharge Conc < TQL
Total Cobalt	56.4	µg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	11.9	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	891	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	4,454	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	37.3	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	2,969	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.15	µg/L	Discharge Conc < TQL
Total Nickel	386	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	14.8	µg/L	Discharge Conc < TQL
Total Silver	40.4	µg/L	Discharge Conc < TQL
Total Thallium	0.71	µg/L	Discharge Conc < TQL
Total Zinc	0.5	mg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	5.0	µg/L	Discharge Conc < TQL
Acrylonitrile	0.78	µg/L	Discharge Conc < TQL
Benzene	7.59	µg/L	Discharge Conc < TQL
Bromoform	91.6	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	5.23	µg/L	Discharge Conc < TQL
Chlorobenzene	297	µg/L	Discharge Conc < TQL
Chlorodibromomethane	10.5	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS

2-Chloroethyl Vinyl Ether	10,393	µg/L	Discharge Conc < TQL
Chloroform	16.9	µg/L	Discharge Conc < TQL
Dichlorobromomethane	12.4	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	130	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	98.0	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	11.8	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	3.53	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	202	µg/L	Discharge Conc < TQL
Methyl Bromide	297	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Chloride	16,332	µg/L	Discharge Conc < TQL
Methylene Chloride	262	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	2.62	µg/L	Discharge Conc < TQL
Tetrachloroethylene	131	µg/L	Discharge Conc < TQL
Toluene	169	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	297	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	1,811	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	7.2	µg/L	Discharge Conc < TQL
Trichloroethylene	7.85	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.26	µg/L	Discharge Conc < TQL
2-Chlorophenol	89.1	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	29.7	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	297	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	5.94	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	29.7	µg/L	Discharge Conc < TQL
2-Nitrophenol	4,751	µg/L	Discharge Conc < TQL
4-Nitrophenol	1,396	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	267	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.39	µg/L	Discharge Conc < TQL
Phenol	11,878	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	19.6	µg/L	Discharge Conc < TQL
Acenaphthene	50.5	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	891	µg/L	Discharge Conc < TQL
Benzidine	0.001	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.013	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.001	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.013	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.13	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.39	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	594	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	4.19	µg/L	Discharge Conc < TQL

4-Bromophenyl Phenyl Ether	160	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.3	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	2,376	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	1.57	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.001	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	475	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	20.8	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	445	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	0.65	µg/L	Discharge Conc < TQL
Diethyl Phthalate	1,782	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	1,485	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	59.4	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	0.65	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	0.65	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.39	µg/L	Discharge Conc < TQL
Fluoranthene	59.4	µg/L	Discharge Conc < TQL
Fluorene	148	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.001	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	2.97	µg/L	Discharge Conc < TQL
Hexachloroethane	1.31	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.013	µg/L	Discharge Conc < TQL
Isophorone	101	µg/L	Discharge Conc < TQL
Naphthalene	128	µg/L	Discharge Conc ≤ 25% WQBEL
Nitrobenzene	29.7	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.009	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.065	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	43.2	µg/L	Discharge Conc < TQL
Phenanthrene	2.97	µg/L	Discharge Conc < TQL
Pyrene	59.4	µg/L	Discharge Conc < TQL

After new effluent samples were received September 26, 2025 for Hexachlorobutadiene and 1,2,4-Trichlorobenzene…..

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2025

Discharge Information

Instructions | Discharge | Stream

Facility: **Kutztown STP** NPDES Permit No.: **PA0031135** 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
1.5	293	7						

2,6-Dinitrotoluene	µg/L	<											
Di-n-Octyl Phthalate	µg/L	<											
1,2-Diphenylhydrazine	µg/L	<											
Fluoranthene	µg/L	<											
Fluorene	µg/L	<											
Hexachlorobenzene	µg/L	<											
Hexachlorobutadiene	µg/L	<	0.248										
Hexachlorocyclopentadiene	µg/L	<											
Hexachloroethane	µg/L	<											
Indeno(1,2,3-cd)Pyrene	µg/L	<											
Isophorone	µg/L	<											
Naphthalene	µg/L	<											
Nitrobenzene	µg/L	<											
n-Nitrosodimethylamine	µg/L	<											
n-Nitrosodi-n-Propylamine	µg/L	<											
n-Nitrosodiphenylamine	µg/L	<											
Phenanthrene	µg/L	<											
Pyrene	µg/L	<											
1,2,4-Trichlorobenzene	µg/L	<	0.254										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2025

Stream / Surface Water Information

Kutztown STP, NPDES Permit No. PA0031135, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: **Sacony 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	002008	7.4	395	21.8			Yes
End of Reach 1	002008	4.7	355	48.6			Yes

Q_{7-10}

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	7.4	0.21	4.57									295	7		
End of Reach 1	4.7	0.15													

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	7.4														
End of Reach 1	4.7														

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

No. Samples/Month: 4

Pollutants	Mass Limits		Concentration Limits				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			

☑ ***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
Hexachlorobutadiene	N/A	N/A	Discharge Conc < TQL
1,2,4-Trichlorobenzene	N/A	N/A	Discharge Conc < TQL

Pennsylvania
Department of
Environmental Protection

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
PRE-DRAFT PERMIT SURVEY FOR TOXIC POLLUTANTS

Permittee Name: **Kutztown Borough Berks County** Permit No.: **PA0031135**

Pollutant(s) identified by DEP that may require WQBELs: **Total Aluminum, Hexachlorobutadiene, and 1,2,4-Trichlorobenzene**

Is the permittee aware of the source(s) of the pollutant(s)? ☐ Yes ☐ No ☒ Suspected

If Yes or Suspected, describe the known or suspected source(s) of pollutant(s) in the effluent.

Possibly the chemical used for Phosphorus removal.

Has the permittee completed any studies in the past to control or treat the pollutant(s)? ☐ Yes ☒ No

If Yes, describe prior studies and results:

Does the permittee believe it can achieve the proposed WQBELs now? ☐ Yes ☐ No ☒ Uncertain

If No, describe the activities, upgrades or process changes that would be necessary to achieve the WQBELs, if known.

Estimated date by which the permittee could achieve the proposed WQBELs: ☒ Uncertain

Will the permittee conduct additional sampling for the pollutant(s) to supplement the application? ☒ Yes ☐ No

Check the appropriate box(es) below to indicate site-specific data that have been collected by the permittee in the past. If any of these data have not been submitted to DEP, please attach to this survey.

☐	Discharge pollutant concentration coefficient(s) of variability	Year(s) Studied:
☐	Discharge and background Total Hardness concentrations (metals)	Year(s) Studied:
☐	Background / ambient pollutant concentrations	Year(s) Studied:
☐	Chemical translator(s) (metals)	Year(s) Studied:
☐	Slope and width of receiving waters	Year(s) Studied:
☐	Velocity of receiving waters at design conditions	Year(s) Studied:
☐	Acute and/or chronic partial mix factors (mixing at design conditions)	Year(s) Studied:
☐	Volatilization rates (highly volatile organics)	Year(s) Studied:
☐	Site-specific criteria (e.g., Water Effect Ratio or related study)	Year(s) Studied:

Please submit this survey to the DEP regional office that is reviewing the permit application within 30 days of receipt.

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.5
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Kutztown WWTP

Permit No.: PA0031135

Replicate No.	Test Completion Date: 12/24/2024 Control	TIWC	Test Completion Date:	Control	TIWC
1	10	10			
2	10	10			
3	10	10			
4	10	10			
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
Mean	10.000	10.000	Mean	0.000	0.000
Std Dev.	0.000	0.000	Std Dev.		
# Replicates	4	4	# Replicates		
T-Test Result			T-Test Result		
Deg. of Freedom			Deg. of Freedom		
Critical T Value			Critical T Value		
Pass or Fail	PASS		Pass or Fail		

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.5
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Kutztown WWTP

Permit No.: PA0031135

Replicate No.	Test Completion Date: 12/24/2024 Control	TIWC	Test Completion Date:	Control	TIWC
1	0.334	0.346			
2	0.36	0.343			
3	0.385	0.351			
4	0.312	0.321			
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
Mean	0.348	0.340	Mean	0.000	0.000
Std Dev.	0.032	0.013	Std Dev.		
# Replicates	4	4	# Replicates		
T-Test Result	5.8444		T-Test Result		
Deg. of Freedom	5		Deg. of Freedom		
Critical T Value	0.7267		Critical T Value		
Pass or Fail	PASS		Pass or Fail		

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.5
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Kutztown WWTP

Permit No.: PA0031135

Replicate No.	Test Completion Date: 12/24/2024 Control	TIWC	Test Completion Date: Control	TIWC
1	1	1		
2	1	1		
3	1	1		
4	1	1		
5	1	1		
6	1	1		
7	1	1		
8	1	1		
9	1	1		
10	1	1		
11				
12				
13				
14				
15				
Mean	1.000	1.000	0.000	0.000
Std Dev.	0.000	0.000		
# Replicates	10	10		
T-Test Result				
Deg. of Freedom				
Critical T Value				
Pass or Fail	PASS			

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.5
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Kutztown WWTP

Permit No.: PA0031135

Replicate No.	Test Completion Date: 12/24/2024 Control	TIWC	Test Completion Date: Control	TIWC
1	42	40		
2	44	46		
3	43	44		
4	45	38		
5	41	40		
6	44	44		
7	33	42		
8	35	38		
9	42	45		
10	39	41		
11				
12				
13				
14				
15				
Mean	40.800	41.800	0.000	0.000
Std Dev.	3.994	2.860		
# Replicates	10	10		
T-Test Result	8.5517			
Deg. of Freedom	17			
Critical T Value	0.8633			
Pass or Fail	PASS			

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.5
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Kutztown WWTP

Permit No.: PA0031135

Replicate No.	Test Completion Date: 7/25/2023 Control	TIWC
1	10	10
2	9	10
3	10	10
4	10	9
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.750	9.750
Std Dev.	0.500	0.500
# Replicates	4	4
T-Test Result	6.7314	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.5
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Kutztown WWTP

Permit No.: PA0031135

Replicate No.	Test Completion Date: 7/25/2023 Control	TIWC
1	0.325	0.342
2	0.303	0.329
3	0.307	0.281
4	0.318	0.291
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.313	0.311
Std Dev.	0.010	0.029
# Replicates	4	4
T-Test Result	5.0024	
Deg. of Freedom	4	
Critical T Value	0.7407	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.5
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Kutztown WWTP

Permit No.: PA0031135

Replicate No.	Test Completion Date: 7/24/2023 Control	TIWC
1	1	0
2	1	1
3	1	1
4	0	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	0.900	0.900
Std Dev.	0.316	0.316
# Replicates	10	10
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

Replicate No.	Test Completion Date: Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.5
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Kutztown WWTP

Permit No.: PA0031135

Replicate No.	Test Completion Date: 7/24/2023 Control	TIWC
1	39	4
2	34	38
3	36	40
4	7	41
5	36	38
6	36	43
7	33	36
8	35	38
9	34	41
10	36	41
11		
12		
13		
14		
15		
Mean	32.600	36.000
Std Dev.	9.143	11.431
# Replicates	10	10
T-Test Result	2.7400	
Deg. of Freedom	15	
Critical T Value	0.8662	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

3800-FM-BPNP SM0485 Rev. 10/2013
Instructions

PA39-03724

WHOLE EFFLUENT TOXICITY (WET) TEST SUMMARY REPORT - COVER SHEET

NPDES Permit Number: PA0031135 Facility Name: Borough of Kutztown Wastewater Treatment Plant
Species Tested: X *Ceriodaphnia dubia* _ *Pimephales promelas* Test Type: **X Chronic** __ Acute
Re-Test? X Yes No (If yes, indicate the date of original test completion: 6/13/22)

SAMPLE INFORMATION

Date/Time	Sample Source	Temperature	Holding Time	Chlorine	Dechlorinated?
07/04/22, 0730	Final effluent	3.0 °C	24 hours	0.00 mg/L	__Yes _x_No
07/06/22, 0730	Final effluent	3.5 °C	24 hours	0.01 mg/L	__Yes _x_No
07/08/22, 0730	Final effluent	4.0 °C	24 hours	0.03 mg/L	__Yes _x_No

TEST CONDITIONS

Date/Time of Test Initiation **07/05/22, 1330** Date/Time of Test Termination **07/11/22, 1430**
X Renewal Test Non-Renewal Test Frequency of Renewals: **Daily**
Dilution Series: **13, 25, 50, 75, 100%** Target Instream Waste Concentration (TIWC): **50%**
Age of Organisms at Start of Test: **<24 hours**
Number of Replicates: **10** Number of Organisms per Replicate: **1**
Source of Organisms: **In-house cultures** Feeding Regimen: **Once/day** *Selenastrum capricornutum* & YWT, at test exchange
Light Intensity: **50-100 foot-candles** Photoperiod: **16L-8D**
Temperature measurements made at least once per 24-hour period? **X Yes** Temperature Range: **24.0-26.3° C**
DO measured daily in at least one replicate of each concentration? **X Yes** (attach log sheet)
Were the chambers aerated? Yes **X** No Rate:
pH measured daily in at least one replicate of each concentration? **X Yes** (attach log sheet)
Were test acceptability criteria in the EPA method met? **X Yes** No
Were there any modifications to or deviations from EPA methods (if Yes, explain on separate sheet)? Yes **X No**

DILUTION / REAGENT WATER

USEPA moderately hard reconstituted water as per EPA-821-R-02-013 2002
Date of Last Test for Chemistry: **07/09/22** Conductivity: **285** µmhos/cm
pH: **7.9** Total Res. Cl: **0** mg/L

CONTROL RESULTS

Ceriodaphnia dubia
Survival: **100%**
Percent that produced 3 broods (if applicable): **70%** Young per Surviving Female (if applicable): **28.9**

REFERENCE TOXICITY TEST

Date of most recent test: **07/05/22** Same conditions as test: **X Yes** No
Were test acceptability criteria in the EPA method met? **X Yes** **No**

TEST RESULTS

6. The permittee must report the results of each test endpoint that has a WET limit in Part A of this permit on the Discharge Monitoring Report (DMR). Test results shall be reported on the DMR in terms of acute or chronic Toxicity Units (TUa or TUc), where TUa is used for acute tests and TUc is used for chronic tests. If DEP's WET Analysis Spreadsheet indicates a passing result for an endpoint, report the value obtained from the expression "1/TIWC", which is equivalent to the permit limit. If the Spreadsheet indicates a failure, report the value obtained from the expression "> 1/TIWC". If a dilution higher than the TIWC dilution is used for the comparison with the control, report the value obtained from the expression "1/dilution". For example, an acute test endpoint failure at a TIWC dilution of 50% would be reported as "> 2.0 TUa" (1/0.5). Taken from PADEP SOP No. BPNPSM-PMT-031, page 11
Permit language varies, questions should be directed to the DEP's Bureau of Point and Non-Point Source Management at 717-787-2137 or your regional office.

Control compared to: **TIWC: 50%**		Toxic Unit chronic (TUc): 100%/50%	**2.00 Survival**
Survival: **X Pass**	Reproduction: **X Pass**		**2.00 Reproduction**

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein; and based on my inquiry of the individuals personally responsible for obtaining the information, I believe the attached information is true, accurate and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine or imprisonment as provided by 18 Pa. C.S. §4904.

Christopher J. Nally — Name of Laboratory Manager
Signature of Laboratory Manager
07/20/22 — Date
39-03724 — DEP Lab ID No.

American Aquatic Testing, Incorporated – 890 North Graham Street – Allentown, PA 18109
www.AmericanAquatic.net

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.5
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Kutztown WWTP

Permit No.: PA0031135

Replicate No.	Test Completion Date: 7/11/2022 Control	TIWC	Test Completion Date:	Control	TIWC
1	1	1	1		
2	1	1	2		
3	1	1	3		
4	1	1	4		
5	1	1	5		
6	1	1	6		
7	1	1	7		
8	1	1	8		
9	1	1	9		
10	1	1	10		
11			11		
12			12		
13			13		
14			14		
15			15		
Mean	1.000	1.000	Mean	0.000	0.000
Std Dev.	0.000	0.000	Std Dev.		
# Replicates	10	10	# Replicates		
T-Test Result			T-Test Result		
Deg. of Freedom			Deg. of Freedom		
Critical T Value			Critical T Value		
Pass or Fail	PASS		Pass or Fail		

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.5
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Kutztown WWTP

Permit No.: PA0031135

Replicate No.	Test Completion Date: 7/11/2022 Control	TIWC	Test Completion Date:	Control	TIWC
1	17	25	1		
2	20	32	2		
3	30	41	3		
4	36	36	4		
5	31	41	5		
6	36	32	6		
7	22	19	7		
8	33	25	8		
9	36	31	9		
10	28	36	10		
11			11		
12			12		
13			13		
14			14		
15			15		
Mean	28.900	31.800	Mean	0.000	0.000
Std Dev.	7.015	7.162	Std Dev.		
# Replicates	10	10	# Replicates		
T-Test Result	3.6030		T-Test Result		
Deg. of Freedom	16		Deg. of Freedom		
Critical T Value	0.8647		Critical T Value		
Pass or Fail	PASS		Pass or Fail		

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.5
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Kutztown WWTP

Permit No.: PA0031135

Replicate No.	Test Completion Date: 6/14/2022 Control	TIWC
1	10	10
2	9	9
3	10	10
4	10	10
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.750	9.750
Std Dev.	0.500	0.500
# Replicates	4	4
T-Test Result	6.7314	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.5
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Kutztown WWTP

Permit No.: PA0031135

Replicate No.	Test Completion Date: 6/14/2022 Control	TIWC
1	0.402	0.374
2	0.368	0.34
3	0.413	0.346
4	0.36	0.351
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.386	0.353
Std Dev.	0.026	0.015
# Replicates	4	4
T-Test Result	5.2099	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.5
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Kutztown WWTP

Permit No.: PA0031135

Replicate No.	Test Completion Date: 6/13/2022 Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

Replicate No.	Test Completion Date: Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.5
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Kutztown WWTP

Permit No.: PA0031135

Replicate No.	Test Completion Date: 6/13/2022 Control	TIWC
1	35	14
2	34	7
3	36	16
4	36	6
5	34	21
6	37	16
7	38	18
8	32	7
9	20	14
10	22	14
11		
12		
13		
14		
15		
Mean	32.400	13.300
Std Dev.	6.257	5.056
# Replicates	10	10
T-Test Result	-5.0423	
Deg. of Freedom	17	
Critical T Value	0.8633	
Pass or Fail	FAIL	

Replicate No.	Test Completion Date: Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.5
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Kutztown WWTP

Permit No.: PA0031135

Replicate No.	Test Completion Date: 3/3/2021 Control	TIWC
1	10	8
2	10	10
3	10	9
4	10	10
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	10.000	9.250
Std Dev.	0.000	0.957
# Replicates	4	4
T-Test Result	3.2125	
Deg. of Freedom	3	
Critical T Value	0.7649	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.5
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Kutztown WWTP

Permit No.: PA0031135

Replicate No.	Test Completion Date: 3/3/2021 Control	TIWC
1	0.336	0.278
2	0.371	0.342
3	0.35	0.332
4	0.351	0.362
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.352	0.329
Std Dev.	0.014	0.036
# Replicates	4	4
T-Test Result	3.4406	
Deg. of Freedom	4	
Critical T Value	0.7407	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.5
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Kutztown WWTP

Permit No.: PA0031135

Replicate No.	Test Completion Date: 3/3/2021 Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

Replicate No.	Test Completion Date: Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.5
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Kutztown WWTP

Permit No.: PA0031135

Replicate No.	Test Completion Date: 3/3/2021 Control	TIWC
1	34	32
2	34	35
3	33	35
4	18	30
5	20	20
6	35	34
7	31	30
8	39	38
9	18	12
10	36	36
11		
12		
13		
14		
15		
Mean	29.800	30.200
Std Dev.	7.969	8.121
# Replicates	10	10
T-Test Result	2.4618	
Deg. of Freedom	16	
Critical T Value	0.8647	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

SOP Whole Effluent Toxicity, Attachment D:

	Dilutions (% Effluent)				
TIWC	**1st**	**2nd**	**3rd**	**4th**	**5th**
25	6	13	25	63	100
26	7	13	26	63	100
27	7	14	27	64	100
28	7	14	28	64	100
29	7	15	29	65	100
30	8	15	30	65	100
31	8	16	31	66	100
32	8	16	32	66	100
33	8	17	33	67	100
34	9	17	34	67	100
35	9	18	35	68	100
36	9	18	36	68	100
37	9	19	37	69	100

Whole Effluent Toxicity SOP
Revised, May 13, 2014

	Dilutions (% Effluent)				
TIWC	**1st**	**2nd**	**3rd**	**4th**	**5th**
38	10	19	38	69	100
39	10	20	39	70	100
40	10	20	40	70	100
41	10	21	41	71	100
42	11	21	42	71	100
43	11	22	43	72	100
44	11	22	44	72	100
45	11	23	45	73	100
46	12	23	46	73	100
47	12	24	47	74	100
48	12	24	48	74	100
49	12	25	49	75	100
50	13	25	50	75	100
51	13	26	51	76	100
52	13	26	52	76	100
53	13	27	53	77	100
54	14	27	54	77	100
55	14	28	55	78	100
56	14	28	56	78	100