Pennsylvania Department of Environmental Protection

Northeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0023051**
Facility Type	**Municipal**	APS ID	**609397**
Major / Minor	**Minor**	Authorization ID	**1438334**

Applicant and Facility Information

Applicant Name	**Palmerton Borough Municipal Authority**	Facility Name	**Borough of Palmerton WWTP**
Applicant Address	443 Delaware Avenue Palmerton, PA 18071-1908	Facility Address	End of South Third Street Palmerton, PA 18071
Applicant Contact	Autumn Canfield, Borough Manager	Facility Contact	Joel George, Superintendent
Applicant Phone	(610) 826-4386	Facility Phone	(610) 826-7463
Client ID	85229	Site ID	253100
Ch 94 Load Status	Not Overloaded	Municipality	Palmerton Borough
Connection Status	No Limitations	County	Carbon
Date Application Received	May 3, 2023	EPA Waived?	Yes
Date Application Accepted	May 17, 2023	If No, Reason	-

Purpose of Application: Renewal of NPDES permit for discharge of treated sewage.

Summary of Review

The applicant is requesting the renewal of an NPDES permit to discharge up to 0.75 MGD of treated sewage into Aquashicola Creek, Trout Stocking, Migratory Fish (TSF, MF) receiving stream in State Water Plan Basin 2-B (Middle Lehigh River). As per the Department's current existing use list, the receiving stream does not have an existing use classification that is more protective than its designated use. This stream segment is not designated as a naturally reproducing trout stream as per PA Fish & Boat Commission. This discharge is not expected to affect public water supplies.

Limitations for pH, $CBOD_5$, Total Suspended Solids (TSS), Dissolved Oxygen (DO), and Fecal Coliform are technology-based and carried over from the previous permit.

Limitations for Nitrate-Nitrite as N, Total Nitrogen, and Total Phosphorus are water quality-based and carried over from the previous permit. The monthly monitoring/reporting of Total Kjeldahl Nitrogen has also been maintained in this permit.

The water-quality based year-round limitation of 20 mg/L average monthly for Ammonia-Nitrogen has been carried over from the previous permit. An IMAX limitation of two times the average monthly limitation has been added to the permit. eDMR data from the previous year (April 1, 2024 to March 31, 2025) indicates the facility is significantly under the limitations; therefore, the new IMAX limitation will come into effect at the permit effective date.

WQM 7.0 modeling did not recommend stricter limits.

Influent monitoring requirements for TSS and $CBOD_5$ has been carried over from the previous permit. The monthly influent monitoring frequency has been updated to weekly to be consistent with the discharge sampling frequency.
The facility utilizes Ultraviolet (UV) disinfection as the primary disinfection method. The Total Residual Chlorine (TRC) Calculation Spreadsheet did not recommend stricter limitations than the previous permit. The IMAX technology-based

Approve	Deny	Signatures	Date
X		/s/ Allison Seyfried Zukosky / Project Manager	May 29, 2025
X		/s/ Edward Dudick, P.E. / Engineer Manager	May 30, 2025

Summary of Review

limitation (1.6 mg/L) has been maintained in the permit and is to be sampled "daily when discharging" in the event the facility uses chlorine for cleaning purposes or as a back-up disinfection option (see requirements under Part C.I.D).

Sewage discharges now require monitoring and reporting for E. Coli. A monitoring frequency of 1/month for design flows >= 1 MGD, 1/quarter for design flows >= 0.05 and < 1 MGD, 1/year for design flows of 0.002 – 0.05 MGD will be utilized.

Pollutant sampling results submitted with the permit application were entered into the Toxic Management Spreadsheet (TMS). The maximum reported Total Copper concentration was 0.17 mg/L and the maximum Total Zinc concentration was 0.22 mg/L. The TMS recommended limits for Total Copper and monitoring/reporting for Total Zinc. The permittee was given the opportunity to conduct a minimum of 10 additional effluent samples for these parameters. The permittee collected 10 additional samples during September 2024 through November 2024 and provided the results for Total Copper only to the Department via email on December 18, 2024. These updated results were used to re-run the modeling. The modeling indicated the Copper limits should still be established.

Therefore, Total Copper limitations were added to the permit and will come into effect four years after the permit effective date. Monitoring/reporting requirements are included in the permit until the limitations come into effect. The quarterly monitoring/reporting for Total Zinc has also been maintained in the permit. The Part C. III. condition regarding Toxics Reduction Evaluations (TREs) is added to the permit and applies to the Total Copper limitations. The permittee will have the option to accept the implementation of the limitations or to perform site-specific studies to verify or refine the WQBELs.

The latest DRBC Docket No. 1964-028 CP-4 requires the addition of monitoring/reporting for 85% minimum $CBOD_5$ Percent Removal. This requirement has been added at the same monitoring frequency as $CBOD_5$. The 1,000 mg/L average quarterly limitation for Total Dissolved Solids (TDS) has also been maintained in this permit.

The receiving stream at Outfall 001 is part of the final Total Maximum Daily Load (TMDL) for the Lehigh River Watershed. The TMDL addresses metals (iron, manganese, and aluminum) and pH associated with acid mine drainage (AMD). There are no approved Waste Load Allocations (WLA) for this facility. Since this is a sewage discharge with no industrial contributors, no appreciable quantities of these metals are expected to be present in the effluent.

For this permit renewal, all monitoring frequencies for parameters with limitations are consistent with the Department's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits* (document no. 362-0400-001).

Stream gage 01450500 (Aquashicola Creek at Palmerton, PA) was used as a reference gage to develop the low flow yield (LFY) of 0.22 cfs/mi^2, which was used to model the discharge. The stream gage data can be observed on page 9 of this fact sheet. The RMI values were obtained using the "PA Historic Streams" feature of eMapPA, drainage areas were delineated using USGS's StreamStats Interactive Map, and elevations were obtained using the elevation profile feature of StreamStats.

A Water Management System Inspection query indicated that on June 3, 2021 a Compliance Evaluation was performed and on March 25, 2024 a routine/partial inspection was performed.

There are currently no open violations for this client in the Clean Water Program that warrant withholding issuance of this permit. There are eight open violations for this client in the Safe Drinking Water Program.

Sludge use and disposal description and location(s): As per the permittee's NPDES Renewal Application, sludge is hauled to Waste Management (owned/operated by Grand Central Sanitation) in Pen Argyl, PA by Waste Management.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.75
Latitude	40º 47' 58.10"	Longitude	-75º 36' 22.91"
Quad Name	Palmerton	Quad Code	1241
Wastewater Description:	Sewage Effluent		
Receiving Waters	Aquashicola Creek (TSF, MF)	Stream Code	3776
NHD Com ID	26290091	RMI	0.745
Drainage Area	77.2 mi^2	Yield (cfs/mi^2)	0.22
Q_{7-10} Flow (cfs)	8.75	Q_{7-10} Basis	USGS Stream Gage 01450500
Elevation (ft)	385.73	Slope (ft/ft)	-
Watershed No.	2-B	Chapter 93 Class.	TSF, MF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired		
Cause(s) of Impairment	METALS		
Source(s) of Impairment	INDUSTRIAL POINT SOURCE DISCHARGE		
TMDL Status	Final	Name	Lehigh River TMDL
Nearest Downstream Public Water Supply Intake	Northampton Borough Municipal Authority		
PWS Waters	Lehigh River	Flow at Intake (cfs)	-
PWS RMI	24.8	Distance from Outfall (mi)	~ 12

Treatment Facility Summary

Treatment Facility Name: Borough of Palmerton WWTP

WQM Permit No.	Issuance Date
1310401	09/24/2010

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	SBR	Ultraviolet	0.411 (2020-2022)

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.75	1,250	Not Overloaded	Cannibal Sludge Reduction System	Hauled

Compliance History

DMR Data for Outfall 001 (from April 1, 2024 to March 31, 2025)

Parameter	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24
Flow (MGD) Average Monthly	0.284	0.285	0.256	0.298	0.238	0.212	0.208	0.263	0.25	0.237	0.309	0.58
Flow (MGD) Daily Maximum	0.47	0.814	0.436	0.897	0.386	0.240	0.292	0.530	0.341	0.282	0.432	1.809
pH (S.U.) Instantaneous Minimum	6.9	7.0	6.8	6.8	6.7	6.9	7.0	6.8	6.8	6.8	6.8	6.8
pH (S.U.) Instantaneous Maximum	7.4	7.5	7.5	7.7	7.5	7.5	7.6	7.6	7.4	7.5	7.6	7.5
DO (mg/L) Daily Minimum	8.5	9.6	9.1	8.6	8.0	7.6	7.2	7.0	6.8	7.2	8.0	8.4
TRC (mg/L) Instantaneous Maximum	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
CBOD5 (lbs/day) Average Monthly	< 14	< 14	< 12	< 15	< 11	< 10	< 10	< 12	< 13	< 28	< 16	< 51
CBOD5 (lbs/day) Weekly Average	< 16	< 19	< 16	< 20	< 12	< 11	< 10	< 13	< 17	73	< 18	149
CBOD5 (mg/L) Average Monthly	< 6	< 6	< 6	< 6	< 6	< 6.0	< 6	< 6	< 6	< 15	< 6	< 10
CBOD5 (mg/L) Weekly Average	< 6.0	< 6	< 6	< 6.0	< 6	6.0	< 6	< 6	< 6	38	7	23
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	619	698	485	593	500	382	561	647	651	836	836	866
BOD5 (lbs/day) Raw Sewage Influent Weekly Average	1066	953	642	742	586	644	735	747	781	1274	1026	1463
BOD5 (mg/L) Raw Sewage Influent Average Monthly	238	281	217	241	237	186	250	290	313	332	285	174
BOD5 (mg/L) Raw Sewage Influent Weekly Average	426	313	269	341	287	337	324	347	373	558	317	289

TSS (lbs/day) Average Monthly	< 12	< 12	< 10	< 13	< 9	< 9	< 8	< 10	< 11	< 9	< 13	< 53
TSS (lbs/day) Raw Sewage Influent Average Monthly	560	541	550	516	393	392	314	372	693	373	251	657
TSS (lbs/day) Raw Sewage Influent Weekly Average	731	682	811	753	753	474	530	431	2254	474	383	1114
TSS (lbs/day) Weekly Average	< 13	< 15	< 13	< 17	< 10	< 9	< 8	< 11	18	< 10	< 15	182
TSS (mg/L) Average Monthly	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10.0
TSS (mg/L) Raw Sewage Influent Average Monthly	213	225	242	200	189	191	133	166	338	155	85	126
TSS (mg/L) Raw Sewage Influent Weekly Average	292	294	332	266	378	232	196	192	1112	196	128	190
TSS (mg/L) Weekly Average	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	6.0	< 5.0	< 5.0	28.0
Total Dissolved Solids (mg/L) Average Quarterly	518.0			498.0			417.0			401.0		
Fecal Coliform (No./100 ml) Geometric Mean	< 1	< 1	< 18	< 6	< 1	< 2.0	< 2	< 3	< 3	< 9	< 1	< 6
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 1	< 1	2419.6	307.8	2	8.5	10.9	18.5	21.1	272.3	1	1011.2
Nitrate-Nitrite (lbs/day) Average Monthly	4.7	3.6	12.8	6.8	7.2	10.3	11.7	6.4	11.7	13.5	10.4	10.9
Nitrate-Nitrite (mg/L) Average Monthly	2.13	1.81	5.58	3.17	3.77	6.36	7.26	3.24	6.55	6.75	3.62	2.26
Total Nitrogen (lbs/day) Average Monthly	30.1	19.3	29.4	9.8	10.1	13.2	15.5	12.1	16.5	16.7	24.8	53.7
Total Nitrogen (mg/L) Average Monthly	13.63	9.59	12.88	4.57	5.26	8.14	9.61	6.15	9.24	8.36	8.64	11.15
Ammonia (lbs/day) Average Monthly	6.7	14.1	12.3	5.7	< 0.5	< 0.4	< 0.4	< 2.8	< 1.2	< 0.8	< 1.4	17.2
Ammonia (mg/L) Average Monthly	2.882	6.12	6.4	1.961	< 0.246	< 0.233	< 0.22	< 1.36	< 0.574	< 0.407	< 0.514	3.65

TKN (lbs/day) Average Monthly	25	16	17	3.0	3	3.0	4	6	5	3	14	43
TKN (mg/L) Average Monthly	11.5	7.88	7.3	1.4	1.59	1.78	2.35	3.01	2.69	1.61	5.02	8.99
Total Phosphorus (lbs/day) Average Monthly	4.3	2.0	9.4	5.8	10.2	7.0	11.3	9.6	6.6	11.4	3.2	6.5
Total Phosphorus (mg/L) Average Monthly	1.93	1.01	4.13	2.71	5.3	4.32	6.97	4.88	3.72	5.71	1.13	1.35
Total Copper (lbs/day) Average Quarterly	0.03			0.2			0.02			0.6		
Total Copper (mg/L) Average Quarterly	0.0122			0.1178			0.0136			0.121		
Total Zinc (lbs/day) Average Quarterly	0.2			0.2			0.1			1		
Total Zinc (mg/L) Average Quarterly	0.0995			0.118			0.0675			0.288		

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.75
Latitude 40º 47' 50.00" **Longitude** -75º 36' 20.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
	50	IMAX	-	-
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
	60.0	IMAX	-	-
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	1.6	IMAX	-	92a.48(b)(2)
Dissolved Oxygen	5.0	Minimum	-	BPJ
E. Coli	Report	IMAX	-	92a.61

Water Quality-Based Limitations

The following limitations were determined through water quality modeling:

Parameter	Limit (mg/l)	SBC	Model
Ammonia-Nitrogen	20.0	Average Monthly	Previous Modeling
	40.0	IMAX	Standard Technology Limitation
Total Copper	0.058	Average Monthly	Toxic Management Spreadsheet (TMS)
	0.091	Daily Maximum	
	0.115	IMAX	
Nitrate-Nitrite as N (lbs/day)	33.1	Average Monthly	Previous Permit
Total Nitrogen (lbs/day)	68.5	Average Monthly	
Total Phosphorus (lbs/day)	13.7	Average Monthly	
Total Dissolved Solids	1,000	Average Quarterly	DRBC Docket
Total Zinc	Report	Average Quarterly	Toxic Management Spreadsheet (TMS)
CBOD5 Minimum % Removal (%)	85	Minimum Monthly Average	DRBC Docket
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Average Monthly	POTW Requirement
		Weekly Average	
Total Suspended Solids Raw Sewage Influent	Report	Average Monthly	
		Weekly Average	

Anti-Backsliding

No limitations were made less stringent.

Modeling Using USGS Stream Gage

Stream Gage: USGS Stream Gage 01450500 – Aquashicola Creek at Palmerton, PA

Name	Value
USGS Station Number	01450500
Station Name	Aquashicola Creek at Pa.lmerton, Pa.
Station Type	Gaging Station, continuous record
Latitude	40.80621
Longitude	-75.59796
NWIS Latitude	40.8062047
NWIS Longitude	-75.5979643
Is regulated?	false
Agency	United States Geological Survey
NWIS Discharge Period of Record	09/30/1939 - 09/02/2024

Characteristic Name	Value	Units
Drainage Area	76.7	square miles

Statistic Name	Value	Units	Preferred?	Years of Record	Standard Error, percent	Citation	Comments
1 Day 10 Year Low Flow	15.1	cubic feet per second	✓	68		49	Statistic Date Range 4/1/1940 - 3/31/2008
7 Day 2 Year Low Flow	29.3	cubic feet per second	✓	68		49	Statistic Date Range 4/1/1940 - 3/31/2008
7 Day 10 Year Low Flow	17	cubic feet per second	✓	68		49	Statistic Date Range 4/1/1940 - 3/31/2008

$$\boldsymbol{LFY} = \frac{Q_{7-10}}{Stream\ Gage\ Drainage\ Area} \times \frac{17.0\ cfs}{76.7\ mi^2} = \mathbf{0.22}$$

$$\boldsymbol{Stream\ Flow\ at\ Outfall} = Outfall\ 001\ Drainage\ Area \times LFY = 35.3\ mi^2 \times 0.248 = \mathbf{8.75\ cfs}$$

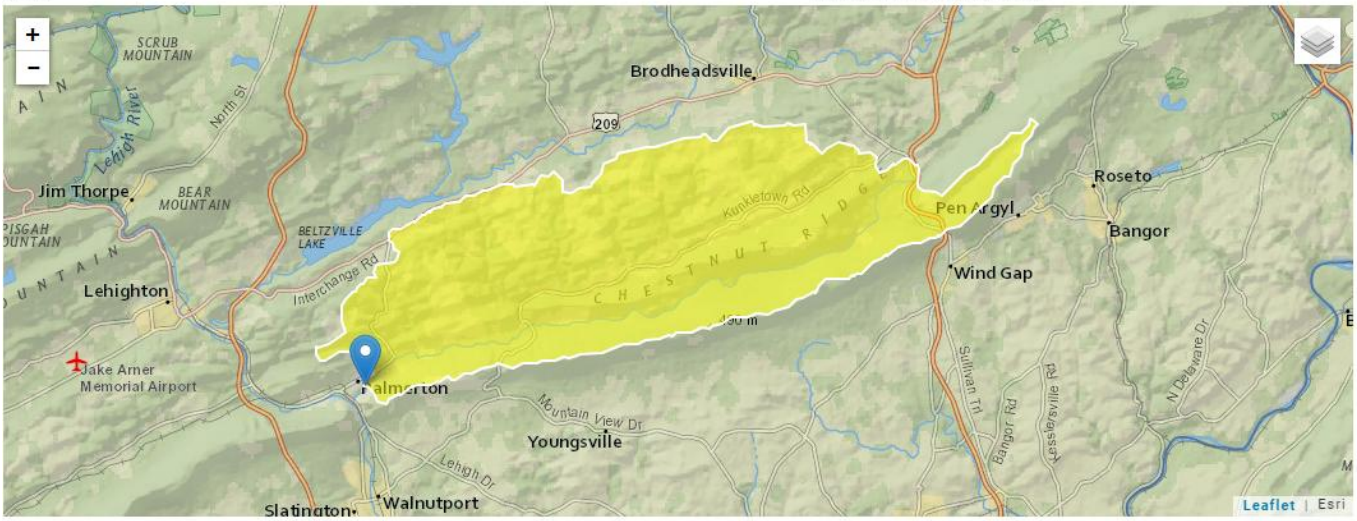
StreamStats Data:

At Outfall 001 on Aquashicola Creek:

RMI	Elevation (ft)	Drainage Area (mi^2)	Q_{7-10} Flow (cfs)
0.745	385.73	77.2	9.79

StreamStats Report

Region ID:	PA
Workspace ID:	PA20240904140138839000
Clicked Point (Latitude, Longitude):	40.79942, -75.60641
Time:	2024-09-04 10:02:02 -0400



Parameter Code	Parameter Name	Value	Units
DRNAREA	Drainage Area	77.2	square miles

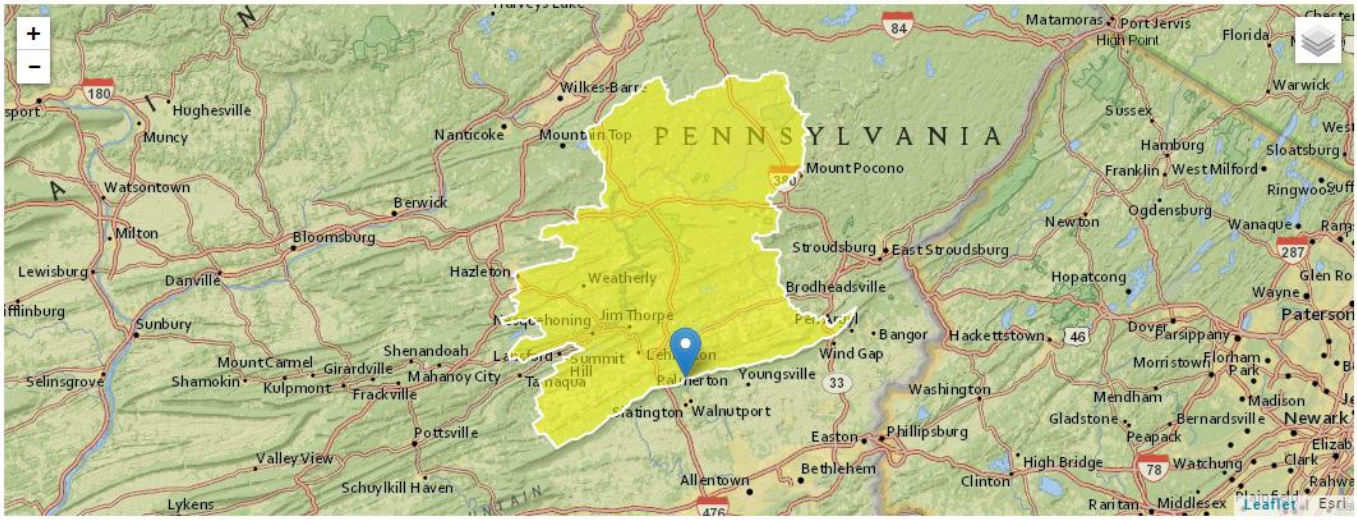
Statistic	Value	Unit
7 Day 2 Year Low Flow	18.1	ft^3/s
30 Day 2 Year Low Flow	22.9	ft^3/s
7 Day 10 Year Low Flow	9.79	ft^3/s

At confluence with Lehigh River:

RMI	Elevation (ft)	Drainage Area (mi^2)
0.00 (36.08 on the Lehigh River)	374.99	882

StreamStats Report

Region ID:	PA
Workspace ID:	PA20240904140832780000
Clicked Point (Latitude, Longitude):	40.79178, -75.61300
Time:	2024-09-04 10:08:58 -0400



Parameter Code	Parameter Name	Value	Units
DRNAREA	Drainage Area	882	square miles

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
02B	3776	AQUASHICOLA CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
0.745	Palmerton Boro	PA0023051	0.750	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			3

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

8.75	= Q stream (cfs)	0.5	= CV Daily
0.75	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 2.425	1.3.2.iii	WLA cfc = 2.356
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.904	5.1d	LTA_cfc = 1.370

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	

WLA afc	(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))... ...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))... ...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2003

Discharge Information

Instructions | Discharge | Stream

Facility: Palmerton Borough NPDES Permit No.: PA0023051 Outfall No.: 001

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: Treated Sewage

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.75	100	7						

	Discharge Pollutant	Units	Max Discharge Conc		0 if left blank: Trib Conc	0 if left blank: Stream Conc	0.5 if left blank: Daily CV	0.5 if left blank: Hourly CV	0 if left blank: Stream CV	0 if left blank: Fate Coeff	0 if left blank: FOS	1 if left blank: Criteria Mod	0 if left blank: Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		528									
	Chloride (PWS)	mg/L		68.5									
	Bromide	mg/L	<	1									
	Sulfate (PWS)	mg/L		75									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	mg/L		0.14154									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	mg/L	<	0.001									
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	mg/L		0.22									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2020

Stream / Surface Water Information

Palmerton Borough , NPDES Permit No. PA0023051, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: Aquashicola 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	003776	0.745	385.73	77.2			Yes
End of Reach 1	003776	0	374.99	882			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	0.745	0.22										100	7		
End of Reach 1	0	0.22													

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	0.745														
End of Reach 1	0														

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Model Results

Palmerton Borough , NPDES Permit No. PA0023051, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.375 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total 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 Copper	0	0		0	13.439	14.0	90.9	Chem Translator of 0.96 applied
Total Lead	0	0		0	64.581	81.6	530	Chem Translator of 0.791 applied
Total Zinc	0	0		0	117.180	120	778	Chem Translator of 0.978 applied

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

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total 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 Copper	0	0		0	8.956	9.33	146	Chem Translator of 0.96 applied
Total Lead	0	0		0	2.517	3.18	49.8	Chem Translator of 0.791 applied
Total Zinc	0	0		0	118.139	120	1,874	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): ###### 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 Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ CRL CCT (min): 41.286 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 Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	0.36	0.57	0.058	0.091	0.15	mg/L	0.058	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	Report	Report	Report	Report	Report	mg/L	0.5	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 Lead	N/A	N/A	Discharge Conc < TQL

TMS PA0023051.pdf

DRBC Docket 1964-028 CP-4.pdf

WQM 7.0.pdf