Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0254525**
Facility Type	**Non-Municipal**	APS ID	**1138242**
Major / Minor	**Minor**	Authorization ID	**1528721**

Applicant and Facility Information

Applicant Name	**UMH Properties Inc.**	Facility Name	**Hillcrest Crossing MHP**
Applicant Address	150 Clay Street	Facility Address	100 Lorraine Drive
	Morgantown, WV 26501		New Kensington, PA 15068-9785
Applicant Contact	Jeffrey Yorick	Facility Contact	
Applicant Phone	(304) 291-3380	Facility Phone	
Client ID	79530	Site ID	244124
Ch 94 Load Status	Not Overloaded	Municipality	Lower Burrell City
Connection Status		County	Westmoreland
Date Application Received	May 20, 2025	EPA Waived?	Yes
Date Application Accepted		If No, Reason	
Purpose of Application	Renewal		

Summary of Review

The permittee is proposing to renew NPDES Permit PA0254525 which expired on 8/31/2022.

The treated effluent will discharge into Chartiers Run, which is classified as a Trout Stocking Fishery (TSF) and is located in State Watershed No. 18-A.

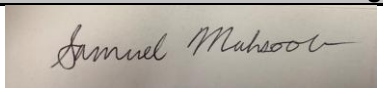
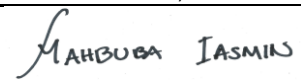
WQM Permit 6569435 was issued on January 9, 1970 and approved a design hydraulic capacity of 0.025 MGD. UV Disinfection was added with 6569435 A-1 on March 9, 2020.

Act 14 Notifications were provided on April 16, 2025.

The client has no open violations for the Clean Water program.

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.

Approve	Return	Deny	Signatures	Date
x			 Sam Mahsoob, EIT / Environmental Engineering Trainee	Select Date
x			 Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineer Manager	6/24/2025

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.025
Latitude	40º 36' 2"	Longitude	-79º 41' 42"
Quad Name	New Kensington East	Quad ID	40079E6
Wastewater Description:	Sewage Effluent		

Receiving Waters	Chartiers Run (TSF)	Stream Code	42524
NHD Com ID	123972424	RMI	2.8
Drainage Area	7.96	Yield (cfs/mi^2)	0.0127
Q_{7-10} Flow (cfs)	0.101	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	875.66	Slope (ft/ft)	.0129
Watershed No.	18-A	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake

PWS Waters	Allegheny	Flow at Intake (cfs)	2390
PWS RMI	26	Distance from Outfall (mi)	3.5

Treatment Facility Summary

Treatment Facility Name: Hillcrest Crossings

WQM Permit No.	Issuance Date
6569435	1/9/1970
6569435 A-1	3/9/2020

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Ultraviolet	0.025

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.025	42.0	Not Overloaded		Unity Twp Municipal Authority

Compliance History	
Summary of DMRs:	
Summary of Inspections:	

Other Comments:

Compliance History

DMR Data for Outfall 001 (from May 1, 2024 to April 30, 2025)

Parameter	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24
Flow (MGD) Average Monthly	0.018	0.019	0.018	0.017	0.019	0.016	0.016	0.016	0.018	0.019	0.016	0.017
pH (S.U.) Instantaneous Minimum	6.8	7.0	6.7	6.8	6.7	6.7	6.9	7.0	6.8	6.8	6.6	6.4
pH (S.U.) Instantaneous Maximum	7.4	7.6	7.3	7.4	7.3	7.2	7.4	7.6	7.4	7.6	7.3	7.3
DO (mg/L) Instantaneous Minimum	4.9	4.6	4.7	4.3	4.8	4.5	4.9	4.7	4.6	4.7	4.7	4.9
CBOD5 (mg/L) Average Monthly	1.5	3.5	2	2.7	3	4	< 3	5	3.6	< 3	< 3	< 3
CBOD5 (mg/L) Instantaneous Maximum	1.8	4	2	3.6	3.2	4	< 3	6	4.2	< 3	< 3	< 3
TSS (mg/L) Average Monthly	7	8	11	21	25	12	9	< 3	4.5	< 3	4	5
TSS (mg/L) Instantaneous Maximum	8	8	15	24	32	14	9	< 3	5	< 3	5	6
Fecal Coliform (No./100 ml) Geometric Mean	5	5	11	2	4	< 1	1	1	1.7	< 1	6	< 1
Fecal Coliform (No./100 ml) Instantaneous Maximum	22	21	12	4	9	< 1	2	1	2	< 1	6	1
UV Intensity (mW/cm²) Instantaneous Minimum	4.1	3.9	3.7	4.2	3.6	3.1	3.2	4.2	3.7	4.2	4.2	6.0
Total Nitrogen (mg/L) Daily Maximum					10.6							
Ammonia (mg/L) Average Monthly	4.3	8.4	0.2	0.5	0.15	0.4	0.5	1.0	0.4	0.7	1.7	1.5

Ammonia (mg/L) Instantaneous Maximum	8.4	10.9	0.3	0.7	0.017	0.5	0.9	1.2	0.6	1.1	3.34	2.9
Total Phosphorus (mg/L) Daily Maximum					2.25							

Compliance History

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .025
Latitude 40º 36' 2.00" **Longitude** -79º 41' 42.00"
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)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Total Nitrogen	Report	Average Monthly	-	92a.61(7)
Total Phosphorus	Report	Average Monthly	-	92a.61(8)
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)
E. Coli (No./100 ml)	-	Report		93a.61(11)(12)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)
Total Residual Chlorine	1.6	IMAX	-	92a.47-48(3)(4)
Ammonia-Nitrogen	25	Average Monthly	-	BPJ (5)
Ammonia-Nitrogen	50	IMAX	-	BPJ (5)
Dissolved Oxygen	4.0	IMIN	-	BPJ (6)

Water Quality-Based Limitations

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
NH3-N (May 1 – Oct 31)	6.0	Average Monthly	WQM 6.3 (Previous Permit)
NH3-N (Nov 1 – April 30)	18.0	Average Monthly	WQM 6.3 (Previous Permit)
NH3-N (May 1 – Oct 31)	6.49	Average Monthly	WQM 7.0
NH3-N (Nov 1 – April 30)	50	Average Monthly	WQM 7.0
CBOD5	25	Average Monthly	WQM 7.0
DO	4	IMIN	WQM 7.0

Comments: The limits for Ammonia-Nitrogen will be maintained from the previous permit renewal.

Additional Considerations

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation. Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued. Interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62). (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.

(40 CFR 122.44 (l)(2) Establishing limitations, standards, and other permit conditions., 40 CFR Ch. I (7-1-21 Edition))

No permits limits have been made less stringent in the renewal draft permit.

E. Coli

Sewage discharges will include monitoring, at a minimum, for E. Coli, in new and reissued permits, with 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.

(*Note 12 SOP-Establishing Effluent Limitations for Individual Sewage Permits Final November 9, 2012, Revised February 5, 2024, Version 2.0.* and *25 PA Code 92a.61(b).)*

Effluent Multipliers

Section 2.C of the Permit Writers Manual contains the procedure for converting average monthly effluent limitations to average weekly, maximum daily, and instantaneous maximum effluent limitations. The average monthly limit is multiplied according to the following chart:

Discharge Solution	Parameters	Average Weekly	Maximum Daily	Instantaneous Maximum Multiplier
Sewage	All	1.5		2.0
Industrial	All		2.0	2.5*

(Department Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits, Updated June 28, 2023 (Document No. 362-0400-001))

Rounding Off

Section 5 C.2. of the Permit Writers Manual contains general guidelines for rounding conventional and toxic pollutants, with instructions to round down to the nearest decimal place indicated.

General Magnitude	Conventional Pollutants	Toxic Pollutants
<0.01	to nearest 0.001	to nearest 0.001
0.01 - 0.1	to nearest 0.01	to nearest 0.01

0.1 - 1.0	to nearest 0.1	to nearest 0.01
1.0 - 10.0	to nearest 0.5	to nearest 0.01
10.0 - 60.0	to nearest 1.0	to nearest 0.01
60.0 or greater	to nearest 5.0	to nearest 0.10

(Department Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits, Updated June 28, 2023 (Document No. 362-0400-001))

Ultraviolet Disinfection

Ultraviolet (UV) disinfection is used therefore Total Residual Chlorine (TRC) limits are not applicable. Routine monitoring of UV intensity is at the same monitoring frequency that is used for TRC.

(*Section I.A, Note 4, SOP for Clean Water Program, Establishing Effluent Limitations for Individual Sewage Permits, Final November 9, 2012, Revised March 24, 2021, Version 1.9* and *25 PA Code 92a.61(b)*.)

Nutrient Monitoring

Nutrient monitoring is required by the SOP for Effluent Limitations for Individual Sewage Permits. Monitoring is included to establish the nutrient load from the wastewater treatment facility and the impacts that load may have on the quality of the receiving stream(s). The receiving stream is not listed as impaired for nutrients, therefore at the discretion of the application manager, a monitoring frequency less than the equivalent of conventional pollutants in Table 6-3 of the Permit Writer's Manual has been selected.

(*Section I.A, Note 7 & 8, SOP for Clean Water Program, Establishing Effluent Limitations for Individual Sewage Permits, Final November 9, 2012, Revised March 24, 2021, Version 1.9* and *25 PA Code 92a.61(b)*.)

Table 6-3 – Self-Monitoring Requirements for SEWAGE Discharges

Plant Design Flow (MGD)	Flow Monitoring	C-BOD_5 or BOD_5	Suspended Solids	pH	Fecal Coliform	Chlorine Residual	NH_3-N	Phosphorus	DO	Toxics
Single Residence (Individual Permit)	2/year by estimate	2/year*	2/year*	1/month*	2/year*	1/month*	2/year*	2/year*	2/year*	N/A
.0005 to .002	weekly, using average pump rate or weir (a)	1/month*	1/month*	daily*	1/month*	daily*	1/month*	1/month*	daily*	N/A
.002 to .01	weekly, using average pump rate or weir (a)	2/month*	2/month*	daily*	2/month*	daily*	2/month*	2/month*	daily*	N/A
0.01 to 0.1	**weekly, using average pump rate or weir (a)**	**2/month***	**2/month***	**daily***	**2/month***	**daily***	**2/month***	**2/month***	**Daily***	**1/week***
0.1 to 1.0	meter	1/week**	1/week**	daily*	1/week*	daily*	1/week**	1/week**	daily*	1/week****
1.0 to 5.0	meter	2/week***	2/week***	daily*	2/week*	daily*	2/week***	2/week***	daily*	1/week****
5.0 to 25.0	meter	daily***	daily***	daily*	daily*	1/shift*	daily***	daily***	daily*	1/week****
over 25.0	meter	daily***	daily***	1/shift*	daily*	1/shift*	1/shift***	1/shift***	1/shift*	1/week****

* Grab sample-these should be most representative of the effluent and are to be taken at a time when the normal daily maximum flow would reach the sampling point.

** 8-hour composite sample.

*** 24-hour composite sample.

**** Same sample type as for Industrial Process Wastewater (See Table 6-4).

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Instantaneous Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	0.025	XXX	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0	XXX	XXX	XXX	1/day	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	Grab
TSS	XXX	XXX	XXX	30	XXX	60	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
UV Intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	18.0	XXX	36.0	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	6.0	XXX	12.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

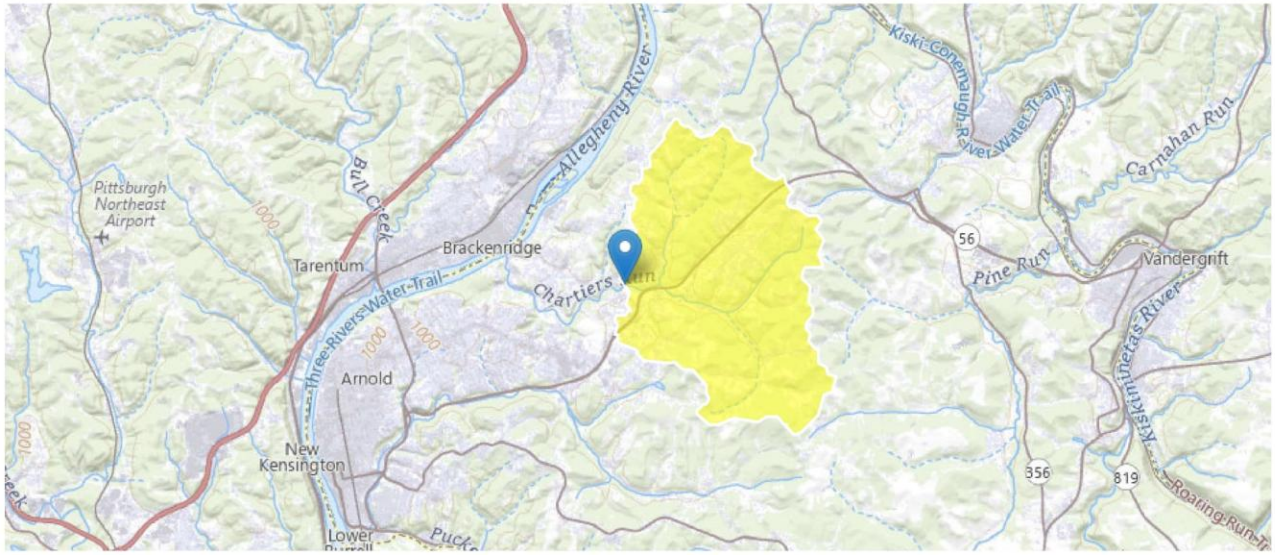
Compliance Sampling Location: Outfall 001

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachments **3&4**)
☐	SOP: Establishing Effluent Limits for Individual Sewage Permits
☐	Other: USGS StreamStats (See Attachments **1&2**), 1996 Pollution Report (Uploaded in OnBase

Attachment 1
USGS StreamStats - Upstream

StreamStats Report - Upstream

Region ID: PA
Workspace ID: PA20250612202708228000
Clicked Point (Latitude, Longitude): 40.59947, -79.69478
Time: 2025-06-12 16:27:40 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	7.96	square miles
ELEV	Mean Basin Elevation	1106	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	7.96	square miles	2.26	1400
ELEV	Mean Basin Elevation	1106	feet	1050	2580

Low-Flow Statistics Flow Report [Low Flow Region 4]

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	0.279	ft^3/s	43	43
30 Day 2 Year Low Flow	0.486	ft^3/s	38	38
7 Day 10 Year Low Flow	0.101	ft^3/s	66	66
30 Day 10 Year Low Flow	0.184	ft^3/s	54	54
90 Day 10 Year Low Flow	0.335	ft^3/s	41	41

Low-Flow Statistics Citations

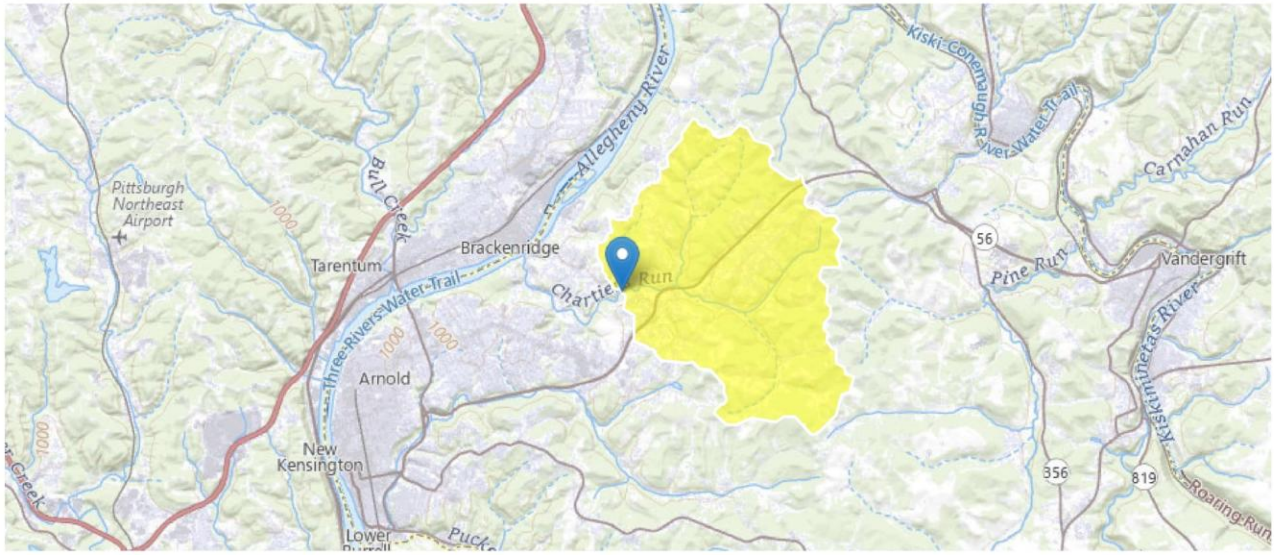
Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.29.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Attachment 2
USGS StreamStats - Downstream

StreamStats Report - Downstream

Region ID: PA
Workspace ID: PA20250612203012063000
Clicked Point (Latitude, Longitude): 40.59812, -79.70006
Time: 2025-06-12 16:30:39 -0400



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Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	8.6	square miles
ELEV	Mean Basin Elevation	1101	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	8.6	square miles	2.26	1400
ELEV	Mean Basin Elevation	1101	feet	1050	2580

Low-Flow Statistics Flow Report [Low Flow Region 4]

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	0.303	ft^3/s	43	43
30 Day 2 Year Low Flow	0.526	ft^3/s	38	38
7 Day 10 Year Low Flow	0.111	ft^3/s	66	66
30 Day 10 Year Low Flow	0.201	ft^3/s	54	54
90 Day 10 Year Low Flow	0.363	ft^3/s	41	41

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. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.29.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Attachment 3
WQM 7.0 Model - Summer

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
18A	42524	CHARTIERS RUN	**2.800**	875.66	7.96	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.013	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Oufall 001	PA0254525	0.0250	0.0250	0.0250	0.000	20.00	7.50

Parameter Data

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

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
18A	42524	CHARTIERS RUN	**2.420**	849.96	8.60	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.013	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	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/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
18A	42524	CHARTIERS RUN

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
2.800	0.10	0.00	0.10	.0387	0.01281	.385	7.59	19.71	0.05	0.486	23.62	7.09
Q1-10 Flow												
2.800	0.06	0.00	0.06	.0387	0.01281	NA	NA	NA	0.04	0.575	23.13	7.13
Q30-10 Flow												
2.800	0.14	0.00	0.14	.0387	0.01281	NA	NA	NA	0.05	0.427	23.90	7.07

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
18A	42524	CHARTIERS RUN

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
2.800	Oufall 001	11.44	30.57	11.44	30.57	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
2.800	Oufall 001	1.43	6.49	1.43	6.49	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
2.80	Oufall 001	25	25	6.49	6.49	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
18A	42524	CHARTIERS RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
2.800	0.025	23.616	7.091
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
7.590	0.385	19.706	0.048
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
8.36	1.131	1.80	0.925
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.069	18.013	Owens	6
Reach Travel Time (days)			
0.486			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.049	7.84	1.72	7.19
0.097	7.35	1.64	7.28
0.146	6.89	1.57	7.36
0.194	6.45	1.50	7.43
0.243	6.05	1.44	7.50
0.291	5.67	1.37	7.56
0.340	5.31	1.31	7.62
0.389	4.98	1.25	7.67
0.437	4.67	1.20	7.72
0.486	4.37	1.15	7.72

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
18A	42524	CHARTIERS RUN

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)
2.800	Oufall 001	PA0254525	0.025	CBOD5	25		
				NH3-N	6.49	12.98	
				Dissolved Oxygen			4

Attachment 4
WQM 7.0 Model - Winter

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
18A	42524	CHARTIERS RUN	**2.800**	875.66	7.96	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.025	0.00	0.00	0.000	0.000	0.0	0.00	0.00	5.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Oufall 001	PA0254525	0.0250	0.0250	0.0250	0.000	15.00	7.50

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	12.51	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
18A	42524	CHARTIERS RUN	**2.420**	849.96	8.60	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.026	0.00	0.00	0.000	0.000	0.0	0.00	0.00	5.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	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/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
18A	42524	CHARTIERS RUN

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
2.800	0.20	0.00	0.20	.0387	0.01281	.417	8.9	21.34	0.06	0.358	6.61	7.05
Q1-10 Flow												
2.800	0.13	0.00	0.13	.0387	0.01281	NA	NA	NA	0.05	0.438	7.30	7.07
Q30-10 Flow												
2.800	0.27	0.00	0.27	.0387	0.01281	NA	NA	NA	0.08	0.309	6.23	7.04

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
18A	42524	CHARTIERS RUN

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
2.800	Oufall 001	22.51	50	22.51	50	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
2.800	Oufall 001	4.3	25	4.3	25	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
2.80	Oufall 001	25	25	25	25	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
18A	42524	CHARTIERS RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (ºC)	Analysis pH
2.800	0.025	6.606	7.051
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
8.903	0.417	21.340	0.065
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
5.69	1.011	4.01	0.250
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
11.144	12.731	Owens	6
Reach Travel Time (days)			
0.358			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.036	5.58	3.98	11.00
0.072	5.47	3.94	11.00
0.107	5.37	3.91	11.00
0.143	5.26	3.87	11.00
0.179	5.16	3.84	11.00
0.215	5.06	3.80	11.00
0.251	4.96	3.77	11.00
0.286	4.87	3.74	11.00
0.322	4.77	3.70	11.00
0.358	4.68	3.67	11.00

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
18A	42524	CHARTIERS RUN

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)
2.800	Oufall 001	PA0254525	0.025	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4