Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0094102**
Facility Type	**Non-Municipal**	APS ID	**1115546**
Major / Minor	**Minor**	Authorization ID	**1488383**

Applicant and Facility Information

Applicant Name	**Airways MHP**	Facility Name	**Airways MHP STP**
Applicant Address	110 King Air Circle	Facility Address	225 Moore Road
	Washington, PA 15301-9060		Washington, PA 15301-8039
Applicant Contact	Albert Shuman	Facility Contact	Thomas Bibby
Applicant Phone	(724) 223-8731	Facility Phone	724-366-5184
Client ID	386418	Site ID	252083
Ch 94 Load Status	Not Overloaded	Municipality	South Franklin Township
Connection Status		County	Washington
Date Application Received	May 31, 2024	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: Renewal and Transfer of treated sewage discharge authorization

Summary of Review

The permittee has applied for a renewal and transfer of the NPDES Permit No. PA0094102. NPDES Permit No PA0094102 was previously issued by the PA Department of Environmental Protection (DEP) on June 1, 2019. The permit expired on May 31, 2024.

Sewage from this facility is treated through extended aeration, final clarification, sand filtration, chlorination, and a sludge holding tank.

The applicant is currently enrolled in and will continue to use eDMR.

At this time neither Thomas Yohe nor Albert Shuman have open unresolved violations that would prohibit the permit transfer.

The applicant has applied with Act 14 notifications and no comments were received.

Draft permit issuance is recommended.

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

Approve	Deny	Signatures	Date
X		Jordan T Coldsmith Jordan Coldsmith / Environmental Engineering Specialist	May 28, 2025
X		Mahbuba Iasmin Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineering Manager	July 1, 2025

Summary of Review
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)	.008
Latitude	40º 7' 50.34"	Longitude	-80º 17' 39.67"
Quad Name	Washington West	Quad Code	40080B3
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Chartiers Creek (WWF)	Stream Code	37155
NHD Com ID	99694814	RMI	0.47
Drainage Area	0.73	Yield (cfs/mi^2)	0.007
Q_{7-10} Flow (cfs)	0.00558	Q_{7-10} Basis	USGS StreamStat
Elevation (ft)	1205	Slope (ft/ft)	
Watershed No.	20-F	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	NUTRIENTS, NUTRIENTS, SILTATION, SILTATION		
Source(s) of Impairment	AGRICULTURE, AGRICULTURE, URBAN RUNOFF/STORM SEWERS, URBAN RUNOFF/STORM SEWERS		
TMDL Status	Final	Name	Chartiers Creek

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

Nearest Downstream Public Water Supply Intake	WESTERN PA W CO-WASHINGTON DIS		
PWS Waters	Chartiers Creek (WWF)	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	3.9

Changes Since Last Permit Issuance: None

Other Comments: The discharge is to an Unnamed Tributary which flows into Chartiers Creek. Chartiers Creek has a Final TMDL and is impaired by PCB and Chlordane. No WLAs have been developed for this sewage discharge and they are not expected to contribute to the stream impairment for these pollutants.

Treatment Facility Summary

Treatment Facility Name: Airways MHP STP

WQM Permit No.	Issuance Date
6374414	
6374414 T-1	08/05/2024

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary with nitrification	Extended Aeration	Chlorine	0.005

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.008		Not Overloaded		

Changes Since Last Permit Issuance: None

Other Comments: the current treatment process consists of:

- extended aeration
- final clarification
- sand filtration
- chlorination
- sludge holding tank

Compliance History

Operations Compliance Check Summary Report

Facility: AIRWAYS MHP STP

NPDES Permit No.: PA0094102

Compliance Review Period: 5/1/20-5/15/25

Inspection Summary:

INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC
07/15/2021	Administrative/File Review	PA Dept of Environmental Protection	No Violations Noted
07/15/2021	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted

Violation Summary:

No violations noted during review period

Open Violations by Client ID:

No open violations for Client ID 45152

Enforcement Summary:

No enforcements executed during review period

Effluent Violation Summary:

MON PD	PARAMETER	REPORTED VALUE	PERMIT LIMIT	UNIT	STAT BASE CODE
Jun-23	Ammonia-Nitrogen	6.05	4.5	mg/L	Average Monthly
Sep-22	Fecal Coliform	1070	1000	No./100 ml	Instantaneous Maximum
Sep-22	Fecal Coliform	431	200	No./100 ml	Geometric Mean

Compliance Status: Facility is in general compliance with no open violations or pending enforcements.

Completed by: Amanda Illar **Completed date:** 5/15/25

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	0.005	0.005	0.005	0.005	0.006	0.005	0.006	0.005	0.005	0.005	0.006	0.005
pH (S.U.) Instantaneous Minimum	6.9	7.0	6.8	6.8	7.0	7.0	6.9	6.9	6.8	7.1	6.8	6.9
pH (S.U.) Instantaneous Maximum	7.0	7.0	6.9	6.9	7.1	7.1	7.0	7.0	7.0	7.2	6.9	7.1
DO (mg/L) Instantaneous Minimum	5.4	5.9	5.7	5.3	5.2	5.9	4.8	5.3	5.4	5.9	5.2	5.7
TRC (mg/L) Average Monthly	0.11	0.26	0.18	0.18	0.16	0.3	0.22	0.2	0.17	0.12	0.14	0.19
TRC (mg/L) Instantaneous Maximum	0.19	0.51	0.26	0.26	0.31	0.5	0.27	0.4	0.29	0.21	0.22	0.28
CBOD5 (mg/L) Average Monthly	4.55	4.85	11.85	6.95	2.2	4.05	3.85	2.1	< 2.0	2.35	3.35	2.95
CBOD5 (mg/L) Instantaneous Maximum	6.9	6.8	13.0	9.4	2.2	4.9	4.0	2.2	< 2.0	2.6	4.7	3.5
TSS (mg/L) Average Monthly	8.0	16.5	16.0	9.5	5.0	8.5	< 5.0	< 5.0	< 5.0	6.0	< 5.0	5.5
TSS (mg/L) Instantaneous Maximum	11.0	23.0	17.0	12.0	5.0	9.0	< 5.0	< 5.0	< 5.0	7.0	< 5.0	6.0
Fecal Coliform (No./100 ml) Geometric Mean	154	2	124	132	16	2	2	28	5	190	74	48
Fecal Coliform (No./100 ml) Instantaneous Maximum	193	2	166	279	136	2	2	194	23	193	317	193
Total Nitrogen (mg/L) Daily Maximum				17.1								
Ammonia (mg/L) Average Monthly	1.0	1.65	3.6	1.45	1.05	1.85	0.75	0.5	1.1	1.45	0.6	1.95

Ammonia (mg/L) Instantaneous Maximum	1.6	2.7	3.9	1.5	1.5	2.6	1.1	0.5	1.7	1.9	0.6	3.4
Total Phosphorus (mg/L) Daily Maximum				3.0								

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .008
Latitude 40º 7' 50.34" **Longitude** -80º 17' 39.67"
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)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

The discharge was evaluated using WQM7.0 to determine the $CBOD_5$, ammonia nitrogen, and dissolved oxygen parameters. The model results show more restrictive limits for ammonia-nitrogen. The limits evaluated for CBOD5 and DO are the same as previous imposed permit limits.

TRC was evaluated using the TRC Spreadsheet. The limits evaluated were found to be more restrictive than the previously imposed limits.

Parameter	Limit (mg/l)	SBC	Model
DO	4	Inst Min.	WQM 7
Ammonia-Nitrogen (May 1 – Oct 31)	2.69 5.38	Average Monthly IMAX	WQM 7
Ammonia-Nitrogen (Nov 1 – Apr 30)	5.37 10.74	Average Monthly IMAX	WQM 7
$CBOD_5$	25 50	Average Monthly IMAX	WQM 7
TRC	0.075 0.244	Average Monthly IMAX	TRC Spreadsheet

eDMR data shows that the facility is not capable of meeting the new more restrictive limits for TRC. A compliance schedule of 2-years will be given for TRC. Additional information on the TRC schedule can be found in part C of the permit.

eDMR data shows that the facility is capable of meeting the new more restrictive limits for Ammonia-Nitrogen. Therefore, a compliance schedule will not be given for ammonia-nitrogen

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 40 CFR 122.44 (l) 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.

No permit limits and/or monitoring requirements have been relaxed in this permit cycle.

Additional Considerations

Sewage discharges will include monitoring, at a minimum, for *E. Coli*, in new and reissued permits, with a monitoring frequency of 1/year for facilities with design flows of 0.002 – 0.05 MGD.

An annual sampling frequency for total phosphorus and total nitrogen will again be imposed per 25 PA Code §92a.61.

The previous permit had a flow limit listed as 0.01 lbs/day. During review, no justification could be found for this limit. This limit will be corrected to report to comply with Standard Operating Procedure (SOP) for Clean Water Program Establishing Effluent Limitations for Individual Sewage Permits SOP No. BCW-PMT-033

Monitoring frequency for the proposed effluent limits are based upon Table 6-3, Self-Monitoring Requirements for Sewage Dischargers, from the Department's "Technical Guidance for the Development and Specification of Effluent Limitations"

The discharge is to an Unnamed Tributary which flows into Chartiers Creek. Chartiers Creek has a Final TMDL and is impaired by PCB and Chlordane. No WLAs have been developed for this sewage discharge and they are not expected to contribute to the stream impairment for these pollutants.

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	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
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
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	5.37	XXX	10.74	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	2.69	XXX	5.38	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Compliance Sampling Location: Outfall 001

Other Comments: None

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 2 years after permit effective 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	Minimum	Average Monthly	Maximum	Instant. Maximum		
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab

Compliance Sampling Location: Outfall 001

Other Comments: none

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: 2 years after 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	Minimum	Average Monthly	Maximum	Instant. Maximum		
TRC	XXX	XXX	XXX	0.075	XXX	0.244	1/day	Grab

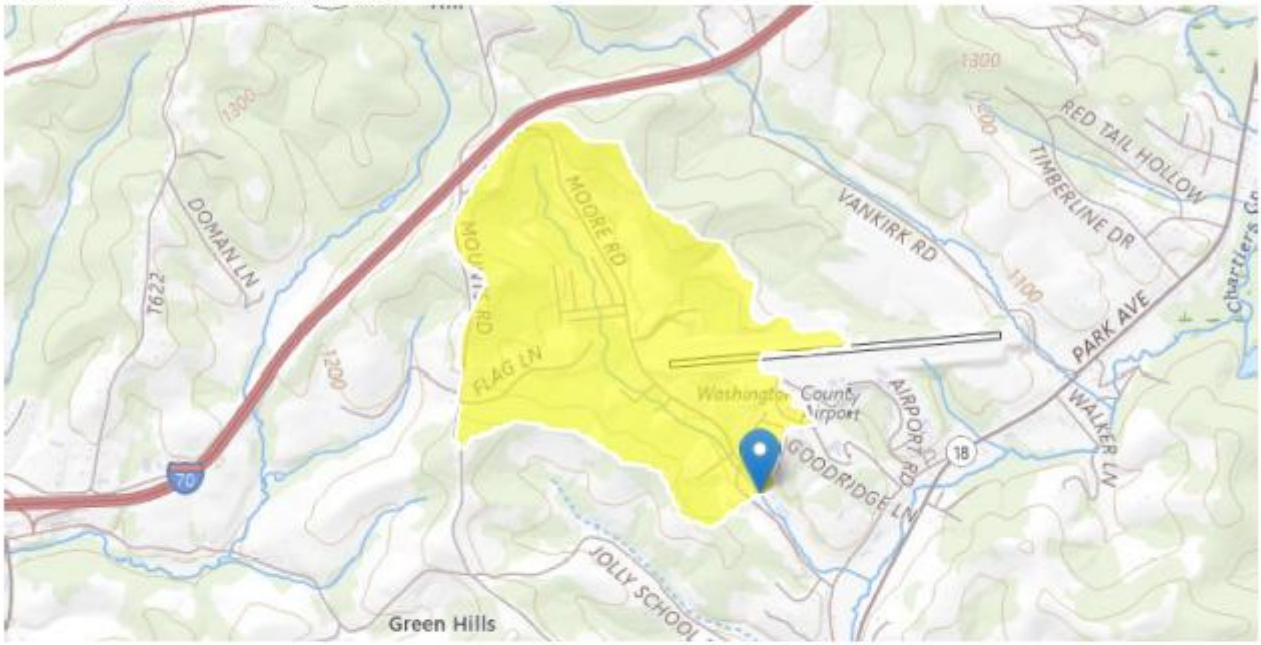
Compliance Sampling Location: Outfall 001

Other Comments: none

Attachment 1
USGS Upstream StreamStat

StreamStats Report

Region ID: PA
Workspace ID: PA20250514184243536000
Clicked Point (Latitude, Longitude): 40.13064, -80.29439
Time: 2025-05-14 14:43:23 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.73	square miles
ELEV	Mean Basin Elevation	1205	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	0.73	square miles	2.26	1400
ELEV	Mean Basin Elevation	1205	feet	1050	2580

Low-Flow Statistics Disclaimers [Low Flow Region 4]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0197	ft^3/s
30 Day 2 Year Low Flow	0.0385	ft^3/s
7 Day 10 Year Low Flow	0.00558	ft^3/s
30 Day 10 Year Low Flow	0.0123	ft^3/s
90 Day 10 Year Low Flow	0.0255	ft^3/s

Low-Flow Statistics Citations

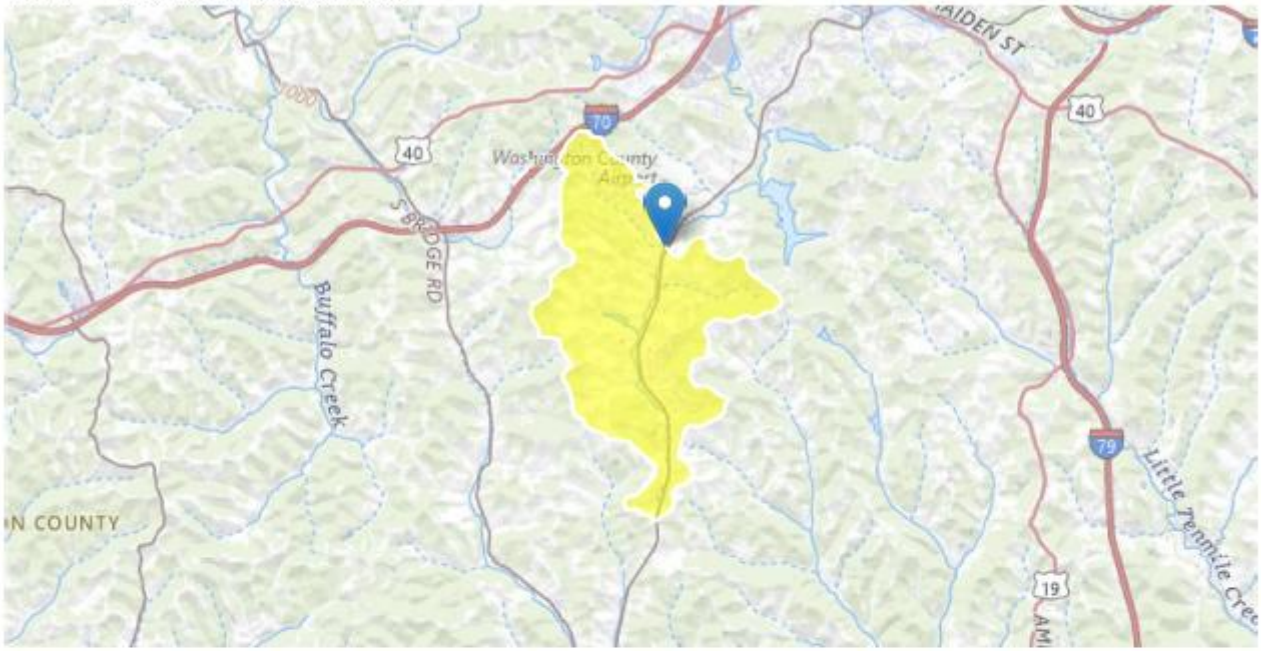
Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.28.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Attachment 2
USGS Downstream StreamStat

StreamStats Report

Region ID: PA
Workspace ID: PA20250514184730899000
Clicked Point (Latitude, Longitude): 40.12701, -80.28832
Time: 2025-05-14 14:48:21 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	5.5	square miles
ELEV	Mean Basin Elevation	1213	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	5.5	square miles	2.26	1400
ELEV	Mean Basin Elevation	1213	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	0.198	ft^3/s	43	43
30 Day 2 Year Low Flow	0.352	ft^3/s	38	38
7 Day 10 Year Low Flow	0.0677	ft^3/s	66	66
30 Day 10 Year Low Flow	0.128	ft^3/s	54	54
90 Day 10 Year Low Flow	0.241	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: 4.28.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Attachment 3
WQM 7.0 Summer Results

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
20F	37155	Trib 37155 to Chartiers Creek	**0.470**	1078.00	0.47	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	0.007	0.01	0.00	0.000	0.000	10.0	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
Airways MHP STP	PA0094102	0.0080	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/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

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
20F	37155	Trib 37155 to Chartiers Creek

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												
0.470	0.01	0.00	0.01	.0124	0.00741	.266	2.5	9.41	0.03	1.042	21.55	7.00
Q1-10 Flow												
0.470	0.00	0.00	0.00	.0124	0.00741	NA	NA	NA	0.03	1.113	21.12	7.00
Q30-10 Flow												
0.470	0.01	0.00	0.01	.0124	0.00741	NA	NA	NA	0.03	0.982	21.90	7.00

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	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
20F	37155	Trib 37155 to Chartiers Creek

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
0.470	Airways MHP ST	15.27	19.68	15.27	19.68	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
0.470	Airways MHP ST	1.67	2.69	1.67	2.69	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)		
0.47	Airways MHP STP	25	25	2.69	2.69	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20F	37155	Trib 37155 to Chartiers Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.470	0.008	21.554	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2.503	0.266	9.412	0.027
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
17.85	1.374	1.86	0.789
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.319	23.206	Owens	5
Reach Travel Time (days)			
1.042			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.104	15.31	1.71	6.94
0.208	13.13	1.57	7.30
0.313	11.26	1.45	7.52
0.417	9.65	1.34	7.70
0.521	8.28	1.23	7.86
0.625	7.10	1.13	8.00
0.729	6.09	1.04	8.01
0.833	5.22	0.96	8.01
0.938	4.48	0.89	8.01
1.042	3.84	0.82	8.01

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
20F	37155	Trib 37155 to Chartiers 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)
0.470	Airways MHP STP	PA0094102	0.008	CBOD5	25		
				NH3-N	2.69	5.38	
				Dissolved Oxygen			4

Attachment 4
WQM 7.0 Winter Results

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
	20F	37155	Trib 37155 to Chartiers Creek	**0.470**	1078.00	0.47	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	0.014	0.01	0.00	0.000	0.000	10.0	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
Airways MHP STP	PA0094102	0.0080	0.0000	0.0000	0.000	15.00	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	4.00	12.51	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
20F	37155	Trib 37155 to Chartiers Creek

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												
0.470	0.01	0.00	0.01	.0124	0.00741	.266	2.5	9.41	0.03	1.042	11.89	7.00
Q1-10 Flow												
0.470	0.00	0.00	0.00	.0124	0.00741	NA	NA	NA	0.03	1.113	12.76	7.00
Q30-10 Flow												
0.470	0.01	0.00	0.01	.0124	0.00741	NA	NA	NA	0.03	0.982	11.20	7.00

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	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
20F	37155	Trib 37155 to Chartiers Creek

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
0.470	Airways MHP ST	24.1	31.06	24.1	31.06	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
0.470	Airways MHP ST	3.33	5.37	3.33	5.37	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)		
0.47	Airways MHP STP	25	25	5.37	5.37	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20F	37155	Trib 37155 to Chartiers Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.470	0.008	11.892	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2.503	0.266	9.412	0.027
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
17.85	1.409	3.70	0.375
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.645	18.454	Owens	5
Reach Travel Time (days)			
1.042			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.104	16.13	3.56	8.77
0.208	14.58	3.42	9.21
0.313	13.18	3.29	9.38
0.417	11.91	3.17	9.50
0.521	10.77	3.04	9.61
0.625	9.73	2.93	9.71
0.729	8.79	2.81	9.72
0.833	7.95	2.71	9.72
0.938	7.18	2.60	9.72
1.042	6.49	2.50	9.72

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
20F	37155	Trib 37155 to Chartiers 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)
0.470	Airways MHP STP	PA0094102	0.008	CBOD5	25		
				NH3-N	5.37	10.74	
				Dissolved Oxygen			4

Attachment 5
TRC Calculations

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.00558	= Q stream (cfs)	0.5	= CV Daily
0.008	= 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 =	0.163	1.3.2.iii	WLA cfc =	0.151
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	0.061	5.1d	LTA_cfc =	0.088

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.075	AFC
		INST MAX LIMIT (mg/l) =	0.244	

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)