Pennsylvania Department of Environmental Protection

Northwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0221830**
Facility Type	**Municipal**	APS ID	**1097679**
Major / Minor	**Minor**	Authorization ID	**1456379**

Applicant and Facility Information

Applicant Name	**West Sunbury Borough Municipal Authority Butler County**	Facility Name	**West Sunbury Borough STP**
Applicant Address	PO Box 202 West Sunbury, PA 16061-0202	Facility Address	Sr 138 N Washington Road West Sunbury, PA 16061
Applicant Contact	Kathy Ferdinandsen	Facility Contact	Kathy Ferdinandsen
Applicant Phone	(724) 637-3000	Facility Phone	(724) 637-3000
Client ID	207551	Site ID	253673
Ch 94 Load Status	Not Overloaded	Municipality	West Sunbury Borough
Connection Status	No Limitations	County	Butler
Date Application Received	September 27, 2023	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: NPDES Renewal for a municipal sewage treatment plant (STP).

Summary of Review

This is an existing discharge for a minor municipal sewage treatment facility.

Act 14 proof of notification was submitted and received.

There are currently no open violations for this client (207551) as of 10/31/2024.

Annual monitoring for E. Coli has been added per Department SOP for new and reissued NPDES permits with design flows exceeding 2000 GPD.

The EPA Waiver is in effect.

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	Deny	Signatures	Date
X		Jordan A. Frey, E.I.T. Jordan A. Frey, E.I.T. / Project Manager	October 31, 2024
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	November 8, 2024

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.028
Latitude	41º 0' 44.29"	Longitude	-79º 53' 32.81"
Quad Name	West Sunbury	Quad Code	41079A8
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary of South Branch Slippery Rock Creek (CWF)	Stream Code	34634
NHD Com ID	126223136	RMI	0.2200
Drainage Area	0.32	Yield (cfs/mi^2)	0.1
Q_{7-10} Flow (cfs)	0.032	Q_{7-10} Basis	Streamstats
Elevation (ft)	1284	Slope (ft/ft)	---
Watershed No.	20-C	Chapter 93 Class.	CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

Background/Ambient Data		Data Source
pH (SU)	7.0	Default
Temperature (°F)	20	Default
Hardness (mg/L)	100	Default
Other:		

Nearest Downstream Public Water Supply Intake		PA American Water – Ellwood City	
PWS Waters	Slippery Rock Creek	Flow at Intake (cfs)	53.1
PWS RMI	0.1	Distance from Outfall (mi)	>25

Changes Since Last Permit Issuance: None.

Other Comments: Yield was back-calculated from the 7-day 10-year low flow value estimated by Streamstats for this watershed.

Treatment Facility Summary

Treatment Facility Name: West Sunbury Municipal Authority

WQM Permit No.	Description	Issuance Date
1096407	Sewers and STP	6 August 1996
1096407 T-1	Transfer to authority	27 May 2003
1096407 A-1	Drying bed consolidation	11 July 2006
1096407	Aeration and piping changes	2014
1002407 T-1	Dassa McKinney Pump Station and Sewers	27 May 2003
1096407	Ultra-Sonic Flow Meter Model SLT 5.0 A-1 Level and Flow Meter	2014
1096407 A-2	STP tertiary treatment	12 August 2016
1096407 A-3	Installed AdvanTex AX-Max450 system	1/30/2019

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Aerated Lagoon	Hypochlorite	0.028

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.028	47	Not Overloaded	Drying	Land Application

Changes Since Last Permit Issuance: WQM 1096407 A-3 was issued concurrently with the previous renewal of the NPDES permit. This WQM Amendment permitted the installation of an AdvanTex AX-Max450 system and related appurtenances.

Other Comments: None.

Compliance History

DMR Data for Outfall 001 (from September 1, 2023 to August 31, 2024)

Parameter	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23
Flow (MGD) Average Monthly	0.0123	0.0103	0.0092	0.0169	0.0266	0.0271	0.0195	0.0310	0.0213	0.0184	0.0172	0.0138
Flow (MGD) Weekly Average	0.0123	0.0103	0.0092	0.0169	0.0266	0.0271	0.0195	0.0310	0.0213	0.0184	0.0172	0.0138
pH (S.U.) Daily Minimum	7.0	7.0	7.0	6.9	7.1	7.4	7.4	7.2	7.2	7.1	7.2	7.3
pH (S.U.) Daily Maximum	7.3	7.3	7.2	7.1	7.4	7.7	7.5	7.6	7.2	7.5	7.4	7.6
DO (mg/L) Daily Minimum	5.4	5.7	5.7	5.6	9.1	11.5	14.6	13.1	10.9	9.1	7.6	7.4
TRC (mg/L) Average Monthly	0.05	0.1	0.09	< 0.08	0.10	0.06	0.06	0.10	0.01	0.04	0.10	0.10
TRC (mg/L) Instantaneous Maximum	0.11	0.1	0.14	0.12	0.14	0.14	0.11	0.12	0.01	0.10	0.16	0.16
CBOD5 (lbs/day) Average Monthly	0.277	1.005	0.307	2.03	1.020	2.147	1.756	1.111	0.817	< 0.752	0.703	0.460
CBOD5 (lbs/day) Weekly Average	1.544	1.675	0.307	3.45	1.054	3.390	1.952	1.163	0.942	0.890	0.818	0.460
CBOD5 (mg/L) Average Monthly	2.7	< 11.7	4.0	14.4	< 4.6	9.5	10.8	4.3	< 4.6	< 4.9	< 4.9	< 4.0
CBOD5 (mg/L) Weekly Average	5.3	19.5	4.0	24.5	5.2	15.0	12.0	4.5	5.3	5.8	< 5.7	< 4.0
BOD5 (mg/L) Influent Average Monthly	171	86	149	151	110	245	96	78	174	272	343	178
TSS (lbs/day) Average Monthly	< 0.513	0.490	0.407	2.57	3.727	2.644	1.268	3.102	0.888	1.074	0.717	0.576
TSS (lbs/day) Weekly Average	< 0.513	0.558	0.422	3.52	4.215	3.390	1.708	3.102	0.888	1.074	0.717	0.576
TSS (mg/L) Average Monthly	< 5.0	5.7	5.3	18.2	16.8	11.7	< 7.8	12.0	5.0	7.0	< 5.0	< 5.0
TSS (mg/L) Influent Average Monthly	121	100	92	114	45	109	77	65	153	90	103	78
TSS (mg/L) Weekly Average	< 5.0	6.5	5.5	25.0	19.0	15.0	< 10.5	12.0	5.0	7.0	< 5.0	< 5.0

Fecal Coliform (No./100 ml) Geometric Mean	25	< 1	< 1	1	49	< 1	< 1	< 1	2	461	19	< 1
Fecal Coliform (No./100 ml) Instantaneous Maximum	648	1	< 1	2	2419	< 1	< 1	< 1	3	2420	365	< 1
Total Nitrogen (mg/L) Semi-Annual Average			22.7						8.82			
Ammonia (mg/L) Average Monthly	2.3	2.7	3.0	4.3	6.5	11.6	8.7	8.5	10.00	7.97	2.74	1.77
Ammonia (mg/L) Instantaneous Maximum	2.3	3.6	3.5	4.6	6.8	14.0	9.5	10.7	10.70	8.43	3.03	2.94
Total Phosphorus (mg/L) Semi-Annual Average			4.4						8.20			

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .028
Latitude 41º 0' 43.67" **Longitude** -79º 53' 32.37"
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)
E. Coli (No./100ml)	Report	IMAX		92a.61

Comments:

E. Coli monitoring was added based on the Department's SOP for new and reissued permits.

Water Quality-Based Limitations

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

Parameter	Limit (mg/l)	SBC	Model
Ammonia (May-Oct)	2.7	Average Monthly	WQM v.1.0b
$CBOD_5$	25	Average Monthly	WQM v1.0b
Dissolved Oxygen (DO)	3.0	Daily Minimum	WQM v.1.0b
Total Residual Chlorine (TRC)	0.1	Average Monthly	TRC Spreadsheet

Comments:

An Ammonia-Nitrogen (NH3N) limit of 2.72 mg/l was determined by WQM modeling to be protective, and shall be rounded down to 2.7 mg/l .

A Dissolved Oxygen minimum of 3.0 mg/l was determined by WQM modeling to be protective, but Department policy imposes a minimum limit no less than 4.0 mg/l by Best Professional Judgment.

The technology-based Total Residual Chlorine (TRC) limit of 0.1 mg/l was found to be protective of the receiving stream per the Department's TRC spreadsheet, which gave a result of 0.117 mg/l. This value was rounded down to 0.1 in congruence with the existing TRC limit to comply with Anti-Backsliding policy.

Best Professional Judgment (BPJ) Limitations

Comments: A Dissolved Oxygen (DO) minimum limit of 4.0mg/l shall be retained.

Anti-Backsliding

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 Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	1/day	Grab
DO	XXX	XXX	4.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.1	XXX	0.4	1/day	Grab
CBOD5	5.8	9.3	XXX	25.0	40.0	50	2/month	8-Hr Composite
BOD5 Raw Sewage Influent	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS	7.0	10.5	XXX	30.0	45.0	60	2/month	8-Hr Composite
TSS Raw Sewage Influent	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Total Nitrogen	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	2/year	8-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	8.1	XXX	16.2	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	2.7	XXX	5.4	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	2/year	8-Hr Composite
E. Coli (No.100ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab

Compliance Sampling Location: Outfall 001, after disinfection.

Other Comments: Permittee was informed in the Fact Sheet Addendum of the previous permit cycle that sampling for pH, DO, TRC would become daily upon permit renewal.

TRC Spreadsheet - West Sunbury Boro STP

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.032	= Q stream (cfs)	0.5	= CV Daily
0.028	= 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 =	0.255	1.3.2.iii	WLA cfc =	0.241
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	0.095	5.1d	LTA_cfc =	0.140

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.117	AFC
		INST MAX LIMIT (mg/l) =	0.382	

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)**

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
20C	34629	Trib 34629 to S Br Slippery Rock Cr

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
2.240	Outfall 001	7.58	11.16	7.58	10.18	2	9
2.019	End of Reach 1	8.32	19.86	7.82	18.13	2	9

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
2.240	Outfall 001	1.6	3.21	1.6	2.72	2	15
2.019	End of Reach 1	1.75	6.91	1.66	5.87	2	15

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)		
2.24	Outfall 001	25	25	2.72	2.72	5	5	0	0
2.02	End of Reach 1	25	25	5.87	5.87	3	3	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20C	34629	Trib 34629 to S Br Slippery Rock Cr

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
2.240	0.028	22.876	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
3.201	0.341	9.386	0.069
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
15.23	1.402	1.57	0.873
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.378	28.329	Owens	6
Reach Travel Time (days)			
0.196			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.020	14.76	1.54	6.73
0.039	14.30	1.51	6.95
0.059	13.86	1.49	7.09
0.078	13.43	1.46	7.19
0.098	13.02	1.44	7.27
0.117	12.62	1.41	7.33
0.137	12.23	1.39	7.38
0.157	11.85	1.37	7.42
0.176	11.49	1.34	7.46
0.196	11.13	1.32	7.50

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
2.019	0.056	22.398	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
5.578	0.386	14.449	0.084
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
11.32	1.242	1.96	0.842
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.675	25.397	Owens	6
Reach Travel Time (days)			
0.801			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.080	10.13	1.83	7.50
0.160	9.07	1.71	7.70
0.240	8.12	1.60	7.81
0.320	7.26	1.49	7.89
0.400	6.50	1.40	7.89
0.480	5.82	1.31	7.89
0.560	5.21	1.22	7.89
0.640	4.66	1.14	7.89
0.721	4.17	1.07	7.89
0.801	3.73	1.00	7.89

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)
2.240	Outfall 001	PA0221830	0.028	CBOD5	25		
				NH3-N	2.72	5.44	
				Dissolved Oxygen			5

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)
2.019	End of Reach 1	PA0221830	0.028	CBOD5	25		
				NH3-N	5.87	11.74	
				Dissolved Oxygen			3

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
20C	34629	Trib 34629 to S Br Slippery Rock Cr	**2.240**	1272.00	0.32	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	0.100	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	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
Outfall 001	PA0221830	0.0280	0.0280	0.0280	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

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
20C	34629	Trib 34629 to S Br Slippery Rock Cr	**2.019**	1256.00	0.94	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	0.100	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	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
End of Reach 1	PA0221830	0.0280	0.0280	0.0280	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

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
20C	34629	Trib 34629 to S Br Slippery Rock Cr	0.920	1216.00	1.78	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	0.100	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	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
End of Reach 2		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 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
20C	34629	Trib 34629 to S Br Slippery Rock Cr

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												
2.240	0.03	0.00	0.03	.0433	0.01371	.341	3.2	9.39	0.07	0.196	22.88	7.00
2.019	0.09	0.00	0.09	.0866	0.00689	.386	5.58	14.45	0.08	0.801	22.40	7.00
Q1-10 Flow												
2.240	0.02	0.00	0.02	.0433	0.01371	NA	NA	NA	0.06	0.215	23.39	7.00
2.019	0.06	0.00	0.06	.0866	0.00689	NA	NA	NA	0.07	0.899	22.95	7.00
Q30-10 Flow												
2.240	0.04	0.00	0.04	.0433	0.01371	NA	NA	NA	0.07	0.181	22.49	7.00
2.019	0.13	0.00	0.13	.0866	0.00689	NA	NA	NA	0.09	0.727	22.02	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	6		