Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0031992**
Facility Type	**Non-Municipal**	APS ID	**369894**
Major / Minor	**Minor**	Authorization ID	**1532518**

Applicant and Facility Information

Applicant Name	**PA DCNR State Parks Bureau**	Facility Name	**Greenwood Furnace State Park**
Applicant Address	15795 Greenwood Road	Facility Address	Standing Stone Creek
	Huntingdon, PA 16652-5831		Huntingdon, PA 16652
Applicant Contact	Adam Watchey	Facility Contact	Michael Dinsmore
Applicant Phone	(814) 490-0480	Facility Phone	(814) 667-1800
Client ID	64584	Site ID	453106
Ch 94 Load Status	Not Overloaded	Municipality	Jackson Township
Connection Status	No Limitations	County	Huntingdon
Date Application Received	July 1, 2025	EPA Waived?	Yes
Date Application Accepted	July 1, 2025	If No, Reason	

Purpose of Application: NPDES permit renewal.

Summary of Review

The Greenwood Furnace State Park's WWTP is located in Jackson Borough, Huntingdon County. The WWTP is owned and operated by the Pennsylvania Department of Conservation & Natural Resources (PA DCNR) – State Parks Bureau. The park and the treatment plant operate from May through September and is closed during the remainder of the year. During operation there is little or no discharge from the polishing pond due to evaporation, trans-evaporation, the possibility of some seepage and due to low flow through the plant, about 3,000 gpd.

The WWTP has a design capacity of 0.059 MGD but is permitted for 0.015 MGD to prevent anti-degradation of the stream, and discharges to the East Branch Standing Stone Creek (HQ-CWF). The discharge to a HQ stream is justified, since the outfall pre-dates the HQ classification of the stream.

PA DCNR – State Parks Bureau has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit. The permit was last reissued on July 16, 2020, and became effective on August 1, 2020. The permit expired on July 31, 2025.

WQM No. 3169401 original was issued on June 23, 1969.

Sludge use and disposal description and location(s): N/A because sludge hauled by facility's contractor.

Changes from the previous permit: The E. Coli monitoring and report requirements will be added to the proposed permit.

Based on the review outline in this fact sheet, it is recommended that the permit be drafted and published in the Pennsylvania Bulletin for public comments for 30 days.

Approve	Deny	Signatures	Date
X		*Hilaryle* Hilary H. Le / Environmental Engineering Specialist	July 11, 2025
X		*Daniel W. Martin* Daniel W. Martin, P.E. / Environmental Engineer Manager	August 25, 2025

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.015
Latitude	40º 38' 39.92"	Longitude	-77º 46' 5.59"
Quad Name	McAlevys Fort	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	East Branch Standing Stone Creek (HQ-CWF)	Stream Code	15411
NHD Com ID	65603674	RMI	8.6 miles
Drainage Area	6.95 mi.^{2}	Yield (cfs/mi^2)	0.07
Q_{7-10} Flow (cfs)	0.51	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)		Slope (ft/ft)	
Watershed No.	11-B	Chapter 93 Class.	HQ-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	
Nearest Downstream Public Water Supply Intake	Huntingdon Boro Water department, Huntingdon County		
PWS Waters	Standing Stone Creek	Flow at Intake (cfs)	
PWS RMI	0.3 mile	Distance from Outfall (mi)	Approximate 24.0 miles

Changes Since Last Permit Issuance:

Drainage Area

The discharge is to East Branch Standing Stone Creek at RMI 8.6 miles. A drainage area upstream of the discharge is estimated to be 6.95 mi.^{2}, according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Streamflow

According to StreamStats, the discharge point on East Branch Standing Stone Creek has a Q_{7-10} of 0.51 cfs and a drainage area of 6.95 mi.^{2}, which results in a Q_{7-10} low flow yield of 0.07 cfs/mi.^{2}. This information is used to obtain a chronic or 30-day (Q_{30-10}), and an acute or 1-day (Q_{1-10}) exposure stream flow for the discharge point as follows (Guidance No. 391-2000-023):

Q_{7-10} = 0.51 cfs
Low Flow Yield = 0.51 cfs / 6.95 mi.^{2} ≈ 0.07 cfs/mi.^{2}
Q_{30-10} = 1.36 * 0.51 cfs ≈ 0.69 cfs
Q_{1-10} = 0.64 * 0.51 cfs ≈ 0.33 cfs

Standing Stone Creek

25 Pa Code § 93.9n classifies Standing Stone Creek as High Quality-Cold Water Fishes (HQ-CWF) surface water. Based on the 2018 Integrated Report, Standing Stone Creek, assessment unit ID 21691, is not impaired. A TMDL currently does not exist for this stream segment, therefore, no TMDL has been taken into consideration during this review.

Public Water Supply

The nearest downstream public water supply intake is the Huntingdon Borough Water Department on the Standing Stone Creek in Huntingdon Borough, approximately 24 miles downstream of this discharge. Considering distance and dilution, the discharge is not expected to impact the water supply.

Treatment Facility Summary				
Treatment Facility Name: Greenwood Furnace St Pk				
WQM Permit No.	**Issuance Date**			
3169401	6/23/1969			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Tertiary	Activated Sludge With Solids Removal	Hypochlorite	0.015
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.015		Not Overloaded	Aerobic Digestion	Combination of methods

Changes Since Last Permit Issuance:

Other Comments:
The WWTP train is as follows:

Comminutor (1) ⇒ Aeration Tanks (2) ⇒ Clarifiers (4) ⇒ Polishing Ponds (2) ⇒ Chlorine Contact Tank (1) ⇒ Sludge Holding Tanks (2) ⇒ Discharge (Outfall 001)

Calcium Hypochlorite is used for disinfection. Soda Ash is used for neutralizing pH.

Compliance History	
Summary of DMRs:	DMRs reported last 12 months are summarized in the next page.
Summary of Inspections:	6/26/2025: Mr. Clark, DEP WQS, conducted compliance evaluation inspection. The effluent at Outfall 001 appeared clear. Field test results were within the permit limits. Recommendations were 1. Repair or replace the leaking airline. 2. Install a screening device at the headworks. 3. Review the new NPDES permit, when received, for changes in testing parameters or sample frequency. 8/7/2024: Mr. Clark, DEP WQS, conducted compliance evaluation inspection. There were no violations noted during the inspection. Field test results were within the permit limits. Recommendations were 1. Replace the comminutor or make a request to the Department regarding the removal of the comminutor. 2. Attach an effluent supplemental report to DMR for September, October & December 2023 and January, February, April, May & June 2024.
Other Comments:	There are no open violations associated with this facility or permittee.

Other Comments:

Compliance History

DMR Data for Outfall 001 (from June 1, 2024 to May 31, 2025)

Parameter	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24
Flow (MGD) Average Monthly								0.0324			0.0344	
Flow (MGD) Daily Maximum								0.0432			0.0432	
pH (S.U.) Daily Minimum								6.83			6.75	
pH (S.U.) Instantaneous Maximum								7.38			7.56	
DO (mg/L) Daily Minimum								6.86			5.89	
TRC (mg/L) Average Monthly								0.263			0.264	
CBOD5 (mg/L) Average Monthly								15.765			17.055	
TSS (mg/L) Average Monthly								8.0			< 8.0	
Fecal Coliform (No./100 ml) Geometric Mean								4.0			10.2	
Fecal Coliform (No./100 ml) Instantaneous Maximum								4.0			16.4	
Nitrate-Nitrite (mg/L) Average Quarterly						0.42			10.08			
Total Nitrogen (mg/L) Average Quarterly						4.26			14.68			
Ammonia (mg/L) Average Quarterly						2.38			4.08			
TKN (mg/L) Average Quarterly						4.22			5.22			
Total Phosphorus (mg/L) Average Quarterly						2.206			3.074			

Existing Effluent Limitations and Monitoring Requirements

Outfall 001,

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.) May 1 - Sep 30	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
pH (S.U.) Oct 1 - Apr 30	XXX	XXX	6.0	XXX	XXX	9.0	3/week	Grab
DO May 1 - Sep 30	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
DO Oct 1 - Apr 30	XXX	XXX	5.0	XXX	XXX	XXX	3/week	Grab
TRC May 1 - Sep 30	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
TRC Oct 1 - Apr 30	XXX	XXX	XXX	0.5	XXX	1.6	3/week	Grab
$CBOD_5$	XXX	XXX	XXX	25.0	XXX	50.0	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30.0	XXX	60.0	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Ammonia	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite
Nitrate-Nitrite	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite
TKN	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite

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	Report Daily Max	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.) Oct 1 - Apr 30	XXX	XXX	6.0 Daily Min	XXX	XXX	9.0	3/week	Grab
pH (S.U.) May 1 - Sep 30	XXX	XXX	6.0 Daily Min	XXX	XXX	9.0	1/day	Grab
DO Oct 1 - Apr 30	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	3/week	Grab
DO May 1 - Sep 30	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC Oct 1 - Apr 30	XXX	XXX	XXX	0.5	XXX	1.6	3/week	Grab
TRC May 1 - Sep 30	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
$CBOD_5$	XXX	XXX	XXX	25.0	XXX	50.0	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30.0	XXX	60.0	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Ammonia	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite
Nitrate-Nitrite	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite
TKN	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite

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		
Total Nitrogen	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite

Compliance Sampling Location:

Other Comments:

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.015
Latitude 40º 38' 39.92" **Longitude** -77º 46' 5.59"
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)

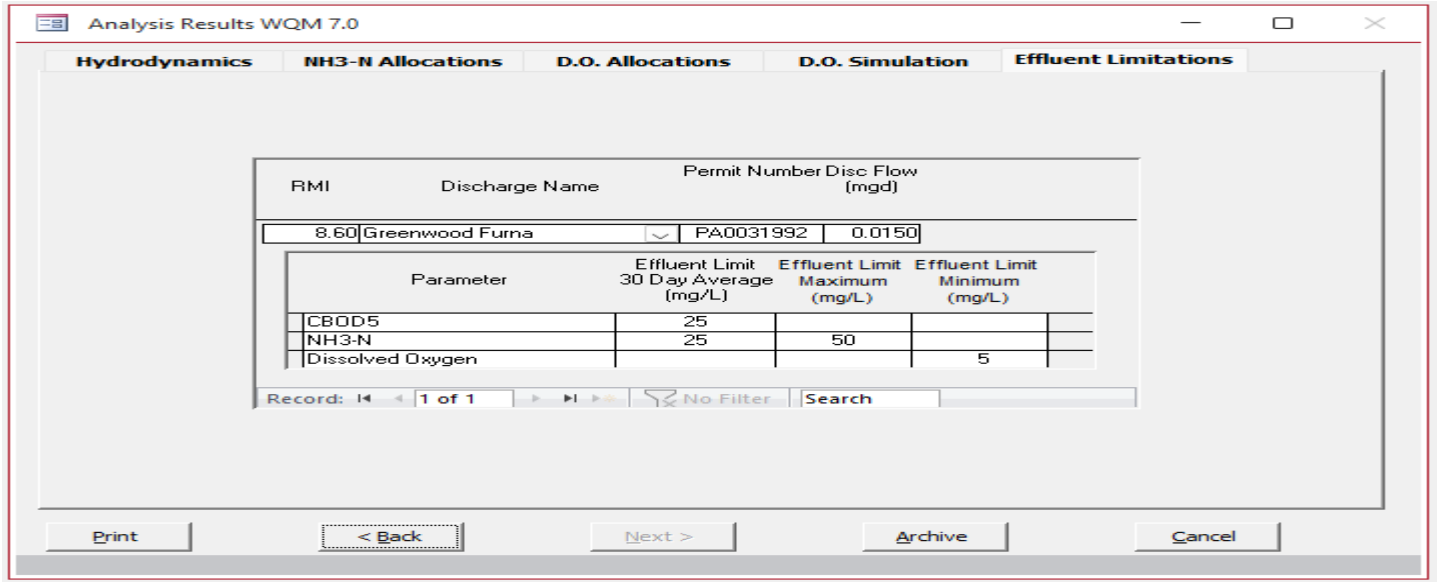
Comments:

Water Quality-Based Limitations

Ammonia (NH_3-N)

NH_3-N calculations were first based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013). The following data is necessary to determine the in-stream NH_3-N criteria used in the attached computer model of the stream:

Discharge pH	=	7.0	(Default)
Discharge Temperature	=	20°C	(Default)
Stream pH	=	7.0	(Default)
Stream Temperature	=	20ºC	(Default)
Background NH_3-N	=	0	(Default)



The printout of the WQM 7.0 output indicates that at a discharge of 0.015 MGD, limits (rounded according to the NPDES Technical Guidance 362-0400-001) of 25.0 mg/L NH_3-N as average monthly (AML) and 50.0 mg/L NH_3-N instantaneous maximum (IMAX) are necessary to protect the aquatic life from toxicity effects. There are no NH_3-N effluent limits in this permit. However, the "Monitor & Report" once per quarter for average quarter will remain in the proposed permit.

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)
Only the minimum treatment requirements of secondary treatment will be necessary to protect water quality. The existing limits of 25.0 mg/L average monthly, and 50.0 mg/L instantaneous maximum will remain in the proposed permit. The facility has consistently achieved $CBOD_5$ levels well below these limits.

Dissolved Oxygen (D.O.)
A minimum D.O. of 5.0 mg/L is required per 25 Pa. Code § 93.7. The agreement between DEP and DCNR requires that D.O. be sampled 1/day (May - Sep) and 3/week (Oct – Apr). These monitoring requirements will remain in the proposed permit.

Fecal Coliform
The recent coliform guidance in 25 Pa Code § 92a.47.(a)(4) requires a summer technology limit of 200/100 ml as a geometric mean and an instantaneous maximum not greater than 1,000/100 ml and 25 Pa Code § 92a.47.(a)(5) requires a winter limit of 2,000/100 ml as a geometric mean and an instantaneous maximum not greater than 10,000/100 ml.

E. Coli
As recommended by DEP's SOP No. BCW-PMT-033, version 2.0 revised February 5, 2024, a routine monitoring for E. Coli will be included in the proposed permit under 25 Pa. Code § 92a.61. This requirement applies to all sewage dischargers greater than 0.002 MGD in their new and reissued permits. A monitoring frequency of 1/year will be included in the permit to be consistent with the recommendation from this SOP.

Total Suspended Solids (TSS)
The existing limits of 30.0 mg/L average monthly, and 60.0 mg/L instantaneous maximum will remain in the proposed permit based on the minimum level of effluent quality attainable by secondary treatment based on 25 Pa. Code § 92a.47. Past DMRs and inspection reports show that the facility has been consistently achieving these limits.

pH
The effluent discharge pH should remain above 6 and below 9 standard units according to 25 Pa Code § 95.2(2). Additionally, the DEP has an agreement with DCNR that necessitates seasonal monitoring requirements for certain parameters, including pH. For Greenwood Furnace State Park, pH must be sampled 1/day (May - Sep) and 3/week (Oct – Apr). These monitoring requirements will remain in the proposed permit.

Chesapeake Bay Strategy
According to DEP's Chesapeake Bay Phase II Watershed Implementation Plan (WIP) Wastewater Supplement, this facility is considered a phase 5 non-significant sewage discharger with design flow less than 0.2 MGD but greater than 0.002 MGD. In general, DEP will issue permits for all phase 5 facilities with monitoring and reporting for Total Nitrogen (TN) and Total Phosphorus (TP) throughout the permit term at a frequency no less than annually. Furthermore, DEP's SOP No. BPNPSM-PMT-033 states that in general, at a minimum, monitoring for TN and TP should be included in new and reissued permits for sewage discharges with design flows > 2,000 gpd. At this time, the Department is not requiring a total maximum annual nitrogen or phosphorus loading cap. Ammonia-Nitrogen, Nitrate-Nitrite as N, Total Kjeldahl Nitrogen, TN, and TP monitoring is already included in the existing permit and will remain in the proposed permit.

The Chesapeake Bay parameters monitoring frequency for this facility will match that of the conventional pollutants monitoring frequency of one sample per quarter.

Total Residual Chlorine
The attached computer printout (Page # 8) utilizes the equations and calculations as presented in the Department's 2003 Implementation Guidance for Residual Chlorine (TRC) (ID # 391-2000-015) for developing chlorine limitations. The attached printout indicates that an average monthly water quality limit of 0.5 mg/L and 1.6 mg/L max daily would be needed to prevent toxicity concerns. This is consistent with the existing permit. The treatment facility is meeting this limit. The agreement between DEP and DCNR requires that TRC be sampled 1/day (May - Sep) and 3/week (Oct – Apr). These monitoring requirements will remain in the proposed permit.

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.51	= Q stream (cfs)	0.5	= CV Daily
0.015	= 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 = 7.030	1.3.2.iii	WLA cfc = 6.846
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 2.620	5.1d	LTA_cfc = 3.980

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)**

Toxics
No toxic parameters of concern associated with this discharge.

Biosolids Management
Sludge is periodically dredged from the lagoon and the polishing pond, and then disposed of by a certified hauler.

Stormwater
There is no known stormwater outfall associated with this facility.

Anti-Degradation (93.4)

The effluent limits for this discharge have been developed to ensure that the existing in-stream water used and the level of water quality necessary to protect the existing uses are maintained and protected. No new or additional discharge is proposed. The discharge pre-dates the Chapter 93 designation of HQ-CWF, and is not expected to impact the stream.

Class A Wild Trout Fisheries

No Class A Wild Trout Fisheries are impacted by this discharge.

The discharge is located on the following Class A Wild Trout Stream:

- East Branch Standing Stone Creek
  - Sub-Basin: 11B, Trout Biomass: A, Section Number: 02, Fishery: Brown
  - Upper Limits Description: Dam at Greenwood Furnace State Park, Lower Limit Description: Mouth
  - Upper Limit River: 9.22 miles

303d Listed Streams:

The discharge is not located on a 303d listed stream segment.

WQM 7.0 input:

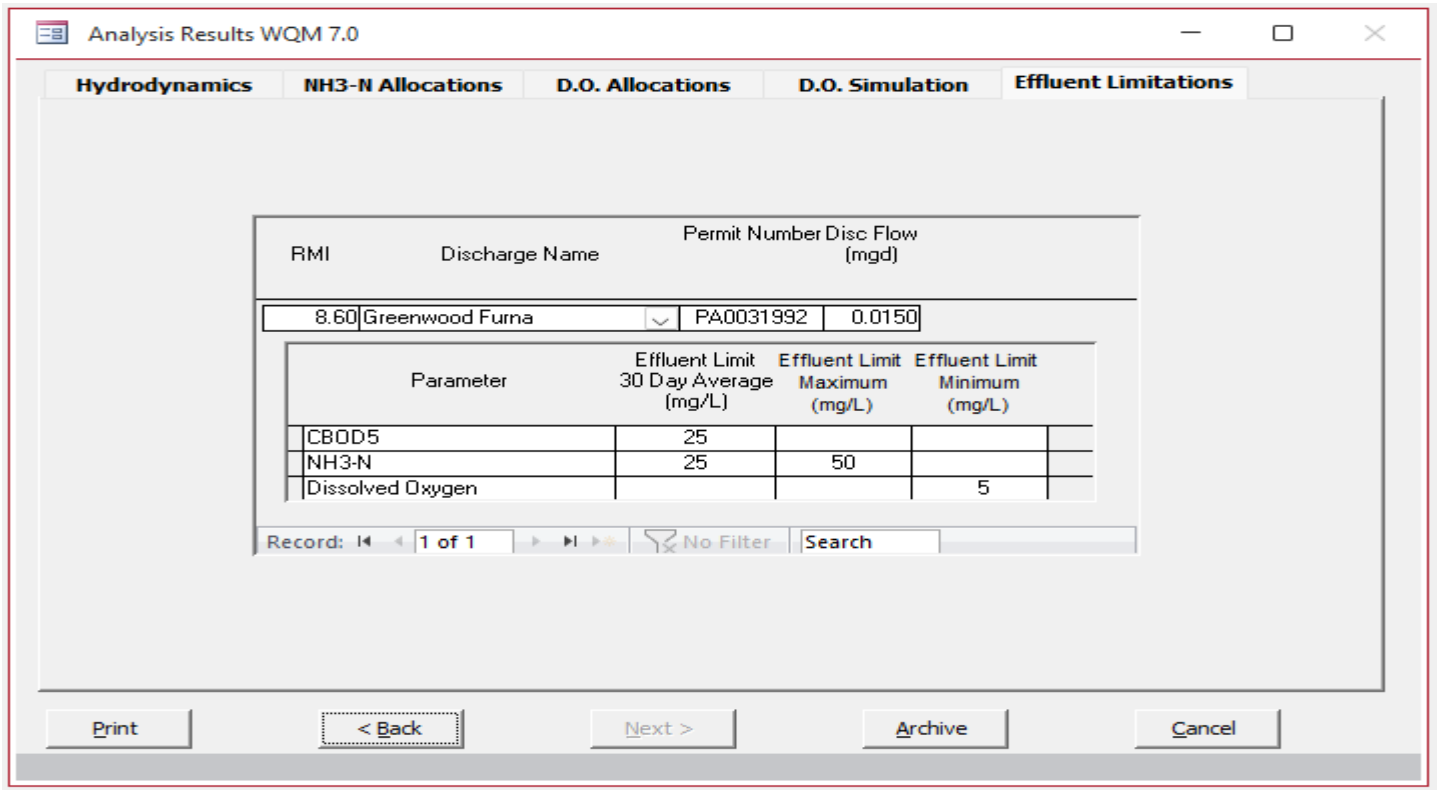
- Discharge pH = 7.0 (Default)
- Discharge Temperature = 20°C (Default)
- Stream pH = 7.0 (Default)
- Stream Temperature = 20°C (Default)
- Background NH_3-N = 0 (Default)

Node 1: Outfall 001 on East Branch Standing Stone Creek (15411)

Elevation:	900.00 ft (USGS National Map Viewer)
Drainage Area:	6.95 mi.^{2} (USGS PA StreamStats)
River Mile Index:	8.6 (PA DEP eMapPA)
Low Flow Yield:	0.07 cfs/mi.^{2}(0.51 cfs/6.95 mi.^{2})
Discharge Flow:	0.015 MGD (NPDES)

Node 2: Just before conjunction East Branch Standing Stone Creek & Trib. 15426

Elevation:	805.00 ft (USGS National Map Viewer)
Drainage Area:	9.02 mi.^{2} (USGS PA StreamStats)
River Mile Index:	6.4 (PA DEP eMapPA)
Low Flow Yield:	0.07 cfs/mi.^{2}
Discharge Flow:	0.000 MGD



rptEffLimits

WQM 7.0 Effluent Limits

SWP Basin: 11B | Stream Code: 15411 | Stream Name: EAST BRANCH STANDING STONE CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Eff. Limit 30-day Ave. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
8.600	Greenwood Furna	PA0031992	0.015	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			5

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rpt_WLA

WQM 7.0 Wasteload Allocations

SWP Basin: 11B | Stream Code: 15411 | Stream Name: EAST BRANCH STANDING STONE 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
8.600	Greenwood Furn	16.76	50	16.76	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
8.600	Greenwood Furn	1.69	25	1.69	25	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5 Baseline (mg/L)	CBOD5 Multiple (mg/L)	NH3-N Baseline (mg/L)	NH3-N Multiple (mg/L)	Dissolved Oxygen Baseline (mg/L)	Dissolved Oxygen Multiple (mg/L)	Critical Reach	Percent Reduction
8.60	Greenwood Furna	25	25	25	25	5	5	0	0

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rptDOSim

WQM 7.0 D.O.Simulation

SWP Basin: 11B | Stream Code: 15411 | Stream Name: EAST BRANCH STANDING STONE CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
8.600	0.015	20.000	7.000
Reach Width (ft)	Reach Depth (ft)	Reach WDRatio	Reach Velocity (fps)
11.296	0.451	24.824	0.098
Reach CBOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
3.05	0.267	1.14	0.700
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
8.095	19.196	Owens	5
Reach Travel Time (days)			
1.373			

Subreach Results

Trav Time (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.137	2.93	1.03	8.24
0.275	2.82	0.94	8.24
0.412	2.71	0.85	8.24
0.549	2.60	0.77	8.24
0.686	2.50	0.70	8.24
0.824	2.41	0.64	8.24
0.961	2.31	0.58	8.24
1.098	2.22	0.53	8.24
1.235	2.14	0.48	8.24
1.373	2.05	0.44	8.24

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rptModelSpecs

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		

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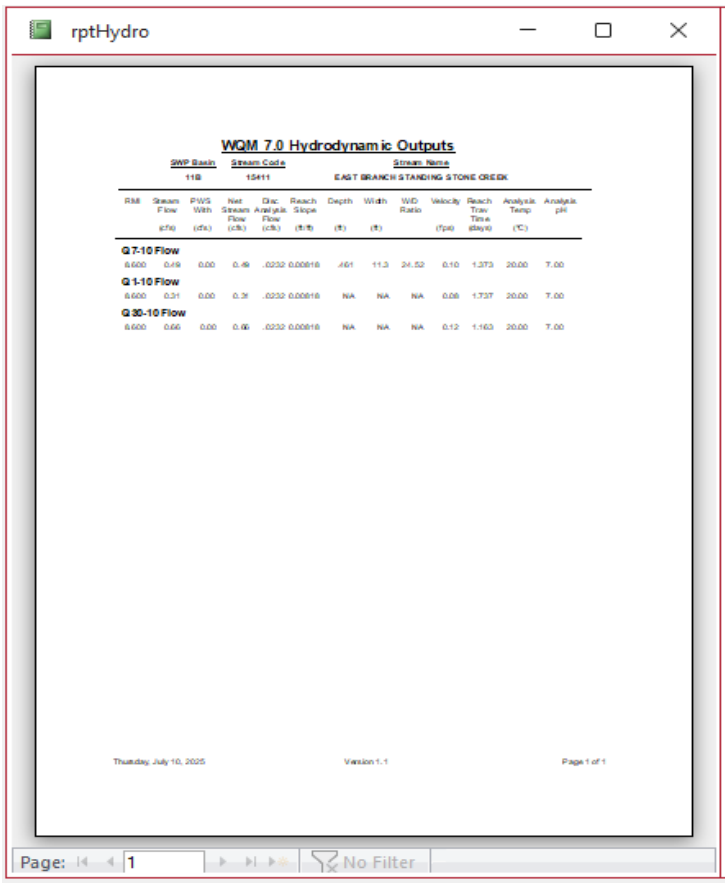
rptHydro
WQM 7.0 Hydrodynamic Outputs
SWP Basin
Stream Code
Stream Name
11B
15411
EAST BRANCH STANDING STONE CREEK
RMI
Stream Flow (cfs)
PWS With (cfs)
Net Stream Flow (cfs)
Disc Analysis Flow (cfs)
Reach Slope (ft/ft)
Depth (ft)
Width (ft)
WD Ratio
Velocity (fps)
Reach Trav Time (days)
Analysis Temp (°C)
Analysis pH
Q 7-10 Flow
6.600 0.49 0.00 0.49 .0232 0.00018 .461 11.3 24.52 0.10 1.373 20.00 7.00
Q 1-10 Flow
6.600 0.31 0.00 0.31 .0232 0.00018 NA NA NA 0.08 1.737 20.00 7.00
Q 30-10 Flow
6.600 0.66 0.00 0.66 .0232 0.00018 NA NA NA 0.12 1.163 20.00 7.00
Thursday, July 10, 2025
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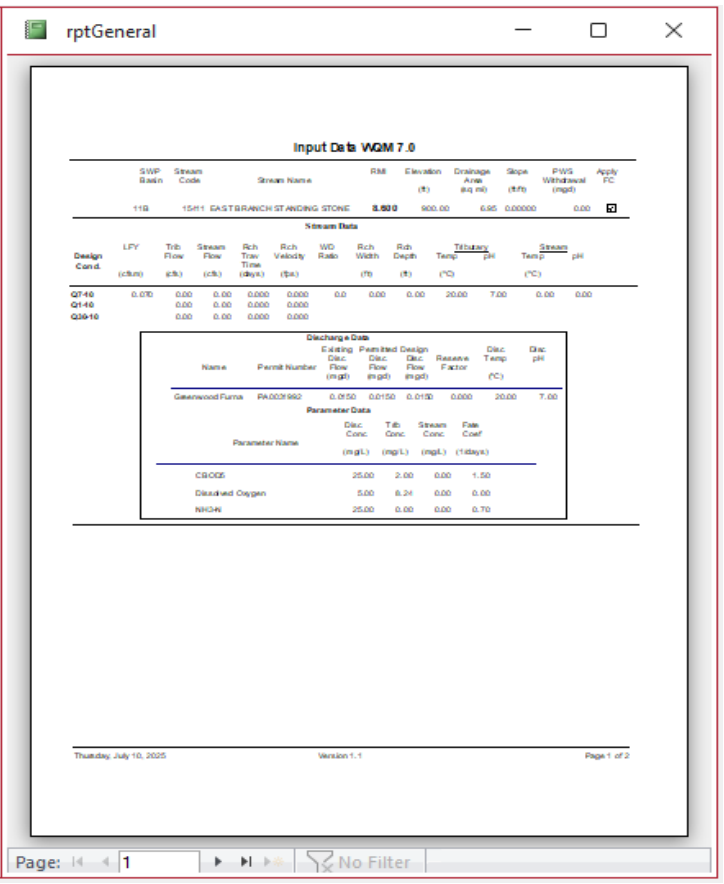
Page: 1
No Filter


rptGeneral
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
11B
15411 EAST BRANCH STANDING STONE
6.600
900.00
6.95
0.00000
0.00
Stream Data
Design Cond.
LFY (cfs/cfs)
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 0.070 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
Greenwood Furna PA0031992 0.0150 0.0150 0.0150 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 5.00 8.24 0.00 0.00
NH3-N 25.00 0.00 0.00 0.70
Thursday, July 10, 2025
Version 1.1
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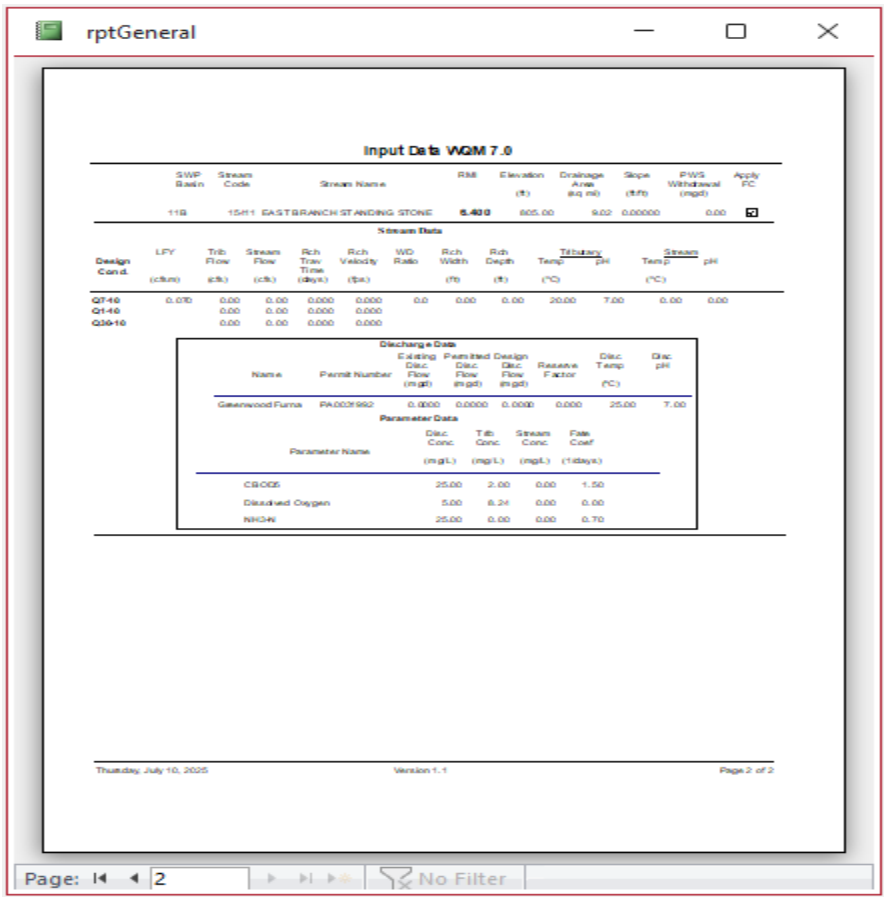
Page: 1
No Filter


rptGeneral
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
11B
15411 EAST BRANCH STANDING STONE
6.400
805.00
9.02
0.00000
0.00
Stream Data
Design Cond.
LFY (cfs/cfs)
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 0.070 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
Greenwood Furna PA0031992 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 5.00 8.24 0.00 0.00
NH3-N 25.00 0.00 0.00 0.70
Thursday, July 10, 2025
Version 1.1
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Page: 2
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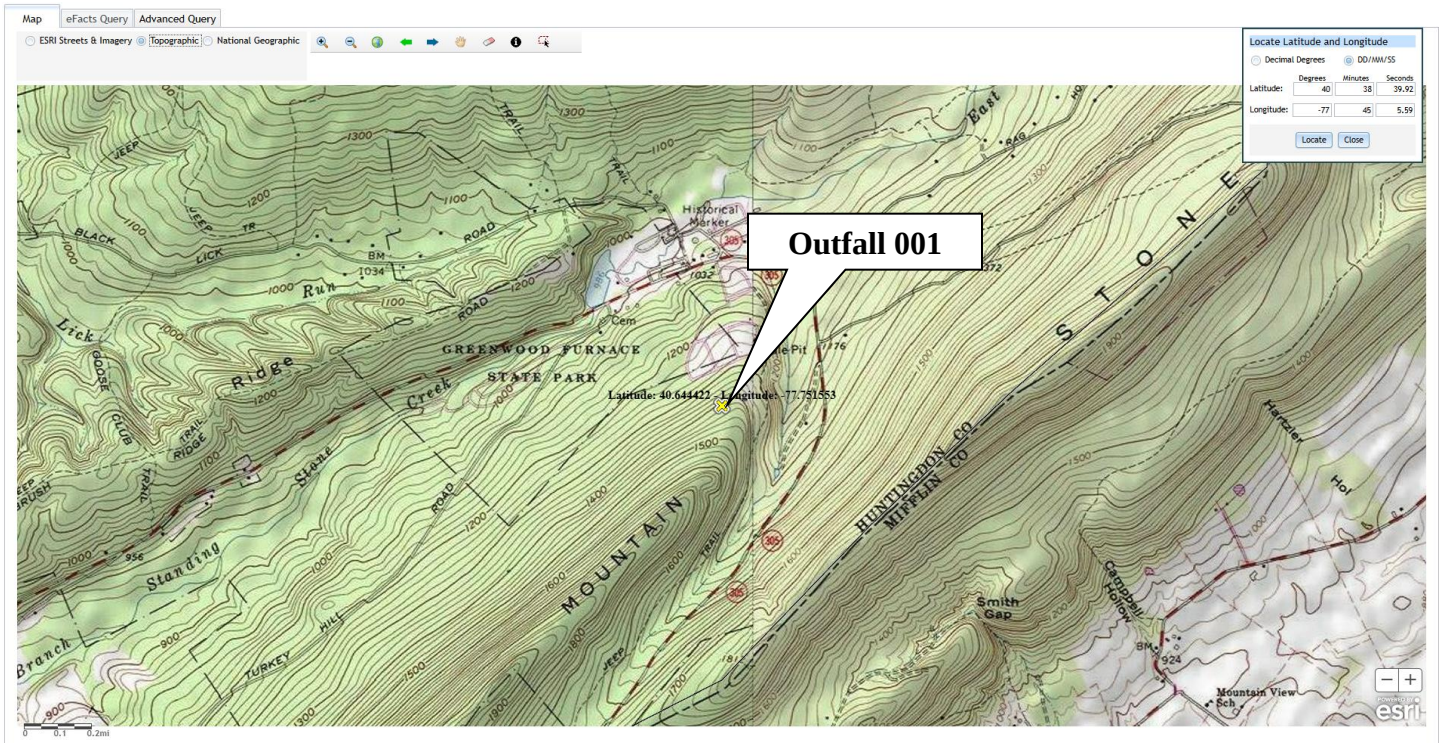
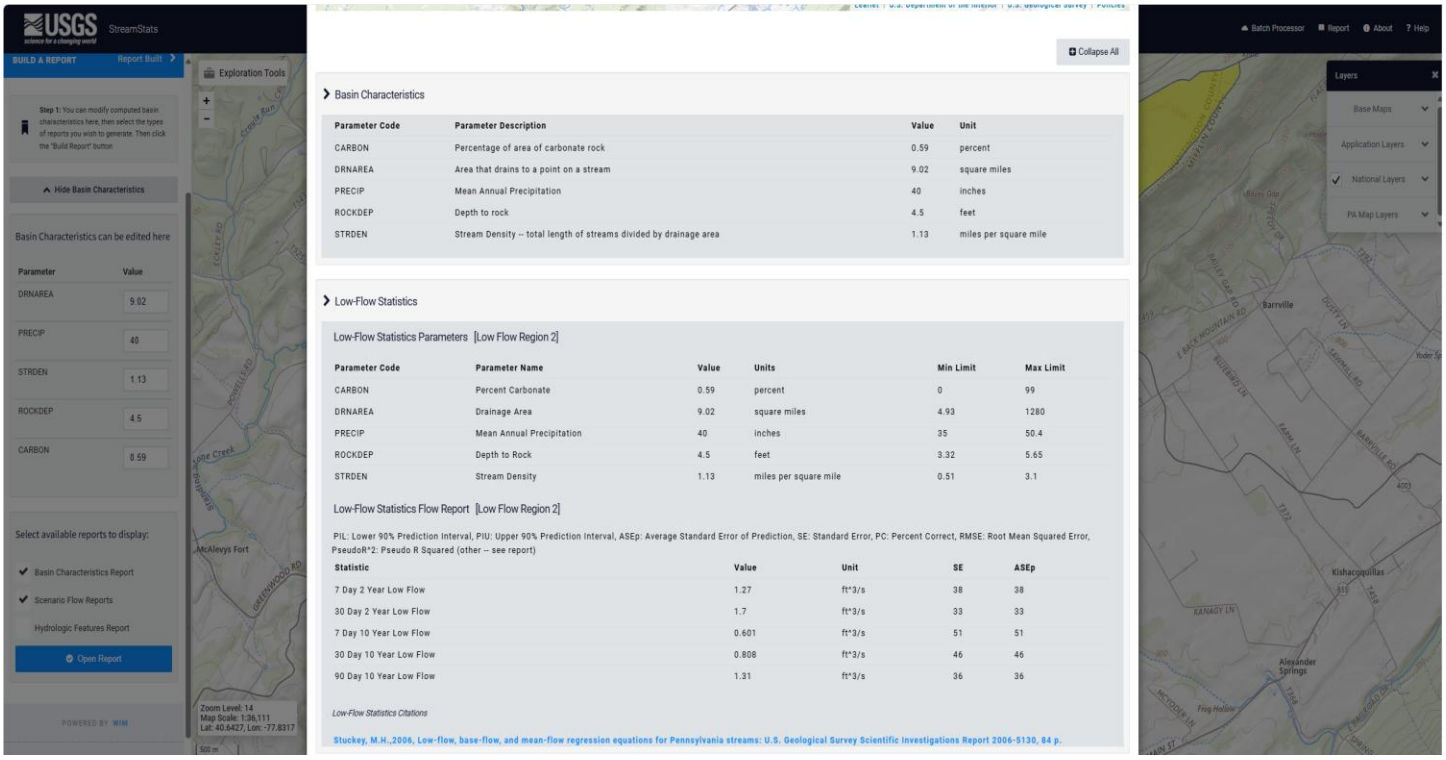
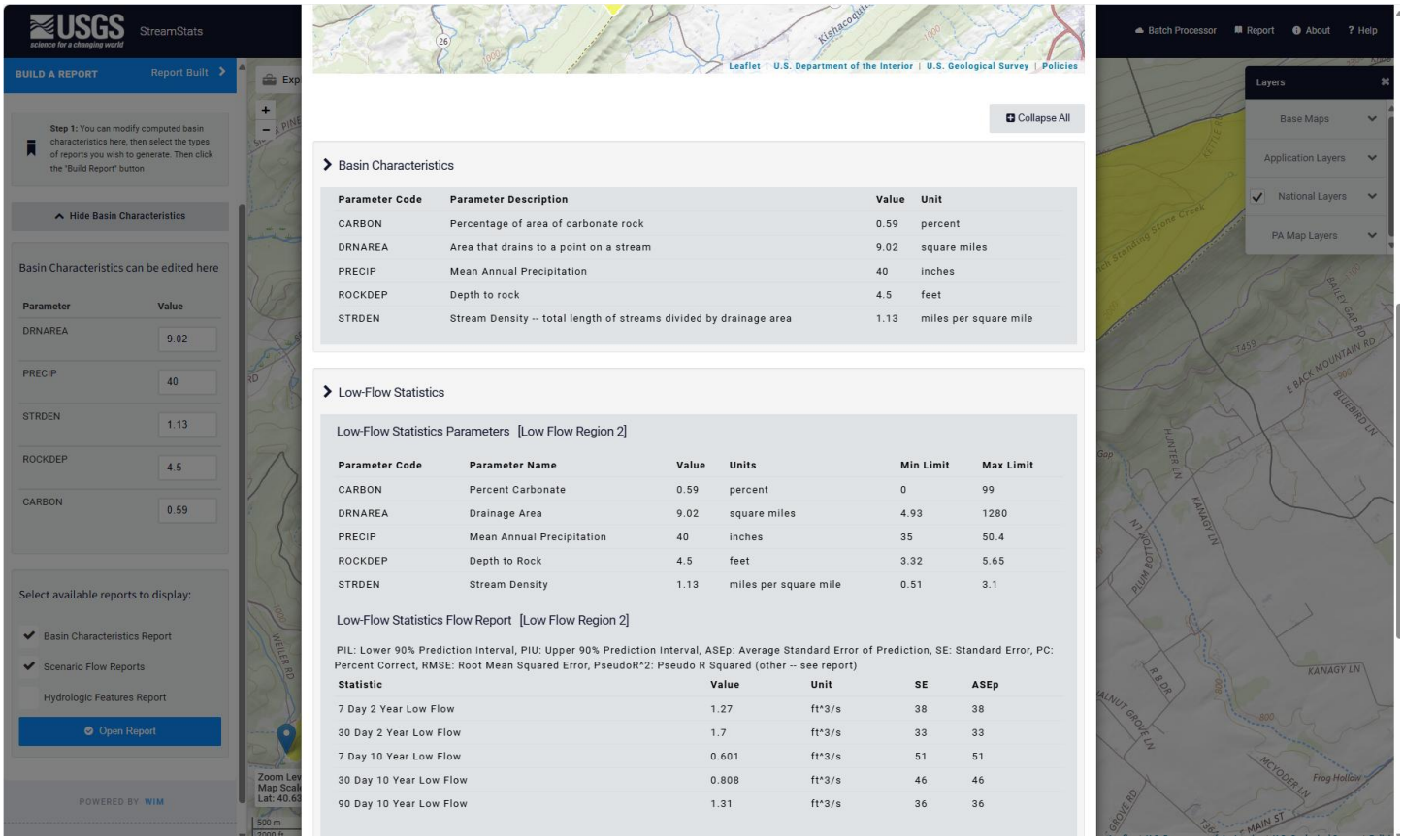

Map
eFacts Query
Advanced Query
ESRI Streets & Imagery
Topographic
National Geographic
Locate Latitude and Longitude
Decimal Degrees
DD/MM/SS
Degrees
Minutes
Seconds
Latitude: 40 38 39.92
Longitude: -77 45 5.59
Locate
Close
Outfall 001
Latitude: 40.644422 Longitude: -77.751553
GREENWOOD FURNACE STATE PARK
MOUNTAIN
HUNTINGDON CO
MIFFLIN CO
Historical Marker
Smith Gap
Mountain View Sch
esri


USGS StreamStats
BUILD A REPORT
Exploration Tools
Collapse All
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
CARBON | Percentage of area of carbonate rock | 0.59 | percent
DRNAREA | Area that drains to a point on a stream | 9.02 | square miles
PRECIP | Mean Annual Precipitation | 40 | inches
ROCKDEP | Depth to rock | 4.5 | feet
STRDEN | Stream Density -- total length of streams divided by drainage area | 1.13 | miles per square mile
Low-Flow Statistics
Low-Flow Statistics Parameters [Low Flow Region 2]
Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit
CARBON | Percent Carbonate | 0.59 | percent | 0 | 99
DRNAREA | Drainage Area | 9.02 | square miles | 4.93 | 1280
PRECIP | Mean Annual Precipitation | 40 | inches | 35 | 50.4
ROCKDEP | Depth to Rock | 4.5 | feet | 3.32 | 5.65
STRDEN | Stream Density | 1.13 | miles per square mile | 0.51 | 3.1
Low-Flow Statistics Flow Report [Low Flow Region 2]
PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)
Statistic | Value | Unit | SE | ASEp
7 Day 2 Year Low Flow | 1.27 | ft^3/s | 38 | 38
30 Day 2 Year Low Flow | 1.7 | ft^3/s | 33 | 33
7 Day 10 Year Low Flow | 0.601 | ft^3/s | 51 | 51
30 Day 10 Year Low Flow | 0.808 | ft^3/s | 46 | 46
90 Day 10 Year Low Flow | 1.31 | ft^3/s | 36 | 36
Low-Flow Statistics Citations
Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.


USGS
StreamStats
BUILD A REPORT
Report Built
Step 1: You can modify computed basin characteristics here, then select the types of reports you wish to generate. Then click the "Build Report" button
Hide Basin Characteristics
Basin Characteristics can be edited here
Parameter
Value
DRNAREA
9.02
PRECIP
40
STRDEN
1.13
ROCKDEP
4.5
CARBON
0.59
Select available reports to display:
Basin Characteristics Report
Scenario Flow Reports
Hydrologic Features Report
Open Report
POWERED BY WIM
Leaflet | U.S. Department of the Interior | U.S. Geological Survey | Policies
Collapse All
Basin Characteristics
Parameter Code
Parameter Description
Value
Unit
CARBON
Percentage of area of carbonate rock
0.59
percent
DRNAREA
Area that drains to a point on a stream
9.02
square miles
PRECIP
Mean Annual Precipitation
40
inches
ROCKDEP
Depth to rock
4.5
feet
STRDEN
Stream Density -- total length of streams divided by drainage area
1.13
miles per square mile
Low-Flow Statistics
Low-Flow Statistics Parameters [Low Flow Region 2]
Parameter Code
Parameter Name
Value
Units
Min Limit
Max Limit
CARBON
Percent Carbonate
0.59
percent
0
99
DRNAREA
Drainage Area
9.02
square miles
4.93
1280
PRECIP
Mean Annual Precipitation
40
inches
35
50.4
ROCKDEP
Depth to Rock
4.5
feet
3.32
5.65
STRDEN
Stream Density
1.13
miles per square mile
0.51
3.1
Low-Flow Statistics Flow Report [Low Flow Region 2]
PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)
Statistic
Value
Unit
SE
ASEp
7 Day 2 Year Low Flow
1.27
ft^3/s
38
38
30 Day 2 Year Low Flow
1.7
ft^3/s
33
33
7 Day 10 Year Low Flow
0.601
ft^3/s
51
51
30 Day 10 Year Low Flow
0.808
ft^3/s
46
46
90 Day 10 Year Low Flow
1.31
ft^3/s
36
36
Batch Processor
Report
About
Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers
KANAGY LN
MAIN ST

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☒	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☒	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☒	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☒	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☒	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: BCW-PMT-033
☐	Other: