pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0087548**
Facility Type	**Non-Municipal**	APS ID	**991062**
Major / Minor	**Minor**	Authorization ID	**1463390**

Applicant and Facility Information

Applicant Name	**Artillery Ridge Campground LLC**	Facility Name	**Artillery Ridge Camping Resort**
Applicant Address	PO Box 544	Facility Address	610 Taneytown Road
	Glenmoore, PA 19343-0544		Gettysburg, PA 17325-8777
Applicant Contact	Gary Ott	Facility Contact	Gary Ott
Applicant Phone	(610) 506-1121	Facility Phone	(610) 506-1121
Client ID	349174	Site ID	255548
Ch 94 Load Status	Not Overloaded	Municipality	Cumberland Township
Connection Status		County	Adams
Date Application Received	November 30, 2023	EPA Waived?	Yes
Date Application Accepted	December 1, 2023	If No, Reason	

Purpose of Application: NPDES permit renewal.

Summary of Review

Quality Water Resources, Inc., on behalf of the Artillery Ridge Campground LLC (Authority/Permittee), applied to the Pennsylvania Department of Environmental Protection (DEP) for issuance of the NPDES permit. The permit was reissued on May 31, 2019 and became effective on June 1, 2019. The permit expired on May 31, 2024. The field condition prohibits technical review until 6/26/2024.

The NPDES PA0087548 major amendment was issued on 4/20/2023 to increase the average annual design flow and hydraulic design capacity of 0.02 MGD, and the organic loading capacity of 40.0 lbs BOD_5/day. The amendment construction project was done on 6/5/2024.

The WQM Part II No. 0198404 was issued on 8/18/1998. WQM No. 0198404 T-1 ownership transfer was issued on 5/31/2019. WQM No. 0198404 A-1 amendment was issued on 4/20/2023, which rerated the annual average design flow and hydraulic design capacity from 0.0058 MGD to 0.02 MGD, and organic capacity from 9.7 lbs/day to 40.0 lbs/day.

Sludge use and disposal description and location(s): N/A because sludge hauled by Smith's Septic Service.

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

Based on the review outlined in this fact sheet, it is recommended that the permit be drafted. A public notice of the draft permit will be published in the *Pennsylvania Bulletin* for public comments for 30 days.

Approve	Deny	Signatures	Date
X		*Hilaryle* Hilary H. Le / Environmental Engineering Specialist	June 28, 2024
X		*Maria D. Bebenek for* Daniel W. Martin, P.E. / Environmental Engineer Manager	July 16, 2024

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.02
Latitude	39º 48' 1.0"	Longitude	-77º 13' 36.0"
Quad Name	Gettysburg	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Rock Creek (WWF)	Stream Code	59136
NHD Com ID	53320556	RMI	1.14 miles
Drainage Area	0.046 mi.^{2}	Yield (cfs/mi^2)	See comments below
Q_{7-10} Flow (cfs)	See comments below	Q_{7-10} Basis	See comments below
Elevation (ft)	530	Slope (ft/ft)	
Watershed No.	13-D	Chapter 93 Class.	WWF
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	City of Frederick, MD		
PWS Waters	Monocacy River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	Approximate 40.0 miles

Changes Since Last Permit Issuance:

Drainage Area
The discharge is to Unnamed Tributary 59136 to Rock Creek at RMI 1.14 mile. A drainage area upstream of the discharge is estimated to be 0.046 mi^2, according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Streamflow
There are no nearby stream gages with low flow data that have extensive or recent periods of record. Since USGS PA StreamStats estimated the drainage area that is below the minimum value allowed by USGS's regression equations, the USGS gage station No. 59041 on Rock Creek watershed (at the PA/MD border) will be used to calculate the Q_{7-10} at the point of discharge using a low flow yield method. The Q_{7-10} here is 2.71 cfs and the drainage area is 63.5 mi^2 which results in a Q_{7-10} low flow yield of 0.002 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):

$$\text{Low Flow Yield} = Q_{7-10gage} / \text{Drainage Area}_{gage} = 2.71 \text{ cfs} / 63.5 \text{ mi}^2 = 0.04 \text{ cfs/mi}^2$$
$$Q_{7-10discharge} = 0.04 \text{ cfs/mi}^2 * \text{Drainage Area}_{discharge} = 0.04 \text{ cfs/mi}^2 * 0.046 \text{ mi}^2 = 0.0018 \text{ cfs}$$
$$Q_{30-10} = 1.36 * Q_{7-10discharge} = 1.36 * 0.0018 \text{ cfs} = 0.002 \text{ cfs}$$
$$Q_{1-10} = 0.64 * Q_{7-10discharge} = 0.64 * 0.0018 \text{ cfs} = 0.001 \text{ cfs}$$

Potable Water Supply Intake
The nearest downstream public water supply intake is the City of Frederick, MD intake on the Monocacy River, approximately 40 miles from the point of discharge. Given the nature and dilution, the discharge is not expected to significantly impact the water supply.

Treatment Facility Summary				

Treatment Facility Name: Artillery Ridge Camping Resort

WQM Permit No.	Issuance Date
0198404	8/28/1998
0198404 T-1	5/31/2019
0198404 A-1	4/20/2023

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Ammonia Reduction	Extended Aeration	Chlorine With Dechlorination	0.02

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.02		Not Overloaded	Anaerobic Digestion	Other WWTP

Changes Since Last Permit Issuance: The WQM Part II amendment was completed construction on 6/5/2024, *see attached this Factsheet pages 19 & 20*.

The proposed WWTP train after construction will be as follows:

> A Bar Screen ⇒ EQ "Surge" Tank (1) ⇒ Extended Aeration Tank (1) ⇒ Settling "Clarifier" Tank (1) ⇒ Chlorine Contact Tank (1) ⇒ De-chlorination/Stilling Well Tank (1) ⇒ Aerated Sludge Storage Tank (1) ⇒ Discharge to an UNT to Rock Creek

Calcium hypochlorite is used for disinfection. Soda ash and alum are used to control pH.

The sludge disposed to be hauled.

Compliance History	
Summary of DMRs:	A summary of the past 12-month DMR data is presented on the next page.
Summary of Inspections:	07/24/2023: Mr. Hoy, DEP Water Quality Specialist, conducted compliance evaluation inspection. There were violations noted during inspection. The field sample test result, Total Residual Chlorine of 2.2 mg/L, was above the permitted IMAX limit of 0.09 mg/L. The plant uprated construction will complete on the end of March 2024. *Recommendations*: 1. Update the permit expiration date on the daily effluent supplemental report and sewage sludge supplemental reports. 2. Document settleability in the daily log. *Requests*: 1. Placing the current wastewater certificate on-site. 2. Retain sludge use and disposal activity records for at least 5 years as required by NPDES Permit No. PA0087548 Part A.III. (2). 3. Notification when construction has begun and when it is completed. 04/14/2021: Mr. Bettinger, DEP Water Quality Specialist, conducted compliance evaluation inspection. There were violations noted during inspection: failure to properly operate and maintain all facilities which are installed or used by permittee to achieve compliance. The permittee submitted the major amendment to increase annual design flow/hydraulic design flow from 0.0058 MGD to 0.02 MGD.
Other Comments:	There is one (1) open violation associated with the permittee or the facility. - 7/24/2023: Violation Code 92A.44: NPDES – Violation of effluent limits in Part A of permit.

Other Comments:

Compliance History

DMR Data for Outfall 001 (from May 1, 2023 to April 30, 2024)

Parameter	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23
Flow (MGD) Average Monthly	0.006905	0.004448	0.003965	0.0027	0.002732	0.005933	0.016993	0.01843	0.02075	0.021391	0.018902	0.015839
Flow (MGD) Daily Maximum	0.008714	0.008025	0.02733	0.0031	0.0035	0.008051	0.020514	0.022878	0.022714	0.023485	0.022557	0.019535
pH (S.U.) Daily Minimum	6.2	6.3	7.3	7.0	7.0	6.6	6.3	6.9	6.5	7.0	6.8	6.8
pH (S.U.) Instantaneous Maximum	7.4	7.6	7.9	7.7	7.8	7.7	7.3	7.2	7.4	7.6	7.4	7.3
DO (mg/L) Daily Minimum	6.1	8.5	10.1	10.1	10.1	7.1	7.0	10.1	10.2	10.2	10.0	8.1
TRC (mg/L) Average Monthly	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
TRC (mg/L) Instantaneous Maximum	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
CBOD5 (mg/L) Average Monthly	6.6	< 4	5.7	3.1	< 3.8	4.6	< 2.3	< 2	3	< 2.3	3.4	2.9
CBOD5 (mg/L) Instantaneous Maximum	8.6	< 4	7.6	3.3	5.5	4.8	2.6	< 2	3.5	2.5	4.4	2.9
TSS (mg/L) Average Monthly	7	12	21	7	14	20	< 12	13	19	< 5	13	20
TSS (mg/L) Instantaneous Maximum	7	16	29	8	17	21	18	13	19	< 5	15	32
Fecal Coliform (No./100 ml) Geometric Mean	9	< 2	7	< 1	< 1	1	< 1	< 1	< 1	< 1	2	< 1
Fecal Coliform (No./100 ml) Instantaneous Maximum	11	5	12	< 1	< 1	1	< 1	< 1	< 1	< 1	3	< 1
Nitrate-Nitrite (mg/L) Annual Average								16.9				
Total Nitrogen (mg/L) Annual Average								< 17.90				
Total Nitrogen (lbs) Total Annual								< 821				

Ammonia (mg/L) Average Monthly	0.18	0.52	0.42	< 0.11	0.74	1.1	0.69	< 0.27	< 0.358	< 0.408	0.637	0.0124
Ammonia (mg/L) Instantaneous Maximum	0.18	0.81	0.59	0.12	1.12	1.32	1.14	0.44	0.615	0.716	0.706	0.148
Ammonia (lbs) Total Annual								< 27				
TKN (mg/L) Annual Average								< 1.0				
Total Phosphorus (mg/L) Annual Average								4.8				
Total Phosphorus (lbs) Total Annual								220				

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.02
Latitude 39º 48' 1.00" **Longitude** -77º 13' 36.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

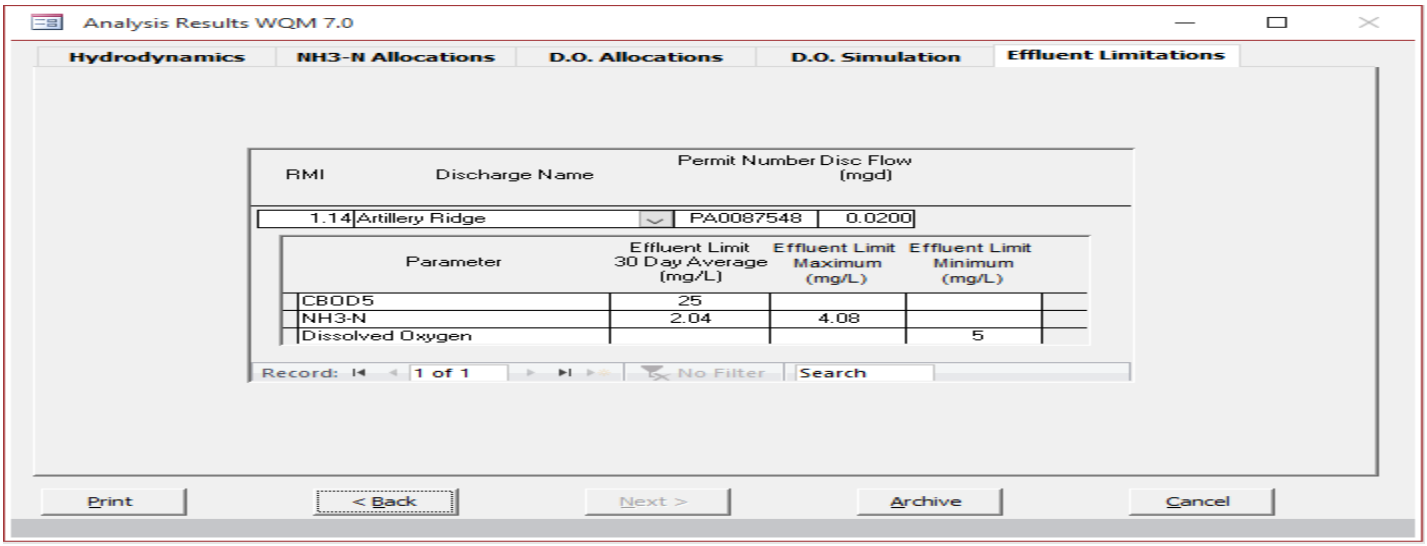
Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
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_3N calculations are 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 WQM 7.0 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 mg/L	(Default)



Regarding NH_3-N limits, the attached computer printout of the WQM 7.0 stream model (version 1.1) indicates that a limit of 2.04 (2.0) mg/L as a monthly average and 4.08 (4.0) mg/L instantaneous maximum (IMAX) are necessary to protect the aquatic life from toxicity effects at the point of discharge. Therefore, these limits are same as the update limits of 2.0 mg/L monthly average & 4.0 mg/L IMAX will remain in the proposed permit. The winter average monthly limit of 6.0 mg/L & IMAX limit of 12.0 mg/L will remain in place. Recent DMRs and inspection reports show that the facility has been consistently achieving these limits.

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$):
The attached computer printout of the WQM 7.0 stream model (ver. 1.1) indicates that a monthly average limit of 25.0 mg/L, or secondary treatment, is adequate to protect the water quality of the stream. Therefore, the existing permit 25.0 mg/L as AML, & 50.0 mg/L as IMAX for all year round will remain in the proposed permit. Recent DMRs and inspection reports show that the facility has typically been achieving concentrations below this limit.

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 renewal permit based on the minimum level of effluent quality attainable be secondary treatment based on 25 Pa. Code § 92a.47. Past DMRs and inspection reports show that the facility has been consistently achieving concentrations under these limits.

pH:
The effluent discharge pH should remain above 6 and below 9 standard units according to 25 Pa. Code § 95.2(2).

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 (average monthly) and not greater than 1,000/100 ml (IMAX) and 25 Pa. Code § 92a.47(a)(5) requires a winter limit of 2,000/100 ml as a geometric mean (average monthly) and not greater than 10,000/100 ml (IMAX), respectively.

Dissolved Oxygen (D.O.):
The minimum D.O. of 5.0 mg/L is required per 25 Pa. Code § 93.7. It is recommended that this limit be maintained in the proposed permit to ensure the protection of water quality standards. This approach is consistent with DEP's current Standard Operating Procedure (SOP) No. BCW-PMT-033, version 2.0 revised February 5, 2024, and has been applied to other point source dischargers throughout the state.

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 Phosphorus (TP):
eMAP PA lists the section of Rock Creek closest to this facility's discharge point as being impaired for nutrients (without a TMDL). As per the previous protection report, an aquatic biologist from the Department concluded from his studies that phosphorus is not currently a problem in this area.

Toxic:
This is a minor sewage facility receiving domestic wastewater only and the current application does not require sampling of toxic pollutants (or heavy metals) for those facilities with design flows less than 0.1 MGD. Therefore, no reasonable potential analysis for toxic pollutants has been performed for this permit renewal.

Total Residual Chlorine (TRC):
Based on the attached TRC Excel Spreadsheet calculator, which uses the equations and calculations from the Department's May 1, 2003 Implementation Guidance for Total Residual Chlorine (ID No. 391-2000-015), the facility's discharge must meet a monthly average limit of 0.017 (0.02) mg/L and an instantaneous maximum limit of 0.056 (0.05) mg/L. Based on the DMRs from the past year, the facility has been consistently achieving this limit. Therefore, this limit will remain in the proposed permit.

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.0018	= Q stream (cfs)	0.5	= CV Daily
0.02	= 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 = 0.038	1.3.2.iii	WLA cfc = 0.029
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.014	5.1d	LTA_cfc = 0.017

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.017	AFC
		INST MAX LIMIT (mg/l) = 0.056	

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)**

Chesapeake Bay TMDL:
This facility is considered a Phase 5 significant sewage discharger. The existing permit were monitor and report for Ammonia-Nitrogen, Total Phosphorus, Nitrate-Nitrite as N, Total Kjeldahl Nitrogen, and Total Nitrogen. The yearly "Monitor & Report" requirements for Ammonia-Nitrogen, TP, Nitrate-Nitrite as N, Total Kjeldahl Nitrogen, and TN will remain in the proposed permit.

The facility design annual flow 0.02 MGD is classified as a phased 5 (below 0.2 MGD), and the cap load 486.0 lbs/year TN & 46.0 lbs/year TP will remain in the proposed permit.

Additional Consideration

Flow Monitoring
The requirement to monitor the volume of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii).

Antidegradation (93.4)
The effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High-Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

303d Listed Streams
This discharge is not located on a 303d listed stream segment.

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

WQM 7.0 data:

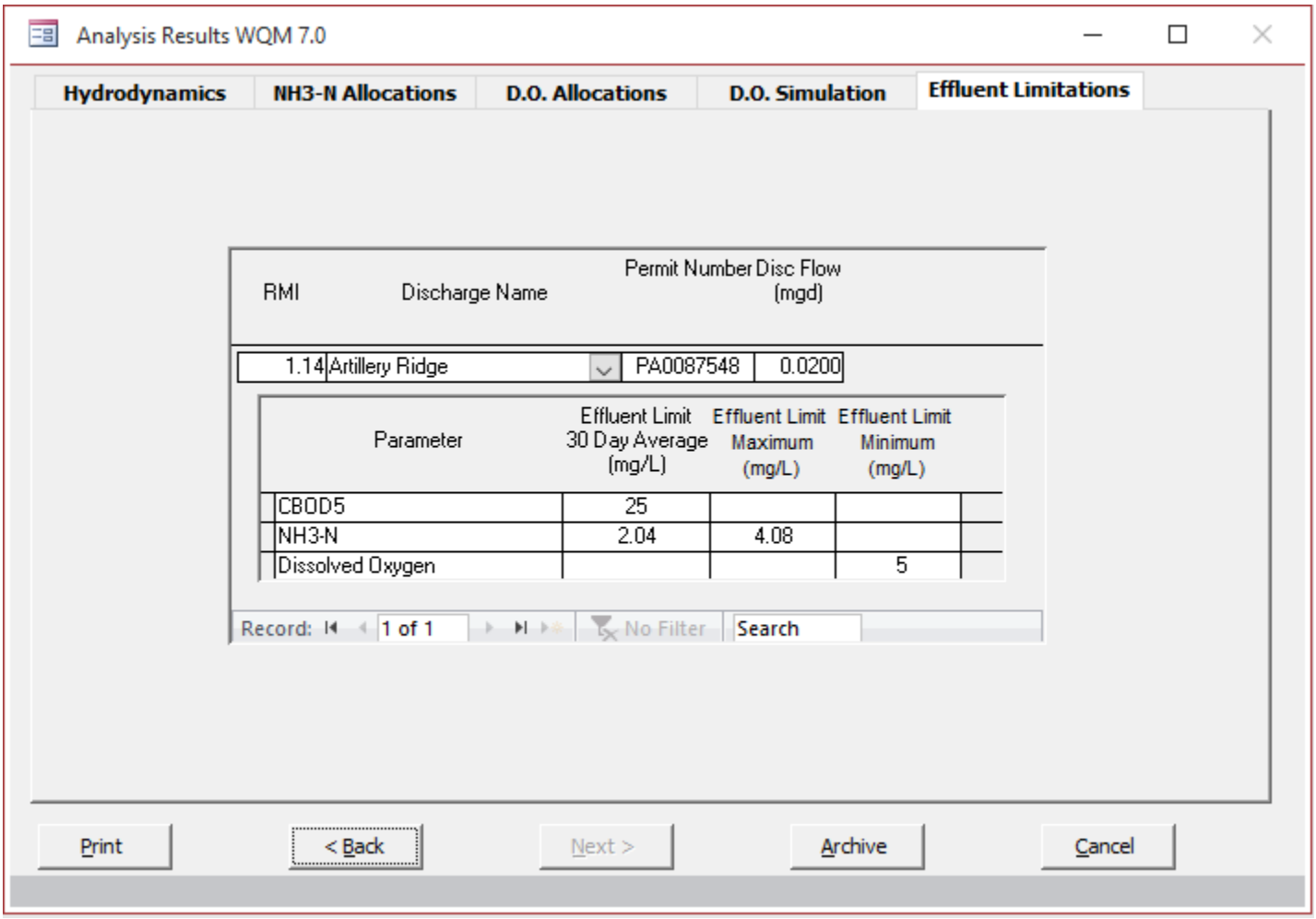
Discharge pH	=	7.0	(Default)
Discharge Temperature	=	20°C	(Default)
Stream pH	=	7.0	(Default)
Stream Temperature	=	20°C	(Default)
Background NH_3-N	=	0 mg/L	(Default)

Node 1: Outfall 001 on UNT to Rock Creek (59136)

Elevation:	530 ft (previous factsheet data)
Drainage Area:	0.046 $mi.^2$ (previous factsheet data)
River Mile Index:	1.140 (previous factsheet data)
Low Flow Yield:	0.04 $cfs/mi.^2$
Discharge Flow:	0.02 MGD (NPDES Application)

Node 2: Just before confluence with Rock Creek (59136)

Elevation:	406 ft (previous factsheet data)
Drainage Area:	0.74 $mi.^2$ (previous factsheet data)
River Mile Index:	0.001 (previous factsheet data)
Low Flow Yield:	0.04 $cfs/mi.^2$
Discharge Flow:	0.000 MGD



rptEffLimits

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
13D	59136	Trib 59136 to Rock 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)
1.140	Artillery Ridge	PA0087548	0.020	CBOD5	25		
				NH3-N	2.04	4.08	
				Dissolved Oxygen			5

Wednesday, June 26, 2024 Version 1.1 Page 1 of 1

Page: 1 No Filter

rpt_WLA

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
13D	59136	Trib 59136 to Rock 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
1.140	Artillery Ridge	16.76	17.4	16.76	17.4	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
1.140	Artillery Ridge	1.89	2.04	1.89	2.04	0	0

Dissolved Oxygen Allocations

		CBOD5		NH3-N		Dissolved Oxygen			
RMI	Discharge Name	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Critical Reach	Percent Reduction
1.14	Artillery Ridge	25	25	2.04	2.04	5	5	0	0

Wednesday, June 26, 2024 Version 1.1 Page 1 of 1

Page: 1 No Filter

rptDOSim

WQM 7.0 D.O. Simulation

SWP Basin	Stream Code	Stream Name
13D	59136	Trib 59136 to Rock Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.140	0.020	20.000	7.000
Reach Width (ft)	Reach Depth (ft)	Reach W/D Ratio	Reach Velocity (fps)
1.428	0.334	4.270	0.069
Reach CBOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
23.71	1.483	1.93	0.700
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
5.182	27.336	Owens	5
Reach Travel Time (days)			
1.014			

Subreach Results

Trav Time (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.101	20.40	1.79	7.68
0.203	17.55	1.67	7.44
0.304	15.10	1.56	7.67
0.406	12.99	1.45	7.87
0.507	11.17	1.35	8.04
0.609	9.61	1.26	8.18
0.710	8.27	1.17	8.24
0.812	7.11	1.09	8.24
0.913	6.12	1.02	8.24
1.014	5.26	0.95	8.24

Wednesday, June 26, 2024 Version 1.1 Page 1 of 1

Page: 1 No Filter

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		

Wednesday, June 26, 2024 Version 1.1 Page 1 of 1

Page: 1 No Filter

rptHydro

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
13D	59136	Trib 59136 to Rock 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												
1.140	0.00	0.00	0.00	.0309	0.02052	.334	1.43	4.27	0.07	1.014	20.00	7.00
Q1-10 Flow												
1.140	0.00	0.00	0.00	.0309	0.02052	NA	NA	NA	0.07	1.026	20.00	7.00
Q30-10 Flow												
1.140	0.00	0.00	0.00	.0309	0.02052	NA	NA	NA	0.07	1.003	20.00	7.00

Wednesday, June 26, 2024 Version 1.1 Page 1 of 1

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
13D	59136	Trib 59136 to Rock Creek	1.140	530.00	0.05	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	0.040	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
Artillery Ridge	PA0087548	0.0200	0.0200	0.0200	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

Wednesday, June 26, 2024 Version 1.1 Page 1 of 2

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
13D	59136	Trib 59136 to Rock Creek	0.001	406.00	0.74	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	0.040	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

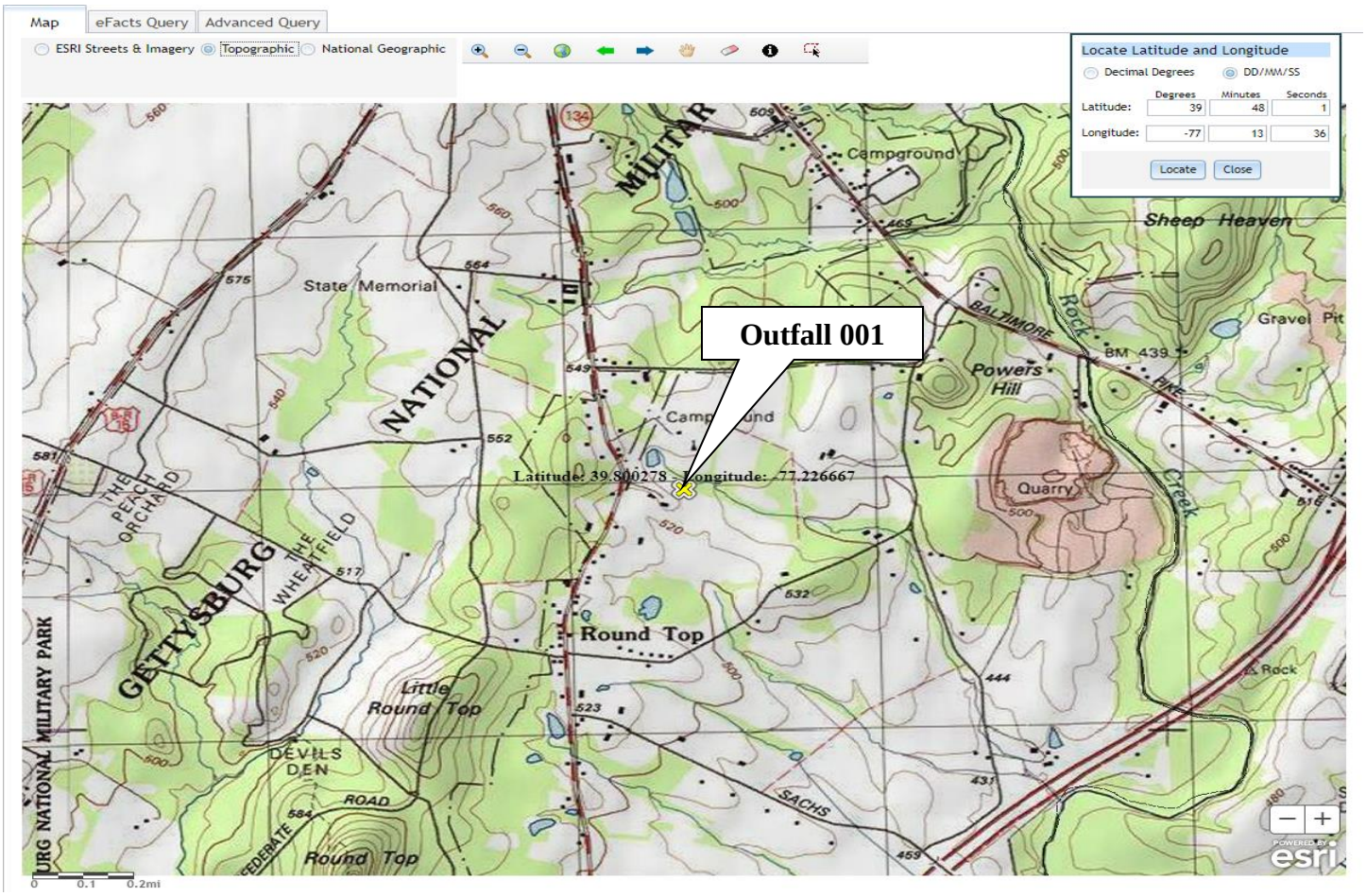
Name	Permit Number	Existing Disc. Flow (mgd)	Permitted Disc. Flow (mgd)	Design Disc. Flow (mgd)	Reserve Factor	Disc. Temp (°C)	Disc. pH
Artillery Ridge	PA0087548	0.0000	0.0000	0.0000	0.000	20.00	7.00

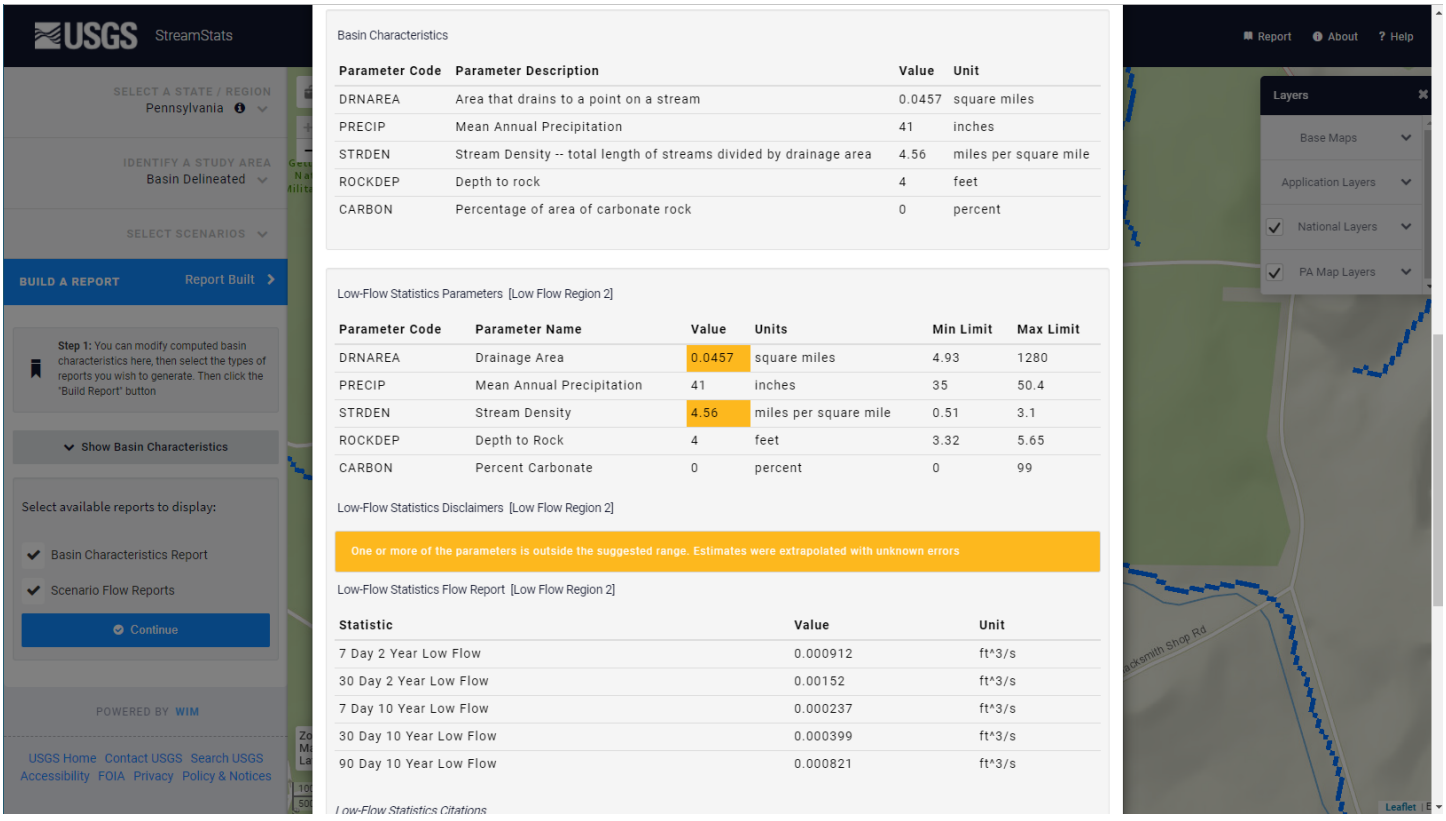
Parameter Data

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	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Wednesday, June 26, 2024 Version 1.1 Page 2 of 2

Page: 2 No Filter





Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.0457	square miles
PRECIP	Mean Annual Precipitation	41	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	4.56	miles per square mile
ROCKDEP	Depth to rock	4	feet
CARBON	Percentage of area of carbonate rock	0	percent

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.0457	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
STRDEN	Stream Density	4.56	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4	feet	3.32	5.65
CARBON	Percent Carbonate	0	percent	0	99

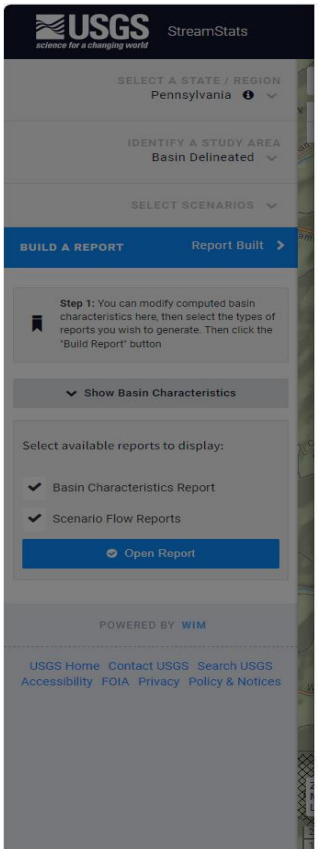
Low-Flow Statistics Disclaimers [Low Flow Region 2]

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 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.000912	ft^3/s
30 Day 2 Year Low Flow	0.00152	ft^3/s
7 Day 10 Year Low Flow	0.000237	ft^3/s
30 Day 10 Year Low Flow	0.000399	ft^3/s
90 Day 10 Year Low Flow	0.000821	ft^3/s

Low-Flow Statistics Citations



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	63.5	square miles
PRECIP	Mean Annual Precipitation	41	inches
ROCKDEP	Depth to rock	4.4	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.44	miles per square mile

Low-Flow Statistics

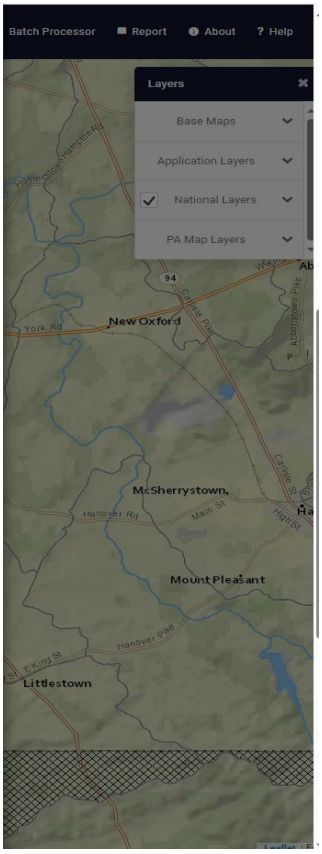
Low-Flow Statistics Parameters [100.0 Percent (63.5 square miles) Low Flow Region 2]

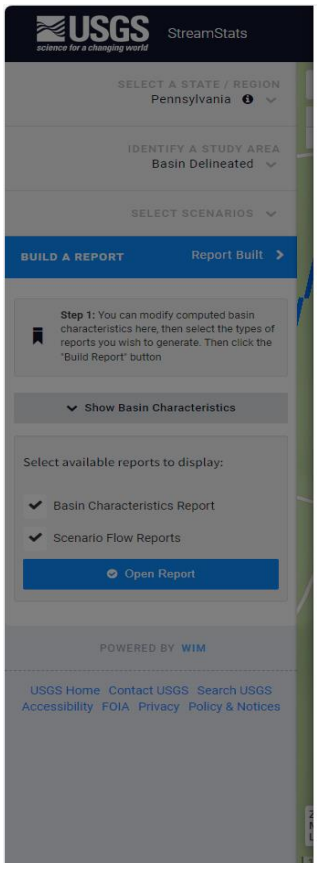
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	63.5	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
STRDEN	Stream Density	2.44	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.4	feet	3.32	5.65
CARBON	Percent Carbonate	0	percent	0	99

Low-Flow Statistics Flow Report [100.0 Percent (63.5 square miles) Low Flow Region 2]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	5.62	ft^3/s	38	38
30 Day 2 Year Low Flow	7.65	ft^3/s	33	33
7 Day 10 Year Low Flow	2.71	ft^3/s	51	51
30 Day 10 Year Low Flow	3.67	ft^3/s	46	46
90 Day 10 Year Low Flow	5.67	ft^3/s	36	36





Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	0.74	square miles
PRECIP	Mean Annual Precipitation	41	inches
ROCKDEP	Depth to rock	4.7	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	3.18	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
DRNAREA	Drainage Area	0.74	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
STRDEN	Stream Density	3.18	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.7	feet	3.32	5.65
CARBON	Percent Carbonate	0	percent	0	99

Low-Flow Statistics Disclaimers [Low Flow Region 2]

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 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0368	ft^3/s
30 Day 2 Year Low Flow	0.0535	ft^3/s
7 Day 10 Year Low Flow	0.0144	ft^3/s
30 Day 10 Year Low Flow	0.0205	ft^3/s
90 Day 10 Year Low Flow	0.0346	ft^3/s

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	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.02	XXX	0.05	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
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	6.0	XXX	12.0	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	2.0	XXX	4.0	2/month	Grab

Outfall 001, Chesapeake Bay

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Annual Average	Maximum	Instant. Maximum		
Ammonia--N	XXX	Report	XXX	Report	XXX	XXX	1/year	Grab
Kjeldahl--N	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Nitrate-Nitrite as N	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Nitrogen	XXX	486.0	XXX	Report	XXX	XXX	1/year	Calculation
Total Phosphorus	XXX	46.0	XXX	Report	XXX	XXX	1/year	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.)	XXX	XXX	6.0 Daily Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.02	XXX	0.05	1/day	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50.0	2/month	Grab
TSS	XXX	XXX	XXX	30.0	XXX	60.0	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
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 Nov 1 - Apr 30	XXX	XXX	XXX	6.0	XXX	12.0	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	2.0	XXX	4.0	2/month	Grab

Compliance Sampling Location:

Other Comments:

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.

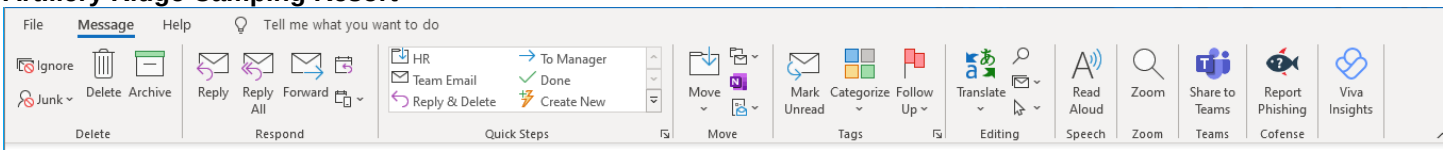
Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Annual Average	Maximum	Instant. Maximum		
Ammonia--N	XXX	Report	XXX	Report	XXX	XXX	1/year	Grab
Kjeldahl--N	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Nitrate-Nitrite as N	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Nitrogen	XXX	486.0	XXX	Report	XXX	XXX	1/year	Calculation
Total Phosphorus	XXX	46.0	XXX	Report	XXX	XXX	1/year	8-Hr Composite

Compliance Sampling Location:

Other Comments:

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:



[External] RE: Follow up Artillery Ridge Campground LLC NPDES Permit No. PA0087548 A-1 & WQM Part II No. 0198704 A-1, when will the upgrade fi...

Chad Kehew <ckehew@jrholley.com>
To Le, Hilary
Cc Gary ott; Gary Ott Jr.; qwr@pa.net
You replied to this message on 6/26/2024 10:48 AM.

Reply | Reply All | Forward | ...
Wed 6/26/2024 10:42 AM

Artillery Ridge Certification.pdf
65 KB

ATTENTION: *This email message is from an external sender. Do not open links or attachments from unknown senders. To report suspicious email, use the Report Phishing button in Outlook.*

Hi Hilary,

The treatment plant has been installed. As you may know, a couple of your colleagues recently were there for an inspection and I understand it went well. Some issues are still being resolved, but I am able to submit the attached Post Construction Certification form to you.

Thanks,
Chad

Charles A. Kehew, II, P.E.
Project Engineer
James R. Holley & Associates, Inc.
18 S. George Street
York, PA 17401
(717) 846-4373 - Phone
(717) 893-7124 - Fax

From: Le, Hilary <hle@pa.gov>
Sent: Tuesday, June 25, 2024 2:47 PM
To: Chad Kehew <ckehew@jrholley.com>
Cc: Gary ott <phillystorageott@yahoo.com>; Le, Hilary <hle@pa.gov>
Subject: Follow up Artillery Ridge Campground LLC NPDES Permit No. PA0087548 A-1 & WQM Part II No. 0198704 A-1, when will the upgrade finished?

Hi Chad,

I would like to follow up this project. Do you have any update?

Thanks!

Hilary Le | Permits Section
Department of Environmental Protection | Clean Water Program
Southcentral Regional Office
909 Elmerton Avenue | Harrisburg, PA 17110
Phone: 717.705.4869 | Fax: 717.705.4760
www.dep.pa.gov

3800-PM-WSFR0179a 9/2005
Post Construction Certification

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

WATER QUALITY MANAGEMENT
POST CONSTRUCTION CERTIFICATION

PERMITTEE IDENTIFIER	
Permittee	Artillery Ridge Campground LLC
Municipality	Cumberland Township
County	Adams
WQM Permit No.	0198404 A-1
Facility Type	Sewage

All of the above information should be taken directly from the Water Quality Management Permit.

CERTIFICATION

This certification must be completed and returned to the permits section of the DEP's regional office issuing the WQM permit within 30 days of completion of the project and received by DEP prior to operation, and if requested, as-built drawings, photographs (if available) and a discussion of any DEP-approved deviations from the design plans during construction.

I, being a Registered Professional Engineer in Pennsylvania, do hereby certify to the best of my knowledge and belief, based upon personal observation and interviews, that the above facility approved under the Water Quality Management Permit has been constructed in accordance with the plans, specifications and modifications approved by DEP.

Construction Completion Date (MM/DD/YYYY): 06/05/2024

Engineer's Seal

Professional Engineer

Name Charles A. Kehew, II, P.E.
(Please Print or Type)

Signature

Date 06/26/2024

License Expiration Date 09/30/2025

Firm or Agency James R. Holley & Associates, Inc.

Telephone 717-846-4373

Permittee or Authorized Representative

Name GARY OTT
(Please Print or Type)

Signature

Title OWNER

Telephone 610-506-1121