Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0041491**
Facility Type	**Non-Municipal**	APS ID	**488448**
Major / Minor	**Minor**	Authorization ID	**1471496**

Applicant and Facility Information

Applicant Name	**Berks Properties Inc.**	Facility Name	**Mountain Village MHP**
Applicant Address	3613 Seisholtzville Road Hereford, PA 18056-1542	Facility Address	Seisholtzville Road Macungie, PA 18062
Applicant Contact	David Rittenhouse	Facility Contact	Jim Groff
Applicant Phone	(610) 650-8074	Facility Phone	(267) 446-0017
Client ID	180156	Site ID	447400
Ch 94 Load Status	Not Overloaded	Municipality	Longswamp Township
Connection Status	Self-Imposed Connection Prohibition	County	Berks
Date Application Received	January 30, 2024	EPA Waived?	No
Date Application Accepted	February 26, 2024	If No, Reason	DEP Discretion
Purpose of Application	NPDES Permit Renewal.		

Summary of Review

Berks Properties Inc. has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit. The permit was last reissued on July 11, 2019, and became effective on August 1, 2019. The permit expired on July 31, 2024, but the terms and conditions of the permit have been extended since that time.

Mountain Village MHP is operated by Berks Properties, Inc. and consists of approximately 260 single-family homes connected via a collection system, with no businesses or restaurants. All mobile homes convey wastewater to the influent pump station, which pumps the flow to the Wastewater Treatment Plant (WWTP).

The average annual design flow & hydraulic design capacity of 0.064 MGD, and the organic loading capacity is 250 lbs BOD_5/day.

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

Delaware River Basin Commission

The discharge is within Delaware River basin and is therefore subject to Delaware River Basin Commission (DRBC) requirements. While the design flow falls within "reviewable projects" by DRBC, no docket was indicated on DRBC's interactive online docket map. Either a docket does not exist, or it predates the online map. DRBC will be copied on the draft permit and a copy of the application forwarded to them.

Changes from the previous permit: 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	January 16, 2025
X		*Maria D. Bebenek for* Daniel W. Martin, P.E. / Environmental Engineer Manager	January 27, 2025

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.064
Latitude	40º 28' 14.0"	Longitude	-75º 36' 25.0"
Quad Name	East Greenville	Quad Code	1541
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Perkiomen Creek (HQ-CWF, MF)	Stream Code	01501
NHD Com ID	25971488	RMI	1.608
Drainage Area	0.16 mi.^{2}	Yield (cfs/mi^2)	See comments below
Q_{7-10} Flow (cfs)	See comments below	Q_{7-10} Basis	USGS Gage No. 01472198
Elevation (ft)	870.0	Slope (ft/ft)	
Watershed No.	3-E	Chapter 93 Class.	HQ-CWF, MF
Existing Use	None	Existing Use Qualifier	None
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	Final	Name	Green Lane Reservoir
Nearest Downstream Public Water Supply Intake	Philadelphia Suburban Water Company		
PWS Waters	Perkiomen Creek	Flow at Intake (cfs)	
PWS RMI	19.7 miles	Distance from Outfall (mi)	Approximate 17.7 miles

Changes Since Last Permit Issuance:

Drainage Area
The discharge is to Unnamed Tributary 01501 to Perkiomen Creek at RMI 1.608. A drainage area upstream of the point of discharge is estimated to be 0.16 sq.mi., according to USGS StreamStats available at https://streamstats.usgs.gov/ss/.

Streamflow
USGS StreamStats produced no Q_{7-10} at the point of discharge. However, the estimated drainage area used in regression equations to calculate this Q_{7-10} is lower than the minimum required value to accurately calculate the Q_{7-10}. As a result, USGS gage station No. 01472198 on Perkiomen Creek at East Greenville, PA is used to calculate the Q_{7-10} as follow:

$$\text{Low Flow Yield} = Q_{7-10gage} / \text{Drainage Area}_{gage} = 5.06 \text{ cfs} / 37.6 \text{ sq.mi} = 0.135 \text{ cfs/sq.mi.}$$
$$Q_{7-10site} = \text{Low Flow Yield} * \text{Drainage Area}_{site} = 0.135 \text{ cfs/sq.mi} * 0.16 \text{ sq.mi} = 0.02 \text{ cfs}$$
$$Q_{30-10} = 1.36 * 0.02 \text{ cfs} \approx 0.027 \text{ cfs}$$
$$Q_{1-10} = 0.64 * 0.02 \text{ cfs} \approx 0.013 \text{ cfs}$$

Unnamed Tributary to Perkiomen Creek
Under 25 Pa Code §93.9f, the entire basin of Perkiomen Creek from source to SR 1010 Bridge at Hereford is designated as High Quality-Cold Water and Migratory fishes. There are no existing uses for this receiving stream. The discharge is located within a stream segment listed as attaining use(s). However, pursuant to 25 Pa Code §93.4(c), all permit requirements for the upcoming permit renewal will be developed to ensure that the water quality of this receiving stream is maintained and protected.

Public Water Supply Intake
The fact sheet developed during the last permit renewal indicates that the nearest downstream water supply intake is Philadelphia Suburban Water Company located on Perkiomen Creek approximately 17.7 miles. Given its distance, the discharge is not expected to affect the water supply.

Treatment Facility Summary				
Treatment Facility Name: Mountain Village M H P				
WQM Permit No.	**Issuance Date**			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary		Hypochlorite	0.064
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.064		Not Overloaded		

Changes Since Last Permit Issuance:

Other Comments:
The treatment process consisting of influent lift station, influent grinders (2), equalization tank, aeration tank, clarifiers (2), chlorine contact tank, dechlorination tank, and outfall to Unnamed Tributary of Perkiomen Creek.

Sodium Hypochlorite is used for disinfection, Sodium bisulfite is used for dechlorination, Aluminum Sulfate is used for phosphorous removal and soda ash is used for pH control.

A sludge holding tank is available. From this tank, sludge is hauled off site via a local hauler to another WWTP for ultimate disposal/treatment.

Compliance History	
Summary of DMRs:	A summary of past 12-month DMR data is presented on the next page.
Summary of Inspections:	**11/07/24:** Mr. Aponte, DEP WQS, conducted a compliance evaluation inspection. There were no violations noted during inspection. The field test results were within permit limits. Recommendations were: 1. Provide additional information when calibrating DO, pH, and TRC meters, including the calibration results, slope, and temperature, as applicable. 2. Please document any additional process control data that is collected at the facility, including but not limited to 30-minute settleability tests or sludge judging. 3. Please initial the daily journal each day to verify who was on-site and completing daily results. 4. Please also update the available operator report in the event that Mr. Nick Esposito begins operating at the facility. 5. Consider adding an alarm to the influent pump station to alert the facility of a high-level alarm, or power failure. 6. Please continue to keep the repair and maintenance journal up to date and on-site. 7. Perform % Total Solids tests on the facility's hauled-out sludge at least annually. With this data, please complete the Biosolids Supplemental Form by including the % TS and calculating the estimated dry tons hauled out from the facility each month. Please also complete the Biosolids Supplemental Form by providing the following data: the municipality, the county, the DEP permit number, the type of disposal/use, and the date the NPDES permit expires. 8. Please also ensure that copies of the sludge hauling manifests are retained at the WWTP for a minimum of five years, as this is a requirement of the NPDES permit. 9. Consider collecting flow proportioned effluent composite samples.
Other comments:	There are currently no open violations associated with the permittee or the facility.

Other Comments:

Compliance History

DMR Data for Outfall 001 (from December 1, 2023 to November 30, 2024)

Parameter	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23
Flow (MGD) Average Monthly	0.0025	0.0234	0.0253	0.0342	0.0322	0.0265	0.0288	0.0507	0.0465	0.03	0.0505	0.0396
Flow (MGD) Daily Maximum	0.0391	0.0305	0.0345	0.1224	0.0606	0.043	0.0661	0.1725	0.1171	0.0567	0.1916	0.1404
pH (S.U.) Instantaneous Minimum	6.9	6.5	6.2	6.4	6.8	6.3	6.2	6.2	6.5	6.1	6.2	6.6
pH (S.U.) Instantaneous Maximum	8.1	7.7	7.7	7.7	7.8	7.5	7.4	7.5	7.7	7.3	7.9	7.9
DO (mg/L) Instantaneous Minimum	6.7	6.6	6.8	6.4	6.4	6.4	6.9	6.8	6.9	7.0	7.0	7.1
TRC (mg/L) Average Monthly	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
TRC (mg/L) Instantaneous Maximum	0.05	0.04	0.04	0.05	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.04
CBOD5 (mg/L) Average Monthly	4.5	2.0	2.0	< 2.0	< 2.0	2.0	< 2.0	3.3	4.0	4.5	3.4	8.0
TSS (mg/L) Average Monthly	1.5	< 1.0	3.5	13.0	2.5	3.0	1.0	4.3	8.3	11.0	14.4	31.0
Total Dissolved Solids (lbs/day) Daily Maximum			195.5			165			233			179
Total Dissolved Solids (mg/L) Daily Maximum			728			686			554			780
Fecal Coliform (No./100 ml) Geometric Mean	8.9	5	1	10.2	6.1	19.5	1	3.9	27.2	< 1.0	3	35
Ammonia (mg/L) Average Monthly	0.1	0.03	0.1	0.9	0.1	0.1	0.1	1.9	2.9	1.8	2.4	2.1
Total Phosphorus (lbs/day) Average Monthly	0.02	0.02	0.02	0.06	0.03	0.02	0.01	0.04	0.06	0.05	0.16	0.20
Total Phosphorus (mg/L) Average Monthly	0.1	0.1	0.1	0.2	0.1	0.1	0.04	0.1	0.15	0.2	0.37	0.6

Existing Effluent Limitations and Monitoring Requirements

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Minimum	XXX	9.0 Daily Minimum	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0 Daily Minimum	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.02	XXX	0.05	1/day	Grab
$CBOD_5$	XXX	XXX	XXX	10	XXX	20	2/month	8-hr comp
Total Suspended Solids	XXX	XXX	XXX	30	XXX	60	2/month	8-hr comp
Fecal Coliform (CFU/100 ml) May 1 – Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	XXX	2/month	Grab
Fecal Coliform (CFU/100 ml) Oct 1 – Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	XXX	2/month	Grab
Ammonia-Nitrogen May 1 – Oct 31	XXX	XXX	XXX	1.5	XXX	3.0	2/month	8-hr comp
Ammonia-Nitrogen Nov 1 – Apr 30	XXX	XXX	XXX	4.5	XXX	9.0	2/month	8-hr comp
Total Phosphorus	0.27	XXX	XXX	0.5	XXX	1.0	2/month	8-hr comp
Total Dissolved Solids	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	8-hr comp

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.064
Latitude 40º 28' 14.00" **Longitude** -75º 36' 25.00"
Wastewater Description: Sewage Effluent

The discharge is to Unnamed Tributary of Perkiomen Creek. Under 25 Pa Code §93.9f, the entire basin of Perkiomen Creek from source to SR 1010 Bridge at Hereford is designated as High Quality-Cold Water and Migratory fishes. It is noteworthy that DEP previously recognized this stream as Trout Stocking Fishes and developed the requirements based on TSF. This is presumably because the High-Quality stream classification of this stream (or the Perkiomen Creek basin) has been determined as part of a September 28, 2002, final rulemaking and this facility was authorized to discharge treated sewage since 1998.

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:

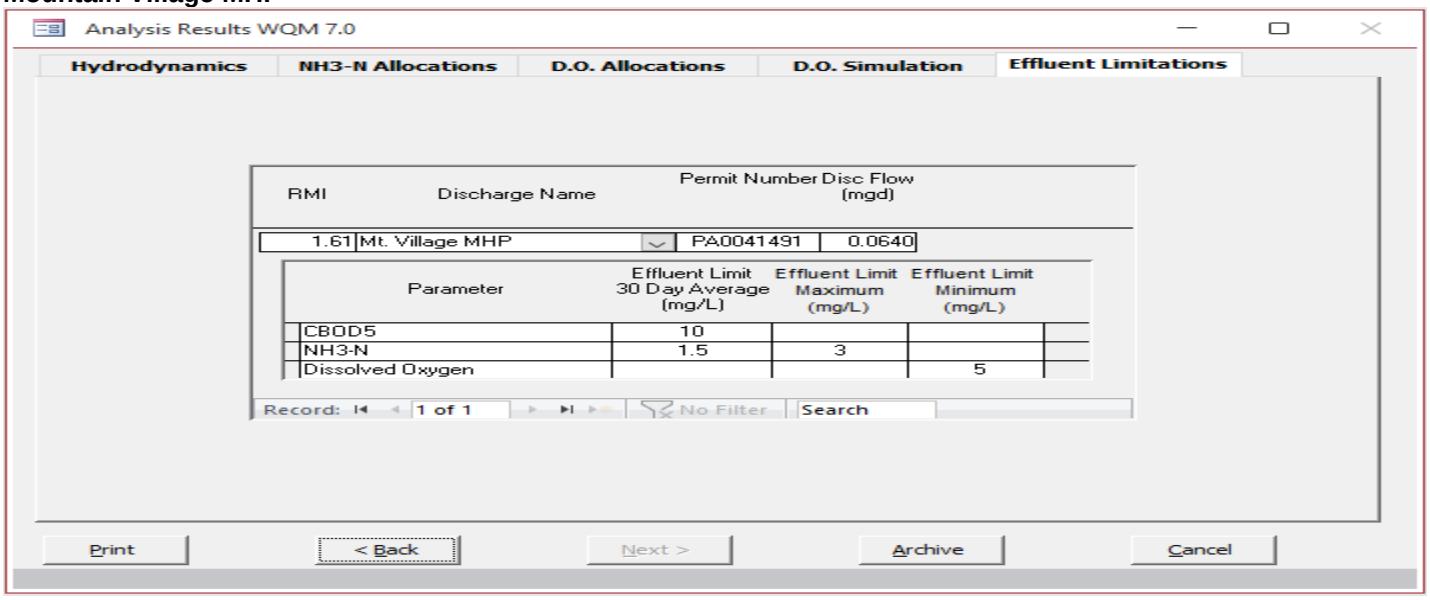
Water Quality-Based Limitations

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 10.0 mg/L, or secondary treatment, is adequate to protect the water quality of the stream. Therefore, the existing summer permit 10.0 mg/L as AML, & 20.0 mg/L as IMAX are same and will remain in the proposed permit. Recent DMRs and inspection reports show that the facility has typically been achieving concentrations below this limit.

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.

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	=	25°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 1.5 mg/L as a monthly average and 3.0 mg/L instantaneous maximum (IMAX) are necessary to protect the aquatic life from toxicity effects at the point of discharge. Therefore, the existing summer limits of 1.5 mg/L monthly average & 3.0 mg/L IMAX are same and will remain in the proposed permit. The existing winter average monthly limit of 4.5 mg/L & IMAX limit of 9.0 mg/L will remain in place. Recent DMRs and inspection reports show that the facility has been consistently achieving these limits.

pH:
The effluent discharge pH should remain above 6.0 and below 9.0 standard units according to 25 Pa. Code § 95.2(1).

Total Suspended Solids (TSS):
The existing technology-based limits of 30.0 mg/L average monthly, and 60.0 mg/L IMAX 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. Recent DMRs and inspection reports show that the facility has been consistently achieving these limits.

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 § 92a.47.(a)(5) requires a winter limit of 2,000/100ml as a geometric mean.

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/quarter will be included in the permit to be consistent with the recommendation from this SOP.

Total Phosphorus:
The existing permit average monthly TP concentration of 0.5 mg/L, and 1.0 mg/L IMAX will remain in the proposed permit. Mass average monthly is calculated and also in the proposed permit.

Average monthly mass limit: 0.5 mg/L x 0.064 MGD x 8.34 = 0.267 (0.27) lbs/day

Toxics:
The application submitted for this permit renewal did not require sampling of toxics pollutants. According to the application, there is no commercial establishment/business within the service area. Therefore, there is no toxics pollutants of concern from this discharge.

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

Chesapeake Bay Total Maximum Daily Load:

The discharge is not located within the Chesapeake Bay watershed. No Chesapeake Bay TMDL has therefore been taken into consideration.

Total Residual Chlorine (TRC):

The attached computer printout utilizes the equations and calculations as presented in the Department's May 1, 2003 Implementation Guidance for TRC (ID No. 391-2000-015) for developing chlorine limitations. The attached printout indicates that a water quality limit of 0.038 mg/L monthly average and 0.125 mg/L IMAX would be needed to prevent toxicity concerns. Therefore, the existing TRC limit of 0.02 mg/L monthly average and 0.05 mg/L IMAX are more stringet and will remain in the proposed permit.

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.02	= Q stream (cfs)	0.5	= CV Daily
0.064	= 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 = 0.083	1.3.2.iii	WLA cfc = 0.074
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.031	5.1d	LTA_cfc = 0.043

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.038	AFC
		INST MAX LIMIT (mg/l) = 0.125	

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)

The current quantitation limit (QL) for TRC accepted by DEP is 0.02 mg/L. When the facility is subject to WQBELs for TRC that are below this QL, the permit generally includes, along with WQBELs in Part A, the following standard Part C condition:

TRC EFFLUENT LIMITATIONS BELOW QUANTITATION LIMITS

A. The calculated limits for Total Residual Chlorine (TRC) as specified in Part A of this permit are the limits necessary to comply with state water quality standards. These effluent limits are lower than the Quantitation Limit (QL), as defined in 25 Pa. Code § 252.1, of the most sensitive existing EPA-approved (40 CFR Part 136) test method or other DEP-approved method. If the sensitivity of the specified method improves or a more sensitive test method becomes available, DEP may modify the permit to require use of the more sensitive method.

B. TRC shall be analyzed using one of the following test methods below, or an approved equivalent, to achieve a QL of 0.02 mg/l or less:

- *EPA 330.5 Spectrophotometric, DPD (SM 4500-Cl G, DPD Colorimetric Method)*
- *EPA 330.4 Titrimetric, DPD-FAS (SM 4500-Cl F, DPD Ferrous Titrimetric Method)*

For the purpose of compliance, a statistical value reported on the DMR that is less than the QL (i.e., "non-detect") will be considered to be in compliance.

C. The permittee may develop a site-specific alternate MDL pursuant to the procedure contained in 40 CFR Part 136 Appendix B. DEP should be contacted for guidance before initiating this procedure.

D. The permittee shall manage non-detect values and report statistical results to DEP in accordance with published DMR guidance (3800-BK-DEP3047 and 3800-FS-DEP4262). Where a mixed data set exists containing non-detect results and "detected" values (i.e., results greater than or equal to the QL), the QL shall be used for non-detect results to compute average statistical results.

Green Lane Reservoir Total Maximum Daily Load (TMDL):

The discharge is to an unnamed tributary of Perkiomen Creek and ultimately to Green Lane Reservoir, a 814-acre lake in Montgomery County that resides within Green Lane Reservoir Park which is a popular area for swimming, fishing, boating, hiking and horseback riding. Green Lane Reservoir is listed as impacted by organic enrichment/low dissolved oxygen as a result of agricultural activities. In 2003, US EPA has approved the total maximum daily load to address impairments identified within the Green Lane Reservoir watershed, *reference this factsheet, pages 16-17*. This TMDL in fact addresses Total Phosphorus wasteload allocations (WLAs) for Mountain Village Mobile Home Park as follows:

Table 4-5 Main Branch Perkiomen Subwatershed (page 4-12)					
Point Source	**NPDES Permit No.**	**Design Flow (MGD)**	**Total Phosphorus concentration (mg/L)**	**WLA (lbs/day)**	**WLA (lbs/month)**
Mountain Village Mobile Home Park	PA0041491	0.064	0.5	0.27	8

As a result, the existing permit contains the TP concentration effluent limit of 0.5 mg/L and average monthly mass effluent limit of 0.27 lbs/day in accordance with 40 CFR §122.44(d)(1)(vii)(B). The fact sheet prepared in 2009 indicates that the cumulative monthly mass effluent limit (8.0 lbs/month) would be redundant if the average monthly mass effluent limit is included in the permit. This was also discussed with US EPA at that time. Consequently, the aforementioned existing effluent limits will remain in the permit and the cumulative monthly WLA will not be included in the permit once again.

Additional Considerations

Flow Monitoring

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

Monitoring Frequencies and Sample Types

All minimum monitoring frequencies and sample types remain unchanged in the draft permit.

Delaware River Basin Commission Requirements

The discharge is located within the Delaware River basin; as a result, the facility is subject to water quality regulations established by the Delaware River Basin Commission. It is unclear whether DRBC previously issued the docket for this facility but because the discharge is greater than 0.05 MGD, the draft permit should be reviewed by DRBC. Total Dissolved Solids is one of major concerns identified within the Delaware River basin; as a result, most of facilities located within this basin are required to monitor for TDS or have numerical effluent limits in their permit. Since the facility has no record of TDS effluent results, the requirement to monitor for TDS is recommended for the upcoming permit renewal for further evaluation. A quarterly monitoring requirement will be sufficient to gather ample data for further evaluation. Once again, the draft permit will be sent to DRBC for their review and comment.

Anti-Degradation Requirements

All effluent limitations and monitoring requirements have been developed to ensure that the water quality of this stream be maintained and protected as per 25 Pa Code §93.4a(c).

Anti-Backsliding Requirements

Unless stated otherwise in this fact sheet, all permit requirements proposed in this fact sheet are at least as stringent as existing permit requirements in accordance with 40 CFR §122.44(l)(1).

WQM 7.0:

The following data were used in the attached computer model (WQM 7.0) of the stream:

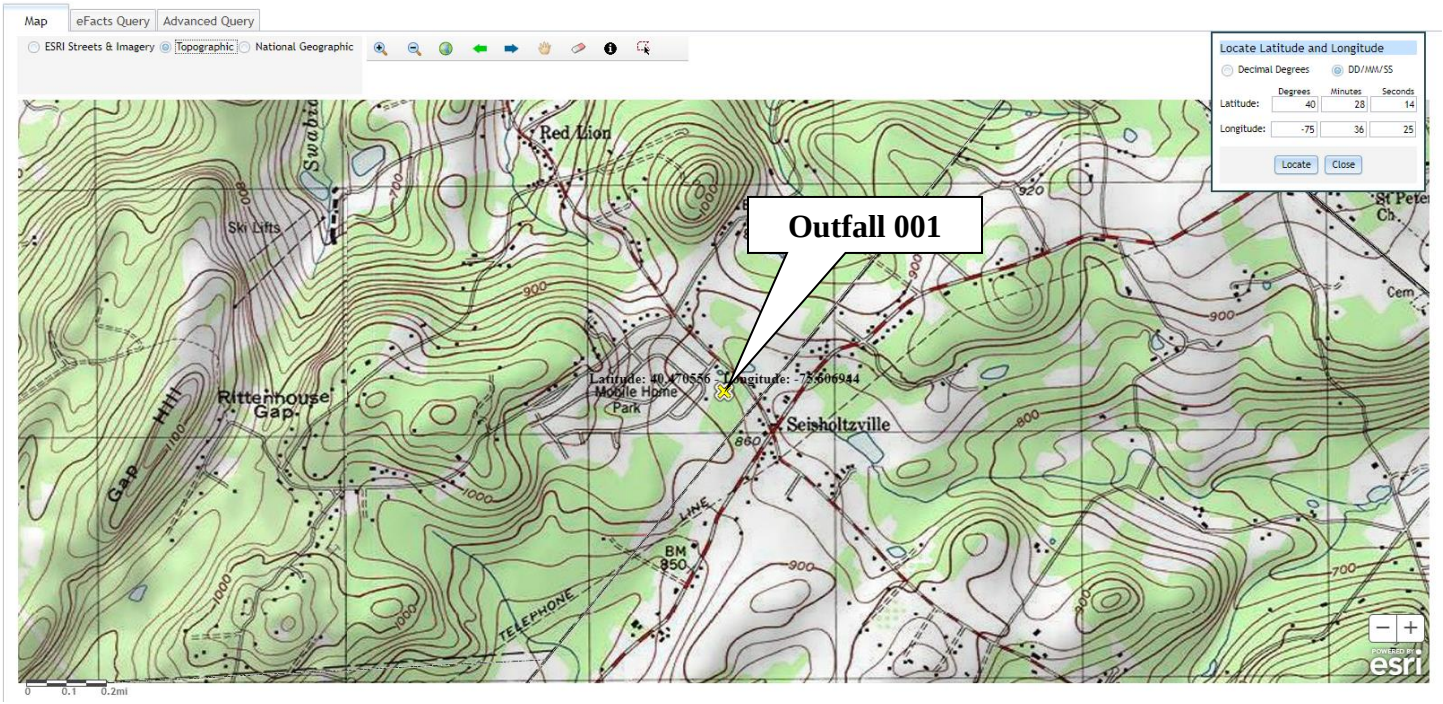
*	Discharge pH	=	7.0	(Default)
*	Discharge Temperature	=	25°C	(Default)
*	Stream pH	=	7.0	(Default)
*	Stream Temperature	=	20°C	(Default)
*	Background NH_3-N	=	0 mg/L	(Default)

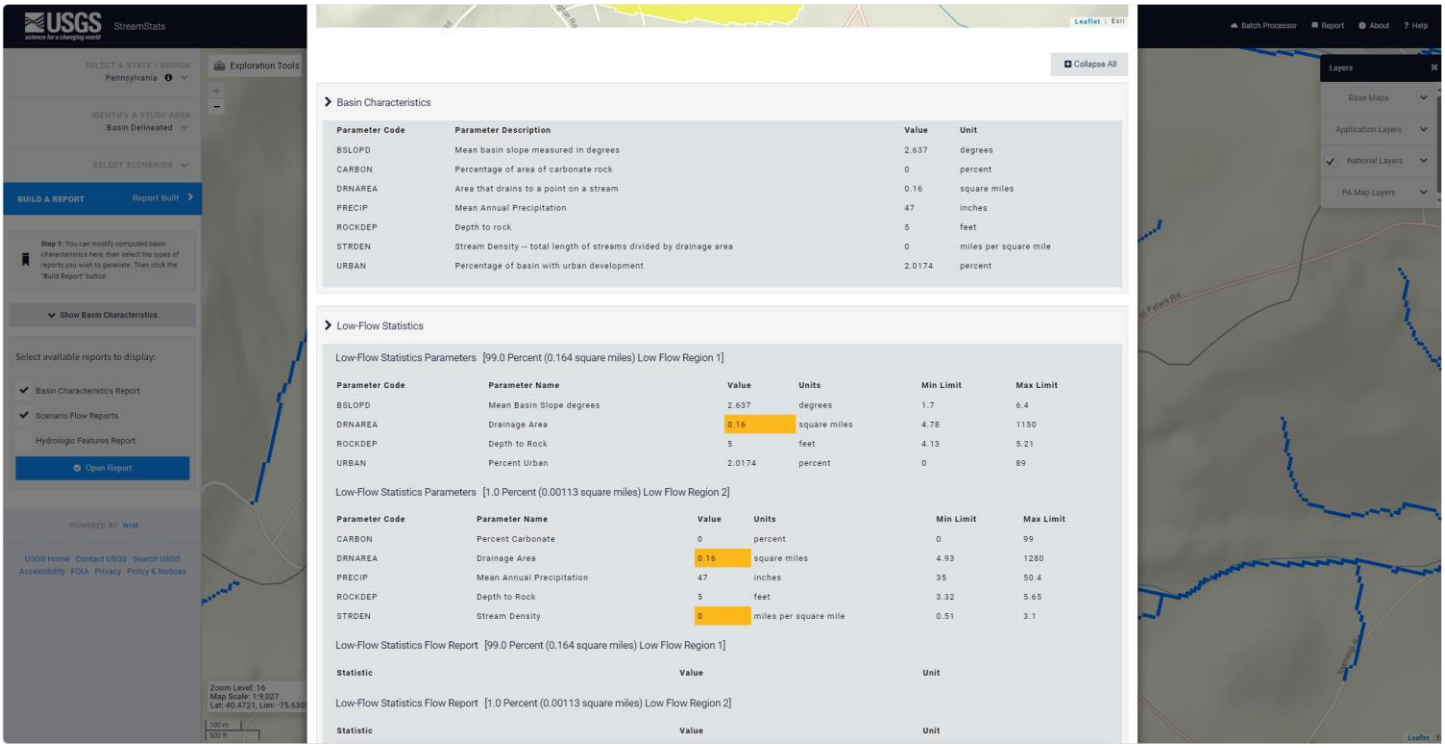
Node 1: Outfall 001 Trib. 01501 to Perkiomen Creek (1501)

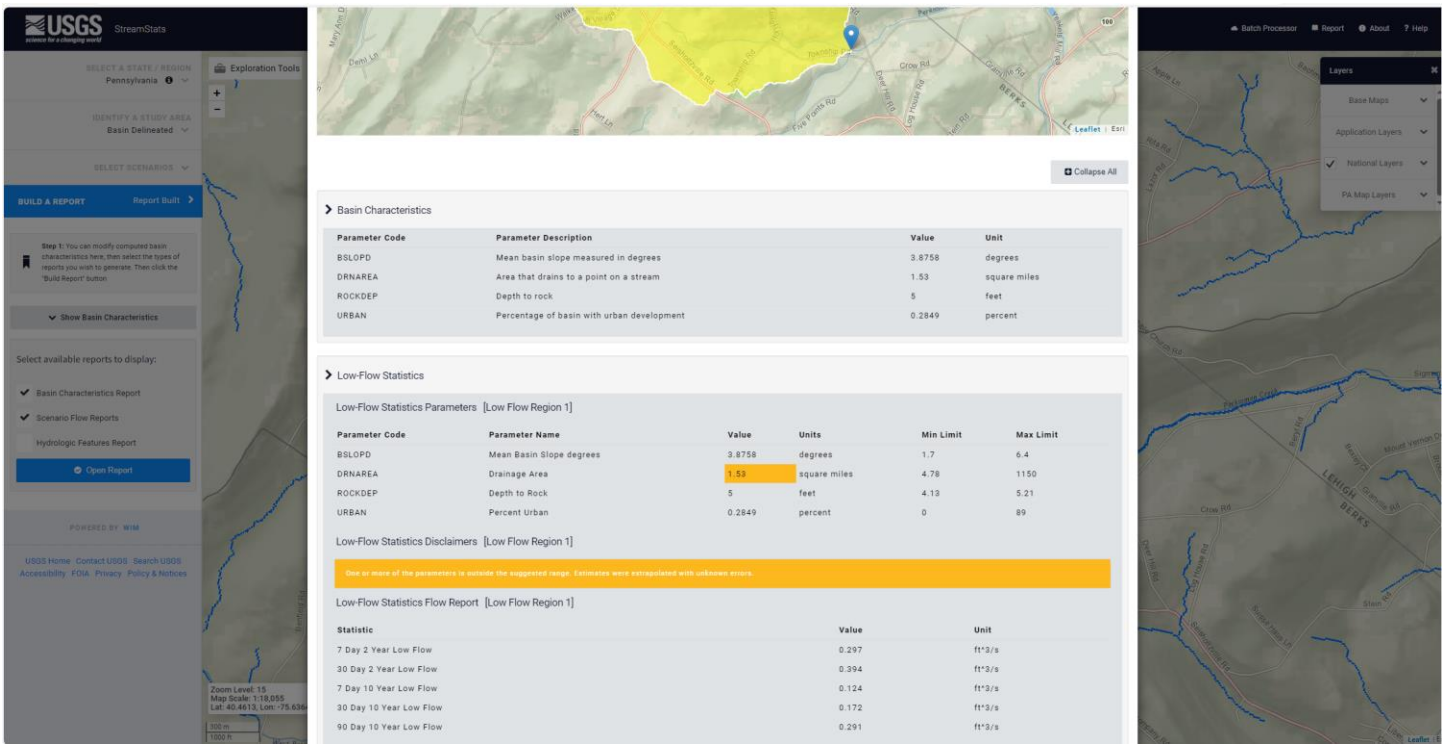
Elevation:	870.0 ft (USGS National Map Viewer)
Drainage Area:	0.16 mi^2 (USGS PA StreamStats)
River Mile Index:	1.608 (PA DEP eMapPA)
Low Flow Yield:	0.135 cfs/mi^2
Discharge Flow:	0.064 MGD

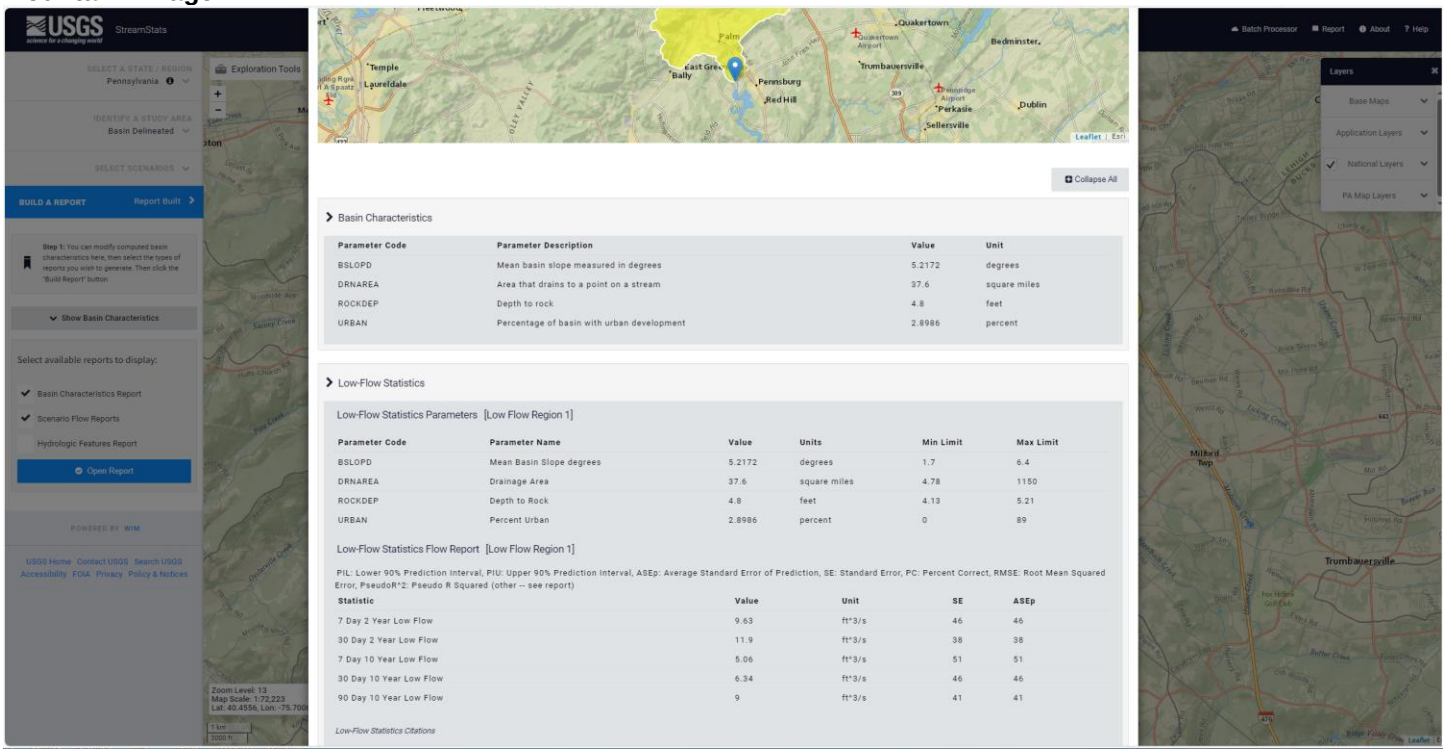
Node 2: At confluence with Perkiomen Creek 1017

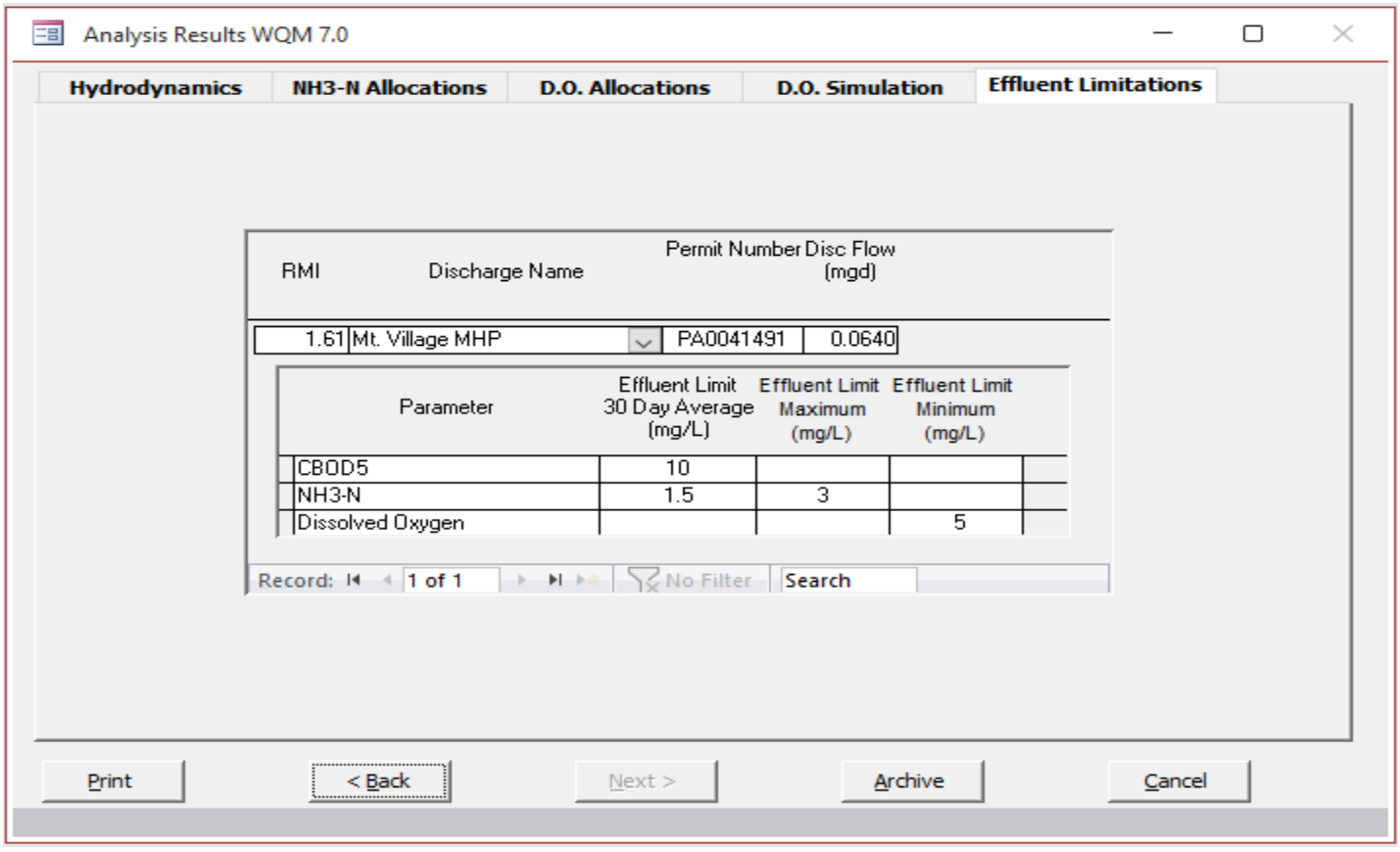
Elevation:	680.0 ft (USGS National Map Viewer)
Drainage Area:	1.53 mi^2 (USGS PA StreamStats)
River Mile Index:	0.001 (PA DEP eMapPA)
Low Flow Yield:	0.135 cfs/mi^2
Discharge Flow:	0.0 MGD




USGS StreamStats
Exploration Tools
Collapse All
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
BSLOPD | Mean basin slope measured in degrees | 2.637 | degrees
CARBON | Percentage of area of carbonate rock | 0 | percent
DRNAREA | Area that drains to a point on a stream | 0.16 | square miles
PRECIP | Mean Annual Precipitation | 47 | inches
ROCKDEP | Depth to rock | 5 | feet
STRDEN | Stream Density -- total length of streams divided by drainage area | 0 | miles per square mile
URBAN | Percentage of basin with urban development | 2.0174 | percent
Low-Flow Statistics
Low-Flow Statistics Parameters [99.0 Percent (0.164 square miles) Low Flow Region 1]
Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit
BSLOPD | Mean Basin Slope degrees | 2.637 | degrees | 1.7 | 6.4
DRNAREA | Drainage Area | 0.16 | square miles | 4.78 | 1150
ROCKDEP | Depth to Rock | 5 | feet | 4.13 | 5.21
URBAN | Percent Urban | 2.0174 | percent | 0 | 89
Low-Flow Statistics Parameters [1.0 Percent (0.00113 square miles) Low Flow Region 2]
Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit
CARBON | Percent Carbonate | 0 | percent | 0 | 99
DRNAREA | Drainage Area | 0.16 | square miles | 4.93 | 1280
PRECIP | Mean Annual Precipitation | 47 | inches | 35 | 50.4
ROCKDEP | Depth to Rock | 5 | feet | 3.32 | 5.65
STRDEN | Stream Density | 0 | miles per square mile | 0.51 | 3.1
Low-Flow Statistics Flow Report [99.0 Percent (0.164 square miles) Low Flow Region 1]
Statistic | Value | Unit
Low-Flow Statistics Flow Report [1.0 Percent (0.00113 square miles) Low Flow Region 2]
Statistic | Value | Unit


USGS StreamStats
Exploration Tools
Collapse All
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
BSLOPD | Mean basin slope measured in degrees | 3.8758 | degrees
DRNAREA | Area that drains to a point on a stream | 1.53 | square miles
ROCKDEP | Depth to rock | 5 | feet
URBAN | Percentage of basin with urban development | 0.2849 | percent
Low-Flow Statistics
Low-Flow Statistics Parameters [Low Flow Region 1]
Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit
BSLOPD | Mean Basin Slope degrees | 3.8758 | degrees | 1.7 | 6.4
DRNAREA | Drainage Area | 1.53 | square miles | 4.78 | 1150
ROCKDEP | Depth to Rock | 5 | feet | 4.13 | 5.21
URBAN | Percent Urban | 0.2849 | percent | 0 | 89
Low-Flow Statistics Disclaimers [Low Flow Region 1]
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 1]
Statistic | Value | Unit
7 Day 2 Year Low Flow | 0.297 | ft^3/s
30 Day 2 Year Low Flow | 0.394 | ft^3/s
7 Day 10 Year Low Flow | 0.124 | ft^3/s
30 Day 10 Year Low Flow | 0.172 | ft^3/s
90 Day 10 Year Low Flow | 0.291 | ft^3/s


USGS StreamStats
Basin Characteristics
Parameter Code
Parameter Description
Value
Unit
BSLOPD
Mean basin slope measured in degrees
5.2172
degrees
DRNAREA
Area that drains to a point on a stream
37.6
square miles
ROCKDEP
Depth to rock
4.8
feet
URBAN
Percentage of basin with urban development
2.8986
percent
Low-Flow Statistics
Low-Flow Statistics Parameters [Low Flow Region 1]
Parameter Code
Parameter Name
Value
Units
Min Limit
Max Limit
BSLOPD
Mean Basin Slope degrees
5.2172
degrees
1.7
6.4
DRNAREA
Drainage Area
37.6
square miles
4.78
1150
ROCKDEP
Depth to Rock
4.8
feet
4.13
5.21
URBAN
Percent Urban
2.8986
percent
0
89
Low-Flow Statistics Flow Report [Low Flow Region 1]
Statistic
Value
Unit
SE
ASEp
7 Day 2 Year Low Flow
9.63
ft^3/s
46
46
30 Day 2 Year Low Flow
11.9
ft^3/s
38
38
7 Day 10 Year Low Flow
5.06
ft^3/s
51
51
30 Day 10 Year Low Flow
6.34
ft^3/s
46
46
90 Day 10 Year Low Flow
9
ft^3/s
41
41


Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI
Discharge Name
Permit Number
Disc Flow (mgd)
1.61
Mt. Village MHP
PA0041491
0.0640
Parameter
Effluent Limit 30 Day Average (mg/L)
Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5
10
NH3-N
1.5
3
Dissolved Oxygen
5
Record: 1 of 1
No Filter
Search
Print
< Back
Next >
Archive
Cancel

rptEffLimits

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
03E	1501	Trib 01501 to Perkiomen 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)
1.608	Mt. Village MHP	PA0041491	0.064	CBOD5	10		
				NH3-N	1.5	3	
				Dissolved Oxygen			5

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rpt_WLA

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
03E	1501	Trib 01501 to Perkiomen 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
1.608	Mt. Village MHP	11.65	3	11.65	3	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
1.608	Mt. Village MHP	1.47	1.5	1.47	1.5	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
1.61	Mt. Village MHP	10	10	1.5	1.5	5	5	0	0

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rptDOSim

WQM 7.0 D.O. Simulation

SWP Basin	Stream Code	Stream Name
03E	1501	Trib 01501 to Perkiomen Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.608	0.064	24.105	7.000
Reach Width (ft)	Reach Depth (ft)	Reach W/D Ratio	Reach Velocity (fps)
2.871	0.386	7.442	0.109
Reach CBOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
8.57	1.336	1.23	0.950
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
5.561	31.549	Owens	5
Reach Travel Time (days)			
0.902			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.090	7.41	1.13	7.63
0.180	6.40	1.04	7.66
0.270	5.54	0.95	7.66
0.361	4.79	0.87	7.66
0.451	4.14	0.80	7.66
0.541	3.58	0.73	7.66
0.631	3.09	0.67	7.66
0.721	2.68	0.62	7.66
0.811	2.31	0.57	7.66
0.902	2.00	0.52	7.66

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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
03E	1501	Trib 01501 to Perkiomen Creek

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Dilc 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												
1.606	0.02	0.00	0.02	.099	0.02239	.386	2.67	7.44	0.11	0.902	24.10	7.00
Q1-10 Flow												
1.606	0.01	0.00	0.01	.099	0.02239	NA	NA	NA	0.10	0.936	24.39	7.00
Q30-10 Flow												
1.606	0.03	0.00	0.03	.099	0.02239	NA	NA	NA	0.11	0.871	23.86	7.00

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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
03E	1501	Trib 01501 to Perkiomen Creek	1.606	67.00	0.16	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	0.135	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 Dilc Flow (mgd)	Permitted Dilc Flow (mgd)	Design Dilc Flow (mgd)	Reserve Factor	Dilc Temp (°C)	Dilc pH
Mt. Village MHP	PA0041491	0.0640	0.0640	0.0640	0.000	25.00	7.00

Parameter Data

Parameter Name	Dilc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	10.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	1.50	0.00	0.00	0.70

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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
03E	1501	Trib 01501 to Perkiomen Creek	0.001	68.00	1.53	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	0.135	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 Dilc Flow (mgd)	Permitted Dilc Flow (mgd)	Design Dilc Flow (mgd)	Reserve Factor	Dilc Temp (°C)	Dilc pH
Mt. Village MHP	PA0041491	0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Dilc 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

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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	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.02	XXX	0.05	1/day	Grab
$CBOD_5$	XXX	XXX	XXX	10.0	XXX	20.0	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30.0	XXX	60.0	2/month	8-Hr Composite
Total Dissolved Solids	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	XXX	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	XXX	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	4.5	XXX	9.0	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	1.5	XXX	3.0	2/month	8-Hr Composite
Total Phosphorus	0.27	XXX	XXX	0.5	XXX	1.0	2/month	8-Hr Composite

Compliance Sampling Location:

Other Comments:

FINAL REPORT

Total Maximum Daily Load of Nutrients for Green Lane Reservoir Montgomery County, PA

Prepared for:
U.S. Environmental Protection Agency
Region 3
1650 Arch Street
Philadelphia, PA

Prepared by:
Tetra Tech, Inc.
10306 Eaton Place
Fairfax, VA

March 10th, 2003

Total Maximum Daily Load of Nutrients for Green Lane Reservoir

Table 4-5. Individual Wasteload allocations of total phosphorus for Green Lane Reservoir

Point Source	NPDES permit no.	Design Flow (mgd)	Total Phosphorus concentration (mg/l)	WLA (lbs/day)	WLA (lbs/month)
Main Branch Perkiomen Subwatershed					
Brown Printing	PA0051802	0.0116	0.5	0.048	1.45
East Greenville Filtration	PA0050644	0	0	0	0
Hereford Mobile Home Park	PA0041505	0.125	0.5	0.52	15.63
Knoll, Inc.	PA0011070	0.0279	0.5	0.116	3.49
Mountain Village Mobile Home Park	PA0041491	0.064	0.5	0.27	8
TTT Realty	PA0012891	0.0088	0.5	0.037	1.1
Main Branch Perkiomen subwatershed total					**29.7**
West Branch Perkiomen Subwatershed					
Bally Borough	PA0055123	0.5	0.5	2.08	62.55
Strawberry Family Restaurant	PA0053376	0.0015	0.5	0.006	0.19
Washington Township.	PA0086142	0.25	0.5	1.04	31.27
Woodland Mobile Home Park	PA0055352	0.014	0.5	0.059	1.75
West Branch Perkiomen subwatershed total					**95.8**
Direct Drainage Subwatershed					
Green Hills Mobile Home Park	PA0031887	0.03	0.5	0.13	3.75
Upper Perkiomen School District	PA0050911	0.004	0.5	0.017	0.5
Direct Drainage subwatershed total					**4.25**
Direct Drainage (Urban) Subwatershed					
Edmund Optics	PA0053864	0	0	0	0
Upper Montgomery Joint Authority	PA0020532	2	0.5	8.34	250.2
Direct Drainage (urban) subwatershed					**250.2**

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: DRBC