pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0033588**
Facility Type	**Non-Municipal**	APS ID	**1009305**
Major / Minor	**Minor**	Authorization ID	**1301689**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Country Estates MHP, LLC**	Facility Name	**Country Estates MHP**
Applicant Address	378 Red Bank Road	Facility Address	1011 South Lake Road
	Mifflinburg, PA 17844		Mercer, PA 16137
Applicant Contact	James Bender, Owner	Facility Contact	Marvin McAfoose, STP Operator
Applicant Phone	(570) 412-6039	Facility Phone	(724) 699-4070
Client ID	287851	Site ID	247520
Ch 94 Load Status	Not Overloaded	Municipality	Jefferson Township
Connection Status	No Limitations	County	Mercer
Date Application Received	January 2, 2020	EPA Waived?	Yes
Date Application Accepted	January 14, 2020	If No, Reason	-

Purpose of Application: Renewal of an NPDES Permit for an existing discharge of treated sanitary wastewater.

Summary of Review

Act 14 - Proof of Notification was submitted and received.

A Part II Water Quality Management permit is not required at this time.

The applicant should be able to continue to meet the limits of this permit, which will continue to protect the uses of the receiving stream.

I. OTHER REQUIREMENTS:

A. Stormwater into Sewers
B. Right of Way
C. Solids Handling
D. Effluent Chlorine Optimization and Minimization
E. Little or No Assimilative Capacity or Dilution

SPECIAL CONDITIONS:

II. Solids Management

There are 3 open violations in efacts associated with the subject Client ID (287851) as of 6/2/2023 (see Attachment 3). *CWY 6/6/2023*

Approve	Return	Deny	Signatures	Date
X			Stephen A. McCauley Stephen A. McCauley, E.I.T. / Environmental Engineering Specialist	6/2/2023
X			Chad W. Yurisic Chad W. Yurisic, P.E. / Environmental Engineer Manager	6/6/2023

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.015
Latitude	41º 15' 9.00"	Longitude	-80º 16' 40.00"
Quad Name	-	Quad Code	-
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to the Lackawannock Creek (TSF)	Stream Code	N/A
NHD Com ID	130025760	RMI	N/A
Drainage Area	1.51 (point of first use)	Yield (cfs/mi^2)	0.1
Q_{7-10} Flow (cfs)	0.151	Q_{7-10} Basis	calculated
Elevation (ft)	1029	Slope (ft/ft)	0.01755
Watershed No.	20-A	Chapter 93 Class.	TSF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	-		
Source(s) of Impairment	-		
TMDL Status	-	Name	-

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

Nearest Downstream Public Water Supply Intake	Aqua Pennsylvania, Inc. - Shenango Valley		
PWS Waters	Shenango River	Flow at Intake (cfs)	97.0
PWS RMI	30.0	Distance from Outfall (mi)	19.0

Sludge use and disposal description and location(s): All sludge is hauled to an approved landfill.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the Pennsylvania Bulletin in accordance with 25 Pa. Code § 92a.82. Upon publication in the Pennsylvania Bulletin, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the Pennsylvania Bulletin at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Narrative: This Fact Sheet details the determination of draft NPDES permit limits for an existing discharge of 0.015 MGD of treated sewage from a non-Municipal STP in Jefferson Township, Mercer County.

Treatment permitted under WQM Permit 4373402 consists of: A manual bar screen, a comminutor, three 15,000 gallon aeration tanks in series, alum chemical addition for phosphorus control, a 3,000 gallon sludge holding tank, a 1,567 gallon clarifier, an approximately 1,600 gallon settling/dosing tank, a 7,200 square foot (200' x 36') sand filter and a 8,208 square foot (228' x 36') sand filter in parallel, tablet chlorine disinfection with a 3,275 gallon contact tank, and an effluent cascade aerator.

1. Streamflow:

Unnamed Tributary to the Lackawannock Creek @ Outfall 001 (first point of use):

Drainage Area:	0.38	sq. mi.	(USGS StreamStats)
Yieldrate:	0.1	cfsm	(default value)
Q_{7-10}:	0.038	cfs	(calculated)
% of stream allocated:	100%	Basis:	No nearby discharges

2. Wasteflow:

Permitted discharge: 0.015 MGD = 0.023 cfs

Runoff flow period: 24 hours Basis: Runoff flow for a non-Municipal STP using sand filtration

There is less than 3 parts stream flow (Q7-10) to 1 part effluent (design flow). In accordance with the SOP, since this is an existing discharge, the treatment requirements in document number 391-2000-014, titled, "Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers", dated April 12, 2008, were evaluated for this facility. Based on eDMR data, the treatment requirements are not attainable with the treatment technology in place so the requirements will not be implemented in this NPDES Permit renewal.

Flow will be required to be monitored as authorized under Chapter 92a.61, and as recommended in the SOP.

3. Parameters:

The following parameters were evaluated: pH, Total Suspended Solids, Fecal Coliform, Phosphorus, Total Nitrogen, NH_3-N, $CBOD_5$, Dissolved Oxygen, and Total Residual Chlorine. NH_3-N, $CBOD_5$, and Dissolved Oxygen were evaluated using WQM 7.0 at the discharge point.

a. pH

Between 6.0 and 9.0 at all times

Basis: Application of Chapter 93.7 technology-based limits.

The measurement frequency was changed from 1/week to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001).

b. Total Suspended Solids

Limits set as 30.0 mg/l as a monthly average and 60.0 mg/l as an instantaneous maximum.

Basis: Application of Chapter 92a47 technology-based limits. The technology-based limits are less restrictive than the limits that are set in the previous permit. The more restrictive limits set in the previous renewal are retained since, based on eDMR data, the limits are attainable.

c. Fecal Coliform

05/01 - 09/30:	200/100ml	(monthly average geometric mean)
	1,000/100ml	(instantaneous maximum)
10/01 - 04/30:	2,000/100ml	(monthly average geometric mean)
	10,000/100ml	(instantaneous maximum)

Basis: Application of Chapter 92a47 technology-based limits.

d. E. Coli

Monitoring was added for E. Coli at a frequency of 1/year.

Basis: Application of Chapter 92a.61 as recommended by the SOP for flows between 0.002 MGD and 0.05 MGD.

e. Phosphorus

The previous monitoring for Total Phosphorus will remain in accordance with the SOP, based on Chapter 92a.61.

f. Total Nitrogen

The previous monitoring for Total Nitrogen will remain in accordance with the SOP, based on Chapter 92a.61.

g. Ammonia-Nitrogen (NH_3-N)

Median discharge pH to be used:	7.1	Standard Units (S.U.)
		Basis: eDMR data
Discharge temperature:	25°C	(default value used in the absence of data)
Median stream pH to be used:	7.0	Standard Units (S.U.)
		Basis: (default value used in the absence of data)
Stream Temperature:	25˚C	(default value used for TSF modeling)
Background NH_3-N concentration:	0.0	mg/l
		Basis: Default value.
Calculated NH_3-N Summer limits:	25.0	mg/l (monthly average)
	50.0	mg/l (instantaneous maximum)
Calculated NH_3-N Winter limits:	25.0	mg/l (monthly average)
	50.0	mg/l (instantaneous maximum)

Result: WQ modeling resulted in the calculated summer limits above (see Attachment 2). The winter limits are calculated as three times the summer limits, but since the technology-based limits are more protective, they will be used. The calculated limits are less restrictive than the limits that are set in the previous permit. The more restrictive limits set in the previous renewal are retained since, based on eDMR data, the limits are attainable.

h. $CBOD_5$

Median discharge pH to be used: 7.1 Standard Units (S.U.)
Basis: eDMR data
Discharge temperature: 25°C (default value used in the absence of data)
Median stream pH to be used: 7.0 Standard Units (S.U.)
Basis: (default value used in the absence of data)
Stream Temperature: 25˚C (default value used for TSF modeling)
Background $CBOD_5$ concentration: 2.0 mg/l
Basis: Default value
Calculated $CBOD_5$ limits: 25.0 mg/l (monthly average)
50.0 mg/l (instantaneous maximum)

Result: WQ modeling resulted in the calculated limits above (see Attachment 2). The calculated limits are less restrictive than the limits that are set in the previous permit. The more restrictive limits set in the previous renewal are retained since, based on eDMR data, the limits are attainable.

i. Dissolved Oxygen (DO)

The technology-based minimum of 4.0 mg/l is recommended by the WQ Model (see Attachment 1) and the SOP based on Chapter 93.7, under the authority of Chapter 92a.61. This is the same as the previous permit and will be retained.

The measurement frequency was changed from 1/week to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001).

j. Total Residual Chlorine (TRC)

☒ TRC limits: 0.5 mg/l (monthly average)
1.6 mg/l (instantaneous maximum)

Basis: The TRC limits above are technology-based using the TRC_Calc Spreadsheet (see Attachment 1) at the first point of use on the receiving stream. The calculated TRC instantaneous maximum limit is less restrictive than the previous renewal. Based on eDMR data, the more restrictive limit is attainable and will be retained.

The measurement frequency was changed from 1/week to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001).

k. Anti-Backsliding

Since all the permit limits in this renewal are the same or more restrictive than the previous NPDES Permit, anti-backsliding is not applicable.

Attachment List:

Attachment 1 - TRC_Calc Spreadsheet

Attachment 2 - WQ Modeling Printouts

Attachment 3 - WMS Open Violations by Client

(The Attachments above can be found at the end of this document)

Compliance History

DMR Data for Outfall 001 (from May 1, 2022 to April 30, 2023)

Parameter	APR-23	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22
Flow (MGD) Average Monthly	0.01283	0.0201	0.00828	0.0143	0.00529	0.003	0.002	0.002	0.001	0.002	0.002	0.002
Flow (MGD) Daily Maximum	0.114	0.155	0.0287	0.0246	0.023	0.006	0.002	0.003	0.002	0.003	0.0025	0.003
pH (S.U.) Minimum	6.17	6.19	6.42	6.79	6.41	6.94	6.54	7.22	6.98	6.59	6.59	7.79
pH (S.U.) Maximum	8.64	8.73	8.61	8.73	7.26	8.71	8.76	8.96	8.86	8.83	8.76	8.97
DO (mg/L) Minimum	6.09	5.12	5.19	6.03	5.87	6.21	6.07	6.41	6.22	6.17	6.17	7.41
TRC (mg/L) Average Monthly	0.4	0.4	0.4	0.5	0.4	0.53	0.47	0.36	0.35	0.46	0.03	0.02
TRC (mg/L) Instantaneous Maximum	0.51	0.51	0.51	0.63	0.74	0.63	0.59	0.46	0.57	0.60	0.06	0.05
CBOD5 (mg/L) Average Monthly	< 4	< 7	5	2	< 3	4.36	2.27	2.20	2.4	2.2	2.2	2.4
TSS (mg/L) Average Monthly	< 5	< 5	< 5	< 5	5	3.75	3.5	6.75	7.25	4.25	2.5	2.5
Fecal Coliform (CFU/100 ml) Geometric Mean	< 29	< 18	< 5	< 1	< 1	1	1	1	5	1	1	1
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	816	326	27	< 1	< 1	1	1	1	25.6	1	1	1
Total Nitrogen (mg/L) Average Monthly	E	3.8	6.68	4.54	0.41	6.45	20.51	16.379	E	11.64	E	E
Ammonia (mg/L) Average Monthly	< 3.0	2.5	< 2.6	2.5	7.2	4.09	2.94	2.09	8.61	0.17	0.1	0.1
Total Phosphorus (mg/L) Average Monthly	E	0.79	1.5	0.79	0.88	1.26	1.32	4.32	E	1.70	E	E

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" (362-0400-001), 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 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.2	1/day	Grab
CBOD5	XXX	XXX	XXX	10.0	XXX	20	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	10.0	XXX	20	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	9.0	XXX	18	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	3.0	XXX	6	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite

Compliance Sampling Location: at Outfall 001, after disinfection.

Flow is monitor only based on Chapter 92a.61. The limits for pH and Dissolved Oxygen are technology-based on Chapter 93.7. The Total Residual Chlorine (TRC) limits are technology-based on Chapter 92a.48. The limits for $CBOD_5$ and Total Suspended Solids are technology-based on a previous Dry Stream Guidance. The limits for Fecal Coliform are technology based on Chapter 92a.47. The limits for Ammonia-Nitrogen are technology-based on a previous Dry Stream Guidance. Monitoring for Total Nitrogen and Total Phosphorus is based on Chapter 92a.61.

Attachment 1

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.151	= 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)	0	=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 2.095	1.3.2.iii	WLA cfc = 2.035
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.781	5.1d	LTA_cfc = 1.183

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)**

Attachment 2

WQM 7.0 Effluent Limits (Perennial Reach)

SWP Basin	Stream Code	Stream Name
20A	36067	LACKAWANNOCK CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
0.340	Perennial Reach	PA0033588b	0.015	CBOD5	5.88		
				NH3-N	6.42	12.84	
				Dissolved Oxygen			2

Inputs equal outputs so all three inputs into Dry Reach model are protective.

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20A	36067	LACKAWANNOCK CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.340	0.015	25.000	7.012
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
5.678	0.383	14.833	0.080
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.52	0.393	0.86	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.411	26.608	Owens	5
Reach Travel Time (days)			
0.259			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.026	2.48	0.83	7.54
0.052	2.45	0.81	7.54
0.078	2.42	0.79	7.54
0.104	2.39	0.77	7.54
0.130	2.36	0.75	7.54
0.156	2.33	0.73	7.54
0.181	2.30	0.71	7.54
0.207	2.27	0.69	7.54
0.233	2.24	0.67	7.54
0.259	2.21	0.66	7.54

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
20A	36067	LACKAWANNOCK CREEK	**0.340**	1029.00	1.51	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	25.00	7.00
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
Perennial Reach	PA0033588b	0.0150	0.0000	0.0000	0.000	25.00	7.10

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	5.88	2.00	0.00	1.50
Dissolved Oxygen	2.00	8.24	0.00	0.00
NH3-N	6.42	0.00	0.00	0.70

(Input from Dry Reach)

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
20A	36067	LACKAWANNOCK CREEK	**0.000**	997.00	3.99	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	25.00	7.00
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
		0.0000	0.0000	0.0000	0.000	0.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
20A	36067	LACKAWANNOCK CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.340	Perennial Reach	6.68	12.84	6.68	12.84	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.340	Perennial Reach	1.33	6.42	1.33	6.42	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
0.34	Perennial Reach	5.88	5.88	6.42	6.42	2	2	0	0

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
20A	36067	LACKAWANNOCK CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
0.340	0.15	0.00	0.15	.0232	0.01783	.383	5.68	14.83	0.08	0.259	25.00	7.01
Q1-10 Flow												
0.340	0.10	0.00	0.10	.0232	0.01783	NA	NA	NA	0.06	0.320	25.00	7.02
Q30-10 Flow												
0.340	0.21	0.00	0.21	.0232	0.01783	NA	NA	NA	0.09	0.223	25.00	7.01

WQM 7.0 D.O.Simulation (Dry Reach)

SWP Basin	Stream Code	Stream Name
20A	36067	LACKAWANNOCK CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.770	0.015	25.000	7.035
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2.375	0.372	6.393	0.069
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
10.72	1.260	9.48	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
2.758	25.531	Owens	NA
Reach Travel Time (days)			
0.379			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.038	10.10	9.12	2.00
0.076	9.51	8.77	2.00
0.114	8.95	8.43	2.00
0.152	8.43	8.11	2.00
0.189	7.94	7.80	2.00
0.227	7.48	7.50	2.00
0.265	7.04	7.22	2.00
0.303	6.63	6.94	2.00
0.341	6.24	6.67	2.00
0.379	5.88	6.42	2.00

(Input into perennial reach)

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
20A	36067	LACKAWANNOCK CREEK	**0.770**	1242.00	0.38	0.00000	0.00	☐

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	25.00	7.00
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
Dry Reach	PA0033588a	0.0150	0.0000	0.0000	0.000	25.00	7.10

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	2.00	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
20A	36067	LACKAWANNOCK CREEK	**0.340**	1029.00	1.51	0.00000	0.00	☐

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	25.00	7.00
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
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Modeling Specifications

Parameters	D.O.	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	Simulation	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	2		

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
20A	36067	LACKAWANNOCK CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
0.770	0.04	0.00	0.04	NA	0.09382	.372	2.37	6.39	0.07	0.379	25.00	7.04
Q1-10 Flow												
0.770	0.02	0.00	0.00	NA	0.09382	NA	NA	NA	0.00	0.000	0.00	0.00
Q30-10 Flow												
0.770	0.05	0.00	0.00	NA	0.09382	NA	NA	NA	0.00	0.000	0.00	0.00

Attachment 3

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

WATER MANAGEMENT SYSTEM
OPEN VIOLATIONS BY CLIENT

Client ID: 287851
Client: All

Open Violations: 3

CLIENT ID	CLIENT	PF ID	FACILITY	PF KIND	PF STATUS	INSP PROGRAM
287851	COUNTRY ESTATES MHP LLC	480923	COUNTRY ESTATES	Community	Active	Safe Drinking Water
287851	COUNTRY ESTATES MHP LLC	480923	COUNTRY ESTATES	Community	Active	Safe Drinking Water
287851	COUNTRY ESTATES MHP LLC	480923	COUNTRY ESTATES	Community	Active	Safe Drinking Water

PROGRAM SPECIFIC ID	INSP ID	VIOLATION ID	INSPECTION CATEGORY	VIOLATION DATE	VIOLATION CODE	VIOLATION	PF INSPECTOR	INSP REGION
6430002	3428963	969792	PF	09/26/2022	C1A	FAILURE TO MEET DESIGN AND CONSTRUCTION STANDARDS	ELKIN,KIRK	NWRO
6430002	3428963	969793	PF	09/26/2022	D2I	FAILURE TO COMPLY WITH UNITERRUPTED SYSTEM SERVICE PLAN REQUIREMENTS	ELKIN,KIRK	NWRO
6430002	3428963	969794	PF	09/26/2022	D2I	FAILURE TO COMPLY WITH UNITERRUPTED SYSTEM SERVICE PLAN REQUIREMENTS	ELKIN,KIRK	NWRO