pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0239003**
Facility Type	**Non-Municipal**	APS ID	**1017725**
Major / Minor	**Minor**	Authorization ID	**1316801**

Applicant and Facility Information

Applicant Name	**H&H Property Investments, LLC**	Facility Name	**Perry Lake Estates MHP**
Applicant Address	21 Winnow Drive	Facility Address	126 Holly Circle
	Clayton, DE 19938		Harmony, PA 16037
Applicant Contact	Tessie Harrison	Facility Contact	Tessie Harrison
Applicant Phone	(267) 981-4783	Facility Phone	(267) 981-4783
Client ID	236252	Site ID	445365
Ch 94 Load Status	Not Overloaded	Municipality	Lancaster Township
Connection Status	No Limitations	County	Butler County
Date Application Received	May 22, 2020	EPA Waived?	Yes
Date Application Accepted	June 10, 2020	If No, Reason	-
Purpose of Application	Renewal of an NPDES Permit for an existing discharge of treated sanitary wastewater. This is permit is being drafted for a second time due to compliance issues preventing final issuance. The first draft was noticed more than two years ago, so it is being redrafted to provide for public comment.		

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 protect the uses of the receiving stream.

I. OTHER REQUIREMENTS:

A. Stormwater into sewers
B. Right of way
C. Solids handling
D. Public sewerage availability
E. Effluent Chlorine Optimization and Minimization

SPECIAL CONDITIONS:

II. Solids Management

There are 5 open violations in efacts associated with the subject Client ID (236252) as of 1/9/2024 (see Attachment 1). *The permittee will be notified of the open violations in the Draft Permit Cover Letter and given an opportunity to address the violations prior to final permit issuance. CWY 1/9/2024*

Approve	Deny	Signatures	Date
X		Stephen A. McCauley Stephen A. McCauley, E.I.T. / Environmental Engineering Specialist	1/9/2024
X		Chad W. Yurisic Chad W. Yurisic, P.E. / Environmental Engineer Manager	1/9/2024

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.0046
Latitude	40º 52' 30.00"	Longitude	-80º 8' 40.00"
Quad Name	-	Quad Code	-
Wastewater Description:	Sewage Effluent		
Receiving Waters	Scholars Run (WWF)	Stream Code	34913
NHD Com ID	126216798	RMI	5.9
Drainage Area	0.35	Yield (cfs/mi^2)	0.047 (Buffalo Cr. 1976-1996)
Q_{7-10} Flow (cfs)	0.016	Q_{7-10} Basis	calculated
Elevation (ft)	1200	Slope (ft/ft)	0.01578
Watershed No.	20-C	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	-

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

Nearest Downstream Public Water Supply Intake	Beaver Falls Municipal Water Authority - Eastvale		
PWS Waters	Beaver River	Flow at Intake (cfs)	561
PWS RMI	3.5	Distance from Outfall (mi)	33.0

Sludge use and disposal description and location(s): Sludge is hauled to the New Castle WWTP, where it is disposed of at 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 0.0046 MGD of treated sewage from a MHP in Lancaster Township, Butler County.

Treatment permitted under Water Quality Management Permit No. 1003404 consists of the following: A 1,700 gallon flow equalization tank, a Bio-Wheel rotating biological contactor package STP that provides aeration as well as 2,367 square feet of contact stabilization, an integral 1,064 gallon clarifier, chemical addition for ammonia and phosphorus control, chlorine tablet disinfection with a 376 gallon chlorine contact tank, and a 1,970 gallon aerated sludge holding tank.

1. Streamflow:

Buffalo Creek at Freeport, PA (1976-1996) - used for most Connoquenessing Creek discharges:

Q_{7-10}:	137	cfs	(USGS StreamStats)
Drainage Area:	6.37	sq. mi.	(USGS StreamStats)
Yieldrate:	0.047	cfsm	calculated

Scholars Run at Outfall 001:

Yieldrate:	0.047	cfsm	calculated above
Drainage Area:	0.35	sq. mi.	(USGS StreamStats)
Q_{7-10}:	0.016	cfs	calculated

% of stream allocated: 100% Basis: No nearby discharges

2. Wasteflow:

Maximum discharge: 0.0046 MGD = 0.0071 cfs

Runoff flow period: 24 hours Basis: Runoff flow with flow equalization

There is greater than 3 parts stream flow (Q7-10) to 1 part effluent (design flow). In accordance with the SOP, 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, are not required to be evaluated for this facility.

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, E. Coli, Total Phosphorus, Total Nitrogen, NH_3-N, $CBOD_5$, Dissolved Oxygen, and Disinfection.

a. pH

Between 6.0 and 9.0 at all times

Basis: Application of Chapter 93.7 technology-based limits.

The measurement frequency was previously set 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), which will be retained.

b. Total Suspended Solids

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

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

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 greater than 0.002 MGD and less than 0.05 MGD.

e. Total Phosphorus

The previous limits based on Chapter 96.5 to protect the Connoquenessing Creek will be retained with this renewal.

f. Total Nitrogen

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

g. Ammonia-Nitrogen (NH_3-N)

Median discharge pH to be used:	7.2	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 WWF modeling)
Background NH_3-N concentration:	0.1	mg/l
		Basis: Default value.
Calculated NH_3-N Summer limits:	5.5	mg/l (monthly average)
	11.0	mg/l (instantaneous maximum)
Calculated NH_3-N Winter limits:	16.5	mg/l (monthly average)
	33.0	mg/l (instantaneous maximum)

Result: WQ modeling resulted in the summer limits above (see Attachment 2). The winter limits are calculated as three times the summer limits. Since the previous NH3-N limits are more restrictive, and are being attained, they will be retained.

h. $CBOD_5$

Median discharge pH to be used: 7.2 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 WWF 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 limits above (see Attachment 2), which are the same as in the previous permit and will be retained.

i. Dissolved Oxygen (DO)

The Dissolved Oxygen minimum of 4.0 mg/l will be retained with this renewal. The technology-based minimum of 4.0 mg/l is recommended by the WQ Model (see Attachment 2) and the SOP based on Chapter 93.7, under the authority of Chapter 92a.61.

The measurement frequency was previously set 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), which will be retained.

j. Disinfection

☐ Ultraviolet (UV) light monitoring

☒ Total Residual Chlorine (TRC) limits: 0.3 mg/l (monthly average)
1.1 mg/l (instantaneous maximum)

Basis: The TRC limits above are water quality-based using the TRC_Calc Spreadsheet (see Attachment 3), which are the same as the final limits in the previous permit and will be retained.

The measurement frequency was previously set 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), which will be retained.

4. Reasonable Potential Analysis for Receiving Stream:

A Reasonable Potential Analysis was not performed in accordance with State practices for Outfall 001 since no sampling other than sewage-related parameters was performed for this facility with the renewal application.

5. Reasonable Potential for Downstream Public Water Supply (PWS):

The Reasonable Potential Analysis performed above does not calculate limits for parameters that are based on PWS criteria (TDS, Chloride, Bromide, and Sulfate). However, since no data was provided, mass-balance calculations were not able to be performed.

Nearest Downstream potable water supply (PWS): Beaver Falls Municipal Water Authority - Eastvale

Distance downstream from the point of discharge: 33.0 miles (approximate)

Basis: No limits or monitoring are necessary as significant dilution is available.

6. 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.

6. Attachment List:

Attachment 1 - Open Violations by Client

Attachment 2 - WQ Modeling Printouts

Attachment 3 - TRC_Calc Spreadsheet

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

Compliance History

DMR Data for Outfall 001 (from December 1, 2022 to November 30, 2023)

Parameter	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23	JAN-23	DEC-22
Flow (MGD) Average Monthly	0.0016	0.00171	0.00164	0.00158	0.00169	0.00098	E	E	E	E	E	E
Flow (MGD) Daily Maximum	0.0028	0.00281	0.00258	0.0022	0.0051	0.0017	E	E	E	E	E	E
pH (S.U.) Minimum	7.4	7.59	6.99	7.27	6.74	6.69	6.02	6.21	E	E	E	E
pH (S.U.) Maximum	8.99	8.99	8.8	8.58	8.63	7.83	7.73	7.59	E	E	E	E
DO (mg/L) Minimum	4.91	4.54	4.01	4.88	1.16	0.88	0.9	1.58	E	E	E	E
TRC (mg/L) Average Monthly	0.08	< 0.06	0.07	< 0.06	0.08	0.09	0.08	0.59	E	E	E	E
TRC (mg/L) Instantaneous Maximum	0.25	0.24	0.38	0.72	0.23	0.22	0.22	1.52	E	E	E	E
CBOD5 (mg/L) Average Monthly	18.1	17.5	27.9	26	< 33.5	21.5	51.2	81.2	266.7	< 117.8	< 41.9	60.7
CBOD5 (mg/L) Instantaneous Maximum	32	23.3	66.2	60.1	118	53.1	132	155	551	303	63.6	70.5
TSS (mg/L) Average Monthly	757	56	67	63	15	129	183	179	72	199	20	23
TSS (mg/L) Instantaneous Maximum	1460	57	98	70	18	248	348	274	108	370	29	25
Fecal Coliform (CFU/100 ml) Geometric Mean	2420	68	312	> 85	< 7	69	< 1	> 2420	> 2420	> 2420	> 2420	> 2420
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	2420	82	649	> 2420	44	473	1	> 2420	> 2420	> 2420	> 2420	> 2420
Total Nitrogen (mg/L) Average Monthly	44.3	32	29.5	43.2	19.7	51.3	39.5	79.3	52	89.3	43.6	47.9
Ammonia (mg/L) Average Monthly	29.3	22.3	20.9	29.7	20.3	3.13	24.0	26.9	40.1	41.7	28.4	39.5
Ammonia (mg/L) Instantaneous Maximum	31.7	23.4	21.0	32.3	27.1	4.98	26.7	48.0	42.6	43.3	28.9	40.3
Total Phosphorus (mg/L) Average Monthly	9.8	5.57	5.44	5.09	2.63	5.65	5.8	9.14	9.55	8.22	7.34	6.65
Total Phosphorus (mg/L) Instantaneous Maximum	11.5	5.85	6.3	5.14	3.4	9.6	8.72	9.94	12.5	11.6	9.72	6.8

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 Daily Min	XXX	9.0 Daily Max	XXX	1/day	Grab
DO	XXX	XXX	4.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.3	XXX	1.1	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	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	Grab
Ammonia Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	10.5	XXX	21.0	2/month	Grab
Ammonia- Nitrogen May 1 - Oct 31	XXX	XXX	XXX	3.5	XXX	7.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	2.0	XXX	4.0	2/month	Grab

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 water quality-based on Chapter 93.7. The limits for $CBOD_5$, Total Suspended Solids, and Fecal Coliforms are technology-based on Chapter 92a.47. Monitoring for E. Coli and Total Nitrogen is based on Chapter 92a.61. The limits for Ammonia-Nitrogen are water quality-based on Chapter 93.7. The limits for Total Phosphorus are based on Chapter 96.5.

Attachment 1

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WATER MANAGEMENT SYSTEM
OPEN VIOLATIONS BY CLIENT

Client ID: 236252
Client: All

Open Violations: 5

CLIENT ID	CLIENT	PF ID	FACILITY	PF KIND	PF STATUS	INSP PROGRAM
236252	H & H PROP INVESTMENTS LLC	470387	PERRY LAKE ESTATES	Community	Active	Safe Drinking Water
236252	H & H PROP INVESTMENTS LLC	631232	PERRY LAKE ESTATES MHP	Sewage Non-Publicly Owned (Non-Muni)	Active	WPC NPDES
236252	H & H PROP INVESTMENTS LLC	631232	PERRY LAKE ESTATES MHP	Sewage Non-Publicly Owned (Non-Muni)	Active	WPC NPDES
236252	H & H PROP INVESTMENTS LLC	631232	PERRY LAKE ESTATES MHP	Sewage Non-Publicly Owned (Non-Muni)	Active	WPC NPDES
236252	H & H PROP INVESTMENTS LLC	631232	PERRY LAKE ESTATES MHP	Sewage Non-Publicly Owned (Non-Muni)	Active	WPC NPDES

PROGRAM SPECIFIC ID	INSP ID	VIOLATION ID	INSPECTION CATEGORY	VIOLATION DATE	VIOLATION CODE	VIOLATION	PF INSPECTOR	INSP REGION
5100043	3561485	996808	PF	05/23/2023	C7	FAILURE TO COMPLY WITH A PERMIT CONDITION	MUHA,LARRY	NWRO
PA0239003	3331032	947164	PF	03/02/2022	CSL611A	CSL - Failure to comply with a DEP-issued enforcement order	SINGER,SEAN	NWRO
PA0239003	3390192	961404	PF	07/11/2022	CSL611A	CSL - Failure to comply with a DEP-issued enforcement order	SINGER,SEAN	NWRO
PA0239003	3437105	971446	PF	10/06/2022	CSL611A	CSL - Failure to comply with a DEP-issued enforcement order	SINGER,SEAN	NWRO
PA0239003	3533337	990529	PF	04/04/2023	CSL611A	CSL - Failure to comply with a DEP-issued enforcement order	SINGER,SEAN	NWRO

Attachment 2

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
20C	34913	SCHOLARS RUN

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)
5.900	Perry Lake	PA0239003	0.005	CBOD5	25		
				NH3-N	5.57	11.14	
				Dissolved Oxygen			4

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20C	34913	SCHOLARS RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
5.900	0.005	25.000	7.051
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2.378	0.278	8.563	0.036
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
8.95	0.580	1.68	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.471	28.037	Owens	5
Reach Travel Time (days)			
2.054			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.205	7.70	1.36	7.54
0.411	6.63	1.10	7.54
0.616	5.71	0.89	7.54
0.822	4.91	0.72	7.54
1.027	4.23	0.59	7.54
1.233	3.64	0.47	7.54
1.438	3.13	0.38	7.54
1.643	2.70	0.31	7.54
1.849	2.32	0.25	7.54
2.054	2.00	0.20	7.54

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		

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
20C	34913	SCHOLARS RUN	**5.900**	1200.00	0.35	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	0.047	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	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
Perry Lake	PA0239003	0.0046	0.0000	0.0000	0.000	25.00	7.20

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	7.54	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
20C	34913	SCHOLARS RUN	**4.700**	1100.00	1.20	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	0.047	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	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
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

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

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
20C	34913	SCHOLARS RUN

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												
5.900	0.02	0.00	0.02	.0071	0.01578	.278	2.38	8.56	0.04	2.054	25.00	7.05
Q1-10 Flow												
5.900	0.01	0.00	0.01	.0071	0.01578	NA	NA	NA	0.03	2.416	25.00	7.07
Q30-10 Flow												
5.900	0.02	0.00	0.02	.0071	0.01578	NA	NA	NA	0.04	1.812	25.00	7.04

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
20C	34913	SCHOLARS RUN

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
5.900	Perry Lake	10.38	25.75	10.38	25.75	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
5.900	Perry Lake	1.35	5.57	1.35	5.57	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)		
5.90	Perry Lake	25	25	5.57	5.57	4	4	0	0

Attachment 3

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.016	= Q stream (cfs)	0.5	= CV Daily
0.0046	= 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 =	0.736	1.3.2.iii	WLA cfc =	0.710
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	0.274	5.1d	LTA_cfc =	0.413

Source	Reference	Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.338	AFC
		INST MAX LIMIT (mg/l) =	1.104	

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)**