pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0103594**
Facility Type	**Non-Municipal**	APS ID	**1088344**
Major / Minor	**Minor**	Authorization ID	**1439453**

Applicant and Facility Information

Applicant Name	**Madhuri Gorrepati**	Facility Name	**Windsor MHP**
Applicant Address	3824 Trythall Street	Facility Address	2871 Us Route 6n East
	Bethlehem, PA 18020-2925		Edinboro, PA 16412-9801
Applicant Contact	Madhuri Gorrepati	Facility Contact	Madhuri Gorrepati
Applicant Phone		Facility Phone	
Client ID	205841	Site ID	447204
Ch 94 Load Status	Not Overloaded	Municipality	Washington Township
Connection Status	No Limitations	County	Erie
Date Application Received	May 1, 2023	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: Renewal *and Transfer* of an NPDES Permit for a Non-Municipal Minor Sewage Treatment Facility.

Summary of Review

Proposed is the renewal *and transfer* of an NPDES Permit for an existing sewage treatment plant discharge from the Windsor Mobile Home Park.

Treatment consists of a Lagoon System; influent enters a solids settling tank, then the primary lagoon, passes through a bar screen on the way to the secondary lagoon, then passes over the calcium hypochlorite tablet feeder, enters the contact chamber, and then flows over a weir wall into discharge pipe and outfall.

There are currently 13 open violations in WMS for the subject Client ID (380336) as of 2/14/24. All of the open violations come from the Safe Drinking Water program.

There are currently 26 DMR violations within the permit term, 11 of those violations happened within the last two years and will be covered in depth further in the Compliance History section of this Fact Sheet.

Act 14 – Notification was submitted and received.

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.

Approve	Deny	Signatures	Date
X		Dustin Hargenrater Dustin Hargenrater / Civil Engineer Trainee	February 14, 2023
		Vacant / Environmental Engineer Manager	Okay to Draft JCD 3/4/2024

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.0092
Latitude NHD	41º 53' 2.03"	Longitude NHD	-80º 4' 27.11"
Latitude DP	41º 53' 10.00"	Longitude DP	-80º 4' 35.53"
Quad Name	Cambridge Springs	Quad Code	41080H1
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary of Little Conneauttee Creek (CWF)	Stream Code	52965
NHD Com ID	127344700	RMI	2.23
Drainage Area	Dry – 0.04 Perennial – 0.39	Yield (cfs/mi^2)	Dry – 0 Perennial – 0.042
Q_{7-10} Flow (cfs)	Dry – 0 Perennial – 0.0162	Q_{7-10} Basis	Dry Stream USGS - StreamStats
Elevation (ft)	Dry – 1425 Perennial - 1406	Slope (ft/ft)	0.013319
Watershed No.	16-A	Chapter 93 Class.	CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

Background/Ambient Data		Data Source
pH (SU)	7.0	Default
Temperature (°F)	20	Default - CWF
Hardness (mg/L)	100	Default
Other:		

Nearest Downstream Public Water Supply Intake		Aqua Pennsylvania Inc. - Emlenton	
PWS Waters	Allegheny River	Flow at Intake (cfs)	1,376
PWS RMI	90.0	Distance from Outfall (mi)	92.4

Changes Since Last Permit Issuance: None

Treatment Facility Summary				
Treatment Facility Name: Windsor Mobile Home Park				
WQM Permit No.	**Issuance Date**			
2570410	October 5, 1970			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary With Ammonia Reduction	Stabilization Lagoon	Hypochlorite	0.0092
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.0092	15.3	Not Overloaded	Aerobic Digestion	Other WWTP

Changes Since Last Permit Issuance: None

Other Comments:

Lagoon treatment with a design flow over 2000 gpd.

Treatment: screening, 43,700-square foot primary lagoon and 6,750-square foot secondary lagoon with chlorination.

30-unit mobile home park.

Compliance History

DMR Data for Outfall 001 (from April 1, 2022 to March 31, 2023)

Parameter	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22	APR-22
Flow (MGD) Average Monthly	0.0031	0.0034	0.0032	0.002675	0.002675	0.002767	0.002825	0.0031	0.002625	0.002280	0.00252	0.002125
pH (S.U.) Daily Minimum	6.7	6.8	6.7	6.8	6.6	6.7	6.7	6.8	6.7	6.7	6.8	6.7
pH (S.U.) Daily Maximum	7.3	7.3	7.2	7.4	7.2	7.3	7.3	7.4	7.2	7.1	7.4	7.1
DO (mg/L) Daily Minimum	5.06	5.01	5.27	5.14	5.36	4.46	4.46	4.59	4.62	4.98	5.42	7.21
TRC (mg/L) Average Monthly	0.14	0.08	0.09	0.21	0.08	0.07	0.11	0.10	0.09	0.09	0.08	0.21
CBOD5 (mg/L) Average Monthly	13.7	12.6	2.0	2.0	3.23	8.905	8.9005	9.105	18.6	12.65	7.53	12.435
CBOD5 (mg/L) Instantaneous Maximum	18.0	16.1	2.0	2.0	4.46	9.36	9.36	12.3	23.5	14.2	12.0	18.3
TSS (mg/L) Average Monthly	17.0	22.0	5.0	5.0	7.0	17.5	17.5	24.5	64.5	34.0	8.5	15.0
TSS (mg/L) Instantaneous Maximum	17.0	26.0	5.0	5.0	9.0	21.0	21.0	26.0	66.0	38.0	12.0	21.0
Fecal Coliform (CFU/100 ml) Geometric Mean	12	1.5	1	1	6	21	21	3	377	116	64	2
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	23	2.0	1	1	31	43	43	5	725	119	411	3
Total Nitrogen (mg/L) Annual Average				0.729								
Ammonia (mg/L) Average Monthly	3.47	5.1	5.85	5.85	3.98	3.47	3.47	1.85	2.17	1.799	3.78	6.195
Ammonia (mg/L) Instantaneous Maximum	3.72	7.08	10.9	10.9	4.94	4.44	4.44	2.68	2.36	2.63	4.93	6.66
Total Phosphorus (mg/L) Annual Average				0.20								

Compliance History

Effluent Violations for Outfall 001, from: May 1, 2022 To: March 31, 2023

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TSS	06/30/22	Avg Mo	34.0	mg/L	30.0	mg/L
TSS	07/31/22	Avg Mo	64.5	mg/L	30.0	mg/L
TSS	07/31/22	IMAX	66.0	mg/L	60.0	mg/L
Fecal Coliform	07/31/22	Geo Mean	377	CFU/100 ml	200	CFU/100 ml

Other Comments: High temperatures in the months of June and July expected to effect TSS and Fecal Coliform reporting. No external comments were made, and no corrective action was reported for these violations.

The permittee has demonstrated its ability to comply by meeting the proposed limits at least 75% of the time considering existing performance data, no compliance schedule will be established in the draft permit.

Based on the definition of chronic or significant violations stated in the SOP this facility only has 2 significant violations within the last two years. The first being in September of 2021, and the second being in July of 2022.

Effluent Violation Summary from May 1, 2021 to May 1, 2023:

June 2021: CBOD5 Average Monthly reported value **35 mg/L**, permit limit **25 mg/L**. No Cause of Non-Compliance, Corrective Action, or External Comments were reported.

July 2021: CBOD5 Average Monthly reported value **27 mg/L**, permit limit **25 mg/L**. No Cause of Non-Compliance, Corrective Action, or External Comments were reported.

September 2021: Fecal Coliform Geometric Mean reported value **739 CFU/100 ml**, permit limit **200 CFU/100 ml**. No Cause of Non-Compliance, Corrective Action, or External Comments were reported.

September 2021: Fecal Coliform Instantaneous Maximum reported value **1120 CFU/100 ml,** permit limit **1000 CFU/100 ml**. No Cause of Non-Compliance, Corrective Action, or External Comments were reported.

October 2021: Total Suspended Solids Average Monthly reported value **35 mg/L**, permit limit **30 mg/L**. No Cause of Non-Compliance, Corrective Action, or External Comments were reported.

November 2021: Total Residual Chlorine Average Monthly reported value **.9 mg/L**, permit limit **.5 mg/L**. No Cause of Non-Compliance, Corrective Action, or External Comments were reported.

December 2021: Total Suspended Solids Average Monthly reported value **31 mg/L**, permit limit **30 mg/L.** No Cause of Non-Compliance, Corrective Action, or External Comments were reported.

June 2022: Total Suspended Solids Average Monthly reported value **34 mg/L**, permit limit **30 mg/L**. No Cause of Non-Compliance, Corrective Action, or External Comments were reported.

July 2022: Total Suspended Solids Average Monthly reported value **64.5 mg/L**, permit limit **30 mg/L**. No Cause of Non-Compliance, Corrective Action, or External Comments were reported.

July 2022: Fecal Coliform Geometric Mean reported value **377 CFU/100 ml**, permit limit **200 CFU/100 ml**. No Cause of Non-Compliance, Corrective Action, or External Comments were reported.

July 2022: Total Suspended Solids Instantaneous Maximum reported value **66 mg/L**, permit limit **60 mg/L**. No Cause of Non-Compliance, Corrective Action, or External Comments were reported

Inspection Summary:

Inspection ID: 3005473
Inspected Date: 03/03/2020
Inspection Type: Administrative/File Review
Inspection Result: Violations Noted
Inspector: Tami Opila
Violations: Failure to pay annual fee

Inspection ID: 3068914
Inspected Date: 08/04/2020
Inspection Type: Compliance Evaluation
Inspection Result: No Violations Noted
Inspector: Melissa Carver
Violations: None

Inspection ID: 3082283
Inspected Date: 09/04/2020
Inspection Type: Follow-up Inspection
Inspection Result: No Violations Noted
Inspector: Melissa Carver
Violations: None

Inspection ID: 3160997
Inspected Date: 03/12/2021
Inspection Type: Administrative/File Review
Inspection Result: Violations Noted
Inspector: Sean Singer
Violations: Violation of Effluent limits in Part A of the Permit

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .0092
Latitude 41º 53' 10.00" **Longitude** -80º 4' 35.53"
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)

Water Quality-Based Limitations

The discharge was modeled using WQM 7.0 to evaluate CBOD5, Ammonia-Nitrogen, and Dissolved Oxygen parameters. The modeling results show technology based effluent limitations for CBOD5 are appropriate. The modeling results also confirm that Ammonia-Nitrogen and Dissolved Oxygen limitations are necessary to meet in-stream water quality criterion. Since this facility discharges to a dry stream the dry stream was modeled first. Dry stream conditions exist for about .1 miles before the discharge reaches perennial conditions at Tributary 52965 of Little Conneauttee Creek. The following modeling considerations were used when modeling the dry stream:

D.O. Goal: 2 mg/L for Dry Streams
CBOD5: In stream concentration of 0 for dry streams at confluence with Tributary 52965.
NH3-N: In stream concentration of 0 for dry streams at confluence with Tributary 52965.
Yield: 0.001 used for Dry Streams
Discharge pH: Calculated using averages of June-September (dry season) for the facility.

The conclusion that the dry stream model provided was that the concentration of the three modeled parameters was still declining. Using the data from the dry stream model D.O. Simulation, we can accurately represent the concentration of the parameters entering the stream at perennial conditions.

The perennial stream modeling suggested that more stringent limits were not required for CBOD5 and Dissolved Oxygen. This determination was made because the inputted data from the D.O. Simulation did not change when modeling the stream for perennial conditions. However, the data did change for Ammonia-Nitrogen which suggests that a limit should be put in place for this parameter. The perennial stream modeling suggested a monthly average limit of 4.81 mg/L and a maximum concentration limit of 9.62 mg/L. Since this is not a POTW it will not be subject to monthly mass loading limits for CBOD5, Total Suspended Solids, and Ammonia-Nitrogen. Using the Round-Off Guidelines in the Technical Guidance for the Development and Specification of Effluent Limitations these values will translate to 4.8 mg/L monthly limit and 9.6 mg/L IMAX limit. The facility is able to meet this limitation over 75% of the time from the last 4 years of effluent data so a compliance schedule will not be developed.

The Total Suspended Solids, pH, Fecal Coliform, or Total Residual Chlorine parameters are not evaluated using WQM 7.0. The bases for the proposed technology-based limitations are listed in the table above. WQM 7.0 and TRC_CALC output files are attached to this fact sheet.

Best Professional Judgment (BPJ) Limitations

A Dissolved Oxygen minimum limitation of 4.0 mg/L will be implemented based on the standard in 25 PA Code Chapter 93 and best professional judgement.

Anti-Backsliding

N/A

Additional Considerations

Nutrient monitoring is required to establish the nutrient load from the wastewater treatment facility and the impacts that load may have on the quality of the receiving stream(s). Sewage discharges with design flows > 2,000 gpd require monitoring, at a minimum, for Total Nitrogen and Total Phosphorous in new and reissued permits. A monitoring frequency of once per year is acceptable. The discharge is to water not impaired for nutrients.

Monitoring frequency for the proposed effluent limits are based on Table 6-3, Self-Monitoring Requirements for Sewage Dischargers, from the Departments Technical Guidance for the Development and Specification of Effluent Limitations

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	XXX	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	3/week	Grab
DO	XXX	XXX	4.0 Daily Min	XXX	XXX	XXX	3/week	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	3/week	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
Total Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	14.4	XXX	28.8	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	4.8	XXX	9.6	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Grab
E. Coli	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Grab

Compliance Sampling Location: Outfall 001, after disinfection

TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.12	= Q stream (cfs)	0.5	= CV Daily
0.009	= Q discharge (MGD)	0.5	= CV Hourly
24	= 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 = 2.768	1.3.2.iii	WLA cfc = 2.691
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 1.032	5.1d	LTA_cfc = 1.565

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.261	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.597	

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)**

WQM 7.0 v1.1 – Dry Stream Model

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
16A	52960	Trib 52960 to Little Conneauttee Cr

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												
0.100	0.00	0.00	0.00	.0139	0.05303	.293	.97	3.32	0.05	0.125	20.00	6.88
Q1-10 Flow												
0.100	0.00	0.00	0.00	.0139	0.05303	NA	NA	NA	0.00	0.000	0.00	0.00
Q30-10 Flow												
0.100	0.00	0.00	0.00	.0139	0.05303	NA	NA	NA	0.00	0.000	0.00	0.00

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
16A	52960	Trib 52960 to Little Conneauttee Cr	0.100	1425.00	0.04	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	0.001	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	6.88	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
Windsor MHP	PA0103594	0.0090	0.0090	0.0090	0.000	20.00	6.88

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	0.00	0.00	1.50
Dissolved Oxygen	4.00	8.24	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
16A	52960	Trib 52960 to Little Conneauttee Cr	**0.000**	1397.00	0.04	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	0.001	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	6.88	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	20.00	6.88

Parameter Data

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

WQM 7.0 Modeling Specifications

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

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
16A	52960	Trib 52960 to Little Conneauttee Cr

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)		
0.10	Windsor MHP	25	25	25	25	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
16A	52960	Trib 52960 to Little Conneauttee Cr

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.100	0.009	20.000	6.880
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
0.975	0.293	3.322	0.049
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
24.94	1.500	24.94	0.700
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
4.011	27.717	Owens	2
Reach Travel Time (days)			
0.125			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.013	24.47	24.72	4.09
0.025	24.02	24.50	4.17
0.038	23.57	24.29	4.24
0.050	23.13	24.08	4.31
0.063	22.70	23.87	4.37
0.075	22.28	23.66	4.44
0.088	21.86	23.45	4.50
0.100	21.46	23.25	4.56
0.113	21.06	23.05	4.62
0.125	20.67	22.84	4.68

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
16A	52960	Trib 52960 to Little Conneauttee Cr

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)
0.100	Windsor MHP	PA0103594	0.009	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4

WQM 7.0 v1.1 – Perennial Conditions Modeling

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
16A	52960	Trib 52960 to Little Conneauttee Cr	2.230	1406.00	0.39	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	0.042	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
Windsor MHP	PA0103594	0.0090	0.0090	0.0090	0.000	20.00	6.88

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	20.67	2.00	0.00	1.50
Dissolved Oxygen	4.68	8.24	0.00	0.00
NH3-N	22.84	0.10	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
16A	52960	Trib 52960 to Little Conneauttee Cr	**1.774**	1335.00	0.76	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	0.043	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
		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
16A	52960	Trib 52960 to Little Conneauttee Cr

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												
2.230	0.02	0.00	0.02	.0139	0.02951	.292	2.45	8.39	0.04	0.661	20.00	6.94
Q1-10 Flow												
2.230	0.01	0.00	0.01	.0139	0.02951	NA	NA	NA	0.04	0.746	20.00	6.93
Q30-10 Flow												
2.230	0.02	0.00	0.02	.0139	0.02951	NA	NA	NA	0.05	0.599	20.00	6.95

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	6		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
16A	52960	Trib 52960 to Little Conneauttee Cr

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
2.230	Windsor MHP	17.81	30.99	17.81	30.99	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
2.230	Windsor MHP	1.92	4.81	1.92	4.81	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)		
2.23	Windsor MHP	20.67	20.67	4.81	4.81	4.68	4.68	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
16A	52960	Trib 52960 to Little Conneauttee Cr

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
2.230	0.009	20.000	6.940
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2.450	0.292	8.395	0.042
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
10.63	1.260	2.27	0.700
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.596	25.372	Owens	6
Reach Travel Time (days)			
0.661			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.066	9.78	2.17	7.84
0.132	9.00	2.07	8.13
0.198	8.28	1.98	8.24
0.264	7.62	1.89	8.24
0.331	7.01	1.80	8.24
0.397	6.45	1.72	8.24
0.463	5.93	1.65	8.24
0.529	5.46	1.57	8.24
0.595	5.02	1.50	8.24
0.661	4.62	1.43	8.24

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
16A	52960	Trib 52960 to Little Conneauttee Cr

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)
2.230	Windsor MHP	PA0103594	0.009	CBOD5	20.67		
				NH3-N	4.81	9.62	
				Dissolved Oxygen			4.68