pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0204625**
Facility Type	**Non-Municipal**	APS ID	**1045497**
Major / Minor	**Minor**	Authorization ID	**1365309**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Feather Family Revocable Trust**	Facility Name	**Feather Nest MHP STP**
Applicant Address	1510 Dark Shade Drive	Facility Address	1510 Dark Shade Drive
	Windber, PA 15963-6223		Windber, PA 15963-6223
Applicant Contact	Robert Feather	Facility Contact	Same as Applicant
Applicant Phone	(814) 467-5612	Facility Phone	Same as Applicant
Client ID	364852	Site ID	257601
Ch 94 Load Status	Not Overloaded	Municipality	Paint Township
Connection Status	No Limitations	County	Somerset
Date Application Received	August 10, 2021	EPA Waived?	Yes
Date Application Accepted	August 16, 2021	If No, Reason	

Purpose of Application: Application for renewal and transfer of an NPDES permit for treated sewage.

Summary of Review

The permittee has applied for a renewal and transfer of NPDES Permit No. PA0204625. NPDES Permit No. PA0204625 was previously issued by the PA Department of Environmental Protection (DEP) on August 23, 2016and expired on August 31, 2021. The renewal application was submitted in a timely manner; therefore, the permit was granted administrative extension.

The permit is being transferred from Robert Feather to Feather Family Revocable Trust.

Sewage from this facility is treated by extended aeration, final clarification, rapid sand filtration and chlorination before discharging to Trib 45277 of Shade Creek. Trib 45277 of Shade Creek is classified as a Cold-Water Fishery per Chapter 93 Designated Use.

The new permittee has applied for eDMR and intends to use it.

The Act-14 PL 834 Municipal Notification was provided by the February 4, 2021 letters from Robert Feather. No comments were received.

WQM Permit No. 5673413 is also being transferred upon approval from the department.

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*,

Approve	Deny	Signatures	Date
X		Stephanie Conrad / Environmental Engineering Specialist	June 2, 2022
X		Christopher Kriley, P.E. / Environmental Program Manager	June 2, 2022

Summary of Review
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.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.02
Latitude	40º 11' 43"	Longitude	-78º 50' 49"
Quad Name	Windber	Quad Code	1715
Wastewater Description:	Sewage Effluent		

Receiving Waters	Trib 45277 of Shade Creek (CWF)	Stream Code	45277
NHD Com ID	123726472	RMI	0.4
Drainage Area	0.29	Yield (cfs/mi^2)	0.04379
Q_{7-10} Flow (cfs)	0.0127	Q_{7-10} Basis	USGS Stream Stats
Elevation (ft)	1860	Slope (ft/ft)	
Watershed No.	18-E	Chapter 93 Class.	CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	**N/A**		
Source(s) of Impairment	**N/A**		
TMDL Status	Final	Name	Kiskiminetas-Conemaugh River Watersheds TMDL

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

Nearest Downstream Public Water Supply Intake	Saltsburg Municipal Waterworks		
PWS Waters	Conemaugh River	Flow at Intake (MGD)	0.602
PWS RMI	27.4	Distance from Outfall (mi)	62.36

Changes Since Last Permit Issuance: None.

Other Comments: None.

Treatment Facility Summary				
Treatment Facility Name: Feather Nest MHP STP				
WQM Permit No.	**Issuance Date**			
5673413	May 24, 1974			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Tertiary	Extended Aeration	Chlorination	0.02
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.02	86.4	Not Overloaded	Pump and Haul	Other STP

Changes Since Last Permit Issuance: None

Other Comments: None

Compliance History

Operations Compliance Check Summary Report

Facility: Feather Nest MHP STP

NPDES Permit No.: PA0204625

Compliance Review Period: 09/2016 – 09/2021

Inspection Summary:

INSP ID	INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC
3140312	01/25/2021	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted
3004359	02/27/2020	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted
2834607	01/08/2019	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted
2700130	02/21/2018	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted
2573829	02/14/2017	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted

Violation Summary:

No violations

Open Violations by Client ID:

No CW violations for client ID 44897

Enforcement Summary:

No enforcements

DMR Violation Summary:

No DMR violations

Compliance Status:

Permittee is in Clean Water compliance.

Completed by: John Murphy

Completed date: 9/14/2021

Compliance History

DMR Data for Outfall 001 (from August 1, 2020 to July 31, 2021)

Parameter	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20
Flow (MGD) Average Monthly	0.005	0.003	0.004	0.004	0.004	0.005	0.005	0.006	0.005	0.005	0.006	0.005
pH (S.U.) Minimum	6.6	6.8	6.8	7.0	6.8	6.9	6.8	7.0	6.5	6.9	6.9	6.6
pH (S.U.) Maximum	7.5	7.1	7.3	7.6	7.4	7.3	7.6	7.6	7.4	7.4	7.7	7.8
DO (mg/L) Minimum	4.3	4.6	4.9	5.1	5.4	6.0	5.2	5.2	5.0	5.0	5.0	4.5
TRC (mg/L) Average Monthly	0.42	0.34	0.38	0.36	0.31	0.3	0.27	0.29	0.27	0.32	0.27	0.31
TRC (mg/L) Instantaneous Maximum	1.12	1.20	0.90	1.1	0.90	0.71	0.57	0.98	0.44	0.85	0.68	0.66
$CBOD_5$ (mg/L) Average Monthly	8.4	3.5	2	2	4	2	2	2	3	3	4.5	4.5
$CBOD_5$ (mg/L) Instantaneous Maximum	10.1	5	2	2	6	2	2	2	4	4	7	6
TSS (mg/L) Average Monthly	10.0	7.5	2	2	3	2.5	2	3	4	5	4.5	7
TSS (mg/L) Instantaneous Maximum	15.0	8	2	2	4	3	2	4	6	6	5	9
Fecal Coliform (CFU/100 ml) Geometric Mean	35.2	1.0	28.3	3.3	5.9	1.0	3.5	1.4	87.8	67.7	6	1.0
Total Nitrogen (mg/L) Daily Maximum								2.4				
Ammonia (mg/L) Average Monthly	0.8	2.44	0.14	0.15	0.56	1.3	0.23	0.68	0.14	1.37	0.47	1.7
Total Phosphorus (mg/L) Daily Maximum								7.44				
Total Aluminum (mg/L) Daily Maximum								0.1				

Total Iron (mg/L) Daily Maximum								0.05				
Total Manganese (mg/L) Daily Maximum								0.03				

Summary of Inspections: The facility was last inspected by PADEP as a Compliance Evaluation on January 25, 2021. There were no violations.

Other Comments:

Permit No. PA0204625

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .02
Latitude 40º 11' 43.00" **Longitude** -78º 50' 49.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Water Quality-Based Limitations

Pursuant to EPA's approval of Pennsylvania's 2017 Triennial Review of Water Quality Standards and corresponding regulatory changes published in the *Pennsylvania Bulletin* on July 11, 2020, new water quality criteria for ammonia-nitrogen apply to waters of the commonwealth. Therefore, WQBELs for Outfall 001 are being re-evaluated even though there have been no changes to the STP.

The effluent was modeled using WQM 7.0 to evaluate the $CBOD_5$, Ammonia-Nitrogen, and Dissolved Oxygen parameters. Modeling confirmed that technology based effluent limitations are appropriate for $CBOD_5$. The modeling also confirmed that water quality based Dissolved Oxygen and Ammonia-Nitrogen limits are necessary to meet in-stream water quality criterion. In accordance with the SOP's, winter Ammonia-Nitrogen limits were assessed by comparing the winter WQM 7.0 output value with one calculated from the summer limit using a seasonal multiplier of three. The more restrictive of the two values is then imposed. For this facility, the winter Ammonia-Nitrogen limit to be imposed was generated using WQM 7.0 modeling. WQM 7.0 output files are provided in Attachment A.

Total Residual Chlorine was modeled with PADEP's TRC Spreadsheet, and it was determined that a stricter limit should be imposed. The TRC Spreadsheet output file is provided in Attachment B.

Dissolved Oxygen, TRC, and Summer and Winter Ammonia-Nitrogen limits are becoming more restrictive. Based on eDMR data, the facility as operating should be able to meet the new, more restrictive Ammonia-Nitrogen limit. The facility is not, however, able to meet the new, more restrictive dissolved oxygen and TRC limits. A compliance period of three years will therefore be established.

Parameter	Limit (mg/l)	SBC	Model
Total Residual Chlorine	0.07	Average Monthly	TRC Spreadsheet

Dissolved Oxygen	5.0	Instantaneous Minimum	WQM 7.0
Ammonia-Nitrogen (winter)	8.5	Average Monthly	WQM 7.0
Ammonia-Nitrogen (summer)	3.0	Average Monthly	WQM 7.0

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation 40 CFR 122.44 **(l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued. Interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62). (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.**

The facility is not seeking to revise the previously permitted effluent limits.

Additional Considerations

Pursuant to EPA's approval of Pennsylvania's 2017 Triennial Review of Water Quality Standards and corresponding regulatory changes published in the *Pennsylvania Bulletin* on July 11, 2020, sewage, discharges will include monitoring, at a minimum, for E. coli, in new and reissued permits, with a monitoring frequency of 1/year for design flows of 0.002 – 0.05 MGD.

For pH, Dissolved Oxygen (DO) and TRC, a monitoring frequency of 1/day has been imposed.

The receiving stream is not impaired for nutrients, therefore, annual sampling for nitrogen and phosphorus will be imposed per 25 PA Code §92a.61.

Monitoring frequency for the proposed effluent limits are based upon Table 6-3, Self-Monitoring Requirements for Sewage Dischargers, from the Departments Technical Guidance for the Development and Specification of Effluent Limitations. Please note that Monitoring Requirements were changed for pH, DO, and TRC to 1/day to be consistent with the guidance. Mr. Feather requested to keep less frequent monitoring in an email dated November 24, 2021. He was informed that the frequency would be changed to 1/day per the above stated guidance. He was also made aware that the daily samples are not required to be taken by a certified operator and that DO, pH, and TRC probes can be used for continuous measurements. These measurements may be used for daily reporting provided that the probe is installed at the proper location and meets the requirements of 40 CFR 136.

Kiskiminetas-Conemaugh River Watershed TMDL

Section 303(d) of the Clean Water Act and the U.S. Environmental Protection Agency's Water Quality Planning and Management Regulation (codified at Title 40 of the Code of Federal Regulations Part 130) requires states to develop a TMDL for impaired water bodies. A TMDL establishes the amount of a pollutant that a water body can assimilate without exceeding water quality criteria for the pollutant. TMDLs also provide a scientific basis for States to establish water

quality-based controls for reducing pollution from both point and non-point sources in order to restore and maintain the quality of the state's water resources (USEPA 1991a). Stream reaches within the Kiskiminetas-Conemaugh River Watershed are included in the state's 2008 Section 303(d) list because of various impairments including metals, pH, and sediment.

Feather Nest MHP STP (PA0204625) discharges to the Kiskiminetas-Conemaugh River Watershed, for which a TMDL was finalized on January 29, 2010. The TMDL addresses metals, pH, and sediment impairments associated with abandoned mine drainage. This facility is listed as a negligible discharger in Appendix C of the approved TMDL and is covered under the aggregate WLA for negligible dischargers in Appendix G. The WLA for this facility was based on a flow of 0.02 and the in-stream water quality for each pollutant of concern (aluminum, iron and manganese).

The previous permit imposed a monitor and report requirement for aluminum, iron, and manganese. The highest reported value for the last three years of eDMR data is reported below along with the in-stream water quality criteria for each pollutant of concern.

Parameter	Highest Reported Value (mg/l)	Criteria (mg/L)
Aluminum, Total	0.1	0.75
Iron, Total	0.1	1.5
Manganese, Total	0.03	1.0

In accordance with 25 PA Code §92a.61, a 1/year monitoring requirement for iron, manganese, and aluminum will again be imposed in the permit to continue verification that the sewage discharge is not contributing to stream impairment.

A "Reasonable Potential Analysis" was conducted using PADEP's Toxic Management Spreadsheet Version 1.3. The output files are included in Attachment C

The maximum reported value for the last three years and each pollutant of concern was input into the TMS Spreadsheet. The analysis determined that a monitor and report requirement for Aluminum is necessary on the basis that the reported discharge concentration is greater than 10% of the governing WQBEL based on the Acute Fish Criteria.

Total Aluminum concentrations for the last three years were all reported as a detection at a concentration of 0.1 mg/L. If the permittee believes that the measured values were actually "non-detect" they can submit lab reports for the last three years and the monitoring requirement will be reevaluated accordingly.

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: Three Years Following Permit Issuance 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		
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.06	XXX	0.22	1/day	Grab

Compliance Sampling Location: Outfall 001

Other Comments:

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Three Years Following Permit Issuance.

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		
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab

Compliance Sampling Location: Outfall 001

Other Comments:

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (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)	0.02	XXX	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	Grab
TSS	XXX	XXX	XXX	30	XXX	60	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	8.6	XXX	17.2	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	2.9	XXX	5.9	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Total Aluminum	XXX	XXX	Report Avg Mo	XXX	Report Daily Max	Report	1/week	Grab
Total Iron	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Outfall 001 , Continued (from 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		
Total Manganese	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Compliance Sampling Location: Outfall 001
Other Comments:

ATTACHMENT A

WQM 7.0 Modeling Results

Summer

Permit No. PA0204625

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
18E	45277	Trib 45277 to Shade Creek	0.400	1860.00	0.29	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	0.044	0.00	0.00	0.000	0.000	10.0	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
Feather Nest MH	PA0204625	0.0200	0.0000	0.0000	0.000	20.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	9.01	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Permit No. PA0204625

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
18E	45277	Trib 45277 to Shade Creek	0.010	1660.00	0.43	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	0.044	0.00	0.00	0.000	0.000	10.0	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

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WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
18E	45277	Trib 45277 to Shade 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												
0.400	0.01	0.00	0.01	.0309	0.09713	.351	2.03	5.8	0.06	0.390	20.00	7.00
Q1-10 Flow												
0.400	0.01	0.00	0.01	.0309	0.09713	NA	NA	NA	0.06	0.415	20.00	7.00
Q30-10 Flow												
0.400	0.02	0.00	0.02	.0309	0.09713	NA	NA	NA	0.06	0.369	20.00	7.00

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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		

Permit No. PA0204625

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
18E	45277	Trib 45277 to Shade 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
0.400	Feather Nest MH	9.67	12.21	9.67	12.21	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
0.400	Feather Nest MH	1.92	2.99	1.92	2.99	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)		
0.40	Feather Nest MH	25	25	2.99	2.99	5	5	0	0

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WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
18E	45277	Trib 45277 to Shade Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.400	0.020	20.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2.035	0.351	5.795	0.061
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
18.31	1.436	2.12	0.700
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.167	23.121	Owens	6
Reach Travel Time (days)			
0.390			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.039	17.31	2.06	6.79
0.078	16.37	2.01	7.10
0.117	15.47	1.95	7.29
0.156	14.63	1.90	7.41
0.195	13.83	1.85	7.51
0.234	13.08	1.80	7.60
0.273	12.37	1.75	7.68
0.312	11.69	1.70	7.75
0.351	11.06	1.66	7.82
0.390	10.45	1.61	7.89

Permit No. PA0204625

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
18E	45277	Trib 45277 to Shade 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)
0.400	Feather Nest MH	PA0204625	0.020	CBOD5	25		
				NH3-N	2.99	5.98	
				Dissolved Oxygen			5

Winter

Permit No. PA0204625

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
18E	45277	Trib 45277 to Shade Creek	0.400	1860.00	0.29	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	0.088	0.00	0.00	0.000	0.000	10.0	0.00	0.00	5.00	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
Feather Nest MH	PA0204625	0.0200	0.0000	0.0000	0.000	15.00	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	4.00	12.51	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Permit No. PA0204625

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
18E	45277	Trib 45277 to Shade Creek	0.010	1660.00	0.43	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	0.088	0.00	0.00	0.000	0.000	10.0	0.00	0.00	5.00	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

Permit No. PA0204625

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
18E	45277	Trib 45277 to Shade 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												
0.400	0.03	0.00	0.03	.0309	0.09713	.368	2.17	5.9	0.07	0.338	10.49	7.00
Q1-10 Flow												
0.400	0.02	0.00	0.02	.0309	0.09713	NA	NA	NA	0.06	0.373	11.56	7.00
Q30-10 Flow												
0.400	0.03	0.00	0.03	.0309	0.09713	NA	NA	NA	0.08	0.311	9.72	7.00

Permit No. PA0204625

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		

Permit No. PA0204625

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
18E	45277	Trib 45277 to Shade 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
0.400	Feather Nest MH	18.23	27.82	18.23	27.82	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
0.400	Feather Nest MH	4.08	8.64	4.08	8.64	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)		
0.40	Feather Nest MH	25	25	8.64	8.64	4	4	0	0

Permit No. PA0204625

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
18E	45277	Trib 45277 to Shade Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.400	0.020	10.492	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2.171	0.368	5.896	0.070
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
14.63	1.392	4.74	0.337
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.837	18.597	Owens	6
Reach Travel Time (days)			
0.338			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.034	14.19	4.69	8.71
0.068	13.77	4.64	9.19
0.101	13.35	4.58	9.46
0.135	12.95	4.53	9.62
0.169	12.57	4.48	9.73
0.203	12.19	4.43	9.79
0.237	11.83	4.38	9.85
0.271	11.47	4.33	9.89
0.304	11.13	4.28	9.92
0.338	10.79	4.23	9.96

Permit No. PA0204625

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
18E	45277	Trib 45277 to Shade 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)
0.400	Feather Nest MH	PA0204625	0.020	CBOD5	25		
				NH3-N	8.64	17.28	
				Dissolved Oxygen			4

ATTACHMENT B

TRC Modeling Results

Permit No. PA0204625

TRC Spreadsheet_Feather Nest MHP STP

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.0127	= Q stream (cfs)	0.5	= CV Daily
0.02	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	1.3.2.iii	WLA afc =	0.150	1.3.2.iii	WLA cfc =	0.139
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	0.056	5.1d	LTA_cfc =	0.081

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.069	AFC
		INST MAX LIMIT (mg/l) =	0.225	

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 C

TMS Spreadsheet Output

Permit No. PA0204625

Permit No. PA0204625

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Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Feather Nest MHP STP** NPDES Permit No.: **PA0204625** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Treated Sewage**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.02	100	7						

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		100									
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	µg/L											
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L		100									
	Total Lead	µg/L											
	Total Manganese	µg/L		30									
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	µg/L											
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

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Group 3	Carbon Tetrachloride	µg/L	<											
	Chlorobenzene	µg/L												
	Chlorodibromomethane	µg/L	<											
	Chloroethane	µg/L	<											
	2-Chloroethyl Vinyl Ether	µg/L	<											
	Chloroform	µg/L	<											
	Dichlorobromomethane	µg/L	<											
	1,1-Dichloroethane	µg/L	<											
	1,2-Dichloroethane	µg/L	<											
	1,1-Dichloroethylene	µg/L	<											
	1,2-Dichloropropane	µg/L	<											
	1,3-Dichloropropylene	µg/L	<											
	1,4-Dioxane	µg/L	<											
	Ethylbenzene	µg/L	<											
	Methyl Bromide	µg/L	<											
	Methyl Chloride	µg/L	<											
	Methylene Chloride	µg/L	<											
	1,1,2,2-Tetrachloroethane	µg/L	<											
	Tetrachloroethylene	µg/L	<											
	Toluene	µg/L	<											
	1,2-trans-Dichloroethylene	µg/L	<											
	1,1,1-Trichloroethane	µg/L	<											
	1,1,2-Trichloroethane	µg/L	<											
	Trichloroethylene	µg/L	<											
	Vinyl Chloride	µg/L	<											
Group 4	2-Chlorophenol	µg/L	<											
	2,4-Dichlorophenol	µg/L	<											
	2,4-Dimethylphenol	µg/L	<											
	4,6-Dinitro-o-Cresol	µg/L	<											
	2,4-Dinitrophenol	µg/L	<											
	2-Nitrophenol	µg/L	<											
	4-Nitrophenol	µg/L	<											
	p-Chloro-m-Cresol	µg/L	<											
	Pentachlorophenol	µg/L	<											
	Phenol	µg/L	<											
	2,4,6-Trichlorophenol	µg/L	<											
Group 5	Acenaphthene	µg/L	<											
	Acenaphthylene	µg/L	<											
	Anthracene	µg/L	<											
	Benzidine	µg/L	<											
	Benzo(a)Anthracene	µg/L	<											
	Benzo(a)Pyrene	µg/L	<											
	3,4-Benzofluoranthene	µg/L	<											
	Benzo(ghi)Perylene	µg/L	<											
	Benzo(k)Fluoranthene	µg/L	<											
	Bis(2-Chloroethoxy)Methane	µg/L	<											
	Bis(2-Chloroethyl)Ether	µg/L	<											
	Bis(2-Chloroisopropyl)Ether	µg/L	<											
	Bis(2-Ethylhexyl)Phthalate	µg/L	<											
	4-Bromophenyl Phenyl Ether	µg/L	<											
	Butyl Benzyl Phthalate	µg/L	<											
	2-Chloronaphthalene	µg/L	<											
	4-Chlorophenyl Phenyl Ether	µg/L	<											
	Chrysene	µg/L	<											
	Dibenzo(a,h)Anthrancene	µg/L	<											
	1,2-Dichlorobenzene	µg/L	<											
	1,3-Dichlorobenzene	µg/L	<											
	1,4-Dichlorobenzene	µg/L	<											
	3,3-Dichlorobenzidine	µg/L	<											
	Diethyl Phthalate	µg/L	<											
	Dimethyl Phthalate	µg/L	<											
	Di-n-Butyl Phthalate													
	2,4-Dinitrotoluene													

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	2,6-Dinitrotoluene	µg/L	<										
	Di-n-Octyl Phthalate	µg/L	<										
	1,2-Diphenylhydrazine	µg/L	<										
	Fluoranthene	µg/L	<										
	Fluorene	µg/L	<										
	Hexachlorobenzene	µg/L	<										
	Hexachlorobutadiene	µg/L	<										
	Hexachlorocyclopentadiene	µg/L	<										
	Hexachloroethane	µg/L	<										
	Indeno(1,2,3-cd)Pyrene	µg/L	<										
	Isophorone	µg/L	<										
	Naphthalene	µg/L	<										
	Nitrobenzene	µg/L	<										
	n-Nitrosodimethylamine	µg/L	<										
	n-Nitrosodi-n-Propylamine	µg/L	<										
	n-Nitrosodiphenylamine	µg/L	<										
	Phenanthrene	µg/L	<										
	Pyrene	µg/L	<										
	1,2,4-Trichlorobenzene	µg/L	<										
Group 6	Aldrin	µg/L	<										
	alpha-BHC	µg/L	<										
	beta-BHC	µg/L	<										
	gamma-BHC	µg/L	<										
	delta BHC	µg/L	<										
	Chlordane	µg/L	<										
	4,4-DDT	µg/L	<										
	4,4-DDE	µg/L	<										
	4,4-DDD	µg/L	<										
	Dieldrin	µg/L	<										
	alpha-Endosulfan	µg/L	<										
	beta-Endosulfan	µg/L	<										
	Endosulfan Sulfate	µg/L	<										
	Endrin	µg/L	<										
	Endrin Aldehyde	µg/L	<										
	Heptachlor	µg/L	<										
	Heptachlor Epoxide	µg/L	<										
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<										
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

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Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Feather Nest MHP STP, NPDES Permit No. PA0204625, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: _____ No. Reaches to Model: 1

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	045277	0.4	1860	0.29			Yes
End of Reach 1	045277	0.01	1660	0.43			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	0.4	0.044				2.03	0.351					100	7		
End of Reach 1	0.01	0.044													

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	0.4														
End of Reach 1	0.01														

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Feather Nest MHP STP, NPDES Permit No. PA0204625, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | (•) All | ( ) Inputs | ( ) Results | ( ) Limits

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 0.007 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	750	750	1,059	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	

☑ ***CFC*** CCT (min): 0.007 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	2,119	WQC = 30 day average; PMF = 1
Total Manganese	0	0		0	N/A	N/A	N/A	

☑ ***THH*** CCT (min): 0.007 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	1,412	

☑ ***CRL*** CCT (min): 0.023 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	N/A	N/A	N/A	

Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	Report	Report	Report	Report	Report	µg/L	750	AFC	Discharge Conc > 10% WQBEL (no RP)

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Total Iron	2,119	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	1,412	µg/L	Discharge Conc ≤ 10% WQBEL

ATTACHMENT D

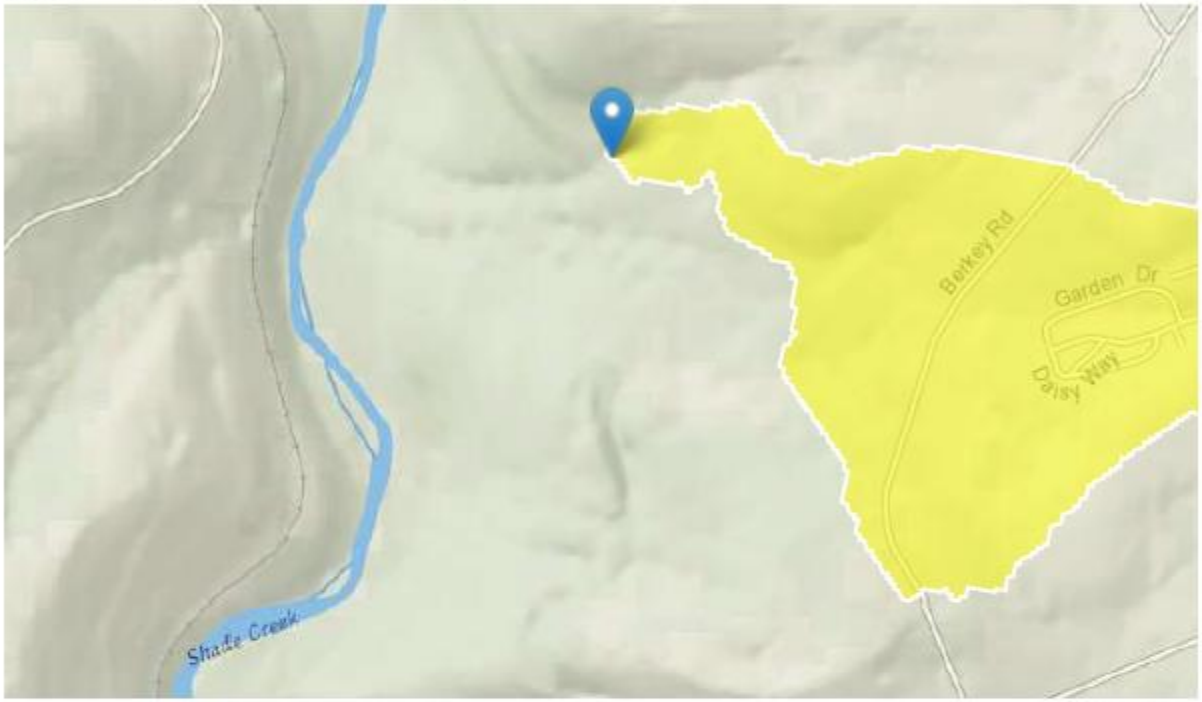
USGS Stream Stats Output

Permit No. PA0204625

Point of Discharge

StreamStats Report

Region ID: PA
Workspace ID: PA20210908122433795000
Clicked Point (Latitude, Longitude): 40.19786, -78.85516
Time: 2021-09-08 08:24:52 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.29	square miles
STORAGE	Percentage of area of storage (lakes ponds reservoirs wetlands)	0	percent
ELEV	Mean Basin Elevation	2007	feet
PRECIP	Mean Annual Precipitation	43	inches
FOREST	Percentage of area covered by forest	39.2833	percent
URBAN	Percentage of basin with urban development	0.3245	percent

Permit No. PA0204625

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.29	square miles	2.33	1720
ELEV	Mean Basin Elevation	2007	feet	898	2700
PRECIP	Mean Annual Precipitation	43	inches	38.7	47.9

Low-Flow Statistics Disclaimers [Low Flow Region 3]

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 3]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0345	ft^3/s
30 Day 2 Year Low Flow	0.0513	ft^3/s
7 Day 10 Year Low Flow	0.0127	ft^3/s
30 Day 10 Year Low Flow	0.0183	ft^3/s
90 Day 10 Year Low Flow	0.028	ft^3/s

Low-Flow Statistics Citations

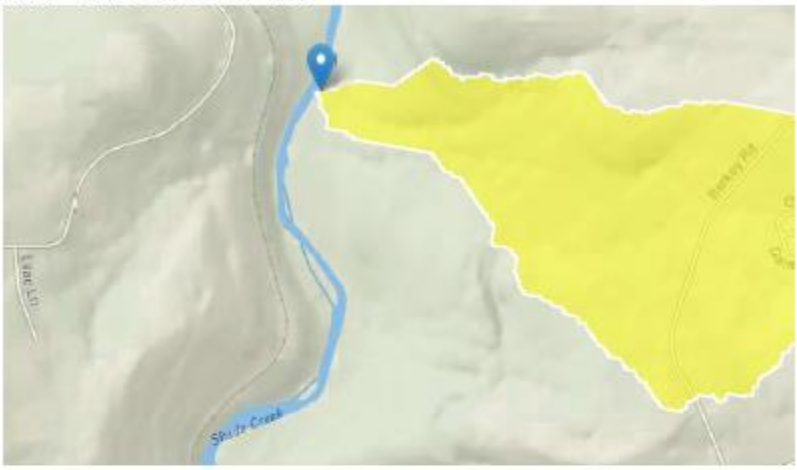
Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Permit No. PA0204625

Downstream of Discharge

StreamStats Report

Region ID: PA
Workspace ID: PA20210908123458835000
Clicked Point (Latitude, Longitude): 40.19836, -78.86162
Time: 2021-09-08 08:35:17 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.43	square miles
ELEV	Mean Basin Elevation	1969	feet
PRECIP	Mean Annual Precipitation	43	inches

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit

https://streamstats.usgs.gov/ss/ 1/3

8/21, 8:39 AM StreamStats

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.43	square miles	2.33	1720
ELEV	Mean Basin Elevation	1969	feet	898	2700
PRECIP	Mean Annual Precipitation	43	inches	38.7	47.9