pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

North West Regional Office
CLEAN WATER PROGRAM

Application Type	Renewal	Application No.	**PA0033421**
Facility Type	Non-Municipal	APS ID	**956365**
Major / Minor	Minor	Authorization ID	**1208749**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Henions Family Enterprise LLC**	Facility Name	**Mercer Grove City KOA Campground**
Applicant Address	1337 Butler Pike	Facility Address	1337 Butler Pike
	Mercer, PA 16137-6211		Mercer, PA 16137-6211
Applicant Contact	Martin Henion	Facility Contact	Martin Henion
Applicant Phone	(724) 748-3160	Facility Phone	
Municipality	Findley Township	County	Mercer
Client ID	163262	Site ID	454644
Ch 94 Load Status	Not Overloaded	Connection Status	No Limitations
SIC Code	7033	SIC Code	4952
SIC Description	Services - Trailer Parks and Campsite,	SIC Description	Trans. & Utilities - Sewerage Systems
Application Received	November 22, 2017	EPA Waived?	Yes
Application Accepted	December 7, 2017	If No, Reason	

Application Purpose: NPDES permit renewal for the discharge of treated sewage from a campground.

Summary of Review

The facility is operating under a December 4, 2018 consent order and agreement with the Department. Under concurrent review is a waste treatment system modification replacing most of the existing septic tank system with an activated sludge facility. The existing sand filtration and chlorine disinfection units are to be retained.

Listed violations: Dec 14, 2017 NOV for NPDES effluent and WQM operation violations
Jul 6, 2016 NOV annual fee submission
Nov 5, 2015 and Nov 20, 2012 NOV for not submitting NPDES permit monthly reports
Nov 17, 2011 NOV for NPDES effluent violations (Letter dated November 18, 2011)

The existing treatment facility is not built as permitted and cannot achieve the NPDES permit requirements.

Treatment design is to be increased from 0.005 to 0.008-MGD.

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		William H. Mentzer, P.E. Environmental Engineering Specialist	June 13, 2019
X		Justin C. Dickey, P.E Environmental Engineer Manager	

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.008
Latitude NHD	41º 11' 2.36"	Longitude NHD	-80º 11' 3.79"
Latitude DP	41º 10' 53.00"	Longitude DP	-80º 10 59.21"
Quad Name	Mercer	Quad Code	0904
Wastewater:	Treated campground wastes		

Receiving Waters	Unnamed Tributary to Pine Run	Stream Code	unknown
NHD Com ID	130031618	RMI	0.15
Drainage Area	0.1	Yield (cfs/mi^2)	0
Q_{7-10} Flow (cfs)	0	Q_{7-10} Basis	Dry stream
Elevation (ft)	1307.14	Slope (ft/ft)	0.02706
Watershed No.	20-A	Chapter 93 Class.	TSF
Existing Use	**statewide**	Existing Use Qualifier	none
Exceptions to Use	none	Exceptions to Criteria	none

Comments The discharge is to a dry drainage swale at RMI 0.15. Confluence is with a dry segment of Pine At RMI 1.01. The Pine Run assessment starts at RMI 0.87. The regional hydrogeologist placed the first-point-of-use at unnamed tributary 35654 RMI 0.63. At perennial stream conditions basin drainage is 0.26-square mile and the Basin elevation is 1253.27 feet.

Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

Background/Ambient Data		Data Source
pH (SU)	7.45	June 28, 1985 hydrogeologist report
ammonia	0	Drainage swale assumption
ammonia	0.1	Perennial stream assumption
CBOD5	0	Drainage swale assumption
CBOD5	2.0	Perennial stream assumption
Hardness (mg/L)		
Other:	0.5-gpm	June 28, 1985 hydrogeologist report

Nearest Downstream Public Water Supply Intake	Beaver Falls MA		
PWS Waters	Beaver River	Flow at Intake (cfs)	NA
PWS RMI	4.7	Distance from Outfall (mi)	31.5

Changes Since Last Permit Issuance: none

Other Comments: none

Treatment Facility Summary

Treatment Facility Name: Mercer Grove City Koa Campground

WQM Permit No.	Transfer/Modification	Issuance Date
4369409		6 June 1969
4369409	T1	29 November 1979
4369409	T2	30 October 2002

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Septic Tank Sand Filter	Hypochlorite	0.005000

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.005000	30.00	Not Overloaded	Anaerobic Digestion	Other WWTP

Changes Since Last Permit Issuance: Septic tank aeration started in 2010.

Other Comments:

Treatment load also listed as 25-PPD, Treatment facility modification is pending to increase the hydraulic design load to 0.008-MGD and reduce the organic design load to 13.33-PPD.

The existing application design is 25 PPD organic load and 0.005-MGD hydraulic load with an 0.00368-MGD mean hydraulic load and a July 0.0045-MGD maximum hydraulic load.

Septic tank aeration is installed based on effluent DO violations. End-of-pipe (outfall) aeration is not reported. In the 22 September 2011 inspection the outfall is shown as an elevated discharge to a dry stream. Rip-rap should be provided for erosion control and cascade aeration.

Authorized disinfection is through a 15% HTH liquid solution using effluent water. HTH appears to be a swimming pool disinfectant and the use of effluent water is not clearly understood.

An as built WQM permit application was submitted on May 5, 2014. Because of the proposal did not conform to the Department's requirements the application was returned.

	MGD	PPD	Min	Mean	Max	
Annual Average Design Flow	0.018000					
Annual Average Design Flow	0.000650					
pH			6.9		7.9	
CBOD5				4.74	21.3	25
TSS				5.4	29.4	25
Coliform				1233	2700	25
TRC				0.25	0,27	25

Compliance History

DMR Data for Outfall 001 (from November 1, 2016 to October 31, 2017)

Parameter	OCT-17	SEP-17	AUG-17	JUL-17	JUN-17	MAY-17	APR-17	MAR-17	FEB-17	JAN-17	DEC-16	NOV-16
Flow (MGD) Ave Monthly	0.0012	0.001	0.001	0.0016	0.0011	0.001	0.001	0.001				
Flow (MGD) Daily Maximum	0.002	0.003	0.001	0.0030	0.0020	0.002	0.001	0.001				
pH (S.U.) Minimum	7.1	7.2	7.11	7.1	7.10	7.10	7.3	0.0				
pH (S.U.) Maximum	7.3	7.3	7.23	7.3	7.30	7.30	7.5	0.0				
TRC (mg/L) Average Monthly	0.26	0.21	0.17	0.18	0.26	0.2	0.27	0.0				
TRC (mg/L) Instantaneous Maximum	0.36	0.28	0.27	0.28	0.34	0.23	0.34	0.0				
CBOD5 (mg/L) Average Monthly	4.4	5.2	13.9	6.8	3	17.90	< 3	00				
TSS (mg/L) Average Monthly	8	13	21	7	8	6	< 3	00				
Fecal Coliform (#/100 ml) Geometric Mean	1	1	50	45	49.193	2	< 1	00				
Fecal Coliform (#/100 ml) Instantaneous Maximum	1	1	2420	1987	2420	3	< 1	00				
Ammonia (mg/L) Average Monthly	1.81	**9.99**	**25.75**	**18.75**	2.23	0.66	0.29	> 0.0				

DMR Data for Outfall 001 (from May 1, 2018 to April 30, 2019)

Parameter	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18	JUL-18	JUN-18	MAY-18
Flow (MGD) Ave Monthly	0.02						0.001	0.001	0.001	0.001	0.001	0.001
Flow (MGD) Daily Maximum	0.02						0.001	0.002	0.001	0.002	0.001	0.001
pH (S.U.) Minimum	7.48						7.63	7.82	7.66	7.86	7.87	7.92
pH (S.U.) Maximum	7.63						7.86	7.94	7.88	8.05	7.99	8.28
TRC (mg/L) Average Monthly	0.25						0.16	0.18	0.18	0.186	0.23	0.23
TRC (mg/L) Instantaneous Maximum	0.32						0.23	0.27	0.23	0.23	0.28	0.30
CBOD5 (mg/L) Average Monthly	4.0						8.5	7.85	< 4.8	< 3	< 3	< 3
TSS (mg/L) Average Monthly	< 3						3.3	< 5	< 3	< 3	< 3	< 3
Fecal Coliform (#/100 ml) Geometric Mean	1.41						1.73	4.5	1	1	< 1.41	1.41
Fecal Coliform (#/100 ml) Instantaneous Maximum	2						3	5	< 1	1	2	2
Ammonia (mg/L) Average Monthly	0.29						**4.0**	**52.0**	**4.33**	3.06	0.52	0.24

Compliance History

-Effluent Violations for Outfall 001, from: December 1, 2016 to: October 31, 2017

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
pH	03/31/17	Min	0.0	S.U.	6.0	S.U.
Fecal Coliform	06/30/17	IMAX	2420	CFU/100 ml	1000	CFU/100 ml
Fecal Coliform	07/31/17	IMAX	1987	CFU/100 ml	1000	CFU/100 ml
Fecal Coliform	08/31/17	IMAX	2420	CFU/100 ml	1000	CFU/100 ml
Ammonia	09/30/17	Avg Mo	9.99	mg/L	3.5	mg/L
Ammonia	08/31/17	Avg Mo	25.75	mg/L	3.5	mg/L
Ammonia	07/31/17	Avg Mo	18.75	mg/L	3.5	mg/L

Effluent Violations for Outfall 001, from: June 1, 2018 to: April 30, 2019

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Ammonia	09/30/18	Avg Mo	52.0	mg/L	3.5	mg/L
Ammonia	10/31/18	Avg Mo	4.0	mg/L	3.5	mg/L
Ammonia	08/31/18	Avg Mo	4.33	mg/L	3.5	mg/L

Summary of Inspections:

The facility was inspected on April 13, 2027.
Reported was 155-camping sites, at least 7 tent sites, at least 9 cabins, two shower/restrooms, meeting hall, game and craft hall, and swimming pool.
Operating: 2 lit stations, 9 septic tanks, dosing tank, aeration pump, sand filters with geotextile fabric, and chlorination.

(Septic tanks are irregularly located and neither the aeration pumps or geotextile fabric are covered in the WQM Permit).

Other Comments: No comments as the septic tanks are to be replaced with an activated sludge system.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.008
Latitude 41º 10' 53.00" **Longitude** -80º 10' 59.21"
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)
DO	4.0			BPJ

Comments:

The existing facility design flow is 0.005-MGD. Submitted for review is a 0.008-MGD activated sludge facility with sand filtration and chlorination.

Water Quality-Based Limitations

The regional hydrogeologist places perennial stream conditions at un-named tributary 35654 RMI 0.63. The seven-day ten-year low flow at the discharge was estimated at 0.5-gpm or 0.0001-cfs. The basin yield is 0.01-cfs/square mile based on a 0.1-square mile drainage area. Subsequent review determined that an alternative 0.02-cfs/square-mile basin yield based on the nearby Coolspring Creek was available.

The 1991 review used WQM6.3 to evaluate CBOD, ammonia, and DO in a dry stream model to determine perennial stream conditions and a perennial stream model. The perennial stream recommendations were then back calculated to determine the dry stream requirements. No total residual chlorine limitations were developed and monitoring was specified in the NPDES permit. WQM7 provides essentially the same requirements without back calculations.

Upon renewal in 1996 because of the dry stream flow condition at the discharge a 0.5-mg/L monthly average TRC limit was included in the NPDES permit.

Stream flow based on either the hydrogeologist recommendation or Cooolspring Creek limits the receiving waters assimilation capacity. TRC is water quality limited at the discharge and at perennial stream conditions using either low flow references. TRC decay based on chlorine demand predicts complete chlorine removal within 20-feet of the outfall and providing water-quality compliance down-stream at perennial stream conditions.

DOSAG modelling reviewed the old WQM6.3 dry stream review procedures and the new WQM 7 dry stream procedures. The review combined tributary 5654 dry stream reach with the dry drainage swale reach creating a discharge at tributary 5654 RMI 1.16.

Based on the 1991 review DOSAG WQM7 was used to evaluate CBOD, DO, and ammonia.

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
Ammonia	3.5	NA	3.5
DO	5.0	NA	5.0

Comments:

Discharge equalization by sand filtration was assumed. A 5.0-mg/L minimum daily DO is acceptable.

Anti-Backsliding

As the discharge is increasing and a new treatment facility is proposed back sliding is not appropriate.

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	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	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
Total Nitrogen	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	11.5	XXX	23.5	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	3.5	XXX	7.5	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Grab

Compliance Sampling Location: Outfall 001 after disinfection