pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0103870**
Facility Type	**Non-Municipal**	APS ID	**986867**
Major / Minor	**Minor**	Authorization ID	**1262361**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Greenville Holding, LLC**	Facility Name	**Greenville MHP**
Applicant Address	PO Box 1611	Facility Address	347 Hadley Road
	New Castle, PA 16103		Greenville, PA 16125
Applicant Contact	Elizabeth Folweiler, Park Manager	Facility Contact	Elizabeth Folweiler, Park Manager
Applicant Phone	(724) 971-1110	Facility Phone	(724) 971-1110
Client ID	332012	Site ID	264200
Ch 94 Load Status	Not Overloaded	Municipality	Hempfield Township
Connection Status	No Limitations	County	Mercer County
Date Application Received	February 4, 2019	EPA Waived?	Yes
Date Application Accepted	February 21, 2019	If No, Reason	-
Purpose of Application	Renewal of an existing NPDES Permit for an existing discharge of treated sanitary wastewater from a MHP.		

Summary of Review

Act 14 - Proof of Notification was submitted and received.

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

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

I. OTHER REQUIREMENTS:

A. Stormwater into Sewers
B. Right of Way
C. Solids Handling
D. 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 (332012) as of 9/9/2019 (see attached).

Approve	Deny	Signatures	Date
X		Stephen A. McCauley, E.I.T. / Environmental Engineering Specialist	
X		Justin C. Dickey, P.E. / Environmental Engineer Manager	

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.021
Latitude	41º 25' 5.6"	Longitude	-80º 19' 56.1"
Quad Name	-	Quad Code	-
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to the Little Shenango River (TSF)	Stream Code	N/A
NHD Com ID	130027145	RMI	3.15 (first perennial point)
Drainage Area	3.64	Yield (cfs/mi^2)	0.1
Q_{7-10} Flow (cfs)	0.36	Q_{7-10} Basis	calculated
Elevation (ft)	1087	Slope (ft/ft)	0.00637
Watershed No.	20-A	Chapter 93 Class.	TSF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	-		
Source(s) of Impairment	-		
TMDL Status	-	Name	-

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

Nearest Downstream Public Water Supply Intake	Greenville Municipal Water Authority		
PWS Waters	Little Shenango River	Flow at Intake (cfs)	10.6
PWS RMI	8.0	Distance from Outfall (mi)	8.0

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 0.021 MGD of treated sewage from an existing non-municipal STP serving a MHP in Hempfield Township, Mercer County.

Permitted treatment consists of:

(WQM Permit no. 4378402) A comminutor with bypass screen, a 21,000 gallon extended aeration tank, a 3,896 gallon settling tank, an approximately 2,870 gallon dosing tank, two intermittent 914.75 square

foot (30.25' X 30.25') surface sand filters, and chlorine disinfection with a 1,834 gallon contact tank. Liquid sludge is hauled to the Hermitage Municipal Authority STP, or another approved facility.

(WQM Permit no. 4389413) A flow diversion chamber, a 10,000 gallon equalization tank, and Alum addition for phosphorus control.

Facility Area: See the topographical map (Attachment 1) and the aerial map (Attachment 2)

1. Streamflow:

The yieldrate for the receiving stream at the first point of perennial conditions was calculated from the average of two nearby gage stations:

Little Shenango River at Greenville:	Yieldrate:	0.055	cfsm	(from StreamStats)
Shenango River at Sharpsville:	Yieldrate:	0.16	cfsm	(from StreamStats)
	Average:	0.1	cfsm	calculated
Unnamed Tributary to the Little Shenango River at first point of perennial conditions:	Yieldrate:	0.1	cfsm	(calculated above)
	Drainage Area:	3.64	sq. mi.	(from StreamStats)
	Q_{7-10}:	0.36	cfs	calculated

2. Wasteflow: Outfall 001

Maximum discharge: 0.021 MGD = 0.032 cfs

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

There is less than 3 parts stream flow (Q7-10) to 1 part effluent (design flow) at the discharge point. However, since this is an existing discharge, the more stringent treatment requirements cannot be achieved, and the receiving stream is not impaired by the discharge, the treatment requirements in document number 391-2000-014, titled, "Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers", dated April 12, 2008, will not be implemented in this NPDES Permit.

3. Parameters:

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

NO_2-NO_3, Fluoride, Phenolics, Sulfates, and Chlorides can be evaluated using PentoxSD at the nearest downstream potable water supply (PWS). Since there is significant dilution available, no modeling was performed for this facility.

a. pH

Between 6.0 and 9.0 at all times

Basis: Application of Chapter 93.7 technology-based limits. The measurement frequency was increased from 1/week to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001).

b. Total Suspended Solids

Limits are 30 mg/l as a monthly average and 60 as a daily 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. Phosphorus

☐ Limit not necessary

Basis: N/A

☒ Limit necessary due to:

☐ Discharge to a lake, pond, or impoundment
☒ Discharge to a stream
☐ Discharge to a dry stream

Basis: The previous limits for Total Phosphorus will be retained. The previous limits were based on the Trophic State Index (TSI) Study on the Shenango Reservoir, where upstream discharges need to have a 1 mg/l phosphorus limit to control nutrient enrichment problems.

e. Total Nitrogen

☐ Limit not necessary

Basis: N/A

☒ Limit necessary due to:

☐ Discharge to a lake, pond, or impoundment
☒ Discharge to a stream
☐ Discharge to a dry stream

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

f. NO_2-NO_3, Fluoride, Phenolics, Sulfates, and Chlorides

Nearest Downstream potable water supply (PWS): Greenville Municipal Water Authority

Distance downstream from the point of discharge: 8.0 miles (approximate)

☒ No limits necessary
☐ Limits needed

Basis: Significant dilution available.

g. Ammonia-Nitrogen (NH_3-N)

Median discharge pH to be used: 7.8 Standard Units (S.U.)

Basis: Average pH value from DMR summary

Discharge temperature: 25°C (default value used in the absence of data)

Median stream pH to be used: 7.0 Standard Units (S.U.)

Basis: Default value used in the absence of data

Stream Temperature: 25˚C (default value used for TSF modeling)

Background NH_3-N concentration: 0.1 mg/l

Basis: Default value used in the absence of data

calculated summer NH_3-N limits: 25.0 mg/l (monthly average)
50.0 mg/l (instantaneous maximum)

calculated winter NH_3-N limits: 25.0 mg/l (monthly average)
50.0 mg/l (instantaneous maximum)

Result: WQ modeling resulted in the calculated summer limits above (see Attachment 4), which are the less restrictive than in the previous NPDES Permit. The winter limits are calculated as three times the summer limits, but since the technology-based limits are more protective, they will be used. However, the previous NH3-N limits of 2.0 mg/l monthly average (summer) and 6.0 mg/l monthly average (winter) were based on a previous version of the "Dry Stream" Guidance. Since the previous limits are attainable, they will be retained with this renewal.

h. $CBOD_5$

Median discharge pH to be used: 7.8 Standard Units (S.U.)
Basis: Average pH value from DMR summary

Discharge temperature: 25°C (default value used in the absence of data)

Median stream pH to be used: 7.0 Standard Units (S.U.)
Basis: Default value used in the absence of data

Stream Temperature: 25˚C (default value used for TSF modeling)

Background $CBOD_5$ concentration: 2.0 mg/l
Basis: Default value used in the absence of data

calculated summer $CBOD_5$ limits: 25.0 mg/l (monthly average)
50.0 mg/l (instantaneous maximum)

calculated winter $CBOD_5$ limits: 25.0 mg/l (monthly average)
50.0 mg/l (instantaneous maximum)

Result: WQ modeling resulted in the calculated summer limits above (see Attachment 4), which are the same as the previous NPDES Permit. The winter limits are calculated as three times the summer limits, but since the technology-based limits are more protective, they will be used. Since the summer limits and the winter limits are the same, the limits for $CBOD_5$ will be set year-round as in the previous NPDES Permit.

i. Dissolved Oxygen (DO)

☒ 4.0 mg/l - minimum desired in effluent to protect all aquatic life.
☐ 5.0 mg/l - desired in effluent for CWF, WWF, or TSF.
☐ 6.0 mg/l - minimum required due to discharge going to a drainage swale or ditch.
☐ 8.0 mg/l - required due to discharge going to a naturally reproducing salmonid stream

Discussion: 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 4) and the SOP based on Chapter 93.7, under the authority of Chapter 92a.61. The measurement frequency was increased from 1/week to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001).

j. Total Residual Chlorine (TRC)

☐ No limit necessary
☒ TRC limits: 0.5 mg/l (monthly average)
1.6 mg/l (instantaneous maximum)

Basis: The TRC limits above are technology-based using the TRC_Calc Spreadsheet (see Attachment 3). The TRC_Calc Spreadsheet was run based on the first point of perennial

conditions, per the SOP and other guidance. However, the previous TRC limits of 0.2 mg/l monthly average and 0.5 mg/l instantaneous maximum are attainable and will be retained with this renewal. The measurement frequency was increased from 1/week to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001).

k. Anti-Backsliding

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

4. Attachment List:

Attachment 1 - Topographical Map of the Facility Area

Attachment 2 - Aerial Map of the STP

Attachment 3 - TRC_Calc Spreadsheet

Attachment 4 - WQ Modeling Printouts

If viewing this electronically, please refer to the following PDF to view the above Attachments:

Adobe Acrobat Document

Compliance History

DMR Data for Outfall 001 (from August 1, 2018 to July 31, 2019)

Parameter	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18
Flow (MGD) Average Monthly	0.005	0.044	0.044	0.043	0.042	0.004	0.037	0.033	0.038	0.035	0.030	0.031
pH (S.U.) Minimum	7.8	7.63	7.63	7.66	7.78	7.62	7.8	7.79	7.68	7.4	7.23	7.58
pH (S.U.) Maximum	7.99	7.88	7.91	7.92	7.99	7.82	7.99	8.07	7.92	7.99	7.90	7.99
DO (mg/L) Minimum	4.99	4.8	4.80	4.77	4.99	4.93	4.89	4.84	4.84	4.77	4.61	4.84
TRC (mg/L) Average Monthly	0.1	0.1	0.10	0.1	0.1	0.04	0.1	0.16	0.16	0.18	0.14	0.15
TRC (mg/L) Instantaneous Maximum	0.11	0.11	0.11	0.11	0.19	0.09	0.12	0.29	0.23	0.2	0.23	0.2
CBOD5 (mg/L) Average Monthly	< 3.0	< 3	4	< 4.0	< 3	< 5	3	3.35	< 3.9	7.1	< 4.2	< 4.1
TSS (mg/L) Average Monthly	7	7	10	< 6	< 9	< 6	7	< 3	6.5	< 3	< 8.0	< 3
Fecal Coliform (CFU/100 ml) Geometric Mean	53220	2454	193862	2633	21923	63206	184983	1564	1564	1382	1269	2420
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	92080	4260	242000	173300	198600	86640	242000	2420	2420	1986	2420	2420
Total Nitrogen (mg/L) Average Monthly	12.0	9.26	11.71	7.03	10.22	9.28	11.6	11.96	11.5	19.0	10.72	13.2
Ammonia-Nitrogen (mg/L) Average Monthly	3.0	3.2	5.4	1.6	2.3	2.9	1.82	1.74	2.59	4.2	2.27	6.8
Total Phosphorus (mg/L) Average Monthly	1.3	1.4	2.3	1.2	1.1	0.9	1.0	1.03	1.05	1.6	1.3	2.49

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 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.2	XXX	0.5	1/day	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30.0	XXX	60	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	2/month	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	6.0	XXX	12	2/month	8-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	2.0	XXX	4	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	1.0	XXX	2	2/month	8-Hr Composite

Compliance Sampling Location: at Outfall 001, after disinfection.

Flow is monitor only based on Chapter 92a.61. The limits for pH and Dissolved Oxygen are technology-based on Chapter 93.7. The Total Residual Chlorine (TRC) limit is water quality-based on Chapter 92a.48. The limits for $CBOD_5$ and Total Suspended Solids are technology-based on Chapter 92a47. The limits for Fecal Coliform are technology based on Chapter 92a.47. Monitoring for Total Nitrogen is based on Chapter 92a.61. The limits for Ammonia-Nitrogen are technology-based on a previous version of the "Dry Streams" Guidance. The limits for Total Phosphorus are technology-based on the Trophic State Index (TSI) Study on the Shenango Reservoir.