pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0240150**
Facility Type	**Municipal**	APS ID	**977012**
Major / Minor	**Major**	Authorization ID	**1245092**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Norwich Township**	Facility Name	**Norwich Township STP**
Applicant Address	3853 West Valley Road	Facility Address	3853 West Valley Road
	Smethport, PA 16749		Smethport, PA 16749
Applicant Contact	James Thomas, Chairman	Facility Contact	Paul Black, Operator
Applicant Phone	(814) 887-2732	Facility Phone	(814) 887-2040
Client ID	75719	Site ID	686206
Ch 94 Load Status	Not Overloaded	Municipality	Norwich Township
Connection Status	No Limitations	County	McKean County
Date Application Received	September 17, 2018	EPA Waived?	Yes
Date Application Accepted	September 18, 2018	If No, Reason	-
Purpose of Application	Renewal of an NPDES Permit for an existing discharge of treated sanitary wastewater from a municipal STP.		

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 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. Effluent Chlorine Optimization and Minimization

SPECIAL CONDITIONS:

II. Solids Management

There are no open violations in efacts for Client ID 75719 as of 8/12/2019.

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)	0.06
Latitude	41º 42' 31.00"	Longitude	-78º 23' 42.00"
Quad Name	-	Quad Code	-
Wastewater Description:	Sewage Effluent		
Receiving Waters	Potato Creek (TSF)	Stream Code	57625
NHD Com ID	112376261	RMI	16.0
Drainage Area	51.7	Yield (cfs/mi^2)	0.084
Q_{7-10} Flow (cfs)	4.34	Q_{7-10} Basis	calculated
Elevation (ft)	1540	Slope (ft/ft)	0.003788
Watershed No.	16-C	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	Pennsylvania - New York State border		
PWS Waters	Allegheny River	Flow at Intake (cfs)	N/A
PWS RMI	N/A	Distance from Outfall (mi)	30.0

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 0.06 MGD of treated sewage from an existing Publicly Owned Treatment Works (POTW) in Norwich Township, McKean County.

Permitted treatment consists of (WQM Permit no. 4208402): A bar screen, two 9,699 gallon aerated flow equalization tanks, a flow splitter box, and two parallel treatment trains each consisting of three 12,931 gallon extended aeration tanks, chemical addition for Phosphorus control, a 7,247 gallon clarifier tank, and a 8,543

gallon aerobic sludge digestion tank. The flow combines for chlorine disinfection with a 4,154 gallon contact tank, and then sodium bisulfate is added, followed by a dechlorination tank and a polishing tank. The two 8,543 gallon aerobic sludge digestion tanks combine into a third 8,543 gallon aerobic sludge digestion tank. The sludge is transferred to two intermittent 1,485 square foot sludge drying beds.

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

1. Streamflow:

Outfall 001 on the Potato Creek: Yieldrate: 0.084 cfsm (calculated above)
Drainage Area: 51.7 sq. mi. (from StreamStats)

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

Q_{7-10}: 4.34 cfs (calculated)

2. Wasteflow: Outfall 001

Maximum discharge: 0.06 MGD = 0.09 cfs

Runoff flow period: 24 hours Basis: Runoff flow for a Municipal STP

Flow will be required to be monitored as authorized under Chapter 92a.61, and as recommended in the SOP.

3. Parameters:

The following parameters were evaluated: pH, Total Suspended Solids, Fecal Coliform, 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

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

Quarterly monitoring for Total Phosphorus and Total Nitrogen will be retained from the previous renewal.

☐ Limit necessary due to:

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

Basis: N/A

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

Nearest Downstream potable water supply (PWS): Pennsylvania - New York State border

Distance downstream from the point of discharge: 30.0 miles (approximate)

☒ No limits necessary for Fluoride, Phenolics, TDS, Sulfate, and Chloride

Basis: Significant dilution available.

f. Ammonia-Nitrogen (NH_3-N)

Median discharge pH to be used: 7.3 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.

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 above summer limits (see Attachment 3). Since the summer limits are technology-based, the winter limits will also be technology-based. Based on the SOP, since this is an existing discharge and the NH3-N limits are technology-based, yearly monitoring will be set.

g. $CBOD_5$

Median discharge pH to be used: 7.3 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

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 above summer limits (see Attachment 3), which are the same as the previous NPDES Permit and will be retained. Since the summer limits are technology-based, the winter limits will also be technology-based.

h. 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.
- ☐ 7.0 mg/l - minimum desired due to discharge going to a High Quality stream.
- ☐ 8.0 mg/l - required due to discharge going to a naturally reproducing salmonid stream

Discussion: The Dissolved Oxygen technology-based minimum of 4.0 mg/l will be retained as recommended by the WQ Model (see Attachment 3) and the SOP based on Chapter 93.7, under the authority of Chapter 92a.61. The measurement frequency was increased from 2/month 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).

i. Total Residual Chlorine (TRC)

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

Basis: The technology-based TRC limits above were calculated using the Department's TRC Calculation Spreadsheet (see Attachment 4). The instantaneous maximum limit was previously set as 1.2 mg/l. Since the Permittee is meeting the more restrictive limit, it will be retained to comply with antibacksliding requirements.

j. Influent Total Suspended Solids and BOD_5

These two parameters will be monitored as recommended in the SOP for POTWs, as authorized under Chapter 92a.61.

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. Reasonable Potential Analysis:

A Reasonable Potential Analysis was performed in accordance with State practices for Outfall 001 by first using the Toxics Screening Analysis Spreadsheet (see Attachment 5) to determine which parameters should be modeled using the PentoxSD program. The following parameters will be evaluated for Outfall 001:

Total Copper, Total Lead, and Total Zinc.

Median stream pH to be used:	7.0	Standard Units (S.U.)
Stream hardness to be used:	100	mg/l
Basis:	PentoxSD defaults	
Median discharge pH to be used:	7.3	Standard Units (S.U.)
Discharge hardness to be used:	100	mg/l
Basis:	eDMR data and NPDES Permit Renewal data	

Result: No modeling was required for the parameters above.

5. Attachment List:

Attachment 1 - Topographical Map of the Facility Area
Attachment 2 - Aerial Map of the STP
Attachment 3 - WQ Modeling Printouts
Attachment 4 - TRC_Calc
Attachment 5 - Toxics Screening Analysis Spreadsheet

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 July 1, 2018 to June 30, 2019)

Parameter	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18	JUL-18
Flow (MGD) Average Monthly	0.0209	0.021	0.0212	0.0196	0.0234	0.0222	0.0215	0.0245	0.019	0.0218	0.0168	0.018
Flow (MGD) Weekly Average	0.0277	0.0274	0.0265	0.0244	0.033	0.0265	0.0235	0.0326	0.0311	0.0268	0.0199	0.0233
pH (S.U.) Minimum	7.1	7.2	7.1	7.1	7.3	7.2	6.8	7.0	7.1	7.0	6.8	7.0
pH (S.U.) Maximum	7.9	7.6	7.5	7.9	7.9	7.6	7.6	7.8	7.7	7.6	7.5	7.5
DO (mg/L) Minimum	4.9	7.4	8.0	8.1	8.2	8.1	8.1	8.0	8.0	8.1	8.0	8.0
TRC (mg/L) Average Monthly	0.04	0.03	0.03	0.04	0.04	0.04	0.04	0.03	0.04	0.04	0.04	0.1
TRC (mg/L) Instantaneous Maximum	0.08	0.06	0.07	0.09	0.07	0.09	0.1	0.07	0.08	0.08	0.09	0.1
CBOD5 (lbs/day) Average Monthly	< 0.8	6	< 2	< 0.07	< 4	< 2	0.7	< 0.7	< 0.8	1	< 1	< 2
CBOD5 (lbs/day) Weekly Average	1	12	3	0.08	8	2	1	1	1	3	2	4
CBOD5 (mg/L) Average Monthly	< 8	39	< 13	< 4	< 19	< 9	5	< 4	< 10	8	< 7	< 12
CBOD5 (mg/L) Weekly Average	12	68	21	< 5	35	14	37	7	16	17	13	28
BOD5 (mg/L) Raw Sewage Influent Average Monthly	167	174	129	146	144	155	185	182	132	103	129	184
TSS (lbs/day) Average Monthly	1	0.8	0.8	1	0.6	1	1	1	0.6	1	2	2
TSS (lbs/day) Weekly Average	1	2	1	2	0.8	1	4	2	1	1	6	2
TSS (mg/L) Average Monthly	10	5	6	6	4	6	13	6	6	8	11	11
TSS (mg/L) Raw Sewage Influent Average Monthly	112	94	99	75	93	123	126	93	98	81	77	99
TSS (mg/L) Weekly Average	14	10	8	9	4	8	37	10	8	9	20	14
Fecal Coliform (CFU/100 ml) Geometric Mean	< 9	< 4	< 2	< 2	< 3	< 4	< 3	> 3	< 3	< 3	< 4	< 4

Fecal Coliform (CFU/100 ml) Instantaneous Maximum	39.2	< 4	< 4	< 4	< 4	< 4	< 4	> 4	< 4	< 4	< 4	< 4
Total Nitrogen (mg/L) Average Monthly	< 1.0			0.3796			15.43			36.33		
Total Phosphorus (mg/L) Average Monthly	0.025			1.5			1.96			0.855		

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	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	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	0.5	XXX	1.2	1/day	Grab
CBOD5	12.5	20.0	XXX	25.0	40.0	50	2/month	24-Hr Composite
BOD5 Raw Sewage Influent	XXX	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
TSS	15.0	22.5	XXX	30.0	45.0	60	2/month	24-Hr Composite
TSS Raw Sewage Influent	XXX	XXX	XXX	Report	XXX	XXX	2/month	24-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 Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-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 limits for Total Residual Chlorine (TRC) are technology based on Chapter 92a.48. The limits for $CBOD_5$, Total Suspended Solids, and Fecal Coliforms are technology-based on Chapter 92a.47. Monitoring for influent BOD5 and TSS is based on Chapter 92a.61. Monitoring for Ammonia-Nitrogen, Total Nitrogen, and Total Phosphorus is based on Chapter 92a.61.