Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0261262**
Facility Type	**Municipal**	APS ID	**684570**
Major / Minor	**Major**	Authorization ID	**1445726**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**North Londonderry Township Authority**	Facility Name	**North Londonderry Township STP**
Applicant Address	655 E Ridge Road	Facility Address	980 W Main Street
	Palmyra, PA 17078-9308		Annville, PA 17003-9063
Applicant Contact	Michael Booth	Facility Contact	Eric Stokes
Applicant Phone	(717) 838-1373	Facility Phone	(717) 507-8781
Client ID	140480	Site ID	717029
Ch 94 Load Status	Not Overloaded	Municipality	South Annville Township
Connection Status	No Limitations	County	Lebanon
Date Application Received	June 30, 2023	EPA Waived?	No
Date Application Accepted	July 10, 2023	If No, Reason	Major Facility, Significant CB Discharge
Purpose of Application	NPDES permit renewal		

Summary of Review

1.0 General Discussion:

This fact sheet supports a 2nd draft permit for renewal of an existing NPDES permit for discharge of treated domestic wastewater from North Londonderry Township STP. A draft permit was issued to the permittee on May 16, 2024 but was not finalized due to comments received from EPA and the permittee. The permit is being re-drafted to address EPA comment on WET testing results analysis and the permittees comment on Free Cyanide. The limitations and monitoring requirements in the draft permit issued on May 16, 2024 except Free Cyanide remain in this current draft permit. Refer to the factsheet developed is support of the May 16, 2024 draft permit for the basis of the limitations and monitoring requirements. Analysis of permittees additional samples for Free Cyanide and WETT results analysis are discussed is sections 1.2 and 1.3 below.

1.1 Public Participation

DEP will re-publish notice of 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

Approve	Deny	Signatures	Date
X		*J. Pascal Kwedza* J. Pascal Kwedza, P.E. / Environmental Engineer	October 8, 2024
X		*Maria D. Bebenek for* Daniel W. Martin, P.E. / Environmental Engineer Manager	October 15, 2024
X		*Maria D. Bebenek* Maria D. Bebenek, Program Manager	October 15, 2024

Summary of Review
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.

1.2 Free Cyanide Analysis

A reasonable potential (RP) analysis was re-done for the additional Free Cyanide samples submitted by permittee in support of the permit renewal application. The original 10 Free Cyanide samples submitted with application were not included in the reasonable potential analysis because they were not spaced at least weekly. The permittee submitted additional samples that met the requirement and were analyzed using DEP'S TOXCONC to determine Average Monthly Effluent Concentration (Amec) of 8.98 mg/l and a daily coefficient of variation (CV) of 1.25 for Free Cyanide presented in attachment A. The results from the TOXCONC analysis were added to DEP's TMS for further analysis. The results of the TMS presented in attachment B indicates a monthly average limitation of 0.007mg/L and instantaneous maximum limitation of 0.018mg/L are recommended for Free cyanide. The permittee's response to a pre-draft survey indicates the facility does not know the sources of the Free Cyanide but can meet the recommended limit. Therefore, the proposed monthly average limitation of 0.007mg/L and instantaneous maximum limitation of 0.018mg/L in the May 16, 2024 draft permit will remain.

Limitation and /or monitoring recommendation on the spreadsheet follow the logic presented in DEPs SOP, to establish limits in the permit where the maximum reported concentration exceeds 50% of the WQBEL, or for non-conservative pollutants to establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL, or to establish monitoring requirements for conservative pollutants where the maximum reported concentration is between 10% - 50% of the WQBEL.

1.3 Whole Effluent Toxicity (WET)

The dilution series used for the tests were: 100%, 79%, 57%, 29%, and 14% instead of 100%, 78%, 55%, 28%, and 14% as required in their current permit The Target Instream Waste Concentration (TIWC) used for analysis of the results was: 57% instead of 55%. The permittee informed DEP that the lab made a mistake and used the dilution series in their previous permit instead of the ones in their current permit. DEP determined that since the dilution used was greater than the TIWC in the permit, it is acceptable and considered passed. This explanation addresses EPA comment on why a different dilution series was used for the WET test. The dilution series in the 1st draft permit has been updated to reflect current analysis.

1.3.1 Summary of Four Most Recent Test Results

1.3.2 TST Data Analysis

WET Summary and Evaluation

Facility Name	North Londonderry Twp
Permit No.	PA0261262
Design Flow (MGD)	1.5
Q_{7-10} Flow (cfs)	1.88
PMF_a	1
PMF_c	1

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	10/6/20	4/29/21	7/5/22	4/4/23
Pimephales	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	10/6/20	4/29/21	7/5/22	4/4/23
Pimephales	Growth	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	10/6/20	4/29/21	7/5/22	4/4/23
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	10/6/20	4/29/21	7/5/22	4/4/24
Ceriodaphnia	Reproduction	PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type	**Chronic**
TIWC	**55** % Effluent
Dilution Series	**14, 28, 55, 78, 100** % Effluent
Permit Limit	**None**
Permit Limit Species	

1.4 Evaluation of Test Type, IWC and Dilution Series for Renewed Permit

Acute Partial Mix Factor (PMFa): **1** Chronic Partial Mix Factor (PMFc): **1**

1.4.1. Determine IWC – Acute (IWCa):

$(Q_d \times 1.547) / ((Q_{7-10} \times PMFa) + (Q_d \times 1.547))$

[(1.5 MGD x 1.547) / ((1.88cfs x 1) + (1.5 MGD x 1.547))] x 100 = **55.2%**

Is IWCa < 1%? ☐ **YES** ☒ **NO (YES - Acute Tests Required OR NO - Chronic Tests Required)**

If the discharge is to the tidal portion of the Delaware River, indicate how the type of test was determined:

Type of Test for Permit Renewal: **Chronic**

1.4.2a. Determine Target IWCa (If Acute Tests Required)

TIWCa = IWCa / 0.3 = **%**

1.4.2b. Determine Target IWCc (If Chronic Tests Required)

$(Q_d \times 1.547) / (Q_{7\text{-}10} \times PMFc) + (Q_d \times 1.547)$

[(1.5 MGD x 1.547) / ((1.88cfs x 1) + (1.5 MGD x 1.547))] x 100 = **55.2%**

1.4.3. Determine Dilution Series

(NOTE – check Attachment C of WET SOP for dilution series based on TIWCa or TIWCc, whichever applies).

Dilution Series = 100%, 78%, 55%, 28%, and 14%.

1.5 WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

Will WET limits be established in the permit? ☐ YES ☒ NO

If WET limits will be established, identify the species and the limit values for the permit (TU).

Not applicable this permit cycle. The existing WET limit will be discontinued, the facility's effluent did not show any toxicity concerns during last permit cycle.

If WET limits will not be established, but reasonable potential was determined, indicate the rationale for not establishing WET limits:

N/A

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" (386-0400-001), 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	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Daily Max	XXX	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
CBOD5 Nov 1 - Apr 30	250	375	XXX	20	30	40	2/week	24-Hr Composite
CBOD5 May 1 - Oct 31	125	188	XXX	10	15	20	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS	125	188	XXX	10	15	20	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite

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	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Nitrate-Nitrite (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Nitrogen (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia Nov 1 - Apr 30	88	XXX	XXX	7.0	XXX	14	2/week	24-Hr Composite
Ammonia May 1 - Oct 31	31	XXX	XXX	2.5	XXX	5	2/week	24-Hr Composite
Ammonia (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
TKN	XXX	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TKN (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	25	XXX	XXX	2.0	XXX	4	2/week	24-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Aluminum	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Boron	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Copper	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Free Cyanide	0.09	XXX	XXX	0.007	XXX	0.018	1/week	24-Hr Composite
Total Zinc	1.88	XXX	XXX	0.15	XXX	0.37	1/week	24-Hr Composite
PFOA (ng/L)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
PFOS (ng/L)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
PFBS (ng/L)	XXX	XXX	XXX	XXX	XXX	Report	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	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
HFPO-DA (ng/L)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab

Compliance Sampling Location: At outfall 001

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, to comply with Pennsylvania's Chesapeake Bay Tributary Strategy.

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
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Total Nitrogen (lbs) Effluent Net	XXX	25,936 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Nitrogen (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Ammonia (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus (lbs) Effluent Net	XXX	3,458 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation

Compliance Sampling Location: At Outfall 001

Attachments

A. TOXCONC Analysis Results

	Facility:		North Londonderry Twp STP			
	NPDES #:		PA0261262			
	Outfall No:		001			
	n (Samples/Month):		4			
	Reviewer/Permit Engineer:		J.P Kwedza			
Parameter Name	Free Cyanide					
Units	µg/L					
Detection Limit	0.5					
Sample Date	***When entering values below the detection limit, enter "ND" or use the < notation (eg. <0.02)***					
4/12/2023	7					
4/19/2023	4					
4/26/2023	1					
5/30/2023	ND					
6/7/2023	ND					
6/15/2023	ND					
7/9/2024	4					
7/19/2024	8					
7/23/2024	3					
7/30/2024	ND					

		Reviewer/Permit Engineer:	J.P Kwedza
Facility:	North Londonderry Twp STP		
NPDES #:	PA0261262		
Outfall No:	001		
n (Samples/Month):	4		
Parameter	**Distribution Applied**	**Coefficient of Variation (daily)**	**Avg. Monthly**
Free Cyanide (µg/L)	Delta-Lognormal	1.2462770	8.9772007

B. TMS Results.

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **North Londoderry Township** NPDES Permit No.: **PA0261262** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **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
1.5	126	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											
	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		8.98			1.25						
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L	<										

Model Results

North Londoderry Township , NPDES Permit No. PA0261262, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | ◉ All ○ Inputs ○ Results ○ Limits

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ ***AFC*** CCT (min): 12.799 PMF: 1 Analysis Hardness (mg/l): 185.9 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
Free Cyanide	0	0		0	22	22.0	39.8	

Model Results

North Londoderry Township , NPDES Permit No. PA0261262, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | ◉ All ○ Inputs ○ Results ○ Limits

☑ ***CFC*** CCT (min): 12.799 PMF: 1 Analysis Hardness (mg/l): 185.9 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
Free Cyanide	0	0		0	5.2	5.2	9.4	

☑ ***THH*** CCT (min): 12.799 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
Free Cyanide	0	0		0	4	4.0	7.23	

☑ ***CRL*** CCT (min): 19.666 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
Free Cyanide	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
Free Cyanide	0.09	0.17	7.23	13.4	18.1	µg/L	7.23	THH	Discharge Conc ≥ 50% WQBEL (RP)