pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0056421**
Facility Type	**Municipal**	APS ID	**995652**
Major / Minor	**Minor**	Authorization ID	**1277482**

Applicant and Facility Information

Applicant Name	**Warwick Township Water & Sewer Authority**	Facility Name	**Country Crossing STP**
Applicant Address	PO Box 315, 1733 Township Greene	Facility Address	1530 Mearns Road
	Jamison, PA 18929-0315		Jamison, PA 18929
Applicant Contact	Michael Sullivan	Facility Contact	Daniel Ervin
Applicant Phone	(215) 343-3584	Facility Phone	
Client ID	64253	Site ID	520395
Ch 94 Load Status	Not Overloaded	Municipality	Warwick Township
Connection Status		County	Bucks
Date Application Received	June 10, 2019	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application .

Summary of Review

The applicant requests the renewal of an NPDES permit to discharge treated sewage from the Country Crossing STP.

There are two outfalls at the site; Outfall 001 discharging to an unnamed tributary to Little Neshaminy Creek and Outfall 002 discharging to a storage pond on Heritage Creek Golf Course with an overflow pipe that drains through a wetland to Little Neshaminy Creek. The facility is permitted to discharge through either outfall during any month of the year and the limits are the same for both outfalls.

Treatment plant consists of a lakeside fine screen, two equalization tanks, four SBRs, one post equalization tank, and UV disinfection unit. One aerobic digestion sludge tank and one sludge thickening tank are also there at the plant. Influent and effluent lines are metered. Ferric chloride is used for phosphorus removal.

There are no changes in the influent quality, treatment units, stream designation etc.
Discharge is in compliance with the permit requirements.
Proposed limits for the new permit are similar to the existing limits.

To avoid issues with sampling and reporting, a condition is included in Part C specifying that, except under extenuating circumstances, discharge will be to only one of the respective outfalls on a monthly basis. This condition is similar to the existing permit condition.

Sewage sludge from the facility is hauled away to other POTWs. Pottstown STP and DELCORA STP are the two facilities received sludge in the past year.

Approve	Deny	Signatures	Date
		Sara Reji Abraham, E.I.T. / Project Manager	
		Pravin C. Patel, P.E. / Environmental Engineer Manager	

Summary of Review

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.

Act 14 Notification:

Warwick Township	-	April 8, 2019
Bucks County	-	May 6, 2019

Permits Conditions:

A. No Stormwater to Sanitary Sewers
B. Acquire Necessary Property Rights
C. Proper Sludge Disposal
D. Operator Notification
E. Discharge through Outfalls 001 and 002
F. Annual Load Calculation
G. Fecal Coliform Reporting
H. Operations and Maintenance plan
I. Solids Management

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.32
Latitude	40º 13' 26.13"	Longitude	-75º 4' 12.64"
Quad Name	Hartboro	Quad Code	1745
Wastewater Description:	Treated Sewage Effluent		
Receiving Waters	Unnamed Tributary to Little Neshaminy Creek (WWF, MF)	Stream Code	02647
NHD Com ID	25479716	RMI	0.9
Drainage Area	3.6 mi^2	Yield (cfs/mi^2)	0.067
Q_{7-10} Flow (cfs)	0.24	Q_{7-10} Basis	Previous fact sheet
Elevation (ft)	198		
Watershed No.	2-F	Chapter 93 Class.	WWF, MF
Assessment Status	Impaired		
Cause(s) of Impairment	FLOW REGIME MODIFICATION, PATHOGENS, POLYCHLORINATED BIPHENYLS (PCBS), SILTATION		
Source(s) of Impairment	SOURCE UNKNOWN, URBAN RUNOFF/STORM SEWERS		
TMDL Status	Final, 04/09/2003, later withdrawn *	Name	Neshaminy Creek
Nearest Downstream Public Water Supply Intake	Aqua PA SE Division, Neshaminy Creek		
PWS Waters	Neshaminy Creek	Distance from Outfall	18 mi

*TMDL withdrawn - PA Bulletin Volume 37 No. 33, August 18, 2007.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	.32
Latitude	40 º 14' 9.72"	Longitude	-75 º 4' 45.89"
Quad Name	Hatboro	Quad Code	1745
Wastewater Description:	Effluent from treatment plant with diversion to a storage pond on golf course and overflow to Little Neshaminy Creek.		
Receiving Waters	Little Neshaminy Creek (WWF, MF)	Stream Code	02638
NHD Com ID	25479934	RMI	0.9
Drainage Area	32 mi^2	Yield (cfs/mi^2)	0.067
Q_{7-10} Flow (cfs)	2.1	Q_{7-10} Basis	Previous fact sheet
Elevation (ft)	167		
Watershed No.	2-F	Chapter 93 Class.	WWF, MF
Assessment Status	Impaired		
Cause(s) of Impairment	FLOW REGIME MODIFICATION, NUTRIENTS, Organic Enrichment/Low D.O., PATHOGENS, POLYCHLORINATED BIPHENYLS (PCBS), SILTATION		
Source(s) of Impairment	MUNICIPAL POINT SOURCE DISCHARGES, SOURCE UNKNOWN, URBAN RUNOFF/STORM SEWERS		
TMDL Status	Final, 04/09/2003, later withdrawn*	Name	Neshaminy Creek
Nearest Downstream Public Water Supply Intake	Aqua PA SE Division, Neshaminy Creek		

*TMDL withdrawn - PA Bulletin Volume 37 No. 33, August 18, 2007.

Treatment Facility Summary

Treatment Facility Name: Country Crossing STP

WQM Permit No.	Issuance Date
0900405	08/02/2000
0996411	09/13/1996

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Sequencing Batch Reactor	Ultraviolet	0.32

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.32	647	Not Overloaded	Aerobic Digestion	Other POTWs

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
CBOD5 (mg/L) Raw Sewage Influent Average Monthly						GG	GG	GG	GG	GG		
BOD5 (lbs/day) Raw Sewage Influent Average Monthly						GG	GG	GG	GG	GG		
BOD5 (mg/L) Raw Sewage Influent Average Monthly						GG	GG	GG	GG	GG		
TSS (mg/L) Raw Sewage Influent Average Monthly						GG	GG	GG	GG	GG		

DMR Data for Outfall 002 (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	0.1704	0.1462	0.1453	0.1405	0.1376	0.1574	0.1679	0.1648	0.1492	0.1573	0.1643	0.1628
Flow (MGD) Daily Maximum	0.218	0.2013	0.1837	0.1767	0.1612	0.201	0.2153	0.2204	0.1816	0.1785	0.1954	0.2183
pH (S.U.) Instantaneous Minimum	7.4	7.3	6.7	7.1	6.8	6.6	7.0	7.1	7.1	7.2	6.9	7.4
pH (S.U.) Instantaneous Maximum	8.3	8.2	8.0	8.2	8.0	7.8	8.1	7.9	8.1	8.1	8.1	8.3
DO (mg/L) Instantaneous Minimum	8.1	6.8	6.3	8.2	6.3	8.1	9.1	9.1	7.9	7.6	6.9	7.0

DO (mg/L) Average Monthly	8.8	8.3	8	9.7	9.4	9.9	10	10	9.4	8.9	8.5	8.3
CBOD5 (lbs/day) Average Monthly	< 3	< 3	< 3	4	6	< 4	< 3	< 3	< 3	< 3	< 3	< 3
CBOD5 (lbs/day) Weekly Average	< 3	7	6	5	13	7	< 3	< 3	< 3	< 3	< 3	< 3
CBOD5 (mg/L) Average Monthly	< 2	< 3	< 3	3	6	< 3	2	< 2	< 2	< 2	< 2	< 2
CBOD5 (mg/L) Raw Sewage Influent Average Monthly	191	171	181	204	201	192	247	145	240	166	174	176
CBOD5 (mg/L) Weekly Average	< 2	7	5	4	12	6	< 2	< 2	< 2	< 2	< 2	< 2
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	356	273	254	267	277	300	513	217	358	270	274	288
BOD5 (mg/L) Raw Sewage Influent Average Monthly	244	234	234	232	259	243	379	164	280	219	208	218
TSS (lbs/day) Average Monthly	< 1	4	6	5	7	< 3	< 2	< 2	< 3	1	< 3	< 3
TSS (lbs/day) Weekly Average	2	7	16	6	9	5	2	< 2	8	1	7	5
TSS (mg/L) Average Monthly	< 1	4	6	4	6	< 2	< 1	< 1	< 2	1	< 2	< 2
TSS (mg/L) Raw Sewage Influent Average Monthly	187	131	113	161	186	163	291	78	309	129	110	147
TSS (mg/L) Weekly Average	1	6	14	5	8	4	2	< 1	6	1	5	4
Fecal Coliform (No./100 ml) Geometric Mean	< 2	< 2	< 2	< 7	< 5	< 2	< 2	< 2	< 2	2	< 2	< 2
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 2	< 2	< 2	30	21	< 2	< 2	2	2	2	< 2	2
UV Intensity (mW/cm²) Minimum	2	2.0	2.0	2	2.0	1.4	1.8	2.4	2.6	3	2.5	3.3

Nitrate-Nitrite (lbs/day) Average Monthly									< 5.2	4.5	< 5.0	5.6
Nitrate-Nitrite (mg/L) Average Monthly									< 4.1	3.5	< 3.9	4.2
Total Nitrogen (lbs/day) Average Monthly	< 8	< 6	< 6	8	7	< 11	< 11	< 7	< 6	< 6.0	< 6.0	< 18.6
Total Nitrogen (mg/L) Average Monthly	< 5.48	< 5.46	< 5.62	6.99	6.67	< 8.67	< 8.2	< 5.09	< 5.12	< 4.5	< 4.94	< 23
Ammonia (lbs/day) Average Monthly	< 0.1	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.2	< 0.2	< 0.2	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Phosphorus (lbs/day) Average Monthly	0.7	< 0.3	0.3	0.3	0.3	< 0.3	0.3	0.3	0.5	3	0.3	0.4
Total Phosphorus (mg/L) Average Monthly	0.4	< 0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.4	0.3	0.3	0.3
Total Phosphorus (lbs) Total Annual	97	67	55	45	33	24	13	156	143	125	112	98

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .32
Latitude 40º 13' 26.15" **Longitude** -75º 4' 12.48"
Wastewater Description: Treated 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

Parameter	Limit (mg/l)	SBC	Basis
CBOD5	20	Average Monthly	Previous WQM model/existing
TSS	20	Average Monthly	Existing*
NH3-N	2.0	Average Monthly	Previous WQM model/existing
Total Phosphorus	0.6	Average Monthly	Existing**
Total Phosphorus*** (lbs)	487	Annual Load	Existing**
Nitrate-Nitrite as N (07/01 to 10/31)	9.0	Average Monthly	Existing****
Fecal Coliform	200/1000	Geo.Mean / IMax	Chapter 93 & DRBC
Dissolved Oxygen	5.0	Inst.Min.	Previous WQM model/existing
pH	6.0 to 9.0 Std.Units		Chapter 93
Total Nitrogen	Report		Existing/data collection/SOP
UV transmittance	Report		Existing/data collection/SOP

* Based on the review of the DMRs DEP found this limit was achievable and included in the permits few years ago.

** These numbers were calculated at the last renewal based on a “no-net increase” policy for the permitted loading. Neshaminy Creek is impaired and the previous TMDL was withdrawn. Therefore, no increase in existing phosphorus load can be allowed until a revised TMDL is developed to address the impairment. According to the permittee the impacts of phosphorus on the receiving stream should be based on annual, as opposed to monthly loads. In lieu of a monthly mass limit, a total annual mass load limit of 487 pounds was calculated based on achieving a long-term average concentration of 0.5 mg/l.

*** For Phosphorus load, running annual total is changed to more appropriate annual total at this renewal.

**** For (NO_2 +NO_3) - N, the limit of 9.0 mg/l complied with the requirement in the Neshaminy basin during summer months (July -October) that [(NO_2+NO_3) - N +NH_3 - N] = 11 mg/l for protection of a water supply intake located near the mouth of the Neshaminy.

Since the TDS concentration reported is less than the criterion it is not necessary to include TDS monitoring in the permit.

Influent monitoring for TSS, CBOD5 and BOD5 is continued in the permit to check the compliance with 85% reduction requirement and for Chapter 94 purposes.

Anti-Backsliding

N/A

Outfall 002 has the very same effluent limitations as Outfall 001.

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	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	Report	XXX	XXX	1/day	Grab
CBOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
CBOD5	53	80	XXX	20	30	40	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
TSS	53	80	XXX	20	30	40	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
UV Intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Nitrate-Nitrite Jul 1 - Oct 31	24.0	XXX	XXX	9.0	XXX	18	1/week	24-Hr Composite
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/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		
Ammonia Nov 1 - Mar 31	16.0	XXX	XXX	6.0	XXX	12	1/week	24-Hr Composite
Ammonia Apr 1 - Oct 31	5.3	XXX	XXX	2.0	XXX	4	1/week	24-Hr Composite
Total Phosphorus	Report	XXX	XXX	0.6	XXX	1.2	1/week	24-Hr Composite
Total Phosphorus (lbs)	XXX	487 Total Annual	XXX	XXX	XXX	XXX	See Permit	Calculation

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 002, 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	Metered
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	Report	XXX	XXX	1/day	Grab
CBOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
CBOD5	53	80	XXX	20	30	40	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS	53	80	XXX	20	30	40	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
UV Intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Nitrate-Nitrite Jul 1 - Oct 31	24.0	XXX	XXX	9.0	XXX	18	1/week	24-Hr Composite
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite

Outfall 002, 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		
Ammonia Nov 1 - Mar 31	16.0	XXX	XXX	6.0	XXX	12	1/week	24-Hr Composite
Ammonia Apr 1 - Oct 31	5.3	XXX	XXX	2.0	XXX	4	1/week	24-Hr Composite
Total Phosphorus	Report	XXX	XXX	0.6	XXX	1.2	1/week	24-Hr Composite
Total Phosphorus (lbs)	XXX	487 Total Annual	XXX	XXX	XXX	XXX	See Permit	Calculation