

Application Type Renewal  
Facility Type Municipal  
Major / Minor Minor

**NPDES PERMIT FACT SHEET  
INDIVIDUAL SEWAGE**

Application No. PA0244031  
APS ID 1094655  
Authorization ID 1450547

**Applicant and Facility Information**

Applicant Name	<u>Chadds Ford Township Sewer Authority</u>	Facility Name	<u>Turners Mill STP</u>
Applicant Address	<u>10 Ring Road PO Box 816 Chadds Ford, PA 19317-0628</u>	Facility Address	<u>20 Ring Road PO Box 816 Chadds Ford, PA 19317-9101</u>
Applicant Contact	<u>Valerie Hoxter</u>	Facility Contact	<u>Matthew Mcaloon</u>
Applicant Phone	<u>(610) 388-8800</u>	Facility Phone	<u>(215) 589-6010</u>
Client ID	<u>62246</u>	Site ID	<u>657713</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Chadds Ford Township</u>
Connection Status	<u>No Limitations</u>	County	<u>Delaware</u>
Date Application Received	<u>July 14, 2023</u>	EPA Waived?	<u>No</u>
Date Application Accepted	<u></u>	If No, Reason	<u>Christina River Basin TMDL</u>
Purpose of Application	<u>Renewal.</u>		

**Summary of Review**

The permittee has requested an approval of the renewal of the discharge of treated sewage into Harvey Run (WWF, WF) through Outfall 001.

The facility is serving Chadds Ford Township (with population of 3972 people). Additionally, below list consists of commercial customers (dated June 8, 2023):

Customer	Type of Business	Flow (MGD)
Brandywine Conservancy	Commercial	0.0023
Brandywine Veterinary	Medical Office	0.00061
Carter Gray	Auto Detailing	0.00015
Tsaganos Associates	Retail Store	0.0011
Eclipse Technology	Commercial	0.00015
Chadds Ford Tavern	Restaurant	0.00092
Chadds Ford Development	Retail	0.0023
Grafton, Wayne & Marjorie	Office	0.00015
Barn Shoppes	Retail	0.0012
Hotel 1	Hotel	0.002
Concord Crossing	Restaurant	0.0015
1620 Baltimore Associates	Restaurant and Retail	0.00061
AOG, LLC	Restaurant and Retail	0.0018
SUNOCO	Gas Station	0.00015

Approve	Deny	Signatures	Date
X		Begay Omuralieva Begay Omuralieva / Environmental Engineering Specialist	May 30, 2024
X		<i>Pravin Patel</i> Pravin C. Patel, P.E. / Environmental Engineer Manager	05/31/2024

**Summary of Review**

Hank's Place	Restaurant	0.0014
Commons of Chadds Ford	Offices	0.0058
Chadds Ford Historical Society	Offices	0.00031
Sanderson Museum	Museum	0.00015
David Dodge	Auto Dealer	0.00061
Parkside Associates	Retail	0.0037
St. Cornelius Church	Church and School	0.0017
Falconidae, LLC	Commercial	0.00031
Sotirios & Alice Trivellas	Office	0.00015
Wallace Building	Commercial	0.00015
Nassar & Patricia Khosravi	Office	0.00015
Mongiovi Orthodontics Medical	Office	0.00015
White Family Real Estate	Office	0.00031
Dembro	Office	0.00015
Kids First Medical	Office	0.00015
LCB Senior Living	Assisted Living	0.0069
9th and Highland, LLC	Commercial	0.00015
Glen Mills Veterinary Hospital	Medical Office	0.00031
Solari, PA	Office	0.00077
RWSA, LLC	Office	0.00046
Shagbark Properties	Office	0.00031
Keystone Plaza	Retail	0.0031

Total 0.04213

Based on the application, treatment system consists of a bar screen with manual by-pass, one equalization basin with redundant feed pumps, three parallel anoxic tanks, three parallel aeration tanks, three parallel clarifiers, three parallel filters, cascade aeration, and a single UV disinfection basin.

DEP has conducted a site visit on 2/22/2024. No violation noted.

Based on 2019 amendment approval, annual flow was revised due to expansion of the treatment plant is by adding a third treatment train to accommodate an additional 70,000 GPD (upon converting Riding Chadds Ford STP to pump station) from 0.140 GPD. No changes since then.

Therefore, all effluent limits and monitoring requirements will be proposed as previously established except for E.coli quarterly monitoring that is required to collect statewide data.

Proposed Effluent Limitations and Monitoring Requirements is listed on pps. 9-10 of this factsheets.

Sludge use and disposal description and location(s): DELCORA STP

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.

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.21
Latitude	39° 52' 18.83"	Longitude	-75° 34' 52.41"
Quad Name		Quad Code	
Wastewater Description: Sewage Effluent			
Receiving Waters	Harvey Run (WWF, MF)	Stream Code	00028
NHD Com ID	26112424	RMI	0.66
Drainage Area	2.825 sq. mi	Yield (cfs/mi <sup>2</sup> )	0.22
Q <sub>7-10</sub> Flow (cfs)	0.64	Q <sub>7-10</sub> Basis	
Elevation (ft)	196.000 Ft	Slope (ft/ft)	
Watershed No.	3H	Chapter 93 Class.	WWF, MF
Existing Use	WWF, MF, DO <sub>2</sub> and T	Existing Use Qualifier	
Exceptions to Use	No exceptions	Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	FLOW REGIME MODIFICATION, SILTATION, SILTATION AGRICULTURE, URBAN RUNOFF/STORM SEWERS, URBAN RUNOFF/STORM		
Source(s) of Impairment	SEWERS		
TMDL Status	Final	Name	Christina River Basin

Changes Since Last Permit Issuance: none

Treatment Facility Summary				
<b>Treatment Facility Name:</b> Turners Mill STP				
<b>WQM Permit No.</b>	<b>Issuance Date</b>			
2305404A1	11/13/2019			
<b>Waste Type</b>	<b>Degree of Treatment</b>	<b>Process Type</b>	<b>Disinfection</b>	<b>Avg Annual Flow (MGD)</b>
Sewage	Tertiary	Extended Aeration With Solids Removal	Ultraviolet	0.21
<b>Hydraulic Capacity (MGD)</b>	<b>Organic Capacity (lbs/day)</b>	<b>Load Status</b>	<b>Biosolids Treatment</b>	<b>Biosolids Use/Disposal</b>
0.403	490.3	Not Overloaded	Dewatering	Delcora STP

Changes Since Last Permit Issuance: no changes

Compliance History

DMR Data for Outfall 001 (from April 1, 2023 to March 31, 2024)

Parameter	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23
Flow (MGD) Average Monthly	0.1184	0.1018	0.1136	0.114	0.107	0.108	0.1162	0.114	0.1177	0.1148	0.1086	0.1084
Flow (MGD) Daily Maximum	0.1359	0.1184	0.1477	0.17	0.131	0.129	0.1498	0.124	0.1670	0.1738	0.1286	0.1860
pH (S.U.) Instantaneous Minimum	6.9	7.0	6.7	6.6	7.0	6.7	6.9	7.0	6.7	7.0	6.6	6.9
pH (S.U.) Instantaneous Maximum	7.4	7.6	7.7	7.6	7.8	7.6	7.7	7.8	7.7	8.1	7.5	7.5
DO (mg/L) Instantaneous Minimum	8.9	9.0	9.50	7.2	7.8	7.0	6.6	6.5	6.4	7.0	7.2	8.1
TRC (mg/L) Average Monthly	< 0.1	< 0.01	< 0.01	< 0.01	< 0.01	0.1	0.1	< 0.01	< 0.01	< 0.001	< 0.01	< 0.01
CBOD5 (lbs/day) Average Monthly	< 1.7	< 1.4	< 1.8	< 1.8	< 1.7	< 1.8	< 1.9	< 2.0	2.0	< 1.8	< 1.8	< 1.7
CBOD5 (lbs/day) Raw Sewage Influent   Average Monthly	147	143	181	165	179	176	160	131	167	151	112	111
CBOD5 (lbs/day) Raw Sewage Influent   Weekly Average	174	231	226	253	223	272	181	189	265	214	147	116
CBOD5 (lbs/day) Weekly Average	< 2.3	< 1.5	< 1.9	< 2.0	< 1.9	< 2.0	< 2.2	< 2.2	2.2	< 2.0	< 2.1	< 1.8
CBOD5 (mg/L) Average Monthly	< 1.8	< 1.6	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.1	2.0	< 1.9	< 2.0	< 2.0
CBOD5 (mg/L) Raw Sewage Influent   Average Monthly	159	175	198	161	202	187	164	136	171	157	123	131
CBOD5 (mg/L) Raw Sewage Influent   Weekly Average	190	307	234	192	251	266	191	190	272	229	153	148

**NPDES Permit Fact Sheet  
Turners Mill STP**

**NPDES Permit No. PA0244031**

CBOD5 (mg/L) Weekly Average	< 2.2	< 1.7	< 2.1	< 2.1	< 2.1	< 2.0	< 2.1	< 2.4	2.2	< 1.9	< 2.1	< 2.1
BOD5 (lbs/day) Raw Sewage Influent   Average Monthly	171	174	213	212	222	227	223	170	192	206	169	148
BOD5 (lbs/day) Raw Sewage Influent   Weekly Average	202	287	280	331	267	355	271	251	281	297	213	166
BOD5 (mg/L) Raw Sewage Influent   Average Monthly	185	213	231	206	252	240	228	176	196	216	186	174
BOD5 (mg/L) Raw Sewage Influent   Weekly Average	225	381	278	252	286	348	286	253	288	318	222	205
TSS (lbs/day) Average Monthly	< 1.2	< 0.9	< 1.0	< 1.0	< 1.0	< 0.9	< 1.0	< 1.0	1.2	1.2	2.4	< 1.4
TSS (lbs/day) Raw Sewage Influent   Average Monthly	160	137	224	157	213	216	217	193	225	227	136	89
TSS (lbs/day) Raw Sewage Influent   Weekly Average	211	187	282	228	286	265	275	274	420	308	206	114
TSS (lbs/day) Weekly Average	1.6	< 1.0	< 1.1	< 1.3	1.7	< 1.0	< 1.2	1.2	1.8	1.6	3.3	< 1.7
TSS (mg/L) Average Monthly	< 1.2	< 1.1	< 1.1	< 1.1	< 1.1	< 1.0	< 1.1	< 1.1	1.3	1.3	2.6	< 1.6
TSS (mg/L) Raw Sewage Influent   Average Monthly	172	165	244	155	241	232	221	202	230	239	148	104
TSS (mg/L) Raw Sewage Influent   Weekly Average	235	225	304	173	265	260	290	276	430	330	215	131
TSS (mg/L) Weekly Average	1.5	< 1.1	< 1.1	< 1.1	1.6	< 1.0	< 1.2	1.2	1.8	1.5	3.6	< 2.1
Fecal Coliform (No./100 ml) Geometric Mean	< 1.3	< 2	< 1.0	< 2	< 1	< 4	3	1	1	< 1	< 1	< 1.0

**NPDES Permit Fact Sheet  
Turners Mill STP**

**NPDES Permit No. PA0244031**

Fecal Coliform (No./100 ml) Instantaneous Maximum	3.1	6.3	3.1	4.1	1	18	6	3	2	< 1	< 3	1.0
UV Intensity (mW/cm <sup>2</sup> ) Daily Minimum	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Nitrate-Nitrite (lbs/day) Average Monthly	< 11.0	< 8.9	< 10.3	< 9.3	19.8	< 15.8	< 17.0	< 15.4	16.2	< 17.9	< 18.2	< 15.6
Nitrate-Nitrite (mg/L) Average Monthly	< 11.7	< 10.6	< 11.2	< 9.5	18.5	< 16.8	< 17.5	< 15.9	16.2	< 18.8	< 20.2	< 18.1
Total Nitrogen (lbs/day) Average Monthly	< 11.6	< 9.3	< 10.7	< 9.8	16.8	< 16.3	< 17.5	< 16.0	16.7	< 18.7	< 19.0	< 16.4
Total Nitrogen (mg/L) Average Monthly	< 12.3	< 11.1	< 11.7	< 10.0	19.0	< 17.4	< 18.0	< 16.6	17.0	< 19.6	< 21.1	< 19.2
Ammonia (lbs/day) Average Monthly	< 0.47	< 0.42	< 0.46	< 0.5	< 0.44	< 0.47	< 0.49	< 0.48	0.49	< 0.48	< 0.36	< 0.43
Ammonia (mg/L) Average Monthly	< 0.50	< 0.50	< 0.50	< 0.5	< 0.50	< 0.5	< 0.50	< 0.50	0.50	< 0.5	< 0.41	< 0.5
TKN (lbs/day) Average Monthly	< 0.58	< 0.42	< 0.46	< 0.51	< 0.44	< 0.52	< 0.52	< 0.60	0.76	0.7	< 0.63	0.88
TKN (mg/L) Average Monthly	< 0.60	< 0.50	< 0.50	< 0.51	< 0.5	< 0.55	< 0.53	< 0.62	0.78	0.73	< 0.67	1.04
Total Phosphorus (lbs/day) Average Monthly	0.43	0.37	0.41	0.33	0.33	0.46	0.47	0.54	0.46	0.51	0.38	0.45
Total Phosphorus (mg/L) Average Monthly	0.46	0.45	0.45	0.32	0.38	0.5	0.48	0.55	0.47	0.54	0.42	0.61

**Compliance History**

**Development of Effluent Limitations**

**Outfall No.** 001  
**Latitude** 39° 52' 23.00"  
**Wastewater Description:** Sewage Effluent  
**Design Flow (MGD)** .21  
**Longitude** -75° 34' 52.00"

**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 <sub>5</sub>	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**

Following were based on the 2019 amendment approval:

Due to the facility's increased effluent flow from 0.14 MGD to 0.21 MGD the water quality modeling (WQM) was run and the following limitations results :

Parameter	Limit (mg/l)	SBC	Model
CBOD 5	25	Average Monthly	WQM 7.0
NH3-N	6.07	Average Monthly	WQM 7.0
DO	3	Min.	WQM 7.0

Comments: All three parameters are superseded by TMDL WLA (Christina River Basin TMDL, revised in 2012) listed below:

**Table 15. TMDL Summary for Brandywine Creek Main Stem**

NPDES	FACILITY NAME	FLOW mg/l	CBOD <sub>5</sub> mg/l	NH <sub>3</sub> -N mg/l	TN mg/l	TP mg/l	DO mg/l	CBOD <sub>5</sub> lb/day	NH <sub>3</sub> -N lb/day	TN lb/day	TP lb/day	DO lb/day
PA0055476	Riding of Chadds Ford STP	0.08	10	3	30	2	3	6.7	2.0	20.016	1.3	2.000
PA0244031	Turner's Mill STP	0.14	10	1.5	40	1.0	6.0	12.000	1.800	46.704	1.2	7.006

The proposed limits will remain the same while the loadings are adjusted based on increased flow and/or TMDL allocations. They are as follows:

Parameters	Mass Units (lbs/day)		Concentration (mg/l)			Basis
	Average Monthly	Weekly Average	Average Monthly	Weekly Average	Instant. Maximum	
CBOD <sub>5</sub>	17.5	26.0	10.0	15.0	20	BAT/ Existing limits BAT/ Existing limits
TSS	17.5	26.0	10.0	15.0	20	
NH <sub>3</sub> -N (11/1 – 4/30)	7.8		4.5		9	

Parameters	Mass Units (lbs/day)		Concentration (mg/l)			Basis
	Average Monthly	Weekly Average	Average Monthly	Weekly Average	Instant. Maximum	
NH3-N (5/1 – 10/31)	2.6		1.5		3	Summarized WLA loading is used for concentration calculation
TP	1.75		1.0		2	
TN	66.7		38		76	



**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) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> 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	6.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.2	1/day	Grab
CBOD5	17.5	26.0	XXX	10.0	15.0	20	1/week	24-Hr Composite
CBOD5 Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
TSS	17.5	26.0	XXX	10.0	15.0	20	1/week	24-Hr Composite
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	50 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
UV Intensity (mW/cm <sup>2</sup> )	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Nitrate-Nitrite	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) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Nitrogen	66.7	XXX	XXX	38.0	XXX	76	1/week	Calculation
Ammonia Nov 1 - Apr 30	7.8	XXX	XXX	4.5	XXX	9	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	2.6	XXX	XXX	1.5	XXX	3	1/week	24-Hr Composite
TKN	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Phosphorus	1.75	XXX	XXX	1.0	XXX	2	1/week	24-Hr Composite

Compliance Sampling Location: Outfall 001

Approve	Deny	Signatures	Date
X		Begay Omuralieva Begay Omuralieva / Environmental Engineering Specialist	May 30, 2024
X		<i>Pravin Patel</i> Pravin C. Patel, P.E. / Environmental Engineer Manager	05/31/2024