pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0040665**
Facility Type	**Non-Municipal**	APS ID	**1078033**
Major / Minor	**Minor**	Authorization ID	**1421710**

Applicant and Facility Information

Applicant Name	**Stone Barn Inc.**	Facility Name	**Stone Barn Rentals**
Applicant Address	100 Stone Barn Drive	Facility Address	100 Stone Barn Drive
	Kennett Square, PA 19348		Kennett Square, PA 19348
Applicant Contact	Elinor Thomforde	Facility Contact	Elinor Thomforde
Applicant Phone	(610) 347-1882	Facility Phone	(610) 347-1882
Client ID	28435	Site ID	443557
Ch 94 Load Status	Not Overloaded	Municipality	West Marlborough Township
Connection Status		County	Chester
Date Application Received	December 29, 2022	EPA Waived?	No
Date Application Accepted		If No, Reason	TMDL - Christina

Purpose of Application .Permit Renewal

Summary of Review

Applicant requests renewal of NPDES permit to discharge 11,000 gpd of treated sewage effluent to East Branch White Clay Creek. Located in Watershed 3-I, the stream is designated as Exceptional Value (EV). The plant serves a 32-unit apartment complex, 3 houses and a restaurant. Flows for 2020, 2021, and 2022 averaged 0.0018 MGD, 0.0014 MGD, and 0.0012 MGD, respectively. The Highest Monthly Average Flow for previous year is 0.0531 MGD. Treatment includes screening, aeration, clarification, chlorination, and filtration. Sodium hypochlorite is used for disinfection, soda ash for pH adjustment, and aluminum sulfate for phosphorus removal. The facility complies with effluent limits.

The sample point limits carry over from the previous permit as followings.

The average monthly limits of $CBOD_5$ = 20 mg/l (May - October) and 25 mg/l (November - April), TSS = 20 mg/l, NH3-N = 3.0 mg/l (May - October) and 9.0 mg/l (November - April), DO = 5 mg/l, and TRC = 0.5 mg/l are carried over from the existing permit. The Christina River Basin Low-Flow TMDL issued by EPA in January 2001 and revised October 2002 included allocations for this discharge for $CBOD_5$ = 20 mg/l and Ammonia = 3.0 mg/l, based on the existing limits previously determined by the Department several renewals ago. Although the TMDL was revised to allow CBOD5 = 25 mg/l and NH3-N = 10 mg/l, the more stringent limits are maintained since no backsliding of limits is allowed in an EV watershed.

The existing Fecal Coliform limits of 200/100 ml (Geo Mean) and 1000/100 ml (Imax) are unchanged. Chapter 92a, § 92a.47(a)(4) governs the summer season May through September. DRBC Water Quality regulation § 4.30.4.A governs the winter season and states that, during October through April, Imax shall not be greater than 1000/100 ml in more than 10 percent of the samples tested. Since the sampling frequency is 2/month, no sample can exceed 1,000/100 ml.
For February 2023, Instantaneous Maximum for Fecal Coliform (No./100 ml) was reported at 1203. However, it went back down to 6 and 33.6 respectively on the following months.

Approve	Deny	Signatures	Date
X		*Charley Yang* Charley Yang / Environmental Engineering Specialist	June 23, 2023
X		*Pravin Patel* Pravin C. Patel, P.E. / Environmental Engineer Manager	06/26/2023

Summary of Review

The Christina River Basin Low-Flow TMDL also established WLAs for Total Nitrogen (TN) = 24 mg/l and Total Phosphorus (TP) = 2 mg/l. The permittee began reporting average monthly TN and TP on DMRs in December 2005. For TN, concentrations gradually declined and the limit became effective upon permit issuance in 2013. For TP, the permit allowed 1 year to achieve compliance with the limit. Per the recent monitoring report, TN has been constantly lower than the limit except Feb 2023 when it was slightly over the limit. TN for the next two month were reported at 9.05 mg/l and 13.01 mg/l respectively.

The latest inspection was conducted by Michael McAdams on 11/16/2022 and the site was in good condition per the inspection report.

The act 14 notifications were sent out on Dec 20, 2022 via certified mail receipt.

On August 29, 2012, the EPA provided notification of their acceptance of the DEP's proposed alternative reduction scenario for EPA's Christina River Basin Low-Flow TMDL. The alternative reduction included a DO limit of 6.0 mg/l. However, this was a result of a typographical error in the permit issued November 28, 2005, that included the higher DO. A corrected page with the longstanding DO limit of 5 mg/l was sent to the permittee on January 18, 2006. The permit limit for DO since the 1980s has been 5.0 mg/l. The limit was deemed protective of instream criteria both before and after redesignation of the stream to exceptional value. Table 2 of the Christina River Basin Low-Flow TMDL issued in January 2001 and revised in October 2002 included the DO limit of 5.0 mg/l. A more stringent limit was not required at that time and, therefore, the limit remains unchanged.

This facility is also included in the "TMDL for Bacteria & Sediment in the Christina River Basin – PA, DE, MD", signed 9/7/06. Table 2-2 of the report shows the fecal coliform (200/100 ml) and TSS (20 mg/l & 0.76 kg/d) for facilities included in the TMDL. Per sections 4.1.3 and 4.2.3 of the report, the facility is not required to reduce its currently permitted fecal coliform or TSS loads to comply with the waste load allocations in the TMDL.

The facility is also included in EPA's September 2006 "Revisions to Total Maximum Daily Loads for Nutrient and Low Dissolved Oxygen under High-Flow Conditions, Christina River Basin – PA, DE, MD".
Table 2-2 of the report shows the concentrations for CBOD5, NH3-N and TP (25 mg/l, 10 mg/l, and 2 mg/l, respectively, that were used as the baseline loading for high flow modeling. Table 2-2 values were based on the low flow TMDL that was revised to allow CBOD5 = 25 mg/l and NH3-N = 10 mg/l, although more stringent limits are maintained due to anti-backsliding in EV watershed. Section 4.3,"Waste Load Allocations", states that "Based on the water quality model simulations, none of the non-MS4 NPDES permitted dischargers in the impaired subbasins were required to reduce their present NPDES permit limits for CBOD5, nitrogen or phosphorus." Section 4.5.5 states that no additional reductions to the non-MS4 NPDES discharges over and above those recommended in the low-flow TMDL are necessary to protect the dissolved oxygen WQS.

Permit Conditions:

A. Notification of Designation of Responsible Operator
B. Abandon STP When Municipal Sewers Available
C. Remedial Measures if Unsatisfactory Effluent
D. No Stormwater
E. Acquire Necessary Property Rights
F. Change in Ownership
G. Chlorine Minimization
H. Proper Sludge Disposal
I. Instantaneous Maximum Limitations
J. 2/Month Sampling
K. Laboratory Certification
L. Fecal Coliform Reporting

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.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.011
Latitude	39Âº 53' 3.43"	Longitude	-75Âº 47' 2.67"
Quad Name	Coatesville	Quad Code	1939
Wastewater Description:	Effluent		
Receiving Waters	Unnamed Tributary to East Branch White Clay Creek (EV)	Stream Code	00432
NHD Com ID	26085952	RMI	
Drainage Area	0.3 mi2	Yield (cfs/mi^2)	0.22
Q_{7-10} Flow (cfs)	0.066	Q_{7-10} Basis	Previous WQPR
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-I	Chapter 93 Class.	EV
Existing Use		Existing Use Qualifier	
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	Final	Name	Christina River Basin

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: none

Other Comments:

Compliance History

DMR Data for Outfall 001 (from March 1, 2022 to February 28, 2023)

Parameter	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22	APR-22	MAR-22
Flow (MGD) Average Monthly	0.0013	0.0012	0.0013	0.0012	0.0009	0.0013	0.0011	0.0011	0.0011	0.0013	0.0014	0.0014
pH (S.U.) Instantaneous Minimum	6.23	6.46	6.53	6.44	6.60	6.65	6.94	7.01	7.10	6.94	7.09	7.06
pH (S.U.) Instantaneous Maximum	7.33	7.21	6.97	7.57	7.10	7.90	7.68	7.81	7.64	7.52	7.89	7.69
DO (mg/L) Instantaneous Minimum	5.1	5.4	5.5	5.1	5.1	5.1	5.1	5.1	5.0	5.0	5.0	5.1
TRC (mg/L) Average Monthly	0.01	0.02	0.01	0.01	0.004	0.02	0.01	0.01	0.01	0.004	< 0.01	0.004
TRC (mg/L) Instantaneous Maximum	0.02	0.08	0.02	0.01	0.01	0.07	0.02	0.02	0.02	0.02	0.01	0.02
CBOD5 (mg/L) Average Monthly	5.6	4.05	5.40	< 5.1	5.15	6.05	7.20	6.55	6.65	5.05	< 5.40	4.90
TSS (mg/L) Average Monthly	7.5	< 5.7	6.30	6.6	< 5.70	7.3	< 7.4	6.0	4.1	< 5.0	< 5.0	< 5.0
Fecal Coliform (No./100 ml) Geometric Mean	< 35	< 4	< 1	< 2	< 1	< 3	< 4	< 13	46	< 1	< 1	< 1
Fecal Coliform (No./100 ml) Instantaneous Maximum	1203	15.5	< 1	4.1	< 1	6.3	19.9	161.6	104	< 1	< 1	< 1
Nitrate-Nitrite (mg/L) Average Monthly	< 11.39	< 10.15	< 5.38	< 4.85	< 3.10	< 6.02	< 6.06	< 4.86	< 4.90	< 8.26	< 3.66	< 2.95
Total Nitrogen (mg/L) Average Monthly	< 25.90	< 11.44	< 7.36	< 7.40	< 4.08	< 7.45	< 8.05	< 7.27	< 10.07	< 10.31	< 7.02	< 4.40
Ammonia (mg/L) Average Monthly	4.85	0.31	0.31	0.59	< 0.16	0.41	0.95	1.13	4.35	0.37	1.65	0.40
TKN (mg/L) Average Monthly	14.51	1.30	1.98	2.55	< 0.99	1.43	1.99	2.41	5.17	2.06	3.36	1.45
Total Phosphorus (mg/L) Average Monthly	0.46	0.39	0.52	0.47	0.46	0.51	0.90	0.33	0.39	0.25	0.38	0.17

Compliance History

Effluent Violations for Outfall 001, from: April 1, 2022 To: February 28, 2023

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	02/28/23	IMAX	1203	No./100 ml	1000	No./100 ml
Total Nitrogen	02/28/23	Avg Mo	< 25.90	mg/L	24.0	mg/L
Ammonia	06/30/22	Avg Mo	4.35	mg/L	3.0	mg/L

Summary of Inspections: The site was in good condition

Other Comments:

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	Estimate
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/week	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/week	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.17	1/week	Grab
CBOD5 Nov 1 - Apr 30	XXX	XXX	XXX	25.0	XXX	50	2/month	24-Hr Composite
CBOD5 May 1 - Oct 31	XXX	XXX	XXX	20.0	XXX	40	2/month	24-Hr Composite
TSS	XXX	XXX	XXX	20.0	XXX	40	2/month	24-Hr Composite
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Total Nitrogen	XXX	XXX	XXX	24.0	XXX	48	2/month	24-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	9.0	XXX	18	2/month	24-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	3.0	XXX	6	2/month	24-Hr Composite
TKN	XXX	XXX	XXX	Report	XXX	XXX	2/month	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	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Total Phosphorus	XXX	XXX	XXX	2.0	XXX	4	2/month	24-Hr Composite

Compliance Sampling Location:

Other Comments: