

Application Type Renewal
Facility Type Municipal
Major / Minor Minor

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0058840
APS ID 1004763
Authorization ID 1293794

Applicant and Facility Information

Applicant Name	<u>Hilltown Township Water & Sewer Authority</u>	Facility Name	<u>Berry Brow WWTP</u>
Applicant Address	<u>316 Highland Park Road, P. O. Box 365 Sellersville, PA 18960-0365</u>	Facility Address	<u>212 S Township Line Road Chalfont, PA 18914</u>
Applicant Contact	<u>James Groff</u>	Facility Contact	<u>James Groff</u>
Applicant Phone	<u>(215) 453-6065</u>	Facility Phone	<u>(215) 453-6065</u>
Client ID	<u>34885</u>	Site ID	<u>631350</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Hilltown Township</u>
Connection Status	<u>No Limitations</u>	County	<u>Bucks</u>
Date Application Received	<u>October 28, 2019</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u></u>	If No, Reason	<u></u>
Purpose of Application	<u>Permit Renewal.</u>		

Summary of Review

The Hilltown Township Water and Sewer Authority has submitted application for the renewal of an NPDES permit to discharge 49,875-gpd of treated sewage to pond to an unnamed tributary to Reading Creek. The facility receives sewage from the Reserve at Hilltown.

The sewage treatment plant is designed for a residential development serving about 190 EDUs. The treatment process includes, influent screens, a sequential batch reactor (SBR) biological treatment system, alum addition for phosphorus removal, disk filtration system, and ultraviolet (UV) disinfection system. After treatment, the wastewater is pumped by force main to an existing small pond, which is a headwater to an unnamed and unlisted tributary to Neshaminy Creek.

The effluent limits contained in the existing NPDES permit are based on a Preliminary Treatment Requirements (PTR) letter sent by the Department to Castle Valley Consultants, Inc. on March 31, 2003. The initial PTR sent to Castle Valley Consultants proposed a TP limit of 1.0 mg/l. The existing total phosphorus (TP) limit is 0.5 mg/l. A TMDL for the Neshaminy Creek watershed was approved in late 2003, which required a phosphorus limit of 0.5 mg/l for new sewage treatment facilities. Castle Valley Consultants agreed at a meeting with the Department on March 12, 2004 that the TP limit was being revised to 0.5 mg/l; and this action was confirmed in a letter dated July 22, 2004. As discharge is located in the dry swale, Water Quality Antidegradation Implementation Guidance is used to develop effluent limits.

Based on Inspection Report, the facility had few violations for TSS and Phosphorus but the plant is well maintained.

CBOD₅

The existing CBOD₅ limit is 10 mg/l. The limit is consistent with the ABACT standards outlined in the Department's Water Quality Antidegradation Implementation Guidance manual, and the "minimum treatment" requirements outlined in the former Implementation Guidance for Evaluating Wastewater Discharges to Drainage Ditches and Swales.

Approve	Deny	Signatures	Date
X		Ketan Thaker / Project Manager <i>Ketan Thaker</i>	5/18/ 2020
X		<i>Pravin Patel</i> Pravin C. Patel, P.E. / Environmental Engineer Manager	05/18/2020

Summary of Review

Total Suspended Solids (TSS)

The existing TSS limit is 10 mg/l. The limit is consistent with the ABACT standards outlined in the Department's Water Quality Antidegradation Implementation Guidance manual, and the "minimum treatment" requirements outlined in the former Implementation Guidance for Evaluating Wastewater Discharges to Drainage Ditches and Swales.

NH₃-N

The existing ammonia limit is 1.5 mg/l (May 1 – Oct 31) and 3.0 mg/l (Nov 1 – Apr 30). The limit is based on the acute ammonia criteria for a temperature of 25° C and a pH of 7.0.

Nitrite + Nitrate as N

The existing Nitrate + Nitrite as N limit is 10 mg/l. The limit is consistent with the primary drinking water standards and the criteria listed in 25 PA Code 93.7.

Phosphorous

The existing total phosphorus (TP) limit is 0.5 mg/l. The initial PTR sent to Castle Valley Consultants proposed a TP limit of 1.0 mg/l. A TMDL for the Neshaminy Creek watershed was approved in late 2003, which required a phosphorus limit of 0.5 mg/l for new sewage treatment facilities. Castle Valley Consultants agreed at a meeting with the Department on March 12, 2004 that the TP limit was being revised to 0.5 mg/l; and this action was confirmed in a letter dated July 22, 2004.

Dissolved Oxygen

The existing dissolved oxygen limit is 6 mg/l. This limit meets the TSF criteria.

Fecal Coliform

The existing fecal coliform limit is 50#/100ml, as a geometric mean. The facility uses a UV (ultraviolet) disinfection system; therefore, no TRC (total residual chlorine) limit is required. The monitoring requirement for UV transmittance will continue and is based on SOP.

Total Nitrogen

A monitoring requirement for Total Nitrogen is being added to the permit as per SOP.

Following are effluent limits:

Parameter	Effluent Limits (av. mo. mg/l)	Basis
CBOD5	10	WQ Antideg Implement Guidance
Ammonia-Nitrogen (5/1 to 10/31)	1.5	WQ Antideg Implement Guidance
Ammonia-Nitrogen (11/1 to 4/30)	3.0	WQ Antideg Implement Guidance
Nitrite+Nitrate as N	10	WQ Antideg Implement Guidance
Phosphorus	0.5	25 Pa Code 92a.61
Dissolved Oxygen	6.0	BPJ
pH (Standard Units)	6.0 to 9.0 SU	25 Pa Code 92a.47, 95.2
Total Nitrogen	Report	25 Pa Code 92a.61
UV Transmittance (%)	Report	25 Pa Code 92a.47-48
Total Suspended Solids	10	WQ Antideg Implement Guidance
Fecal Coliform (#/100 ml)	50 (Geo Mean)	25 Pa Code 92a.47

Act-14 Public Notice to Hilltown Township and Bucks County on December 22, 2019 by certified mail.

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.	<u>001</u>	Design Flow (MGD)	<u>.049875</u>
Latitude	<u>40° 17' 59.41"</u>	Longitude	<u>-75° 15' 18.97"</u>
Quad Name	<u>Telford</u>	Quad Code	<u>1643</u>
Wastewater Description: <u>Sewage Effluent</u>			

Receiving Waters	<u>Unnamed Tributary to Reading Creek (WWF, MF)</u>	Stream Code	<u>02484</u>
NHD Com ID	<u>25484864</u>	RMI	<u>43.5 (Neshaminy Creek)</u>
Drainage Area	<u>0.1 mi²</u>	Yield (cfs/mi ²)	<u></u>
Q ₇₋₁₀ Flow (cfs)	<u></u>	Q ₇₋₁₀ Basis	<u></u>
Elevation (ft)	<u></u>	Slope (ft/ft)	<u></u>
Watershed No.	<u>2-F</u>	Chapter 93 Class.	<u>WWF, MF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>

Assessment Status	<u>Not Assessed</u>		
Cause(s) of Impairment	<u>Agriculture – excessive algae</u>		
Source(s) of Impairment	<u>Nutrients, sediments</u>		
TMDL Status	<u>Nutrient TMDL was withdrawn</u>	Name	<u>Neshaminy Creek</u>

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

Nearest Downstream Public Water Supply Intake	<u>Aqua PA Trevoise</u>		
PWS Waters	<u>Neshaminy Creek</u>	Flow at Intake (cfs)	<u></u>
PWS RMI	<u></u>	Distance from Outfall (mi)	<u></u>

Treatment Facility Summary				
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Sequencing Batch Reactor W/Sol Removal	Ultraviolet	0.0499
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0499		Not Overloaded		

Compliance History

DMR Data for Outfall 001 (from April 1, 2019 to March 31, 2020)

Parameter	MAR-20	FEB-20	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19
Flow (MGD) Average Monthly	0.042	0.038	0.037	0.037	0.035	0.034	0.033	0.033	0.033	0.034	0.035	0.033
pH (S.U.) Instantaneous Minimum	7.1	6.9	7.1	7.2	7.1	6.8	7.0	7.7	7.4	7.6	7.6	7.6
pH (S.U.) Instantaneous Maximum	7.6	7.8	8.1	8.1	7.9	7.4	8.2	8.1	8.1	8.2	8.2	8.3
DO (mg/L) Minimum	7.2	7.3	7.7	7.5	7.0	6.2	6.2	6.3	6.2	6.7	6.6	6.7
CBOD5 (lbs/day) Average Monthly	0.90	0.60	1.26	0.60	< 0.60	< 0.70	< 0.50	< 0.50	< 0.60	< 0.60	< 0.70	< 0.50
CBOD5 (lbs/day) Raw Sewage Influent Average Monthly	95	46	53	44	40	45	29	30	41	46	49	41
CBOD5 (lbs/day) Weekly Average	1.20	0.70	1.93	0.70	< 0.60	< 0.70	< 0.50	< 0.50	0.60	< 0.70	< 0.70	< 0.60
CBOD5 (mg/L) Average Monthly	3	3	5	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
CBOD5 (mg/L) Raw Sewage Influent Average Monthly	269	202	185	148	141	134	111	122	142	154	146	161
CBOD5 (mg/L) Weekly Average	3	3	7	2	< 2	< 2	< 2	< 2	2	< 2	< 2	2
TSS (lbs/day) Average Monthly	3.65	3.37	11.20	< 0.60	1.60	< 0.50	< 0.70	< 0.60	< 0.30	1.88	1.02	1.92
TSS (lbs/day) Raw Sewage Influent Average Monthly	77	34	31	70	25	19	13	13	13	16	49	41
TSS (lbs/day) Weekly Average	4.70	6.51	19.50	1.00	2.92	0.70	1.07	0.90	0.30	2.40	1.71	2.70
TSS (mg/L) Average Monthly	10	16	41	< 2	6	< 2	< 3	< 3	< 1	7	3	8

**NPDES Permit Fact Sheet
Berry Brow WWTP**

NPDES Permit No. PA0058840

TSS (mg/L) Raw Sewage Influent Average Monthly	226	152	110	218	88	56	50	52	46	54	52	74
TSS (mg/L) Weekly Average	12	30	71	3	10	2	4	4	1	9	5	12
Fecal Coliform (CFU/100 ml) Geometric Mean	< 1	< 2	< 1	1	< 1	< 1	< 3	< 1	10	< 6	< 1	< 1
UV Transmittance (%) Minimum	1.6	1.7	1.0	1.2	2.6	3.4	3	1.9	1.8	2.4	2.8	2.5
Nitrate-Nitrite (lbs/day) Average Monthly	1.70	0.70	1.19	1.11	2.50	3.43	2.19	1.77	0.50	1.16	1.01	0.70
Nitrate-Nitrite (mg/L) Average Monthly	5	3	4	4	9	10	8	8	2	4	3	3
Total Nitrogen (lbs/day) Average Monthly	2	1	2	1	3	4	2	2	0.80	1	1	0.90
Total Nitrogen (mg/L) Average Monthly	5.89	4.93	6.24	4.74	9.61	10.8	8.92	8.3	2.61	4.7	3.92	3.72
Ammonia (lbs/day) Average Monthly	< 0.04	< 0.02	< 0.04	< 0.03	< 0.03	0.20	< 0.03	< 0.02	< 0.03	< 0.03	< 0.03	< 0.03
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.2	< 0.1	< 0.1	< 0.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Phosphorus (lbs/day) Average Monthly	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	< 0.1	0.03
Total Phosphorus (mg/L) Average Monthly	0.3	0.3	0.7	0.3	0.4	0.5	0.2	0.4	0.4	0.3	< 0.1	0.1

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	XXX	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
CBOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
CBOD5	4.17	6.25	XXX	10	15	20	2/month	24-Hr Composite
TSS	4.17	6.25	XXX	10	15	20	2/month	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	50 Geo Mean	XXX	1000.0	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	50.0 Geo Mean	XXX	1000.0	2/month	Grab
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Nitrate-Nitrite	4.17	XXX	XXX	10	XXX	20	2/month	24-Hr Composite
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Ammonia Nov 1 - Apr 30	1.25	XXX	XXX	3.0	XXX	6	2/month	24-Hr Composite
Ammonia May 1 - Oct 31	0.63	XXX	XXX	1.5	XXX	3	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	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Phosphorus	0.2	XXX	XXX	0.5	XXX	1	2/month	24-Hr Composite