pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0058017**
Facility Type	**Non-Municipal**	APS ID	**1072547**
Major / Minor	**Minor**	Authorization ID	**1412345**

Applicant and Facility Information

Applicant Name	**Harrow Station LLC**	Facility Name	**Harrow Station WWTP**
Applicant Address	265 Frogtown Road	Facility Address	8340 Easton Road
	Kintnersville, PA 18930-9644		Ottsville, PA 18942
Applicant Contact	Glenn Neebe	Facility Contact	Jim Groff
Applicant Phone	(610) 972-6083	Facility Phone	(215) 453-6065
Client ID	241359	Site ID	521657
Ch 94 Load Status	Not Overloaded	Municipality	Nockamixon Township
Connection Status	No Limitations	County	Bucks
Date Application Received	October 4, 2022	EPA Waived?	Yes
Date Application Accepted	October 4, 2022	If No, Reason	

Purpose of Application: NPDES permit renewal.

Summary of Review

The PA Department of Environmental Protection (PADEP/Department) received an NPDES permit renewal application from Cowan Associates, Inc. (consultant) on behalf of Harrow Station LLC (permittee) for permittee's Harrow Station WWTP (facility) on October 4, 2022. This is a minor sewage facility with design flow of 0.005286 MGD and the treated effluent is discharged into a constructed wetland to UNT to Tohickon Creek (TSF, MF). The current permit will expire on March 31, 2023. The coverage is automatically extended since a renewal application was received at least 180 days prior to the expiration date. Renewal NPDES permit applications under Clean Water program are not covered by PADEP's PDG per 021-2100-001.

This fact sheet is developed in accordance with 40 CFR §124.56.

Changes in this permit: E. Coli monitoring, TN limits with schedule added.

Sludge use and disposal description and location(s): Aerobically digested biosolids are hauled off to other WWTP.

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.

Approve	Deny	Signatures	Date
√		Reza H. Chowdhury, E.I.T. / Project Manager 	February 14, 2023
X		Pravin Patel Pravin C. Patel, P.E. / Environmental Engineer Manager	02/21/2022

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.005286
Latitude	40º 29' 27.61"	Longitude	-75º 10' 36.88"
Quad Name	Bedminster	Quad Code	1544
Wastewater Description:	Sewage Effluent		
Receiving Waters	Constructed wetland to UNT to Tohickon Creek (TSF, MF)	Stream Code	03156
NHD Com ID	26030724	RMI	1.18
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	2-D	Chapter 93 Class.	TSF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s), downstream Lake Nockamixon is impaired.		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	**Approved**	Name	**Lake Nockamixon TMDL**
Nearest Downstream Public Water Supply Intake	BCWSA New Hope in New Hope Boro, Bucks County		
PWS Waters	Delaware Canal	Flow at Intake (cfs)	
PWS RMI	24.26 mile	Distance from Outfall (mi)	14.03

Changes Since Last Permit Issuance: Permit amended to increase the average annual design flow from 3,820 GPD to 5,286 GPD on April 14, 2021. No physical improvement was made within the treatment plant to accommodate the increased flow since the facility was built for 15,000 GPD.

Other Comments:
Streamflow: During the previous permit renewal, the permittee proposed to extend the outfall from its current location (constructed wetland/polishing pond) to the stream to get the benefit of dilution in order to get a relaxation in effluent limits (specifically for TN) and a Preliminary Effluent Limitations (PELs) was prepared. However, the proposal was never materialized, therefore the receiving stream (constructed wetland/polishing pond) is considered a dry stream and dry stream limits were applied during the 2021 major amendment. Moreover, due to the discharge being into dry stream and in turn groundwater recharge, Safe Drinking Water (SDW) Program's Maximum Contaminant Levels (MCLs) were also considered and most stringent/BPJ limits were applied. No WQM 7.0 modeling was conducted since the discharge point is into a dry stream.

PWS Intake: The nearby downstream PWS intake is BCWSA's Hew Hope plant in New Hope Borough, Bucks County. The PWS water is Delaware Canal at approximate RMI of 24.26 mile, which is approximately 14 miles downstream of the discharge point. Due to the distance, unlikely occasion of overflowing the polishing pond, and dilution of Tohickon Creek, the PWS intake is not expected to be affected by this discharge.

Lake Nockamixon Creek TMDL:
The secondary receiving waterbody, Lake Nockamixon, has an EPA approved TMDL on March 2003. The TMDL was for Nutrients. Harrow Station is identified there and was allocated a WLA for TP. The WLA for TP is 0.5 mg/l and 0.0159 lbs./day as average monthly loading at design flow of 3,820 GPD. The facility expanded in 2020, however, the concentration and mass loading stayed the same as was prior to expansion to maintain the net zero increase of pollutants.

Treatment Facility Summary				
Treatment Facility Name: Harrow Station STP				
WQM Permit No.	**Issuance Date**			
0900415 A-1	4/14/2021			
0900415	11/21/2000			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary With Ammonia And Phosphorus	Extended Aeration	Ultraviolet	0.005286
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.005286		Not Overloaded	Aerobic Digestion	Other WWTP

Changes Since Last Permit Issuance: The WWTP expanded from 3,820 GPD to 5,286 GPD.

Treatment Plant Description

The Harrow Station WWTP is located near the intersection of Rt. 412 and Rt. 611, and serves a small commercial development, which contains various retails stores, offices, and a restaurant. Outfall 001 discharges to a constructed wetland/polishing pond (with no liner), which overflows to an UNT to Haycock Creek and drains to Lake Nockamixon in Bucks County. The receiving stream is designated as TSF, MF, and attaining its designated use(s); however, the Lake Nockamixon is impaired with nutrients and sedimentation from agricultural and point sources. A TMDL has been developed for the Lake Nockamixon watershed (March 10, 2003) in which Harrow Station's discharge was included. The DRBC identified the receiving waters as Special Protection Waters (SPW) for which more stringent Fecal Coliform limits apply.

Due to the receiving waterbody being dry stream, the PADEP's regional Hydrogeologist recommended that drinking water standards (MCLs) must be met, in a memo on April 24, 2000. The 2021 amendment required the permittee to meet Total Nitrogen (TN) limit of 10 mg/l to protect the groundwater. The permittee stated that they can't meet the limit and proposed to conduct a hydrogeologic study with monitoring requirement for rest of the permit term. The PADEP agreed to this and the permittee submitted a hydrogeologic study report on September 29, 2022 conducted by V.F. Britton Group, LLC. The study included installation of two new downgradient and one upgradient monitoring wells (PW-01, PW-02, and PW-03) from which quarterly samples were collected on September 2021, December 2021, March 2022, and June 2022 for Nitrate-N, Ammonia-N, Nitrite-N, TKN, Chloride, Total Phosphorus, turbidity, fecal coliform, alkalinity, pH, and dissolved solids. The report noted that the stormwater basin receives not only from the WWTP, but also the stormwater runoff from general site area including the paved parking areas. The ratio of WWTP discharge to other stormwater runoff is 1:16 which the report extrapolated to be 1 mg/l of TN into the basin from WWTP at actual discharge condition (1,656.69 GPD, 24 months average). The TN sample results from monitoring wells showed non-detected which may be as a result of TN uptake by organic materials at the bottom of the basin. The reported 24 months average discharge TN concentration is 17.37 mg/l that projects an TN concentration in the basin of 2.93 mg/l at maximum permitted discharge of 5,286 GPD. The report concluded that even at maximum flow condition and maximum TN concentration there will likely be no impact on groundwater and drinking water standard for TN won't be exceeded. There was elevated level of fecal coliform detected in the downgradient wells but was also detected in the upgradient well which suggests the probable source of fecal coliform may be from sub-watershed containing several farms that have animal livestock. There was elevated level of chloride concentration in the downgradient wells and slightly elevated level in the upgradient well. The possible source of elevated chloride may be from road salts and other de-icing products that may enter the stormwater basin from the roadways and parking areas associated with the site. The facility uses UV disinfection, not chlorine, so the source may not be from WWTP. The facility, however, uses a minor amount of ferric chloride (0.33 GPD) to promote solids settling.

PADEP's regional hydrogeologist reviewed the report and in general agreed with the conclusion of the report. Groundwater monitoring requirement will be added in the permit as suggested by regional hydrogeologist.

PADEP's May 28, 2021 inspection report noted the following treatment units: one EQ tank, one anoxic tank, one aeration basin, two secondary clarifiers, one media filter, two UV chambers, and one sludge holding tank.

Existing limits at Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Instantaneous Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (GPD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	6.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	0.44	XXX	XXX	10.0	XXX	20	2/month	Grab
Total Suspended Solids	0.44	XXX	XXX	10.0	XXX	20	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	113.0 Geo Mean	XXX	1000.0*	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	113.0 Geo Mean	XXX	1000.0	2/month	Grab
Ultraviolet light intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Metered
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	2/month	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	0.132	XXX	XXX	3.0	XXX	6	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	0.066	XXX	XXX	1.5	XXX	3	2/month	Grab
Total Phosphorus	0.0159	XXX	XXX	0.5	XXX	1	2/month	Grab

Compliance History

DMR Data for Outfall 001 (from December 1, 2021 to November 30, 2022)

Parameter	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22	APR-22	MAR-22	FEB-22	JAN-22	DEC-21
Flow (GPD) Average Monthly	1597	1729	1887	1545	1870	1770	1955	1446	1383	1473	1462	1304
Flow (GPD) Daily Maximum	1820	2025	2285	1875	1960	1950	2275	1685	1570	1675	1645	1465
pH (S.U.) Instantaneous Minimum	8.3	7.5	7.6	8.4	7.9	7.8	7.4	7.7	7.7	7.6	7.5	7.7
pH (S.U.) IMAX	8.9	8.6	9.0	8.9	8.7	8.6	8.4	8.4	8.5	8.4	8.5	8.2
DO (mg/L) Instantaneous Minimum	7.3	7.3	7.1	6.7	6.9	7.1	6.5	7.1	7.7	7.1	7.5	7.9
CBOD5 (lbs/day) Average Monthly	0.01	0.03	0.03	0.03	0.03	0.03	0.03	< 0.02	0.02	0.03	0.01	0.03
CBOD5 (mg/L) Average Monthly	1.0	2.0	2.0	2.0	2.0	2.0	2.0	< 2.0	2.0	2.0	1.0	2.5
TSS (lbs/day) Average Monthly	0.05	0.14	0.06	0.03	0.02	0.06	0.04	0.01	0.05	0.03	0.01	0.05
TSS (mg/L) Average Monthly	4.0	1.0	4.0	2.5	< 1.0	4.0	2.5	1.0	4.5	2.0	< 1.0	5.0
Fecal Coliform (No./100 ml) Geometric Mean	1.4	5.5	24.5	4.2	4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.0
Fecal Coliform (No./100 ml) IAMX	2.0	10.0	120.0	6.0	16.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	4.0
UV Intensity (mW/cm^2) Instantaneous Minimum	17	0.0	19.0	19	23	20.0	19	24	27	20	22.0	22
Total Nitrogen (lbs/day) Average Monthly	0.23	0.3	0.12	0.1	0.08	0.06	0.27	0.26	0.35	0.4	0.34	0.26
Total Nitrogen (mg/L) Average Monthly	17	21.0	7.7	7.8	4.3	4.4	13.9	21.25	30.1	32.2	27.4	24.1
Ammonia (lbs/day) Average Monthly	< 0.001	0.0003	0.002	0.0003	0.001	0.0003	0.0003	0.001	0.001	0.003	0.002	0.001
Ammonia (mg/L) Average Monthly	< 0.02	0.02	0.1	0.02	< 0.02	0.02	0.02	< 0.02	0.1	0.2	0.2	0.1
Total Phosphorus (lbs/day) Average Monthly	0.0021	0.0036	0.0074	0.0116	0.0031	0.0030	0.0016	0.0010	0.0012	0.0012	0.0012	0.0011

Total Phosphorus (mg/L) Average Monthly	0.16	0.25	0.47	0.9	0.2	0.2	0.1	0.08	0.1	0.1	0.1	0.1

Compliance History

Effluent Violations for Outfall 001, from: January 1, 2022 To: November 30, 2022

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Total Phosphorus	08/31/22	Avg Mo	0.9	mg/L	.5	mg/L

Summary of Inspections:
June 2, 2022: RTPT conducted. No violation noted. There was some re-nitrification occurring due to cold weather, but the floating sludge wasn't passing through the baffles. Final effluent was clear.

May 28, 2021: RTPT conducted. No violation noted. A non-compliance was recorded due to ferric chloride drums being outside near the sand filter without a secondary containment.

December 15, 2020: RTPT conducted. No violation noted. The plant appeared to be operating properly. A thin layer of solids buildup and leaf litter in the sand filter which appeared to be normal. The sand filters are raked once per two weeks. Effluent from the plant appeared to be clear.

June 16, 2020: RTPT conducted. No violation noted. A pile of rags was observed near the EQ tank, vegetation beginning to grow in several of the tanks most notably in the clarifiers. The plant as a whole appeared to be functioning properly.

December 5, 2019: CEI conducted. No violation noted. Final effluent looked clear with no solids present at the outfall.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .005286
Latitude 40º 29' 27.61" **Longitude** -75º 10' 36.88"
Wastewater Description: 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
$CBOD_5$	10	Average Monthly	-	*
Total Suspended Solids	10	Average Monthly	-	*
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 10/31)	1,000 / 100 ml	IMAX	-	92a.47(a)(5)
Fecal Coliform (11/1 – 4/30)	1,000 / 100 ml**	IMAX	DRBC Sec. 4.30.4.A.2	-
Total Phosphorus	0.5	Average Monthly	-	*
Total Nitrogen	5.0	Average Monthly	-	*
Dissolved Oxygen	6.0	Minimum	-	*

* Dry stream policy, 391-2000-014 minimum treatment requirement
** In no more than 10% of samples collected

Water Quality-Based Limitations

Ammonia-Nitrogen: The previous permit amendment utilized WQM 7.0 modeling to determine the NH3-N limit and confirmed that the existing 1.5 mg/l was still protective. Since the receiving waterbody is considered as dry stream, the WQM 7.0 model wasn't utilized this time and SDW's MCL will govern. Since SDW doesn't have an MCL for NH3-N, existing water quality based NH3-N limit of 1.5 mg/l and 3 mg/l as summer average monthly and IMAX limits respectively, and 3.0 mg/l and 6 mg/l as winter AML and IMAX limits will be carried over.

CBOD5: Current CBOD5 limit is based on the dry stream guidance and will be carried over. The mass based average monthly limit is calculated to be 0.44 lbs./day which is the same as existing permit and will be carried over.

D.O.: Current permit has minimum D.O. of 6 mg/l which conforms with both dry stream guidance and TSF criteria.

Additional consideration:

Fecal Coliform: The recent coliform guidance in 25 Pa. code § 92a.47.(a)(4) requires a summer technology limit of 200/100 ml as a geometric mean and an instantaneous maximum not greater than 1,000/100ml and § 92a.47.(a)(5) requires a winter limit of 2,000/100ml as a geometric mean and an instantaneous maximum not greater than 10,000/100ml. Delaware River Basin Commission's (DRBC's) Water Quality Regulations at Section 4.30.4.A requires that during winter season from October through April, the instantaneous maximum concentration of fecal coliform organisms shall not be greater than 1,000 per 100 milliliters in more than 10 percent of the samples tested. Therefore, the summer limit is governed by DEP's regulation while winter limit is governed by DRBC's regulation. Due to the SPW designation of the receiving watershed, a limit of 50/100 ml applies when a facility within SPW expands. However, previous amendment noted that this limit is unnecessarily stringent and instead conducted a mass balance calculation to recalculate the fecal limits after the expansion. The calculation is provided below:

$$\left(\frac{(3820\ x\ 200)+(5286\ x\ 50)}{(3820+5286)}\right) = 112.93 \text{ (rounded to 113)}$$

This limit was applied during the previous amendment and will be continued in this renewal.

E. Coli: Pa Code 25 § 92a. 61 requires monitoring of E. Coli. DEP's SOP titled "Establishing Effluent Limitations for Individual Sewage Permits (BCW-PMT-033, revised March 24, 2021) recommends yearly E. Coli monitoring for sewage dischargers with design flow between 0.002 MGD and 0.05 MGD. This requirement will be applied from this permit term.

pH: The TBEL for pH is above 6.0 and below 9.0 S.U. (40 CFR §133.102(c) and Pa Code 25 §§ 95.2(1), 92a.47) which are existing limits and will be carried over.

Total Suspended Solids (TSS): There is no water quality criterion for TSS. The existing limits of 10 mg/L average monthly and 20 mg/L instantaneous maximum will remain in the permit based on the minimum level of treatment requirement by dry stream guidance. The mass based average monthly limit is calculated to be 0.44 lbs./day which is the same as was in existing permit and will be carried over.

UV Disinfection: The facility utilizes Ultraviolet Irradiation as a mean of disinfection. The current permit has UV Intensity in mW/cm^2 at a frequency of 1/day which will be carried over.

Best Professional Judgement (BPJ):

Total Phosphorus: The current permit has an average monthly limit of 0.5 mg/l, IMAX of 1.0 mg/l, and mass-based average monthly limit of 0.0159 lbs./day based on WLA in the TMDL. These limits will be carried over.

Total Nitrogen: As stated in page 3 of this report, due to safe drinking water concern, a limit will be applied. The permittee submitted three (3) years of TN sampling data (2020-2022). The hydrogeologic study report concluded that at current discharge concentration, there is expected to be no impact in the groundwater quality. The sampling data indicated that there is higher concentration of TN during winter months compared to summer months. To avoid immediate non-compliance, it was decided that instead of average monthly limit an annual average (rolling average) limit for TN will be appropriate. In order to collect sufficient data to calculate rolling annual average, a monitoring requirement will be placed in the permit for first 12 months. A limit will be applied from 13^{th} month as annual average. The hydrogeologic report indicated that at average concentration of 17.37 mg/l (average of 2 years) there will be on impact on groundwater. However, since the study collected samples quarterly, it doesn't co-relate the groundwater TN concentration to the average value but co-relates to actual concentration which varies widely among months. Therefore, a review of rolling averages for 2020-2022 were considered and a 90^{th} percentile value of 28.96 mg/l (or 29mg/l) was determined appropriate to protect the groundwater while being in compliance of at least 90% of the time. In summary, monitoring will be added for first 12 months and 29 mg/l as annual average will be applied from 13^{th} month of the permit effective date. Regional Hydrogeologist's requirements will be added in the Part C of the permit.

Monitoring Frequency and Sample Types:
Otherwise specified above, the monitoring frequency and sample type of compliance monitoring for existing parameters are recommended by DEP's SOP and Permit Writers Manual and/or on a case-by-case basis using best professional judgment (BPJ).

Anti-Backsliding
The proposed limits are at least as stringent as are in existing permit, unless otherwise stated; therefore, anti-backsliding is not applicable.

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.

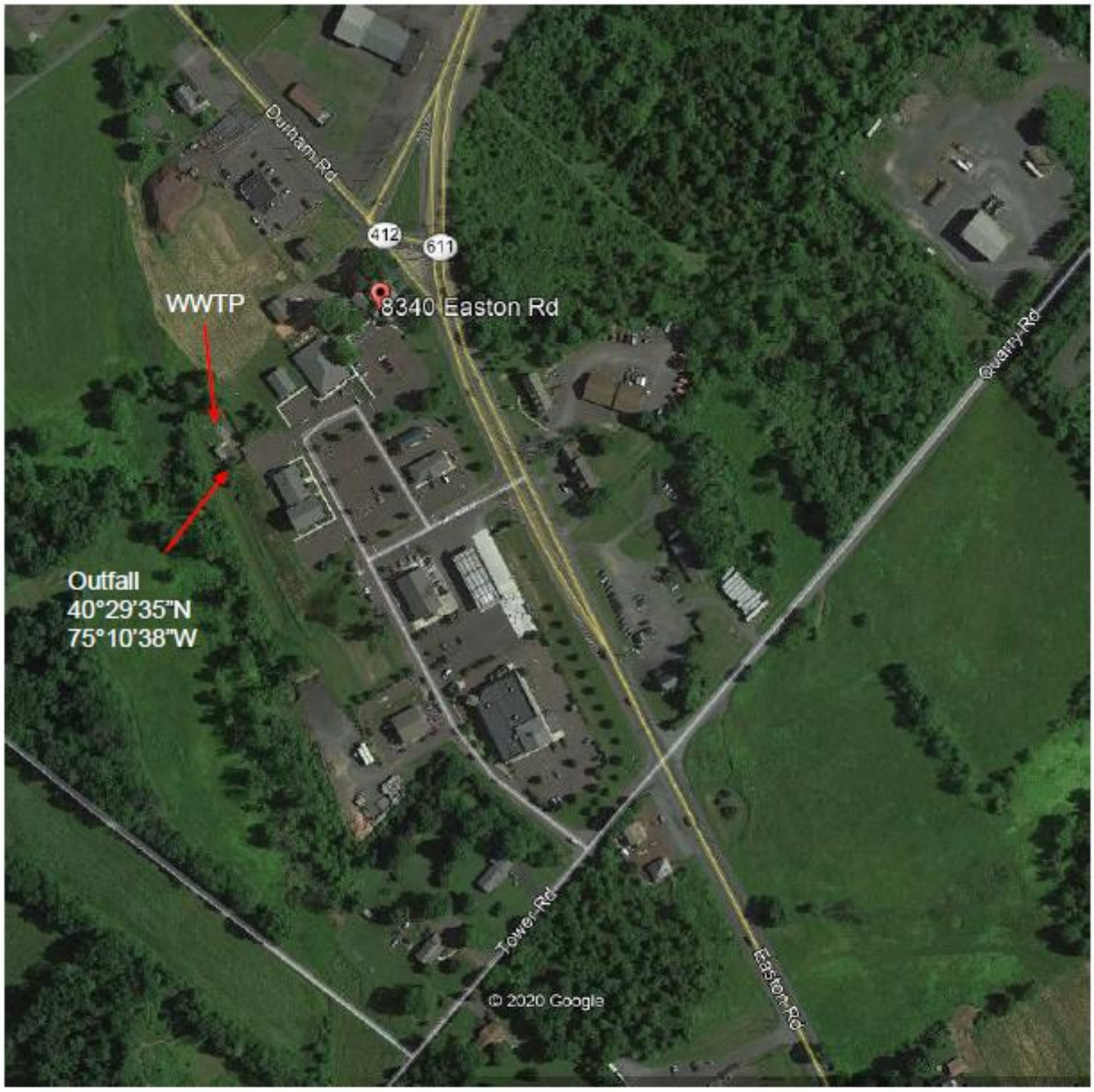
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Instantaneous Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (GPD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	6.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	0.44	XXX	XXX	10.0	XXX	20	2/month	Grab
Total Suspended Solids	0.44	XXX	XXX	10.0	XXX	20	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	113.0 Geo Mean	XXX	1000.0	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	113.0 Geo Mean	XXX	1000.0	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Ultraviolet light intensity (mW/cm^2)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Metered
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	2/month	Calculation
Total Nitrogen (interim)	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Calculation
Total Nitrogen (final)	XXX	XXX	XXX	29.0 Annl Avg	XXX	XXX	1/year	Calculation
Ammonia-Nitrogen Nov 1 - Apr 30	0.132	XXX	XXX	3.0	XXX	6	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	0.066	XXX	XXX	1.5	XXX	3	2/month	Grab
Total Phosphorus	0.0159	XXX	XXX	0.5	XXX	1	2/month	Grab

Compliance Sampling Location: At Outfall 001

Other Comments: None

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:

Permit No. PA0058017



Imagery adapted from Google Earth.

Figure 1
Site Location Map
Harrow Station WWTP
8340 Easton Road
Nockamixon Township
Bucks County, PA
CAI 14656.02

COWAN ASSOCIATES, INC.

Cowan Associates, Inc.
120 Penn Am Drive
Quakertown, PA 18951

\\cai-s01\DOC_DATA\PROJECTS\14656.02 Harrow Station\2022 NPDES Renewal\DEP Submission\LocationMap8-2020.doc

NOTES

1. BASE MAP AERIAL PHOTOGRAPH IS FROM PASDA 2019 AERIAL PHOTOGRAPH.

EXPLANATION

- WASTEWATER TREATMENT FACILITY DISCHARGE
- EW-A — EXISTING MONITORING WELL LOCATION (UNRELATED EVALUATION)
- 72073 — PAGWIS DATABASE WELL LOCATION
- NEWLY INSTALLED MONITORING WELL (7/8/21)
- PROPERTY BOUNDARY

N

APPROXIMATE SCALE (FEET)

0 100 200 400

V. F. Britton Group, LLC
ENVIRONMENTAL AND HYDROGEOLOGIC CONSULTING
326 Conestoga Road Wayne, PA 19087
215-870-5881
vbl@vfbritton.com www.vfbritton.com

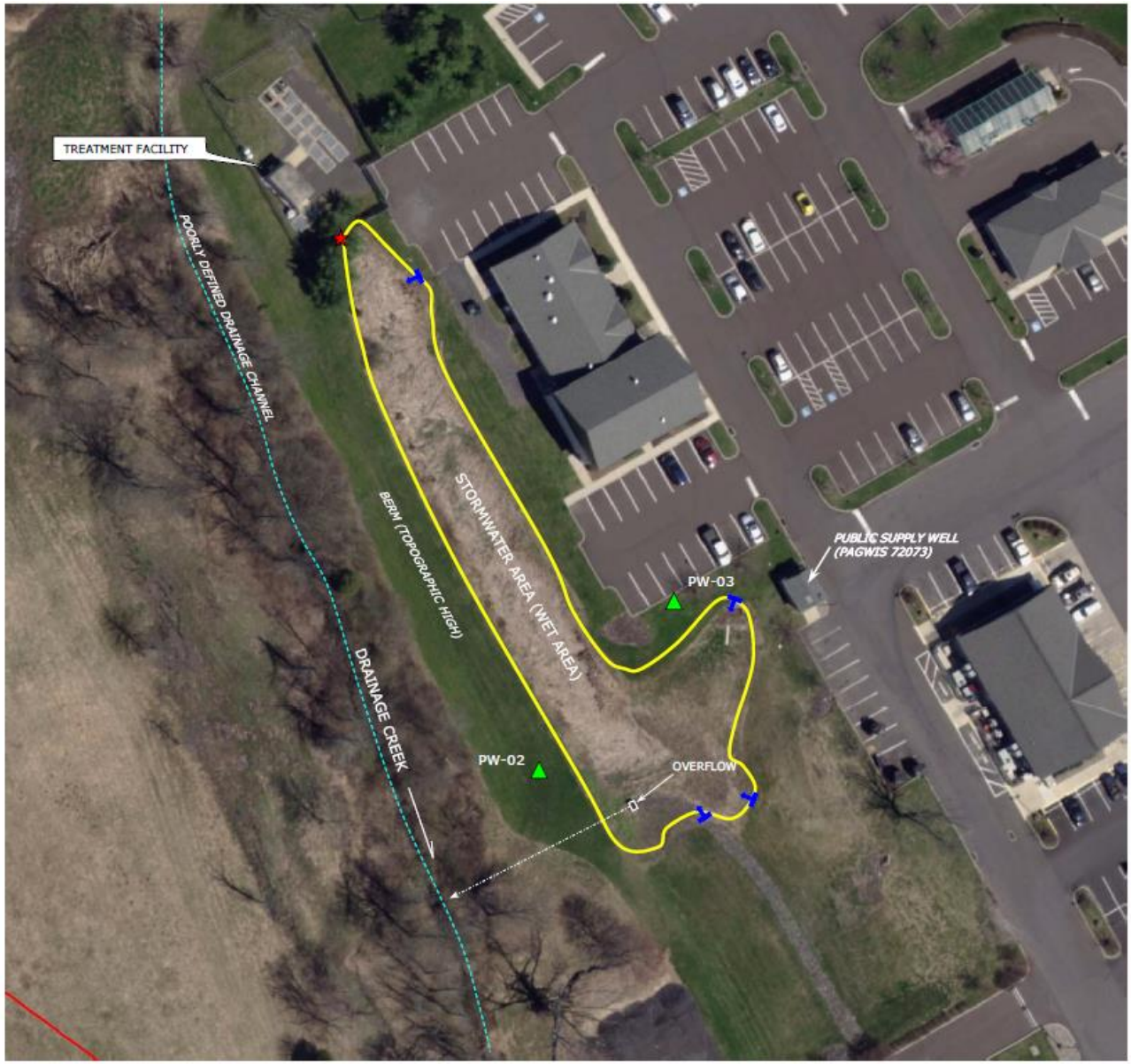
GENERAL SITE LAYOUT

PROJECT LOCATION
HARROW STATION
WASTEWATER TREATMENT FACILITY
NOCKAMIXON TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

DRAWN BY VFB
DATE 9-19-22

FIGURE NUMBER
2

Permit No. PA0058017



NOTES

1. BASE MAP AERIAL PHOTOGRAPH IS FROM PEMA 2018.

EXPLANATION

- WASTEWATER TREATMENT FACILITY DISCHARGE
- PW-2 MONITORING WELL LOCATION
- STORMWATER DISCHARGE INTO BASIN (FROM PARKING LOT AREAS)

N

APPROXIMATE SCALE (FEET)

0 40 80 160

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STORMWATER BASIN AREA

PROJECT LOCATION
HARROW STATION
WASTEWATER TREATMENT FACILITY
NOCKAMIXON TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

DRAWN BY VFB DATE 9-19-22

FIGURE NUMBER
3

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

MEMO

TO Reza Chowdhury
Project Manager
Clean Water

FROM Peter L. Evans, P.G. PLE 10/21/22
Licensed Professional Geologist
Clean Water

THROUGH Elizabeth Mahoney EAM 10/17/2022
Environmental Group Manager
Clean Water

Pravin Patel, P.E. Pravin Patel 10/21/2022
Environmental Engineer Manager
Clean Water

DATE October 17, 2022

RE Harrow Station WWTF
Permit No. PA0058017 Ad. 1
Nockamixon Township
Bucks County

MESSAGE:

The application is for the renewal of the above referenced permit. The consultant, V.F. Britton Group, LLC, completed a Comprehensive Groundwater Evaluation to document the site's impact on groundwater resources in the last year. The consultant relied on the data generated by the site's groundwater monitoring program to complete the evaluation and make his conclusions.

The site is a discharge to a stormwater detention basin covered under an NPDES permit. Since the basin is periodically dry, the site has a groundwater monitoring program to document impacts to groundwater resources from the detention basin. Since the basin also receives stormwater, the monitoring program will likely show impacts from the areas contributing stormwater to the detention basin. It should also be noted that the permit has

Southeast Regional Office
2 East Main Street | Norristown, PA 19401-4915 | 484.250.5970 | Fax 484.250.5971 | www.depweb.state.pa.us

included the requirement for only a year. For this reason, it is not possible to identify trends within the groundwater data. In addition, since the detention basin had been receiving stormwater for some time, background data is not present and the evaluation can only evaluation the existing groundwater quality against drinking water standards.

The consultant has noted the presence of total dissolved solids and chloride in the downgradient monitoring wells that do not meet drinking water standards. In addition, fecal coliform was identified in both upgradient and downgradient monitoring wells. The consultant suggests that the stormwater received form the parking lot is responsible for the total dissolved solids and chloride. The consultant also suggests that the fecal coliform is from natural sources given its presence both up and downgradient. The consultant has concluded that the wastewater discharge is not adversely impacting groundwater and is not a threat to public health.

After reviewing the information provided, I can support the consultant's method and his conclusions. Given the lack of information it is not possible to make any further assessment regarding trends in groundwater quality. I would recommend that sodium be added to the groundwater monitoring program. As a result of this review, I am able to recommend permit renewal with the following updated permit language.

I. Groundwater Monitoring Requirements

The permittee shall effectively monitor the quality of the groundwater. The parameters to be tested, and frequency of analysis and other monitoring requirements shall be as follows:

A. Quarterly analysis of groundwater sampled at groundwater monitoring wells **PW-01, PW-02, and PW-03** shall consist of: static water level, sampling depth, turbidity, pH, chloride, total phosphorus, ammonia nitrogen, nitrate nitrogen, nitrite nitrogen, total dissolved solids, fecal coliform, sodium, and alkalinity.

B. Groundwater elevations must be measured prior to purging the groundwater monitoring well.

C. Before collection of the groundwater sample, a groundwater monitoring well shall be properly purged and allowed to recover to at least 90 percent of the well volume that was present prior to purging.

D. All groundwater samples shall be collected from within the top five feet of the water elevation within the well column.

II. Groundwater Monitoring Data Reporting Requirements

A. Annual Groundwater Report

All groundwater data shall be submitted to DEP **annually** and be in **report form**. The report shall be due to DEP within 28 days of the end of the month of permit issuance. For example, if your permit was issued on March 4th, then your annual report is due by April 28th. The annual report shall be mailed under separate cover and addressed to:

Department of Environmental Protection
Southeast Regional Office
Clean Water Program

2 East Main Street
Norristown, PA 19401

Attention: Hydrogeologist
Planning Section

The Annual Groundwater Monitoring Report shall include the following information:

1.. General Information

a. Facility name
b. Facility permit number
c. Facility location (including municipality and county)
d. Facility contact information:

i. permittee name, address, e-mail address, and telephone number
ii. contact name and title
iii. facility operator name, address, e-mail address, and telephone number
iv. facility consultant name, address, e-mail address, and telephone number

2. Site Data

a. A brief narrative that provides the date and description of any facility event which may have impacted any part of the groundwater monitoring program. (e.g., collapse of groundwater monitoring well, etc.).

b. Average effluent flow for the year covered by the report.

c. In tabular form, the following information needs to be provided for at least the last 5 years of system operation:

i. Date of sampling.
ii. Groundwater elevation.
iii. Sampling depth.
iv. Identification of upgradient and downgradient wells.
v. The results of the analysis of the samples.

d. Background groundwater data generated prior to system start-up. **This information is absolutely needed and needs to be included in the data tabulation.**

B. Comprehensive Groundwater Evaluation (CGE)

As part of the facility's 5-year permit renewal application, the permittee shall submit a report that is a result of a comprehensive evaluation of the systems impact on groundwater. A Registered P.G. must identify any trends which may pose a threat to human health or certify that none are present. Should adverse impacts to groundwater be identified, the permittee needs to recommend actions to address the potential threat.

C. Groundwater Background Report

The existing Groundwater Background Report shall be updated as needed.

Permit No. PA0058017

The Groundwater Background Report is a one-time report. Should future changes or additions occur for any information in this section, an addendum that can be added to the report is all that is needed to update this report.

cc: Ms. Mahoney
Mr. Patel
File