pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0261661**
Facility Type	**Non-Municipal**	APS ID	**750112**
Major / Minor	**Minor**	Authorization ID	**1140543**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Pravin M and Mangla P Patel**	Facility Name	**Comfort Inn**
Applicant Address	2845 Lebanon Road	Facility Address	2845 Lebanon Road
	Manheim, PA 17545-8346		Manheim, PA 17545-8346
Applicant Contact	Pravin Patel	Facility Contact	Pravin Patel
Applicant Phone	(717) 665-3118	Facility Phone	(717) 665-3118
Client ID	287849	Site ID	725742
Ch 94 Load Status	Not Overloaded	Municipality	Rapho Township
Connection Status	No Limitations	County	Lancaster
Date Application Received	May 3, 2016	EPA Waived?	Yes
Date Application Accepted	June 27, 2016	If No, Reason	

Adobe Acrobat Document

Purpose of Application: This is a request for NPDES renewal.

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / ENVIRONMENTAL ENGINEERING SPECIALIST	December 2, 2019
		Daniel W. Martin, P.E. / ENVIRONMENTAL ENGINEER MANAGER	
		Maria Bebenek, P.E. / Environmental Program Manager	

Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the Comfort Inn located at 2845 Lebanon Road, Manheim, PA 17545 in Lancaster County, municipality of Rapho. The existing permit became effective on January 1, 2012 and expired on November 30, 2016. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on May 3, 2016.

The purpose of this Fact Sheet is to present the basis of information used for establishing the proposed NPDES permit effluent limitations. The Fact Sheet includes a description of the facility, a description of the facility's receiving waters, a description of the facility's receiving waters attainment/non-attainment assessment status, and a description of any changes to the proposed monitoring/sampling frequency. Section 6 provides the justification for the proposed NPDES effluent limits derived from technology based effluent limits (TBEL), water quality based effluent limits (WQBEL), total maximum daily loading (TMDL), antidegradation, anti-backsliding, and/or whole effluent toxicity (WET). A brief summary of the outlined descriptions has been included in the Summary of Review section.

The subject facility is a 0.0048 MGD treatment facility. The applicant does not anticipate any proposed upgrades to the treatment facility in the next five years. The NPDES application has been processed as a Minor Sewage Facilities Level 1 due to the type of sewage and the design flow rate for the facility. The applicant disclosed the Act 14 requirement to Lancaster County Commissioners and Rapho Township and the notice was received by the parties on April 15, 2016. A planning approval letter was not necessary as the facility is neither new or expanding.

Utilizing the DEP's web-based Emap-PA information system, the receiving waters has been determined to be Shearers Creek. The sequence of receiving streams that Shearers Creek discharges into are the Chickies Creek and the Susquehanna River which eventually drains into the Chesapeake Bay. The subject site is subject to the Chesapeake Bay implementation requirements. The receiving water has protected water usage for cold water fishes and migratory fishes. No Class A Wild Trout fisheries are impacted by this discharge. The subject facility discharges to high quality surface waters which precipitates the need for an evaluation of anti-degradation requirements.

Shearers Creek is a Category 2, 5, and 5alt stream listed in the 2016 Integrated List of All Waters (formerly 303d Listed Streams). This stream is an attaining stream that supports fish consumption. This stream is also a non-attaining stream that is impaired for recreational use due to pathogens from an unknown source. Further, this stream is impaired for aquatic use due to siltation from agriculture. The receiving waters (Shearer Creek) feeds into Chickies Creek. Chickies Creek is approximately 5.5 miles from the subject facility. Chickies Creek is subject to a total maximum daily load (TMDL) plan to improve water quality in the subject facility's watershed.

Based upon the Fact Sheet from May 26, 2011, the point of first use has been identified by biologists as effluent dominated during dry periods. Biologists have recommended that the receiving stream will need the maximum protection available.

The existing permit and proposed permit differ as follows:

- Nitrite-Nitrate will have an effluent limit of 10 mg/l.
- Monitoring for TDS has been eliminated.
- Total Lead will be lowered to 0.094 mg/l. Monitoring frequency shall be reduced to 1x/quarter.
- Monitor frequency for Total Copper and Total Zinc shall be reduced to 1x/quarter.

The proposed permit will expire five (5) years from the effective date.

Based on the review in this report, it is recommended that the permit be drafted. 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.

Any additional information or public review of documents associated with the discharge or facility may be available at PA DEP Southcentral Regional Office (SCRO), 909 Elmerton Avenue, Harrisburg, PA 17110. To make an appointment for file review, contact the SCRO File Review Coordinator at 717.705.4700.

1.0 Applicant

1.1 General Information

This fact sheet summarizes PA Department of Environmental Protection's review for the NPDES renewal for the following subject facility.

Facility Name:	The Comfort Inn
NPDES Permit #	PA0261661
Physical Address:	2845 Lebanon Road Manheim, PA 17545
Mailing Address:	2845 Lebanon Road Manheim, PA 17545
Contact:	Pravin Patel Owner Sanjay Patel 717-503-0769 sapa74@aol.com
Consultant:	Scott Akens Akens Engineering Associates, Inc. 219 E. Main Street Shiremanstown, PA 17011 scott@akensengineering.com

1.2 Permit History

- The Comfort Inn (formerly Red Carpet Inn) was originally an onlot treatment system. The facility was converted to a surface discharge when the original dwelling was demolished and rebuilt as a larger motel. The design flow was based upon 100 gal/day/room and 400 gpd for the residence.
- On September 3, 2010, DEP prepared a survey for the Point of First Use Survey.
- On October 18, 2017, the facility was under a Consent Order and Agreement (COA). The major requirements of the COA were to (a) hire a qualified operator; (b) have an operator visit the facility at least 3x/wk; (c) submit a Part II, if necessary.

The Comfort Inn has been categorized as an active NPDES permit in the Chiques Creek watershed. DEP review of this renewal permit was significantly delayed due to logistics related to managing effluent requirements for dischargers within the Chickies Creek watershed.

2.0 Treatment Facility Summary

2.1 Site location

The physical address for the facility is 2845 Lebanon Road, Manheim, PA 17545. A topographical and an aerial photograph of the facility are depicted as Figure 1 and Figure 2.

Figure 1: Topographical map of the subject facility

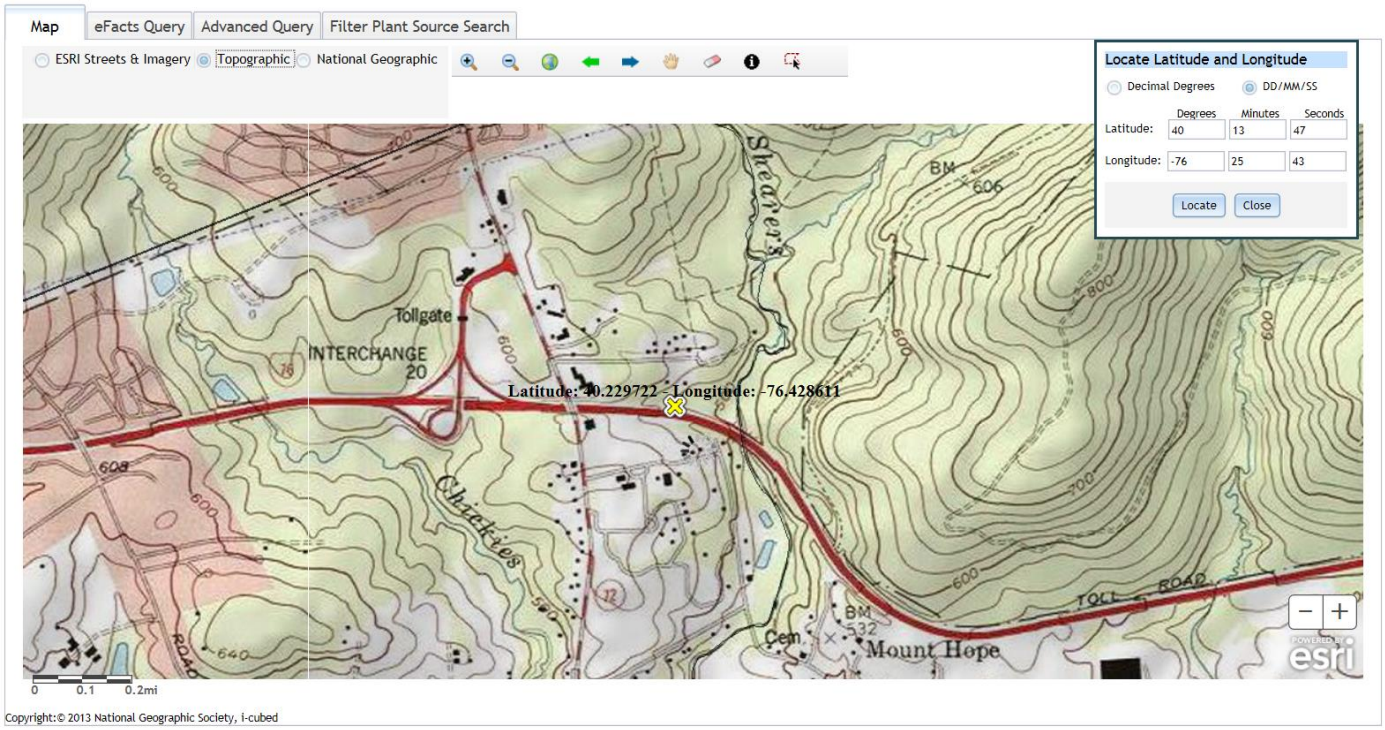
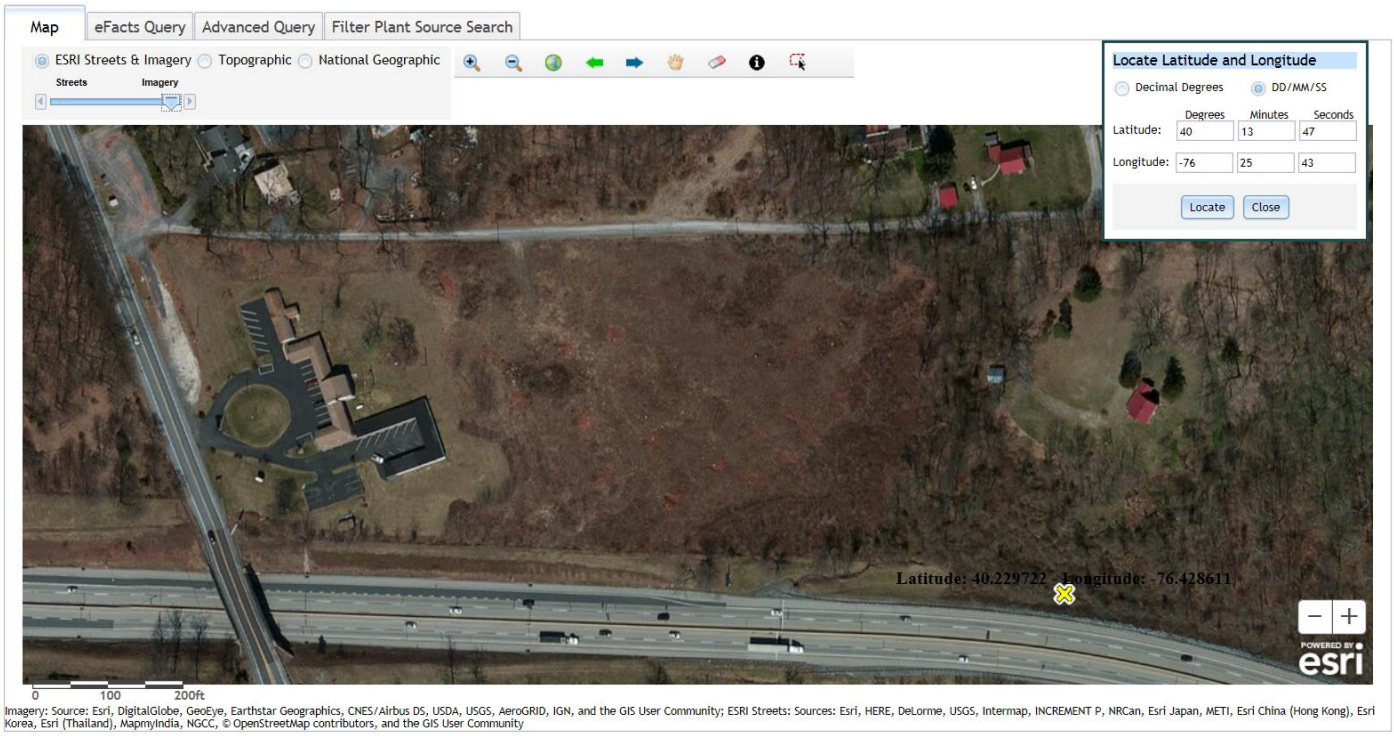


Figure 2: Aerial Photograph of the subject facility



2.2 Description of Wastewater Treatment Process

The subject facility is a 0.0048 MGD design flow facility. The subject facility treats wastewater using the Purestream Biologically Engineered Single Sludge Treatment (BESST) treatment process. This process includes the following treatment units: surge tank, an anoxic compartment, clarifier, aeration compartment, and uv disinfection prior to discharge through the outfall. The facility is being evaluated for flow, pH, dissolved oxygen, CBOD, TSS, TDS, fecal coliform, ammonia-nitrogen, total phosphorus, total copper, total lead, and total zinc.

The existing permits limits for the facility is summarized in Section 2.4.

The treatment process is summarized in the table.

Treatment Facility Name: Red Carpet Inn Wastewater

WQM Permit No.	Issuance Date
3611401	10/31/2011

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Ammonia And Phosphorus	Extended Aeration	Ultraviolet	0.0048

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0048	9.6	Not Overloaded	Holding Tank	Other WWTP

2.3 Facility Outfall Information

The facility has the following outfall information.

Outfall No. 001 **Design Flow (MGD)** .0048
Latitude 40º 13' 47.00" **Longitude** -76º 25' 43.00"
Wastewater Description: Sewage Effluent

2.3.1 Operational Considerations- Chemical Additives

Chemical additives are chemical products introduced into a waste stream that is used for cleaning, disinfecting, or maintenance and which may be detected in effluent discharged to waters of the Commonwealth. Chemicals excluded are those used for neutralization of waste streams, the production of goods, and treatment of wastewater.

The subject facility utilizes the following chemicals as part of their treatment process.

- Aluminum sulfate for phosphorus precipitation
- Soda ash for H control and odor

2.4 Existing NPDES Permits Limits

The existing NPDES permit limits are summarized in the table.

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 001 , **Latitude** 40° 13' 47" , **Longitude** 76° 25' 43" , **River Mile Index** 0.28 , **Stream Code** 08012

Discharging to Unnamed tributary to Shearer's Creek

which receives wastewater from the wastewater treatment plant

1. The permittee is authorized to discharge during the period from January 1, 2012 through November 30, 2016.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements, Footnotes and Supplemental Information).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum(2)		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	7.0	XXX	XXX	XXX	1/day	Grab
CBOD5	XXX	XXX	XXX	10	20	25	2/month	24-Hr Composite
Total Suspended Solids	XXX	XXX	XXX	10	20	25	2/month	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	500	1,000	1250	2/month	24-Hr Composite
Fecal Coliform (CFU/100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	1.0	2.0	2.5	2/month	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	0.5	1	1.25	2/month	24-Hr Composite

Outfall 001, Continued (from January 1, 2012 through November 30, 2016)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum(2)		
Total Copper	XXX	XXX	XXX	0.053	0.106	0.13	2/month	24-Hr Composite
Total Lead	XXX	XXX	XXX	0.098	0.196	0.25	2/month	24-Hr Composite
Total Zinc	XXX	XXX	XXX	0.244	0.288	0.61	2/month	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):at discharge from the facility

I. C. **For Outfall** 001 , **Latitude** 40° 13' 47" , **Longitude** 76° 25' 43" , **River Mile Index** 0.28 , **Stream Code** 0812

Discharging to Unnamed Tributary to Shearers Creek

which receives wastewater from the wastewater treatment plant

A. The permittee is authorized to discharge during the period from October 1, 2012 through November 30, 2016.

B. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements, Footnotes and Supplemental Information).

FINAL

Parameter (1)	Effluent Limitations					Monitoring Requirements	
	Mass Units (lbs)		Concentrations (mg/L)			Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Minimum	Monthly Average	Maximum		
Ammonia---N	XXX	Report	XXX	XXX	XXX	2/month	24-Hr Composite
Kjeldahl---N	Report	XXX	XXX	Report	XXX	2/month	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	2/month	24-Hr Composite
Total Nitrogen	Report	Report	XXX	5	10	2/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	2/month	24-Hr Composite
Net Total Nitrogen	Report	181	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	0	XXX	XXX	XXX	1/month	Calculation

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at discharge from the facility

Footnotes:
(1) See Part C for Chesapeake Bay Requirements.
(2) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events required.
(3) The TN cap load for this permittee has been based on the connection of 25 retired hotel rooms (100 gallons per day per room) plus 1 house (400 gallon per day) that are served by this permittee's wastewater treatment facility and were previously served by an on-lot system owned by the permittee. Twenty-five pounds of Total Nitrogen as N for each EDU (equivalent dwelling unit) /year and 400 gallons per EDU was used to determine the 181 annual TN load.

3.0 Facility NPDES Compliance History

3.1 Summary of Inspections

A summary of the most recent inspections during the existing permit review cycle is as follows.

11/20/2015:

- The inspector reported that the DEP had not been receiving monthly reports for pumping and hauling information (amount, hauler, destination, etc) with the DMRs.
- Non-compliance was reported in August 2015 thru October 2015. Violations are due to issues with equipment, operator training, and low food to mass ratio.
- DO and pH were not being sampled daily.
- Chesapeake Bay supplemental sheets and DMRs had not been submitted.
- The facility recently replaced two pumps and did purchase DO and pH meters recently.

12/18/2015:

- The inspector noted errors for net total nitrogen, net total phosphorus, and total phosphorus for the months of August 2015 to October 2016.
- The facility exceeded net total nitrogen and net total phosphorus established in the NPDES permit. The facility was advised to purchase credits by November 28, 2015.
- The facility was issued a NOV for the Chesapeake Bay violations on February 23, 2016.

04/26/2016:

- By letter to the facility owner, the facility owner agreed to conduct an engineering evaluation of the facility and submit the report to DEP within 30 days of the letter.

- The facility also agreed to pump and haul the sewage generated at the facility until the facility has an ability to meet NPDES permit discharge limitations.

08/24/2016:

- The facility owner and DEP met and concurred on terminating discharge from the treatment plant. A proposal was to discharge to a holding tank with the contents being pumped out by a sewage hauler.

01/30/2017:

- A Field Order was issued to the facility on 01/30/2017. DEP cited the facility for operating the plant without a certified operator. The Field Order required them to have a certified operator by 2/1/17.

11/29/2017:

- The facility is operating as a Comfort Inn.
- DMR records indicate that the plant began discharging in July.

03/23/2018:

- There was nothing significant to report

02/19/2019:

- Anoxic tank was converted to aeration to facilitate nitrification
- The designed aerobic tank is now aerobic tank #2.
- During winter, all tanks are covered with tarps.
- During the summer, composite samples are collected from post aeration tanks.
- During the winter, samples are collected from inside the control building from an effluent pipe.

3.2 Summary of DMR Data

A review of approximately 1-year of DMR data shows that the monthly average flow data for the facility below the design capacity of the treatment system. The facility was believed to have begun using eDMR in March 2019

The maximum average flow data for the DMR reviewed was 0.00226 MGD. The design capacity of the treatment system is 0.0048 MGD.

The facility was believed to begin using eDMR in March 2019.

DMR Data for Outfall 001 (from October 1, 2018 to September 30, 2019)

Parameter	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18
Flow (MGD) Average Monthly	0.001374	0.002266	0.00193	0.00126	0.000978	0.001188	0.001069	0.001322	0.000844	0.000943	0.001117	0.001916
Flow (MGD) Daily Maximum	0.004237	0.004022	0.003545	0.002713	0.003019	0.002984	0.002652	0.00291	0.003039	0.003273	0.003013	0.003101
pH (S.U.) Instantaneous Minimum	7.7	7.7	7.8	7.9	7.9	7.8	7.8	7.6	7.7	7.8	7.7	7.8
pH (S.U.) Instantaneous Maximum	8.2	8.3	8.1	8.3	8.2	8.2	8.5	8.3	8.4	8.3	8.2	8.2
DO (mg/L) Minimum	7.2	7.0	7.1	7.4	7.8	8.1	8.7	7.9	9.3	8.2	9.0	7.8
CBOD5 (mg/L) Average Monthly	< 2.0	2.3	< 2.0	< 2.0	< 2.0	5.0	< 2.0	6.7	7.2	7	<3	9
CBOD5 (mg/L) Daily Maximum	< 2	2.5	< 2	< 2	< 2	6.3	< 2.0	7.6	9.5	8.9	3.7	9.6
TSS (mg/L) Average Monthly	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	<5.0	<5.0	<5	<5	<5
TSS (mg/L) Daily Maximum	< 5	< 5	< 5	< 5	< 5	< 5	< 5.0	<5.0	<5.0	<5	<5	<5
Total Dissolved Solids (mg/L) Average Monthly	431	393	376	508	481	487	295	525	449	595	480	484
Total Dissolved Solids (mg/L) Daily Maximum	458	473	408	535	520	560	419	614	568	629	546	515
Fecal Coliform (CFU/100 ml) Geometric Mean	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<2	<1	<1
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	1	3	<1	<1
Nitrate-Nitrite (mg/L) Average Monthly	7.5	8.9	12.3	9.8	11.8	20.9	6.9	38	32.6	40.2	40.5	36.1
Nitrate-Nitrite (lbs) Total Monthly	3	3	5	3	5	4	0.5	6	9	27	17	26
Total Nitrogen (mg/L) Average Monthly	< 8.8	13.4	13.5	< 10.9	< 12.8	< 22	9.3	<39.4	<33.6	<42	<42	<37
Total Nitrogen (mg/L) Daily Maximum	< 12.9	16.8	13.9	< 12.1	< 14.3	< 23.2	12	40.6	<36.5	<43.8	42.4	<38.7

Total Nitrogen (lbs) Effluent Net Total Monthly	NULL1	NULL0	NULL0	NULL2	00	00	00	-9	-6	<13	<3	<12
Total Nitrogen (lbs) Total Monthly	< 4	5	5	< 3	< 6	< 4	0.7	<6	<9	<2.8	<18	<27
Ammonia (mg/L) Average Monthly	< 0.2	0.5	< 0.1	< 0.1	< 0.1	< 0.2	< 0.2	<0.1	0.8	0.3	<1.1	1.8
Ammonia (mg/L) Daily Maximum	0.368	0.784	0.176	< 0.1	< 0.1	0.306	0.208	0.116	1.45	0.485	2.01	3.22
TKN (mg/L) Average Monthly	< 1.3	4.6	1.3	< 1.1	< 1	< 1.1	2.4	<1.4	<1	<1.1	<1.4	<1.1
TKN (lbs) Total Monthly	< 0.6	1	0.5	< 0.3	< 0.4	< 0.2	0.2	<0.2	<0.3	<0.7	<0.6	<0.7
Total Phosphorus (mg/L) Average Monthly	0.2	0.6	0.5	0.8	0.5	0.3	0.5	0.1	0.2	<0.1	<0.1	0.2
Total Phosphorus (mg/L) Daily Maximum	0.23	0.62	0.54	0.82	0.52	0.33	0.63	0.13	0.18	0.14	0.14	0.25
Total Phosphorus (lbs) Effluent Net Total Monthly	0.1	0.2	0.2	0.2	0.2	0.06	0.04	0.02	0.05	<0.07	<0.05	0
Total Phosphorus (lbs) Total Monthly	0.1	0.2	0.2	0.2	0.2	0.06	0.04	0.02	0.05	<0.07	<0.005	0.2
Total Copper (mg/L) Average Monthly	0.020	0.030	0.020	0.020	0.030	0.030	< 0.010	0.03	0.03	0.02	0.02	0.03
Total Copper (mg/L) Daily Maximum	0.017	0.032	0.022	0.031	0.029	0.027	0.018	0.028	0.027	0.021	0.019	0.029
Total Lead (mg/L) Average Monthly	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	<0.005	<0.003	<0.003	<0.003	<0.003
Total Lead (mg/L) Daily Maximum	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.0038	< 0.003	<0.006	<0.003	<0.003	<0.003	<0.003
Total Zinc (mg/L) Average Monthly	0.020	0.040	0.020	0.020	0.030	0.030	< 0.020	<0.03	0.05	0.03	0.064	0.03
Total Zinc (mg/L) Daily Maximum	0.029	0.043	0.018	0.035	0.041	0.032	0.026	<0.04	0.06	0.03	0.0093	0.0028

3.2.1 Summary of Chesapeake Bay Truing Period Compliance

The table summarizes the facility's compliance with Chesapeake Bay Truing Period Compliance.

Chesapeake Bay Annual Nutrient Summary				
Comfort Inn				
PA0261661				
Year for Truing Period (Oct 1 - Nov 28)	Net Effluent Limits		Compliant with Permit Limits (Yes/No)	
	Nitrogen (lbs)	Phosphorus (lbs)	Nitrogen	Phosphorus
	181	***0***		
2017	-120	-1	Yes	Yes
2018	Under Review	Under Review	-----	-----
2019	-65	-10	Yes	Yes
Notes:				
Chesapeake Bay Annual Nutrient Summary submitted for Compliance Year 2018. The reporting is being investigated for possible error				

3.3 Non-Compliance

3.3.1 Non-Compliance- NPDES Effluent

A summary of the non-compliance to the permit limits for the existing permit cycle is as follows.

The table summarizes data that was not in compliance with effluent limitations beginning when the facility commenced using eDMR. It is believed the facility started using eDMR in March 2019.

Summary of Non-Compliance with NPDES Effluent Limits
Beginning January 1, 2012 and ending November 7, 2019

NON COMPLIANCE DATE	NON COMPLIANCE CATEGORY	PARAMETER	SAMPLE VALUE	VIOLATION CONDITION	PERMIT VALUE	UNIT OF MEASURE	STATISTICAL BASE CODE
04/05/2019	Concentration 3 Effluent Violation	Total Nitrogen	12	>	10	mg/L	Daily Maximum
04/05/2019	Concentration 2 Effluent Violation	Total Nitrogen	9.3	>	5	mg/L	Average Monthly
05/15/2019	Concentration 2 Effluent Violation	Total Nitrogen	< 22	>	5	mg/L	Average Monthly
05/15/2019	Concentration 3 Effluent Violation	Total Nitrogen	< 23.2	>	10	mg/L	Daily Maximum
06/19/2019	Concentration 2 Effluent Violation	Total Nitrogen	< 12.8	>	5	mg/L	Average Monthly
06/19/2019	Concentration 3 Effluent Violation	Total Nitrogen	< 14.3	>	10	mg/L	Daily Maximum
07/19/2019	Concentration 3 Effluent Violation	Total Nitrogen	< 12.1	>	10	mg/L	Daily Maximum
07/19/2019	Concentration 2 Effluent Violation	Total Dissolved Solids	508	>	500	mg/L	Average Monthly
07/19/2019	Concentration 2 Effluent Violation	Total Phosphorus	0.8	>	0.5	mg/L	Average Monthly
07/19/2019	Concentration 2 Effluent Violation	Total Nitrogen	< 10.9	>	5	mg/L	Average Monthly
08/23/2019	Concentration 2 Effluent Violation	Total Nitrogen	13.5	>	5	mg/L	Average Monthly
08/23/2019	Concentration 3 Effluent Violation	Total Nitrogen	13.9	>	10	mg/L	Daily Maximum
09/13/2019	Concentration 2 Effluent Violation	Total Phosphorus	0.6	>	0.5	mg/L	Average Monthly
09/13/2019	Concentration 3 Effluent Violation	Total Nitrogen	16.8	>	10	mg/L	Daily Maximum
09/13/2019	Concentration 2 Effluent Violation	Total Nitrogen	13.4	>	5	mg/L	Average Monthly
10/11/2019	Concentration 2 Effluent Violation	Total Nitrogen	< 8.8	>	5	mg/L	Average Monthly
10/11/2019	Concentration 3 Effluent Violation	Total Nitrogen	< 12.9	>	10	mg/L	Daily Maximum

3.3.2 Non-Compliance- Enforcement Actions

A summary of the non-compliance enforcement actions for the current permit cycle is as follows:

Summary of Enforcement Actions
Beginning January 1, 2012 and Ending November 6, 2019

ENF ID	ENF TYPE	ENF TYPE DESC	ENF CREATION DATE	EXECUTED DATE	VIOLATIONS	# OF VIOLATIONS	ENF FINALSTATUS	ENF CLOSED DATE
349902	NOV	Notice of Violation	01/06/2017	02/23/2016	92A.44; 92A.46; 92A.61(C); 92A.61(F)1	6	Comply/Closed	11/20/2016
350869	FDORD	Field Order	02/06/2017	01/30/2017	302.1202	1	Comply/Closed	10/08/2017
358560	COA	Consent Order and Agreement	10/19/2017	10/18/2017	302.1202; 92A.44	2		

3.4 Summary of Biosolids Disposal

A summary of the biosolids disposed of from the facility is as follows.

2019 Sewage Sludge / Biosolids Production Information

Hauled Off-Site			
Date (YEAR)	Gallons	% Solids	Dry Tons
March			
April	1000	1.9	0.079
May			
June			
July	1200	1.9	0.095
August			
September			
October			
November	1200	1.9	0.095

Notes:

Biosolids disposed at Annville Towship STP, DEP Permit # PA083504

3.5 Open Violations

No open violations existed as of November 2019.

4.0 Receiving Waters and Water Supply Information Detail Summary

4.1 Receiving Waters

The receiving waters has been determined to be Shearers Creek. The sequence of receiving streams that the Shearers Creek discharges into are the Chickies Creek and the Susquehanna River which eventually drains into the Chesapeake Bay.

4.2 Public Water Supply (PWS) Intake

The closest PWS to the subject facility is Wrightsville Borough Municipal Authority (PWS ID #7670097) located approximately 29 miles downstream of the subject facility on the Susquehanna River. Based upon the distance and the flow rate of the facility, the PWS should not be impacted.

4.3 Class A Wild Trout Streams

Class A Wild Trout Streams are waters that support a population of naturally produced trout of sufficient size and abundance to support long-term and rewarding sport fishery. DEP classifies these waters as high-quality coldwater fisheries.

The information obtained from EMAP suggests that no Class A Wild Trout Fishery will be impacted by this discharge.

4.4 2016 Integrated List of All Waters (303d Listed Streams):

Section 303(d) of the Clean Water Act requires States to list all impaired surface waters not supporting uses even after appropriate and required water pollution control technologies have been applied. The 303(d) list includes the reason for impairment which may be one or more point sources (i.e. industrial or sewage discharges) or non-point sources (i.e. abandoned mine lands or agricultural runoff and the pollutant causing the impairment such as metals, pH, mercury or siltation).

States or the U.S. Environmental Protection Agency (EPA) must determine the conditions that would return the water to a condition that meets water quality standards. As a follow-up to listing, the state or EPA must develop a Total Maximum Daily Load (TMDL) for each waterbody on the list. A TMDL identifies allowable pollutant loads to a waterbody from both point and non-point sources that will prevent a violation of water quality standards. A TMDL also includes a margin of safety to ensure protection of the water.

The water quality status of Pennsylvania's waters uses a five-part categorization (lists) of waters per their attainment use status. The categories represent varying levels of attainment, ranging from Category 1, where all designated water uses are met to Category 5 where impairment by pollutants requires a TMDL for water quality protection.

The subject facility is listed in the 2016 Pennsylvania Integrated Water Quality Monitoring and Assessment Report as a Category 2 waterbody. The surface waters is an attaining stream that supports fish consumption. Category 5 places the surface waters also as an impaired stream for recreational uses due to pathogens from an unknown source. Category 5alt also places the stream as an impairment for siltation due to agriculture. The designated use has been classified as protected waters for cold water fishes and migratory fishes.

4.5 Low Flow Stream Conditions:

Water quality modeling estimates are based upon conservative data inputs. The data are typically estimated using either a stream gauge or through USGS web based StreamStats program. The NPDES effluent limits are based upon the combined flows from both the stream and the facility discharge.

A conservative approach to estimate the impact of the facility discharge using values which minimize the total combined volume of the stream and the facility discharge. The volumetric flow rate for the stream is based upon the seven-day, 10-year low flow (Q710) which is the lowest estimated flow rate of the stream during a 7 consecutive day period that occurs once in 10 year time period. The facility discharge is based upon a known design capacity of the subject facility.

The closest WQN station to the subject facility is the Chickies Creek station (WQN#206). This WQN station is located approximately 26 miles downstream of the subject facility. For WQM modeling, pH and stream water temperature data from the water quality network station was used. pH was estimated to be 8.1 and the stream water temperature was estimated to be 20.6 C. The low flow yield and the Q710 for the subject facility was estimated using the gage station (#1576500) on the Conestoga River at Lancaster. The Q710 and drainage area were 39.9 ft^3/s and 324 mi^2. The drainage area at the subject site was 1.8 mi^2. (Abstracted from Fact Sheet from May 26, 2011).

Gauge Station Data			
USGS Station Number	1576500		
Station Name	Conestoga River at Lancaster, PA		
Q710	39.9	ft^3/sec	
Drainage Area (DA)	324	mi^2	
Calculations			
The low flow yield of the gauge station is:			
Low Flow Yield (LFY) = Q710 / DA			
LFY =	(39.9 ft^3/sec / 324 mi^2)		
LFY =	0.1231	$ft^3/sec/mi^2$	
The low flow at the subject site is based upon the DA of		1.8	mi^2
Q710 = (LFY@gauge station)(DA@Subject Site)			
Q710 = (0.1231 $ft^3/sec/mi^2$)(1.8 mi^2)			
Q710 =	0.222	ft^3/sec	

4.6 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.0048
Latitude	40º 13' 47.98"	Longitude	-76º 25' 34.12"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		

Receiving Waters	Shearers Creek	Stream Code	8012
NHD Com ID	57462079	RMI	1.95
Drainage Area	5.59	Yield (cfs/mi^2)	0.0932
Q_{7-10} Flow (cfs)	0.521	Q_{7-10} Basis	GaugeStation
Elevation (ft)	492	Slope (ft/ft)	
Watershed No.	7-G	Chapter 93 Class.	HQ-CWF
Existing Use	Same as Chapter 93 class.	Existing Use Qualifier	HQ, CWF, MF
Exceptions to Use		Exceptions to Criteria	None
Assessment Status	Attaining Use(s) for fish consumption; Impaired for recreational use and aquatic life		
Cause(s) of Impairment	Pathogens and siltation		
Source(s) of Impairment	Unknown source for pathogen; Agriculture for siltation		
TMDL Status	Chickies Creek	Name	Pending- TMDL under review

Background/Ambient Data		Data Source
pH (SU)	8.1	WQN206; Median July to Sept
Temperature (°F)	20.6	WQN206; Median July to Sept
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake		Wrightsville Borough Municipal Authority	
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	43.3	Distance from Outfall (mi)	29

5.0: Overview of Presiding Water Quality Standards

5.1 General

There are at least six (6) different policies which determines the effluent performance limits for the NPDES permit. The policies are technology based effluent limits (TBEL), water quality based effluent limits (WQBEL), antidegradation, total maximum daily loading (TMDL), anti-backsliding, and whole effluent toxicity (WET) The effluent performance limitations enforced are the selected permit limits that is most protective to the designated use of the receiving waters. An overview of each of the policies that are applicable to the subject facility has been presented in Section 6.

5.2 Technology-Based Limitations

5.2.1 Technology-Based Limitations

TBEL treatment requirements under section 301(b) of the Act represent the minimum level of control that must be imposed in a permit issued under section 402 of the Act (40 CFR 125.3). Available TBEL requirements for the state of Pennsylvania are itemized in PA Code 25, Chapter 92a.47.

The presiding sources for the basis for the effluent limitations are governed by either federal or state regulation. The reference sources for each of the parameters is itemized in the tables. The following technology-based limitations apply, subject to water quality analysis and best professional judgement (BPJ) where applicable:

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform	1,000 / 100 ml	IMAX	-	92a.47(a)(4)

5.3 Water Quality-Based Limitations

WQBEL are based on the need to attain or maintain the water quality criteria and to assure protection of designated and existing uses (PA Code 25, Chapter 92a.2). The subject facility that is typically enforced is the more stringent limit of either the TBEL or the WQBEL.

Determination of WQBEL is calculated by spreadsheet analysis or by a computer modeling program developed by DEP. DEP permit engineers utilize the following computing programs for WQBEL permit limitations: (1) MS Excel worksheet for Total Residual Chorine (TRC); (2) WQM 7.0 for Windows Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen Version 1.0 (WQM Model) and (3) PENTOXSD for Windows 2.0 (PENTOXSD) for Toxics pollutants.

5.3.1 Water Quality Modeling 7.0

The WQM Model is a computer model that is used to determine NPDES discharge effluent limitations for Carbonaceous BOD (CBOD5), Ammonia Nitrogen (NH3-N), and Dissolved Oxygen (DO) for single and multiple point source discharges scenarios. WQM Model is a complete-mix model which means that the discharge flow and the stream flow are assumed to instantly and completely mixed at the discharge node.

WQM recommends effluent limits for DO, CBOD5, and NH_3-N in mg/l for the discharge(s) in the simulation.

Four types of limits may be recommended. The limits are (a) a *minimum concentration for DO in the discharge as 30-day average; (b) a 30-day average concentration for CBOD5 in the discharge; (c) a 30-day average concentration for the NH_3-N in the discharge; (d) 24-hour average concentration for NH_3-N in the discharge*.

The WQM Model requires several input values for calculating output values. The source of data originates from either EMAP, the National Map, or Stream Stats. Data for stream gauge information, if any, was abstracted from USGS Low-Flow, Base-Flow, and Mean-Flow Regression Equations for Pennsylvania Streams authored by Marla H. Stuckey (Scientific Investigations Report 2006-5130).

The input values utilized for the modeling are summarized in the table which can be found in Attachment B.

The applicable WQM Effluent Limit Type are discussed in Section 6 under the corresponding parameter which is either DO, CBOD, or ammonia-nitrogen.

5.3.2 PENTOXSD Modeling

The PENTOXSD model is a computer model that is used to determine effluent limitations for toxics (and other substances) for single discharge wasteload allocations. This computer model uses a mass-balance water quality analysis that includes consideration for mixing, first-order decay, and other factors used to determine recommended water quality-based effluent limits. PENTOXSD does not assume that all discharges completely mix with the stream. The point of compliance with water quality criteria are established using criteria compliance times (CCTs). The available CCTs are either acute fish criterion (AFC), chronic fish criterion (CFC), or human health criteria (THH & CRL).

Acute Fish Criterion (AFC) measures the criteria compliance time as either the maximum criteria compliance time (i.e.15 minutes travel time downstream of the current discharge) or the complete mix time whichever comes first. AFC is evaluated at Q710 conditions.

Chronic Fish Criterion (CFC) measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the complete mix time whichever comes first. CFC is evaluated at Q710 conditions.

Threshold Human Health (THH) measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the estimated travel time downstream to the nearest potable water supply intake whichever comes first. THH is evaluated at Q710 conditions.

Cancer Risk Level (CRL) measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the complete mix time whichever comes first. CRL is evaluated at Qh (harmonic mean or normal flow) conditions.

The PENTOXSD Model requires several input values for calculating output values. The source of data originates from either EMAP, the National Map, or Stream Stats. Data for stream gauge information, if any, was abstracted from USGS Low-Flow, Base-Flow, and Mean-Flow Regression Equations for Pennsylvania Streams authored by Marla H. Stuckey (Scientific Investigations Report 2006-5130).

The input values utilized for the modeling are summarized in the table which can be found in Attachment B.

5.3.3 Whole Effluent Toxicity (WET)

This is not applicable to the subject facility.

5.4 Total Maximum Daily Loading (TMDL)

5.4.1 TMDL

The goal of the Clean Water Act (CWA), which governs water pollution, is to ensure that all of the Nation's waters are clean and healthy enough to support aquatic life and recreation. To achieve this goal, the CWA created programs designed to regulate and reduce the amount of pollution entering United States waters. Section 303(d) of the CWA requires states to assess their waterbodies to identify those not meeting water quality standards. If a waterbody is not meeting standards, it is listed as impaired and reported to the U.S. Environmental Protection Agency. The state then develops a plan to clean up the impaired waterbody. This plan includes the development of a Total Maximum Daily Load (TMDL) for the pollutant(s) that were found to be the cause of the water quality violations. A Total Maximum Daily Load (tmdl) calculates the maximum amount of a specific pollutant that a waterbody can receive and still meet water quality standards.

Pennsylvania has committed to restoring all impaired waters by developing TMDLs and TMDL alternatives for all impaired waterbodies. The TMDL serves as the starting point or planning tool for restoring water quality.

5.4.1.1 Local TMDL

This facility discharges to (a tributary of) Chiques Creek. Chiques Creek was included on Pennsylvania's 1996 303(d) List of Impaired Waters due to nutrient impairments. A Total Maximum Daily Load (TMDL) for the Chiques Creek Watershed was approved by the United States Environmental Protection Agency (EPA) on April 9, 2001. Due to several deficiencies within the TMDL, it was withdrawn with approval from EPA on October 28, 2015. DEP, Susquehanna River Basin Commission (SRBC) and watershed stakeholders have been in the process of developing a large scale monitoring and restoration plan. The goal of this Alternate Restoration Plan (ARP) is to address impacts to the Chiques Creek Watershed due to suspended solids/siltation and nutrient pollution. During the ongoing ARP development, this discharge permit will be renewed to conform with existing guidance. This permit will include a Total Phosphorus (TP) limit of 2.0 mg/l. The TP limit of 2.0 mg/l is derived from 25 Pa. Code § 96.5(c). This section states that "when it is determined that the discharge of phosphorus, alone or in combination with the discharge of other pollutants, contributes or threatens to impair existing or designated uses in a free flowing surface water, phosphorus discharges from point source discharges shall be limited to an average monthly concentration of 2 mg/l. More stringent controls on point source discharges may be imposed, or may be otherwise adjusted as a result of a TMDL which has been developed." This is consistent with existing limits for other dischargers to the Chiques Creek Watershed. A continued evaluation of dischargers to Chiques Creek will be performed as described in the NPDES Part C Conditions.

The restricting phosphorus limit is the most stringent limit applicable based upon the conditions of the receiving waters. The facility is also subject to antidegradation and intermittent streams policies. While the Chickes Creek requires a phosphorus limit of 2.0 mg/l, the phosphorus limit for the facility shall be restricted to standards set for intermittent streams which is more stringent. The phosphorus limit shall continue at 0.5 mg/l as a monthly average.

5.4.1.2 Chesapeake Bay TMDL Requirement

The Chesapeake Bay Watershed is a large ecosystem that encompasses approximately 64,000 square miles in Maryland, Delaware, Virginia, West Virginia, Pennsylvania, New York and the District of Columbia. An ecosystem is composed of interrelated parts that interact with each other to form a whole. All of the plants and animals in an ecosystem depend on each other in some way. Every living thing needs a healthy ecosystem to survive. Human activities affect the Chesapeake Bay ecosystem by adding pollution, using resources and changing the character of the land.

Most of the Chesapeake Bay and many of its tidal tributaries have been listed as impaired under Section 303(d) of the federal Water Pollution Control Act ("Clean Water Act"), 33 U.S.C. § 1313(d). While the Chesapeake Bay is outside the boundaries of Pennsylvania, more than half of the State lies within the watershed. Two major rivers in Pennsylvania are part of the Chesapeake Bay Watershed. They are (a) the Susquehanna River and (b) the Potomac River. These two rivers total 40 percent of the entire Chesapeake Bay watershed.

The overall management approach needed for reducing nitrogen, phosphorus and sediment are provided in the Bay TMDL document and the Phase I and II WIPs which is described in the Bay TMDL document and Executive Order 13508.

The Bay TMDL is a comprehensive pollution reduction effort in the Chesapeake Bay watershed identifying the necessary pollution reductions of nitrogen, phosphorus and sediment across the seven Bay watershed jurisdictions of Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia and the District of Columbia to meet applicable water quality standards in the Bay and its tidal waters.

The Watershed Implementation Plans (WIPs) provides objectives for how the jurisdictions in partnership with federal and local governments will achieve the Bay TMDL's nutrient and sediment allocations. The jurisdictions have developed or will develop WIPs over three Phases.

Phase I and Phase II WIPs were developed and submitted to EPA in 2010 and 2012 for objectives to be implemented by 2017 and 2025 to achieve applicable water quality standards. The Phase II WIPs build on the initial Phase I WIPs platform by providing more specific local actions. In 2018, Phase III WIPs will be developed to include further actions for jurisdictions to implement between 2018 and 2025.

Section 7 of the Phase II WIP describes Pennsylvania's strategy for reducing nutrients to the Chesapeake Bay from wastewater facilities. The supplement to Section 7 of the Phase II WIP provides an update on Chesapeake Bay TMDL implementation activities for point sources and DEP's current implementation strategy for wastewater. The supplement is updated periodically to reflect changes due to PA DEP's permit actions as well as changes to strategies in managing the wastewater sector's allocated loads under the TMDL. The latest revision of the supplement was October 14, 2016.

The Chesapeake Bay TMDL (Appendix Q) categorizes point sources into four sectors
:

- Sector A- significant sewage dischargers;
- Sector B- significant industrial waste (IW) dischargers;
- Sector C- non-significant dischargers (both sewage and IW facilities); and
- Sector D- combined sewer overflows (CSOs).

All sectors contain a listing of individual facilities with NPDES permits that were believed to be discharging at the time the TMDL was published (2010). All sectors with the exception of the non-significant dischargers have individual wasteload allocations (WLAs) for TN and TP assigned to specific facilities. Non-significant dischargers have a bulk or aggregate allocation for TN and TP based on the facilities in that sector that were believed to be discharging at that time and their estimated nutrient loads.

Based upon the supplement the subject facility has been categorized as a Sector C- Phase 5 discharger. The supplement defines Sector C a sewage facility that is considered non-significant dischargers if it is a Phase 4 facility or Phase 5 facility having a specified flow rate (i.e. Phase 4 facility ≥ 0.2 MGD and < 0.4 MGD, Phase 5 facility > 0.002 MGD and < 0.2 MGD), a small flow/single residence sewage treatment facilities (≤ 0.002 MGD), or a non-significant IW facilities. These facilities may be covered by statewide general permits or may have individual NPDES permits.

Currently, there are approximately 1,000 Phase 4 and 5 sewage facilities and approximately 740 small flow sewage treatment facilities covered by the general permit. There are also approximately 600 non-significant IW facilities.

For Phase 5 sewage facilities with individual permits (average annual design flow on August 29, 2005 > 0.002 MGD and < 0.2 MGD), DEP will issue individual permits with monitoring and reporting for TN and TP throughout the permit term at a frequency no less than annually, unless (1) the facility has already conducted at least two years of nutrient monitoring and (2) a summary of the monitoring results are included in the next permit's fact sheet. If, however, Phase 5 facilities choose to expand, the renewed or amended permits will contain Cap Loads based on the lesser of (a) existing TN/TP concentrations at current design average annual flow or (b) 7,306 lbs/yr TN and 974 lbs/yr TP.

For new Phase 4 and 5 sewage discharges, in general DEP will issue new permits containing Cap Loads of "0" and new facilities will be expected to purchase credits and/or apply offsets to achieve compliance, with the exception of small flow and single residence facilities.

A list of non-significant sewage and industrial waste dischargers with Cap Loads in NPDES permits is presented in Attachment B of the Phase 2 WIP.

The total nitrogen (TN) and total phosphorus (TP) cap loads for the subject facility are as follows:

TN Cap Load (lbs/yr)	181
TN Delivery Ratio	0.961
TP Cap Load (lbs/yr)	0
TP Delivery Ratio	0.436

This facility is subject to Sector C Phase 5 monitoring requirements. The facility is listed in Attachment B of the Chesapeake Bay as a Non-Significant Dischargers with Cap Loads. Total nitrogen credits from the dwelling which formerly utilized an onlot system may be used. The cap loads have been established by EPA and not eliminated as requested by the consultant.

The monitoring frequency recommended for the Chesapeake Bay Implementation Plan is 2x/mo for nitrogen species and total phosphorus. However, the facility will be required to have a more frequent sampling frequency due to antidegradation and intermittent stream purposes.

5.5 Anti-Degradation Requirement

Chapter 93.4a of the PA regulations requires that surface water of the Commonwealth of Pennsylvania may not be degraded below levels that protect the existing uses. The regulations specifically state that *Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected*. Antidegradation requirements are implemented through DEP's guidance manual entitled Water Quality Antidegradation Implementation Guidance (Document #391-0300-02).

The policy requires DEP to protect the existing uses of all surface waters and the existing quality of High Quality (HQ) and Exceptional Value (EV) Waters. Existing uses are protected when DEP makes a final decision on any permit or approval for an activity that may affect a protected use. Existing uses are protected based upon DEP's evaluation of the best available information (which satisfies DEP protocols and Quality Assurance/Quality Control (QA/QC) procedures) that indicates the protected use of the waterbody.

The subject facility's discharge will be to a HQ special protection waters.

A Point of First Use (POFU) survey was completed on an Unnamed Tributary (UNT) to Shearers Creek, Rapho Township, Lancaster County on August 23, 2010. The findings for the survey include (a) Shearers Creek and its tributaries are classified as high quality (HQ) under chapter 93 (b) the stream is small. Six thousand gallons a day would make the UNT effluent dominated. During dry periods, it may constitute nearly the entire stream flow, (c) UV treatment is recommended so the aquatic life will not be decimated by over chlorination, and (d) the stream will need the maximum protection available.

A person proposing a new, additional, or increased discharge to high quality or exceptional value waters shall evaluate non-discharge alternatives to the proposed discharge and use an alternative that is environmentally sound and cost-effective when compared to the cost of the proposed discharge. If a non-discharge alternative is not environmentally sound and cost-effective, a new, additional or increased discharge shall use the best available combination of cost-effective treatment, land disposal, pollution prevention and wastewater reuse technologies (Water Quality Antidegradation Implementation Guidance 45).

Dischargers in existence prior to the HQ or EV designation are grandfathered and considered to be part of the existing quality of the waterbody. All nonpoint source contributions and non-grandfathered point sources that occur after a waterbody is designated HQ or EV are subject to applicable provisions of the Antidegradation Program (Water Quality Antidegradation Implementation Guidance 47).

The receiving stream, Shearers Creek, was designated as HQ approximately in 1979. The Red Carpet Inn originally was a vintage 1950s motel with 25 units and one single family residence served by an on-lot system. The dwelling was demolished and the new hotel was constructed as a new 44 room hotel and a single facility residence. The WQM Part 2 was issued for the new hotel on October 31, 2011.

An antidegradation analysis was performed in the Fact Sheet dated for May 26, 2011. The analysis has been carried and continued forward to the proposed renewal. The results are enclosed in Attachment C.

Via a narrative from Akens Engineering Associates, Inc on November 24, 2017, the consultant requested that permit limits be reduced for dissolved oxygen, TDS, ammonia-nitrogen, and total phosphorus. DEP's position is that the facility is non-grandfathered and the increased discharge to high quality waters subjects the facility to the antidegradation program.

For the facility, iron, aluminum, and sulfate are possible constituents of the chemical(s) that will be used to remove phosphorus. However, the values determined as limiting are sufficiently high that they need not be included as permit limits (Fact Sheet dated for May 26, 2011).

The antidegradation program requires inclusion of several parameters. DEP has recommended the following changes to monitoring and limits for the parameters.

- **A limit for NO2-NO3 has been recommended for the proposed permit. The limit should have been included in the current permit but was omitted due to an error in transcribing recommended limits in the summary table. The limit shall be 10 mg/l as NO2-NO3 with monitoring 1x/mo.**
- **Due to an error in transcribing limits for lead, the appropriate limit for lead based upon antidegradation modeling is 0.094 mg/l as a monthly average.**
- **Background sampling of two wells collected in 2011 yielded background levels for lead, copper, and zinc. DMR data from March 2019 to September 2019 yielded similar results as the background levels from the wells in 2011. Consideration was given for the background concentration. Monitoring for lead, copper, and zinc have been recommended to be reduced to 1x/quarter. Refer to the summary table.**

Summary of Max Monthly TDS, Lead, Copper, and Zinc in 2019				
Month	**TDS**	**Lead**	**Copper**	**Zinc**
Units	**mg/l**	**mg/l**	**mg/l**	**mg/l**
Background	-----	**<0.003**	**0.021**	**0.055**
March	419	<0.003	0.018	0.026
April	560	0.0038	0.027	0.032
May	520	<0.003	0.029	0.041
June	535	<0.003	0.031	0.035
July	408	<0.003	0.022	0.018
August	473	<0.003	0.032	0.043
September	458	<0.003	0.017	0.029
Maximum	560	<0.003	0.032	0.043

- **Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits, monitoring shall not be required for TDS, sulfate, chloride, and bromide since DMR data from March 2019 to September 2019 did not exceed 5,000 mg/l. Refer to the summary table.**

5.6 Anti-Backsliding

Anti-backsliding is a federal regulation which prohibits a permit from being renewed, reissued, or modified containing effluent limitations which are less stringent than the comparable effluent limitations in the previous permit (40 CFR 122.l.1 and 40 CFR 122.l.2). A review of the existing permit limitations with the proposed permit limitations confirm that the facility is consistent with anti-backsliding requirements. The facility has proposed effluent limitations that are as stringent as the existing permit.

6.0 NPDES Parameter Details

The basis for the proposed sampling and their monitoring frequency that will appear in the permit for each individual parameter are itemized in this Section. The final limits are the more stringent of technology based effluent treatment (TBEL) requirements, water quality based (WQBEL) limits, TMDL, antidegradation, anti-degradation, or WET.

The reader will find in this section:

a) A summary of which policy attributed to the permit limit.
b) a justification of recommended permit monitoring requirements and limitations for each parameter in the proposed NPDES permit;
c) a summary of changes from the existing NPDES permit to the proposed permit; and
d) a summary of the proposed NPDES effluent limits.

Summary of Which Policy Attributed to the Permit Limit

Summary of Effluent Limits for Different Policies

Parameter	Units	Anti-Degradation	Intermittent Stream	TBEL	WQBEL	Chesapeake Bay TMDL	Chickies Creek TMDL	*Recommended Limit*
CBOD	mg/l	15.3	10	25	10	-----	-----	***10***
TSS	mg/l	473	10	30	-----	-----	-----	***10***
NH3-N	mg/l	1	-----	-----	1	-----	-----	***1***
NO2-NO3	mg/l	10.04	-----	-----	-----	-----	-----	***10.04***
TP	mg/l	0.5	0.5	-----	-----	-----	2.0	***0.5***
DO	mg/l	-----	6	7	-----	-----	-----	***7***
Lead	mg/l	0.094	-----	-----	0.297	-----	-----	***0.094***
Copper	mg/l	0.053	-----	-----	0.839	-----	-----	***0.053***
Iron	mg/l	14.6	-----	-----	-----	-----	-----	***No limit since chemicals containing chemical element is used for P reduction as limiting reagent***
Sulfate	mg/l	1417	-----	-----	-----	-----	-----	
Aluminum	mg/l	3.86	-----	-----	-----	-----	-----	
TDS	mg/l	2456	-----	5000	-----	-----	-----	***No Limit since < 5000 mg/l***
Zinc	mg/l	0.244	-----	-----	-----	-----	-----	***0.244***
TN	mg/l	-----	5	-----	-----	-----	-----	***5***
Total P	lbs/yr	-----	-----	-----	-----	0	-----	***0***
Tota N	lbs/yr	-----	-----	-----	-----	181	-----	***181***

Notes:

- Antidegradation limits abstracted from May 26, 2011 Fact Sheet
- Intermittent Stream limits abstracted from Policy and Procedures for Evaluating Wastewater Dischargers to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers (Document # 391-2000-014), Revised April 12, 2008
- WQBEL limits abstracted from PENTOXSD
- Chesapeake Bay limits abstracted from Phase 2 WIP Supplement, Attachment B - Non-Significant Discharges with Cap Loads in NPDES Permits, Revised November 9, 2018

6.1 Recommended Monitoring Requirements and Effluent Limitations

A summary of the recommended monitoring requirements and effluent limitations are itemized in the tables. The tables are categorized by (a) Conventional Pollutants and Disinfection, (b) Nitrogen Species and Phosphorus, and (c) Toxics.

6.1.1 Conventional Pollutants and Disinfection

Summary of Proposed NPDES Parameter Details for Conventional Pollutants and Disinfection Comfort Inn, PA0261661			
Parameter	**Permit Limitation Required by[1]:**	**Recommendation**	
pH (S.U.)	TBEL	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits may range from pH = 6.0 to 9.0
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 95.2(1).
Dissolved Oxygen	BPJ	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits shall be greater than 7.0 mg/l.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3. Due to the receiving waters classification as a HQ-CWF, the effluent limits assigned by Chapter 93.7.
CBOD	TBEL -Intermittent Stream (DEP #391-2000-014)	Monitoring:	The monitoring frequency shall be 2x/month as an 24-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 10 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by DEP guidance documents on intermittent streams. WQM modeling indicates that the TBEL for intermittent streams is more stringent than the WQBEL. Thus, the permit limit is confined to TBEL.
TSS	Intermittent Stream (DEP #391-2000-014)	Monitoring:	The monitoring frequency shall be 2x/month as an 24-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 10 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by the policy on intermittent streams.
Fecal Coliform	TBEL	Monitoring:	The monitoring frequency shall be 2x/month as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 200 No./100 mL as a geometric mean.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(4). Seasonal variations are not permitted for intermittent streams.
Notes:			
1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other			
2 Monitoring frequency based on flow rate of 0.0048 MGD.			
3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97			
4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)			
5 Phase 2 Watershed Implementation Plan Wastewater Supplement, Revised September 6, 2017			

6.1.2 Nitrogen Species and Phosphorus

Summary of Proposed NPDES Parameter Details for Nitrogen Species and Phosphorus

Comfort Inn, PA0261661

Parameter	Permit Limitation Required by[1]:	Recommendation	
Ammonia-Nitrogen	DEP Guidance Document-Antidegradation Model	Monitoring:	The monitoring frequency shall be 2x/mo as a 24-hr composite sample
		Effluent Limit:	Effluent limits shall not exceed 1.0 mg/l as an average monthly.
		Rationale:	Due to the receiving waters classification as a HQ-CWF, antidegradation modeling recommends that effluent limits shall not be greater than 1.0 mg/l.
Nitrate-Nitrite as N	DEP Guidance Document-Antidegradation Model	Monitoring:	The monitoring frequency shall be 2x/mo as a 24-hr composite sample
		Effluent Limit:	Effluent limits shall not exceed 10 mg/l as an average monthly.
		Rationale:	Due to the receiving waters classification as a HQ-CWF, antidegradation modeling recommends that effluent limits shall not be greater than 10 mg/l. The current NPDES renewal is absent a limit for this parameter as the parameter was omitted in error.
Total Nitrogen	TBEL -Intermittent Stream (DEP #391-2000-014)	Monitoring:	The monitoring frequency shall be 2x/mo as a 24-hr composite sample
		Effluent Limit:	Effluent limits shall not exceed 5.0 mg/l as an average monthly.
		Rationale:	The effluent limits assigned by the policy on intermittent streams.
TKN	Cheapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 2x/mo as a 24-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 2x/mo.
Total Phosphorus	DEP Guidance Document-Antidegradation Model	Monitoring:	The monitoring frequency shall be 2x/mo as a 24-hr composite sample
		Effluent Limit:	Effluent limits shall not exceed 0.5 mg/l as an average monthly.
		Rationale:	Due to the receiving waters classification as a HQ-CWF, antidegradation modeling recommends that effluent limits shall not be greater than 0.5 mg/l.
Net Total Nitrogen	Cheapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/mo.
		Effluent Limit:	The annual cap load is 181 lbs/yr
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/mo.
Net Total Phosphorus	Cheapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/mo.
		Effluent Limit:	The annual cap load is 0 lbs/yr
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/mo.
Notes:			

1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other

2 Monitoring frequency based on flow rate of 0.0048 MGD.

3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97

4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)

5 Phase 2 Watershed Implementation Plan Wastewater Supplement, Revised September 6, 2017

6.1.3 Toxics

PENTOXSD modeling was utilized to evaluate toxic pollutants of concern itemized by the antidegradation guidance document. In addition, other known or suspected parameters suspected to be present were also evaluated. The facility is a sewage treatment plant receiving domestic wastewater.

To capture the most recent data available for toxics, the maximum monthly data points from the DMR data from March 2019 to September 2019 was tabulated. See the summary table in Section 5.5.

To determine if PENTOXSD modeling is necessary, DEP has developed a Toxics Screening Analysis worksheet to identify toxics of concern. Toxic pollutants whose maximum concentrations as reported in the permit application or on DMRs are greater than the most stringent applicable water quality criterion are pollutants of concern. A Reasonable Potential Analysis was utilized to determine (a) if the toxic parameters modeled would require monitoring or (b) if permit limitations would be required for the parameters.

The Toxics Screening Analysis- Water Quality Pollutants of Concern worksheet indicated PENTOXSD modeling was required since the concentrations measured in the effluent sample were not within the normal range for safe water quality protection.

Upon PENTXOSD modeling and utilizing the Toxics Screening Analysis worksheet, no monitoring or limits were required for lead and copper. However, due to anti-backsliding regulations, lead and copper will remain in the permit but at a reduced monitoring frequency of 1x/quarter.

The PENTOXSD modeling and Toxics Screening Analysis outputs can be found in Appendix B.

6.1.3.1 Implementation of Regulation- Chapter 92a.61

Chapter 92a.61 provides provisions to DEP to monitor for pollutants that may have an impact on the quality of waters of the Commonwealth. Based upon DEP policy directives issued in January 2014 in conjunction with EPA, increased monitoring in NPDES permits for TDS, sulfate, chloride, and bromide have been recommended.

For point source discharges and upon issuance or reissuance of an individual NPDES permit, the following criteria triggers requirements for monitoring and reporting.

(a) Discharges not exceeding 0.1 MGD should monitor and report for TDS, sulfate, chloride, and bromide if the concentration of TDS in the discharge exceeds 5,000 mg/l.
(b) Discharges not exceeding 0.1 MGD should monitor and report for bromide if the concentration of bromide in the discharge exceeds 10 mg/l.

Since the submitted sampling data does not exceed thresholds, monitoring for TDS, sulfate, chloride, and bromide are not necessary.

6.1.3.2 Summary of Toxics Monitoring/Limits

Summary of Proposed NPDES Parameter Details for Toxics

Comfort Inn, PA0261661

Parameter	Permit Limitation Required by[1]:	Recommendation	
Total Copper	DEP Guidance Document-Antidegradation Model	Monitoring:	The monitoring frequency shall be 1x/quarter as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	The performance effluent limit shall not exceed 0.053 mg/l as a monthly average.
		Rationale:	The effluent limits were established from antidegradation modeling.
Total Lead	DEP Guidance Document-Antidegradation Model	Monitoring:	The monitoring frequency shall be 1x/quarter as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	The performance effluent limit shall not exceed 0.094 mg/l as a monthly average.
		Rationale:	The effluent limits were established from antidegradation modeling.
Total Zinc	DEP Guidance Document-Antidegradation Model	Monitoring:	The monitoring frequency shall be 1x/quarter as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	The performance effluent limit shall not exceed 0.244 mg/l as a monthly average.
		Rationale:	The effluent limits were established from antidegradation modeling.

Notes:

1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other

2 Monitoring frequency based on flow rate of 0.0048 MGD.

3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97

4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)

5 Phase 2 Watershed Implementation Plan Wastewater Supplement, Revised September 6, 2017

6.2 Summary of Changes From Existing Permit to Proposed Permit

A summary of how the proposed NPDES permit differs from the existing NPDES permit is summarized as follows.

Changes in Permit Monitoring or Effluent Quality

Parameter	Existing Permit	Draft Permit
Nitrate-Nitrite as N	Monitoring is required 2x/mo with no effluent limits.	Monitoring shall be required 2x/mo with a performance effluent limit of 10 mg/l as an average monthly. The current NPDES renewal is absent a limit for this parameter as the parameter was omitted in error.
TDS	The monitoring frequency is 2x/month with an effluent performance limit of 500 mg/l	The facility does not exceed the threshold limit of 5,000 mg/l which triggers monitoring. The requirement for monitoring this limit has been eliminated.
Total Lead	The monitoring frequency is 2x/month with an effluent performance limit of 0.098 mg/l	To correct the limit for an error in the previous fact sheet, the effluent performance limit wil be lowered to 0.094 mg/l. The monitoring frequency shall be 1x/quarter.
Total Copper	The monitoring frequency is 2x/month with an effluent performance limit of 0.053 mg/l	The monitoring frequency shall be 1x/quarter with the same effluent performance limit.
Total Zinc	The monitoring frequency is 2x/month with an effluent performance limit of 0.244 mg/l	The monitoring frequency shall be 1x/quarter with the same effluent performance limit.

6.3.1 Summary of Proposed NPDES Effluent Limits

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.

The proposed NPDES effluent limitations are summarized in the table below.

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 001 , **Latitude** 40° 13' 47.00" , **Longitude** 76° 25' 43.00" , **River Mile Index** 1.95 , **Stream Code** 8012

Receiving Waters: Shearers Creek (HQ-CWF)

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from Permit Effective Date through Permit Expiration Date.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

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	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	7.0 Inst Min	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	10	20	25	2/month	24-Hr Composite
Total Suspended Solids	XXX	XXX	XXX	10	20	25	2/month	24-Hr Composite
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	1.0	2.0	2.5	2/month	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	0.5	1	1.25	2/month	24-Hr Composite
Nitrate-Nitrite as N	XXX	XXX	XXX	10	20	25	2/month	24-Hr Composite
Copper, Total	XXX	XXX	XXX	0.053 Avg Qrtly	0.106	0.13	1/quarter	24-Hr Composite
Lead, Total	XXX	XXX	XXX	0.094 Avg Qrtly	0.188	0.235	1/quarter	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	Daily Maximum	Instant. Maximum		
Zinc, Total	XXX	XXX	XXX	0.244 Avg Qrtly	0.488	0.61	1/quarter	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. B. For Outfall 001 , **Latitude** 40° 13' 47.00" , **Longitude** 76° 25' 43.00" , **River Mile Index** 1.95 , **Stream Code** 8012

Receiving Waters: Shearers Creek (HQ-CWF)

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **Permit Effective Date** through **Permit Expiration Date**.

2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	2/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Net Total Nitrogen	Report	181	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	0	XXX	XXX	XXX	XXX	1/month	Calculation

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

Footnotes:
(1) See Part C for Chesapeake Bay Requirements.
(2) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events required.

(3) The TN cap load for this permittee has been based on the connection of 25 retired hotel rooms (100 gallons per day per room) plus 1 house (400 gallon per day) that are served by this permittee's wastewater treatment facility and were previously served by an on-lot system owned by the permittee. Twenty-five pounds of Total Nitrogen as N for each EDU (equivalent dwelling unit) /year and 400 gallons per EDU was used to determine the 181 annual TN load. A facility may use Offsets for compliance but may not register them as credits

6.3.2 Summary of Proposed Permit Part C Conditions

The subject facility has the following Part C conditions.

- Dry Stream
- Solids Management for Non-Lagoon Treatment System
- Chiques Creek Part C Condition

  Chiques Creek discharges are likely to have their permit reissued with an average monthly Total Phosphorus (TP) limit of 2.0 mg/l and an instantaneous maximum TP limit of 4.0 mg/l. Due to the facility discharging into HQ and intermittent stream, a ore stringent limit of 0.5 mg/l TP and an instantaneous maximum of 1.25 mg/l shall be included in the proposed permit.

  DEP and SRBC will be continuing an ongoing effort to develop an Alternate Restoration Plan (ARP) to address the impact of siltation and nutrient pollution to Chiques Creek. The results of the ARP may require the permittee to address more stringent TP limits during the next permit renewal cycle. The permittee is advised to maintain communications and coordinate efforts with the DEP and SRBC during this permit cycle to ensure their facility is adequately prepared to potentially meet more stringent effluent limitations.

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☒	PENTOXSD for Windows Model (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☒	Toxics Screening Analysis 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: New and Reissuance Sewage Individual NPDES Permit Applications, Revised October 11, 2013.*
☐	Other:

Attachment A

Stream Stats/Gauge Data

Table 1. List of U.S. Geological Survey streamgage locations in and near Pennsylvania with updated streamflow statistics.—Continued

[Latitude and Longitude in decimal degrees; mi², square miles]

Streamgage number	Streamgage name	Latitude	Longitude	Drainage area (mi²)	Regulated[1]
01561000	Brush Creek at Gapsville, Pa.	39.956	-78.254	36.8	N
01562000	Raystown Branch Juniata River at Saxton, Pa.	40.216	-78.265	756	N
01562500	Great Trough Creek near Marklesburg, Pa.	40.350	-78.130	84.6	N
01563200	Raystown Branch Juniata River below Rays Dam nr Huntingdon, Pa.	40.429	-77.991	960	Y
01563500	Juniata River at Mapleton Depot, Pa.	40.392	-77.935	2,030	Y
01564500	Aughwick Creek near Three Springs, Pa.	40.213	-77.925	205	N
01565000	Kishacoquillas Creek at Reedsville, Pa.	40.655	-77.583	164	N
01565700	Little Lost Creek at Oakland Mills, Pa.	40.605	-77.311	6.52	N
01566000	Tuscarora Creek near Port Royal, Pa.	40.515	-77.419	214	N
01566500	Cocolamus Creek near Millerstown, Pa.	40.566	-77.118	57.2	N
01567000	Juniata River at Newport, Pa.	40.478	-77.129	3,354	Y
01567500	Bixler Run near Loysville, Pa.	40.371	-77.402	15.0	N
01568000	Sherman Creek at Shermans Dale, Pa.	40.323	-77.169	207	N
01568500	Clark Creek near Carsonville, Pa.	40.460	-76.751	22.5	LF
01569000	Stony Creek nr Dauphin, Pa.	40.380	-76.907	33.2	N
01569800	Letort Spring Run near Carlisle, Pa.	40.235	-77.139	21.6	N
01570000	Conodoguinet Creek near Hogestown, Pa.	40.252	-77.021	470	LF
01570500	Susquehanna River at Harrisburg, Pa.	40.255	-76.886	24,100	Y
01571000	Paxton Creek near Penbrook, Pa.	40.308	-76.850	11.2	N
01571500	Yellow Breeches Creek near Camp Hill, Pa.	40.225	-76.898	213	N
01572000	Lower Little Swatara Creek at Pine Grove, Pa.	40.538	-76.377	34.3	N
01572025	Swatara Creek near Pine Grove, Pa.	40.533	-76.402	116	N
01572190	Swatara Creek near Inwood, Pa.	40.479	-76.531	167	N
01573000	Swatara Creek at Harper Tavern, Pa.	40.403	-76.577	337	N
01573086	Beck Creek near Cleona, Pa.	40.323	-76.483	7.87	N
01573160	Quittapahilla Creek near Bellegrove, Pa.	40.343	-76.562	74.2	N
01573500	Manada Creek at Manada Gap, Pa.	40.397	-76.709	13.5	N
01573560	Swatara Creek near Hershey, Pa.	40.298	-76.668	483	N
01574000	West Conewago Creek near Manchester, Pa.	40.082	-76.720	510	N
01574500	Codorus Creek at Spring Grove, Pa.	39.879	-76.853	75.5	Y
01575000	South Branch Codorus Creek near York, Pa.	39.921	-76.749	117	Y
01575500	Codorus Creek near York, Pa.	39.946	-76.755	222	Y
01576000	Susquehanna River at Marietta, Pa.	40.055	-76.531	25,990	Y
01576085	Little Conestoga Creek near Churchtown, Pa.	40.145	-75.989	5.82	N
01576500	Conestoga River at Lancaster, Pa.	40.050	-76.277	324	N
01576754	Conestoga River at Conestoga, Pa.	39.946	-76.368	470	N
01578310	Susquehanna River at Conowingo, Md.	39.658	-76.174	27,100	Y
01578400	Bowery Run near Quarryville, Pa.	39.895	-76.114	5.98	N
01580000	Deer Creek at Rocks, Md.	39.630	-76.403	94.4	N
01581500	Bynum Run at Bel Air, Md.	39.541	-76.330	8.52	N
01581700	Winters Run near Benson, Md.	39.520	-76.373	34.8	N
01582000	Little Falls at Blue Mount, Md.	39.604	-76.620	52.9	N
01582500	Gunpowder Falls at Glencoe, Md.	39.550	-76.636	160	Y
01583000	Slade Run near Glyndon, Md.	39.495	-76.795	2.09	N
01583100	Piney Run at Dover, Md.	39.521	-76.767	12.3	N

Table 2. Selected low-flow statistics for streamgage locations in and near Pennsylvania.—Continued

[ft³/s; cubic feet per second; —, statistic not computed; <, less than]

Streamgage number	Period of record used in analysis[1]	Number of years used in analysis	1-day, 10-year (ft³/s)	7-day, 10-year (ft³/s)	7-day, 2-year (ft³/s)	30-day, 10-year (ft³/s)	30-day, 2-year (ft³/s)	90-day, 10-year (ft³/s)
01565000	1941–2008	37	17.6	18.6	28.6	20.3	32.4	24.4
01565700	1965–1981	17	.4	.4	.9	.5	1.1	.8
01566000	1913–2008	52	4.3	7.9	18.8	12.4	25.6	19.2
01566500	1932–1958	27	1.7	2.4	4.0	3.2	5.7	4.9
01567000	[2]1974–2008	35	504	534	725	589	857	727
01567000	[3]1901–1972	72	311	367	571	439	704	547
01567500	1955–2008	54	2.0	2.2	3.3	2.6	3.8	3.1
01568000	1931–2008	78	12.7	15.5	25.5	19.2	32.0	26.0
01568500	[2]1943–1997	55	1.8	2.3	4.3	2.7	5.0	3.1
01569000	1939–1974	14	2.6	4.0	7.4	5.1	9.4	7.8
01569800	1978–2008	31	15.9	17.0	24.4	18.4	26.1	20.3
01570000	[3]1913–1969	35	—	63.1	110	76.1	124	95.3
01570000	[2]1971–2008	38	63.1	69.3	109	78.3	125	97.8
01570500	[3]1901–1972	72	2,310	2,440	4,000	2,830	4,950	3,850
01570500	[2]1974–2008	35	3,020	3,200	5,180	3,690	6,490	4,960
01571000	1941–1995	16	.1	.2	.6	.3	1.2	.8
01571500	1911–2008	62	81.6	86.8	115	94.0	124	105
01572000	1921–1984	14	2.1	2.3	4.8	3.0	6.5	4.5
01572025	1990–2008	17	15.2	16.4	26.7	18.5	34.6	27.7
01572190	1990–2008	17	19.1	20.5	36.2	23.9	45.8	35.3
01573000	1920–2008	89	18.0	22.0	52.0	30.8	69.2	50.9
01573086	1965–1981	17	.5	.6	2.6	.8	3.3	1.1
01573160	1977–1994	18	26.9	29.6	46.4	33.6	51.9	39.5
01573500	1939–1958	20	1.3	1.4	2.5	1.8	3.2	2.6
01573560	1977–2008	30	50.3	62.0	104	76.9	131	108
01574000	1930–2008	79	8.0	11.1	32.0	17.7	47.0	33.9
01574500	[2]1968–2008	41	14.2	24.0	35.9	29.4	42.0	33.3
01574500	[3]1930–1966	34	2.3	7.1	11.5	9.3	14.8	12.7
01575000	[2]1973–1995	23	.7	1.4	6.7	3.2	12.0	9.3
01575000	[3]1929–1971	43	.1	.6	10.3	2.3	15.0	6.1
01575500	[2]1948–1996	49	12.1	18.7	41.3	23.9	50.0	33.8
01576000	[3]1933–1972	40	2,100	2,420	4,160	2,960	5,130	4,100
01576000	[2]1974–2008	35	2,990	3,270	5,680	3,980	7,180	5,540
01576085	1984–1995	12	.4	.5	.8	.7	1.2	1.2
01576500	1931–2008	78	27.2	38.6	79.4	49.1	97.3	66.1
01576754	1986–2008	23	74.2	84.9	151	106	189	147
[4]01578310	1969–2008	40	549	2,820	5,650	4,190	7,380	6,140
01578400	1964–1981	18	1.4	1.5	2.7	1.9	3.2	2.5
[4]01580000	1928–2008	81	19.7	22.8	48.1	28.1	51.8	35.4
[4]01581500	1946–2008	28	.2	.3	1.2	.8	1.7	1.5
[4]01581700	1969–2008	40	4.7	5.5	17.5	8.1	18.3	12.0
[4]01582000	1946–2008	63	11.3	12.5	25.0	15.5	28.0	20.3
[4]01582500	1979–2008	27	41.2	43.9	78.8	53.8	90.6	74.1
[4]01583000	1949–1981	33	.3	.3	.7	.3	1.0	.6
[4]01583100	1984–2008	15	2.1	2.4	5.5	3.2	6.0	4.2

Attachment B

Modeling Input Values
WQM 7.0 Modeling Output Values
Toxics Screening Analysis
PENTOXSD Modeling Output Values

Attachment C

Antidegradation Modeling Results
Permit Limit Summary Table