pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0085316**
Facility Type	**Non-Municipal**	APS ID	**278773**
Major / Minor	**Minor**	Authorization ID	**1215045**

Applicant and Facility Information

Applicant Name	**Fort Heritage Ltd**	Facility Name	**Fort Heritage Lighthouse Chapel**
Applicant Address	1958 Emmitsburg Road	Facility Address	1960 Emmitsburg Road
	Gettysburg, PA 17325-7196		Gettysburg, PA 17325-7196
Applicant Contact	Linwood Kern	Facility Contact	Linwood Kern
Applicant Phone	(717) 334-1577	Facility Phone	(717) 334-1577
Client ID	87408	Site ID	1922
Ch 94 Load Status		Municipality	Cumberland Township
Connection Status		County	Adams
Date Application Received	December 18, 2017	EPA Waived?	Yes
Date Application Accepted	January 31, 2018	If No, Reason	

Purpose of Application: NPDES Renewal.

Summary of Review

Fort Heritage, LTD has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit. The permit was issued on October 22, 2012 and became effective on November 1, 2012. The permit authorized discharge of treated sewage from the existing wastewater treatment plant (WWTP) located in Cumberland Township, Adams County to Marsh Creek. The existing permit expiration date was October 31, 2017, and the permit has been administratively extended since that time.

Fort Heritage is a proposed commercial development including a 200-site campground, a 1000-seat amphitheater, an office/lodge, caretaker's residence, and owner's residence. 50 of the 200 campsites will be sewered. This facility will have a hydraulic design capacity of 0.020 MGD. The facility is proposed but not materialized.

Changes from the previous permit: Unit of Fecal Coliform changed from CFU/100 ml to No./100 ml.

Based on the review outline in this fact sheet, it is recommended that the permit be drafted and published in the Pennsylvania Bulletin for public comments for 30 days.

Approve	Deny	Signatures	Date
X		*Hilaryle* Hilary H. Le / Environmental Engineering Specialist	December 29, 2020
		Daniel W. Martin, P.E. / Environmental Engineer Manager	

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.02
Latitude	39º 47' 32.00"	Longitude	-77º 16' 46.00"
Quad Name	Fairfield	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Marsh Creek	Stream Code	58903
NHD Com ID	53320722	RMI	6.59 miles
Drainage Area	68.0 mi.^{2}	Yield (cfs/mi^2)	0.05
Q_{7-10} Flow (cfs)	3.52	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)		Slope (ft/ft)	
Watershed No.	13-D	Chapter 93 Class.	CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	City of Frederick, MD		
PWS Waters	Monocacy River	Flow at Intake (cfs)	
PWS RMI	NA	Distance from Outfall (mi)	Approximate 37 miles

Changes Since Last Permit Issuance:

Drainage Area:
The discharge is to Marsh Creek at RMI 6.59 miles. A drainage area upstream of the discharge is estimated to be 68.0 sq.mi, according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Streamflow:
According to StreamStats, the discharge point on Marsh Creek has a Q_{7-10} of 3.52 cfs and a drainage area of 68.0 mi^2, which results in a Q_{7-10} low flow yield of 0.05 cfs/mi^2. This information is used to obtain a chronic or 30-day (Q_{30-10}), and an acute or 1-day (Q_{1-10}) exposure stream flow for the discharge point as follows (Guidance No. 391-2000-023):

$$Q_{7-10} = 3.52 \text{ cfs}$$
$$\text{Low Flow Yield} = 3.52 \text{ cfs} / 68.0 \text{ mi}^2 \approx 0.05 \text{ cfs/mi}^2$$
$$Q_{30-10} = 1.36 * 3.52 \text{ cfs} \approx 4.79 \text{ cfs}$$
$$Q_{1-10} = 0.64 * 3.52 \text{ cfs} \approx 2.25 \text{ cfs}$$

The resulting dilution ratio (under Q_{7-10} conditions) is: $Q_{stream} / Q_{discharge}$ = 3.52 cfs / [0.020 MGD * (1.55 cfs/MGD)] = 113.5:1

Marsh Creek:
25 Pa Code § 93.9z classifies Marsh Creek as cold-water fishes (CWF) surface water. Based on the 2018 Integrated Report, Marsh Creek (Assessment ID 11487), is not impaired. A TMDL currently does not exist for this stream segment, therefore, no TMDL has been taken into consideration during this review.

Public Water Supply:
The nearest downstream public water supply intake is the City of Frederick, MD intake on the Monocacy River, approximately 37 miles downstream of this discharge. Considering distance and dilution, the discharge is not expected to impact the water supply.

Treatment Facility Summary				
Treatment Facility Name: Fort Heritage Campground				
WQM Permit No.	**Issuance Date**			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage				0.02
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.02				

Changes Since Last Permit Issuance: the facility is not built.

The WWTP train is to be as follows:

Grease Trap (1) ⇒ Equalization Tank (1) ⇒ Aeration Tank (3) ⇒ Clarifier (1) ⇒ Chlorine Contact Tank (1) ⇒ Post Aeration Tank (1) ⇒ Dechlorination Tank (1) ⇒ Discharge

An aerated sludge holding tank will be used for solids storage.

Compliance History	
Summary of DMRs:	Not Applicable.
Summary of Inspections:	3/12/2018: Mr. Bowen, DEP WQS, conducted a routine partial inspection. Mr. Kern stated that the campground and associated wastewater treatment plant has not been constructed, therefore, submission of discharge monitoring reports (DMRs) is not required. 7/15/2019: Mr. Benham, DEP WQS, conducted compliance evaluation inspection. In a phone conversation at 11:45 AM, Mr. Kern stated that the Fort Heritage Campground had not been built, and the registration for eDMR was not completed.
Other Comments:	There are two open violations due to failure to use a format or process required by DEP for self-monitoring results and not submitted.

Other Comments:
No compliance history exists since the facility has not yet been constructed.

On 12/7/2020 sent via electronic email to Mr. Linwood Kern, Fort Heritage, LLD NPDES PA0085316, located in Cumberland Township, Adams County: referenced eDMRs registration requirement issue (see the attachment).

PA0085316.eDMRLetter.12.7.2020 Ft Her

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.02
Latitude 39º 46' 43.00" **Longitude** -77º 16' 23.00"
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
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Comments:

Water Quality-Based Limitations

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$):
Only the minimum treatment requirements of secondary treatment will be necessary to protect water quality. The existing limits of 25 mg/L average monthly and 50 mg/L instantaneous maximum will remain in the renewal permit. Past DMRs and inspection reports show that the facility has been consistently achieving concentrations under these limits.

Ammonia (NH_3-N):
NH_3-N calculations were first based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013). The following data is necessary to determine the in-stream NH_3-N criteria used in the attached computer model of the stream:

- Discharge pH = 7.0 (Default)
- Discharge Temperature = 25°C (Default)
- Stream pH = 7.0 (Default)
- Stream Temperature = 20ºC (Default for CWF)
- Background NH_3-N = 0 (Default)

The model input data and results are attached. The printout of the WQM 7.0 output indicates that at a discharge of 0.020 MGD, limits (rounded according to the NPDES Technical Guidance 362-0400-001) of 25 mg/L NH_3-N as a monthly average and 50 mg/L NH_3-N instantaneous maximum are necessary to protect the aquatic life from toxicity effects. However, the model results will not be applied as the permit limits since the dilution provided by the stream is very large (dilution ratio = 113.5:1). As per 391-2000-013, since both the toxicity-based and DO-based ammonia effluent limitations are greater than 15 mg/L, no NH_3-N limitations are needed for this facility.

Total Suspended Solids (TSS):
The existing limits of 30 mg/L average monthly and 60 mg/L instantaneous maximum will remain in the permit based on the minimum level of effluent quality attainable by secondary treatment based on 25 Pa. Code § 92a.47.

Dissolved Oxygen (D.O.):
A minimum D.O. of 5.0 mg/L is required per 25 Pa. Code § 93.7. This is consistent with the previous permit and current Department criteria.

pH:
The effluent discharge pH should remain above 6 and below 9 standard units according to 25 Pa Code § 95.2(2).

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 (average monthly) and not greater than 1,000/100 ml (IMAX) and 25 Pa. Code § 92a.47(a)(5) requires a winter limit of 2,000/100 ml as a geometric mean (average monthly) and not greater than 10,000/100 ml (IMAX), respectively.

Total Residual Chlorine (TRC):
Based on the attached TRC Excel Spreadsheet calculator, which uses the equations and calculations from the Department's May 1, 2003 Implementation Guidance for Total Residual Chlorine (ID No. 391-2000-015), the facility's discharge must meet a monthly average limit of 0.05 mg/L and an instantaneous maximum limit of 0.16 mg/L. Based on the DMRs from the past year, the facility has been consistently achieving this limit. Therefore, this limit will remain in the renewal permit

Chesapeake Bay Strategy:
This facility falls in Phase 5 of the Pennsylvania's Chesapeake Bay Tributary Strategy Point Source Implementation Plan. At this time, the Department is not requiring a total maximum annual phosphorus or nitrogen loading cap. The Supplement to Phase II Watershed Implementation Plan states the following:

> *"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 existing average annual flow or b) 7,306 lbs/yr TN and 974 lbs/yr TP."*

Total Nitrogen (TN) and Total Phosphorus (TP) "Monitor & Report" requirements will not be necessary since the facility has already satisfied the data criteria of the Chesapeake Bay Strategy

Total Phosphorus (TP):
eMAP PA lists the section of Marsh Creek closest to this facility's discharge point as being impaired for nutrients (without a TMDL). As per the previous protection report, an aquatic biologist from the Department concluded from his studies that phosphorus is not currently a problem in this area.

Toxic:
This is a minor sewage facility receiving domestic wastewater only and the current application does not require sampling of toxic pollutants (or heavy metals) for those facilities with design flows less than 0.1 MGD. Therefore, no reasonable potential analysis for toxic pollutants has been performed for this permit renewal.

Antidegradation (93.4):
The effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

303d Listed Streams:
This discharge is not located on a 303d listed stream segment.

Class A Wild Trout Fisheries:
No Class A Wild Trout Fisheries are impacted by this discharge.

WQM 7.0 Data:

Node 1: Fort Heritage Outfall 001 on Marsh Creek

Elevation:	446 ft (USGS National Map Viewer)
Drainage Area:	68.0 mi^2 (USGS PA StreamStats)
River Mile Index:	6.59 (PA DEP eMapPA)
Low Flow Yield:	0.05 cfs/mi^2
Discharge Flow:	0.020 MGD (NPDES Application)

Node 2: Just before confluence of Marsh Creek with Plum Run

Elevation:	442 ft (USGS National Map Viewer)
Drainage Area:	68.4 mi^2 (USGS PA StreamStats)
River Mile Index:	5.80 (PA DEP eMapPA)
Low Flow Yield:	0.05 cfs/mi^2
Discharge Flow:	0.000 MGD

TRC EVALUATION

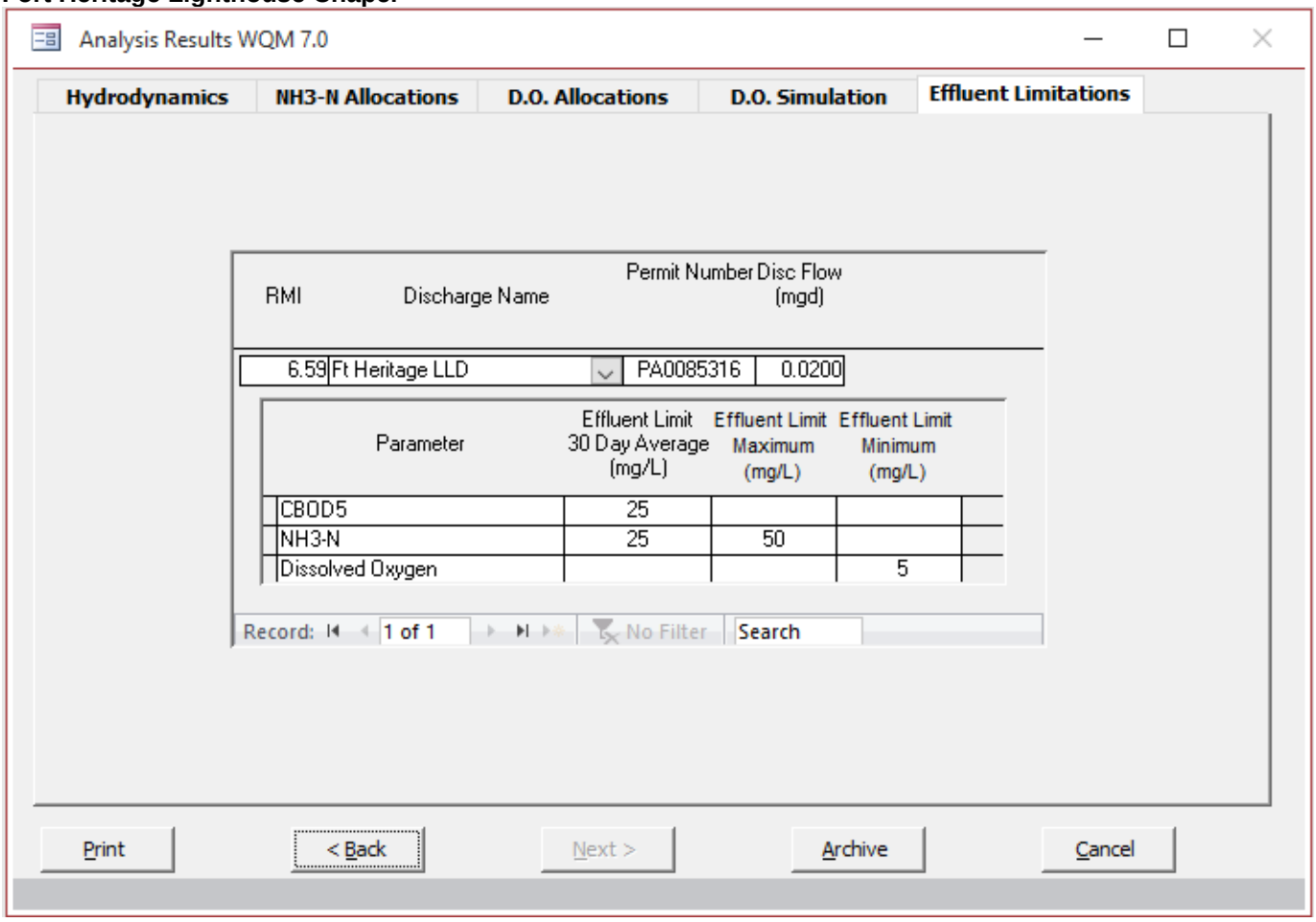
Input appropriate values in A3:A9 and D3:D9

3.52	= Q stream (cfs)	0.5	= CV Daily
0.02	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 36.311	1.3.2.iii	WLA cfc = 35.393
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 13.530	5.1d	LTA_cfc = 20.576

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	

WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...** **...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...** **...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**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D.O. Allocations
D.O. Simulation
Effluent Limitations
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Discharge Name
Permit Number
Disc Flow (mgd)
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Ft Heritage LLD
PA0085316
0.0200
Parameter
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Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5
25
NH3-N
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Dissolved Oxygen
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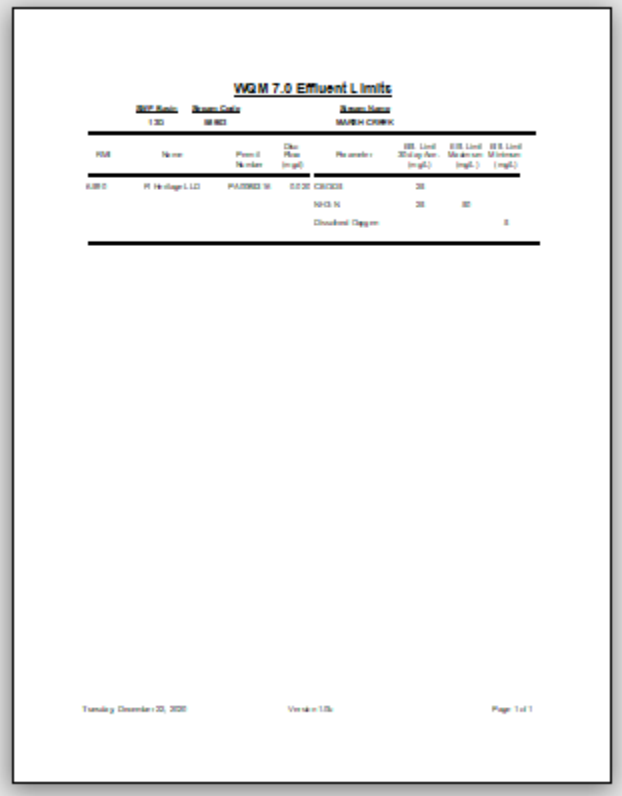
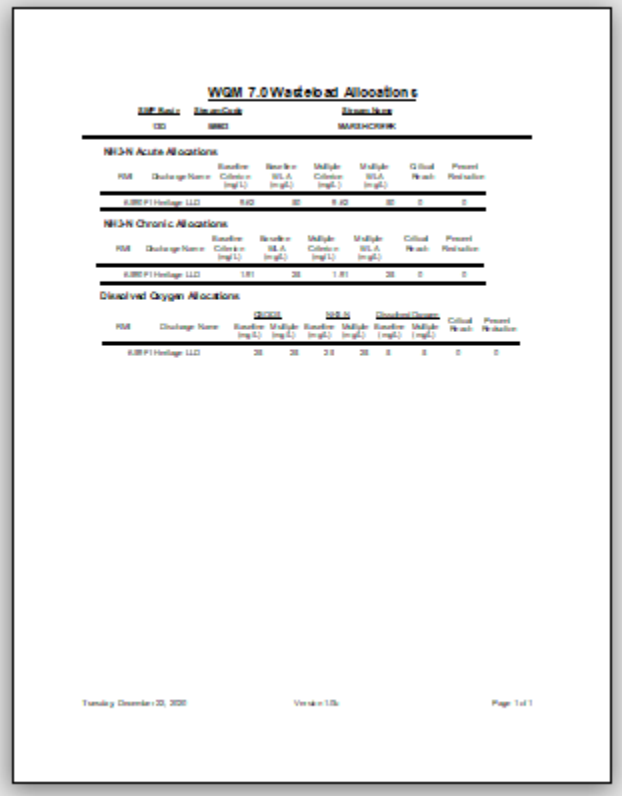
rptEffLimits



WQM 7.0 Effluent Limits

rpt_WLA



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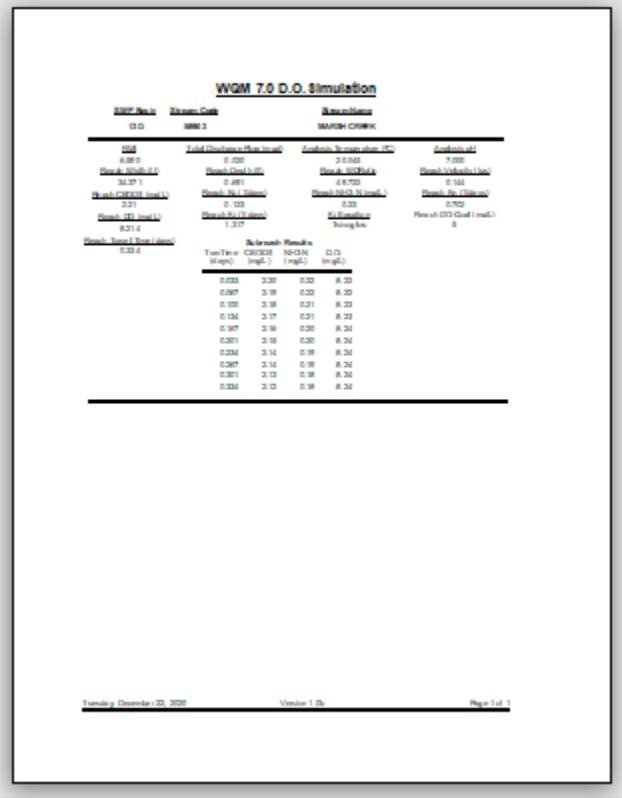

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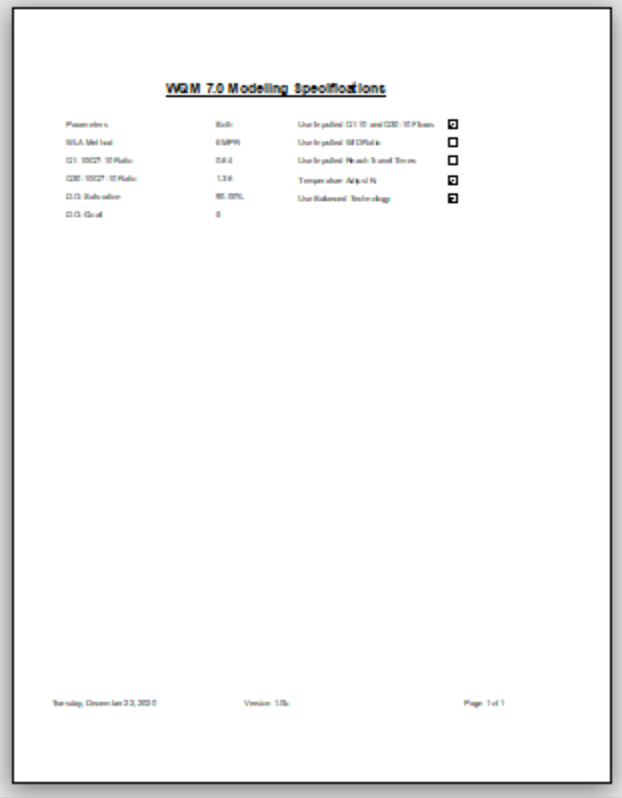

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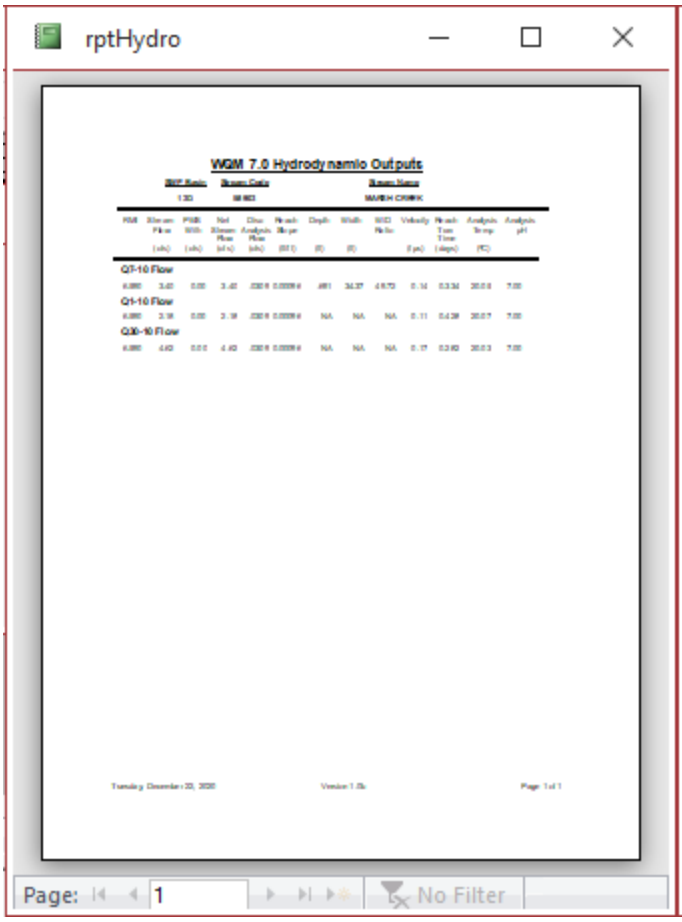
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Q1-10 Flow
Q30-10 Flow
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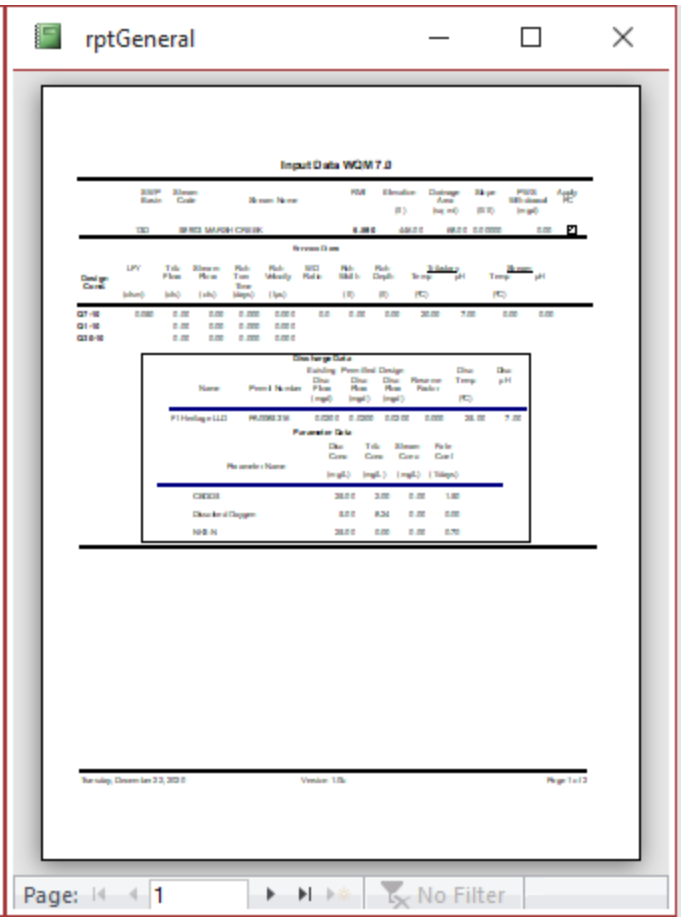
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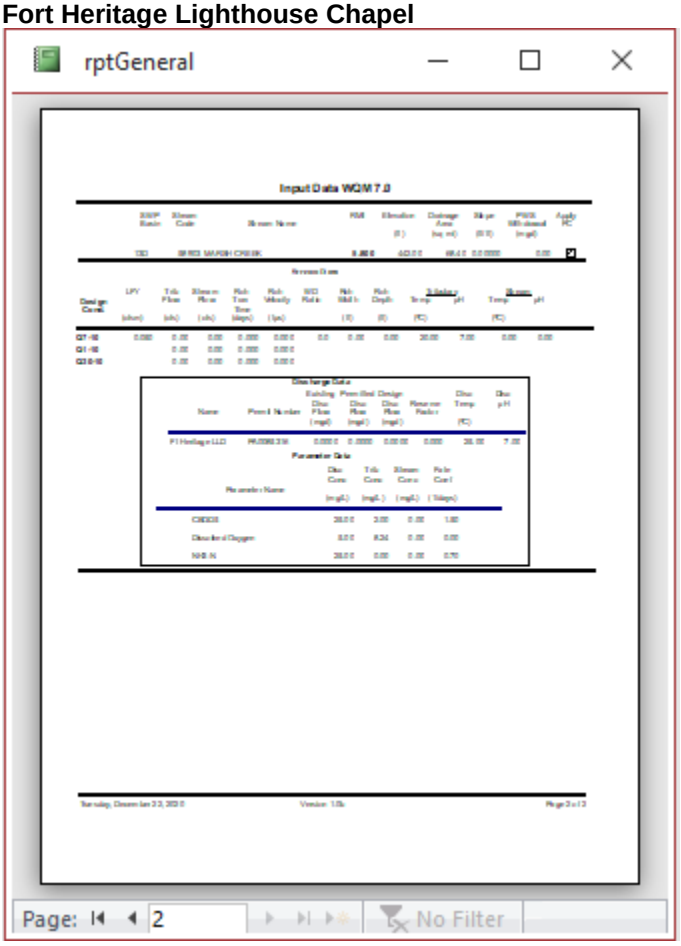
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Existing Effluent Limitations and Monitoring Requirements

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Total Monthly	Total Annual	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.50	XXX	1.63	1/day	Grab
$CBOD_5$	XXX	XXX	XXX	25	XXX	50	2/month	24-Hr Composite
TSS	XXX	XXX	XXX	30	XXX	60	2/month	24-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Nitrate-Nitrite	Report	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/quarter	Calculation
TKN	Report	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite

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	Daily Maximum	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.50	XXX	1.63	1/day	Grab
$CBOD_5$	XXX	XXX	XXX	25	XXX	50	2/month	24-Hr Composite
TSS	XXX	XXX	XXX	30	XXX	60	2/month	24-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Nitrate-Nitrite	Report Total Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Total Nitrogen	Report Total Qrtly	Report Avg Qrtly	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Calculation
TKN	Report Total Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Total Phosphorus	Report Total Qrtly	Report Avg Qrtly	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite

Compliance Sampling Location:

Other Comments:

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:
☐	Other: