SUMMARY REPORT & FACT SHEET (SRFS)

Permit Application Numbers: **State:** 21-DP-0580 **NPDES:** MD0021601

Name of Facility: Patapsco Wastewater Treatment Plant

Mailing Address: 3501 Asiatic Avenue, Baltimore, Maryland 21226

Facility's Location: 3501 Asiatic Avenue, Baltimore, Maryland 21226

Facility Organization: Department of Public Works
Abel Wolman Municipal Building, 6th Floor
200 N. Holliday Street, Baltimore, Maryland 21202

Contact Person	***Applicant***	***Facility***
Name:	Khalil Zaied	Neal Jackson
Title:	Director of Public Works	Plant Manager
Phone:	410-396-3100	410- 396 - 2898
Email:	Khalil.zaied2@baltimorecity.gov	Neal.Jackson@baltimorecity.gov

Applicant engaged in: The Treatment of Domestic and Industrial Wastewater

Number of outfalls: 001A- (Facility Effluent) **SIC Code:** 4952 (Sewerage Systems)

MDE Engineer: Mahendra Chawla/jp **Completion Date:** 04/18/2024 (Original)
03/25/2025 (Rev. 2) 10/28/2024 (Rev. 1)

Accepted by: _____ 4/18/2024 10/29/2024
Yen-Der Cheng, Chief
Municipal Surface Discharge Permits Division
Date

Is EPA joint review required? Yes ☒, Date sent: 04/19/2024 No ☐

State/EPA comment/agreement received: Yes ☒ Date received: 05/19/2024, N/A ☐

New or Updates to the Discharge Permit

Is the permit application for a new discharge permit? ☐ Yes, ☒ No

If No, are there any new or Update(s) to Discharge Permit Requirement(s) proposed in this permit Renewal? ☒ Yes, ☐ No ☐ N/A

No.	Effluent Limitation, Monitoring or Other Requirement	Description	References	
			SRFS	Permit
New Requirements:				
1	Definitions	Added definition for "Performance-Based Benchmark Load"	N/A	Definitions I.P, Page 4
		Added definition for "Performance-Based Credit Load"	N/A	Definitions I.Q, Page 5
		Added definition for "Secondary Treatment"	N/A	Definitions I.V, Page 5
2	Effluent Limitations	Addition of limits for BOD_5 & TSS 85% removal	Section II, Page 12 and Section III, Page 24	Special Condition II. A.1, Page 7 (73 MGD) Special Condition II.A.2, Page 9 (81 MGD)
		Final Ammonia limits added	Section III, Page 25	Special Condition II. A.1, Page 7 (73 MGD) Special Condition II.A.2, Page 9 (81 MGD)
		Added extra Monitoring and footnotes for 18 Chemicals (Aldrin through Ideno(1,2,3-cd)Pyrene).	Section III, Pages 31-34	Special Condition II. B.1.a, Page 13
3	Monitoring/ Reporting	Monitoring for Influent Raw water added.	Section III, Page 27	Special Condition II. B.1.b, Page 13
		Nutrient and Sediment Performance-based Credit Reporting Schedule added	Section III, Page 28	Special Condition II. B.1.c, Page 14

New or Updates to the Discharge Permit

4	Other	Added requirement for Climate Change Resiliency	Section II, Page 20	Special Condition II.L Page 29-30
		Added requirement for Maintenance of Laboratory Certification Records	Section II, Page 22	Special Condition II.M Page 30
		Added requirement for Testing and Analysis of Per- and Polyfluorinated Alkyl Substances (PFAS)	Section II, Page 20	Special Condition II.N Pages 30-32
		Added requirement for Polychlorinated Biphenyls (PCBs) Monitoring, Reporting and Minimization	Section II, Page 21	Special Condition II.P Pages 32-35
		Added requirement for an Operation and Maintenance Guidance Checklist	Section II, Page 21	Special Condition II.Q Page 35
		Added requirement for Wastewater Treatment Plant Operator Licensing and Certification	Section II, Page 22	Special Condition II.R Page 36
		Added requirement for Protection of Water Contact Recreational Activity in the Receiving Waters	Section II, Page 23	Special Condition II.S Page 36-37
		Added requirement for Use of Sufficiently Sensitive Methods.	N/A	General Condition III.A.4, Pages 40-41
		Additional Rationale for Effluent Limitations: Anti-degradation policy review and space reserved for future use to address TIER III waters requirements added	Section III, Pages 37 - 38	N/A

New or Updates to the Discharge Permit

No.	Effluent Limitation, Monitoring or Other Requirement	Description	References	
			SRFS	Permit
Updated Requirements:				
1	Effluent Limitation	Footnotes for Effluent Limitations revised.	Section III, Pages 29-34	Special Condition II.B.1 Pages 15 – 18
2	Special Conditions	Wastewater Capacity Management language updated.	Section II, Pages 17 - 18	Special Condition II.C Pages 20 – 21
		Biomonitoring Testing Schedule revised	Section II, Page 14	Special Condition II.D.2 Pages 21 - 22
		Toxic Chemical Testing Schedule revised	Section II, Page 17	Special Condition II.F.3 Page 26
		FOG Mitigation Plan requirements enhanced	Section II, Page 23	Special Condition II.T Page 37 - 38
3	General Conditions	Monthly Monitoring Results revised	N/A	General Condition III.A.2 Pages 39-40
		Added Monitoring by Permittee revised	N/A	General Condition III.A.8 Page 41
		Right of Entry language explained in detail	N/A	General Condition III.B.9 Page 45
		Wastewater Collection System Reporting revised	N/A	General Condition III.C.1.i, Page 49
4	Other	"Civil and Criminal Penalties" requirements are updated.	N/A	Permit Condition IV Page 51

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I. Description of Facility, Outfall and Receiving Stream

Description of Facility & Outfall(s)

Details for Facility:

POTW ☒ Privately Owned Facility ☐

EPA MAJOR ☒ EPA MINOR ☐ Chesapeake Bay Significant ☒

Service Area Brief Description: The facility serves Baltimore City, Baltimore County, Anne Arundel County and Howard County

Population Served: 504,000, 5-year projection flow: 70.0 MGD

The proposed discharge flow of 73.0 Million Gallons per Day (MGD), up to 81.0 MGD contingent upon the re-rating of the current design capacity, is consistent with the capacity listed in the latest Baltimore City's Comprehensive/Master Water and Sewer Plan, as amended and adopted in 2006 by the Baltimore City, and approved by MDE's Water Resources Planning Program. It is also in conformance with the State's Smart Growth initiatives.

As agreed upon in the Consent Order CO-15-2208, the City of Baltimore is to upgrade the Patapsco WWTP to an ENR facility with design flow of 81 MGD. This upgrade was completed in January 2022. However, updated effluent limits have not yet been requested by the City or Patapsco WWTP. Effluent limits have been included at both the previous 73 MGD and presumed current 81 MGD capacity of the facility, pending notification from the City or the facility.

Current Design Capacity of the Facility: 73.0 MGD

Which of the following documents were used as the base of the design capacity? (Check boxes as appropriate.)

☐ Construction Permit (Issued by MDE), ☒ Most updated W/S Plan (2006)
☒ Permit Application ☐ Other (Specify)

Additional comments on the plant capacity: 2.6 Million Gallons per day I/I affecting plant capacity.

Type of Discharge: ☒ Surface Discharge, Discharge Period: 12 months (January – December)
☐ Groundwater Discharge, Discharge Period: 12 months (January – December)

Additional comments on the discharge type: Continuous discharge.

Wastewater Treatment Processes:

Grit removal, mechanical screens, primary clarifiers, oxygen activated sludge reactors, secondary clarifiers, biological aerated filters for nitrification, denitrification filters, flow distribution chamber, chlorine contact chamber and cascade post aeration chamber.

I. Description of Facility, Outfall and Receiving Stream

Details for Outfall:				
Outfall Type:	*Non-submerged discharge*: Yes ☐ No ☒ N/A ☐ Pipe ☐ Ditch ☐ Outfall Distance from the last sampling point: _____ *Submerged Discharge*: Yes ☒ No ☐ N/A ☐ Distance from the last sampling point: 824 ft., Diameter of the diffusers: 3 ft. Distance from Shore: 824 ft , Depth: 18 ft , No. of Diffuser(s): 16			
Outfall Location:	**GPS Readings**		**Maryland Coordinates (NAD27), feet**	
	Latitude	Longitude	North	East
	39° 14' 0" (N)	76° 33' 47" (W)	510,154	923,773

Details for Effluent Receiving Stream	
Name of Stream	Patapsco River which flows into the Chesapeake Bay.
Type of Stream	Tidal River
Stream Use Designation	Patapsco River is designated as Use II Waters Chesapeake Bay is designated as Use II Waters
River Mile	7.5 Miles (from outfall 001A to confluence of the Patapsco River to the Chesapeake Bay)
Watershed	8-Digit Sub-watershed Code 02-13-09-03 CBPSEG Code (PATMH- Patapsco River Mesohaline)
Tier II Waters	Receiving stream(s) designated as Tier II water Yes ☐ No ☒ Tier II rules applicable to discharge Yes ☐ No ☒ N/A ☐ Refer to Section "Anti-degradation Policy review" on page(s) 37 for further details.

I. Description of Facility, Outfall and Receiving Stream

Details for Effluent Receiving Stream				
Does the facility discharge into impaired waters included on (303(d) list)?	Yes ☒ No ☐ As per the approved Integrated Report of Surface Water Quality (formerly known as the 303(d) List and 305(b) Report)**,** the streams in the Patapsco River Mesohaline sub-watershed are listed as impaired water bodies due to total phosphorus, total nitrogen and total suspended solids (1996), Enterococcus (1998), PCBs (1998), Chlordane (1998), Sulfate (2014), impact to biological communities (2004) and Debris/Floatables (2008).			
Approved Total Maximum Daily Load (TMDL) / Water Quality Analysis (WQA) for concerned parameter(s)	Any approved TMDL(s) for Patapsco River Mesohaline sub-watershed Yes ☒ No ☐ Total Nitrogen, Total Phosphorus and Total suspended Solids TMDL for the Chesapeake Bay was approved on 12/29/2010. Baltimore Harbor Nutrients TMDL was approved 12/17/2007 and revised on 5/11/2022, Chlordane TMDL was approved on March 20, 2001, PCBs TMDL was approved on 10/1/2012, Sediment TMDL approved on 1/27/2022, WQA for Zinc approved on 1/14/2022.			
	Is the Patapsco River a part of the Chesapeake Bay TMDL (as accepted by EPA on 12/29/2010)? Yes ☒ No ☐			
Background Stream Flows (See PROJECT FILE for details):	Period	7Q10 Low-flow, cfs	30Q5 Low-flow, cfs	Average Flow, cfs
	5/1 To 10/31	488.70	1052.50	N/A
	11/1 To 4/30	488.70	1052.50	N/A
	Annual*	N/A	N/A	N/A
	* Annual average flow is not applicable to tidally influenced waterbody.			

Summary of Effluent Quality and Compliance History during Previous Discharge Permit (15-DP-0580) Cycle:

Duration of Plant Performance History Reviewed: 1/1/2019 - 12/31/2023

Source(s) of Plant Performance History: USEPA ICIS Database and NetDMRs

I. Description of Facility, Outfall and Receiving Stream

(a) Summary of Effluent Quality:

Parameter	Statistical Basis	Concentration	Quantity
BOD_5	mth. avg.	13.2 Avg. (4.0 - 40) mg/l	5,946.7 Avg. (Range) lbs./d.
Total Suspended Solids (TSS)	mth. avg.	11.8 Avg. (2.0 - 61) mg/l	5,315 Avg. (Range) lbs./d. 1,876,700 lbs/yr
Total Ammonia Nitrogen as N (5/1 to 10/31)	mth. avg.	3.7 Avg.(0.3 – 14.2) mg/l	1,620.3 Avg. (Range) lbs./d.
Organic Nitrogen as N	mth. avg.	2.2 Avg. (0.6 – 6.3) mg/l	N/A
(Nitrite + Nitrate) as N	mth. avg.	2.2 Avg. (0.26 – 15.7) mg/l	N/A
Total Nitrogen as N	mth. avg. Total Annual 5/1-10/31	8.4 Avg. (2.2 – 23.6) mg/l N/A	N/A 1,315,220 Avg. lbs./yr 395,353.3 Avg lbs/Season
Total Phosphorus as P	mth. avg. Total Annual 5/1-10/31	0.9 Avg. (0.1 – 2.8) mg/l N/A	N/A 141,200 Avg. lbs./yr 44,883.3 Avg. lbs/Season
Orthophosphate as P	mth. avg.	0.4 Ave (range) mg/l	N/A
Enterococci	mth. geometric mean	25.8 Avg. (3 - 176) MPN/100ml	N/A
Total Residual Chlorine (TRC)	max.	Avg. (Range) mg/l	N/A
pH	min. max.	6.7 Avg. (6.3 – 7.1) SU 7.8Avg. (7.3 – 8.3) SU	N/A
Dissolved Oxygen (DO)	min. at any time min. d. avg. min. wk avg.	6.8 Avg. mg/l (4.8 – 9.5) Avg. mg/l (Range) Avg. mg/l (Range)	N/A
Flow	mth. avg	N/A N/A	51.3 Avg (36.7 – 68.4) MGD
Total Flow	mth. annual	N/A N/A	1,556.4 Avg (1,101 – 2,119) MG/mth 18,677 Avg. (18,091 – 19,194) MG/yr.

I. Description of Facility, Outfall and Receiving Stream

Are there any Non Compliance (NC) violations on record? Yes ☒ No ☐

Are those NC pertinent to the Numeric Effluent Limitations? Yes ☒ No ☐

If Yes, list numeric violations' summary below.

(b) Numeric Effluent Limitations Violations:

Parameter	Violations Reported in Month/Year
BOD_5	04/2021, 05/2021, 01/2022, 02/2022, 04/2022
TSS	08/2020, 04/2021, 05/2021, 06/2021, 07/2021, 02/2022, 04/2022
Total Ammonia Nitrogen as N	08/2018, 09/2018, 05/2021, 06/2021, 07/2021, 05/2022, 06/2022, 07/2022, 08/2022
Total Nitrogen as N	04/2018, 05/2018, 06/2018, 07/2018, 08/2018, 09/2018, 10/2018, 11/2018, 12/2018, 08/2020, 09/2020, 10/2020, 11/2020, 12/2020, 05/2021, 06/2021, 07/2021, 08/2021, 09/2021, 10/2021, 11/2021, 12/2021, 04/2022, 05/2022, 06/2022, 07/2022, 08/2022, 9/30/2022, 10/31/2022, 11/30/2022, 12/31/2022
Total Phosphorus as P	06/2018, 07/2018, 08/2018, 09/2018, 10/2018, 11/2018, 12/2018, 07/2019, 08/2019, 09/2019, 10/2019, 11/2019, 12/2019, 07/2020, 08/2020, 09/2020, 10/2020, 11/2020, 12/2020, 05/2021, 06/2021, 07/2021, 08/2021, 09/2021, 10/2021, 11/2021, 12/2021, 01/2022, 02/2022, 03/2022, 04/2022, 05/2022, 06/2022, 07/2022, 08/2022, 9/30/2022, 10/31/2022, 11/30/2022, 12/31/2022
Enterococci	08/2018, 09/2018, 03/2019, 06/2019, 07/2019, 01/2020, 07/2020, 08/2020, 03/2021, 04/2021, 05/2021, 06/2021, 07/2021, 01/2022, 04/2022, 05/2022
Dissolved Oxygen	03/2023

I. Description of Facility, Outfall and Receiving Stream

Are there any Non Compliance (NC) Action or Order Pending? Yes ☒ No ☐

If YES, include narrative of details provided by Compliance Program.

Consent Decree 24-C-22-000386

The Maryland Department of the Environment (MDE) and Blue Water Baltimore, Inc. filed a lawsuit in the Circuit Court for Baltimore City seeking injunctive relief and penalties against Mayor and City Council of Baltimore, alleging violations of the Clean Water Act (CWA), Federal Water Pollution Control Act 33 U.S.C. § 1251 et seq., the Environment Article of the Annotated Code of Maryland, and the existing permit for National Pollution Discharge Elimination System (NPDES) Permit No. MD0021601 (15-DP-0580), at Back River Wastewater Treatment Plant (WWTP).

Patapsco WWTP experienced a decline in proper operations and maintenance actions at the facility, during its current permit cycle, leading to numerous violations of multiple General and Special Conditions of its discharge permit 15-DP-0580. These violations include effluent limit exceedances, failure to submit sampling results and DMR non-compliance reports, failure to comply with sampling & testing protocols and equipment maintenance schedules, and failure to submit required reports.

The Consent Decree mandates the City to take corrective actions within applicable deadlines and publish quarterly progress reports.

MDE's Compliance Program, in a letter dated November 16, 2023, informed the City of Baltimore DPW to pay a stipulated penalty of $1,425,000 per the terms of the Consent Decree.

SSO Modified Consent Decree JFM-02-1524

The United States Environmental Protection Agency (USEPA), the Maryland Department of the Environment (MDE), and the City of Baltimore ("Baltimore City", "the City") entered into a Consent Decree (CD) on September 30, 2002, that required the City to eliminate Sanitary Sewer Overflows (SSOs) and Dry Weather Overflows through repairs, improvements and upgrades, from its collection system by January 1, 2016.

However, due to the identification of a hydraulic restriction within the City's collection system impacting flow to Back River WWTP and the scope of work to be completed, the City entered into a Modified Consent Decree (MCD), binding on both Back River WWTP and Patapsco WWTP, on October 6, 2017, to supersede the 2002 CD.

Under the MCD, the City will complete corrective actions through a two-phase approach (Phase I and Phase II Plan), with final upgrades and maintenance scheduled to be completed by December 31, 2030. The MCD also requires the City to submit quarterly reports to the EPA and MDE, detailing progress towards the milestones within each Phase.

II. Special Requirements and Conditions

WWTP meeting at least 85% reduction of BOD_5 and TSS Yes ☒ No ☐ N/A ☐

Based on the plant performance records for 1/1/19-12/31/2023, the effluent BOD_5 and TSS are averaged 13.2 mg/l and 11.8 mg/l, respectively. Using BOD_5 and TSS concentration of 200 mg/l for typical raw-sewage influent (as stated in the technical manuals), this facility removes approximately 93 % of BOD_5 and TSS on monthly average basis. The 85 % (percent) removed limits are included in conjunction with the monthly average monitoring requirement for these parameters in the effluent and influent for the respective parameter. Refer to Section III (Proposed Effluent Limitations and Monitoring Requirements) for further details.

Rationale: 40CFR, PART 133, §133.102

Enhanced Nutrient Removal (ENR) Requirements: ENR Limits ☒ ENR Goal ☐ N/A ☐

As per the Chesapeake Bay TMDL, Patapsco WWTP has been assigned with the annual maximum Waste Load Allocations (WLAs) of 889,300 pounds/year for Total nitrogen (TN) and 66,700 pounds/year for Total Phosphorus (TP), which are based on TN concentration of 4.0 mg/l, TP concentration of 0.3 mg/l and current design capacity of 73.0 MGD.

This is an ENR significant WWTP with a design capacity of greater than 0.5 MGD discharging into the Chesapeake Bay Water Quality Segment - PATMH_MD (Patapsco River Mesohaline - Maryland). As per the current Departmental Guidelines for the ENR requirements, the above stated WLAs for TN and TP are incorporated to establish the annual maximum load limits for the proposed permit renewal.

Rationale: Updated Watershed Implementation Plan of the Chesapeake Bay TMDL

Is the Facility eligible for "Nutrient and Sediment Performance-based Credit Loads"? Yes ☒ No ☐

Is the Monitoring and Reporting Schedule included? Yes ☒ No ☐ N/A ☐

Because ENR upgrades at the Patapsco WWTP were already completed and fully operated since **01/2020**; this facility is eligible under COMAR 26.08.11 (Maryland Water Quality Trading Program) to generate the performance-based credit of sediment, TN and TP credits for trading to industrial and municipal stormwater permit holders. In order to generate the performance-based credits for a calendar year, the permittee will be required to complete the form "Credit Verification and Registration Form for Wastewater Point Source" based on the plant performance results of the previous calendar year, and submit the form to the Department's Water and Science Administration Trading Administrator by the end of January of the calendar year in question. This form can be obtained from MDE's website link listed below: https://mde.maryland.gov/programs/Water/WQT/Pages/WQT_Tools_Resources.aspx and click on "Point Source/WW Credit Registration" to download the form.

Refer to Section III.B (Proposed Effluent Limits and Monitoring Requirements) on pages 27 and 28 for the monitoring and reporting details.

II. Special Requirements and Conditions

Rationale: COMAR 26.08.11 (Maryland Water Quality Trading Program Regulations)

TMDL Implementation Requirements: Yes ☒ No ☐ N/A ☐,

The Total Nitrogen, Total Phosphorus, Total Suspended Solids and PCBs Waste Load Allocations (WLAs) for the Patapsco WWTP included in the TMDLs for the Chesapeake Bay and Baltimore Harbor are as follows:

Baltimore Harbor Nutrients TMDL Allocations
Approved on 12/17/2007

Total Nitrogen (5/1-10/31) = 333,330 lbs
Total Phosphorus (5/1-10/31) = 33,330 lbs
Total Nitrogen (1/1-12/31) = 889,453 lbs
Total Phosphorus (1/1-12/31) = 66,709 lbs
Total Suspended Solids (1/1-12/31) = 6,669,776 lbs

Chesapeake Bay Nutrients TMDL Allocations
Approved on 12/29/2010

Total Nitrogen (1/1-12/31) = 889,304 lbs
Total Phosphorus (1/1-12/31) = 66,698 lbs
Total Suspended Solids (1/1-12/31) = 6,669,776 lbs

PCB TMDL Allocation
Approved on 10/1/2012

PCBs (1/1-12/31) = 27.20 grams/yr

Rationale: 40 CFR §130.7, The approved TMDLs of Total Nitrogen, Total Phosphorus, Total Suspended Solids for the Baltimore Harbor and the Chesapeake Bay. Approved PCBs TMDL for Baltimore Harbor

Was WET testing required in the previous discharge permit (15-DP-0580)? Yes ☒ No ☐ N/A ☐

The previous permit (15-DP-0580) required the permittee to perform definitive annual chronic testing using *Americamysis bahia* and *Cyprinodon variegatus* as test organisms. The test results submitted between the period 2/2018 – 1/2021 were reviewed. The test results are summarized below:

TEST PERIOD	TEST SPECIES	TEST RESULTS	
		48-hour LC_{50} (ACUTE)	IC_{25} (CHRONIC)
2/14/2018	C. variegatus	**>100**	**>100**
	A. bahia	**>100**	**42.7**
2/10/2019	C. variegatus	**>100**	**>100**
	A. bahia	**>100**	**70.0**

II. Special Requirements and Conditions

2/10/2020	C. variegatus	**>100**	**>100**
	A. bahia	**>100**	**35.2**
1/11/2021	C. variegatus	**>100**	**>100**
	A. bahia	**>100**	**>100**

Is WET testing proposed for the permit? Yes ☒ No ☐ N/A ☐

Biological testing for the whole effluent toxicity determination is required for POTWs with (a) flows equal to or greater than 1.0 mgd or an approved pretreatment program, (b) a discharger that has demonstrated actual or potential toxicity, or (c) a discharger whose discharge the Department believes may cause toxicity as determined by an evaluation of manufacturing processes, indirect discharges, treatment processes, effluent or receiving water data, or other relevant information.

Estimation of Instream Waste Concentration (IWC) for WET:

For Discharge to Tidal (Estuarine) waters (Submerged Outfall):

$$IWC(\%) = \left\lfloor \frac{81.0 \times 1.5472}{((81.0 \times 1.5472) + 350.83} \right\rfloor \times 100 = \mathbf{26.32\ \%}$$

$$Q_{RWE} = \left\lceil \frac{(1 - 0.2632)}{0.2632} \right\rceil \times 81.0 \times 1.5472 = \mathbf{350.83\ cfs}$$

Where, Q_D = Plant permitted flow = 81.0, MGD
Q_{RWE} = Calculated equivalent annual 30Q5 low-flow (for *tidally influenced stream*) , cfs
F = Chronic Toxicity Dilution factor = 0.2632

II. Special Requirements and Conditions

Are WET limits proposed for the permit? Yes ☐ No ☒ N/A ☐

Since 2012, the effluent data from Outfall 001A has shown intermittent toxicity to the *Americamysis bahia.* The test results show an inhibition of both growth and fecundity. The IC25s for the tests that demonstrated toxicity ranged from 35.2 to 82.4%. However, given the IC25s observed from all tests are above the IWC (26.3% based on the maximum design capacity), none of the test results are considered toxic. As a result, a WET limit is not required for this permit renewal. To verify whether seasonal and operational changes at the facility may affect water chemistry, the permit adds the requirement of quarterly chronic testing for the first year of the permit cycle, followed by three annual chronic testing events.

Rationale: COMAR 26.08.03.07D(1,) COMAR 26.08.03.07E and MDE's "Effluent Biotoxicity Testing Protocol, as amended Jan. 2019" which can be downloaded from the Department's website link: https://mdewwp.page.link/Biomonitoring (this link is case-sensitive).

Was Toxic Chemical Testing required in the previous discharge permit (15-DP-0580)? Yes ☒ No ☐ N/A ☐

A total of sixty effluent toxic chemical tests were performed from July 2018 through June 2023. All the available data for toxic pollutants reported in TCT reports have been reviewed, and it was determined that the laboratory reported pollutants to the non-detectable level using the reporting limits based on the 2011 Minimum Quantification Levels (MQLs) and Reporting Detection Limit (RDLs) were significantly higher than the 2019 MQLs and RDLs. As a result, multiple pollutants that resulted from "non-detect" according the 2011 MQLs and RDLs may be present in the effluent as potential risks according to the 2019 MQLs and RDLs, which are more stringent than those of 2011. The results from the analysis indicated that the levels of the following 35 (thirty-five) pollutants (as shown in the table below) exceeded the toxicity criteria set for chronic aquatic life or human health. As a result, quarterly monitoring for these chemicals will be required (using the updated RDL from the new test protocol) to gather additional information.

II. Special Requirements and Conditions

Patapsco WWTP TCT data	**Av. Conc used for Analysis based on Results reported**	**RDLs used for Analysis are based on RDLs reported and are above Protocol**
Paramenter	**ug/l**	**ug/l**
Copper	5.8	0.064
Cyanide total	8.5	5.0
Cyanide free	6.9	2.0
Nickel	4.2	0.2
Thallium	0.5	0.064
Aldrin	3.4	0.0000077
Dieldrin	0.019	0.000012
4,4-DDD	0.019	0.0012
4,4-DDE	0.019	0.0013
4,4-DDT	0.019	0.0003
Beta-BHC	0.019	0.0013
Chlordane	0.19	0.0031
Endosulfan sulfate	0.019	0.0013
Endrin	0.019	0.0023
Heptachlor	0.019	0.000059
Heptachlor epoxide	0.019	0.00032
Toxaphene	0.49	0.002
1,2 Diphenylhydrazine	3.0	0.5
3,3 Dichlorobenzidine	3.0	0.49
Benzadine	4.0	0.0014
Benzo (a) Anthracene	1.5	0.012
Bezno (a) Pyerene	1.5	0.0012
Benzo (b) Fluoranthene	1.5	0.012
Benzo (k) Fluoranthene	1.5	0.05
Bis(2-Chloroethyl) Ether	3.0	0.3
Bis(2-Ethylhexyl) Phthalate	3.0	3.0
Chrysene	1.5	0.038
Dibenzo(a,h)Anthracene	1.5	0.0012
Hexachlorobenzene	3.0	0.00079
Ideno(1,2,3-cd)Pyrene	1.5	0.012
N-Nitrosodi-n-Propylamine	3.0	0.05
Acrolein	2.5	2.5
Acrylonitrile	5.0	0.61
2,4,6-Trichlorophenol	3.0	2.0
Pentachlorophenol (PCP)	6.0	2.7

II. Special Requirements and Conditions

Is Toxic Chemical Testing (TCT) proposed? Yes ☒ No ☐ N/A ☐

TCT is required for POTWs with (a) flows equal to or greater than 1.0 mgd or an approved pretreatment program, (b) a discharger that has demonstrated actual or potential toxicity, or (c) a discharger whose discharge the Department believes may cause toxicity as determined by an evaluation of manufacturing processes, indirect discharges, treatment processes, effluent or receiving water data, or other relevant information.

For this permit renewal, the facility shall perform three (3) TCTs in: the 1st quarter of the 1st calendar year, and; the 2nd and 3rd concurrently with the 2nd and 3rd year's WET testing. The permittee will also test for the additional 35 (thirty-five) toxic parameters listed in the previous section for the first year of the permit cycle. Upon completion of the fourth test, the Department will review the submitted results and determine the need to discontinue monitoring for the additional parameters.

Rationale: *COMAR 26.08.03.07D(1) and MDE's "Toxic Pollutant Analytical and Reporting Requirements Protocol and Reporting Requirements for Toxic Chemical Testing Analytical Data, as amended Dec. 2023" which can be downloaded from Department's website link: https://mdewwp.page.link/TCT (this link is case-sensitive)."*

Wastewater Capacity Management

Does the proposed permit include condition pertaining to the wastewater flow capacity management? Yes ☒ No ☐

If Yes, does the proposed permit require submittal of Wastewater Capacity Management Plan (WCMP)? Yes ☐ No ☒

The Department considers two criteria when determining the requirement for submission of a Wastewater Capacity Management Plan (WCMP):

(1) If the annual average flows for the most recent three calendar years exceed the 80% design capacity per MDE's "Guidance Document Wastewater Capacity Management Plans, 2006" and

(2) If the Annual Monthly Flow Peaking Factor (PF) is greater than the facility Design Flow PF as stated in the Department's "Design Guidance for Wastewater Treatment Facilities, 2021" document.

Based on the DMR data analyzed for the most recent three years (2021 – 2023), and as shown in the table below, the annual average discharge flow from Outfall 001A combined was 70.2% of the existing rated capacity of 73.0 MGD. Therefore, a WCMP is not required to be submitted at this time.

Year	Annual Avg Flow *(MGD)*	Design Capacity (MGD)
	Outfall 001A	
2021	50.259	73
2022	51.653	73

II. Special Requirements and Conditions

Year	Annual Avg Flow *(MGD)*	Design Capacity (MGD)
	Outfall 001A	
2023	51.779	73
Average Flow	**51.230**	

To calculate the Peaking Factor, the Department used effluent data for the same three calendar years (2021 – 2023). The Annual Monthly Flow PF for 2023 was calculated as 1.22, exceeding the design flow PF of 1.2.

Year	Annual Daily Average Flow (MGD)	Max. Monthly Average Flow (MGD)	Annual Monthly Flow PF	Design Flow PF
2021	50.259	57.3	1.14	1.2
2022	51.653	60.31	1.17	1.2
2023	51.779	63.15	**1.22**	1.2

Rationale: MDE's Guidance Document "Wastewater Capacity Management Plans, 2006" and "Design Guidance for Wastewater Treatment Facilities, 2021"

Pretreatment Program/Influent Restriction

WWTP with approved pretreatment program ☒ Non-pretreatment program WWTP ☐

Rationale: COMAR 26.08.08 and Department Guidelines

II. Special Requirements and Conditions

Reapplication Due Date for Next Permit Renewal

Per the Departmental guidelines for the watershed permitting, the next renewal of a discharge permit for the Patapsco WWTP is scheduled for 1st quarter, 3rd year in cycle with the projected renewal application date of 01/01/2026 and reissuance date of 04/01/2027.

The issuance date of this proposed permit will be established after fulfilling all the formalities of the public participation process. It is anticipated that a period between the proposed permit issuance date and the above stated reapplication date for the next permit cycle year would likely be less than three years. As per the USEPA's guidelines for NPDES discharge permit, it is suggested that the facility's performance results for a period of at least three years should be considered for the next permit renewal processing; and therefore, the reapplication due date for the proposed discharge permit will be set as "No later than 12 months" or "No later than 18 months" before the expiration date of the proposed permit.

Rationale: *COMAR 26.08.04.01 and Departmental Guidelines.*

Are temperature requirements included? Yes ☐ No ☒

For Use I, I-P, II, II-P waters:

The Department recognizes that WWTP effluent may involve a thermal component. For this discharge, there is no reasonable potential for the temperature to exceed 90° F or the ambient temperature of the surface waters criteria in COMAR 26.08.02.03-3; therefore, temperature limitations and monitoring are not required.

Rationale: COMAR 26.08.02.03-3

Is the emergency holding pond required? Yes ☐ No ☒

Rationale: *COMAR 26.08.04.04C(2)(c)*

II. Special Requirements and Conditions

Climate Change Resiliency Requirements

The effects of climate change are projected to be more pronounced in the coming decades. As a result, the intensity and frequency of extreme weather events may quickly overload the wastewater facility hydraulically, disrupt the operation in the treatment works, and cause the potential endangerment of aquatic life and public health.

Refer to Special Condition II.L. of the discharge permit for requirements.

Rationale: *MDE's Water and Science Administration (WSA) Climate Integration Policy and Guidance, and 07/22/2020, EPA's Climate Resilient Water Utility (CRWU) Initiative (https://www.epa.gov/crwu)*

Per- and Polyfluorinated Alkyl Substances (PFAS) Study Plan and Monitoring Requirement

Does the proposed permit require report submittal requirement for (PFAS) Study Plan and monitoring? Yes ☒ No ☐

Patapsco WWTP accepts wastewater from several Significant Industrial Users (SIUs) with a potential to elevate levels of Per- and Polyfluorinated Alkyl Substances (PFAS) in the treatment works. Additionally, owing to the size of the treatment works, the facility generates a substantial amount of effluent and biosolids that are contaminated with PFAS compounds.

Due to the increasing awareness of risks posed by PFAS compounds, the Department initiated a survey to investigate the levels of PFAS at publicly owned treatment works (POTWs) across the State. MDE conducted two rounds of sampling at the Patapsco WWTP on 11/6/2022 and 12/21/2022. The results of the survey showed elevated levels of multiple PFAS compounds in the effluent.

However, with the facility operating at less-than-optimal conditions during the recent few years, and per the EPA memorandum addressing PFAS discharges in the NPDES permits, the Department requires additional testing and analysis of PFAS compounds within the Patapsco WWTP during this permit renewal.

The PFAS monitoring schedule shall include definitive four quarterly sampling events within the twelve (12) month period after approval of the PFAS Monitoring Plan which shall be submitted no later than 90 (ninety) days from the effective date of the discharge permit. Each testing event of PFAS compounds shall include samples from influent, effluent, and sludge biosolids to be taken on the same day, and samples shall be analyzed using the EPA Method 1633 (EPA 821-R-24-001).

Refer to the Discharge Permit Special Condition II.P for details of the requirements.

Rationale: Department's strategy to address risk posed by exposure to PFAS, an emerging and evolving national concern and EPA Method 1633 (EPA 821-R-24-001)

II. Special Requirements and Conditions

PCB Monitoring, Reporting and Minimization

Does the proposed permit require submission of a PCB Minimization Plan? Yes ☒ No ☐

Patapsco WWTP is assigned an annual tPCB WLA of 27.2 grams per year for Outfall 001A.

As a result of the continual tPCBs exceedances against the assigned WLAs during the previous permit cycle, 15-DP-0580, the Department is continuing the previous permit requirements for quarterly tPCB monitoring and reporting, in conjunction with mandating the submission of a PCB Minimization Plan (The Plan) in Special Condition II.P. of the discharge permit.

The Plan shall identify sources of PCB discharges within the facility, outline specific BMPs to be implemented, establish a plan to monitor the effectiveness of BMPs, and provide a timeline for its completion.

For further details see Special Condition II.P.2 of the discharge permit.

Rationale: Baltimore Harbor TMDLs, Consent Decree, Case No. 24-C-22-000386

Operations and Maintenance (O&M) Guidance Checklist

To ensure optimized processes and operations across all POTWs equipped with ENR treatment technologies, and to assist in achieving compliance, the Department has designed an O&M Guidance checklist for ENR facilities to submit as part of the permit renewal process.

To this end, the Department requires the permittee to submit the O&M guidance checklist no later than twelve months after the effective date of the permit for review and approval. For further details see Special Condition II.Q of the discharge permit.

Rationale: Department Policy for Operation and Maintenance Requirements of ENR Facilities

II. Special Requirements and Conditions

Wastewater Treatment Plant Operator Licensing and Certification

Multiple site visits conducted by MDE's Compliance Program in recent years have cited Patapsco WWTP for lacking both adequate and qualified wastewater treatment plant operators. The reports also identified the facility in violation of General Condition III(B)(3)(b) of the permit. Inadequate and unqualified staffing at the facility have also contributed to the non-compliance experienced by the plant.

Therefore, to ensure optimal operations and maintenance at the facility, a new Special Condition II.R., requiring wastewater operators supervising the operations and maintenance activities to have at minimum a certified Class 5A license and meet all qualifications in COMAR 26.06.01 is added to this permit renewal. The facility must not be operated at any time without a certified operator meeting these requirements on duty.

The permittee is required to update the Department on their progress with adequate staffing and licensure statuses as part of the O&M Checklist mentioned in Special Condition II.Q of the permit.

Rationale: COMAR 26.06.01, and Consent Order Case No. 24-C-22-000386

Maintenance of Laboratory Certification Records

During a review of analytical data for the previous permit cycle, the Department observed multiple occurrences of improper sample collection, preservation, holding times, and/or laboratory analysis of one or more parameters, at times caused by mishandling on the part of the contract laboratory.

Therefore, the Department requires the facility to maintain on-site certification records of all analytical laboratories used for monitoring effluent parameters and be available for review upon request.

Refer to Special Condition II.M of the permit for further details.

Rationale: 40 CFR 136, Consent Decree, Case No. 24-C-22-000386

II. Special Requirements and Conditions

Effluent Bacterial Action Level – Protection of Recreational Activity in receiving waters

This permit requires the permittee to monitor and report both the Statistical Threshold Value (STV) and the Geometric Mean (GM) criteria for Enterococci. The "action level" established for the STV criterion in the permit ensures public safety during warmer-season (April 1st through October 31st) water recreation activities. This requirement aligns with EPA's 2012 Recreational Water Quality Criteria, which protect the designated use of primary contact recreation for receiving waters and reduce the risk of human illnesses from pathogens.

Results of individual sampling conducted by MDE as well as the plant performance analysis (2019-2023) have indicated high counts of bacteria levels in the Patapsco River within the vicinity of the treatment plant and in the facility's treated effluent, respectively.

The STV criterion is incorporated as an indicator of aquatic microbial quality and is calculated as a 90th percentile. It considers the variability of sample results in a calendar month to determine the probability of a facility exceeding its bacterial threshold level.

To ensure public awareness, the permittee shall notify MDE and the local health department within 24 hours of the STV exceedance. The notification shall be followed by a five (5) day report detailing the effectiveness of the implemented action(s) taken to address the exceedance.

Implementation of these measures will not only ensure the safeguarding of public health but will also allow for protection of the designated primary contact recreational use for the individual receiving waters.

For more details refer to Special Condition II.S of the discharge permit.

***Rationale**: EPA 2012 Recreational Water Quality Criteria, COMAR 26.08.02.03-3*

Fat, Oil and Grease (FOG) Mitigation Plan

The Consent Order Case No. 24-C-22-000386 addresses continuing problems in the facility's ability to achieve successful FOG mitigation as required by the previous discharge permit, 15-DP-0580. To safeguard the functionality of the treatment works, uphold effluent quality, and ensure unwavering adherence to the narrative discharge standards stipulated in this permit, the FOG mitigation plan is continued and the requirements are expanded in the permit 21-DP-0580 to include the following components:

a) Regular maintenance and skimmer repairs, as required by Consent Order (24-C-22-000386).
b) Effective enforcement of pretreatment requirements.
c) Engaging in public outreach initiatives.
d) Elevation of water level or lowering of scum logs during standard flow conditions.
e) Formulation and implementation of an effective FOG mitigation control strategy.
f) Employing source tracking methodologies and deploying targeted mitigation strategies to address identified FOG sources.

Additionally, the permittee shall provide the Department with detailed reports, on an *annual* basis, identifying all actions taken to adhere to the provision of the plan.

Refer to Special Condition II.T of the permit for further details.

Rationale: MDE Compliance Inspection Reports, and Consent Order Case No. 24-C-22-000386

III. Proposed Effluent Limits and Monitoring Requirements

The effluent limits and monitoring requirements, as listed below, are proposed to process the application for the discharge permit renewal.

(a) For Effluent Discharged at Outfall 001A (001B after expansion):

The quality of the effluent discharged by the facility at the discharge location (Outfall 001A/001B after expansion) [(1) (2) (3) (4)] shall be limited and/or monitored at all times as shown below. The effluent characteristics shall be monitored all the time at the Sampling Point (discharge permit Definition I.U) located at {Submerged Outfall, 39° 14' 6" N / 76° 33' 20.2" W}. The permittee shall ensure that the effluent samples taken at the above stated sampling point are representative of the effluent quality discharged at the Outfall 001.

The effluent discharged at Outfall 001B shall occur only after completion of a public participation process and issuance of a major permit modification by the Department. See Special Condition II.A.2 of the Discharge Permit for further details.

Effluent Characteristics	Requirements	Period	Quantity	Concentration	Footnotes
BOD_5	**Limits for 73.0 mgd**	All Year	18,000 lbs./d. (max mth. avg.) 27,000 lbs/d (max wk. avg.)	30 mg/l (max mth. avg.) 45 mg/l (max wk. avg)	N/A
	Limits for 81.0 mgd	All Year	18,000 lbs./d. (max mth. avg.) 27,000 lbs./d. (max wk. avg.)	27 mg/l (max mth. avg.) 40 mg/l (max wk. avg.)	
	Minimum Monitoring	All Year	**Frequency** One per day	**Sample Type** 24-hour composite**	(10)(22)
BOD_5, Percent Removal	**Limits**	All Year	N/A	85 % (min. mth, avg.)	(9)
	Minimum Monitoring	All Year	**Frequency** One per quarter	**Sample Type** Calculated	(10)(21)(22)
Total Suspended Solids (TSS)	**Limits for 73.0 mgd**	All Year	18,000 lbs./d. (max mth. avg.) 27,000 lbs./d. (max wk. avg.) 6,669,776 lbs./yr. (annual max)	30 mg/l (max mth. avg.) 45 mg/l (max wk. avg.)	N/A
	Limits for 81.0 mgd	All Year	18,000 lbs./d. (max mth. avg.) 27,000 lbs./d. (max wk. avg.) 6,669,776 lbs./yr. (annual max)	27 mg/l (max mth. avg.) 40 mg/l (max wk. avg.)	
	Minimum Monitoring	All Year	**Frequency** One per day	**Sample Type** 24-hour composite**	(10)(22)
TSS, Percent Removal	**Limits**	All Year	N/A	85 % (min. mth, avg.)	(9)
	Minimum Monitoring	All Year	**Frequency** One per quarter	**Sample Type** Calculated	(10)(21)(22)

III. Proposed Effluent Limits and Monitoring Requirements

Effluent Characteristics	Requirements	Period	Quantity	Concentration	Footnotes
Total Kjedahl Nitrogen (TKN)	**Limits**	5/1 – 10/31	lbs./d. (max mth. avg.) lbs./d. (max wk. avg.)	mg/l (max mth. avg.) mg/l (max wk. avg.)	N/A
	Minimum Monitoring	All Year	**Frequency** One per day	**Sample Type** 24-hour composite**	(10)(11)(12)
Total Ammonia Nitrogen as N	**Limits for 73.0 mgd**	5/1-10/31	2,983 lbs/d. (max mth. avg) 13,151 lbs/d. (max.daily)	4.9 mg/l (max mth. avg.) 21.6 mg/l (max daily)	
		11/1-4/30	5,337 lbs/d (max mth.avg) N/A lbs/d (max daily	7.9 mg/l (max.mth.avg.) N/A mg/l (max daily)	
	Limits for 81.0 mgd	5/1-10/31	3,175 lbs/d. (max mth. avg) 12,633 lbs/d. (max.daily)	4.7 mg/l (max mth. avg.) 18.7 mg/l (max daily)	
		11/1-4/30	4,871 lbs/d (max mth.avg) N/A lbs/d (max daily	8.0 mg/l (max.mth.avg.) N/A mg/l (max daily)	
	Minimum Monitoring	All Year	**Frequency** One per day	**Sample Type** 24-hour composite	(10)(12)
Organic Nitrogen as N (Monitoring only parameter)	**Reporting**	All Year	N/A	REPORT mg/l (mth. avg.)	(10)(11)(12)
	Minimum Monitoring		**Frequency** One per day	**Sample Type** Calculated	
(Nitrite + Nitrate) as N (Monitoring only parameter)	**Reporting**	All Year	N/A	REPORT mg/l (mth. avg.)	(10)(11)(12)
	Minimum Monitoring		**Frequency** One per day	**Sample Type** 24-hour composite**	
Total Nitrogen as N	**Limits for 73.0 and 81.0 mgd**	(5/1-10/31) All Year	333,330 lbs. (5/1-10/31) 889,300 lbs/yr. (annual max)	REPORT mg/l (mth. avg)	(4_a) (5)(6)
	Minimum Monitoring	All Year	**Frequency** One per day	**Sample Type** Calculated	(10)(12)(13)
Orthophosphate as P (Monitoring only parameter)	**Reporting**	All Year	N/A	REPORT mg/l (mth. avg.)	(10)(11)(20)
	Minimum Monitoring		**Frequency** Two per week	**Sample Type** 24-hour composite**	

III. Proposed Effluent Limits and Monitoring Requirements

Effluent Characteristics	Requirements	Period	Quantity	Concentration	Footnotes
Total Phosphorus as P	**Limits for 73.0 mgd and 81.0 mgd**	(5/1-10/31) All Year	33,330 lbs (5/1-10/31)) 66,700 lbs/year	REPORT mg/l (max mth. avg.)	(4_a) (5)(6)
	Minimum Monitoring	All year	**Frequency** One per day	**Sample Type** 24-hour composite**	(10)(13)
Enterococci	**Limits for 73.0 mgd and 81.0 mgd**	All year	N/A	35 MPN/100 ml (max mth. geometric mean) 130 MPN/100 ml max. STV	
	Minimum Monitoring	All Year	**Frequency** One per day	**Sample Type** Grab	(10)
Total Residual Chlorine (TRC)	**Limits**	All Year	N/A	Nondetectable level (See footnote- 7)	(7)(14)(15)
	Minimum Monitoring	All Year	**Frequency** Three per day, One per shift	**Sample Type** Grab	(10)
pH	**Limits**	All Year	N/A	6.0 SU (min) 8.5 SU (max)	
	Minimum Monitoring	All Year	**Frequency** Three per day, One per shift	**Sample Type** Grab	(10)(15)
Dissolved Oxygen (DO)	**Limits for 73.0 mgd and 81.0 mgd**	All Year 2/1 – 5/31	N/A N/A	5.0 mg/l (min at any time) 6.0 mg/l (min wk. avg.)	N/A
	Minimum Monitoring	TBD	**Frequency** Three per day, One per shift	**Sample Type** Grab	(10)(15)
			One per month	Grab (Four per day)	
Total Polychlorinated Biphenyls (tPCBs)	**Reporting**	All Year	REPORT grams/year	REPORT pg/L	(4_b)
	Minimum Monitoring	All Year	**Frequency** One per quarter	**Sample Type** 24-hour composite**	(10)
Flow	**Limits / Reporting**	All Year	REPORT mgd (max mth avg) REPORT mgd (daily max)	N/A	N/A
	Minimum Monitoring	All Year	**Frequency** Continuous	**Sample Type** Recorded	(10)(17)(18)

III. Proposed Effluent Limits and Monitoring Requirements

Effluent Characteristics	Requirements	Period	Quantity	Concentration	Footnotes
Total Flow	**Reporting**	All Year	REPORT Mgal/mth (mth. total)	N/A	
	Minimum Monitoring	All Year	**Frequency** Monthly	**Sample Type** Calculated	(10)(19)

** The permittee shall conduct the flow-proportional composite monitoring at all times unless receiving approval from the Department for the time-proportional composite monitoring. The time -proportional composite sampling may be approved when the permittee demonstrates the wastewater flow of the sampled stream is constant (i.e., the flow rates measured do not vary more than ±10 percent of the average flow rate over the sampling period).

An annual average flow of **73.0 and 81.0** million gallons per day (mgd) were used in waste allocation calculations (expressed as waste loading rate limit), and this unit shall be used when reporting on the Discharge Monitoring Report (DMR). Notification is to be provided to the Department at least 180 days before the annual average flow is expected to exceed this flow level. If a permit modification is required, the Department will initiate the public participation NPDES process.

(b) For Raw Wastewater Influent at Sampling Point 101A:

The quality of the wastewater influent entering the Patapsco WWTP shall be monitored at **Influent Chamber (76° 33' 57.44" W/39° 14' 1.23" N)** all the time as shown below:

Influent Characteristics	Requirements	Period	Quantity	Concentration	Footnotes
BOD_5	**Reporting**	All Year	N/A	REPORT mg/l (mth. avg.)	(10)(21)(22)
	Minimum Monitoring		**Frequency** One per quarter	**Sample Type** Grab	
TSS	**Reporting**	All Year	N/A	REPORT mg/l (mth. avg.)	(10)(21)(22)
	Minimum Monitoring		**Frequency** One per quarter	**Sample Type** Grab	

The monitoring frequency to determine BOD_5/TSS removal efficiency (in percentage) will be on a quarterly basis. The permittee shall select a calendar month and a minimum of one day (in that calendar month) in each calendar quarter to collect samples from the influent and effluent to calculate the removal efficiency. The calendar quarter shall end March, June, September, and December. The permittee may take additional samples of BOD_5 and TSS in the influent on different days within the selected calendar month. All the sampling results for this requirement shall be reported on the Monthly Operating Report (MOR) for the same calendar month.

III. Proposed Effluent Limits and Monitoring Requirements

Influent Characteristics	Requirements	Period	Quantity	Concentration	Footnotes
For the compliance determination of the percent removal requirement, the individual results of BOD_5/TSS in the influent and effluent collected on the same day must be incorporated to calculate the monthly average concentrations of the specific parameter in the influent and effluent. (***Example: If the influent samples are collected for multiple days in a calendar month, the effluent sampling results from the same corresponding days must be used to calculate the monthly average concentrations and to report the percent (%) removed as a minimum monthly average for the same calendar month and reported in the Discharge Monitoring Report (DMR) as well to fulfill the quarterly monitoring requirement.***) These monthly average concentrations shall be applied to calculate the percent removal efficiency using formula listed in the footnote 21 and the results of the percent removal shall be reported on the DMR for the ending month of the calendar quarter. The permittee shall also prepare and submit a report as a copy of record (COR) along with the ending month's NetDMR for each calendar quarter. The COR shall provide details, including but not limited to, name of facility, sampling time (day(s), month, and year), individual results as well as monthly average concentrations of influent and effluent, laboratory sheets and pertinent information for analytes, and results of the percent removal calculation results.				

(c) The monitoring requirements for Nutrient and Sediment Performance-based Credit Reporting Schedule:

Under COMAR 26.08.11, Maryland Water Quality Trading Program, the permittee is authorized to generate nutrient and sediment credits for trading to industrial and municipal stormwater permit holders. For each calendar month, the permittee shall calculate and report on the monthly DMR the effluent related nutrient (Total Nitrogen and Total Phosphorus) and sediment (TSS) performance-based benchmark loads and performance-based credits as listed below.

If the permittee seeks to trade the reported credit, the permittee shall also submit information related to the generation of annual performance-based credit on the "***Credit Verification and Registration Form for Wastewater Point Source***" provided by the Department. The completed form shall be sent to the Department's Water and Science Administration Trading Administrator by the end of each January to report credits generated during the prior calendar year.

Effluent Characteristics	Requirements	Period	Quantity	Concentration	Footnotes
TSS (Performance-based Benchmark Load)	**Reporting**	All Year	REPORT lbs/yr (YTD Cum_load)	N/A	(10)(23)
	Minimum Monitoring		**Frequency** One per month	**Sample Type** Calculated	
Total Nitrogen as N (Performance-based Benchmark Load)	**Reporting**	All Year	REPORT lbs/yr (YTD Cum_load)	N/A	(10)(23)
	Minimum Monitoring		**Frequency** One per month	**Sample Type** Calculated	

III. Proposed Effluent Limits and Monitoring Requirements

Effluent Characteristics	Requirements	Period	Quantity	Concentration	Footnotes
Total Phosphorus as P (Performance-based Benchmark Load)	**Reporting**	All Year	REPORT lbs/yr (YTD Cum_load)	N/A	(10)(23)
	Minimum Monitoring		**Frequency** One per month	**Sample Type** Calculated	
TSS (Performance-based Credit)	**Reporting**	All Year	REPORT lbs/yr (YTD Cum_load)	N/A	(10)(24)
	Minimum Monitoring		**Frequency** One per month	**Sample Type** Calculated	
Total Nitrogen as N (Performance-based Credit)	**Reporting**	All Year	REPORT lbs/yr (YTD Cum_load)	N/A	(10)(24)
	Minimum Monitoring		**Frequency** One per month	**Sample Type** Calculated	
Total Phosphorus as P (Performance-based Credit)	**Reporting**	All Year	REPORT lbs/yr (YTD Cum_load)	N/A	(10)(24)
	Minimum Monitoring		**Frequency** One per month	**Sample Type** Calculated	
Flow Year-to-date (YTD) Total	**Reporting**	All Year	REPORT MGal/yr (YTD flow)	N/A	(10)(25)
	Minimum Monitoring		**Frequency** One per month	**Sample Type** Calculated	

Footnotes for Effluent Limitations and Monitoring Requirements in Section III.a – III.c

(1) When this permit is renewed, the new limitations may not be equal to the above limitations.

(2) There shall be no discharge of floating solids or visible foam other than trace amounts.

(3) The permit may also be reopened in accordance with the requirements of MDE's Watershed Permitting Plan under which all discharge permits in a watershed are issued the same year.

(4)$_{a}$ The Patapsco River (Baltimore Harbor basin number 02130903) has been identified on the 303(d) list as impaired by total phosphorus, total nitrogen, total suspended solids (1996), Enterococcus (1998), toxics (polychlorinated biphenyls, or PCBs) (1998), chlordane (1998), impacts to biological communities (2004) and Debris/Floatables (2008). A Total Maximum Daily Load (TMDL), approved by the EPA on 12/29/2010, allocated limits of 33,330 lbs of total phosphorus and 333,330 lbs of total nitrogen per season (5/1-10/31). Yearly loadings of 66,700 lbs, 889,300 lbs, 6,669,776 lbs and 27.20 grams for total phosphorus, total nitrogen, total suspended solids and PCBs respectively were also allocated to this facility; and the parameter limits are in conformance with this TMDL.

(4)$_{(b)}$ The TMDL for PCBs for Baltimore Harbor and PATMH Tidal Chesapeake Bay Segment, approved by the EPA on 10/1/2012, has included a tPCBs annual waste load allocation (WLA) of 27.20 grams/year (0.059912 pounds/year) for this facility (that is based on the design capacity of 73.0 mgd and the water column TMDL endpoint tPCBs concentration of 0.27 nanograms (ng/l).

III. Proposed Effluent Limits and Monitoring Requirements

This permit is in conformance with the "Chesapeake Bay TMDL for Nitrogen, Phosphorus and Sediment" established on December 29, 2010. When TMDLs for other remaining parameters are completed, limits may be imposed, after the public participation process, to incorporate any TMDL requirements.

(5) The permittee shall operate the ENR facility in a manner that optimizes the nutrient removal capability of the facility as stipulated in the Grant Agreement for ENR upgrade. The first exceedance of the permit limit shall be counted and reported as daily exceedances beginning from the first exceedance, determined to the nearest day, through December 31. In addition, after any such exceedance, the permittee shall demonstrate to the Department's satisfaction that the facility is optimizing its nutrient removal capability, and neither the arrival of the next calendar year nor the issuance of a permit renewal during a period of noncompliance shall obviate continuance of any noncompliance status related to treatment optimization requirements.

(6) At the end of each calendar year, the permittee shall comply with the *concentration-based* limitations for the Annual Maximum Loading Rate defined below or the *Tributary Strategy-based* loading rate limitation listed in above in the effluent limitations table, whichever is lower:

(a) TN Limitation (lbs/year): 4.0mg/l (for 73 MGD flow) ***or*** 3.6 mg/l (for 81 MGD flow) x annual total flow (calendar year based in million gallons per year) x 8.34. To the extent that the permittee alleges that temperature levels of 12 degrees C or lower have diminished the treatment system's capability of complying with this *concentration-based* loading rate limitation for Total Nitrogen, the permittee shall provide notification beginning with the calendar year report under the "Upset" provision in Section III.B.6 of this permit. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

(b) TP Limitation (lbs/year): 0.3mg/l (for 73 MGD flow) ***or*** 0.27 mg/l (for 81 MGD flow) x annual total flow (calendar year based in million gallons per year) x 8.34.

The details and results of all required annual calculations shall be submitted to the Department with the Discharge Monitoring Report for December. See Special Condition II.J of the discharge permit for further details. The *concentration-based* loading requirements may be revised if the limits or schedule are determined to be impracticable based on actual performance and the Department re-opens the permit as a major modification (which requires public participation) to impose (an) alternate effluent limitation(s) or revised schedule.
The permittee may request that the permit be reopened and modified to include nutrient trading consistent with the most current "Maryland Policy for Nutrient Cap Management and Trading in Maryland's Chesapeake Bay Watershed" in effect at that time.

(7) Total residual chlorine limitation of ***the nondetectable level*** shall be applicable, when chlorine or any chlorine-containing compound is used in any treatment process(es), including but not limited to disinfection, that could become a potential constituent of the effluent discharged from the Patapsco WWTP. The wastewater shall be dechlorinated to reduce effluent total residual chlorine concentration to the nondetectable level (See definition I.M of the discharge permit).

(8) TUa is defined as 100 divided by the LC_{50} value resulting from the first 48 hours of a valid acute or chronic toxicity test. Compliance with the LC_{50} requirements shall be determined through testing performed in accordance with Special Condition II.D. TUc is defined as 100 divided by the IC_{25} value resulting from a valid chronic toxicity test. Compliance with the IC_{25} requirements shall be determined through testing performed in accordance with Special Condition II.D.

(9) In accordance with 40CFR §133.102, the 30-day average percent removal for BOD_5 and TSS shall not be less than 85 (eighty-five) percent as the minimum level of effluent quality attainable by the secondary treatment. Refer to the footnotes 20 and 21 for further details for calculations and reporting requirements

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toward compliance to the BOD_5 and TSS percent removal effluent limitations (See Definition I.W included in the discharge permit).

Footnotes for Monitoring Requirements in Section III.a – III.c

(10) "STORET" (short for STOrage and RETrieval) is a widely-used repository for water quality data reporting and monitoring. The STORET codes for the effluent characteristics described as limitations and/or monitoring requirements are: BOD_5 (00310), BOD_5 percent removal (81010), Total Suspended Solids (00530), Total Suspended Solids percent removal (81011), TKN (00625), Total Ammonia Nitrogen as N (00610), Total Phosphorus as P (00665), Total Nitrogen as N (00600), (Nitrite + Nitrate) as N (00630), Organic Nitrogen as N (00605), Orthophosphate as P (04175), Enterococci (61211), Total Residual Chlorine (50060), Dissolved Oxygen (00300), pH (00400), Flow (50050), Total flow (82220), Total hardness as $CaCO_3$, (00900), PCBs (79819), WET Acute Toxicity (TS000), WET Chronic Toxicity (TT000), Sediment as TSS Performance-based Benchmark Load (00530(P)), TSS Performance-based Credit (00530(Q)), Total Nitrogen Performance-based Benchmark Load (00600(P)), Total Nitrogen Performance-based Credit (00600(Q)), Total Phosphorus Performance-based Benchmark Load (00665(P)), Total Phosphorus Performance-based Credit (00665(Q)), Flow YTD Total (74076(R)), Cyanide, Total (00720), Cyanide (free or amenable) (00722), Aldrin (39330), Dieldrin (39380), Chlordane (technical mixture and metabolites) (39350), Endrin (39390), Heptachlor (39410), Heptachlor Epoxide (BHC-hexachlorocyclohexane) (39420), Toxaphene (39400), Benzidine (39120), Hexachlorobenzene (39700), 4,4'-DDD (39310), 4,4'-DDE (39320), 4,4'-DDT (39300), Benzo(a)Anthracene (34526), Benzo(a)Pyrene (34247), Benzo(b)Fluorathene (34230), Benzo(k)Fluorathene (34242), Dibenzo(a,h)Anthracene (34556) and Ideno(1,2,3-cd)Pyrene (34403).

(11) This parameter (without effluent limitations) must be monitored, and it shall be reported on the Monthly Operating Report (MOR) as individual results and on the Discharge Monitoring Report as monthly average concentrations.

(12) Total nitrogen as N (in mg/l) is a calculated parameter as the sum of individual results for total ammonia nitrogen as N, organic nitrogen as N and (nitrite + nitrate) as N. Total Kjeldahl Nitrogen (TKN) is defined as the total concentration of organic nitrogen and ammonia as N. All nitrogen species must be sampled at the same day. The monitoring result for organic nitrogen may be calculated through the subtraction of the total Ammonia as N monitoring result from the result of TKN sample taken at the same day.

(13) The permittee shall also calculate and report on the monthly DMR the TN, TP and TSS total monthly loads plus year-to-date cumulative loads for the calendar year in question for the outfall- 001A.

For each calendar year, the year-to-date cumulative loads of TN and TP for the month of December shall represent the total annual loads, and they must be incorporated toward complying with the respective annual maximum load limits. Refer to Special Condition II.J of the discharge permit for "Reporting TN and TP total annual loads for compliance to the Concentration-based maximum annual loading rate limits".

(14) The Minimum monitoring requirements of three per day (One per shift) grab samplings for total residual chlorine shall be applicable, when chlorine or any chlorine compound is used in any treatment process(es), including but not limited to disinfection, that could become a potential constituent of the effluent discharged from the Patapsco WWTP. The minimum level (quantification level) for total residual chlorine is 0.10 mg/l. The permittee may report all results below the minimum level as <0.10 mg/l. All results reported below the minimum level shall be considered in compliance.

(15) Samples for these parameters (total residual chlorine, pH and dissolved oxygen) shall be taken at intervals evenly distributed throughout the staffed period each day to comply with the General Condition III.A for the

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representative sampling requirements.

(16) All toxic chemical monitoring required by this permit shall be performed in accordance with MDE's Water Management Administration Toxic Substance Analytical Protocol. This includes analytical methodology, detection levels, holding times, preservation methods, sample types and reporting.

The permittee shall measure and report tPCBs in picograms/L (pg/L).To incorporate the TMDL of PCBs for Baltimore Harbor approved by the EPA on 10/1/2012, the effluent tPCBs monitoring and annual total PCBs reporting shall continue at the Patapsco WWTP. The permittee shall use the approved EPA testing Methods in accordance with MDE's protocol titled "Reporting Requirements for Total PCBs (PCB Congeners) by EPA Method 1668 C or A". The tPCBs monitoring shall be once per quarter. The quarter shall end on March, June, September and December. The annual average concentration for tPCBs shall be calculated using the following formula:

$$\text{Average Concentration (ng/l)} = 264172 \times \frac{\text{Total Annual Cumulative load discharged (Grams)}}{\text{Total Annual Flow (MG) at 001A and 001B}}$$

Based on the tPCBs monitoring results, the Department has determined to continue tPCBs monitoring and change the tPCBs monitoring frequency after the tPCBs sources are identified and eliminated through BMP as stated in footnote $4_{(b)}$. Any changes to the effluent tPCBs limits and/or monitoring requirements shall be addressed through the permit modification process.

(17) Flows shall be reported in millions gallons per day (mgd) to at least the nearest 10,000 gallons per day. (Example: A flow of 1,524,699 gallons per day shall be reported as 1.52 mgd.). For each calendar month, flows shall be reported on the MOR as daily individual results and on the DMR as monthly average (mgd) and daily maximum (mgd)*)*.

(18) Continuous electronic flow measurement and recording which can produce a permanent record are acceptable to the Department.

(19) Total monthly flow is a calculated parameter equal to sum of the daily flow results in a calendar month. It shall be reported on the monthly DMR as Total monthly flow in millions gallons (MG) to at least the nearest 10,000 gallons. (Example: A flow of 1,524,699 gallons shall be reported as 1.53 MG).

(20) The permittee shall distribute the timing for effluent sampling with (a) minimum of 48-hour apart for two per week monitoring frequencies, (b) minimum of 24-hours apart for three per week monitoring frequencies, or (c) no more than one per day for five per week monitoring frequencies. The 48 hours interval for two per week sampling shall be defined as the period between the starting times of the two consecutive effluent sample collections for the same effluent parameter.

(21) Wastewater influent samples for BOD_5 and TSS shall be collected per the sampling type and reporting frequency specified in above (Table III(b) above). These measurements shall be utilized to calculate BOD_5 and TSS percent removed using the formula listed below in footnote 22, and results shall be used to comply with the Percent removal effluent limits of BOD_5 and TSS (Section III(a) above). Any effluent excursion of the percent removal limit (in Table III.A above) reported at the end of each monitoring period will be considered as violation for the full period as specified.

(22) At the end of each reporting period, the permittee shall incorporate BOD_5 and TSS monthly average concentrations in the influent and effluent (both reported on a monthly DMR for the calendar month of the influent sampling), and calculate monthly percent (%) of a parameter (BOD_5 or TSS) removed using the following formula:

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$$Monthly\ Average\ Percent\ (\%)\ of\ Parameter\ Removed\ = \{\frac{(A-B)}{A}\} \times 100$$

Where:

A = Monthly Average Concentration of Parameter in Influent, mg/l

B = Monthly Average Concentration of Parameter in Effluent, mg/l

The results (monthly average percent (%) of BOD_5 and TSS removed) shall be reported in the DMR submitted for the last calendar month of the reporting period. *(Example: If the monitoring frequency of the percent (%) removal is one per quarter, the results shall be reported in the DMRs for March, June, September, and December)*.

(23) ***Nutrient and Sediment Performance-Based "Benchmark Loads":***

At the end of each month, a year-to-date cumulative nutrient and sediment (as total nitrogen, total phosphorus and total suspended solids in the effluent) performance-based "benchmark load" for this facility should be calculated and reported on monthly DMR using the formulas listed below:

(a) For TN:

Year-to-date cumulative Performance-Based Benchmark Load for TN (pounds) = 3.0 mg/L × 8.34 × Flow YTD Total (million gallons/year).*

(b) For TP:

Year-to-date cumulative Performance-Based Benchmark Load for TP (pounds) = 0.30 mg/L × 8.34 × Flow YTD Total (million gallons/year).*

(c) For Sediment:

*Year-to-date cumulative Performance-Based Benchmark Load for Sediment (pounds) = 30 mg/L *× 8.34 × Flow YTD Total (million gallons/year).*

**Or any more stringent effluent concentration-based limit required in the discharge permit.*

(24) ***Nutrient and TSS "Performance-Based Credit" (footnote in the monitoring & reporting requirement section)***

At the end of each month, the facility shall subtract the year-to-date nutrient and sediment cumulative loads (as defined in Section I.H.6 of the discharge permit (21-DP-0580)) from the year-to-date nutrient and sediment performance-based benchmark loads (stated above in footnote 23), and report the result as year-to-date "performance-based credit" on the monthly DMR. The "performance-based credit" generated by the facility at the end of each calendar year may be eligible for trading activities authorized by COMAR 26.08.11.

(25) Flow YTD Total is calculated and reported in million gallons per year as the sum of total flows (stated above in footnote 18) from January 1st through the reporting month.

(26) The toxic substances shall be measured and reported in units of µg/l, using the appropriate minimum Limit of Quantification (LOQ) levels as suggested in the Department's protocol. The LOQ is a minimum reporting limit which is the minimum value of the calibration ranges of an analyte. The permittee must assure that the laboratory contracted for analysis and reporting of the toxic substances shall comply with all requirements of the MDE's most updated "*Toxic Pollutant Monitoring Protocol and Reporting Requirements for Toxic Chemical Testing Analytical Data, as amended Dec. 2023*" including all but not limited to the analytical methodology, detection levels, holding times, preservation methods, sample type, and reporting. In addition to the data submitted by the monthly DMR, the permittee shall submit a copy of the laboratory

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report for the parameter to MDE in accordance with General Condition III.A.2.c of the discharge permit. Water used for the operation of sampling/analysis apparatus shall be free of the elements and compounds under investigation as well as any other elements or compounds whose presence could interfere with the analysis.

(27) The permittee shall measure the toxic substances once per quarter by 24-hour composite samples for at least four consecutive quarters in addition to the Toxic Chemical Testing (TCT) requirements stated in Special Condition II.B.1(b) and Special Condition II.F. The 24-hour composite samples shall be collected using a glass sample container with Polytetrafluoroethylene (PTFE) intake tubing and minimal flexible tubing for the peristaltic pump. Upon completion of the fourth test, the permittee shall submit results including comprehensive lab reports for all four tests to the Department for review. The Department reserves the right to make the final determination on whether to continue or drop monitoring for any of the above stated toxic substance(s) for the remainder of the permit cycle as appropriate.

Regulations and Rationale for Effluent Limitations:	
BOD_5	**Regulations:** 40 CFR §130.7, 40 CFR §133.102, COMAR 26.08.02.03-3A(2), COMAR 26.08.04.04C(1) and COMAR 26.08.0l.01B(80). **Discussion and Rationale(s):** The technical analysis was performed in 2010 using a mathematical model (WASP) to establish the effluent limits requirements for discharge flows up to 81.0 MGD. There is no increase of the discharge flow for the permit renewal; and also, there are no indications of apparent changes to the receiving stream. Therefore, the BOD_5 and dissolved oxygen effluent limits established in 2010 and incorporated in previous permit 15-DP-0580 have been considered at this time for the proposed permit renewal. These limits will be protective of meeting the dissolved oxygen criteria in downstream portion of the effluent receiving stream. The BOD_5 85 % removed limit in conjunction with the influent BOD_5 monitoring have been included as per the 40 CFR, §133.102(a) for minimum requirement of the secondary treatment to the wastewater. The reporting frequency for 85% BOD_5 removal limit (Section III(a), page 24) and influent BOD_5 (Section III(b), page 27) have been determined based on both the wastewater treatment technology of the existing facility and the most recent twenty-four months (01/2022 to 12/2023) performance record.
Total Suspended Solids (TSS)	**Regulations:** 40 CFR §130.7, 40 CFR §133.102, COMAR 26.08.02.03-3A(5), COMAR 26.08.04.04C(1), COMAR 26.08.0l.01B(80), COMAR 26.08.11, and 40 CFR§133.102 - §133.105. **Discussion and Rationale(s):** Under the Chesapeake Bay Watershed Implementation Plan as adopted in the Chesapeake Bay TMDL, all the significant point sources (WWTPs) discharging into the Chesapeake Bay watershed have been assigned with the individual WLA for TSS. In addition to the approved Sediment TMDL for Patapsco River, the proposed TSS limits are also in conformance to the requirements of the Chesapeake Bay TMDL as accepted by EPA on 12/29/2010. The TSS 85 % removed limit in conjunction with the influent TSS monitoring have been included as per the 40 CFR, §133.102(a) for minimum requirement of the secondary treatment to wastewater. The reporting frequency for 85% TSS removal limit (Section III(a), page 24) and influent TSS (Section III(b), page 27) have been determined based on both the wastewater treatment technology of the existing facility and the most recent twenty-four months (01/2022 to 12/2023) performance record.
Total Kjedahl Nitrogen (TKN)	**Regulations:** COMAR 26.08.02.03-3A(2) **Discussion and Rationale(s):** Refer to Discussion and Additional Rationale for BOD_5.

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Regulations and Rationale for Effluent Limitations:	
Total Ammonia Nitrogen as N	**Regulations:** COMAR 26.08.02.03-2J, COMAR 26.08.02.03-2K and COMAR 26.08.02.05C, COMAR 26.08.02.05D. **Discussion and Rationale(s):** The reasonable potential of the Patapsco WWTP effluent to cause a violation of the receiving stream's ammonia water quality criteria was investigated to process the discharge permit renewal. An in-house SPREADSHEET program (developed by the Municipal Surface Discharge Permits Division) was used as a tool for the toxicity analysis. The dilution factors, based on the applicable mixing zone criteria, were incorporated in the analysis. As the ammonia toxicity criteria are pH dependent, the effluent pH of 7.7 for Summer and 7.9 for Winter which is a median of the maximum effluent pH data (for {1/2019 – 10/2022}) was used.
Total Nitrogen as N	**Regulations:** 40 CFR §130.7, COMAR 26.08.02.04, COMAR 26.08.03.01C(3), COMAR 26.08.04.04C, COMAR 26.08.11, Chesapeake Bay TMDL, Baltimore Harbor Nitrogen and Phosphorus TMDL, and in addition, the Chesapeake Bay Nutrient Reduction Strategy and the Enhanced Nutrient Removal (ENR) Policy. **Discussion and Rationale(s):** The ENR based TN load limits and TN performance-based credit load monitoring and reporting requirements are included for the offset trading. Refer to Section II (Special Requirements and Conditions) on page 12 for the further details.
Total Phosphorus as P	**Regulations:** 40 CFR §130.7, COMAR 26.08.02.04, COMAR 26.08.03.01C(3), COMAR 26.08.04.04C, COMAR 26.08.11, Chesapeake Bay TMDL, Baltimore Harbor Nitrogen and Phosphorus TMDL, and in addition, the Chesapeake Bay Nutrient Reduction Strategy and the Enhanced Nutrient Removal (ENR) Policy. **Discussion and Rationale(s):** Refer to Section II (Special Requirements and Conditions) on page 12 for ENR based TP load limits and the performance-based TP credit load requirements.
Enterococci	**Regulations:** 40 CFR §130.7, COMAR 26.08.02.03-3C, COMAR 26.08.04.02-1A(2). **Discussion and Rationale(s):** An action level of 130 MPN/100ml as Statistical Threshold Value (STV) is added in conformance with COMAR 26.08.02.03-3C for effluent discharges directly into tidally influenced waters designated Use II non-shellfish harvesting areas and to ensure human health protection during primary water contact recreation.
Total Residual Chlorine	**Regulations:** COMAR 26.08.02.03-2G(1), COMAR 26.08.02.05C, COMAR 26.08.02.05D,COMAR 26.08.03.06C(5), COMAR 26.08.03.06D, COMAR 26.08.03.06F **Discussion and Rationale(s):** The reasonable potential of the Patapsco WWTP effluent to cause a violation of the receiving stream's TRC water quality criteria was investigated to process the discharge permit renewal. An in-house SPREADSHEET program (developed by the Municipal Surface Discharge Permits Division) is used as a tool for the toxicity analysis. The toxicity based limit was compared with the effluent quality criteria to set the TRC limit requirement.
pH	**Regulations:** 40 CFR §130.7, COMAR 26.08.02.03-3A(4),

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Regulations and Rationale for Effluent Limitations:	
	Discussion and Rationale(s): The limits are set equal to the stream water quality criteria. Also, refer to Discussion and Additional Rationale for Total Ammonia Nitrogen as N.
Dissolved Oxygen (DO)	**Regulations:** COMAR 26.08.02.03-3A(4). **Discussion and Rationale(s):** The limits are set equal to the stream water quality criteria. Also, refer to Discussion and Additional Rationale for BOD_5.
Flow	**Regulations:** COMAR 26.08.04.02A(2). The discharge is consistent with the (name of County) water and sewer master plan. **Discussion and Rationale(s):** The permit flow considered for this permit renewal is equivalent to the rated design capacity of the facility. It is not a limitation, but it incorporated with concentration limits to calculate the waste load limits for {BOD_5, TSS, Ammonia-N, TP and TN}.
WET	**Regulations:** COMAR 26.08.03.07 **Discussion and Rationale(s):** Refer to Section II "Special Requirements and Condition" for additional information pertaining to the WET requirements.

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Regulations and Rationale for Effluent Limitations:

(A) Anti-Backsliding Policy Review:

Provisions as stipulated in Federal Regulations [CWA §303(d)(4), CWA §402(o) & 40 CFR 122.44(l) require a reissued permit to be as stringent as the previous permit requirements, with some exceptions as determined by the Department.

The effluent limitations established for the permit renewal are in conformance to the above stated provisions.

(B) Anti-Degradation Policy Review:

(a) Is there Tier II water downstream of the Point of Discharge Location (Outfall 001A) for this facility?
Yes ☐ No ☒

Waters of this State shall be protected and maintained for existing uses and the basic uses of water contact recreation, fishing, protection of aquatic life and wildlife, and agricultural and industrial water supply as identified in Use I. The discharge permit being processed includes sufficient limits in order to maintain and protect water quality intended for the existing designated uses.

Rationale: *COMAR 26.08.02.04 and COMAR 26.08.02.04-1*

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Regulations and Rationale for Effluent Limitations:

{SPACE RESERVED FOR FUTURE USE TO ADDRESS TIER III WATERS REQUIREMENTS}

Rationale: *COMAR 26.08.02.04-2*

Regulations and Rationale(s) for Monitoring Requirements:

COMAR 26.08.04.03A. Also, the memorandums dated 7/24/1996 and 3/6/2008 referred as the Department Guidelines to establish the minimum monitoring requirements to process the discharge permit (re)issuance for this facility.

IV. CHRONOLOGICAL LOG OF MEETINGS, SITE VISITS, TELEPHONE CALLS, ETC.

DATE	ACTIVITY DESCRIPTION
9/01/2021	Received discharge permit application dated **08/19/2021** completed and signed by Neal Jackson, Plant Manager.
10/12/2021	Received memo from MDE's Water Resources Planning Division stating that the proposed discharge flow is consistent with the 2006 Baltimore City Water and Sewer Plan.
12/23/2021	Notified applicant and interested person(s) by letters concerning Notice of Application publication on 12/23/2021 and 12/30/2021 in the "The Sun" newspaper.
12/21/2022	Site visit conducted.
4/19/2024	1st draft permit sent to EPA and Baltimore City for review and comments.
5/13/2024	Virtual meeting conducted with EPA to discuss draft permit and SRFS.
5/19/2024	Comments received from EPA on the draft permit.
6/6/2024	Virtual meeting conducted with Baltimore City to discuss the draft permit.
6/21/2024	Updated information emailed to Baltimore City, as requested, including revised ammonia criteria.
7/12/2024	Comments received from Baltimore City on the draft permit.

V. MAP SHOWING POINT OF DISCHARGE LOCATION