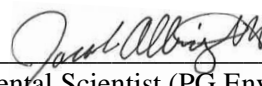




**U.S. ENVIRONMENTAL PROTECTION AGENCY
 REGION III WATER BRANCH, ENFORCEMENT
 AND COMPLIANCE ASSURANCE DIVISION
 CLEAN WATER ACT
 COMPLIANCE INSPECTION REPORT**

for

Name of Facility: Potomac River Water Filtration Plant (WFP)
Facility Address: 12200 River Road, Potomac, MD 20854
Mailing Address: 14501 Sweitzer Lane, Laurel, MD 20724

Report Prepared on: March 8, 2022 By: 
Date *Signature*
 Environmental Scientist (PG Environmental)

Report Final as of: _____ By: _____, EPA
Date *Signature*

General Information

Type of Inspection: Wastewater Treatment Facility CEI
Owner: Washington Suburban Sanitary Commission
Operator: Washington Suburban Sanitary Commission
Permittee: Washington Suburban Sanitary Commission
NPDES Permit No: MD0051586
NPDES Permit Effective Date: December 12, 2019
NPDES Permit Expiration Date: November 30, 2024
Receiving Water: Potomac River
Latitude and Longitude: 39.038056, -77.255

On-Site Facility Inspection Overview

On February 16, 2022, a representative from U.S. Environmental Protection Agency (EPA) Region III, and EPA’s contract inspectors from PG Environmental and ERG (the EPA Inspection Team), conducted a compliance evaluation inspection at the Potomac River Water Filtration Plant (Facility) in Potomac, Maryland. Washington Suburban Sanitary Commission (WSSC) is identified as the Permittee and owns and operates the Facility. A representative from the Maryland Department of the Environment (MDE) attended the inspection.

Approximate Entry Time: 9:30 AM (EST) **Approximate Exit Time:** 3:20 PM (EST)

Unique Project Identifier (UPI): 3E22WN031A

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Appendix A: Photograph Log

Appendix B: Exhibit Log

- Exhibit 1 – Potomac River Water Filtration Plant Process Diagram
- Exhibit 2 – EPA ICIS Data (December 1, 2019 through December 31, 2021)
- Exhibit 3 – ICIS Spreadsheet Notes (January 1, 2021 through December 31, 2021)
- Exhibit 4 – EPA ECHO Detailed Facility Report
- Exhibit 5 – Fourth Quarter 2021 Consent Decree Status Report

Appendix C: NPDES Permit No. MD0051586

Appendix D: Consent Decree

I. INTRODUCTION

On February 16, 2022, a representative from U.S. Environmental Protection Agency (EPA) Region III and EPA's contract inspectors from PG Environmental and ERG (hereinafter, collectively referred to as the EPA Inspection Team) inspected the Potomac River Water Filtration Plant (hereinafter, Facility) in Potomac, Maryland. A representative from the Maryland Department of the Environment (MDE) attended the inspection. Washington Suburban Sanitary Commission (WSSC) is identified as the Permittee and owns and operates the Facility. The primary purpose of the inspection was to review basic treatment processes at the Potomac River Water Filtration Plant, evaluate operations related to the waste stream, review the accuracy and reliability of the Permittee's self-monitoring and reporting program, and obtain information that will assist EPA in assessing the Permittee's compliance with the requirements of the Permit. The weather at the time of the inspection was mild and overcast.

The Facility provides drinking water to residents, businesses, and industries in Montgomery County and Prince Georges County, Maryland. The Facility produces about 100 million gallons per day (MGD) of water for distribution and is rated to produce as much as 285 MGD. The majority of the solids from the flocculation and sedimentation processes for produced water are sent to an onsite solids handling facility which further processes solids and discharges to DC Water's collection system, and ultimately the Blue Plains Wastewater Treatment Plant (WWTP). Backwash from the Facility's granular media filters (along with any reservoir leakage, stormwater, or emergency bypass flow) is discharged through Outfall 001A. Outfall 001A discharges are covered under National Pollutant Discharge Elimination System (NPDES) Permit No. MD0051586 (hereinafter, the Permit; refer to [Appendix C](#)) and were the focus of the inspection.

A Consent Decree was entered into by the Facility and the Potomac Riverkeeper, the Chesapeake Bay Foundation, and MDE on April 15, 2016, due to alleged violations of the Clean Water Act (CWA) and the Permit. The Consent Decree requires the Facility to make short-term operational changes and capital improvements with the goal of significantly reducing the solids loading discharged into the Potomac River by January 1, 2026, as well as achieve Permit effluent limits (refer to [Appendix D](#)).

II. INSPECTION PROCESS

Inspection Opening Conference

The EPA Inspection Team arrived at the Facility at 9:30 AM (EST) for the inspection. Jake Albright of PG Environmental displayed his CWA inspector credential to Mr. Eric Liang and Mr. Hector Rojas, both Plant Engineering Section Managers, at the outset of the inspection and explained the purpose of the inspection was to observe compliance with the Permit. The EPA Inspection Team informed the Permittee that any information that the Facility deemed to be confidential business information ("CBI") should be identified to EPA representatives during the inspection and it would be handled as CBI according to EPA's CBI procedures. Table 1 describes the individuals that participated in the inspection.

Table 1. Inspection Attendee List

Name	Affiliation	Telephone	Email
EPA Region III Inspectors and Contractors			
Jake Albright	PG Environmental	(703) 956-1957	jake.albright@pgenv.com
Angela Weisel	EPA Region III	(215) 814-2124	weisel.angela@epa.gov
Michael Beck	ERG	(331) 643-9987	mike.beck@erg.com
Maryland Department of the Environmental			
Renato Cuizon	MDE	(443)-829-9427	renato.cuizon1@maryland.gov
Facility Representative			
Eric Liang, Section Manager, Plant Engineering	WSSC	(301) 206-7399	eric.liang@wsscwater.com
Hector Rojas, Section Manager, Plant Engineering	WSSC	(301) 206-7393	hector.rojas@wsscwater.com

Facility Site Walk

As part of the inspection process, the EPA Inspection Team visually observed the treatment train and site conditions in the presence of the Facility representatives. The EPA Inspection Team began the site walk in the Facility’s main administrative and operations building to observe operator certificates, logbooks, the onsite laboratory, and the Facility’s supervisory control and data acquisition (SCADA) system (refer to [Appendix A, Photograph 1](#)). The EPA Inspection Team continued to the raw water compliance sampling location as well as the pipe gallery under the reservoirs in order to observe newly replaced effluent valves (refer to [Appendix A, Photographs 2 through 5](#)). The EPA Inspection Team then proceeded to the raw water intake and followed the produced water treatment train through to the dual media filters, including stopping to inspect Outfall 001A and the effluent monitoring station and sampling vault (Vault 47).

Water Production

The water production process consists of the following components:

- Raw water intake with bar screens and two raw water pump stations (refer to [Appendix A, Photographs 6 and 7](#))
- Potassium permanganate addition (refer to [Appendix A, Photograph 8](#))
- Four rapid mix tanks and flocculation basins (with coagulant addition and pH adjustment; refer to [Appendix A, Photographs 9 and 10](#))
- Sedimentation basins (refer to [Appendix A, Photograph 9](#))
- Dual granular media filters (refer to [Appendix A, Photograph 12](#))
- Ultraviolet (UV) light and chlorine disinfection (refer to [Appendix A, Photograph 13](#))

Raw water is pulled from the Potomac River through the intake via Raw Water Pump Stations 1 and 2, which convey water to be processed to either the east or west treatment train. The Facility is capable of injecting potassium permanganate as needed after the intake for algae control and can inject carbon into the process in case of an emergency (e.g., a fuel spill entering the intake). From there, the water enters one of four rapid mixers where sulfuric acid can be added for pH adjustment, and poly aluminum chloride (PAC) is added as a coagulant. The Facility also has ferric sulfate on hand to use as coagulant if needed but was not using it at the time of the inspection. Following the rapid mix process, the water enters the sedimentation basins, followed by the dual media filters. Produced water is disinfected via UV light and chlorine prior to being distributed or stored for consumption.

A Facility diagram is included in [Appendix B, Exhibit 1](#).

Process Solids and Effluent Streams

Process wastewater effluent created and discharged onsite through Outfall 001A is composed of water from the dual media filter backwash cycles, filter to waste events (for maintenance or in case of emergency), water storage reservoir leakage, and stormwater runoff (refer to [Appendix A, Photograph 5](#)). The Facility can add sodium bisulfite at two locations to remove chlorine prior to discharge. Effluent is monitored in Vault 47, just upstream of Outfall 001A, prior to being discharged to the Potomac River (refer to [Appendix A, Photographs 14 through 17](#)).

Settled solids from the flocculation and sedimentation processes are collected and sent to the onsite solids handling facility to be further processed. Discharges from the solids handling facility are conveyed to DC Water's collection system and the Blue Plains WWTP. The solids handling facility was not a focus of the EPA inspection.

Records Review

The EPA Inspection Team conducted a records review to evaluate the Permittee's compliance with the Permit. Most of the records and reports required by the Permit were available for review prior to and after the inspection. Plant equipment operation and maintenance (O&M) manuals, laboratory standard operating procedures (SOPs) and calibration records were reviewed onsite. The Permittee's electronic discharge monitoring reports (eDMRs) and monthly operating reports (MORs) were obtained electronically and reviewed offsite after the onsite inspection. The following were reviewed:

- eDMRs and MORs (January 2021 through December 2021)
- Facility Data in EPA's Integrated Compliance Information System (ICIS) Database (December 1, 2019, and December 31, 2021)
- Weekly Discharge Sampling sheets (2019 through 2021)
- Discharge Exceedance Reports (January 2021 through December 2021)
- EPA's Enforcement and Compliance History Online (ECHO) Detailed Facility Report
- Consent Decree Status Reports (Third and Fourth Quarters 2021)
- Chain of custody for offsite laboratory samples (January 1, 2021, through December 31, 2021)
- Calibration records for raw water and effluent flowmeters

Summary of Observations

The following section summarizes the EPA Inspection Team's observations relative to the Permittee's Permit requirements, including the status of certain treatment units, operation and maintenance practices, and the Permittee's monitoring and reporting documentation.

Discharge Limitations and Monitoring Requirements

Section II.A of the Permit defines discharge limitations for Outfall 001A.

Observation 1. Based on a review of EPA's ICIS database and the Facility's eDMR submittals, the EPA Inspection Team observed 135 effluent limit exceedances from Outfall 001A between December 1, 2019, and December 31, 2021 (refer to [Appendix B, Exhibit 2](#) for the ICIS Data and Table 2 below for a summary of exceedances).

Table 2. Outfall 001A Final Effluent Exceedances (December 2019 through December 2021)

Permit #	Monitoring Period End Date	Parameter Name	DMR Value	Permit Limit	Units	Limit Type
MD0051586	12/31/2021	Aluminum, total recoverable	4.2	4	mg/L	Average monthly
MD0051586	11/30/2021	Turbidity	874	150	NTU	Max. Daily
MD0051586	11/30/2021	Solids, total suspended	8266.575	4304	lbs/day	Max. Daily
MD0051586	11/30/2021	Solids, total suspended	147	60	mg/L	Max. Daily
MD0051586	11/30/2021	Solids, total suspended	33	30	mg/L	Average monthly
MD0051586	11/30/2021	Aluminum, total recoverable	9	8	mg/L	Max. Daily
MD0051586	11/30/2021	Aluminum, total recoverable	5	4	mg/L	Average monthly
MD0051586	10/31/2021	Turbidity	1000	150	NTU	Max. Daily
MD0051586	10/31/2021	Solids, total suspended	362	60	mg/L	Max. Daily
MD0051586	10/31/2021	Solids, total suspended	4373.246	2152	lbs/day	Average monthly
MD0051586	10/31/2021	Solids, total suspended	19635.62	4304	lbs/day	Max. Daily
MD0051586	10/31/2021	Solids, total suspended	78	30	mg/L	Average monthly
MD0051586	10/31/2021	Iron, total (as Fe)*	10.1	8	mg/L	Max. Daily
MD0051586	10/31/2021	Aluminum, total recoverable	19.6	8	mg/L	Max. Daily
MD0051586	10/31/2021	Aluminum, total recoverable	405.93	287	lbs/day	Average monthly
MD0051586	10/31/2021	Aluminum, total recoverable	7.3	4	mg/L	Average monthly
MD0051586	10/31/2021	Aluminum, total recoverable	1092.812	574	lbs/day	Max. Daily
MD0051586	9/30/2021	Turbidity	990	150	NTU	Max. Daily
MD0051586	9/30/2021	Solids, total suspended	18292.85	4304	lbs/day	Max. Daily
MD0051586	9/30/2021	Solids, total suspended	47	30	mg/L	Average monthly
MD0051586	9/30/2021	Solids, total suspended	322	60	mg/L	Max. Daily
MD0051586	9/30/2021	Solids, total suspended	2818.514	2152	lbs/day	Average monthly
MD0051586	9/30/2021	Aluminum, total recoverable	22.6	8	mg/L	Max. Daily
MD0051586	9/30/2021	Aluminum, total recoverable	1283.779	574	lbs/day	Max. Daily
MD0051586	8/31/2021	Turbidity	636	150	NTU	Max. Daily
MD0051586	8/31/2021	Solids, total suspended	4873.16	4304	lbs/day	Max. Daily
MD0051586	8/31/2021	Solids, total suspended	87	60	mg/L	Max. Daily
MD0051586	8/31/2021	Aluminum, total recoverable	10.7	8	mg/L	Max. Daily
MD0051586	8/31/2021	Aluminum, total recoverable	592.8978	574	lbs/day	Max. Daily
MD0051586	7/31/2021	Turbidity	1000	150	NTU	Max. Daily
MD0051586	7/31/2021	Solids, total suspended	35	30	mg/L	Average monthly
MD0051586	7/31/2021	Solids, total suspended	169	60	mg/L	Max. Daily
MD0051586	7/31/2021	Solids, total suspended	12641.82	4304	lbs/day	Max. Daily
MD0051586	7/31/2021	Solids, total suspended	2356.594	2152	lbs/day	Average monthly

Permit #	Monitoring Period End Date	Parameter Name	DMR Value	Permit Limit	Units	Limit Type
MD0051586	7/31/2021	Aluminum, total recoverable	867.8504	574	lbs/day	Max. Daily
MD0051586	7/31/2021	Aluminum, total recoverable	11.6	8	mg/L	Max. Daily
MD0051586	6/30/2021	Turbidity	987	150	NTU	Max. Daily
MD0051586	6/30/2021	Solids, total suspended	54	30	mg/L	Average monthly
MD0051586	6/30/2021	Solids, total suspended	3184.451	2152	lbs/day	Average monthly
MD0051586	6/30/2021	Solids, total suspended	350	60	mg/L	Max. Daily
MD0051586	6/30/2021	Solids, total suspended	19276.68	4304	lbs/day	Max. Daily
MD0051586	6/30/2021	Iron, total (as Fe)*	9.1	8	mg/L	Max. Daily
MD0051586	6/30/2021	Aluminum, total recoverable	1534.735	574	lbs/day	Max. Daily
MD0051586	6/30/2021	Aluminum, total recoverable	4.9	4	mg/L	Average monthly
MD0051586	6/30/2021	Aluminum, total recoverable	292.9495	287	lbs/day	Average monthly
MD0051586	6/30/2021	Aluminum, total recoverable	29.2	8	mg/L	Max. Daily
MD0051586	5/31/2021	Turbidity	184	150	NTU	Max. Daily
MD0051586	5/31/2021	Solids, total suspended	13342.7	4304	lbs/day	Max. Daily
MD0051586	5/31/2021	Solids, total suspended	264	8	mg/L	Max. Daily
MD0051586	4/30/2021	Turbidity	348	150	NTU	Max. Daily
MD0051586	3/31/2021	Turbidity	1000	150	NTU	Max. Daily
MD0051586	3/31/2021	Turbidity	68	50	NTU	Average monthly
MD0051586	3/31/2021	Solids, total suspended	13766.63	2152	lbs/day	Average monthly
MD0051586	3/31/2021	Solids, total suspended	3470	60	mg/L	Max. Daily
MD0051586	3/31/2021	Solids, total suspended	302165.9	4304	lbs/day	Max. Daily
MD0051586	3/31/2021	Solids, total suspended	180	30	mg/L	Average monthly
MD0051586	3/31/2021	Iron, total (as Fe)*	346.9402	287	lbs/day	Average monthly
MD0051586	3/31/2021	Iron, total (as Fe)*	75.1	8	mg/L	Max. Daily
MD0051586	3/31/2021	Iron, total (as Fe)*	4.7	4	mg/L	Average monthly
MD0051586	3/31/2021	Iron, total (as Fe)*	6539.873	574	lbs/day	Max. Daily
MD0051586	3/31/2021	Aluminum, total recoverable	159	8	mg/L	Max. Daily
MD0051586	3/31/2021	Aluminum, total recoverable	12.5	4	mg/L	Average monthly
MD0051586	3/31/2021	Aluminum, total recoverable	885.8473	287	lbs/day	Average monthly
MD0051586	3/31/2021	Aluminum, total recoverable	13845.61	574	lbs/day	Max. Daily
MD0051586	2/28/2021	Solids, total suspended	9281.4	4304	lbs/day	Max. Daily
MD0051586	2/28/2021	Solids, total suspended	34	30	mg/L	Average monthly
MD0051586	2/28/2021	Solids, total suspended	182	60	mg/L	Max. Daily
MD0051586	2/28/2021	Aluminum, total recoverable	5.2	4	mg/L	Average monthly
MD0051586	1/31/2021	Turbidity	1000	150	NTU	Max. Daily

Permit #	Monitoring Period End Date	Parameter Name	DMR Value	Permit Limit	Units	Limit Type
MD0051586	1/31/2021	Solids, total suspended	69	60	mg/L	Max. Daily
MD0051586	1/31/2021	Solids, total suspended	31	30	mg/L	Average monthly
MD0051586	1/31/2021	Aluminum, total recoverable	9.7	8	mg/L	Max. Daily
MD0051586	1/31/2021	Aluminum, total recoverable	5.4	4	mg/L	Average monthly
MD0051586	12/31/2020	Turbidity	300	150	NTU	Max. Daily
MD0051586	12/31/2020	pH	6.1	6.5	SU	Minimum
MD0051586	11/30/2020	Turbidity	186	150	NTU	Max. Daily
MD0051586	11/30/2020	Solids, total suspended	66	60	mg/L	Max. Daily
MD0051586	11/30/2020	Aluminum, total recoverable	11.4	8	mg/L	Max. Daily
MD0051586	11/30/2020	Aluminum, total recoverable	4.6	4	mg/L	Average monthly
MD0051586	11/30/2020	Aluminum, total recoverable	679.8828	574	lbs/day	Max. Daily
MD0051586	10/31/2020	Turbidity	1000	150	NTU	Max. Daily
MD0051586	10/31/2020	Solids, total suspended	93	30	mg/L	Average monthly
MD0051586	10/31/2020	Solids, total suspended	6431.891	2152	lbs/day	Average monthly
MD0051586	10/31/2020	Solids, total suspended	123012.8	4304	lbs/day	Max. Daily
MD0051586	10/31/2020	Solids, total suspended	1760	60	mg/L	Max. Daily
MD0051586	10/31/2020	Iron, total (as Fe)**	332.9426	287	lbs/day	Average monthly
MD0051586	10/31/2020	Iron, total (as Fe)**	3690.364	574	lbs/day	Max. Daily
MD0051586	10/31/2020	Iron, total (as Fe)**	52.8	8	mg/L	Max. Daily
MD0051586	10/31/2020	Iron, total (as Fe)**	4.9	4	mg/L	Average monthly
MD0051586	10/31/2020	Aluminum, total recoverable	423.9269	287	lbs/day	Average monthly
MD0051586	10/31/2020	Aluminum, total recoverable	6.2	4	mg/L	Average monthly
MD0051586	10/31/2020	Aluminum, total recoverable	4920.152	574	lbs/day	Max. Daily
MD0051586	10/31/2020	Aluminum, total recoverable	70.4	8	mg/L	Max. Daily
MD0051586	9/30/2020	Turbidity	189	150	NTU	Max. Daily
MD0051586	9/30/2020	Solids, total suspended	37	30	mg/L	Average monthly
MD0051586	9/30/2020	Solids, total suspended	2180.624	2152	lbs/day	Average monthly
MD0051586	9/30/2020	Solids, total suspended	4438.235	4304	lbs/day	Max. Daily
MD0051586	9/30/2020	Solids, total suspended	69	60	mg/L	Max. Daily
MD0051586	9/30/2020	Iron, total (as Fe)**	8.2	8	mg/L	Max. Daily
MD0051586	9/30/2020	Aluminum, total recoverable	4.2	4	mg/L	Average monthly
MD0051586	9/30/2020	Aluminum, total recoverable	8.3	8	mg/L	Max. Daily
MD0051586	8/31/2020	Turbidity	927	150	NTU	Max. Daily
MD0051586	8/31/2020	Solids, total suspended	2575.556	2152	lbs/day	Average monthly
MD0051586	8/31/2020	Solids, total suspended	8567.523	4304	lbs/day	Max. Daily

Permit #	Monitoring Period End Date	Parameter Name	DMR Value	Permit Limit	Units	Limit Type
MD0051586	8/31/2020	Solids, total suspended	104	60	mg/L	Max. Daily
MD0051586	8/31/2020	Solids, total suspended	37	30	mg/L	Average monthly
MD0051586	8/31/2020	Iron, total (as Fe)**	708.8778	574	lbs/day	Max. Daily
MD0051586	8/31/2020	Iron, total (as Fe)**	8.6	8	mg/L	Max. Daily
MD0051586	8/31/2020	Aluminum, total recoverable	4.1	4	mg/L	Average monthly
MD0051586	8/31/2020	Aluminum, total recoverable	1268.781	574	lbs/day	Max. Daily
MD0051586	8/31/2020	Aluminum, total recoverable	15.4	8	mg/L	Max. Daily
MD0051586	6/30/2020	Turbidity	724	150	NTU	Max. Daily
MD0051586	6/30/2020	Solids, total suspended	5124.117	2152	lbs/day	Average monthly
MD0051586	6/30/2020	Solids, total suspended	65	30	mg/L	Average monthly
MD0051586	6/30/2020	Solids, total suspended	456	60	mg/L	Max. Daily
MD0051586	6/30/2020	Solids, total suspended	32723.36	4304	lbs/day	Max. Daily
MD0051586	6/30/2020	Iron, total (as Fe)*	911.8428	574	lbs/day	Max. Daily
MD0051586	6/30/2020	Iron, total (as Fe)*	12.7	8	mg/L	Max. Daily
MD0051586	6/30/2020	Aluminum, total recoverable	402.9305	287	lbs/day	Average monthly
MD0051586	6/30/2020	Aluminum, total recoverable	2475.573	574	lbs/day	Max. Daily
MD0051586	6/30/2020	Aluminum, total recoverable	5.1	4	mg/L	Average monthly
MD0051586	6/30/2020	Aluminum, total recoverable	34.5	8	mg/L	Max. Daily
MD0051586	5/31/2020	Turbidity	727	150	NTU	Max. Daily
MD0051586	5/31/2020	Solids, total suspended	169	60	mg/L	Max. Daily
MD0051586	5/31/2020	Solids, total suspended	2295.604	2152	lbs/day	Average monthly
MD0051586	5/31/2020	Solids, total suspended	14275.54	4304	lbs/day	Max. Daily
MD0051586	5/31/2020	Iron, total (as Fe)*	629.8914	574	lbs/day	Max. Daily
MD0051586	5/31/2020	Aluminum, total recoverable	10.9	8	mg/L	Max. Daily
MD0051586	5/31/2020	Aluminum, total recoverable	920.8413	574	lbs/day	Max. Daily
MD0051586	4/30/2020	Turbidity	500	150	NTU	Max. Daily
MD0051586	4/30/2020	Solids, total suspended	155	60	mg/L	Max. Daily
MD0051586	4/30/2020	Solids, total suspended	2594.553	2152	lbs/day	Average monthly
MD0051586	4/30/2020	Solids, total suspended	22463.13	4304	lbs/day	Max. Daily
MD0051586	4/30/2020	Iron, total (as Fe)*	819.8587	574	lbs/day	Max. Daily
MD0051586	4/30/2020	Aluminum, total recoverable	1150.802	574	lbs/day	Max. Daily
MD0051586	1/31/2020	Turbidity	236	150	NTU	Max. Daily
MD0051586	1/31/2020	Solids, total suspended	2449.578	2152	lbs/day	Average monthly
MD0051586	1/31/2020	Aluminum, total recoverable	329.9431	287	lbs/day	Average monthly
MD0051586	1/31/2020	Aluminum, total recoverable	583.8994	574	lbs/day	Max. Daily

Permit #	Monitoring Period End Date	Parameter Name	DMR Value	Permit Limit	Units	Limit Type
MD0051586	12/31/2019	Solids, total suspended	3526.392	2152	lbs/day	Average monthly
MD0051586	12/31/2019	Solids, total suspended	19567.63	4304	lbs/day	Max. Daily
MD0051586	12/31/2019	Solids, total suspended	102	60	mg/L	Max. Daily
MD0051586	12/31/2019	Aluminum, total recoverable	11.7	8	mg/L	Max. Daily
MD0051586	12/31/2019	Aluminum, total recoverable	475.918	287	lbs/day	Average monthly
MD0051586	12/31/2019	Aluminum, total recoverable	2244.613	574	lbs/day	Max. Daily

Footnote (8) in Section II.A of the Permit states, “The effluent limitations for Total Iron as Fe shall be applicable during the periods when iron compound(s) are used in water treatment processes for the drinking water production.”

* The elevated iron levels reported in March, June, and October 2021, as well as in April, May, and June 2020 would not be considered effluent limit exceedances because iron-based compounds were not being added to the treatment process. This is documented in the ICIS data notes (refer to [Appendix B, Exhibit 3](#)). These 10 values are not included in the total number of exceedances referenced above (135).

** The ICIS data notes state, “On August 10, 2020 the Plant initiated low dosage blending of ferric sulfate, an iron-based coagulant, with the primary coagulant, polyaluminum chloride. Until that date, a ferric based coagulant had not been used in the water treatment process at the Plant since November 2, 2018.” Thus, the elevated levels of iron observed in August, September, and October 2020 would be considered effluent limit exceedances. These 7 values are included in the total number of exceedances referenced above.

According to EPA’s ECHO Detailed Facility Report, violations were identified for the Facility in the fourth quarter of 2019 and first quarter of 2020, and the Facility was in a state of Significant Noncompliance (SNC) between the second quarter of 2020 through the end of 2021 (refer to [Appendix B, Exhibit 4](#)). Facility staff stated that they believed most exceedances were caused by elevated pollutant levels occurring in the source water. They believe Potomac River water coming into the plant’s intake has elevated concentrations of iron and aluminum as well as increased total suspended solids and turbidity, particularly during high flow events in the river due to storms.

As stated previously, the Facility has been under a Consent Decree with the Potomac Riverkeepers, Chesapeake Bay Foundation, and MDE since April 15, 2016, to minimize solids loading to the river and meet effluent limits. Facility representatives stated that the Facility completed a project about a year prior to the inspection to replace leaky effluent valves on the produced water reservoirs (refer to [Appendix A, Photograph 3](#)), which resulted in the elimination of about 20 MGD of leakage from being discharged through Outfall 001A. In addition, according to Facility representatives and the Facility’s fourth quarter 2021 Consent Decree Status Report (refer to [Appendix B, Exhibit 5](#)), the Permittee had advertised bids for sedimentation process upgrades in December 2021 and gravity thickener expansion in January 2022. The report also indicates construction started on solids handling building upgrades in May 2021. A detailed timeline for all projects to be completed was not provided; however, the Consent Decree requires all long-term projects to be completed by January 1, 2026.

Observation 2. In addition to the exceedances documented in the ICIS data, the EPA Inspection Team also observed numerous other daily maximum exceedances to be reported in the ICIS spreadsheet notes (refer to [Appendix B, Exhibit 3](#)). These were confirmed with values documented in the Permittee’s MORs. Table 3 provides a summary of the 144 observed exceedances for January 1, 2021, through December 31, 2021. Although not reviewed, it is likely additional exceedances were also presented this way in 2020 and 2019. It is unclear if any of these additional exceedances had been factored into the calculations that support state and federal electronic reporting databases. Based on a review of the Permittee’s Discharge Exceedance Reports, it appeared as though the Permittee had been providing MDE with written notice of these exceedances.

Table 3. Additional Daily Maximum Exceedances at Outfall 001A Documented in ICIS Notes and MORs (January 1, 2021, through December 31, 2021)

Permit #	Monitoring Date	Parameter Name	DMR Value	Permit Limit	Units
MD0051586	11/23/2021	Aluminum, total recoverable	8.1	8	mg/L
MD0051586	11/3/2021	Turbidity	184	150	NTU
MD0051586	11/2/2021	Turbidity	463	150	NTU
MD0051586	10/25/2021	Aluminum, total recoverable	12.2	8	mg/L
MD0051586	10/23/2021	Aluminum, total recoverable	16.9	8	mg/L
MD0051586	10/22/2021	Aluminum, total recoverable	14.8	8	mg/L
MD0051586	10/19/2021	Aluminum, total recoverable	15.0	8	mg/L
MD0051586	10/13/2021	Aluminum, total recoverable	13.1	8	mg/L
MD0051586	10/5/2021	Aluminum, total recoverable	10.5	8	mg/L
MD0051586	10/4/2021	Aluminum, total recoverable	15.5	8	mg/L
MD0051586	10/23/2021	Aluminum, total recoverable	857.9	574	lbs/day
MD0051586	10/22/2021	Aluminum, total recoverable	826.3	574	lbs/day
MD0051586	10/19/2021	Aluminum, total recoverable	771.0	574	lbs/day
MD0051586	10/13/2021	Aluminum, total recoverable	715.0	574	lbs/day
MD0051586	10/4/2021	Aluminum, total recoverable	861.8	574	lbs/day
MD0051586	10/26/2021	Solids, total suspended	346	60	mg/L
MD0051586	10/25/2021	Solids, total suspended	267	60	mg/L
MD0051586	10/23/2021	Solids, total suspended	68	60	mg/L
MD0051586	10/19/2021	Solids, total suspended	262	60	mg/L
MD0051586	10/18/2021	Solids, total suspended	76	60	mg/L
MD0051586	10/13/2021	Solids, total suspended	139	60	mg/L
MD0051586	10/6/2021	Solids, total suspended	66	60	mg/L
MD0051586	10/4/2021	Solids, total suspended	141	60	mg/L
MD0051586	10/26/2021	Solids, total suspended	19296	4304	lbs/day
MD0051586	10/25/2021	Solids, total suspended	15242	4304	lbs/day
MD0051586	10/19/2021	Solids, total suspended	13467	4304	lbs/day
MD0051586	10/18/2021	Solids, total suspended	4937	4304	lbs/day
MD0051586	10/13/2021	Solids, total suspended	7586	4304	lbs/day
MD0051586	10/4/2021	Solids, total suspended	7840	4304	lbs/day
MD0051586	10/31/2021	Turbidity	813	150	NTU
MD0051586	10/29/2021	Turbidity	215	150	NTU
MD0051586	10/28/2021	Turbidity	273	150	NTU
MD0051586	10/27/2021	Turbidity	317	150	NTU
MD0051586	10/26/2021	Turbidity	270	150	NTU
MD0051586	10/24/2021	Turbidity	862	150	NTU
MD0051586	10/23/2021	Turbidity	202	150	NTU
MD0051586	10/19/2021	Turbidity	269	150	NTU
MD0051586	10/18/2021	Turbidity	874	150	NTU
MD0051586	10/17/2021	Turbidity	908	150	NTU

Permit #	Monitoring Date	Parameter Name	DMR Value	Permit Limit	Units
MD0051586	10/15/2021	Turbidity	161	150	NTU
MD0051586	10/12/2021	Turbidity	727	150	NTU
MD0051586	10/11/2021	Turbidity	820	150	NTU
MD0051586	10/8/2021	Turbidity	167	150	NTU
MD0051586	10/7/2021	Turbidity	339	150	NTU
MD0051586	10/6/2021	Turbidity	199	150	NTU
MD0051586	10/5/2021	Turbidity	194	150	NTU
MD0051586	10/4/2021	Turbidity	852	150	NTU
MD0051586	10/3/2021	Turbidity	850	150	NTU
MD0051586	9/27/2021	Aluminum, total recoverable	2.6	8	mg/L
MD0051586	9/23/2021	Aluminum, total recoverable	10.8	8	mg/L
MD0051586	9/22/2021	Aluminum, total recoverable	10.9	8	mg/L
MD0051586	9/21/2021	Aluminum, total recoverable	8.82	8	mg/L
MD0051586	9/23/2021	Aluminum, total recoverable	697	574	lbs/day
MD0051586	9/22/2021	Aluminum, total recoverable	649	574	lbs/day
MD0051586	9/22/2021	Solids, total suspended	276	60	mg/L
MD0051586	9/21/2021	Solids, total suspended	70	60	mg/L
MD0051586	9/27/2021	Solids, total suspended	1284	4304	lbs/day
MD0051586	9/22/2021	Solids, total suspended	16449	4304	lbs/day
MD0051586	9/28/2021	Turbidity	242	150	NTU
MD0051586	9/27/2021	Turbidity	257	150	NTU
MD0051586	9/26/2021	Turbidity	447	150	NTU
MD0051586	9/25/2021	Turbidity	987	150	NTU
MD0051586	9/24/2021	Turbidity	181	150	NTU
MD0051586	9/23/2021	Turbidity	333	150	NTU
MD0051586	9/21/2021	Turbidity	394	150	NTU
MD0051586	9/20/2021	Turbidity	361	150	NTU
MD0051586	9/4/2021	Turbidity	397	150	NTU
MD0051586	8/17/2021	Aluminum, total recoverable	9.07	8	mg/L
MD0051586	8/14/2021	Solids, total suspended	72	60	mg/L
MD0051586	8/14/2021	Turbidity	258	150	NTU
MD0051586	8/13/2021	Turbidity	601	150	NTU
MD0051586	7/7/2021	Aluminum, total recoverable	8.43	8	mg/L
MD0051586	7/7/2021	Aluminum, total recoverable	756	574	lbs/day
MD0051586	7/7/2021	Solids, total suspended	74	60	mg/L
MD0051586	7/1/2021	Solids, total suspended	75	60	mg/L
MD0051586	7/7/2021	Solids, total suspended	6639	4304	lbs/day
MD0051586	7/1/2021	Solids, total suspended	4718	4304	lbs/day
MD0051586	7/22/2021	Turbidity	346	150	NTU
MD0051586	7/9/2021	Turbidity	628	150	NTU
MD0051586	7/8/2021	Turbidity	214	150	NTU
MD0051586	7/7/2021	Turbidity	549	150	NTU
MD0051586	7/5/2021	Turbidity	542	150	NTU
MD0051586	6/29/2021	Aluminum, total recoverable	17.5	8	mg/L
MD0051586	6/18/2021	Aluminum, total recoverable	13.6	8	mg/L
MD0051586	6/29/2021	Aluminum, total recoverable	964	574	lbs/day
MD0051586	6/18/2021	Aluminum, total recoverable	846.4	574	lbs/day
MD0051586	6/26/2021	Solids, total suspended	64	60	mg/L
MD0051586	6/24/2021	Solids, total suspended	120	60	mg/L
MD0051586	6/18/2021	Solids, total suspended	180	60	mg/L
MD0051586	6/9/2021	Solids, total suspended	77	60	mg/L
MD0051586	6/8/2021	Solids, total suspended	258	60	mg/L
MD0051586	6/24/2021	Solids, total suspended	6826	4304	lbs/day
MD0051586	6/18/2021	Solids, total suspended	11202	4304	lbs/day

Permit #	Monitoring Date	Parameter Name	DMR Value	Permit Limit	Units
MD0051586	6/9/2021	Solids, total suspended	5794	4304	lbs/day
MD0051586	6/8/2021	Solids, total suspended	13564	4304	lbs/day
MD0051586	6/30/2021	Turbidity	333	150	NTU
MD0051586	6/28/2021	Turbidity	703	150	NTU
MD0051586	6/27/2021	Turbidity	170	150	NTU
MD0051586	6/23/2021	Turbidity	870	150	NTU
MD0051586	6/22/2021	Turbidity	813	150	NTU
MD0051586	6/18/2021	Turbidity	398	150	NTU
MD0051586	6/17/2021	Turbidity	810	150	NTU
MD0051586	6/16/2021	Turbidity	907	150	NTU
MD0051586	6/7/2021	Turbidity	836	150	NTU
MD0051586	4/7/2021	Turbidity	330	150	NTU
MD0051586	3/24/2021	Aluminum, total recoverable	25.5	8	mg/L
MD0051586	3/23/2021	Aluminum, total recoverable	28.1	8	mg/L
MD0051586	3/17/2021	Aluminum, total recoverable	10.5	8	mg/L
MD0051586	3/16/2021	Aluminum, total recoverable	11.2	8	mg/L
MD0051586	3/6/2021	Aluminum, total recoverable	28.9	8	mg/L
MD0051586	3/5/2021	Aluminum, total recoverable	14.5	8	mg/L
MD0051586	3/3/2021	Aluminum, total recoverable	21.4	8	mg/L
MD0051586	3/24/2021	Aluminum, total recoverable	1472.3	574	lbs/day
MD0051586	3/23/2021	Aluminum, total recoverable	1698.4	574	lbs/day
MD0051586	3/17/2021	Aluminum, total recoverable	654.7	574	lbs/day
MD0051586	3/16/2021	Aluminum, total recoverable	640.6	574	lbs/day
MD0051586	3/6/2021	Aluminum, total recoverable	1523.3	574	lbs/day
MD0051586	3/5/2021	Aluminum, total recoverable	1102.3	574	lbs/day
MD0051586	3/3/2021	Aluminum, total recoverable	1428	574	lbs/day
MD0051586	3/24/2021	Solids, total suspended	322	60	mg/L
MD0051586	3/23/2021	Solids, total suspended	120	60	mg/L
MD0051586	3/17/2021	Solids, total suspended	155	60	mg/L
MD0051586	3/15/2021	Solids, total suspended	69	60	mg/L
MD0051586	3/6/2021	Solids, total suspended	474	60	mg/L
MD0051586	3/3/2021	Solids, total suspended	361	60	mg/L
MD0051586	3/24/2021	Solids, total suspended	18592	4304	lbs/day
MD0051586	3/23/2021	Solids, total suspended	7253	4304	lbs/day
MD0051586	3/17/2021	Solids, total suspended	9664	4304	lbs/day
MD0051586	3/15/2021	Solids, total suspended	4555	4304	lbs/day
MD0051586	3/6/2021	Solids, total suspended	24984	4304	lbs/day
MD0051586	3/3/2021	Solids, total suspended	24089	4304	lbs/day
MD0051586	3/23/2021	Turbidity	1000	150	NTU
MD0051586	3/22/2021	Turbidity	1000	150	NTU
MD0051586	3/16/2021	Turbidity	693	150	NTU
MD0051586	3/15/2021	Turbidity	986	150	NTU
MD0051586	3/14/2021	Turbidity	578	150	NTU
MD0051586	3/6/2021	Turbidity	189	150	NTU
MD0051586	3/5/2021	Turbidity	1000	150	NTU
MD0051586	3/4/2021	Turbidity	1000	150	NTU
MD0051586	3/2/2021	Turbidity	279	150	NTU
MD0051586	1/28/2021	Aluminum, total recoverable	8.14	8	mg/L
MD0051586	1/27/2021	Aluminum, total recoverable	9.72	8	mg/L
MD0051586	1/15/2021	Aluminum, total recoverable	9.28	8	mg/L
MD0051586	1/16/2021	Aluminum, total recoverable	9.73	8	mg/L

Special Plan and Report Submittals

Section II.B(2) of the Permit states, “No later than three months from MDE’s publication of a tentative determination of a proposed permit (02-DP-1055), the permittee shall submit the Study Plans for effluent biomonitoring as well as toxic chemical testing and obtain approval from the Department. For further details, refer to Special Condition II.D.1 for Effluent Biomonitoring Study Plan and Special Condition II.F.1 for Effluent Toxic Chemical Testing Study Plan.”

Additionally, the Section II.B(2) of the Permit states, “After MDE’s approval of the Effluent Biomonitoring Study Plan, the permittee shall perform the effluent biomonitoring study and submit the results in a comprehensive report to the Department as per requirements of the Special Condition II.D, and “After MDE’s approval of the Effluent Toxic Chemical Testing Plan, the permittee shall perform the effluent toxic chemical testing and submit the results in a comprehensive report to the Department as per requirements of the Special Condition II.F.”

Observation 3. The EPA Inspection Team requested the Effluent Biomonitoring Study Plan, Effluent Toxic Chemical Testing Plan, and associated reports verbally at the time of the inspection and in writing following the inspection; however, these documents had not been provided at the time this report was completed. Facility representatives explained they believed the plans had been completed, and that the plans and all associated documentation were held in WSSC’s offsite lab facility.

Monitoring and Reporting

Section III.A.3 of the Permit states, “Analytical and sampling methods shall conform to test procedures for the analysis of pollutants as identified in 40 CFR Part 136 - "Guidelines Establishing Test Procedures for the Analysis of Pollutants."

Observation 4. The EPA Inspection Team observed multiple instances on the Facility’s Weekly Discharge Sampling sheets where the 15-minute hold time for pH analysis was exceeded. These dates include August 1, 2021, September 5, 2021, and October 23, 2021 (refer to [Appendix A, Photographs 18 through 20](#)).

Section III.A.5.a. of the Permit states, “The permittee shall calibrate and maintain all monitoring and analytical instrumentation to ensure accuracy of measurements.”

Observation 5. The EPA Inspection Team observed the thermometers used to monitor ambient conditions in the raw water and Outfall 001A effluent composite samplers were not kept in solution. The thermometers were observed laying on their sides inside the sampler within direct contact to the metal holding bracket (refer to [Appendix A, Photographs 3 and 16](#)).

Section III.A.6 of the Permit states, “For each measurement or sample taken pursuant to the requirements of the permit, the permittee shall record the following information: a. the date, exact place and time of sampling or measurement; b. the person(s) who performed the sampling or measurement; c. the dates analyses were performed; d. the person(s) who performed each analysis; e. the analytical techniques or methods used; and f. the results of such analyses.”

Observation 6. The EPA Inspection Team observed whiteout had been applied to multiple areas for corrections in the Facility’s Weekly Discharge Sampling sheets (refer to [Appendix A, Photographs 21 and 22](#) for examples).

Proper Operation and Maintenance

Title 40 of the Code of Federal Regulation (CFR), Chapter 122.41 applies to all NPDES permits and states, “The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with

the terms and conditions of this permit. Proper operation and maintenance include, but is not limited to, adequate laboratory controls including appropriate quality assurance procedures. This provision also includes the operation of backup or auxiliary facilities or similar systems that are installed by the permittee, only when necessary to achieve compliance with the terms and conditions of this permit.”

Section III.B.3.a of the Permit states, all waste collection, control, treatment and disposal facilities shall be “operated efficiently to minimize upsets and discharges of excessive pollutants.”

Section III.B.3.c of the Permit states, “Facility maintenance work, which adversely affects or may adversely affect the discharge quality shall be scheduled during non-critical water quality periods.”

Observation 7. The EPA Inspection Team observed that the launders separating treatment components in Sedimentation Basin 3A and 3B had significant corrosion with paint peeling, rust, and flakes of material observed floating on the surface of the basins (refer to [Appendix A, Photograph 11](#)). At the time of the inspection, Facility representatives were unsure of the total severity of the corrosion of the launders but stated that a replacement project for the launders with a non-corrodible material had been planned.

Operator Certification

Section III.B.3.b of the Permit states, “The permittee shall provide an adequate operating staff qualified to carry out the operation, maintenance, and testing functions required to ensure compliance with this permit. Superintendents and operators must be certified by the Board of Waterworks and Waste Systems Operators located at Montgomery Park Business Center, 1800 Washington Boulevard, STE- 410, Baltimore, Maryland 21230 in accordance with Title 12 of Environmental Article, Annotated Code of Maryland.”

Observation 8. The EPA Inspection Team observed at least two of the displayed operator certifications had expired. Facility representatives explained that one of the operators (Jacob Burdette) had completed his exam and was waiting on a new certificate to arrive and the other (Hector Rojas) had yet to take the exam (refer to [Appendix A, Photographs 23 and 24](#)).

Closing Conference

After the Facility site walk, the EPA Inspection Team met with the WSSC Section Managers for a closing conference and shared preliminary observations. The EPA Inspection Team reiterated that all preliminary observations discussed were not compliance determinations. Any and all preliminary observations shared were subject to further investigation by the EPA Inspection Team upon the additional review of records and documentation. Additional observations may be contained in this inspection report that were not identified at the time of the closing conference after the additional review of materials following the inspection.

The inspection concluded at approximately 3:20 PM (EST).