



Maryland Department of Environment
Water and Science Administration
Compliance Program
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Inspector: Ronald Wicks
AI ID: 3076

Site Name: Patapsco WWTP
Facility Address: 3501 Asiatic Ave, Curtis Bay, MD 21226
County: Baltimore City County

Start Date/Time: January 30, 2023, 08:45 AM
End Date /Time: February 23, 2023, 11:06 PM

Complaint Number:
Media Type(s): NPDES Municipal Major Surface Water

Contact(s):

Neal Jackson
Eric Johnson
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Wendy Huang MDE
Samantha Coffman MDE

NPDES Municipal Major Surface Water

Permit / Approval Numbers: 15DP0580
NPDES Numbers: MD0021601
Inspection Reason: Follow-up (Non-Compliance)
Site Status: Active
Compliance Status: Noncompliance
Site Condition: Noncompliance
Recommended Action: Additional Investigation Required
Evidence Collected: Photos or Videos Taken, Record Review, Visual Observation
Delivery Method: Email
Weather: Clear Average

Inspection Findings:

The Patapsco WWTP is a 73 MGD capacity, activated sludge wastewater treatment plant (WWTP) with ferric chloride for removal of phosphorus. The treatment system has Grit removal, mechanical fine screens, primary clarifiers, oxygen activated sludge reactors, secondary clarifiers, biological aerated filters for nitrification, de-nitrification filters, flow distribution chamber, chlorine contact chamber, dichlorination and cascade post aeration chamber prior to final discharge to the Patapsco River. The receiving water is designated Use II waters protected for estuarine and marine aquatic

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life. The average flow is approximately 55-57 MGD; however, during heavy rainfall flows can double due to infiltration from the sewer lines. Patapsco WWTP's biosolids are processed by Synagro, Inc., a private company, located on-site that draws the undigested biosolids and then dewateres the biosolids and transports off site.

The permit effective date is 10/1/2017, expiration date is 09/30/2022 (The permit has been administratively extended) with a reapplication date of 03/31/2021. The renewal application was received by the Maryland Department of the Environment (Department). The facility's activity code or standard industrial classification (SIC) is 4952 and the North American Industry Classification System (NAICS) is 22132.

Today, on January 30, 2023, I conducted a compliance evaluation inspection at the Patapsco WWTP, NPDES Discharge Permit number MD0021601 and State number 15-DP-0580.

I was joined by Wendy Huang and Samantha Coffman, Environmental Compliance Inspectors with the Compliance Program, Maryland Department of the Environment. We met Mr. Neal Jackson, Plant Manager, Mr. Eric Johnson, Wastewater Operations Supervisor II, Andrea Buie, Environmental Compliance Manager on site for this evaluation. I began the inspection with an opening conference where I outlined my plans for this inspection and discussed follow-up items from previous evaluations. specific details regarding the treatment processes and plant operations detailed below.

Biosolids Treatment and Management

Due to the high concentration of total petroleum hydrocarbons (TPH) detected in the sludge, Synagro, the biosolids processing facility, has not been using the air dryer normally used to efficiently process sludge. Synagro has not been routinely pelletizing the sludge but processing biosolids to cake at a much slower rate. Today, Jackson stated that Synagro has been monitoring the hydrocarbon concentration of the sludge and initiated a trial startup last week using the air dryer for dewatering of the biosolids with plans to continue after reviewing the TPH data from testing events.

According to Jackson, the Patapsco WWTP is working with Synagro to improve biosolids processing and removal from the site. Biosolids are being taken from the gravity sludge thickeners (GST) instead of from the SBTs where the TPH concentrations are very high. Due to the high concentration of TPH in the sludge, a portable belt press was used to dewater the sludge in the SBTs. All of the sludge in the SBTs has been processed and these tanks are now empty.

According to Jackson and Johnson, 45 – 50 dry tons of biosolids are now being processed daily by Synagro and the centrifuged sludge is sent out of state by railcar. The removal of the sludge by rail began on June 23, 2022. The inventory of biosolids has been reduced to a point where according to Jackson and Johnson, sludge is being processed the same day it is pumped from the treatment system. The tailings transfer station that was being used as a temporary sludge storage site has been cleared of sludge and has gone back to its original purpose of a drying area for tailings from the fine screening area.

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Total Petroleum Hydrocarbon (TPH) Source Investigation

On July 27, 2022, the Department received a letter from Baltimore City containing a status report update on efforts to forensically determine the source(s) of the hydrocarbon-related constituents in the influent from the Patapsco WWTP. The report specified that additional monitoring would be conducted in the collection system near one or more significant industrial users (SIU). If it is determined that one or more of the SIUs is the source of the TPH constituents of concern, the Baltimore City would take appropriate measures in coordination with the SIUs to mitigate TPH from their discharge. On December 7, 2022, the Department received an update from the City stating the further evaluation and monitoring has determined that the source of the TPH is not related to any one SIU and based on these findings the City has concluded that the influent concentrations of TPH are from "...a diffuse array of Fats, Oils, and Grease (FOG) contributors and not from individual large sources". Within 30 days of the receipt of this report the Patapsco WWTP shall share the results of all forensic sampling and analysis and any other pertinent monitoring data that supports the City's conclusions in the December 7, 2022, letter to the Department.

Grit Building

The domestic waste enters the plant at the grit building where there are six grit chambers. Hazen and Sawyer, Inc, a third-party contractor has cleaned and repaired some of the grit processing equipment. Initially, Hazen and Sawyer determined that all six grit chambers were not functioning as designed because of the grit and rags in the chambers. All of the grit chambers have been cleaned and put into service. The facility generates 60 – 70 tons of grit per month, which is landfilled off site. There are now 6 roll off dumpsters at the grit building, which has made the loading and disposal of the grit more efficient.

According to Jackson, SC 938 is a capital improvement project contract was approved to completely rehabilitate the Grit facility. According to Jackson when completed, the Grit Building will be an open-air structure with just a roof and no walls. Jackson further stated that until the building is refurbished, they will be adding Thioguard® TST, a technical grade of magnesium hydroxide $Mn(OH)_2$ to an inlet interceptor. Thioguard® TST inhibits the ability of sulfate reducing bacteria (SRB) to convert sulfates to hydrogen sulfide gas.

Fine Screening Process

To date, 5 of the 8 fine screens have been recently refurbished and installed. Fine screens #6 and #7 have been refurbished but not installed as of this writing. Baltimore City has appropriated the funds to upgrade the bar screens by replacing all the internal parts and installing a more effective wash system. All 8 of the screening units are scheduled to be refurbished. According to Jackson, the remaining screen #2B is scheduled for repairs next month.

Primary Settling Tanks (PST)

I asked Jackson about the status of a Capital Improvement Project for FY2018 that was approved by the Board of Estimates in 2017 to provide upgrades for the PSTs. These improvements include the following:

- Pump and scum removal upgrades for all PSTs
- Replacement actuators in all scum troughs.
- Replacing the flight brackets on PSTs #2-6 with new functional heavy-duty brackets.
- Installing scum trough with actuated adjustment rods in PST #1-3
- Installing a heavy-duty mixer in the scum trough between PSTs #5 and #6

According to Jackson, the replacement of the actuators in the scum troughs are to be done ahead of the other items in the FY2018 Capital Improvement Project.

Gravity Sludge Thickeners (GST)

There are 3 GSTs (# 1, 2, and 4) and only 2 are operational. GSTs #1 and #2 are in operation, but both require reinforcement of the scraper mechanisms to be fully functional. The third GST, #4 requires extensive repairs to be functional. According to Jackson, repairs to GST #4 are nearing completion but they are waiting on the delivery of a speed reducer and skimmer arm to complete the repairs to GST #4 and the reinforcement parts for #1 and #2 GST are scheduled to arrive in 6 to 10 weeks. The Patapsco WWTP is currently providing a monthly status report to the Department every 30 days on the status of the repairs.

Liquid Oxygen (LOX) Plant

The liquid oxygen required for the biological reactors is produced in the LOX Plant. The LOX plant produces >99% pure oxygen through cryogenic distillation of air. The LOX Plant separates oxygen from air by liquefying air at extremely low temperatures. The LOX Plant has two separate trains to produce oxygen and each with its own compressor. Both compressors have failed, but they have been refurbished and are now functional. During the periods when the compressors were down, the Patapsco WWTP provided the biological reactors with oxygen trucked in from an outside contractor. In addition, there have been delivery delays that have exacerbated the problem. During this inspection, the LOX Plant was down again due to problems with the cryogenic system. According to Jackson, a contractor, Johnson Controls is completing repairs to the chiller and all oxygen is being supplied and trucked in by a private contractor.

According to DPW representatives, the purchased oxygen cannot enter the biological reactors with the same pressure as can be done using the onsite LOX plant and because of this the second stage dissolved oxygen can only reach 5.0 mg/L, which is under the minimum 6.0 mg/L required for second stage nitrification in the biological treatment. Currently, the ammonia as N concentrations of the effluent leaving the biological reactors going into the BAF was between 14 and 16 mg/L. During the previous inspection the ammonia as N concentrations were between 16 and 20 mg/L, which shows a decrease in the ammonia as N concentration.

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High Purity Oxygen Biological Reactors (biological reactors)

The #1 and #4 reactors are not functioning because the aerators in the biological reactors were inoperative. Today reactors # 2, #3 #5, and #6 are online with all associated aerators functioning.

Secondary Clarifiers

The Patapsco WWTP has eight secondary clarifiers and currently 6 are being used as intended. The #2 secondary clarifier is offline for repairs and secondary clarifier # 3 is being used exclusively for filter backwash for the BAFs to try to contain the media that is being discharged during the backwash process. The status of the clarifiers are detailed under the site review.

BAF

The next topic of discussion was the media leakage problem from the nitrifying filters. The filters used are Veolia Water technologies (VWT), biological activated filter (BAF). The media loss has been an ongoing problem since 2020. Previously, the Patapsco WWTP reported that the media leakage problem was isolated to BAF cell #5 and cell # 5 was taken out of service to stop the leakage problem. However, according to Jackson, it was determined that Cell #5 is no longer a concern and media loss was due to the water velocity during the backwash cycles. According to DPW, the operation of the BAF has been transitioned to fully automatic mode, which will help to control velocity during backwash cycles.

The Department's 6/29 and 7/7 inspection report specified that the Patapsco WWTP shall provide a written plan or SOP by August 3, 2022, on how the BAF media will be removed from the mud well and steps that will be taken to prevent further media loss or discharge to the surface waters. In the February 3, 2023, progress report the DPW stated that "the Patapsco WWTP has devised a procedure to move media from the mud wells to the TPS building where it is easier to remove. This procedure will be documented in an SOP and then mud well cleanings will be scheduled as needed. This procedure was submitted to the Department on January 3, 2023.

Denitrification Filters (DNF)

Currently 31 of the 34 DNF are online and functioning. The 3 DNF that are offline are down for repairs. The third-party engineering report states that for current flow conditions 24 DNF are required for satisfactory process operations.

Chlorine Contact Chambers (CCC)

The scum collection trough on CCC #2 has been out of service for over 4 months and requires repairs in order for it to function and skim off FOG and floating scum. During the site review, I observed that the scum collection trough was now back in service.

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Operations and Maintenance (O&M), Preventive Maintenance (PM) and Staffing

Previous inspection reports noted that operating conditions in many process areas require improvements due to unsatisfactory PM and lack of satisfactory process controls. These conditions have led to failing treatment process due to poorly functioning equipment. According to the February 3, 2023, Patapsco WWTP progress report submitted to the Department, the DPW stated that “Preventative Maintenance efforts continue to be prioritized, tracked, conducted, and filed with the current ELKE MIMS” system.

According to the plant manager, the ransomware attack shutdown the control apps for the inventory system. I asked the plant manager if the inventory system was back online or if they were able to determine the status of spare parts and equipment. Jackson stated that they are still working on the inventory problem. Inventory control is to be managed under the ELKE system and the asset management system will be used to reconcile available parts. According to the November 10, 2022, progress report, the Baltimore City DPD personnel are currently assessing central inventory resource needs. According to the progress report, after the assessment, the Patapsco WWTP will order a sufficient supply of spare parts, equipment, and other supplies.

Self-Monitoring Program

A. Sampling and Analysis

For 2022 there have been a significant number of samples that were not reported because of laboratory or operator error (see Table 1 below). Failure to monitor and report as specified by the permit is a violation of 40 CFR Parts 122 and 125 and Title 9 of the Environmental Article. According to the permittee, most of those errors are due to problems by the laboratory that are out of their control. However, this does not change their obligations to monitor and report all sampling data collected in support of the Clean Water Act (CWA)

In order to comply with 40 CFR Part 122 and 125 and of Title 9 of the Environmental Article, the Patapsco WWTP must ensure that measures are taken to ensure that all samples meet the sampling and analytical requirements of 40 CFR Part 136 so that rejection is not required. Some compliance methods require rejection of data that fail QC criteria. However, to do so when there is not opportunity for reanalysis, resampling or corrective action may cause a violation of 40 CFR Part 122 or 125 reporting requirements.

The reporting requirements in Parts 122 or 125 may take precedence over the otherwise applicable reporting or preservation requirements of a particular analytical method. When sampling or analytical QC results do not meet 40 CFR Part 136 requirements and there is no opportunity to resample, the permittee sample result must be reported in the comments section of the DMR with explanation and flagged, but do not include it in the calculation for the averages.

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In the Department’s 8/24/22 inspection report, it was specified that within 30 days, the Patapsco WWTP must conduct a root cause analysis to identify and correct the problems associated with samples that were not reported because of variances from 40 CFR Part 136 requirements. On January 19, 2023, the Department received a root cause analysis report from the DPW. The report states the following: “DPW is currently negotiating a contract with a laboratory located in Maryland to analyze our daily samples for pollutants with short hold times. It should be noted there are a limited number of laboratories providing the needed services in Maryland. To our knowledge, there is no laboratory in Maryland that can handle the large number of samples routinely collected by DPW. ALS has determined there was an internal communication break down with receipt confirmation and notification for the ALS lab team to start analysis. ALS has changed their internal process to notify the ALS lab team to start the analysis process when the samples arrive. An entire lab-shift team has been designated to address incoming samples from the City WWTPs. The new process went into effect on December 1, 2022. The City will continue to meet monthly with ALS: to review the previous month’s sample analysis, to tweak processes and operating procedures as needed.” These laboratory errors continue to occur.

Table 1 Samples That Were Not Reported Due to Laboratory or Operator Error (Year 2022)

Date	Parameter	Issue	Action
3/4/22	<i>Enterococci</i>	Laboratory analyst failed to incubate sample for the method-specified 24 hrs.	Discussed with analyst
4/3/22	<i>Enterococci</i>	Patapsco operator delivered the sample a day late, therefore the sample arrived at the laboratory beyond the EPA 40 CFR Part 136 specified maximum holding time.	Patapsco WWTP detailed a plan of action in the 5-day letter submitted to the Department
7/2/22	BOD and TSS	The samples were considered invalid because the temperature upon arrival at the laboratory exceeded the maximum temperature of 6°C specified by 40 CFR Part 136 for TSS and BOD. In addition, the results of laboratory control sample for BOD did not meet the recovery rate of 85 – 115%	Laboratory analytical problem and failure to properly ice samples for transport to the laboratory
7/2/22	TKN, Ammonia, Nitrate-Nitrite and total Phosphorus	The samples were considered invalid because the temperature upon arrival at the laboratory exceeded the maximum holding temperature of 6°C specified by 40 CFR Part 136	

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7/8/22	BOD	BOD result was considered invalid because the temperature of the incubator was above the method specified temperature of 21°C	Laboratory oversight
7/9/22	BOD	BOD result was considered invalid because the temperature of the incubator was above the method specified temperature of 21°C	Laboratory oversight
7/11/22	Orthophosphate	Sample was held beyond the 48-hr holding time specified by 40 CFR Part 136 prior to analysis.	Laboratory oversight
7/13/22	BOD	BOD result was considered invalid because the temperature of the incubator was above the method specified temperature of 21°C	Laboratory oversight
7/18/22	TSS and BOD	The samples were considered invalid because the temperature upon arrival at the laboratory exceeded the maximum holding temperature of 6°C specified by 40 CFR Part 136	
7/18/22	TKN, Ammonia, Nitrate-Nitrite and total Phosphorus	The samples were considered invalid because the temperature upon arrival at the laboratory exceeded the maximum holding temperature of 6°C specified by 40 CFR Part 136	
7/31/22	TSS and BOD	The samples were considered invalid because the temperature upon arrival at the laboratory exceeded the maximum holding temperature of 6°C specified by 40 CFR Part 136	
7/31/22	TKN, Ammonia, Nitrate-Nitrite and total Phosphorus	The samples were considered invalid because the temperature upon arrival at the laboratory exceeded the maximum holding temperature of 6°C specified by 40 CFR Part 136	
8/1/2022	Orthophosphate	Sample was held beyond the 48-hr holding time specified by	Laboratory oversight

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		40 CFR Part 136 prior to analysis.	
8/3/2022	TKN, Ammonia, Nitrate-Nitrite and total Phosphorus	The permittee considered the samples invalid because the samples were flagged by the laboratory because the temperature upon arrival at the laboratory was 7 °C, which is 1° above the maximum holding temperature of 6°C specified by 40 CFR Part 136	
8/10/2022	Free Cyanide	Sample was held beyond the 14-day holding time specified by 40 CFR Part 136 prior to analysis.	Laboratory oversight
8/12/2022	BOD*	The initial BOD result, which was analyzed within holding time was estimated to be >79.3 mg/L, which would indicate that the laboratory did not use the appropriate sample dilutions for this sample matrix. The sample was reanalyzed outside of the holding time using some of the remaining sample. The BOD result for the second sample set was 321 mg/L but outside of the assigned holding time.	Laboratory oversight
8/29/2022	Orthophosphate	Sample was held beyond the 48-hr holding time specified by 40 CFR Part 136 prior to analysis.	Laboratory oversight
9/10/2022	Total Phosphorus	Sample was held beyond the 28-day holding time specified by 40 CFR Part 136 prior to analysis.	Laboratory oversight
9/16/2022	BOD	The sample was flagged by the laboratory because the incubation time exceeded the maximum method incubation time by 30 minutes.	Laboratory oversight
9/17/2022	BOD	The sample was flagged by the laboratory because the incubation time exceeded the	Laboratory oversight

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		maximum method incubation time by 30 minutes.	
9/17/2022	TSS	The sample was accidentally discarded before it was analyzed.	Laboratory oversight
9/18/2022	BOD	Sample was held beyond the 48-hr holding time specified by 40 CFR Part 136 prior to analysis.	Laboratory oversight
10/5/2022	TSS	Sample was held beyond the 7-day holding time specified by 40 CFR Part 136 prior to analysis.	Laboratory oversight
10/9/2022	TSS and BOD	The sample collector used the incorrect sampling bottle. The sampling bottle contained acid which was not appropriate for these parameters.	Permittee oversight
11/17/22	BOD	Sample was held beyond the 48-hr holding time specified by 40 CFR Part 136 prior to analysis.	
11/19/22	BOD	Sample was held beyond the 48-hr holding time specified by 40 CFR Part 136 prior to analysis.	
11/22/22	BOD	Sample was held beyond the 48-hr holding time specified by 40 CFR Part 136 prior to analysis.	
12/3/22	BOD	Sample was held beyond the 48-hr holding time specified by 40 CFR Part 136 prior to analysis.	
12/6/22	PCB Congener	Laboratory failed to analyze the sample before the end of the permit-specified monitoring period.	
12/24/22	BOD	Sample was held beyond the 48-hr holding time specified by 40 CFR Part 136 prior to analysis.	

B. Flow Measurement and Calibration

Flow data reported to the Department show that the sewage flow coming into the plant on a daily basis is 15 – 30% greater than the amount of wastewater being discharged. I discussed this issue with Jackson and Johnson during previous inspections to see if there was an explanation for the discrepancy. According to Johnson, the influent flow meter has not been functioning since February. On June 1, 2022, the Department received copies of the influent and effluent flow measurement system calibration records done by plant mechanics for the period January – May 2022. These records do not show any problems with the flow measuring system. The Department requested further assessments conducted by a third-party engineering company. The Department received an email from Joseph Kebede, Bureau Head, dated November 25, 2022, outlining the steps to be taken to address the flow discrepancy, including an evaluation by Sherwood Logan & Associates, Inc. scheduled for December 9, 2022, and recommendations for corrective measures from Hazen & Sawyer. As of the first week of January 2023, Baltimore City DPW did not submit the information on the evaluation conducted by Sherwood Logan & Associates or recommendations for corrective measures from Hazen & Sawyer as agreed.

Therefore, on January 6, 2023, the Department sent a letter to Director Jason Mitchel requesting that the City submit the results of the evaluation and recommendations for flow meter improvements with a time schedule no later than January 16, 2023. On January 13, 2023, Baltimore City DPW submitted a letter to the Department requesting a 30-day extension to conduct the supplemental investigation, analyze the results, and work with the on-site engineering team to develop the recommendations for repair or possible replacement of the flow meter. To date the Department has not received a copy of the evaluation, recommendations or the results of the supplemental investigation.

C. PCB Minimization Plan

The total PCB loading for the 1st through 4th quarters of 2021 is 206.5 grams, which is above the annual waste load allocation (WLA) of 27.2 grams/year. Special Condition A2 footnote 4b specifies that within 60 days of exceeding the WLA, the permittee shall submit a PCB minimization plan (PMP) to the Department for approval to track the sources and Best Management Practice (BMP) implementation. The Department provided a guidance document to ensure that the plan encompasses a full range of PCB minimization activities.

The Department specified in the May 18, 2022, inspection report that Within 60 days of the receipt of the report, the Patapsco WWTP shall submit to the Department for approval a PCB minimization plan designed to track and eliminate PCB sources entering the treatment plant. On November 10, 2022, the Patapsco WWTP submitted a PCB Action plan to the Department. However, this action plan does not address the specific minimization actions specified in the Department's outline for pollutant minimization plans for polychlorinated biphenyls for sanitary wastewater treatment plants. On February 6, 2023, the Department

received an updated PCB minimization plan, prepared by AECOM. The plan is now under review by the Department.

Permit Effluent Violations

There have been a continual series of permit effluent violations reported for the following constituents due to operational and process problems:

- Biochemical oxygen demand (BOD₅)
- Total suspended solids (TSS)
- Total phosphorus (TP)
- Total Nitrogen (TN)
- Total Ammonia as N
- Enterococcus

During a data review of the DMRs and MORs for April through December of 2022, the following reported violations were observed as shown in Table 2 below:

Table 2

Date	Parameter	Result Reported	Permit Violation	Permit Limitation
April 2022	TSS	Monthly Average Concentration- 61 mg/L	Exceeded Monthly Average Concentration	30 mg/L
April 2022	TSS	Monthly Average Loading – 29,231 Lbs.	Exceeded Monthly Average Loading	18,000 Lbs.
April 4/1 – 4/7 2022	TSS	Weekly Average Concentration - 155 mg/L	Exceeded Weekly Average Concentration	45 mg/L
April 4/1 – 4/7 2022	TSS	Weekly Average Loading - 74,486 Lbs.	Exceeded Weekly Average Loading	27,000 Lbs.
April 4/1 – 4/7 2022	Total Phosphorus	Weekly Average Concentration – 4.6 mg/L	Exceeded Weekly Average Concentration	3.0 mg/L
April 4/1 – 4/7 2022	Total Phosphorus	Weekly Average Loading – 2,513 Lbs.	Exceeded Weekly Average Loading	1,830 Lbs.
April 2022	Total Phosphorus	Monthly Average Concentration – 2.56 mg/L	Exceeded Monthly Average Concentration	2.0 mg/L

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April 2022	Total Phosphorus	Annual cumulative loading - 128,800 lbs.	Exceeded the 2022 total cumulative annual loading for 2022 in March 2022 and will continue to exceed the limit until 12/31/2022	66,700 lbs./year
April 2022	Total Nitrogen	Annual cumulative loading 1,111,800.0 lbs.	Exceeded the total annual cumulative loading for 2022. Will continue to exceed the limit until 12/31/2022	889,300 lbs./yr.
April 22	Enterococcus	Monthly Geomean concentration 54 MPN/100 ML	Exceeded Monthly Geomean Concentration	35 MPN/ 100 ml
April 4/1 – 4/7 2022	Biochemical Oxygen Demand	Reported Weekly Average Concentration - 60 mg/L	Exceeded Weekly Average Concentration	45 mg/L
April 4/1 – 4/7 2022	Biochemical Oxygen Demand	Weekly Average Loading – 30,136 Lbs.	Exceeded Weekly Average Loading	27,000 Lbs.
April 22	Biochemical Oxygen Demand	Monthly Average Concentration- 38 mg/L	Exceeded Monthly Average Concentration	30 mg/L
April 22	Biochemical Oxygen Demand	Monthly Average Loading – 18,778 Lbs.	Exceeded Monthly Average Loading	18,000 Lbs.
May 2022	Enterococcus	Monthly Geomean concentration 38.2 MPN/100 ML	Exceeded Monthly Geomean Concentration	35 MPN/ 100 ml
May 2022	Ammonia as N	Monthly Average Concentration- 14.2 mg/L	Exceeded Seasonal Monthly Average Concentration (5/1-10/31)	6.3 mg/L
May 2022	Ammonia as N	Monthly Average Loading – 7,100 Lbs.	Exceeded Seasonal Monthly Average Loading (5/1-10/31)	3,836 Lbs.
May 2022	Total Nitrogen	1,456,300.0 Lbs.	Exceeded the total annual cumulative loading for 2022. Will continue to exceed the limit until 12/31/2022	889,300 lbs./yr.

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May 2022	Total Nitrogen,	344,600 Lbs. Seasonal Cumulative Total 5/1-10/31	Exceeded Seasonal cumulative total	333,330 Lbs.
June 2022	Ammonia as N	Monthly Average Concentration- 13.5 mg/L	Exceeded Seasonal Monthly Average Concentration (5/1-10/31)	6.3 mg/L
June 2022	Ammonia as N	Monthly Average Loading – 5,938 Lbs.	Exceeded Seasonal Monthly Average Loading (5/1-10/31)	3,836 Lbs.
June 2022	Total Phosphorus	Seasonal Cumulative Total 5/1-10/31 35,500 Lbs.	Exceeded Seasonal cumulative total	33,330 Lbs.
June 2022	Total Nitrogen	1,738,700.0 lbs./yr.	Exceeded the total annual cumulative loading for 2022. Will continue to exceed the limit until 12/31/2022	889,300 lbs./yr.
June 2022	Total Phosphorus	164,300.0 lbs./yr.	Exceeded the total annual cumulative loading for 2022. Will continue to exceed the limit until 12/31/2022	66,700.0 lbs./yr.
June 2022	Total Nitrogen,	627,000.0 Lbs. Seasonal Cumulative Total 5/1-10/31	Exceeded Seasonal cumulative total Will continue to exceed the limit until 10/31/2022	333,330 Lbs.
July 2022	Ammonia as N	Monthly Average Concentration- 10.3 mg/L	Exceeded Seasonal Monthly Average Concentration (5/1-10/31)	6.3 mg/L
July 2022	Ammonia as N	Monthly Average Loading – 4,302 Lbs.	Exceeded Seasonal Monthly Average Loading (5/1-10/31)	3,836 Lbs.
August 2022	Total Phosphorus	Seasonal Cumulative Total 5/1-10/31 42,800.0 Lbs.	Exceeded Seasonal cumulative total	33,330 Lbs.
August 2022	Total Nitrogen	2,004,900.0 lbs./yr.	Exceeded the total annual cumulative loading for 2022. Will	889,300 lbs./yr.

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			continue to exceed the limit until 12/31/2022	
August 2022	Total Phosphorus	171,600.0 lbs./yr.	Exceeded the total annual cumulative loading for 2022. Will continue to exceed the limit until 12/31/2022	66,700.0 lbs./yr.
August 2022	Total Nitrogen,	893,200.0 Lbs. Seasonal Cumulative Total 5/1-10/31	Exceeded Seasonal cumulative total Will continue to exceed the limit until 10/31/2022	333,330 Lbs.
September 2022	Total Nitrogen	2,251,500.0 lbs./yr.	Exceeded the total annual cumulative loading for 2022. Will continue to exceed the limit until 12/31/2022	889,300 lbs./yr.
September 2022	Total Phosphorus	189,400.0 lbs./yr.	Exceeded the total annual cumulative loading for 2022. Will continue to exceed the limit until 12/31/2022	66,700.0 lbs./yr.
September 2022	Total Phosphorus	Seasonal Cumulative Total 5/1-10/31 60,600.0 Lbs.	Exceeded Seasonal cumulative total	33,330 Lbs.
September 2022	Total Nitrogen,	1,139,800.0 Lbs. Seasonal Cumulative Total 5/1-10/31	Exceeded Seasonal cumulative total Will continue to exceed the limit until 10/31/2022	333,330 Lbs.
October 2022	Total Nitrogen	2,309,200.0 lbs./yr.	Exceeded the total annual cumulative loading for 2022. Will continue to exceed the limit until 12/31/2022	889,300 lbs./yr.
October 2022	Total Phosphorus	192,400.0 lbs./yr.	Exceeded the total annual cumulative loading for 2022. Will continue to exceed the limit until 12/31/2022	66,700.0 lbs./yr.
October 2022	Total Phosphorus	63,600.0 Lbs. Seasonal Cumulative Total 5/1-10/31	Exceeded Seasonal cumulative total	33,330 Lbs.

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October 2022	Total Nitrogen,	1,197,500.0 Lbs. Seasonal Cumulative Total 5/1-10/31	Exceeded Seasonal cumulative total Will continue to exceed the limit until 10/31/2022	333,330 Lbs.
November 2022	Total Nitrogen	2,390,600.0 lbs./yr.	Exceeded the total annual cumulative loading for 2022. Will continue to exceed the limit until 12/31/2022	889,300 lbs./yr.
November 2022	Total Phosphorus	194,600.0 lbs./yr.	Exceeded the total annual cumulative loading for 2022. Will continue to exceed the limit until 12/31/2022	66,700.0 lbs./yr.
December 2022	Total Nitrogen	2,465,100.0 lbs./yr.	Exceeded the total annual cumulative loading for 2022. Will continue to exceed the limit until 12/31/2022	889,300 lbs./yr.
December 2022	Total Phosphorus	196,800.0 lbs./yr.	Exceeded the total annual cumulative loading for 2022. Will continue to exceed the limit until 12/31/2022	66,700.0 lbs./yr.

Site Review

After the preliminary meeting, I continued the inspection with a site review. The domestic waste enters the plant at the grit building where there are six grit chambers. Hazen and Sawyer, Inc, is still repairing and cleaning the grit building process equipment. Initially, Hazen and Sawyer determined that all six grit chambers were not functioning as designed because of the grit and rags in the chambers. All of the grit chambers have been cleaned and put into service. Hazen and Sawyer Inc. has also repaired and put into service one of the clamshell cranes. Because of problems with odor control and ventilation at the grit building confined space entry requirements are in place. Respirators are required for entry to the grit building, so we were not able to inspect the grit handling system.

There are two influent lines coming into the plant, domestic, which is 90% - 95% of the flow and industrial, which makes up the remaining 5% - 10% of the flow. The industrial flow and domestic flow are measured individually by separate venturi meters with secondary totalizing units and then the two waste streams combine at the influent tank at the fine screen building.

During an inspection of the industrial influent screening facility, I found that 2 screens were operable, 2 (#1 and #4) of the 4 pumps were operable. The #2 and #3 pumps require variable

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frequency drives (VFD) in order to function. According to Jackson, they have received a bid for a complete upgrade of the Industrial influent screening facility.



1/30/23 Industrial plant influent. Grease was observed on the screens and floating in the influent.

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1/30/23 One of the screening units at the industrial influent screening facility

The domestic sewage travels from the grit chambers to the fine screening units. The sewage is pumped to the influent tank at the fine screen building and travels to the fine screening building. The facility has eight screening units and 5 of the 8 screening units were online and functioning.

Next, we traveled to the fine screening building. At the entrance to the fine screening building, I observed what appeared to be spilled lime mixed with water in the roadway. Later it was traced back to the inside trash collection and dumpster area. I requested that the area be cleaned up and the water not be allowed to flow to the storm drains in the area. Jackson contacted maintenance and request that the area be cleaned. The second picture is an after shot showing conditions after the cleanup.

The dumpster collection area must be maintained in better condition to prevent reoccurrences. Housekeeping practices should be improved, and all spills must be cleaned up immediately after they occur to prevent these substances from contaminating stormwater that flows to the surface waters of the State. In addition, the Patapsco WWTP should emphasize to its employees and contractors working on site the importance of preventing spills and similar environmental incidents. In addition, there should be an enhancement in management efforts in stressing to staff the importance of the prevention, immediate action and management of spills and potential spill situations.

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1/30/23 spilled lime and water mixture.

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1/30/23 This is a picture taken after the cleanup.

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1/30/23 Trash collection dumpster appears to be the source of the lime.

The next area of evaluation was the Tailings Transfer Station. The Patapsco WWTP has been using the Tailings Transfer Station as a temporary sludge storage area to store unprocessed sludge. This area is now being cleared of sludge. According to Johnson, now that Synagro is using the railcars to transport the centrifuged sludge off-site there is no need to store the sludge at the Tailings Transfer Station. The railcars offer a greater capacity than trucks and this change has significantly reduced the Patapsco WWTP's biosolids inventory. Tailings Transfer Station will go back to being use as a storage area for the tailings from the fine screening area as designed. The entire transfer station area has been cleared of sludge.

The next area of evaluation was the fine screening building. The influent tank at the fine screening building had a thick layer of grease (see pictures below). According to Jackson, a large amount of grease came through several days ago from an unknow source.

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1/30/23 Influent tank at fine screening building showing heavy layer of grease.

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1/30/23 Influent tank at fine screening building showing heavy layer of grease.

Next, I inspected the fine screening area where I observed an accumulation of rags and debris falling off of the conveyor belts. The housekeeping practices in this area require more attention and improvements are necessary to prevent and minimize potential problems downstream due to trash and debris impairing and clogging equipment. In addition, the bar screening units were clogged with grease making them unable to function as designed.

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1/30/23 conveyer belt at fine screening building

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1/30/23 conveyor belt area at fine screening building

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1/30/23 Fine screening units clogged with grease and not functioning as designed.



1/30/23 Location for fine screens #6 and #7 that were taken out for repairs. The screens have been refurbished but have not been installed. The channels should be cleaned of the heavy layer of FOG before installation.

The wastewater travels from the fine screening to the primary settling tanks (PST) for initial settling of the solids and scum removal. The plant has six primary settling tanks with 3 passes. The bottom sludge from the PSTs is gathered by screw collectors at the bottom of the tanks and collected in hoppers and then sent to the GSTs.

Today, 5 of the 6 PSTs were online. PST #2 was taken offline and is scheduled to be cleaned by a third-party contractor, Kalyani Environmental Solutions.

During an inspection of the PSTs, I observed a considerable amount of FOG floating on the surface of the PSTs as well as media recycled from the BAF recycle clarifier. I also observed FOG/media slugs on the overflow weirs at some of the PSTs. Some of this material has breached the weirs and was observed floating in the channel leading to the biological reactors.

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1/30/23 PST #1 has a thick layer of FOG.

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1/30/23 Thick layer of FOG on the PSTs

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1/30/23 Floating slugs of FOG in the channel leading to the biological reactors.

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1/30/23 FOG that has breached the weirs of the PSTs.

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11/30/23 FOG and BAF media clumped together overflowing the PST overflow weirs.



1/30/23 FOG that has breached the PST treatment.

According to Mr. Jackson, the scum troughs are checked twice a day to remove the scum and manual skimming with a net is being conducted as well to try to manage the floating scum and FOGs. There was no manual skimming or rotations being done during my time inspecting the PSTs. Due to the FOG, the scum troughs are overwhelmed. The facility must ensure the operational integrity of primary treatment system and take a proactive approach by removing the accumulation of FOGs that have accumulated in the PSTs and channel leading to the reactors. More frequent checks of the scum troughs and manual skimming should be conducted to prevent media and FOGs from flowing downstream.

The wastewater travels from the PSTs to the high-pressure pure oxygen reactors, which are below ground. Each of the six PSTs has an associated reactor. The first stage receives no oxygen and oxygen is added to the second stage to maintain a dissolved oxygen concentration of 6.0 to 12.0 mg/l. The flow and second stage DO is monitored by the operators every 2 hours. The waste streams from reactors #1 through #4 are split between four secondary clarifiers and the wastewater from reactors # 5 and #6 split between 4 smaller separate secondary clarifiers. During previous inspections, the reported MLSS (mg/L suspended solids) in the reactors have been above the target range of 3500 – 4000. Chris Saunders, representing Hazen and Sawyer Inc., who joined us for the site review told me that the current MLSS concentration range for the reactors online was 3680 –

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4200, which is acceptable I also asked Saunders what the current Ammonia as N concentration was going to the BAF, and he stated that the Ammonia as N concentration going to the BAF was in the range of 14 – 16 mg/L.

During an inspection of the secondary clarifiers, I found the following:

- Secondary clarifier #3 is still being used to collect the backwash from the BAF and the DNF in an attempt to isolate the BAF media that is being discharged during backwash. The effluent from the #3 clarifier goes back to the influent line of the PSTs. The floating media was observed on the surface of the water.
- Currently, 6 of the 8 clarifiers are active and being used for wastewater treatment to settle solids. However, the scum collection scrapers are not functioning as designed for all active clarifiers.
- Secondary clarifier # 2 is offline for repairs due to a problem with the suction tube assembly. The tank must be drained prior to completing the maintenance work so it will take several weeks to complete the repairs.
- The scum collection trough/pit on secondary clarifier 6A was clogged and needs to be cleaned. There was a floating layer of scum on the surface of the water.
- During the November 2022 inspection the skimmer arm on clarifier #5A was reported as bent and a part of the scum scraper is missing. During today's inspection, I found that the skimmer arm is no longer functioning, and the scum scraper is missing. There is floating sludge that is overflowing the weirs and the sludge blanket appear to be higher than normal. This clarifier requires maintenance.

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1/30/23 Secondary clarifier #6A scum collection trough/pit was clogged. There was a floating layer of scum on the surface of the water.

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1/30/23 Secondary clarifier 5A the skimmer arm is no longer functioning, and the scum scraper is missing.

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1/30/23 Secondary clarifier 5A with floating biosolids

Next, I conducted an evaluation of the BAF. In the BAF process, wastewater flows upwards through the cells that contain tightly packed media that provides a surface for the microorganisms to attach to and grow. Air is added to the bottom of the cell to provide oxygen for the microorganisms to thrive. This media is being lost and discharged during the backwash process and according to the Patapsco WWTP it has been isolated to Cell #5. The ENR filters used are Veolia Water technologies (VWT), biological activated filter (BAF). Currently, 20 of the 22 filters were online during this evaluation. The BAF system now functions in auto-mode. Tertiary Pumping Station is now 100% automated. The Tertiary Pump Station has 5 pumps with 4 active pumps and 1 pump for backup.

The Patapsco WWTP has been working with VWT to resolve the problem. I was informed that there is no longer a problem with the leakage of media and all media being discharged are from the residual in the backwash mud wells. During an inspection of the BAF mud well where the backwash is discharged before going into clarifier #3, I observed that the amount of media has declined by and the entire surface of the water in the mud well is no longer covered with a heavy layer of media. The Patapsco WWTP submitted on 1/5/23 an SOP informing the Department how

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the media would be removed. The Patapsco WWTP must continue to clean the mud wells in order to prevent further discharges of media and prevent issues with media clogging pumps and other sensitive treatment works equipment.



1/30/23 BAF cell in operation

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1/30/23 Picture taken today of backwash mud well showing media accumulation. See picture below showing mud well condition on 11/2/22.

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Picture taken 11/2/22 of backwash mud well showing media accumulation.

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The Denitrification Filter System (DNF) was the next stop during the site review. The facility has 34 denitrification filters for denitrification and today according to the Area Supervisor, 31 were in service. There have been issues with overloading the filters with solids requiring the DNF system to be bypassed. During this inspection, the some of the filters in service had issues requiring attention as detailed below:

Five of the DNF # 25, 27, 29, 31, and 32 were submerged. The water level was above the overflow height rendering them non-functional.

There was a heavy scum layer on some of the DNFs.



1/30/23 DNF with heavy scum layer

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1/30/23 Center filter submerged and filters to either side have a scum layer.

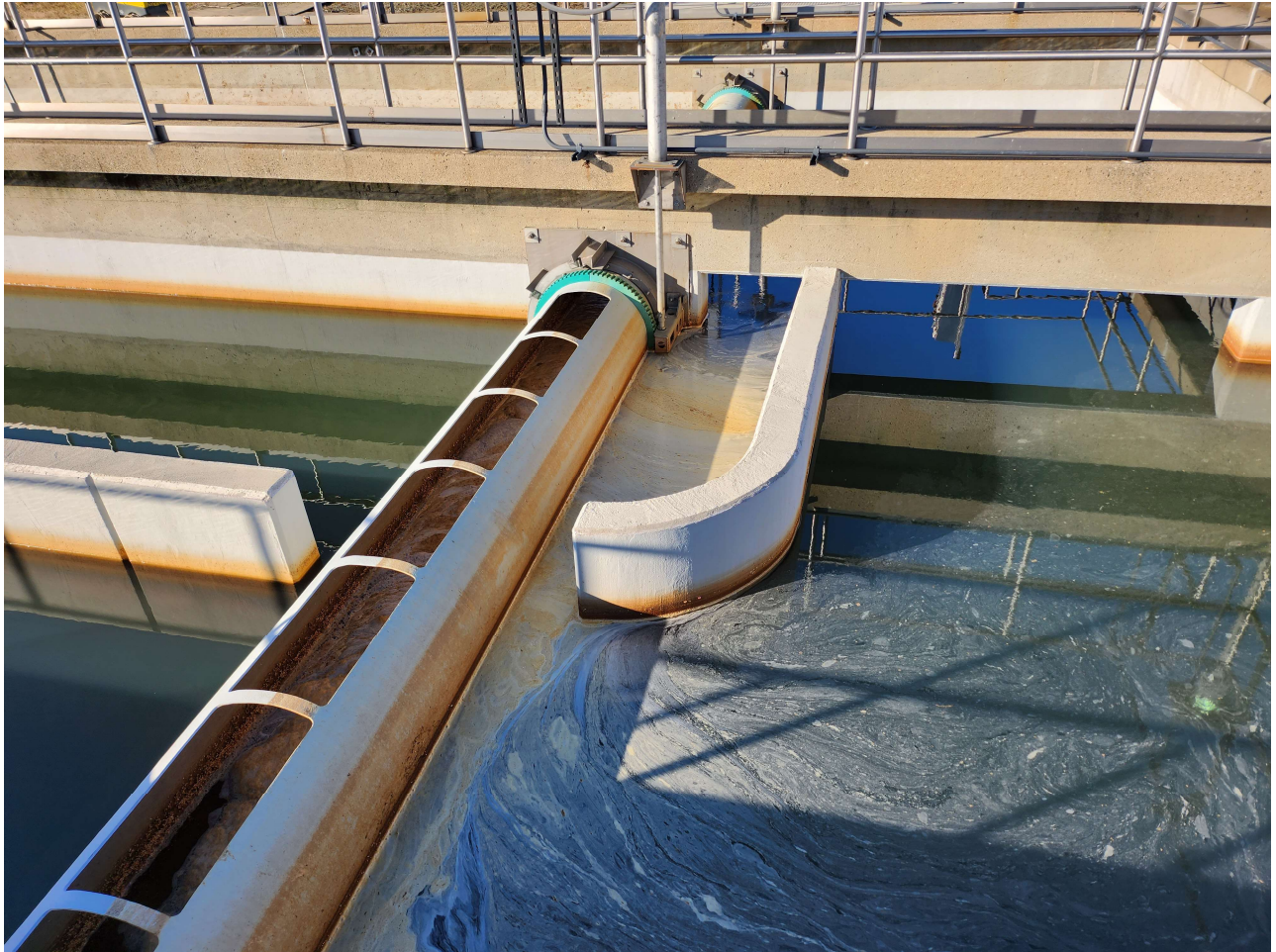
Next, I inspected the chlorine contact basins prior to the final discharge. There are 4 contact chambers and all 4 are currently online. Each contact chamber has 3 scum logs or troughs to remove floating scum. During this inspection none of the scum logs were being used to collect FOG although there was evidence of scum in the contact chambers. Currently there was no manual skimming being done at the chlorine contact basins. There was scum and solids observed in the chlorine contact basins.

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1/30/23 Chlorine contact basin

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1/30/23 Chlorine Contact basin with scum log.

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1/30/23 Chlorine contact with scum log

Effluent Monitoring Equipment

The facility is collecting a 24-hr, flow-proportioned composite samples at Outfall 001 in accordance with the requirements of the permit. The primary refrigerated, automatic composite sampler was inspected, and I found that the temperature of the compartment was satisfactory, and the sampling container was also clean. The temperature of the refrigerated compartment was 5 degrees C, which meets 40 CFR Part 136 requirements. I inspected the final effluent in the sampling container and observed that the composite sample was a medium amber color with suspended particulates.

Next, I inspected the quality assurance data for the routine field measurements (DO, pH, total residual chlorine (TRC) conducted at each shift at the Outfalls. The secondary standards used to verify the accuracy of the colorimeter used to monitor TRC show that the results obtained are

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outside of the acceptance limits of the standardization check kit. Either a calibration curve must be prepared for the colorimeter, or the colorimeter must be replaced with an accurate meter.



1/30/23 Automatic sampling equipment

GSTs

Gravity thickening is the process by which biosolids are condensed to produce a concentrated solids product and a relatively solids-free supernatant. The facility has 3 GSTs (#1, #2 and #4) and during this inspection, I observed that 2 were online. However, the skimmer arm on GST #1 is not functional because the scrapper flaps are broken.

The #4 GST is not functional. The scrapers, drive and pumps require replacement and the repairs have begun. The original speed reducer could not be repaired so a new speed reducer was ordered. Currently waiting for the replacement part. During an inspection of # 1 GST and # 2 GST, I observed the following problems:

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- The sludge blankets were above an acceptable level causing the effluent (supernatant) from the GSTs to have a higher-than-normal solids concentration. The high sludge blanket is also causing the top layer of supernatant to be charcoal in color.
- The # 2 GST skimmer arm was not in complete alignment with the surface of the water and requires reinforcement.
- The skimmer arm on GST #1 is not functional because the scrapper flaps are broken.
- Scum collection baffle openings are impacted with solids and scum and should be cleared of the substances.
- Media from the BAF floating in the tanks.



1/30/23 GST#1 scum layer on the surface due to inability of the skimmer arm to function. Scum and trash observed on the weirs.

Table 3 Patapsco WWTP Total Annual Cumulative Load for 2022

Parameter	Patapsco WWTP Cumulative Total for 2022	Permit Tributary Strategy Limit*	Concentration-Based Limitations*	Compliance
Total Suspended Solids	3,212,900 lbs./yr.	6,669,776 lbs./yr.	NA	Y
Total Nitrogen	2,465,100.0 lbs./yr.	889,300 lbs./yr.	566,289 lbs./yr.	N
Total Phosphorus	196,800.0 lbs./yr.	66,700 lbs./yr.	42,472 lbs./yr.	N
Annual Flow	18,861.2 MG/yr.	NA	NA	NA

* At the end of each calendar year, the permittee shall comply with the *concentration-based* limitations (3.6 mg/L for Total Nitrogen and 0.27 mg/L for Phosphorus) for the Annual Maximum Loading Rate or the *Tributary Strategy-based* loading rate limitation listed in the permit whichever is lower:

Table 4

Parameter	Cumulative Total for 2020	Cumulative Total for 2021	Cumulative Total for 2022
Total Suspended Solids	1,690,800 lbs./yr.	3,192,300 lbs./yr.	3,212,900 lbs./yr.
Total Nitrogen	1,029,200 lbs./yr.	1,993,300 lbs./yr.	2,465,100.0 lbs./yr.
Total Phosphorus	114,500 lbs./yr.	252,300 lbs./yr.	196,800.0 lbs./yr.
Annual Flow	18,098.2 MG/yr.	18,340.6 MG/yr.	18,861.2 MG/yr.

Operation and Maintenance

There are a number of out of service and malfunctioning process equipment that requires replacement or repairs as detailed in this and previous compliance evaluation reports. The majority of these process equipment issues have been outstanding for months and many for over one year. The data above show that there has not been an improvement in the treatment and removal of solids

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and total nitrogen during the past two years (see Table 3 above). The problems with treatment stem from inadequate monitoring of process controls and inadequate PM. The Patapsco WWTP must improve operating practices by utilizing preventive maintenance procedures that are devised to reduce incidents of process equipment failures and inefficiency due to poorly functioning equipment. The Patapsco WWTP has been operating in a corrective maintenance mode and correcting problems after an incident or after failing equipment no longer functions instead of operating in a preventative maintenance (PM) mode. According to Jackson, this is currently changing. The Patapsco WWTP is using the ELKE system for all maintenance. The system generates daily 6:30 AM maintenance sheets for all supervisors. These sheets contain a list of maintenance items that must be performed for the day. Jackson further stated that the supervisors meet with him daily to address the status of the daily maintenance items.

As reported in the 8/24/22 inspection report, PM helps to cut facility operating costs by eliminating unforeseen equipment failures and the need for corrective maintenance. PM improves the facility's reliability of treatment processes by minimizing the time equipment is out of service. PM can increase the useful life of equipment and thereby avoiding costly premature replacement of equipment. PM also prevents possible compliance violations.

The Patapsco WWTP shall comply with the requirements of the 8/24/23 inspection report to develop and initiate a PM program including but not limited to the following:

- 1. A written PM program covering all major equipment items.**
- 2. Types of repair and other PM tasks necessary for each piece of equipment including interval or frequency of service.**
- 3. PM tasks should be scheduled in accordance with the manufacturer's recommendations.**
- 4. All PM tasks should be recorded, filed, and reviewed so future maintenance problems can be assessed properly.**
- 5. A central inventory of spare parts, equipment, and supplies should be maintained and controlled.**

There should also well-trained, competent plant staff to perform the routine PM tasks. An ongoing training program should be developed and implemented to ensure that staff have the skills necessary to operate and maintain the process equipment.

FOG Mitigation Plan

The Patapsco WWTP has not complied with Special Condition Special Condition M of the permit and reported at the end of the calendar year all measures taken to comply with the FOG mitigation plan. The Patapsco WWTP shall report to the Department within 10 days of the receipt of this report all measures taken to comply with the FOG mitigation plan.

With respect to the above MDE authorization the following violations of Environmental Article 9 by the Patapsco WWTP were observed on this date:

- A. Baltimore City DPW has concluded that the influent concentrations of TPH are from "...a diffuse array of Fats, Oils, and Grease (FOG) contributors and not from individual large sources".
- B. The PSTs are overwhelmed with FOG and are not able to function as designed. The cause of the FOG has not been identified. However, heavy FOG loads into the plant is a continuing problem for the Patapsco WWTP. FOGs are bypassing treatment and traveling downstream. This can lead to clogged filters, pumps, piping and impede and negatively impact downstream treatment processes. Under the provisions of 40 CFR Part 403.5(c)(1) & (2), *a POTW must establish and enforce specific local limits for industrial users to prevent interference with the operation of the municipally-owned treatment works in the following circumstances: (1) POTWs with approved pretreatment programs; (2) POTWs that have experienced Interference or Pass-Through and such violation is likely to recur.* Special condition M of the permit specifies that the Patapsco WWTP shall develop and implement an FOG mitigation Plan to protect the treatment works, maintain effluent quality, and ensure full compliance with the narrative discharge standard of this permit, the
- C. The results of the standard checks indicate that the TRC colorimeter is not producing accurate results. This is a violation of General Condition A5a of the permit.
- D. Equipment maintenance and repairs are not being performed by the Back River WWTP at the level necessary to efficiently operate and maintain the treatment works. This is a violation of General Condition B3(a) & (b) of the NPDES permit, which specifies the following:
- *Facilities shall be operated efficiently to minimize upsets and discharges of excessive pollutants.*
 - *The permittee shall provide an adequate operating staff qualified to carry out operation, maintenance and testing functions required to ensure compliance with this permit.*

The fine screening system is not being maintained to the level necessary to ensure that downstream equipment functions satisfactorily. During previous inspections in 2021 and 2022, the belt conveyors were not operable due to the accumulation debris such as rags, paper and plastic items. During this inspection, the belts were functioning; however, there was an accumulation debris on and around the belts. The belts are old with missing and damaged skirting which allows the debris to fall from the belt and clog the mechanical parts. Because of this issue the system requires constant maintenance to prevent blockage of the belt mechanisms. Only 2 of the 3 GSTs are available and the 2 GSTs that are being used are not processing the sludge efficiently because repairs are necessary in order for them to function as designed. Currently, the LOX plant is offline due to mechanical issues. Therefore, oxygen is being trucked in for use in the Pure Oxygen Biological Reactors The facility does not have the redundancy and resiliency required because of the condition of

essential process equipment. The secondary clarifiers require repairs and 5 of the DNF were submerged due to clogging of the filters.

- E. The Patapsco WWTP staff are not addressing and controlling spills satisfactorily to prevent stormwater pollution.
- F. The Patapsco WWTP has failed to submit the results of the third-party flow meter evaluation, consultant's recommendations and the results of the supplemental investigations for flow meter improvements as requested by the Department.

To bring this site into compliance with Environment Article Title 9, the Patapsco WWTP shall make the following corrections:

- 1. With respect to item A above, within 30 days of the receipt of this report the Patapsco WWTP shall share the results of all forensic sampling and analysis and any other pertinent monitoring data that supports the City's conclusions in the December 7, 2022, letter to the Department.**
- 2. With respect to item B above, The Patapsco WWTP shall continue to develop ways to mitigate incoming FOG into the plant. The Patapsco WWTP shall report to the Department within 10 days of the receipt of this report all measures taken to comply with the FOG mitigation plan for 2022.**
- 3. With respect to item C above, either a calibration curve must be prepared for the colorimeter, or the colorimeter must be replaced with an accurate meter.**
- 4. With respect to item D above, the Patapsco WWTP shall efficiently operate and maintain the treatment works to comply with the requirements under General Condition B3 of the NPDES permit and 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.**
- 5. With respect to item E above, the Patapsco WWTP shall immediately improve housekeeping practices, and ensure that all spills are cleaned up immediately after they occur to prevent these substances from contaminating stormwater. In addition, there should be an enhancement in management efforts in stressing to staff the importance of the prevention, immediate action and management of spills and potential spill situations.**
- 6. With respect to item F above, within 5 days of the receipt of this report, the Patapsco WWTP shall submit the results of the third-party flow meter evaluation, consultant's**

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recommendations, and the results of the supplemental investigations for flow meter improvements.

State law provides for penalties for violations of Maryland Environment Article Title 9 for each day the violation continues. The Maryland Department of the Environment may seek penalties for the aforementioned violations of Title 9 on this site for each day the violation continues.

NPDES Municipal Major Surface Water - Inspection Checklist

Inspection Item	Status	Comments
Does the facility have a discharge permit?	No Violations Observed	
Is the discharge permit current?	No Violations Observed	
If the permit is not current, has facility applied for renewal?	No Violations Observed	
Does the facility operate as authorized by their current permit?	Out of Compliance	
Has the Permittee exceeded the permitted capacity of the WWTP?	No Violations Observed	
Is the number and location of discharge points as described in the discharge permit?	No Violations Observed	
Has permittee submitted correct name and address of receiving waters?	No Violations Observed	
Is the permittee meeting the compliance schedule per permit requirements?	2 - Not Applicable	
Has the operator or superintendent been certified by the Board in the appropriate classification for the facility?	No Violations Observed	
Are adequate records being maintained for the sampling date, time, and exact location; analysis dates and times; individual performing analysis; and analytical results?	4 - Not Evaluated	
Are adequate records being maintained for the analytical methods/techniques used?	4 - Not Evaluated	
Does the permittee retained a minimum of 3 years worth of monitoring records including raw data and original strip chart recordings; calibration and maintenance records; and reports?	No Violations Observed	
Do lab records reflect that lab and monitoring equipment are being properly calibrated and maintained?	No Violations Observed	Only on-site analysis evaluated

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NPDES Municipal Major Surface Water - Inspection Checklist

Inspection Item	Status	Comments
Does the permittee/laboratory use suitable QA/QC procedures and operate a formal quality assurance (QA) program using appropriate controls?	No Violations Observed	Only on-site analysis evaluated
Has the permittee submitted the monitoring results on the proper Discharge Monitoring Report form?	No Violations Observed	
Do the Discharge Monitoring Reports reflect permit conditions?	No Violations Observed	
Has the permittee submitted these results within the allotted time electronically?	No Violations Observed	
Is the facility being properly operated and maintained including:(a) stand-by power or equivalent provisions available, (b) adequate alarm system for power or equipment failure available, (c) all treatments units are in service, .	Out of Compliance	
If a by-pass occurred since last inspection, has the permittee submitted notice of the by-pass within the allotted time?	No Violations Observed	
If a non-complying discharge occurred since the last inspection, was the regulatory agency notified within the allotted time?	No Violations Observed	
If applicable, has the permittee complied with all special conditions of their permit?	Out of Compliance	General Conditions and Special Conditions
Are flow measuring devices properly installed and operated, calibration frequency of flow meter adequate, flow measurement equipment adequate to handle expected ranges of flow?	Out of Compliance	See narrative
Are discharge monitoring points adequate for representative sampling?	No Violations Observed	
Do parameters and sampling frequency meet the minimum requirements?	No Violations Observed	
Does the permittee use the method of sample collection required by the permit?	No Violations Observed	
Are analytical testing procedures used approved by EPA?	No Violations Observed	
Has the permittee notified the Department of the name and address of the commercial laboratory?	No Violations Observed	
Were discharges observed at the authorized outfalls?	No Violations Observed	
If discharges were observed, do the discharges or receiving waters have any visible pollutants observed?	No Violations Observed	
Were discharge samples collected?	No Violations Observed	
Are the permit conditions being met?	Out of Compliance	

Inspector: Ronald Wicks 2/23/23 Received by: _____
 Ron Wicks /Date Signature/Date
 ron.wicks@maryland.gov
 410-537-3510

 Print Name

Inspection Date: January 30, 2023
Site Name: Patapsco WWTP
Facility Address: 3501 Asiatic Ave, Curtis Bay, MD 21226