



## STATUS REPORT

# Progress and Improvements

DPW BUREAU/OFFICE Patapsco WTPP

Date 8/8/22

Parameter	Week Ending 7/22/22	Week Ending 7/28/22	Weekly Permit Limit	Monthly Permit Limits	Weekly Limits Met?	Monthly Limits Met?
Total Suspended Solids (TSS)	16 mg/L	5 mg/L	45 mg/L	30 mg/L	Yes	Yes
Biochemical Oxygen Demand (BOD)	15 mg/L	7 mg/L	45	30	Yes	Yes
Total Phosphorus (TP)	0.64 mg/L	0.48 mg/L	3.0	2.0	Yes	Yes
Ammonia (NH <sub>3</sub> )	11 mg/L	9 mg/L	N/A	6.3	N/A	No**
Total Nitrogen (TN)	21 mg/L	20 mg/L	N/A	N/A	N/A	N/A
<i>Enterococci</i>	6 MPN/100 mls	3 MPN/100 mls	N/A	35 MPN/100 mls	N/A	Yes

N/A= Not Applicable

MPN= Most Probable Number

\*\*\*\*Repairs to liquid oxygen (LOX) plant have not been completed as of August 8, 2022. It is expected they will be completed by August 9, 2022. This will allow Patapsco to see improvements for Ammonia level by the next report. We continue methanol dosing in the Denitrification Filters (DNF) to enhance the denitrification process and assist with nitrogen removal.

## Personnel Updates

In July, DPW successfully completed interviews for Waste Water Technician Supervisor I and offers were extended to two (2) candidates. Applications for the Waste Water Technician Supervisor II closed on July 26<sup>th</sup> and interviews will be scheduled in the coming weeks. The Waste Water Technician Supervisors oversee Operations Technicians and help make operations more efficient and effective at the plant.

## Training and Education Updates

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Maryland Center for Environmental Training's (MCET) recertification trainings have been approved and dates are being set this week for on-the-job professional development. These sessions will allow staff to continue education and maintain qualifications to comply with the 5A license.

In February, DPW procured Hazen & Sawyer as a training consultant on engineering and process. This month, they have been providing routine employee training sessions to enhance their technical skills and to meet their continuing education requirements.

## Maintenance Updates

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Overall, DPW has made several notable repairs and upgrades over the last few weeks to ensure compliance, efficiency, and best in class service.

Notably, Covers on Gravity Sludge Tanks (GST) #1 and #2 were removed and the launders and weirs were cleaned to provide the proper weir overflow. Two (2) of the four (4) GST thickened sludge pumps have been rebuilt. Installation of both thickened sludge pumps will be complete in early August. These improvements to the GSTs are critical in efficient operations.

Two (2) Primary Settling Tanks (PST) scum pumps have been rebuilt and are currently being installed with completion being week ending 8/12. Aerator 1C on the reactor deck is being repaired and expected to be back in service next week. The aerators facilitate high aerobic environment to increase the activity of the bacteria to reduce the Biological Oxygen Demand (BOD) which allow the bacteria to consume ammonia (NH<sub>3</sub>) and begin the nitrogen removal process (nitrification). This will help the plant increase efficiency in its nitrification process. The Fats, Oils, and Grease (FOG) upgrades at the PSTs will allow the plant to remove FOG from the process versus the recirculation procedure currently employed. The recirculation only sends the FOG back to the head of the process for removal at the screening facility. It is more beneficial to the process to remove the FOG whenever possible.

The City's works with Synagro, a sludge and biosolids processing vendor, to implement a rail car system for the removal of solids from Patapsco has increased solids production. Synagro is now drawing directly from the Gravity Sludge Thickeners (GST) as this will directly remove sludge from the process stream and is most impactful. Our partnership with Synagro has resulted in a decrease in total suspended solids (TSS) and biochemical oxygen demand (BOD) in the plant effluent. The City expects this effort to continue to be effective in maintaining reduced TSS and BOD levels in the plant's final effluent.

DPW personnel are closely monitoring media loss by removing media in the treatment process. Filter backwash has been isolated and there is no observed media loss during backwashing (it is being contained in the mud wells). Isolating the media improves the effectiveness of the downstream treatment processes. A plan for the removal of the media from the mud wells is under development and will be implemented within a few weeks. Both the BAF and DNF filters are being backwashed aggressively to prevent solids buildup as well as assisting with some media removal.

## Summary

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As we start the month, we are confident in a clear path forward to compliance at the Patapsco Wastewater Treatment Plant. Our partners including the Maryland Department of the Environment (MDE), Hazen and Sawyer, among others, are collaborating to remove solids from the process, improve operational functions and training, and supporting our main goal of compliance.

Currently, the plant complies with our permits for Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS). Plans are underway to meet the nutrient limits, however, the reactors need to be returned to the design BOD removal to allow for nitrification and denitrification in the ENR facilities.