



May 14, 2022 Back River Wastewater Treatment Plant Update

What You Need to Know

May 14, 2022 Back River Progress (Previous report was April 29, 2022)

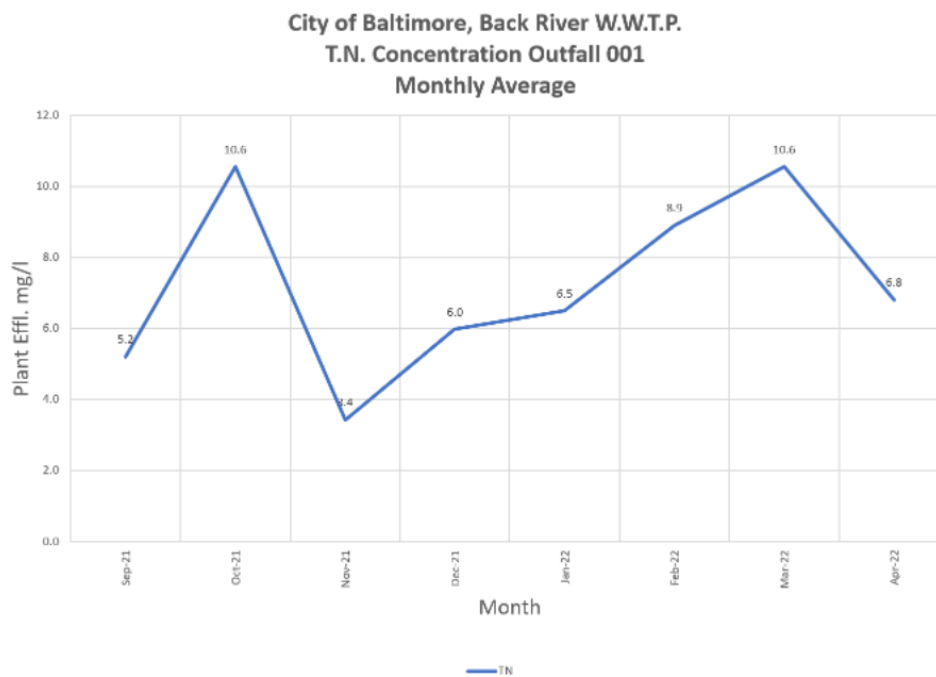
- Treatment Plant
 - The primary focus continues to be **solids removal** from the buildup in the Back River Wastewater Treatment Plant system.
 - There is still excess sludge in the system causing elevated mixed liquor suspended solids concentration within the biological reactor system.
 - The Maryland Department of the Environment (MDE) has issued temporary permits to three landfills for the disposal of the sludge.
 - The Maryland Environmental Service (MES) met with two sludge haulers at the plant to get quotes for hauling sludge from hi-rate digesters #1 and #4, and sent digester cleaning specs for hi-rate digesters #1 and #4 to contractors to get quotes.
 - **Digester recirculation pumps:** A complete rebuild of Digester Recirculation Pump #3 was completed and the pump is **now in service**. Digester Recirculation Pump #1 has also been fixed and **now in service**.
 - Price quotes should be coming regarding work on additional pumps.
 - MES is working with the Baltimore City Department of Public Works (DPW) to provide additional training to existing operators.
 - **MES continues to face challenges with the city to keep the facility maintained and equipment running continuously.**
 - MES continues to meet with the city to get an inventory of Capital Improvement Projects to assist with their assessment and prioritization.
 - MES also seeking more information from DPW on outstanding work projects and orders.
 - Scum booms to collect floating solids and scum were **placed in the contact chamber** just upstream of scum logs #2 and #4.
 - Scum log #1 is currently out for servicing, but the scum boom will be added once servicing is complete.
 - There is a proposal to upgrade the Supervisory Control and Data Acquisition system in order to accommodate automated equipment so the equipment no longer has to be run in manual mode.
 - The shift to automatic mode will increase efficiency of the process equipment and increase safety.
 - Activator #4 system, under Enhance Nutrient Removal contract SC882, was **successfully seeded and placed on line**.
 - Primary Settling Tank #9, which had previously operated with a bent rake, is down as the rake is broken.
 - **MES is making repairs** to the two operating centrifuges to minimize their down time and improve their efficiency.



May 14, 2022 Back River Wastewater Treatment Plant Update

What You Need to Know

- Effluent Concentrations
 - Monthly **nitrogen** concentrations and pollution loads increased from November 2021 to March 2022, and then **decreased by about 40%** in April.
 - In the last week of April, the effluent nitrogen concentration was approximately 5 milligrams/liter (mg/l), which is still greater than the loading cap of 4 mg/l.
 - Due to the very high levels of nitrogen early in Calendar Year 2022, and the current nitrogen levels continuing to be above 4 mg/l, the Back River will likely exceed its annual Chesapeake Bay loading rate by early September.
 - Monthly **phosphorus** concentrations and pollution loads increased from November 2021 to March 2022, and then **decreased by about 55%** in April.
 - In the last week of April, the effluent phosphorus concentration was approximately 0.3 mg/l, which is greater than the permit limit of 0.2 mg/l.
 - In January and February 2022, monthly **suspended solids** concentrations were almost twice the permit limit, but **started to trend downward** in March.
 - Data is showing increases in the last two weeks and is currently being investigated.
 - Increases may be due to recent **rainfall**.



May 14, 2022 Back River Wastewater Treatment Plant Update

What You Need to Know

Figure 1. Monthly average total nitrogen concentrations for outfall 001. Data and chart from Baltimore City DPW reporting.

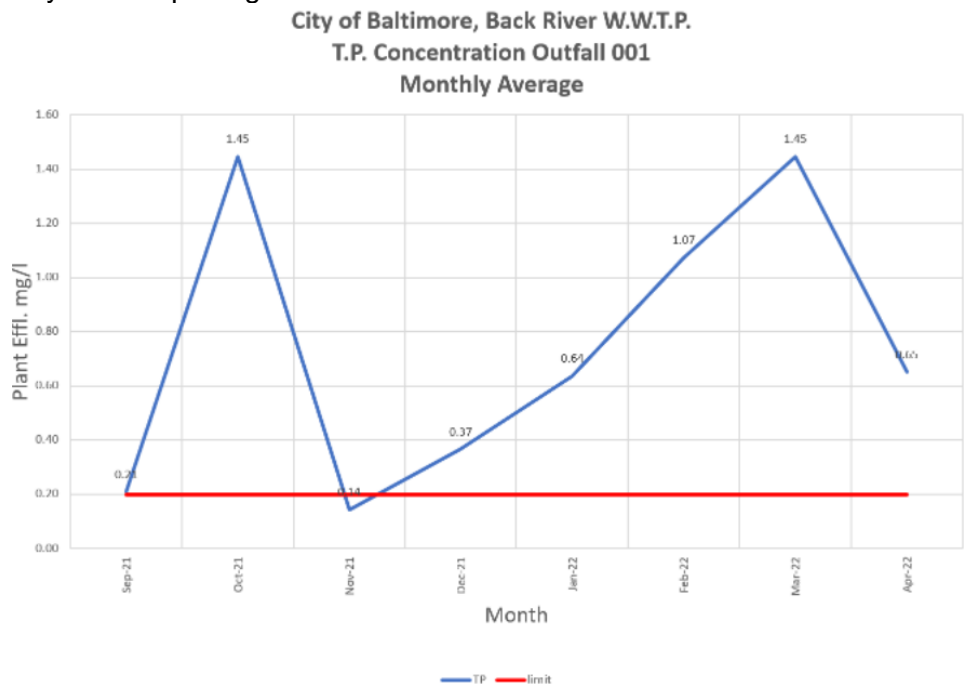


Figure 2. Monthly average total phosphorus concentrations for outfall 001. Data and chart from Baltimore City DPW reporting.