



**Water and Science Administration
Compliance Program
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Inspector: Ronald Wicks
AI ID: 8449

Site Name: Back River WWTP
Facility Address: 8201 Eastern Ave, Baltimore, MD 21224
County: Baltimore County

Start Date/Time: April 16, 2022 02:01 PM
End Date /Time: April 19, 2022 06:21 PM

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

Contact(s):

Mr. Ronald Turner Plant Manager
Ms. Betty Jacobs Assistant Plant Manager
Ms. Rachael Helmick Operator

NPDES Municipal Major Surface Water

Permit / Approval Numbers: 15DP0581
NPDES Numbers: MD0021555
Inspection Reason: Complaint
Site Status: Active
Compliance Status: Noncompliance
Site Condition: Noncompliance
Recommended Action: Continue Routine Investigation
Evidence Collected: Photos or Videos Taken, Visual Observation
Delivery Method: Email
Weather: Clear, Average

Inspection Findings:

On, April 16, 2022, I investigated a report of sewage in the Back River next to the final discharge (Outfall 001) for the Back River Wastewater Treatment Plant. I met Ms. Rachael Helmick, Mr. Ronald Turner and Ms. Betty Jacobs, representing the Back River WWTP at the site and Mr. Lance Fierro, a contract operator for Maryland Environmental Services (MES). I began the inspection with an evaluation of the discharge point to the river. We traveled to the end of the pier where the final effluent mixes with the receiving waters. There was no evidence of sewage or biosolids in the river around the sides of the pier or at the end of the pier. This includes the area around the mixing

Inspection Date: April 16, 2022
Site Name: Back River WWTP
Facility Address: 8201 Eastern Ave, Baltimore, MD 21224

zone for the discharge point. However, I was not able to see under the pier. There was a thin layer of oily scum on the river, which could be due to natural biological activity.

Next, I traveled back to the plant to complete the investigation. During the course of the investigation, I found the following problems:

- During an inspection of the contact chambers, I observed black balls of floating material in the water prior to the step aeration cascade and in the discharge canal after the chlorine contact chamber. A video was taken of this observation. See Picture #1 below. According to Ms. Helmick, there is no power at the skimming system resulting in the floating particles discharging through the contact chambers and then overflowing to the step aeration system.
- I followed the process back to the treated water coming from the sand filters. I inspected the treated water from the sand filters and found that there was a heavy layer of floating solids and scum on the surface of the water in the distribution chamber that feeds the chlorine contact chambers. This condition may have been caused by a wash out of the secondary clarifiers that entered into the influent line of the denitrification filters (DNF).
- Because of an operational problem at the DNF system, the sludge from the DNF flowed to the sand filters and then to the chlorine contact chambers. See picture #2 below



Inspection Date: April 16, 2022
Site Name: Back River WWTP
Facility Address: 8201 Eastern Ave, Baltimore, MD 21224

Picture #1 - 4/16/22 Floating balls of solid material



Picture # 2 - 4/16/22 Treated water from the sand filters that flows to the chlorine contact chambers

Next, I traveled to the DNF building to inspect the DNF system. There, I met Mr. Larry Slattery, representing ProStart, a contractor hired to manage the DNF system. According to Mr. Slattery only about half of the filters were in service. We looked at the control panel and found that of the 52 Tetra filters only 30 were in service and 22 were not functioning and requiring various types of repairs and maintenance. I inspected the DNFs and found the following problems:

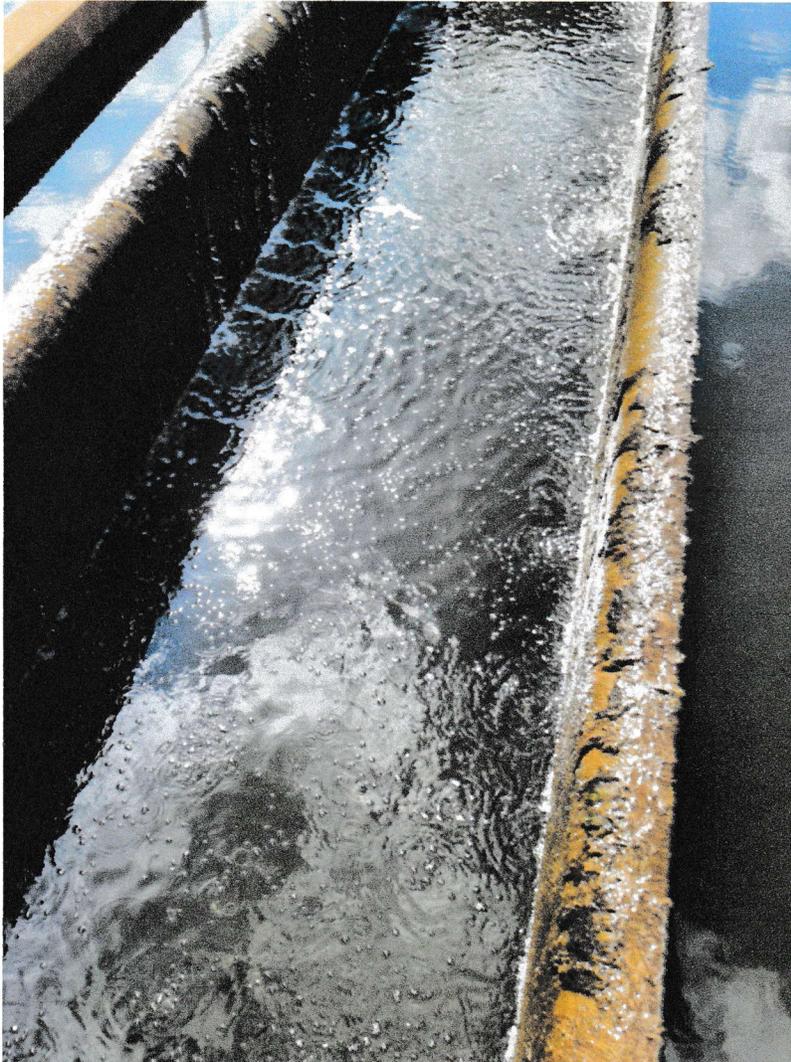
I observed that some of the operating filters were not functioning as designed. There were solid materials and sludge on the overflow weirs, and floating scum layer on the surface of the water in some of the filters. See Pictures # 3-5. In addition, some of the filters designated as in service were not functioning as designed.

I observed a scum layer of floating solids and FOG on the water in the clear well. The DNF effluent flows to the clear well and then to the sand filters.

Inspection Date: April 16, 2022
Site Name: Back River WWTP
Facility Address: 8201 Eastern Ave, Baltimore, MD 21224

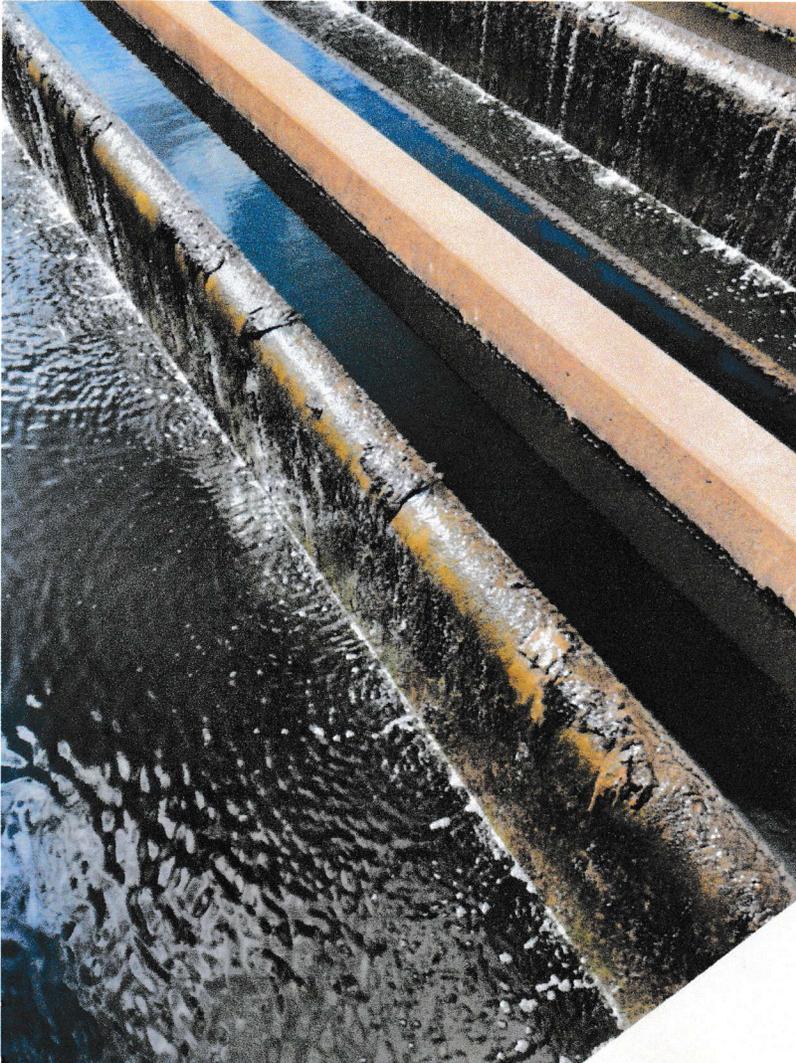
The solids and scum collected in the filters are removed during the filter back wash cycle and sent to the mud well which is next to the clear well. The filter back wash water that is collected in the mud well under normal operations flows to the tertiary clarifier. However, the mud well that collects the filter backwash from the Tetra filters was at some point allowed to overflow into the final effluent channel from the Tetra filters sending the floating scum and solids mixture from the back wash to the sand filters. During an inspection of the clear well, I observed a floating layer of scum, foam and FOG. See Picture #6.

The sand filters are not designed to treat this sludge and the wastewater flowed to the chlorine contact chambers as seen in Picture #2. According to Mr. Slattery, he has only been at the DNF building for two days and the mud well overflow occurred before ProStart took over management of the DNF system.



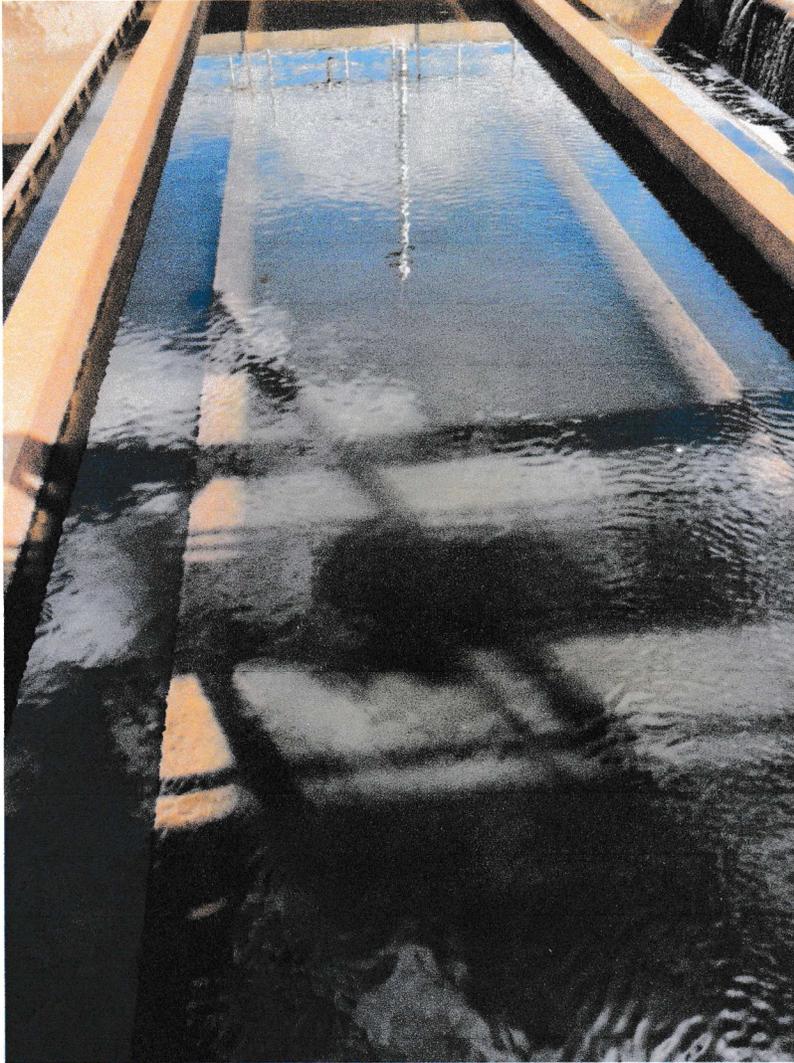
Picture #3 - 4/16/22 DNF Note dark scum on the ledge of the overflow weir

Inspection Date: April 16, 2022
Site Name: Back River WWTP
Facility Address: 8201 Eastern Ave, Baltimore, MD 21224



Picture #4 - 4/16/22 Sludge on weirs and dark water

Inspection Date: April 16, 2022
Site Name: Back River WWTP
Facility Address: 8201 Eastern Ave, Baltimore, MD 21224



Picture #5 - 4/16/22 submerged filter not functioning as designed.

Inspection Date: April 16, 2022
Site Name: Back River WWTP
Facility Address: 8201 Eastern Ave, Baltimore, MD 21224



Picture #6 - 4/16/22 effluent from DNF at Clear well. Note floating remnants of scum, FOG and solids

With respect to the above MDE authorization, the following violations were observed under Environment Article Title 9 for the Back River WWTP:

1. The Back River WWTP is allowing partially treated solid material to be discharged to the surface waters of the State due to malfunctioning equipment.
2. The mud well in the DNF was not monitored properly and allowed to overflow with filter back wash. This caused the mud well to overflow into the adjacent clear well. This has caused a buildup of floating solids at the head of the chlorine contact chambers.
3. More than 22 of the denitrification filters require maintenance or repairs due to various reasons. In September or 2021 sixteen filters needed repairs or maintenance. Therefore, the Back River WWTP has failed to keep up with maintenance and repairs on process equipment.

Inspection Date: April 16, 2022
Site Name: Back River WWTP
Facility Address: 8201 Eastern Ave, Baltimore, MD 21224

In order to bring this site into compliance with Environment Article Title 9, the Back River WWTP should make the following corrections:

- A. With respect to item 1 above, the Back River WWTP must ensure that floating materials and partially treated solids are not allowed to discharge to waters of the State.
- B. With respect to item 2 above, the Back River WWTP must ensure that all process equipment is functioning as designed and evaluate and confirm that there is adequate staff at all times to monitor all process equipment and ensure satisfactory performance.
- C. With respect to item 3 above, the Back River should determine the cause for the problems with the out of service denitrification filters and make the necessary repairs.

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.

Inspector: Ronald Wicks 4/19/22
Ron Wicks /Date
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Received by: 
Signature/Date
Ronald Turner
Print Name