



NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Shawn M. LaTourette, Commissioner

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Water Resource Management
Division of Water Supply & Geoscience

NJDEP OVERSIGHT REPORT
TRENTON WATER WORKS
Period: December 2023

Trenton Water Works is a community water system that provides drinking water to 200,000+ people in the City of Trenton and portions of neighboring Mercer County municipalities (Ewing, Hamilton, Hopewell, Lawrence). Due to state Safe Drinking Water Act (N.J.S.A. 58:12A) compliance concerns, the New Jersey Department of Environmental Protection (Department) issued a Unilateral Administrative Order (UAO) on October 12, 2022, to initiate direct operational oversight of Trenton Water Works (TWW). While under the Department's direct operational oversight, TWW remains responsible for managing the daily operations of the water system. To facilitate on-the-ground oversight of TWW's operations and enhance TWW's technical and managerial capacity, the Department appointed a third-party oversight contractor (TPO) that works routinely with TWW staff and reports directly to the Department.

This report is intended to summarize oversight findings and actions during the month of December 2023.

Summary of December Findings and Immediate-Term Actions

The Department and the selected consultant chosen to perform the Comprehensive Performance Evaluation (CPE) at TWW's treatment plant, H2M, had a kickoff meeting to strategize the effort. The CPE will be ongoing through Q1 of 2024 as each treatment unit within the plant will be evaluated, and recommendations will be provided to optimize performance. While this evaluation will aim to improve water quality, the Department is still observing concerns with preventative maintenance at the treatment plant.

1) Treatment Plant Operation and Maintenance

From the excessive rain the region received in late December, TWW experienced very high turbidity in the Delaware River. Historically, during similar incidences TWW may have had trouble treating the water and would shut down the plant temporarily; however, this time TWW has continued to demonstrate the ability to treat the water despite the fluctuating raw water quality. While improved operations have been observed during these situations, the Department has seen little improvement in TWW's preventative maintenance program at the treatment plant.

TWW is not actively using their maintenance management system to the extent the program can perform. Daily task logs for the maintenance staff remain mostly janitorial in nature, and do not address daily tasks that need to be performed on multiple treatment units at the plant. A focus on maintenance and training of the maintenance staff will continue to be a priority as the Department moves into Phase 2 of the TPO's involvement with TWW.



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2) Distribution System Activities

a) **Uni-Directional Flushing Program**

As part of the ongoing *Legionella* mitigation efforts in TWW's distribution system, the Department, in conjunction with recommendations by EPA, is identifying the components and strategy needed at TWW for a comprehensive uni-directional flushing program. Uni-directional flushing is intended to flush water at velocities to scour and remove biofilm from the inside of pipes, and potentially remove any contaminants such as bacteria, viruses, etc. This program needs to be designed in detail so that water mains are flushed in a sequential manner and intended results are achieved without spreading contaminants throughout the distribution system.

The Department is evaluating the feasibility of developing a Request for Quotes (RFQ) for a comprehensive unidirectional flushing plan.

b) **Flusher Installations on Dead-Ends Within the Service Area**

TWW has many dead-end water mains throughout their distribution system that do not have the ability to be flushed (ex. No hydrants at the dead-ends). TWW identified 185 dead-end locations for manual flushers to be installed, which will give them the capability to flush these locations. This project, which is under contract by Dewcon, will commence in January 2024. TWW will connect low velocity flushing devices to these dead-end flushers to avoid scouring the biofilm of these dead-end water mains.

c) **Latest Update on Pennington Reservoir Replacement Plan (PRRP)**

TWW's contractor submitted the 30% design for the distribution system improvements around the reservoir. This includes water main and pressure reducing valve construction to prepare for the decommissioning of the reservoir and to allow the planned two 8-million-gallon storage tanks to connect to the central pumping station. This design will be reviewed by both the Department and the TPO, Mott MacDonald, who has done extensive work regarding the reservoir and knows the piping complications around the reservoir.

d) **Check Valve**

TWW anticipates the new reservoir check valve to be delivered in April 2024. This check valve is of a different design than the previous two check valves that were installed and failed. TWW will be requiring the manufacturer to conduct a bench test on the new valve. Bench testing will ensure the valve can handle the pressure from the gravity zone and zinc orthophosphate fed



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water will not backflow into the reservoir. Details of the previous check valve failure can be found in the May 2023 monthly report from the Department.

e) Low Velocity Flushing Program

TWW continued with their low velocity flushing approach through the month of December. While no flushers are running continuously, due to the colder temperatures, TWW is still sampling at locations to ensure the free chlorine residual is above the target of 1.0 mg/L.

3) Lab Operations/Data Integrity

TWW's laboratory hired a chemist to assist with updates and improvements to laboratory policies and procedures. Further, TWW developed and implemented an ArcGIS Collectors map application to capture field data using ESRI ArcGIS Field Maps. TWW will be using this application to track and monitor field collections, employee location, and replace paper copies with electronic data.

NEXT STEPS

The NJDEP anticipates receiving the results of multiple assessments conducted at the plant in 2024, including:

- Receiving recommendations following the Technical, Managerial, and Financial Capacity Assessment
- Receiving recommendations from the TPO final reports.
- Observing the findings of the 360° financial assessment of the water utility and working with the State's I-Bank to discuss actions moving forward
- Receiving recommendations following the CPE of TWW's treatment plant which will highlight critical improvements needed within the treatment process to optimize the system