

United States Environmental Protection Agency Region 4
Enforcement and Compliance Assurance Division
Water Enforcement Branch
61 Forsyth Street, SW
Atlanta, Georgia 30303



Compliance Evaluation Inspection Report

Watertown STP
City of Watertown, Tennessee
NPDES Permit: TN0025488
Project No. CV-TN0025488-102822

Facility Address:
106 S. Commerce Road
Watertown, Tennessee 37184

Inspection Date:
October 28, 2022

Inspectors:
Brad Ammons, EPA Region 4
Richard Elliott, EPA Region 4
Jordan Fey, TDEC, Nashville Field Office

Inspection Report Prepared by:
Brad Ammons

November 28, 2022

COMPLIANCE EVALUATION INSPECTION REPORT
Watertown STP, Project No. CV-TN0025488-102822

Title and Approval Sheet

Title: Compliance Evaluation Inspection City of Watertown STP, TN

Approving Official:

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Brad Ammons, Environmental Engineer
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I. Introduction

Representatives of the United States Environmental Protection Agency and Tennessee Department of Environment and Conservation (TDEC) conducted a Compliance Evaluation Inspection (CEI) on the Watertown Sewage Treatment Plant (STP) owned by the City of Watertown, Tennessee (the City). The inspection was conducted under the authority of Section 308 of the Clean Water Act (CWA), as amended. This narrative report and attachments present summary results of the inspection.

An opening conference was held on October 28, 2022, at the STP followed by a walk-through of the facility and inspection of the last pump station upstream of the STP. A summary of findings is detailed below. Participants in the inspection included:

<u>Name</u>	<u>Position</u>	<u>Phone Number</u>
Brad Ammons	EPA Inspector	404-562-9769
Richard Elliott	EPA Inspector	404-562-8691
Jordan Fey	TDEC, Nashville Field Office	615-306-3494
Dale Smith	M.S. Environmental Services, Inc.	615-684-4807

M.S. Environmental Services, Inc. was hired by the City to operate the STP. The City uses Waypoint Analytical Laboratory in Memphis, Tennessee to analyze Total Nitrogen, Total Phosphorus, Total Cadmium, Total Mercury, Whole Effluent Toxicity (WET), Ammonia-Nitrogen, and Carbonaceous Biochemical Oxygen Demand (CBOD₅). Mr. Smith analyzes for pH, Dissolved Oxygen (DO), Settleable Solids (SS), Total Suspended Solids (TSS) and E. Coli. Mr. Smith collects the samples for all parameters, ices them and drops them off at City Hall for pickup by Waypoint Analytical Laboratory for the parameters the contract lab analyzes.

II. Background

The City entered into an Administrative Compliance Order (ACO) with the TDEC on October 15, 2015, that requires the City to comply with the discharge requirements of the Clean Water Act and pay a civil penalty. TDEC has also issued 2 Notices of Violation (NOV) in the last 3 years. Finally, on October 24, 2019, TDEC issued an Administrative Penalty Order (APO) for \$3,200, which was paid and the APO was subsequently closed on September 20, 2021.

The EPA targeted the Watertown STP as part of the Significant Non-Compliance (SNC) National Compliance Initiative (NCI). Specifically, the Watertown STP continues to be in and out of SNC for ammonia-nitrogen as well as experiencing non-SNC violations for CBOD₅, WET, Dissolved Oxygen, TSS % removal, and Sanitary Sewer Overflows (SSO).

III. Facility Description

The STP is an activated sludge treatment plant with a design flow of 0.27 million gallons per day (MGD) and an average daily flow of approximately 0.27 MGD. Specifically, the treatment process consists of a bar screen, aeration, clarification, UV disinfection, and aerobic sludge digestion.

As discussed above, the STP is currently violating the effluent limitations of the National Pollutant Discharge Elimination System (NPDES) permit. Specifically, the STP is in and out of SNC for ammonia-nitrogen and also has non-SNC violations for CBOD₅, WET, Dissolved Oxygen, TSS % removal, and SSOs. The EPA has not reviewed the compliance schedule documents, but it appears that

no measurable rehabilitation/upgrades of the STP has occurred, even though the City is under a compliance schedule.

The activated sludge treatment section of the STP consists of two aeration basins (see Photo 4 in attachment), two clarifiers (one of which is out of service; see Photos 5 and 6), one digester basin (see Photo 3), and other related appurtenances. Sludge management consists of an open-air (aerobic) digester and the resulting sludge is landfilled. Disinfection consists of an UV system (see Photo 10). An ultrasonic depth sensor system is used to measure the flow level in the UV channel (see Photo 9). The effluent flow meter is hardwired into the Operations building for recording. Figure 1 is an aerial display of the STP.



Figure 1. Aerial display of the STP.

IV. Inspection Procedures

The overall objective of this CEI was to evaluate the City's progress with corrective actions associated with TDEC's ACO and offer compliance assistance as needed. Specific tasks included conducting an opening conference, interviews with contract staff from M.S. Environmental Services, Inc., conducting a site visit of the STP and the final pump station in the collection system, records review, and a closing conference. The only rehabilitation of the STP the contract operator mentioned was a replacement of diffusers in the aeration basins and digester. In addition, the contract operator mentioned that the City had requested an extension to the deadline in TDEC's ACO to do all the STP rehabilitation in one contract.

V. Permit Review

The City maintains and contract operates the STP under the NPDES permit number TN0025488 which has an effective date of November 1, 2021, and an expiration date of July 31, 2024. The STP is authorized to discharge treated wastewater into the Round Lick Creek.

Pollutants of concern include Total Nitrogen, Total Phosphorus, Total Cadmium, Total Mercury, WET, Ammonia-Nitrogen, CBOD₅, pH, DO, SS, TSS, and E. Coli. Flow is also monitored continuously and reported monthly.

VI. Records Review

The EPA reviewed the lab bench sheets for the pollutants analyzed by the City, as well as the Chains of Custody for the pollutants analyzed by the contract laboratory. In addition, the EPA checked the pH buffers for their expiration dates (pH 7.0 expires March 2024 and pH 10.0 expires April 2024).

VII. Findings and Conclusions

STP and Pump Station Site Visits (refer to Attachment 1 for all photographic references)

1. The influent flow meter has vegetation growing on it (Photo 1).
2. The return activated sludge line appeared to be in good condition (Photo 2).
3. There is a large hole under the sludge digester due to the blower line rupturing. This may lead to failure of the digester itself if not shored up (Photo 3).
4. Aeration basins appear to be in good condition, except for the age of the blowers (Photo 4).
5. Clarifier #2 was out of service (note there are no scraper arms in the bottoms of either clarifier) (Photo 5). Clarifier #1 had some floatables in it, as well as grass/vegetation growing on the effluent weir (Photos 6 and 7).
6. The effluent automatic sampler appears to be in good condition (Photo 8).
7. The effluent ultrasonic flow meter was last calibrated in June 2022 and read 0.035 MGD at the time of inspection (Photo 9).
8. The UV disinfection system appeared to be in good shape (Photo 10).
9. The effluent at the outfall appeared clear with no signs of solids or foam visible (Photo 11).
10. The final pump station in the collection system appeared to be in good shape, but aged (Photo 12) and had SCADA installed that will call the contract operator's cell phone, but does not allow for remote control of the pumps (Photo 13). The operator mentioned the City has plans to replace all 3 pumps with submersible pumps, but no date was mentioned.

Laboratory and Sampling Review:

1. As discussed above, sampling conducted by the contract operator includes pH, DO, SS, TSS, and E. Coli.
2. As discussed above, the contract laboratory (Waypoint Analytical in Memphis, TN) analyzes for Total Nitrogen, Total Phosphorus, Total Cadmium, Total Mercury, WET, Ammonia-Nitrogen, and CBOD₅. Inspectors reviewed the TSS, DO, and E. Coli. logs. No discrepancies were noted.
3. DO and pH meters are calibrated before use and all other laboratory equipment is calibrated annually.
4. Buffers to calibrate pH probes were within their expiration date.

VIII. Discussion

The EPA and TDEC mentioned the following concerns during the Exit Conference:

1. There are some housekeeping issues around the STP that need to be addressed (e.g., the vegetation on the influent ultrasonic flowmeter; the hole under the sludge digester).
2. The lack of progress in rehabilitating/upgrading the STP to meet ammonia-nitrogen limitations.
3. The concern about SSOs in the collection system, as the contract operator mentioned that a portion of the City's collection system was under a moratorium for new connections.

4. The lack of clarity in whether the City will rehabilitate the collection system (Infiltration/Inflow) or the STP first.

ATTACHMENTS

1. Photographs

END OF REPORT



Photo 1: Influent flow meter/weir.



Photo 2: Return Activated Sludge line.



Photo 3: Hole under sludge digester from broken air line to aeration basin.



Photo 4: Aeration basins.



Photo 5: Secondary clarifier #2 (out of service).



Photo 6: Secondary Clarifier #1.



Photo 7: Clarifier #1 (grass growing on weir).



Photo 8: Effluent automatic sampler.



Photo 9: Effluent flow meter (read 0.035 MGD).



Photo 10: UV disinfection system.



Photo 11: Outfall with sign.



Photo 12. Final pump station upstream of STP (3 pumps).



Photo 13. Pump Station SCADA system to cell phone (monitor only; no controls).