

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

Shannon Publicly Owned Treatment Works, East
Shannon Publicly Owned Treatment Works, West

NPDES Permit No. MS0047988

NPDES Permit No. MS0027405

Facility Address:

1426 North Street
Shannon, MS 38868

Inspection Date:

2/2/2022

Inspectors:

Tristan Odekirk, Environmental Engineer, EPA Region 4

John Goodwin, Environmental Engineer, EPA Region 4

Rusty Lyons, MDEQ, Independent Contractor

Inspection Report Prepared by:

Tristan Odekirk
March 30, 2022

Project ID: CV-MS0047988/MS0027405-02022022

Approval Sheet

Title: Compliance Evaluation Inspections Reports for Shannon POTW East and Shannon POTW West, Shannon, MS

Enforcement Officer:

Tristan Odekirk, Environmental Engineer
Wastewater Enforcement Section
Water Enforcement Branch

Date

Approving Official:

for Jairo Castillo, P.E., Chief
Wastewater Enforcement Section
Water Enforcement Branch

Date

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I. INTRODUCTION

Representatives of the United States Environmental Protection Agency, Region 4 and the Mississippi Department of Environmental Quality (MDEQ) conducted two Compliance Evaluation Inspections (CEIs) on the Shannon Publicly Owned Treatment Works (POTWs), owned and operated by the Town of Shannon (Town), Mississippi.

An opening conference was held on February 2, 2022, at the Shannon Public Works building. Participants in the inspections included:

<u>Name</u>	<u>Position</u>	<u>Phone Number</u>
Tristan Odekirk	EPA, Region 4 Inspector	404-562-9295
John Goodwin	EPA, Region 4 Inspector	404-562-8488
Rusty Lyons	MDEQ, Contractor	601-572-7783
Ryan Flippen	Town of Shannon, Wastewater Operator	662-310-0667
Daniel Vaughan	Town of Shannon, Public Works	662-767-3969

II. INSPECTION PROCEDURES

The overall objective of this CEI was to evaluate the condition and operational performance of the wastewater treatment lagoons and the Town's self-monitoring program and offer compliance assistance as needed. Specific tasks included conducting interviews with Town staff, reviewing Discharge Monitoring Reports (DMRs) and other records, and conducting a site visit to the lagoons.

III. FACILITY DESCRIPTION

A. SHANNON POTW EAST

The Shannon POTW East is an aerated lagoon located in Shannon, Mississippi, and treats municipal wastewaters. The lagoon serves the Town and has no major industrial users. The effluent discharges into Chiwapa Creek.

Plant personnel stated that there was a recent turnover in plant staff. The plant operator was hired by the Town three weeks prior to the EPA inspection.

The Shannon POTW East consists of three lagoon cells totaling approximately 17 acres. Wastewater enters a 10-acre lagoon cell (Figure 1) then passes through two 3.3-acre lagoons cells (Figure 2). Each lagoon cell has one mechanical aerator. From the third lagoon cell, wastewater is pumped through a chlorine contact chamber. An inline flow meter is located between the third lagoon and the chlorine contact chamber. Chlorine and sulfur dioxide gas is supplied from tanks in a housing unit adjacent to the contact chamber (Figure 4). The chlorine chamber effluent flows over a v-notch weir (Figure 5) with a visible staff gauge.

B. SHANNON POTW WEST

The Shannon POTW West is a single cell aerated lagoon located in Shannon, Mississippi, and treats municipal wastewaters. The lagoon serves the Town and has no major industrial users. The effluent discharges into Chiwapa Creek.

Municipal wastewater enters the facility passing through an influent wet well (Figure 6). The facility consists of one 4.23-acre lagoon (Figure 7). The lagoon has one aerator for aeration and mixing. Following the lagoon, wastewater is pumped to the chlorine contact chamber for disinfection and dechlorination. Chlorine and sulfur dioxide are housed in a nearby structure (Figure 8). After disinfection, effluent passes over a v-notch weir (Figure 9) to an effluent step aeration cascade structure (Figure 10) and on to the receiving stream.

IV. FINDINGS AND CONCLUSIONS

A. SHANNON POTW EAST

1. Permit

The MDEQ is authorized to administer the National Pollutant Discharge Elimination System (NPDES) program pursuant to Section 402 of the Clean Water Act (CWA), 33 U.S.C. § 1342, and issued NPDES permit number MS0047988 to the facility and its associated wastewater collection and transmission system for the discharge of treated municipal wastewater into waters of the U.S., subject to specific terms and conditions. Permit MS0047988 for the Shannon POTW East became effective on August 4, 2017 and expires on July 31, 2022.

2. Records/Reports

The NPDES permit was on site. The Town has not submitted a permit renewal application. Condition Number S-8 states: "At least 180 days prior to the expiration date of this permit pursuant to the State law and regulation, the permittee who wishes to continue to operate under this permit shall submit an application to the Permit Board for reissuance. The Permit Board may grant permission to submit an application later than this, but no later than the expiration date of the permit." POTW East's permit renewal application was due to the MDEQ permitting office on or before February 1, 2022.

No Chain of Custody sheets, or laboratory results were available, and no records were available that indicated that laboratory samples had been collected by the previous operator. A logbook recording date, time, and values of chlorine residual and dissolved oxygen sampling was kept on site but had only three weeks of records as the previous operator did not maintain any documents known to the current operator. According to the permit, "[a]ll records and results of monitoring activities required by this permit, including calibration and maintenance records, shall be retained by the permittee for a minimum of three (3) years, unless otherwise required or extended by the Permit Board, copies of which shall be furnished to the Department upon request."

According to the EPA's Integrated Compliance Information System (ICIS), the POTW East facility has been in significant non-compliance for DMR non-receipt for 2019, 2020, and 2021. According to the permit, "[t]he Permittee shall submit analytical results on an annual DMR: Due annually by the 28th of January". When asked about the missing DMRs, Town personnel stated that they had only recently begun to work for the Town and did not know why the DMRs had not been submitted. Facility personnel included two mechanics who had begun work three months prior to the inspection, and one wastewater operator who had begun three weeks prior to the inspection.

Either electronic or printed copies of DMRs should be maintained locally and be available for review upon request by state and federal inspectors.

3. Operation & Maintenance

Plant personnel did not know the depth of any of the lagoons as no schematics were available. Town staff stated that they had just recently cleared the facility entrance and the area around the chlorine contact chamber of heavy vegetative growth. Of the three lagoon cells, aeration was operational only in the third cell. Duckweed was observed in the primary lagoon (Figure 11).

The access structure to the flow meter was flooded with groundwater and roots were seen growing into the structure (Figure 3).

The v-notch weir and staff gauge were in good condition and the staff gauge was clearly legible.

The permittee should develop and implement standard operating procedures to effectively operate the lagoon.

4. Sludge Handling

There was no record of solids removal from the lagoon. The new operator stated that he plans to conduct sludge depth measurements throughout the lagoon to perform a sludge depth profile.

5. Sampling/Laboratory

Samples are collected monthly by EnviroLab Starkville, and sampling results are sent to the Shannon Public Works department. The sampling lab contact information is:

EnviroLab
603 E Gillespie St
Starkville, MS 39759
662-323-7744

The sampling laboratory was not evaluated. In situ samples were taken weekly for total residual chlorine and dissolved oxygen. The chlorine meter, DO probe, and flow meter were calibrated.

6. Flow Measurement

Flow is measured by an inline flow meter positioned between the last lagoon cell and the chlorine contact chamber. The flow meter had an up-to-date calibration sign. As the facility was not discharging at the time of inspection no flow was observed in the flow meter.

7. Effluent and Receiving Waters

The facility discharges to Chiwapa Creek. No discharge was observed at the time of inspection.

B. SHANNON POTW, WEST

1. Permit

The MDEQ issued NPDES permit numbers MS0027405 to the facility and its associated wastewater collection and transmission system for the discharge of treated municipal wastewater into waters of the U.S., subject to specific terms and conditions. Permit MS000027405 for the Shannon POTW West became effective on September 11, 2017 and expires on August 31, 2022.

2. Records/Reports

The facility had a copy of the most recent permit on site. The Town has not submitted a permit renewal application. Condition Number S-8 states: "At least 180 days prior to the expiration date of this permit pursuant to the State law and regulation, the permittee who wishes to continue to operate under this permit shall submit an application to the Permit Board for reissuance. The Permit Board may grant permission to submit an application later than this, but no later than the expiration date of the permit." POTW West's permit renewal application was due to the MDEQ permitting office on or before March 4, 2022.

The only other records available were a few laboratory sample analysis sheets that contained only some of the required reporting parameters. The chain of custody forms for the samples noted in the laboratory analysis sheets were not available. No DMRs, logbooks, or SOP/manuals were available as the previous operator kept no paperwork. According to the permit "All records and results of monitoring activities required by this permit, including calibration and maintenance records, shall be retained by the permittee for a minimum of three (3) years, unless otherwise required or extended by the Permit Board, copies of which shall be furnished to the Department upon request."

According to ICIS the POTW West facility has not submitted a DMR for 2020 or 2021.

3. Operation & Maintenance

The facility is operated by the same personnel as the POTW East facility. The lagoon had one non-operating aerator (Figure 12). The rest of the lagoon appeared to be in good condition. Facility personnel stated that once the berms dry from recent rainfall they would repair the aerator.

The manhole cover to the influent wet well was missing.

There were numerous empty and partially filled chlorine containers observed outside of the structure that were exposed to weather and showing signs of corrosion (Figure 13).

4. Sludge Handling

There was no record of solids removal from the lagoon. The new operator stated that he plans to conduct sludge depth measurements throughout the lagoon to perform a sludge depth profile.

5. Sampling/Laboratory

Samples are collected by EnviroLab Starkville. The sampling lab contact information is:

EnviroLab
603 E Gillespie St
Starkville, MS 39759
662-323-7744

The sampling laboratory was not evaluated. In situ measurements are taken of dissolved oxygen and total residual chlorine.

6. Flow Measurement

Flow is measured by an inline flow meter positioned between the lagoon and the chlorine contact chamber. The flow meter had an up-to-date calibration sign. There was no flow in the flow meter at the time of inspection.

7. Effluent and Receiving Waters

The facility discharges to Chiwapa Creek. The receiving waters could not be accessed at the time of inspection.

V. RECOMMENDATIONS

The EPA recommends that the Shannon Public Works complete the following:

- a. Establish Standard Operating Procedures to include procedures for routine operations and maintenance, sampling, and reporting.
- b. Establish record keeping procedures and keep records, as required by its NPDES permit.
- c. Repair aerators.
- d. Promptly secure or remove empty and partially empty chlorine tanks from the elements. Partially filled chlorine gas tanks can present a severe hazard if the tank is dropped or tipped over and damaged.
- e. Cap the POTW West influent manhole.
- f. Drain and clean flow meter chamber of the POTW West.
- g. Submit past due DMRs with available data.
- h. Submit overdue permit renewal applications for both lagoons.

ATTACHMENTS

1. Shannon POTW East, Facility Description Photo Log



Figure 1:Initial 10-acre lagoon.



Figure 2:Second and third lagoons.



Figure 3: Inline flow meter located between final lagoon and chlorine contact chamber. Flow meter access hole is shown flooded with plant roots growing into chamber.



Figure 4: Chlorine (left) and sulfur dioxide gas (right) in shelter on site.



Figure 5: Effluent V-notch weir with staff gauge.

2. Shannon POTW West, Facility Description Photo Log



Figure 6: Inlet structure with missing manhole.



Figure 7: Shannon POTW West lagoon with effluent structure.



Figure 8: Chlorine (left) and sulfur dioxide gas (right) storage structure.



Figure 9: Effluent V-notch weir with staff gauge.



Figure 10: Effluent step aeration cascade where sample is taken.

3. Shannon POTW East, Operation and Maintenance Photo



Figure 11: Considerable duckweed growing in first lagoon.

4. Shannon POTW West, Operation and Maintenance Photo Log



Figure 12: Lagoon aerator was not operational.



Figure 13: Empty and partially empty chlorine tanks

END OF REPORT