



**Carolina Water Service**  
of North Carolina™

**Wastewater Treatment and Collection  
Performance Annual Report**

**Carolina Trace**

NPDES: NC0038831  
Collection System: WQCS00217

**January 1, 2019 - December 31, 2019**

P.O. Box 240908  
Charlotte, NC 28224

Phone: 800-525-7990  
<https://www.myutility.us/carolinawaterservicenc>

## I. General Information

### Service Area:

Carolina Trace S/D

### Applicable Permits:

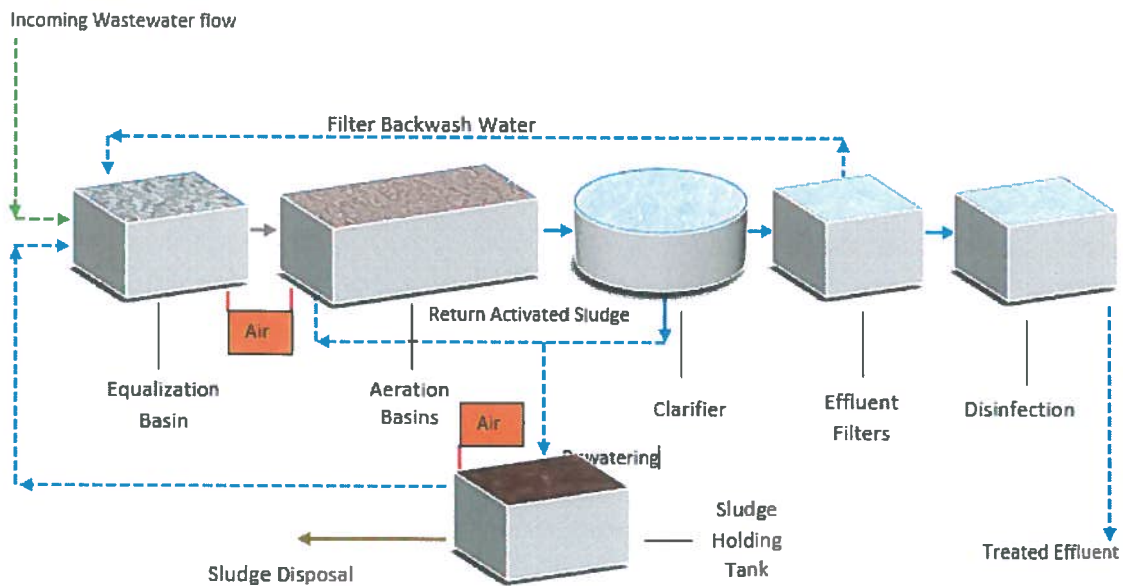
Type	NPDES Permit Number	Area Manager	Phone
Wastewater Treatment Facility	NC0038831	Stephen Harrell	800-525-7990
Collection System	WQCS00217	Stephen Harrell	800-525-7990

### Description of Collection and Treatment Systems:

Operation and maintenance of a wastewater collection system consisting of approximately 39.7 miles of gravity sewer, approximately 5.3 miles of force main, 6 duplex pump stations, 7 simplex pump stations, serving 1621 customer connections.

Operation of a 675,000 GPD wastewater treatment facility with the following components: Equalization basin, Circular treatment consisting of aeration chamber and clarifier, Sludge holding, Tertiary filters, UV disinfection, and Flow measuring device.

**Treatment Process Flow Chart**



1. Equalization Basin — Removes debris which could damage plant equipment.
2. Aeration Basin — Air is circulated, and bacteria removes dissolved solids, pollutants, phosphorus and nitrates.
3. Clarifier — Solids are separated from the liquid and piped back to the aeration basins via the return activated sludge piping.
4. Effluent Filters — Liquid is filtered to remove any remaining small particles which are piped to Equalization tank.
5. Disinfection — Effluent is disinfected by either Ultraviolet light or chlorine to remove organisms.
6. Solids Handling — Treats the solids removed from the wastewater to allow safe and economical disposal.

### Summary of Collection System Performance:

During 2019, we collected and treated over 115 million gallons of wastewater. On April 29, 2019, a Sanitary Sewer Overflow occurred discharging approximately 195 gallons into a tributary of Lake Trace.

### Key Performance:

- 27,779 feet of sewer main was cleaned in 2019.
- Replaced 94 feet of sewer main
- Cleared 14,866 feet of sewer right of ways.
- There are 6 duplex Lift Stations serving the Carolina Trace Subdivision. Each Duplex Lift Station is checked three times a week with maintenance conducted as needed as well as emergency generator testing, wet well cleanings, and emergency/routine repairs conducted periodically.
- Duplex Lift Stations are continuously monitored using a telemetry system that will notify our staff of any issues 24/7.
- Annually, each Lift Station is inspected using our 56 Point checklist for Safety.
- As part of our Asset Management Program, an Annual Maintenance Checklist is conducted to determine that equipment is performing at peak efficiencies.
- Our staff throughout the year manually conducts manhole inspections and documents deterioration (if any) due to corrosive atmospheric conditions.
- We have instituted an infiltration and inflow (I&I) program. The purpose of the I&I program is to keep unwanted storm water from entering the collection system. Infiltration and inflow is a clear indicator that there could be broken pipes, uncovered sewer laterals, or someone illegally connected to the collection system.
- As a proactive measure, we educate our customers of our concerns of Fats, Oil, and Grease. Your help in what is put down the drain greatly prevents clogs due to grease buildups and improves our overall collection system. These grease buildups can result in SSO's.
- Our staff is continually monitoring and clearing rights of way (ROW's). These ROW's normally are in low lying creeks and wooded areas. ROW's need to be cleared to ensure easy access during emergency situations.

### Summary of Wastewater Facility Performance:

It is our goal and standard at Carolina Water Service of North Carolina to meet 100% of our NPDES permit discharge limits. We evaluate our treatment processes daily to ensure that goal is obtained. Our permit requires us to continually monitor the effluent to determine if the treatment processes are working effectively. This monitoring consists of sampling at various points in the treatment process. These samples include: Flow measurement of how much wastewater enters and then is discharged from our plant, Biological Oxygen Demand (BOD), Total Chlorine Residual, Fecal Coliform, Total Ammonia, Total Nitrogen, pH, Total Phosphorus, Total Suspended Solids, Dissolved Oxygen, Temperature, and Chronic Toxicity.

A minimum of 1,469 compliance samples are taken on an annual basis. Our staff is committed to a standard of excellence by ensuring a safe and clean facility while maintaining regulatory compliance. No known adverse effects have been noted on the environment or receiving streams.

## II. Violation Summary – 2019

January	Notice of Violation for exceeding the design capacity of the plant.
February	No violations/deficiencies.
March	No violations/deficiencies.
April	No violations/deficiencies.
May	Exceeded the daily Fecal Coliform permit limit on May 7, 2019.
June	No violations/deficiencies.
July	No violations/deficiencies.
August	No violations/deficiencies.
September	Exceeded the monthly Total Ammonia Nitrogen limit.
October	No violations/deficiencies.
November	No violations/deficiencies.
December	No violations/deficiencies.

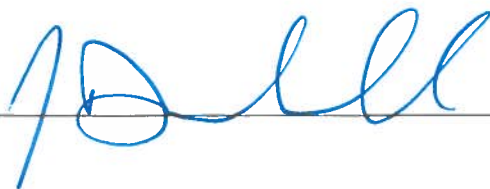
## III. Notification

Customers will be notified of the availability of this report with a message on their bills and copies will be provided upon request.

## IV. Certification

I hereby certify that the information contained in this report is accurate and complete to the best of my knowledge.

Signature:



Date:

2-20-2020

Name: J. Bryce Mendenhall

Title: VP of Operations NC/TN