

Monthly Spill Totals As Reported to NCDEQ

All overflows and violations have been corrected and reported to the State of NC. No environmental impacts or fish kills occurred with these events.

Jan	3,710	May	675	Sep	0
Feb	2,720	Jun	1,200	Oct	158
Mar	100	Jul	1,196	Nov	0
Apr	92,825	Aug	0	Dec	898,050

ENVIRONMENTAL PROGRAMS AND SERVICE INITIATIVE

As part of a commitment to support educational awareness and promote better learning, Shelby offers tours of the wastewater treatment plant to various interest groups. For a tour of the plant, contact the Wastewater Plant Supervisor at 704-484-6850.

FATS, OILS AND GREASE PROGRAM

Grease is a leading cause of sewer blockages and overflows in the sewer system and can lead to sewer back-ups into homes. The City urges residents to help our fight against grease:

- Never pour grease down the drain.
- Scrape grease and food scraps into the trash.
- Use sink strainers to prevent food scraps from going down the drain.



The Fats, Oil and Grease (FOG) Program seeks to reduce these occurrences by education to the public on how to prevent grease from entering the sewer system.

Special emphasis has been placed on food service establishments, but we all need to do our part to keep grease out of the sewer system. For more information on our program, contact the Pretreatment Coordinator at 704-484-6850.

INFRASTRUCTURE IMPROVEMENTS

Sewer Collections System

- **Manhole Replacements** – 18 manholes
- **Sewer Replacement & Repairs**
 - ◆ Belvedere (1,570 LF)
 - ◆ Elmwood (100 LF)
 - ◆ Sumter Aerial Crossing (245 LF)
 - ◆ West Warren Street (210 LF)
- **Sewer Extensions**
 - ◆ Maple Glen (2,457 LF & 16 Manholes)
 - ◆ Willow Estates (5,850 LF & 43 Manholes)
 - ◆ Seattle Crossing (3,307 LF & 24 Manholes)
 - ◆ Randolph Industrial Park (force main, & lift station - *completed*)
- **Sewer Point Repairs** – Various point repairs identified by assessments or by staff.
- **Sewer Lift Stations**
 - ◆ Replaced the pumps and discharge check valves at the Walmart Distribution Lift Station
 - ◆ Replaced the Automatic Transfer Switch at Hallelujah Acres Lift Station

Wastewater Treatment Plant


- Upgraded the Chlorine and Sulfur Dioxide Gas Feed System from a 100 pound per day to 200 pound per day system


COPIES OF THIS REPORT ARE AVAILABLE AT:

- City Hall: 300 South Washington Street
- Utilities Operations Center: 824 West Grover Street
- First Broad River Wastewater Treatment Plant: 1940 South Lafayette Street
- On the City's website: www.cityofshelby.com

For more detailed information, contact the Director of Water Resources, Brian Wilson at 704-484-6840 or brian.wilson@cityofshelby.com.

I certify under penalty of law that this report is complete and accurate to the best of my knowledge. I further certify that this report has been made available to the users or customers of the named system and that those users have been notified of its availability.


Steve Smith
Operator in Responsible Charge


Adam Howell
Field Operations Crew Supervisor/
Operator in Responsible Charge



ANNUAL SYSTEM PERFORMANCE REPORT 2023



Facility Information:
First Broad River Wastewater Treatment Plant
 1940 South Lafayette Street
 Shelby, North Carolina 28152

Permits:
Collection System: WQCS00037
Wastewater Treatment: NC0024538
Laboratory Certification: 238
WWTP Stormwater Permit: NCG110040
Class B Land Application: WQ0042031

City of Shelby Utilities
 824 West Grover Street
 Shelby, North Carolina 28150

SYSTEM OVERVIEW

The City of Shelby wastewater collection and treatment system serves a customer base of 8,600 residential, commercial, and industrial users. During last year, the First Broad River Wastewater Treatment Plant (WWTP) collected and treated an average of 3.43 million gallons per day (MGD); included in this flow is wastewater from Kingstown and Fallston.

The sewer collection system consists of gravity sewer lines, lift stations, and force mains that convey wastewater to the First Broad River WWTP. The City owns and maintains 221.5 miles of gravity sewer and force main lines with twenty (20) lift stations. The City of Shelby also maintains the sewer collection systems for the Town of Fallston and the Town of Kingstown.



Aerial View of the First Broad River WWTP

WHAT IS WASTEWATER?

Wastewater is sewage from your home's sinks, toilets, bathtubs, and washing machines. People also create wastewater at work. Offices, businesses and manufacturers create not only domestic wastewater, but also can create wastewater combined with the discharge associated with manufacturing processes or services.

The City of Shelby's collection system and lift stations direct the flow of the wastewater to the First Broad River WWTP for treatment. The First Broad River WWTP is located on South Lafayette Street.

HOW DO WE TREAT WASTEWATER?

Wastewater treatment plants clean our wastewater and prevent pollution from getting into the environment. When wastewater enters our 6 MGD facility, bar screens catch and remove trash and large objects. Grit chambers then remove heavy particles like gravel, sand, seeds, and coffee grounds. The wastewater then flows through large settling tanks called clarifiers where heavy solids settle to the bottom and are removed. After the primary clarifiers, the liquid portion flows into the aeration basin where microorganisms breakdown the pollutants.

The wastewater then flows into final clarifiers where the microorganisms settle out and are returned to the basins. The flow is disinfected before the treated water is returned to the First Broad River.

The solids, which have been removed from the process, are pumped to anaerobic digesters where they are held, mixed and are heated for treatment. Once treatment requirements are met, the solids are stored until they can be dewatered through belt pressing operations. The de-watered cake solids are stored and eventually land applied as a Class B biosolids (fertilizer) on permitted farm land.

COLLECTION SYSTEM MAINTENANCE

The Field Operations Division maintains collection system pipes and lines in order to prevent sanitary sewer overflows (SSOs) and keep wastewater flowing through the collection system to the treatment plant for treatment. During this report year, 33.8 miles of sewer lines (15.3%) were cleaned by rodding/jetting/bucket cleaning, 14.6 miles of sewer lines (6.6%) were videoed to inspect sewer lines for problems. During the year, Field Operations also conducted inspections of 153 exposed aerial crossings and also performed maintenance of sewer right-of-ways. Field Operations is responsible for installation of sewer connections and also perform repairs to problematic connections, lines and manholes. Smoke testing is also performed to determine sources of inflow and infiltration.

Plant Maintenance conducts inspections of all lift stations and performs both preventative and corrective maintenance on the stations and the force mains. The City's lift stations are equipped with alarm systems and are served with back-up generation (either permanent or portable capabilities).

Dumping waste into the City's manholes without permission is illegal. Residents can report suspicious activity, sewer overflows and other sewer issues any time by dialing (704) 484-6866.

COMPLIANCE SUMMARY

The City of Shelby's First Broad WWTP has permit limits and monitoring requirements regulated by the North Carolina Department of Environmental Quality (NCDEQ). During the year thousands of samples are collected and analyzed to document compliance and to monitor plant operations.

WASTEWATER TREATMENT PLANT COMPLIANCE

No violations during 2023

NCDEQ requires all wastewater collection and treatment systems to annually report to its customers all sanitary sewer overflows, violations of state-issued permit limits and reporting requirements. The following overflows and violations occurred from January 2023 through December 2023.

SANITARY SEWER OVERFLOWS

Spills Greater Than 1,000 Gallons Reaching Surface Water

Date	Address	Gallons	Cause
1/4/2023	703 Hanover Dr	2,250	TR
2/13/2023	211 Edgemont Ave	2,550	CS
4/23/2023	611 Ronald Dr	15,000	TR
4/28/2023	1120 Ladell Ln	45,000	TR
12/26/2023	1120 Ladell Ln	480,000	TR
12/26/2023	611 Ronald Dr	333,000	TR
12/27/2023	400 Johnsfeld Rd	11,250	R/D
12/27/2023	3028 Charles Rd	5,250	TR

TR—Torrential Rain
R/D—Roots/Debris
F—Pipe Failure
CS—Collapsed Sewer