



CITY OF GREENSBORO

Water Resources

2018 Sewage Collection & Water Reclamation Plant Report



The Clean Water Act of 1999 (House Bill 1160) requires all entities that own or operate wastewater collection and treatment systems to make an annual report available to their customers. The purpose of the report is to show how a system operates, how well it performed during the year, what violations occurred, and other important information.

This report is produced in compliance with these requirements and covers the calendar year January - December 2018. It is submitted to the North Carolina Department of Environmental Quality. This report is available to all customers at local City of Greensboro library branches, the Water Resources Customer Service Center at 2602 S. Elm Eugene St. and online at www.greensboro-nc.gov/WastewaterReport.



The names listed are professionals designated by the State as the "Operators in Responsible Charge" (ORC) of the respective systems:

T.Z. Osborne Water Reclamation Facility
Permit Number: NC0047384
ORC: Bradley Flynt, (336) 433-7262

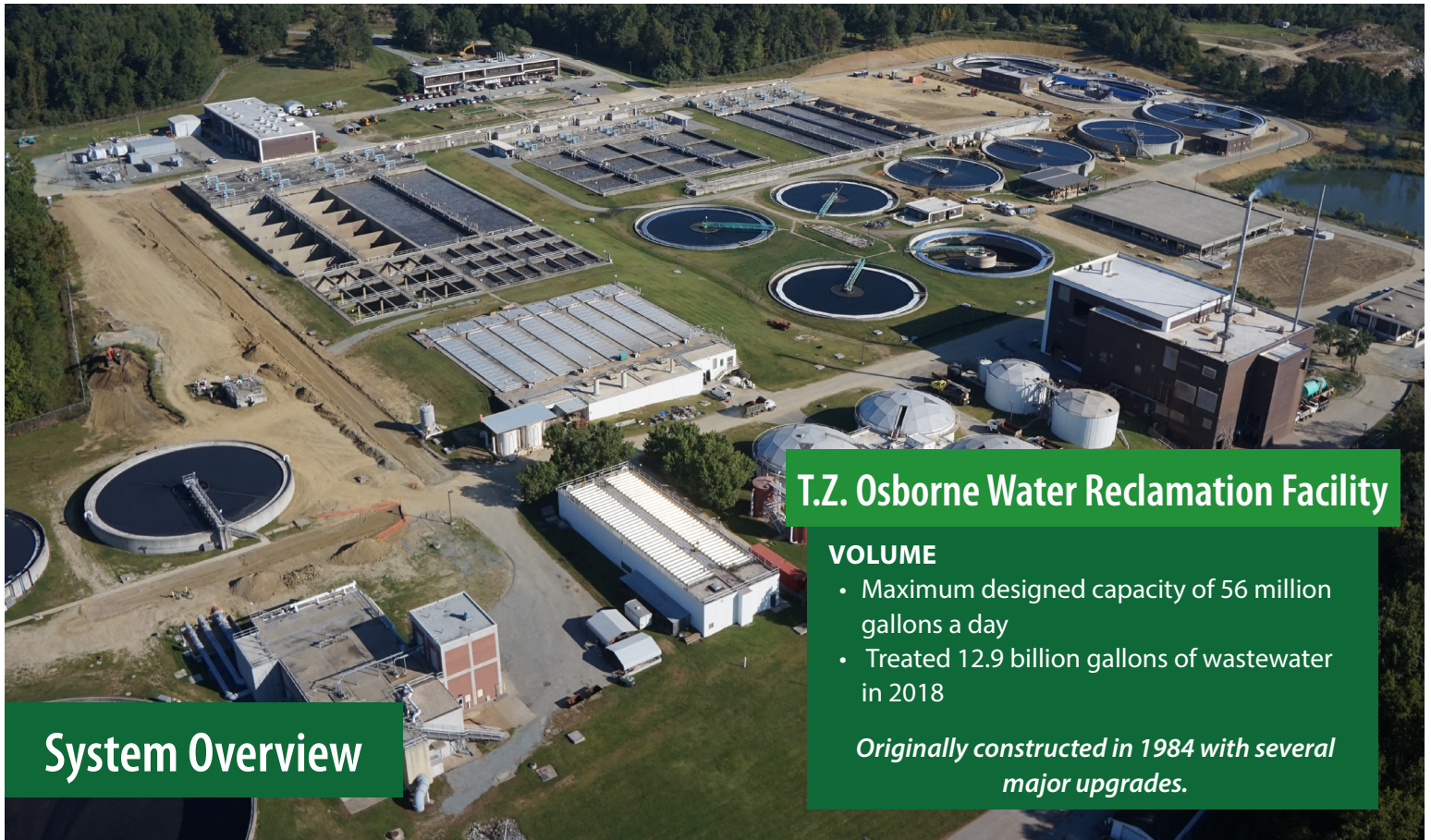
Sewage Collection System Permit
Number: WQCS00006
ORC: Robert Martin, (336) 373-2033

Contact Information

T.Z. Osborne Water Reclamation Facility
(336) 373-7740

www.greensboro-nc.gov/water

**To report sewer overflows, please
contact 336-373-2033**



T.Z. Osborne Water Reclamation Facility

VOLUME

- Maximum designed capacity of 56 million gallons a day
- Treated 12.9 billion gallons of wastewater in 2018

Originally constructed in 1984 with several major upgrades.

System Overview

The long history of water reclamation in Greensboro began with the construction of the original 4 million gallon per day (MGD) South Buffalo Creek Treatment Facility in 1928. Over the next ten years, the North Buffalo Water Reclamation Facility opened to provide secondary treatment for the northern half of Greensboro. By 1984, South Buffalo Creek Treatment Facility closed only to be replaced by T.Z. Osborne Water Reclamation Facility.

Currently, the City of Greensboro Water Resources Department operates one water reclamation plant and a sewage collection system that collects and transports sewage to this plant. The North Buffalo Facility was decommissioned in October 2017. It is now a transfer pump station and all wastewater is currently treated at the T.Z. Osborne facility.

The sewage collection and water reclamation system of the City of Greensboro begins with approximately 99,797 connections that serve homes, commercial establishments, and industries. Every day an average of 35.3 million gallons of sewage is generated in our homes and industries that must be collected, transported, and treated to very stringent standards before it is released back into the environment (in our streams). This service is provided by the City's Water Resources Department and is funded almost entirely from the user charges that are paid monthly by our customers.

The City of Greensboro operates a sewage collection system comprised of 1,418 miles of gravity lines, 33,644 sewer manholes, 49 pump stations, and 70 miles of pressurized sewage force mains. The system is subject to many federal and state rules and regulations designed to enforce the provisions of the Clean Water Act. All spills and overflows, of any volume, that reach surface waters must be reported to the State. The City of Greensboro notifies media any time a spill results in 1,000 gallons or more reaching surface waters.

Wastewater Treatment Plant Performance

The City of Greensboro's wastewater treatment plant operates under a National Pollutant Discharge Elimination System (NPDES) Permit. This highly complex permit includes monitoring requirements and discharge limits. The permit can be viewed at our treatment plant upon request. Compliance with these permits requires our laboratory staff to conduct over 60,000 tests per year. Wastewater treatment plants have no control over some parameters, other than through regulating what industry and households can discharge to the sewers through the Industrial Waste and Pretreatment Program.

During 2018 the Water Resources Department treated almost 12.9 billion gallons of wastewater and returned it to our streams. We are proud of the performance of these facilities made possible by the dedicated efforts of the professionals who operate, maintain and conduct tests for the plant. All NPDES permit violations are reported to the State of North Carolina to ensure compliance with reporting regulations. A list of violations that occurred during the 2018 calendar year is at the end of this report (Table 1).

The City of Greensboro's water reclamation facility is a tertiary treatment plant that utilizes activated sludge processes. Solid waste (biosolids) generated in these processes is disposed of by a fluidized bed incinerator.



System Improvements

Water Resources is proud that given the capacity of our treatment plant and the age of our collection system, our permit departures have been minimal. Recognizing the changing climate of environmental concern, total compliance is our commitment to our customers.

In an effort to continue to improve our wastewater collection system and meet the demands of new regulations, various capital improvement projects have been initiated. To prepare for State and Federal nutrient reduction regulations and the Jordan Lake Rules, upgrades to provide a higher level of treatment at the T.Z. Osborne facility are currently underway. This \$115 million four-phase construction project will be completed in 2020.

Protecting the System

Each year, the City of Greensboro evaluates the wastewater collection system and prioritizes needs and resources. The system is monitored and maintained daily with the implementation of both preventative and corrective maintenance measures. In addition, the City of Greensboro continually improves the system using an aggressive program to rehabilitate old infrastructure that exhibit signs of deterioration. Planning and making improvements to our wastewater collection system extends the life and operating efficiency of the City's sewer system.

Summary of Collection

In 2018, there were 64 Sanitary Sewer Overflows (SSOs) in our community which is an increase from the 51 spills reported in 2017. SSOs occur when problems in the system cause sewage to emerge from manhole covers, service cleanouts or plumbing fixtures. The major contributors to sewer overflows include trash or debris, tree and shrub roots, grease, pump station equipment failure, and pipe failures or breaks. Listed on the following pages are the compliance and violation records for T.Z. Osborne treatment plant and the list of SSOs that exceeded 1,000 gallons.

The annual sewage and water reclamation plant report is available at the following City of Greensboro locations: the Vance H. Chavis Lifelong Learning Branch Library, the McGirt-Horton Branch Library, the Central Library, the Melvin Municipal Office Building, the T.Z. Osborne Wastewater Facility, and also on the City's website: www.greensboro-nc.gov/water.

Fats, Oils and Grease Program

Grease that comes from cooking oils, gravy, lard or shortening, and butter or margarine may not look harmful as a liquid, but when they cool they get thick and stick to pipes.

Cooking oil, fats, and grease that enter the sanitary system from household drains and poorly maintained grease traps in restaurants and other food establishments can result in sanitary sewer overflows (SSOs). Sewer overflows and backups can cause health hazards, damage home interiors and threaten the environment.

The City of Greensboro Water Resources Department implements a Fats, Oils, and Grease (FOG) Policy designed to educate and enforce proper disposal of FOG within the community. The FOG policy educational and enforcement programs are intended for all customers (Food Service Establishments, Nursing/Group homes, Schools/ Cafeterias, Industries, and Residents) that discharge wastewater into the City of Greensboro Sanitary Sewer System with the aim of mitigating or eliminating SSOs that are grease related. The City of Greensboro FOG policy requires all commercial and food service establishments to install and regularly maintain an appropriately sized grease trap or interceptor.

To learn more, please visit www.greensboro-nc.gov



Tips to Prevent Sanitary Sewer Overflows

- Place cooled oil and grease into trash bins or covered collection containers. Never pour grease down the drain!
- Scrape food scraps from dishes into trash bins.
- Wipe off all fats, oils, grease and food residue from dishes and cookware into trash bins.
- Use a strainer in the sink to collect excess food particles.
- Clean up grease spills with absorbent material and place into trash bins.

2018 Wastewater Treatment Plant Compliance/Violations

TABLE 1

T.Z. Osborne - Permit #NC0047384

MONTH	DESCRIPTION	TYPE OF VIOLATION
September	Fecal Coliform (9/16-9/23)	Weekly Average
	Carbonaceous Biochemical Oxygen Demand (9/16-9/23)	Weekly Average
	Total Suspended Solids (9/16-9/23)	Weekly Average
October	Carbonaceous Biochemical Oxygen Demand (10/6-10/13)	Weekly Average
	Fecal Coliform (10/20-10/26)	Weekly Average
November	Flow	Monthly Average
	Carbonaceous Biochemical Oxygen Demand (11/11-11/17)	Weekly Average
	Total Suspended Solids (11/11-11/17)	Weekly Average
December	Flow	Monthly Average

Note: The historical rainfall events during the last 4 months of the year, including 2 hurricanes, impacted the treatment plant and collection system, causing violations.

2018 Wastewater Treatment Plant & Sewer Compliance/Violations

TABLE 2

Sewage Collection System - Permit #WQCS00006

Sewage Spills from Collection System Exceeding 1,000 Gallons

PERMITEE: CITY OF GREENSBORO

INCIDENT STARTED	VOLUME REACHING SURFACE WATER	SURFACE WATER NAME	LOCATION	PROBABLE CAUSE
3/3/2018	50,000 gallons	North Buffalo	2401 Textile Drive	Grease
3/22/2018	60,000 gallons	North Buffalo	3000-A Northline Avenue	Debris in Line
4/2/2018	5,500 gallons	South Buffalo	200 E. Vandalia Road	Grease
5/13/2018	1,800 gallons	North Buffalo	1041 Battleground Avenue	VCP Pipe & Rocks
5/14/2018	2,500 gallons	South Buffalo	3200 Cypress Park	Grease
5/17/2018	3,500 gallons	South Buffalo	3845 MariBeau Woods Court	Grease
5/21/2018	30,000 gallons	South Buffalo	130 Sierra Drive	Rags
6/18/2018	2,500 gallons	South Buffalo	126 Thornton Court	Debris in Line
6/20/2018	3,000 gallons	North Buffalo	500 Waycross Drive	Roots
6/20/2018	335,000 gallons	Little Alamance	6671 Judge Adams Road	Other
8/3/2018	1,500 gallons	N/A	6671 Judge Adams Road	Contractor
8/7/2018	5,000 gallons	South Buffalo	2306 Bracyridge Road	Pipe Failure
9/6/2018	5,000 gallons	South Buffalo	4124 Eastland Avenue	Roots
9/16/2018	63,000 gallons	North Buffalo	1600 West End Place	Severe Natural Condition
9/17/2018	11,000 gallons	North Buffalo	2199 White Street	Severe Natural Condition
9/17/2018	625,000 gallons	Horsepen Creek	3844 Battleground Avenue	Severe Natural Condition
9/17/2018	1,300,000 gallons	Middle Reedy Fork Creek	6951 McLeansville Road	Severe Natural Condition
10/11/2018	3,000 gallons	North Buffalo	3240 Gatesville Drive	Inflow
10/11/2018	3,000 gallons	North Buffalo	3240 Gatesville Drive	Inflow
10/11/2018	2,500 gallons	North Buffalo	2401 Lafayette Avenue	Grease
10/11/2018	200,000 gallons	Horse Pen Creek	3844 Battleground Avenue	Inflow
10/11/2018	2,500 gallons	North Buffalo	4105 Corbin Road	Inflow
10/12/2018	1,200 gallons	South Buffalo	612 Cardella Drive	Inflow
10/12/2018	800,000 gallons	Middle Reedy Fork Creek	6951 McLeansville Road	Inflow
10/22/2018	3,000 gallons	South Buffalo	2214 Crestridge Road	Pipe Failure
11/12/2018	1,850 gallons	North Buffalo	Brightwood Lift Station	Inflow
11/20/2018	2,000 gallons	South Buffalo	3815 West Avenue	Pipe Failure
12/18/2018	9,000 gallons	Horsepen Creek	Behind Bledsoe Lift Station	Grease