# City of Greensboro
# Water Resources Department

***Sewage Collection and Water Reclamation Plant Report for 2016***

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 2016. This report is available to all customers, and is submitted to the North Carolina Department of Environmental Quality.

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

North Buffalo Water Reclamation Facility
Permit Number: NC0024325
ORC: Ed Osborne, (336) 373-7850

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

North Buffalo Water Reclamation Facility
(336) 373-5913

**www.greensboro-nc.gov/water**

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

### T.Z. Osborne Water Reclamation Facility

Originally constructed in 1984 with several major upgrades.

**Volume**

Maximum designed capacity of 40 million gallons a day
Treated 9.4 billion gallons of wastewater in 2016

### North Buffalo Water Reclamation Facility

Originally constructed in 1938 with several major upgrades.

**Volume**

Maximum designed capacity of 16 million gallons a day
Treated 2.6 billion gallons of wastewater in 2016

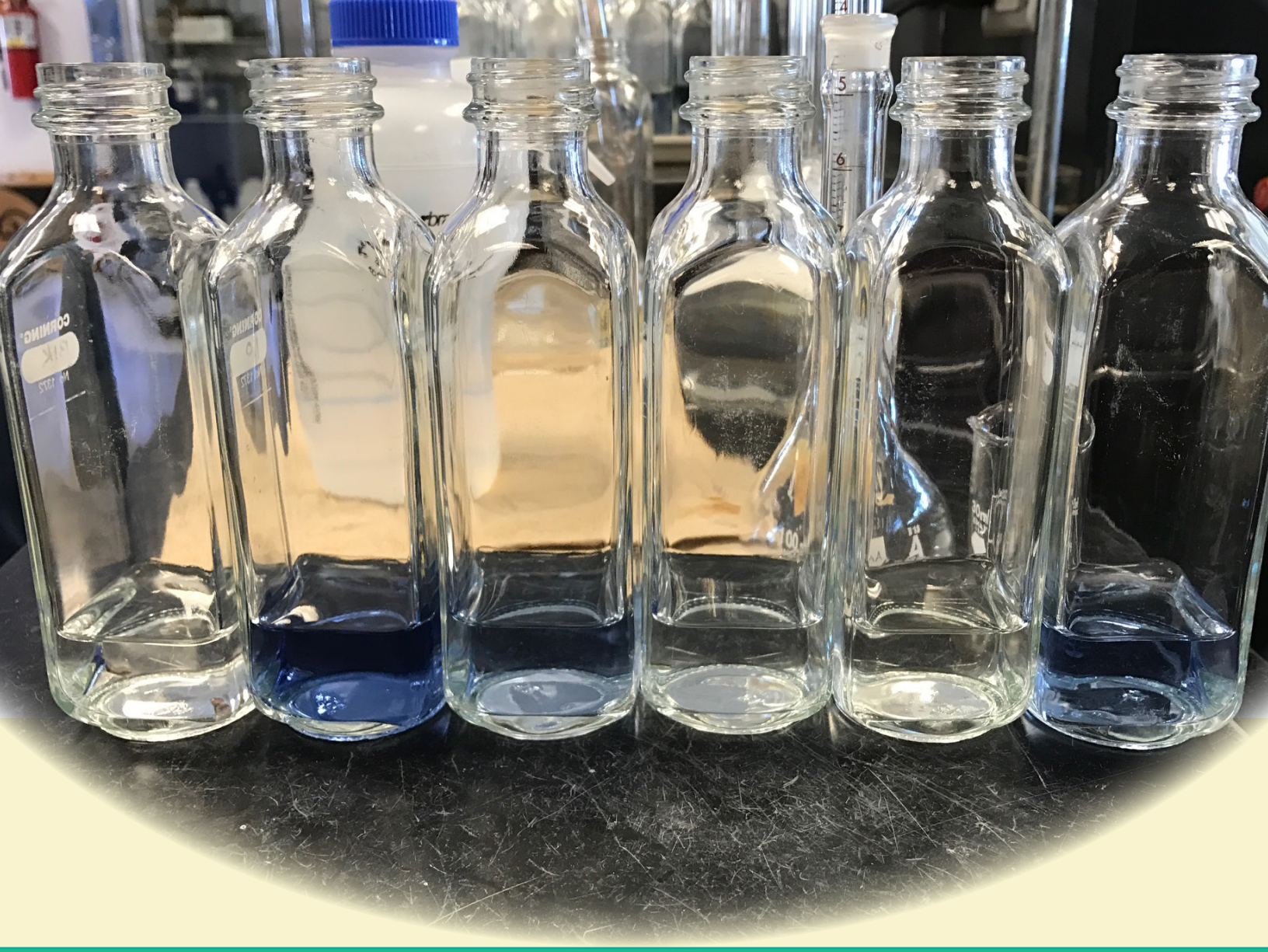
## System Overview

The long history of water reclamation in Greensboro began with the construction of the original 4 million gallons 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 two water reclamation plants and a sewage collection system that collects and transports sewage to these two plants. Some transfer of sewage occurs between the two plants. The North Buffalo Facility and the T.Z. Osborne Facility are permitted to process up to 16 and 40 million gallons of wastewater per day, respectively.

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 32.79 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 our 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 1,629 miles of gravity lines, 40,040 sewer manholes, 49 pump stations, and 88 miles of pressurized sewage force mains. The system is subject to many rules and regulations. 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 plants operate under National Pollutant Discharge Elimination System (NPDES) Permits. These are highly complex permits that include monitoring requirements and discharge limits. The permits can be viewed at our treatment plants upon request. Compliance with these permits requires our laboratory staff to conduct over 60,000 tests per year. Wastewater treatment plant operators have no control over some limited parameters (selenium and mercury) other than through regulating what industry and households can discharge to the sewers through the Industrial Waste and Pretreatment Program.

During 2016 the Water Resources Department treated 12 billion gallons of wastewater and returned it to our streams. We are proud of the outstanding performance of these facilities made possible by the dedicated efforts of the professionals who operate, maintain and conduct tests for these plants. All NPDES permit violations are reported to the State of North Carolina to ensure compliance with all reporting regulations. A list of violations that occurred during the 2016 calendar year is at the end of this report (Tables 1-2). There were no detected environmental impacts from any of these permit violations.

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

# System Improvements

The Greensboro Water Resources Department is proud that given the capacity of our treatment plants and the age of our collection system, our permit departures have been minimal. However, we recognize that in the changing climate of environmental concern, total compliance is demanded by the public.

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, 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.

# How We Protect 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

There were 41 Sanitary Sewer Overflows (SSOs) in our community, a decrease from the 62 spills reported in 2015. 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 both wastewater treatment plants and the list of SSOs that were 1,000 gallons or more.

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, all Water Resources Wastewater Facilities, 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 sewer system from household drains and poorly maintained grease traps in restaurants and other food establishments can result in sanitary sewer overflows (SSO's). 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 SSO's 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.

**Tips you can do to prevent SSO's**

- 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.

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

# Wastewater Treatment Plant Compliance/Violations for 2016

## Table 1

| North Buffalo - Permit #NC0024325 | | |
|---|---|---|
| **Month** | **Description** | **Type of Violation(s)** |
| N/A | N/A | N/A |

**No violations in 2016

## Table 2

| T.Z. Osborne - Permit #NC0047384 | | |
|---|---|---|
| **Month** | **Description** | **Type of Violation(s)** |
| April | Ammonia-Nitrogen [4/4-4/8]<br>Ammonia-Nitrogen | Weekly Avgerage<br>Monthly Average |
| October | CBOD (Carbonaceous Biochemical Oxygen Demand) 10/10-10/14]<br>CBOD (Carbonaceous Biochemical Oxygen Demand)<br>TSS (Total Suspended Solids) [10/10-10-14] | Weekly Average<br>Monthly Average<br>Weekly Average |

## Table 3

### *Sewage Spills from Collection System Exceeding 1,000 Gallons*

| Sewage Collection System- Permit #WQCS00006 | | | | | |
|---|---|---|---|---|---|
| **Permitee** | **Incident Started** | **Volume Reaching Surface Water** | **Surface Water Name** | **Location** | **Probable Cause** |
| City of Greensboro | 2/9/2016 | 650,000 | North Buffalo Creek | 1632 Oakleigh Road | Broken Force Main |
| City of Greensboro | 3/31/2016 | 2,000 | Horsepen Creek | 2785 Horsepen Creek Road | Grease |
| City of Greensboro | 6/4/2016 | 35,000 | Rock Creek | 6068 Burlington Road | Broken Force Main |
| City of Greensboro | 7/25/2016 | 96,200 | Little Alamance | 6068 Burlington Road | Lift Station Failure |