



City of Greensboro Water Resources Department

Sewage Collection and Water Reclamation Plant Report for 2014



Aerial photo of T. Z. Osborne Wastewater Plant



Aerial photo of North Buffalo Wastewater Plant

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 report must detail how a system operates, how well it performed during the year, what violations occurred, and other information. This report is produced in compliance with these requirements and covers the calendar year January - December 2014. This report is available to all customers, and is submitted to the North Carolina Department of Environment and Natural Resources. Included in this report is a table listing the spills and overflows that occurred during the 2014 year.

The City of Greensboro Water Resources Department operates two water reclamation plants and a sewage collection system that collects and transports the 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.

Wastewater System Overview

The sewage collection and water reclamation system of the City of Greensboro begins with approximately 103,480 connections that serve homes, commercial establishments, and industries. Every day an average of 31 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 1,612 miles of gravity line, 39,562 sewer manholes, 48 pump stations, and 90 miles of pressurized sewage force main. The system is subject to many rules and regulations. All spills and overflows of any volume that reach surface water must be reported to the State. Spills that exceed 1,000 gallons must also be reported to local news media outlets.

Wastewater Treatment Plant Performance



The City of Greensboro's Treatment Plants operate under the 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 require our laboratory staff to conduct over 10,500 tests per year. Any one of these tests may result in a value that causes us to violate the limits of the NPDES Permit. 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 2014 the Water Resources Department treated 11.4 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 2014 calendar year is at the end of this report (Tables 1-3). There were no detected environmental impacts from any of these permit violations.



The City of Greensboro 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.

Fats, Oils, and Grease Program



To prevent undue introduction of fats, oils, and grease (FOG) into the wastewater collection system, the City of Greensboro Water Resources Department is implementing a FOG Policy designed to educate and enforce the proper disposal of FOG within City jurisdictions. 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 Sanitary Sewer Overflow (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.

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 however, 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 nutrient reduction requirements of the Jordan Lake Rules, upgrades that will provide a higher level of treatment for the T.Z. Osborne facility are currently

underway. This \$100 million four-phase construction project will be completed in 2020.

An on-going cleaning and inspection program to monitor and maintain our sewer system continues to be bolstered with the introduction of new equipment including two rapid assessment acoustic testing devices. New inspection equipment, along with an aggressive program to rehabilitate old infrastructure that exhibit signs of deterioration has allowed continual improvement of the system.

Additional Report Information



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, McGirt-Horton Branch Library, Central Library, Melvin Municipal Office Building (MMOB), all Water Resources Facilities, and also the City's website: www.greensboro-nc.gov/water.

Customers will also receive notification concerning availability in the At Your Service quarterly newsletter, that are distributed in water and sewer bills from April to May of 2015. Additional copies of the report may be requested by calling the City Contact Center at (336) 373-CITY (2489).

Important information that can be found on our website

- Significant Industrial User (SIU) Permit Information
- Sewer use and Pretreatment Ordinance
- Significant Industrial Users Listing
- Industrial Waste Section Contact Information
- Useful State/Federal SIU Permit Resources

Summary of Collection System Performance

From January 1st – December 31st of 2014, the City of Greensboro had 71 Sanitary Sewer Overflows (SSOs). SSOs occur when problems in the system cause sewage to emerge from manhole covers, service cleanouts or plumbing fixtures. Grease was the number one contributing factor of SSOs during 2014. Other issues reported were debris in line, pump station equipment failure, roots, and pipe failure breaks.

Debris in the collection system can range from rags, flushable wipes, rocks, sticks, feminine hygiene products, etc., which are all illegal discharges when dumped into the sanitary sewer system. Listed below in Table 1 & 2 are the compliance and violation records for both wastewater treatment plants. Table 3 list the SSO's that were 1,000 gallons or more.

The City has an ongoing Fats, Oils and Grease Program to educate residents and business owners regarding the need to keep grease out of the sewer system, as well as a comprehensive maintenance program. With the help of each sewer customer using the sewer system responsibly, the City can continue to reduce the number of SSO occurrences each year.

Wastewater Treatment Plant Compliance/Violations for 2014

Table 1

North Buffalo-Permit #NC0024325			
Month	Description	Number of Violations	Type of Violation (s)
N/A	N/A	0	N/A

Table 2

T.Z. Osborne -Permit #NC0047384			
Month	Description	Number of Violations	Type of Violation (s)
March	Ammonia	1	Ammonia
April	CBOD	3	CBOD
May	CBOD	2	CBOD

Note: There were no environmental impacts noted for the above violations.

Table 3
Sewage Spills from Collection System Exceeding 1,000 Gallons

Sewage Collection System- Permit #WQCS00006						
Permitee	Permit Number	Incident Started	Volume Reaching Surface Water	Surface Water Name	Location	Probable Cause
City of Greensboro	WQCS00006	2/22/2014	1,500	Brush Creek	7701 Airport Center Dr.	Grease
City of Greensboro	WQCS00006	3/1/2014	5,200	Little Alamance	1035 Neese Rd.	L/S Power Failure
City of Greensboro	WQCS00006	3/8/2014	8,000	North Buffalo	3240 Gatesville Rd.	L/S Power Failure
City of Greensboro	WQCS00006	6/3/2014	15,000	North Buffalo	2105 Drexel Rd.	Broken Main
City of Greensboro	WQCS00006	9/3/2014	2,000	North Buffalo	2199 White St.	Air Valve Malfunction
City of Greensboro	WQCS00006	10/7/2014	13,000	Little Creek	5936 Burlington Rd.	Broken Main
City of Greensboro	WQCS00006	12/26/2014	1,400	Beaver Creek	3652 S. East School Rd.	L/S Power Failure

Contact Information

The following are the professionals designated by the state as the "Operators in Responsible Charge" (ORC) of the respective systems and permits for the systems:

North Buffalo Water Reclamation Facility Permit No. NC0024325, ORC Nathan Osborne, (336) 373-7850
 T.Z. Osborne Water Reclamation Facility Permit No. NC0047384, ORC Lori Cooper, (336) 373-4502
 Sewage Collection System, Permit No. WQCS00006, ORC Mark Malloy, (336) 373-2033

WATER RESOURCES ADMINISTRATION: 336-373-2055
 T. Z. OSBORNE WATER RECLAMATION: 336-373-7740
 NORTH BUFFALO WATER RECLAMATION: 336-373-5913

www.greensboro-nc.gov/water