

Grease in the collection system

In North Carolina and other states grease is one of the main causes for sewer overflows. These overflows are related to the improper disposal of oil and grease from kitchen drains. Grease congeals in sewer pipes and can cause wastewater to back up into homes and businesses and waterways. Sanford did not experience any sewer overflows this year due to grease.

The City of Sanford's "Fats, Oils, and Grease Program" has been in effect for nine years. The purpose of the program is to prevent the accumulation of fats, oils, and grease in the sanitary sewer system. We have 167 commercial facilities with 178 grease traps participating in the program. Our FOG coordinator inspected 87 grease traps this year and 413,100 gallons of grease-containing fluids were removed through routine maintenance. Our staff strives to maintain the City's infrastructure at the highest quality possible, while providing you with continuous service and protecting the environment. All of us can work together to protect the environment and maintain the sewer infrastructure. You can help as well.

SEWER IMPROVEMENTS

The Big Buffalo Waste Water Treatment Plant Expansion project is proceeding as planned. The \$48 million project will increase plant treatment capacity from 6.8 million gallons per day to 12 million gallons per day. The contract completion time is May of 2014 however the contractors feel they will finish well before then.

The City continued its rehabilitation efforts by completing a number of projects that replaced old manholes and sewer lines. The City also completed a project to install generators at all of the sewer lift stations. In the past, City crews would have to visit each lift station during a power outage and run them with a manual generator. Storms serious enough to cause power outages can present dangerous conditions to City personnel who have to be out in the weather. Now, each lift station is automatically switched and powered by a generator in the event of a power outage. City crews still inspect the site during power outages however this new capability frees up manpower during times of inclement weather and minimizes the need for City personnel to be in potentially hazardous situations.

Sanford did not have any reportable waste water spills during fiscal year 2011-2012.

City of Sanford Public Works Center

601 N. Fifth Street, Sanford, NC 27330

Fedd Walker

Operator in Responsible Charge, Collection

Phone (919) 775-8336

Permit #NC0024147/#WQCS00047

Big Buffalo Wastewater Treatment Plant

5327 Iron Furnace Road, Sanford, NC 27330

Jay Grainger

Operator in Responsible Charge,

Wastewater Treatment Plant

Phone (919) 775-8305

Permit #NC0024147/#WQ0000543

YOU CAN HELP!

Please follow these guidelines:

- *Collect fat, oils, and grease in a container and dispose of it in the garbage.*
- *Place personal hygiene products and diapers in a wastebasket. Do not flush plastics.*
- *Place food scraps in the trash or start a compost area. Use the garbage disposal as little as possible.*
- *Don't pour hazardous materials, such as pesticides, paint, and herbicides down the drain.*
- *Check before you dig! Do not plant trees, shrubs, and other vegetation or erect fences and other structures on or near sewer lines, easements, or manholes.*

We certify that this report is accurate to the best of our knowledge. It is being mailed to The NC Division of Water Quality and to all City of Sanford wastewater customers. The report is also available at City Hall, the Public Works Center, and the Wastewater Treatment Plant.



ANNUAL WASTEWATER REPORT

***Wastewater System
Performance 2011-2012***

The City of Sanford's Annual Wastewater Treatment and Collection System Report

The City of Sanford is pleased to provide an overview detailing the operation, maintenance and performance of your municipal Water Reclamation Facility and Wastewater Collection System. This report gives us the opportunity to keep you informed and to meet our State compliance requirements.

Big Buffalo Wastewater Reclamation Facility

Treatment Process

Sanford's Big Buffalo Wastewater Reclamation Facility is an advanced treatment facility with a permitted capacity of 6.8 million gallons per day. This past fiscal year we treated over 1.349 billion gallons of wastewater. This is an average of four million gallons a day. This facility treats waste from eighteen thousand residential customers, fifteen schools and fifteen industries in Sanford. Physical, biological, and chemical processes at the plant treat wastewater before it is released into the environment. When the wastewater is received at the plant through our collection system, it passes through a bar screen and then through a grit chamber where debris is removed prior to reaching the influent pumps that pump it to the aeration basins.

Microorganisms in the aeration basin are used to convert organic matter to a solid residue. The aeration basins discharge the wastewater to the clarifiers where solids are broken down further. Clear water in the clarifiers then travels to the filters. The reclaimed water is disinfected by a chlorination process and safely de-chlorinated prior to being discharged through an outfall pipe into the Deep River under the National Pollutant Discharge Elimination System permit (NPDES) number NC0024147.

Staffing

Critical plant equipment is monitored twenty-four hours a day by thirteen highly trained and certified employees at the Big Buffalo WRF. Employees are certified by the State of North Carolina for proficiency in plant operation, pump station maintenance, laboratory analysis, land application of biosolids, and pretreatment management. City employees are on duty twenty-four hours, seven days per week monitoring all system activity from the plant control room. The Big Buffalo staff together has a combination of 144 years of experience.

Biosolids

The nutrient-rich organic materials resulting from the treatment of domestic sewage at the Big buffalo WRF are called biosolids. The nutrients in these biosolids contain calcium, nitrogen, phosphorous, and micronutrients like copper and zinc, which are essential for plants. Recycling these biosolids is the most environmentally friendly and cost effective method for the City to manage its biosolids. Farmers have been using these biosolids for years because of their benefits as a fertilizer to maintain productive soils. These solids are converted to a dense residue, removed, and reused on permitted land. Sanford has seventy eight permitted fields for recycling of biosolids. This fiscal year we applied 4.4 million gallons or 575 dry tons to 12 of the 78 fields which equals 278 acres of land in Lee, Chatham, and Montgomery Counties.

Reuse Program

Sanford's reuse program decreases the amount of nutrients and flow discharged into the river. Treated wastewater in recent years has been used to irrigate the local municipal golf course. The City is also looking into expanding its reclaimed water usage to industries in an effort to curb overall water usage, free up more capacity in the river, and to extend the life of the wastewater plant. We have asked local industries to examine the feasibility of introducing the use of reclaimed water into their operations.

Pretreatment Program and Facility Lab

Pretreatment Program

Pretreatment programs help water reclamation facilities maintain the requirements of water quality before it is returned to the river basin. Big Buffalo WRF is designed to handle domestic waste. Therefore, industries that produce certain amounts of non domestic waste are required to have a permit for disposal. We currently have ten industries in the program. The City issues permits to these industries specifying the parameters of concern and flow limitations. Industrial discharges are monitored to specify the maximum amounts of pollutants that may be discharged into the facility. Staff conducts routine monitoring and inspections of these industries to ensure compliance.

Laboratory Analysis

Sanford's reclamation facility maintains a certified analytical laboratory approved by the State of North Carolina and the EPA. Our lab is certified to perform environmental analysis and report monitoring data to the Division of Water Quality for compliance with NPDES effluent and pretreatment regulations. Technicians observe wastewater discharge at local industries in order to monitor compliance, and laboratory personnel monitor the effluent daily by testing twenty wastewater parameters. All data reported this year was in compliance with the NPDES permit.

Community Participation

You are invited to participate in our public forum and voice your concerns about wastewater treatment. The City of Sanford Council meets the first and third Tuesdays of each month beginning at 7 P.M. at City Hall, 225 East Weatherspoon Street, Sanford, NC.

Information on the Internet:

Visit the City of Sanford's Web site to view and print this report at (www.sanfordnc.net) and for information on all city departments and departmental contacts. Also, the North Carolina Department of Environment and Natural Resources has a Web site (www.ehnr.state.nc.us) that provides complete and current information on water and wastewater issues in North Carolina.

City of Sanford Public Access Channel

Please view the City of Sanford's Public Access Channel on Charter Cablevision Channel 11 for coverage of Council meetings, sewer and water construction activities, street closings, community announcements, and other information relevant to City activities.

For more information about this report, copies, or any questions relating to the wastewater treatment system, please call Laura Spivey, Public Works Administrator, at (919) 775-8299

COLLECTION SYSTEM PERFORMANCE

Sanitary Sewer Overflow (SSO)

On a daily basis approximately 4 million gallons of wastewater moves through the collection system from bathtubs, showers, kitchen sinks, toilets, washing machines, and dishwashers from homes and businesses to the Big Buffalo WRF. The collection system is made up of mechanical devices such as pump stations, and sewer lines that are subject to malfunction or have unavoidable clogs or cracks.

Sanitary sewer overflows occur when wastewater escapes from the sanitary sewer system to the ground. Any wastewater spill (SSO) in excess of 1,000 gallons or any amount that reaches surface waters must be reported to the Division of Water Quality and revealed in this report to our customers.

One common reason for a sanitary sewer overflow is heavy rainfall accumulation in the storm water system that overflows into the sewer collection lines causing the sanitary sewer overflow to occur. Other sanitary sewer overflows may result from pump station malfunction, tree roots or debris in lines, structural damage, vandalism, grease, and electrical failures.

Sanford has a wastewater collection system with a total of 255 miles of gravity wastewater lines and pressurized force mains ranging in diameter from six inches to thirty-six inches. This system also encompasses nine sewer lift stations and 4,700 manholes.

Sewer Collection System Activities

The City of Sanford's Sewer Construction and Maintenance Department performs routine and preventative maintenance on the collection system daily and are on call for any problems with the system twenty four hours a day. This department consists of twelve highly trained and certified employees with a combination of 136 years of experience.

Some of the routine maintenance performed in the system includes sewer line cleaning. This past year we cleaned twenty-three percent of our lines. Our staff responded to 271 sewer backup or stoppage investigations. If a stoppage is discovered to be on the citizens' property, city staff will explain to the property owner or business owner the next step in getting the problem fixed. The property owner may be required to contact a plumber to clear the line, or install a new line and cleanout. A line stoppage often involves rodding and jetting to clear a clogged line and this fiscal year we rodded and jetted 58 miles of sewer main. Easement-clearing is also part of the maintenance performed in the collection system, because wastewater lines are located along utility easements. Our staff performs inspections of the lines and mows the easements. This past fiscal year the staff mowed 33 miles of right-of-way, inspected 65 miles of priority (aerial) lines, and inspected 52 miles of collection lines.

Smoke testing is still an efficient and inexpensive way to identify problems in lines. The pressurized smoke fills the line and escapes wherever there is an opening. TV-ing a line involves a closed circuit inspection unit that takes actual video of the lines and this year we videoed 3.3 miles of line.