



**City of Rocky Mount: Wastewater Systems  
Annual Performance Report  
(January 2016 - December 2016)**

**Tar River Regional Wastewater Treatment Plant and Collection System**

**I. General Information**

Facility/System Name: Tar River Regional Wastewater Treatment Plant

Responsible Entity: City of Rocky Mount  
Jonathan L. Boone, Director of Public Works & Water Resources

Persons in Charge: Brenton Bent, Asst. Director of Public Works & Water Resources  
Nathaniel Williams, Superintendent of Water & Sewer Services

Applicable Permits NPDES Permit #NC0030317  
Land Application Permit #WQ0005568  
Collection System Permit #WQCS00011

**Description of Collection System and Treatment Process:**

The City of Rocky Mount maintains 434 miles of wastewater collection lines with 33 sewer lift stations. This collection system receives wastewater from five municipalities and parts of Nash and Edgecombe counties. The collection system discharges to the Tar River Regional Wastewater Treatment Plant. This plant is permitted to treat twenty-one (21) million gallons per day of wastewater by a pure oxygen activated sludge process using the Air Products "A2O OASES" biological nutrient removal process which provides both nitrification (conversion of ammonia to nitrates) and denitrification (conversion of nitrates to gaseous nitrogen). The effluent is filtered and disinfected before being returned to the Tar River. Waste activated sludge is aerobically digested to permitted parameters and recycled through land application.

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**II. Performance: Summary of Performance for Reporting Period**

The Tar River Regional Wastewater Plant treated 4.20 billion gallons of wastewater in 2016.

Removal of CBOD<sub>5</sub> (Carbonaceous Biochemical Oxygen Demand) contaminants was 99.52%, total suspended residue was removed at a rate of 98.86%, and NH<sub>3</sub>N (ammonia nitrogen) removal rate was 99.58%.

The table below will serve to exhibit the Wastewater Facility's performance in relationship with our NPDES (National Pollutant Discharge Elimination System) permit limits.

**TAR RIVER REGIONAL WASTEWATER PLANT  
EFFLUENT ANALYSIS**

Parameter	Summer (Apr-Oct)		Winter (Jan-Mar & Nov-Dec)	
	NPDES Limits	Actual Values	NPDES Limits	Actual Values
pH	6 to 9	6.1 to 7.3	6 to 9	6.1 to 7.1
Residual Chlorine	0.028 mg/L	<0.020 mg/L	0.028 mg/L	<0.020 mg/L
CBOD <sub>5</sub>	5 mg/L	0.502 mg/L	10.0 mg/L	0.688 mg/L
Ammonia Nitrogen	2 mg/L	0.048 mg/L	4 mg/L	0.047 mg/L
Total Suspended Residue	30 mg/L	1.94 mg/L	30 mg/L	1.90 mg/L
Fecal Coliform	200/100 ml	5.4/100 ml	200/100 ml	4.6/100 ml
Dissolved Oxygen	6.0 mg/L minimum	8.32 mg/L	6.0 mg/L minimum	8.89 mg/L
Flow	21 MGD	10.2 MGD	21 MGD	13.3 MGD

**Permit Non Compliance:**

The Tar River Regional Wastewater Treatment Plant was in full compliance with all sampling, monitoring, and discharge requirements for the year 2016.

**Sanitary Sewer Overflows:**

The City of Rocky Mount Water Resources Department has a goal of zero sanitary sewer overflows. Sanitary sewer overflows result from various causes including infiltration and inflow due to high water level, restricted lines from rags, roots, and grease accumulations, broken pipes from corrosion and construction activities, and power failures at sewer pump stations. The City is reducing the potential for overflows by installing back up generators for pump stations, cleaning lines, and working to reduce infiltration and inflow problems. Citizens of Rocky Mount area can help by properly disposing of spent household products and disposing of greases, oils, and food scraps in solid waste; rather than down the drain.

There were seven (**7**) incidents of Sanitary Sewer Overflows within this report period as follows:

1. 02/04/2016 (Nash County) from manhole G-109 on Riverside Dr.
2. 02/04/2016 (Nash County) 9819 US 301 N @ Sewer Lift Station.
3. 02/25/2016 (Nash County) from manhole G-109 on Riverside Dr.
4. 02/25/2016 (Nash County) from manhole on the Creek Side Dr. Utility Easement.
5. 7/17/2016 (Nash County) from manhole at Riverside Dr., RR Trestle.
6. 10/08/2016 (Nash County) from manhole G-109 on Riverside Dr.
7. 10/11/2016 (Nash County) from manhole at intersection of N. Church St. and Airport Rd.

All included sanitary sewer overflows occurred during heavy sustained rain events as documented by USGS data.

### **Collection System Improvements:**

A Supervisory Control and Data Acquisition (SCADA) system now monitors all lift stations through remote monitoring. The sewer lines are inspected and cleaned daily by a full time CCTV crew and High Pressure Water Jet Trucks.

In 2016 the city completed in-house repairs for the following:


- Clean out caps (missing or damaged) replaced, 22
- Manholes raised or repaired, 41
- Service laterals repaired, 83
- Damaged mains repaired, 34
- Mains cleaned, 46.3 miles
- Mains video inspected, 14.6 miles

### **III. Notification:**

This report has been included on the City of Rocky Mount Water & Sewer web page and published in the Rocky Mount Telegram.

### **Certification:**

I certify under penalty of law that this report is completed 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.

  
Jonathan L. Boone, P.E.  
Director of Public Works & Water Resources  
City of Rocky Mount, NC

18 January 2017  
Date