



**City of Rocky Mount: Wastewater Systems  
Annual Performance Report  
(January 2015 - December 2015)**

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

**I. General Information**

Facility/System Name:	<u>Tar River Regional Wastewater Treatment Plant</u>
Responsible Entity:	<u>City of Rocky Mount</u> <u>Jonathan L. Boone, director of Public Works &amp; Water Resources</u>
Persons in Charge:	<u>Richard W. Krumreig, superintendent of WWTP, Land Application</u> <u>Nathaniel Williams, superintendent of Water &amp; Sewer Services</u>
Applicable Permits	<u>NPDES Permit #NC0030317</u> <u>Land Application Permit #WQ0005568</u> <u>Collection System Permit #WQCS00011</u>

**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 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.

**II. Performance: Summary of performance for reporting period**

The Tar River Regional Wastewater Plant treated 4.41 billion gallons of wastewater in 2015.

Removal of carbonaceous biochemical oxygen demand (CBOD) contaminants was 99.64%, total suspended residue was removed at a rate of 99.31% and NH<sub>3</sub>N (ammonia nitrogen) removal rate was 99.71%.

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

**TAR RIVER REGIONAL WASTEWATER PLANT  
EFFLUENT ANALYSIS**

Parameter	Summer (April-October)		Winter (January-March) & (November-December)	
	NPDES Limits	Actual Values	NPDES Limits	Actual Values
pH	6 to 9	6.2 to 7.2	6 to 9	6.2 to 7.2
Residual Chlorine	0.028 mg/L	0.000376 mg/L	0.028 mg/L	<0.020 mg/L
CBOD <sub>5</sub>	5 mg/L	0.373 mg/L	10.0 mg/L	0.424 mg/L
Ammonia Nitrogen	2 mg/L	0.036 mg/L	4 mg/L	0.021 mg/L
Total Suspended Residue	30 mg/L	0.830 mg/L	30 mg/L	1.14 mg/L
Fecal Coliform	200/100 ml	7.1/100 ml	200/100 ml	3.1/100 ml
Dissolved Oxygen	6.0 mg/L minimum	8.53 mg/L	6.0 mg/L minimum	9.22 mg/L
Flow	21 MGD	9.2 MGD	21 MGD	16.2 MGD

**Permit Non Compliance:**

The Tar River Regional Wastewater Treatment Facility was in full compliance with all permit limits for the year. The facility had one violation for failing to monitor and report a value for conductivity on January 16, 2015. Conductivity values for the days preceding and following the missed date were normal.

On December 10 and 11, 2015, water treatment residuals were mistakenly staged on a field that was not recorded in the land application program. We removed 283 tons of residuals and dirt to completely restore the site by December 14, 2015. There was no run off. A notice of violation was issued by Department of Environmental Quality (DEQ) for this incident, and the city responded on January 26, 2016 with a description of the procedures implemented and a training plan to prevent any reoccurrence.

**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 the Rocky Mount area can help by properly disposing of spent household products, such as greases, oils, and food scraps, in solid waste rather than down the drain.

There were eight (8) incidents of sanitary sewer overflows within this report period as follows:

1. 01/12/15 (Nash County) from manhole G-109 on Riverside Dr.

2. 01/18/15 (Nash County) from manhole G-109 on Riverside Dr.
3. 04/20/15 (Nash County) from manhole G-109 on Riverside Dr.
4. 06/16/15 (Nash County) from abandoned headworks of decommissioned WWTP at Stith Park
5. 11/10/15 (Nash County) from manhole at the RR trestle on Kingston Ave.
6. 11/10/15 (Nash County) from manhole G-109 on Riverside Dr.
7. 12/23/15 (Nash County) from manhole G-109 on Riverside Dr.
8. 12/31/15 (Nash County) from manhole G-109 on Riverside Dr.

All included sanitary sewer overflows occurred during heavy sustained rain events as documented by United States Geological Survey (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 sewer jet trucks. Forty eight and one-tenth miles of sewer lines were cleaned to clear built up sediment, grease, debris, and root intrusions. In addition, 10.5 miles of sewer main was video inspected.

In 2015, the city completed in-house repairs for the following,

- Clean out caps (missing or damaged) replaced, 32
- Manholes raised or repaired, 22
- Service laterals repaired, 59
- Damaged mains repaired, 26

### **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.

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

04 February 2016  
Date