



CITY OF OXFORD

WASTEWATER TREATMENT FACILITY

ANNUAL PERFORMANCE REPORT

FOR THE CALENDAR YEAR OF 2014

PREPARED: January 2015

**2014 ANNUAL PERFORMANCE REPORT
FOR THE
CITY OF OXFORD
WASTEWATER TREATMENT FACILITY**

I. General Information

Facility/System Name: City Of Oxford Wastewater Treatment Plant

Responsible Entity: City Of Oxford

PERSON IN CHARGE/ CONTACT: DENNIS WILSON

CITY OF OXFORD

PO BOX 506

OXFORD NC 27565

(919) 693-8783

II. Description of Treatment Process:

The City Of Oxford's wastewater Treatment Plant is a 3.5 MGD design facility that treats a combination of industrial, commercial and domestic wastewater.

The unit processes in the flow scheme include mechanical screening, influent pumps, aerated grit chambers, a three stage oxidation ditch featuring anaerobic, anoxic and aerobic zones to facilitate the removal of nutrients from the treated discharge waters, three secondary clarifiers that operate in parallel, a traveling bridge tertiary filter to meet total suspended solids and BOD limits, UV disinfection chambers for the removal of disease causing organisms, and mechanical aeration before final discharge to Fishing Creek.

Excess biological sludge is batched and aerated in diffused air digesters for 30 days and then pumped to storage lagoons where it is later removed by a contracted sludge hauler. The sludge is then land applied in a liquid form to permitted agricultural sites.

III. Compliance Performance

The North Carolina Department of Environment and Natural Resources (NCDENR) regulates the City Of Oxford's effluent discharge under the National Discharge and Pollution System (NPDES).

The NCDENR issued to the City a NPDES Permit that includes water quality limits and sampling and monitoring requirements. The NPDES Permit requires the City to test the treated water on a daily basis excluding weekends.

For this reporting period the City of Oxford was required to analyze 2393 samples of the treated water before it was discharged to the creek, of that number, 2393 were analyzed. The WWTP achieved a 100% compliance Level with its NPDES requirements regarding monitoring.

The following is a summary of the testing for the parameters that are assigned Water Quality Standards by the NPDES Permit. Please note the summary does not include parameters that only incorporate a monitoring requirement, nor does it include daily process control testing.

Parameters Assigned Water Quality Standards

Constituent	Number Of Test Required	Number Of Test Conducted
Flow	365	365
Biochemical Oxygen Demand	260	260
TOTAL SUSPENDED SOLIDS	260	260
Ammonia	260	260
Fecal Coliform	260	260
Toxicity	4	4
Cyanide	52	52
Selenium	52	52
Mercury	52	52
Copper	24	24
Zinc	24	24
Dissolved Oxygen	260	260
Temperature	260	260
PH	260	260

***Testing is not required during holidays or inclement weather.**

In addition to the required testing, the City Of Oxford conducted over 1000 in- house tests to ensure the proper operation of the treatment facility.

The following is a summary of Permit violations, which occurred during the year

Violations For 2014

Date Of Violation	Parameter Violated	Parameter limit	Parameter Analysis Result	Corrective Action Taken
1-31-14	Ammonia	2.0	2.4	Cold temps reduced nitrogen removal /Return ratio adjusted
5-16-14	Dissolved Oxygen	5.0	4.4	Heavy rainfall caused excessive flows/ increased waste rate

City Of Oxford
Wastewater Treatment Plant

Effluent

Data Summary Table

Month	BOD (mg/l)	TSS (mg/l)	NH3-N (mg/l)
January	1.9	2.4	2.4
February	1.1	.5	0
March	1.7	1.4	0
April	2.9	2.5	.06
May	1.8	1.9	.01
June	1.3	.3	0
July	.7	.1	.05
August	1.0	0	0
September	.7	.2	0
October	0	0	.71
November	0	.3	.26
December	.5	.4	.03
Yearly Average	.99	.83	.29

NPDES PERMIT LIMITS

Parameter	Weekly	Monthly
BOD	25.0 mg/l (winter) 7.5 mg/l (Summer)	10.0 mg/l (winter) 5.0 mg/l (Summer)
TSS	45.0 mg/l	30.0 mg/l

Total Gallons of Water Treated: 434.69 MG (million gallons)
Average Yearly Plant Flow Rate: 1.231MGD (*million gallons per day*)

Sludge Application Summary

Land Application Dates	Number of Gallons Land Applied	Contracted Sludge Hauler
July 2014	520,800	Synagro
August 2014	2,256,800	
Yearly Total	2,777,600	

All Sludge Residuals were Land Applied by SYNAGRO to various Granville County Permitted Farm Sites

City Of Oxford
Wastewater Treatment Plant
INFLUENT DATA SUMMARY

Month	BOD (mg/l)	TSS (mg/l)
January	269	384
February	327	351
March	256	360
April	252	292
May	286	425
June	286	462
July	278	431
August	412	439
September	270	357
October	378	580
November	248	541
December	180	481
Yearly Average	264	393.3

Average Pounds of BOD Removed per day = **2710**

Average Pounds of TSS Removed per day = **4038**

Average yearly BOD removal Efficiency = **99.6%**

Average yearly TSS removal Efficiency = **99.8 %**

City Of Oxford Wastewater Report **Certification Statement**

IV. Certification

I have personally examined and am familiar with the information submitted in this document and attachments. Based upon my inquiry of those individuals immediately responsible for obtaining the information reported herein, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Signed this 20th day of January 2015.

Dennis Wilson

WWTP Superintendent

Name

Title

V.

Wastewater Spills (No Spills Occurred For 2014)

* NC Division of Water Quality

Date of Spill	Volume Of Spill	Was Spill Reported	To What Enforcement Agency *
			DWQ
Total			

Summary:

The wastewater plant has performed well for the year 2014 with only (2) minor problems which could be related back to weather conditions.

The City is currently in the process of constructing a 1,000,000 gallon per day equalization tank. The purpose of this tank will be to shave off some of the higher flows during rainfall events, thus reducing violations associated with these events.

As always the City of Oxford's administration and wastewater staff strive to improve upon the performance of the wastewater plant.