



2011 Davie County Annual Drinking Water Quality Report

Public Water System ID # NC0230015

May 2012

We're pleased to provide you with the 2011 Davie County Annual Water Quality Report. Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over land or underground, it can pick up substances such as microbes, inorganic or organic chemicals, and radioactive substances. The purpose of the water treatment process is to remove harmful contaminants, such as chemicals or bacteria, which may exist in the raw water supply. We test the water daily to ensure it is safe when it reaches our customers. All of our water originates as surface water in the Yadkin/Pee Dee River Basin. Davie County operates two water treatment plants – one on Sparks Road that processes water from the Yadkin River and another in Cooleemee to treat water taken from the South Yadkin River. The Davie County Water System serves a population of approximately 25,141 people.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. To comply with the Federal and State regulations, the Davie County Water System routinely monitors for over 150 contaminants. The table inside lists the Regulated Contaminants our monitoring detected during the period of January 1st to December 31st, 2011 and the most recent results of detected contaminants not due to be tested in 2011. The purpose of Unregulated Contaminant monitoring is to assist the EPA in determining the occurrence of these contaminants in drinking water and whether future regulation is warranted. The monitoring results of an Unregulated Contaminant are shown at the bottom of the table.

The purpose of this report is to give you an overview of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. We have learned through our monitoring and testing that some constituents have been detected. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. You may get more information about contaminants and potential health effects by calling the Environmental Protection Agency (EPA) Safe Drinking Water Hotline at 800-426-4791.

The Davie County Water System is a valuable asset to our county and all citizens can help protect the system and infrastructure. We need you to join us in safeguarding these valuable resources by informing us of any suspicious activities at our water sources, treatment plants, water storage tanks, manholes or fire hydrants by calling either **336-753-6090** during normal business hours or **336-751-0896** after hours.

All of the information in this report is also available on the Davie County website at www.co.davie.nc.us. Please contact **Mr. Johnny Lambert, Director of Public Utilities, at 336-753-6090**, if you have any questions about the report or your water utility. You may want to learn more by attending any of our regularly scheduled County Commissioner meetings at the Davie County Administration Building located at 123 South Main St. in Mocksville. The meetings are at 6:00 p.m. on the first Monday of each month. We are proud of our excellent water system and committed to ensuring the safety of your water.

Sincerely,
Beth M. Dirks
Davie County Manager

REGULATED CONTAMINANTS

Disinfection Byproduct Precursors and Turbidity 2011

Contaminant	Violation Y/N	Your Water	MCLG	MCL	Likely Source of Contamination
Total Organic Carbon [TOC] Removal Ratio - Treated Water*	N	1.30 RAA - C 1.00 - 1.64 R - C 1.51 RAA - S 1.05 - 1.80 R - S	N/A	TT	Naturally present in the environment
Turbidity (NTU)*	N	0.376 - C** 0.178- S** 98.6 % - C*** 100 % - S***	N/A	TT ≤ 0.3 TT = % Samples ≤ 0.3	Soil runoff

*Depending on the Total Organic Carbon in our source water, the water system must have a certain percent removal of TOC or must meet alternative compliance criteria. The Cooleemee and Sparks Road Water Plants both had acceptable removal of TOC (Disinfection By-Product Precursors).

*Turbidity is a measure of cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

**These measurements were the highest single measurements detected in 2011 at the Cooleemee and Sparks Road Water Plants.

***The Turbidity Rule requires that 95% or more of all the monthly samples must be less than or equal to 0.3 NTU.

Disinfection and Disinfection Byproduct Contaminants 2011

Contaminant	Violation Y/N	Your Water	MCLG	MCL	Likely Source of Contamination
Chlorine (ppm) (Tested monthly)	N	1.47 AV - D 0.43 - 2.20 R - D	MRDLG = 4	MRDL = 4	Water additive used to control microbes
Total Haloacetic Acids [HAA5] (ppb) (Tested quarterly)	N	23.1 RAA - D 6.0 - 52.0 R - D	N/A	60	By-product of drinking water chlorination
Total Trihalomethanes [TTHM] (ppb) (Tested quarterly)	N	32.2 RAA - D 10.0 - 58.0 R - D	N/A	80	By-product of drinking water chlorination

Inorganic Contaminants 2011 or Most Recent Analysis

Contaminant	Violation Y/N	Your Water	MCLG	MCL	Likely Source of Contamination
Fluoride (ppm) (Tested 2/24/2011)	N	0.73 - C 0.78 - S	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (ppm) (Tested 1/12/2011)	N	0.94 - C 0.66 - S	10.00		Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Copper (ppm)* - 90th percentile (Tested from 8/17/2009 to 9/1/2009)	N	0.123 - D	1.3	AL = 1.3 or TT	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)* - 90th percentile (Tested from 8/17/2009 to 9/1/2009)	N	< 3 - D	0	AL = 15 or TT	Corrosion of household plumbing systems; erosion of natural deposits

*The levels detected are the 90th percentile value of all samples taken. None of the water samples from the tested homes was above the Action Limits for Copper or Lead during this testing period.

UNREGULATED CONTAMINANT

Contaminant	Your Water	Secondary MCL
Sulfate (ppm) (Tested 2/24/2011)	18.0 - C 17.5 - S	250

Cooleemee Plant - C

Average - AV

Sparks Road Plant - S

Range - R

Water Distribution System - D

Running Annual Average - RAA

We routinely monitor the chlorine contact times and disinfectant residual levels within our water system as required by the North Carolina rules governing Public Water Systems. Test results from the Cooleemee Water Treatment Plant showed that the chlorine contact times were not adequately met during the time period of January, February and April of 2011. Tests taken during the same time period did not indicate the presence of bacteria in the water. Inadequately treated water may contain disease-causing organisms. The organisms include bacteria, viruses and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. These symptoms are not only caused by organisms in drinking water, but also other factors. We took all necessary steps to assure this problem was rectified and the treatment plant was returned to compliance.

In the table on the previous page, there are many terms and abbreviations you might not recognize. To help you understand these terms, we've provided these definitions.

DEFINITIONS

- **Action Level (AL)** - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **Maximum Contaminant Level (MCL)** - The "Maximum Allowed" MCL is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- **Maximum Contaminant Level Goal (MCLG)** - The "Goal" MCLG is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- **Maximum Residual Disinfectant Level (MRDL)** - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- **Maximum Residual Disinfectant Level Goal (MRDLG)** - The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.
- **Nephelometric Turbidity Unit (NTU)** - Nephelometric turbidity unit is a measure of the clarity of water. Turbidity more than 5 NTU is just noticeable to the average person.
- **Non-Detects (ND)** - Laboratory analysis indicates that the constituent is not present.
- **Not Applicable (N/A)** - Information not applicable/not required for that particular water system or for that particular methodology used.
- **Parts per billion (ppb)** - One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.
- **Parts per million (ppm)** - One part per million corresponds to one minute in two years or a single penny in \$10,000.
- **Treatment Technique (TT)** - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

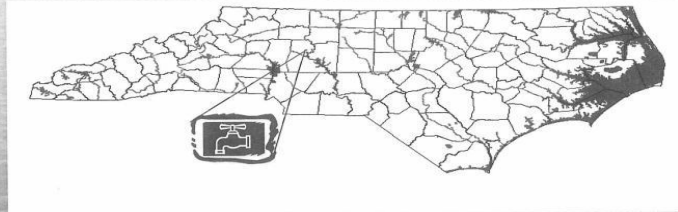
***** IMPORTANT HEALTH EFFECTS WARNINGS *****

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Cryptosporidium is a microbial parasite found in surface waters throughout the U.S. Cryptosporidium must be ingested for it to cause disease and can be contracted in other ways than by drinking water. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Immuno-compromised individuals can seek additional guidance at <http://www.epa.gov/safewater/consumer/pdf/crypto.pdf> and are encouraged to consult their doctor regarding appropriate precautions to prevent waterborne infection.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Davie County Water System is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead/>.

**NC's Area Wide Optimization Program
Certificate of Facility Optimization
Turbidity Removal
2010**



Davie County – Sparks Road Water Treatment Facility



Thomas A. Reeder
Director, Division of Water Resources

NC Public Water Supply Section

Jessica C. Godreau, P.E., BCEE
Chief, Public Water Supply Section

Davie County's Water System was awarded North Carolina's highest honor for excellence in water treatment for 2010 at the Sparks Road Water Treatment Facility. Only 25 out of 150 surface water facilities statewide received this recognition. Davie County commends the operators and water system employees for their efforts at increasing efficiencies and reducing costs while maintaining quality at levels that exceed regulatory requirements.



SOURCE WATER ASSESSMENT PROGRAM (SWAP)

The North Carolina Department of Environment and Natural Resources Public Water Supply Section conducted assessments for all drinking water sources across North Carolina. The purpose of the Source Water Assessment Program is to determine the susceptibility of the surface water intakes to Potential Contaminant Sources (PCSs).

The results of the assessment are available in SWAP Assessment Reports that include maps, background information and a relative susceptibility rating of Higher, Moderate or Lower. It is important to understand that a susceptibility rating of "higher" does not imply poor water quality, only the system's potential to become contaminated by PCSs in the assessment area.

The relative Susceptibility Rating of the drinking water source for the Davie County Water System was determined by combining the number and location of PCSs within the assessment area (Contaminant Rating) and the inherent characteristics or existing conditions of the watershed and its delineated assessment area (Inherent Vulnerability Rating). The assessment findings are summarized in the table below:

Davie County Water System SWAP Results Summary

Source Name	Inherent Vulnerability Rating	Contaminant Rating	Susceptibility Rating	SWAP Report Date
SOUTH YADKIN RIVER	Higher	Moderate	Higher	February 17, 2010
YADKIN RIVER	Higher	Moderate	Higher	February 17, 2010

The complete SWAP Assessment report for the Davie County Water System may be viewed on the Web at: <http://www.deh.enr.state.nc.us/pws/swap>. Please note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this web site may differ from the results that were available at the time this CCR was prepared. To obtain a printed copy of this report, please mail a written request to: Source Water Assessment Program - Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634 or email request to swap@ncmail.net. Please indicate your system name, Public Water System ID, and provide your name, mailing address and phone number. If you have any questions about the SWAP report please contact the Source Water Assessment staff by phone at 919-715-2633.