



Water testing performed in 2009



Presented By:
CITY OF SANFORD

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Maintaining High Standards

Once again we are proud to present our annual water quality report. This report covers all testing performed between January 1, 2009, and December 31, 2009. The events of the past few years have presented many of us with challenges we could not have imagined. Yet in spite of this, we have maintained our high standards in an effort to continue delivering the best quality drinking water possible. There may be other hurdles in the future, but know that we will always stand behind you and the drinking water we work diligently to provide.

We encourage you to share your thoughts with us on the information contained in this report. Should you ever have any questions, we are always available to assist you.



Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or www.epa.gov/safewater/hotline/.

Where Does My Water Come From?

The City of Sanford's customers are fortunate because we enjoy an abundant water supply from a single surface-water source: the Cape Fear River. The Deep River, Haw River, and the Rocky River form the headwaters of the Cape Fear River Basin. The City of Sanford Water Treatment Plant serves the City of Sanford, Lee County, the Town of Broadway, Carolina Trace, and parts of Chatham County. Our treatment facility provides roughly 2 billion gallons of clean drinking water every year.



Public Notification Concerning Construction Activities

The City of Sanford Water Treatment Facility mailed notification in October 2009 stating that due to construction activities to improve the facility's two-million-gallon clearwell, there would be a change to the disinfection process. This change is the addition of chlorine only to disinfect the drinking water. This process became effective December 4, 2009, and will continue until June 30, 2010. Some customers may notice a "chlorine" odor during this period of change. However, the drinking water is safe for all daily uses. Thank you for your patience in accommodating the facility to make the necessary improvements in the clearwell, allowing us to continually provide a safe, reliable source of drinking water.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. The City Council meets the first and third Tuesdays of each month at 7:00 PM in the Council Chambers at the Municipal Building at 225 E. Weatherspoon Street in Sanford. The Law and Finance Committee of the Council meets the Wednesday preceding each Council Meeting in the Council Chambers at 1:00 PM. Special meetings may be called in accordance with G.S. 160A-71. Meetings are open to the public.

Water Treatment Process

The treatment process consists of a series of steps. First, raw water is drawn from the Cape Fear River and is stored in a sixty-million-gallon reservoir. The water is gravity fed into a mixing tank where a coagulant chemical is added. The addition of the coagulant chemical causes particles to adhere to one another (called “floc”), making them heavy enough to settle into a basin from which the sediment is removed. Chlorine is then added for disinfection. At this point, the water is filtered through multimedia filters composed of anthracite coal and silicate sand. As smaller, suspended particles are removed, the turbidity disappears and the clear water emerges.

Chlorine is added again as a safeguard against any bacteria that may be present as the water travels into a two-million-gallon storage tank. (We carefully monitor the amount of chlorine, adding the lowest quantity necessary to protect the safety of your water without compromising taste.) Finally, caustic soda (used to adjust the final pH and alkalinity), fluoride (used to prevent tooth decay), a corrosion inhibitor (used to protect distribution system pipes), and chlorine with ammonia (used to form chloramines for final disinfection) are added before the water is pumped to sanitized elevated storage tanks and into your home or business.

Questions?

For more information about this report or for any questions relating to your drinking water, please call Mr. Scott M. Christiansen, Water Treatment Plant Superintendent, at (919) 775-8307.



Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, in some cases radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

Microbial Contaminants such as viruses and bacteria which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife.

Inorganic Contaminants such as salts and metals which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and Herbicides which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

Organic Chemical Contaminants including synthetic and volatile organic chemicals which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems.

Radioactive Contaminants which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

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, water conservation, and other information relevant to City activities.

Information on the Internet

Visit the City of Sanford's Web site (www.sanfordnc.net) for information on all city departments and departmental contacts. The U.S. EPA Office of Water (www.epa.gov/watrhome) and the Centers for Disease Control and Prevention (www.cdc.gov) Web sites provide a substantial amount of information on many issues relating to water resources, water conservation, and public health. Also the North Carolina Department of Environment and Natural Resources has a Web site (www.enr.state.nc.us) that provides complete and current information on water issues in North Carolina, including valuable information about our watershed.

Lead and Drinking Water

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 City of Sanford 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 www.epa.gov/safewater/lead.



Source Water Assessment Program

The North Carolina Department of Environment and Natural Resources (DENR), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source (well or surface-water intake) to potential contaminant sources (PCSs).

The results of the assessment are available in SWAP reports that include maps, background information, and a relative susceptibility rating of Higher, Moderate, or Lower.

The relative susceptibility rating of the water source for the City of Sanford was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the watershed and its delineated assessment area). The assessment found that the Cape Fear River has a Higher susceptibility rating. It is important to note that a susceptibility rating of Higher does not imply poor water quality, but rather the system's potential to become contaminated by PCSs in the assessment area.

The complete SWAP report for the City of Sanford may be viewed on the Web at www.deh.enr.state.nc.us/pws/swap. To obtain a copy of this report, please mail a written request to Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email a request to swap@ncmail.net. Please indicate your system name and public water supply identification number, as well as 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.

What's Your Water Footprint?

You may have some understanding about your carbon footprint, but how much do you know about your water footprint? The water footprint of an individual, community, or business is defined as the total volume of freshwater that is used to produce the goods and services that are consumed by the individual or community or produced by the business. For example, 11 gallons of water are needed to irrigate and wash the fruit in one half-gallon container of orange juice. Thirty-seven gallons of water are used to grow, produce, package, and ship the beans in that morning cup of coffee. Two hundred and sixty-four gallons of water are required to produce one quart of milk, and 4,200 gallons of water are required to produce two pounds of beef.

According to the U.S. EPA, the average American uses about 100 gallons of water daily. In fact, in the developed world, one flush of a toilet uses as much water as the average person in the developing world allocates for an entire day's cooking, washing, cleaning, and drinking. The annual American per capita water footprint is about 8,000 cubic feet; twice the global per capita average. With water use increasing six-fold in the past century, our demands for freshwater are rapidly outstripping what the planet can replenish.

To check out your own water footprint, go to www.h2oconserve.org, or visit www.waterfootprint.org to see how the water footprints of other nations compare.

Public Notification of System Wide Flushing

Beginning June 1 through June 30 the City of Sanford's Water Construction crews will be flushing the water distribution system to ensure the lines are free of debris and to provide system reliability. During flushing, customers may notice low water pressure and periods of discolored water. If the discolored water persists, please flush your residence line for two to five minutes by opening the kitchen spigot and allowing the water to flow. If the discoloration continues please contact the Public Works Service Center at (919) 775-8329.

Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water.

The state requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Atrazine (ppb)	2008	3	3	0.12	NA	No	Runoff from herbicide used on row crops
Chloramines (ppm)	2009	[4]	[4]	2.44	ND–3.9	No	Water additive used to control microbes
Chlorine (ppm)	2009	[4]	[4]	1.26	0.10–2.6	No	Water additive used to control microbes
Dalapon (ppb)	2008	200	200	3.1	NA	No	Runoff from herbicide used on rights of way
Fluoride (ppm)	2009	4	4	0.6	NA	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2009	60	NA	28.93	23.78–33.08	No	By-product of drinking water disinfection
Simazine (ppb)	2009	4	4	0.081	NA	No	Herbicide runoff
TTHMs [Total Trihalomethanes] (ppb)	2009	80	NA	41.75	31.5–52.75	No	By-product of drinking water chlorination
Total Organic Carbon [TOC] ¹ (ppm)	2009	TT	NA	3.1	2.8–3.4	No	Naturally present in the environment
Turbidity ² (NTU)	2009	TT = 1 NTU	NA	0.219	0.032–0.219	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2009	TT	NA	100	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community (Lead was not detected at the 90th percentile)

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2007	1.3	1.3	0.101	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

SECONDARY SUBSTANCES							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Manganese (ppb)	2009	50	NA	11	NA	No	Leaching from natural deposits
Sulfate (ppm)	2009	250	NA	37.7	NA	No	Runoff/leaching from natural deposits; Industrial wastes
pH (Units)	2009	6.5–8.5	NA	6.5	NA	No	Naturally occurring

UNREGULATED AND OTHER SUBSTANCES				
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Alkalinity (ppm)	2009	38.4	27–61	Erosion of natural deposits; Water treatment processes
Raw Total Organic Carbon (ppm)	2009	6.28	5.8–8.8	Naturally present in the environment
Sodium (ppm)	2009	21.9	NA	NA

¹ Depending on the TOC in our source water, the system MUST have a certain percent removal of TOC or must achieve alternative compliance criteria. If we do not achieve that percent removal, there is an alternative percent removal. If we fail to meet the alternative percent removal, we are in violation of a Treatment Technique.

² Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. The turbidity rule requires that 95 percent or more of the monthly samples must be less than or equal to 0.3 NTU.

Definitions

AL (Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

MCL (Maximum Contaminant Level): 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.

MCLG (Maximum Contaminant Level Goal): 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.

MRDL (Maximum Residual Disinfectant Level): 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.

MRDLG (Maximum Residual Disinfectant Level Goal): 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 contaminants.

NA: Not applicable.

ND (Not Detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.