

2014 Annual Drinking Water Quality Report

“City of Hendersonville Water”

Water System Number: **NC 01 45 010**



We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is a snapshot of last year's water quality. Included are details about your source of water, what it contains, and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and to providing you with this information because informed customers are our best allies. **If you have any questions about this report or concerning your water, please contact Ronald L. Reid at (828) 891-7779. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. The meeting times are first Thursday of every month at 5:45 PM. Public comment time is provided at each of these meetings**

What EPA Wants You to Know

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. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

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 microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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. Hendersonville Water and Sewer 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, unused for several hours you can minimize the potential for lead exposure by flushing your tap water for 1/2-minute up 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>.

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 and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include microbial contaminants, such as viruses and bacteria, which may come from treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water 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 storm water runoff, and residential uses; organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems; and radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

When You Turn on Your Tap....Consider the Source

The water that is used by this system is taken from the Mills River Watershed. Two intakes located within Pisgah National Forest currently supplies up to 50% of the current usage in Hendersonville, Laurel Park, Mills River, parts of Fletcher and customers located within Henderson County. Additional water that maybe required is pumped from the main stem of the Mills River. The City has installed a 30-inch raw water line from the French Broad River to the water treatment plant. Though this line is not actively in service, it is available in situations that require more water than current sources can provide, such as drought conditions.

Source Water Assessment Program (SWAP) Results

The assessment indicated a susceptibility rating of “Moderate” for Mills River, Bradley Creek, and the North Fork of Mills River, each source for the City of Hendersonville Water System. A susceptibility rating of “High” or “Moderate” does not imply poor water quality; rather, it signifies that the system has the potential to become contaminated by ways determined by combining the contaminant rating (number and location of PCS (Potential Contaminant Sources) within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated assessment area). The assessment findings are summarized in the table below:

Susceptibility of Sources to Potential Contaminant Sources (PCS)

Source Name	Susceptibility Rating	SWAP Report Date
Bradley Creek	Moderate	July 18, 2014
North Fork of Mills	Moderate	July 18, 2014
Mills River	Moderate	July 18, 2014

The complete SWAP/ DWPP Assessment report for City of Hendersonville may be viewed on the Web at: www.ncwater.org/?page=63. Note that because SWAP/ DWPP results and reports are periodically updated by the PWS Section (Public Water Supply Section, Division of Water Resources, NC Department of Environment and Natural Resources), the results available on this web site may differ from the results that were available at the time this CCR (Consumer Confidence Report) was prepared. If you are unable to access your SWAP/ DWPP report on the web, you may mail a written request for a printed copy to: Drinking Water Protection Program Source / Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email requests to swap@ncdenr.gov. Our system name is City of Hendersonville Water, 305 Williams Street,

Hendersonville, NC 28792; phone number is (828) 891-7779, and Ronald Reid is our WTP Superintendent and Keith Kirchner is our ORC (Operator-in-Responsible-Charge). If you have any questions about the SWAP report please contact the Source Water Assessment staff by phone at (919) 707-9098.

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 PCS (Potential Contaminant Sources) in the assessment area.

Violations that Your Water System Received for the Report Year

During 2014 we received no violations for that time period.

Water Quality Data Tables of Detected Contaminants

We routinely monitor for over 150 contaminants in your drinking water according to Federal and State laws. The table below lists all the drinking water contaminants that we detected in the last round of sampling for the particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in this table is from testing done January 1 through December 31, 2014.** The EPA and the State allow us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old. To view a complete list of sampling and requirements go to www.ncwater.org/?page9; click on Public Water Supply, got to the bottom right hand of the page and you will see you will have two choices here under Sampling Status and Drinking Water Watch. Highlight the Sampling Status and Drinking Water Status, click and go to either of those locations and enter NC 01 45 010 to review the cycle of sampling or the results.

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulations are warranted.

Important Drinking Water Definitions:

Not-Applicable (N/A) – Information not applicable/not required for that particular water system or for that particular rule.

Non-Detects (ND) - Laboratory analysis indicates that the contaminant is not present at the level of detection set for the particular methodology used.

Parts per million (ppm) or Milligrams per liter (mg/L) - One part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter (ug/L) - One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Parts per trillion (ppt) or Nanograms per liter (nanograms/L) - One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

Parts per quadrillion (ppq) or Picograms per liter (picograms/L) - One part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.

Picocuries per liter (pCi/L) - Picocuries per liter is a measure of the radioactivity in water.

Million Fibers per Liter (MFL) - Million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

Nephelometric Turbidity Unit (NTU) - Nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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

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

Maximum Residual Disinfection 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 contaminants.

Maximum Residual Disinfection 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 Contaminant Level (MCL) - 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 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.



Tables of Detected Contaminants

Turbidity

Contaminant, units	Treatment Technique (TT) Violation Y/N	Your Water	Treatment Technique (TT) Violation if:	Likely Source of Contamination
Turbidity, NTU - Highest single turbidity measurement	N	0.03 - 0.12 NTU	Turbidity > 0.15 NTU	Soil run-off
Turbidity, NTU - Lowest monthly percentage (%) of samples meeting turbidity limits	N	100%	Less than 95% of monthly turbidity measurements are ≤ 0.3 NTU	

*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% or more of the monthly samples must be less than or equal to 0.15 NTU. City of Hendersonville Water Treatment Plant is using 0.15 NTU rather than >1 because we are in the LT2 Bin 2 classification and we participate in the Area Wide Optimization Program.

Inorganic Contaminants

Contaminant, units	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Fluoride, ppm	July 2014	N	0.76	ND - 0.89	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Sodium, ppm	July 2014	N	13.7	0 – 13.7	2*	2*	Addition of Sodium Bicarbonate to Finish Water

*No MCL for Sodium

Nitrate/Nitrite Contaminants

Contaminant, units	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Nitrate (as Nitrogen), ppm	N	0.051	ND - 0.051	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (as Nitrogen), ppm	N	ND	N/A	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

Unregulated Inorganic Contaminants

Contaminant, units	Sample Date	Your Water	Range Low High	Secondary MCL
Sulfate, ppm	July 2014	ND	0-0	250

Asbestos Contaminant

Contaminant, units	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Total Asbestos, MFL	August 17, 2011	N	ND	ND	7	7	Decay of asbestos cement water mains; erosion of natural deposits

Lead and Copper Contaminants

Contaminant, units	Sample Date	Your Water	# of sites found above the AL	MCLG	Action Level (AL)	Likely Source of Contamination
Copper, ppm (90 th percentile)	July 2014	0.064	None	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead, ppm (90 th percentile)	July 2014	0.001	None	0	0.015	Corrosion of household plumbing systems; erosion of natural deposits

Radioactive Contaminants

Contaminant, units	Sample Date	MCL Violation Y/N	Your Water	MCLG	MCL	Likely Source of Contamination
Alpha emitters, pCi/L	3/8/2008	N	ND	0	15	Erosion of natural deposits
Beta/photon emitters, pCi/L	3/8/2008	N	ND	0	50*	Decay of natural and man-made deposits
Uranium, pCi/L	3/8/2008	N	ND	0	20.1	Erosion of natural deposits

*Note: The MCL for beta/photon emitters is 4-mrem/year. EPA considers 50-pCi/L to be the level of concern for beta particles.

Total Organic Carbon (TOC)

Contaminant	TT Violation Y/N	Your Water (RAA Removal Ratio)	Range, Monthly Removal Ratio Low - High	MCLG	TT	Likely Source of Contamination	Compliance Method
Total Organic Carbon (removal ratio) (TOC)-TREATED	N	ND	ND	N/A	TT	Naturally present in the environment	ACC# 2

Disinfectants and Disinfection Byproducts Contaminants

Contaminant, units	MCL/MRDL Violation Y/N	Your Water RAA (Stage 1)	Range Low-High	MCLG	MCL	Likely Source of Contamination
TTHM, ppb [Total Trihalomethanes]	N	17	13 -18	N/A	80	By-product of drinking water chlorination
HAA5, ppb [Total Haloacetic Acids]	N	30	19 -30	N/A	60	By-product of drinking water disinfection
Chlorine, ppm	N	1.49	0.5 - 2.2	MRDLG = 4	MRDL = 4	Water additive used to control microbes

For TTHM: *Some people who drink water containing Trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.*

For HAA5: *Some people who drink water containing Haloacetic Acids in excess of the MCL over many years may have an increased risk of getting cancer.*

The PWS Section requires monitoring for other misc. contaminants, some for which the EPA has set national secondary drinking water standards (SMCLs) because they may cause cosmetic effects or aesthetic effects (such as taste, odor, and/or color) in drinking water. The contaminants with SMCLs normally do not have any health effects and normally do not affect the safety of your water.

Other Miscellaneous Water Characteristics Contaminants

Contaminant (units)	Sample Date	Your Water	Range Low/High	SMCL
Iron (ppm)	July 17, 2014	ND	ND	0.3 mg/L
Manganese (ppm)	July 17, 2014	ND	ND	0.05 mg/L
Nickel (ppm)	July 17, 2014	ND	ND	N/A
Sodium (ppm)	July 17, 2014	13.7	ND - 13.7	N/A
Sulfate (ppm)	July 17, 2014	ND	ND	250 mg/L
pH	July 17, 2014	7.6	7.5 – 7.7	6.5 to 8.5

Cryptosporidium

Our system monitored for *Cryptosporidium* during the period of January 2006 through December 2007. During that period we collected 24 samples from the Mills River (untreated and unfiltered) and detected levels of *Giardia* to be from zero (no detection) to 0.273 in cysts per liter. *Cryptosporidium* was found to be at less than 0.095 to 8, in the same sample. As a result of these finding the City of Hendersonville is resampling again in 2014 through 2015 for *Cryptosporidium* and *Giardia* per our sampling schedule which starts in October of this year.

Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes *Cryptosporidium*, the most commonly-used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these organisms in our source water and/or finished water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of *Cryptosporidium* may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can

overcome the disease within a few weeks. However, immuno-compromised people, infants and small children, and the elderly are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.

Giardia

Giardia is a waterborne parasite of the intestinal tract, referred to as Giardiasis. Many times humans are infected when drinking water from backcountry streams and lakes, also known as “beaver fever”, as well as in municipal water supplies, swimming pools, whirlpool spas and wells. Giardiasis can also be transmitted through food and person-to-person contact.