

2009 Annual Drinking Water Quality Report

Town of Maiden

PWS ID# 01-18-030

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 from where your water comes, 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 Brian Walker at (828) 428-5000. 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 council meetings. They are held on the 1st & 3rd Mondays of each month at the council room of the library.**

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 microbiological 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.

Town of Maiden 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>.

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 sewage 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

We are a purchase water system. Our water is purchased from the City of Hickory and the City of Newton. The City of Hickory's water is drawn from Lake Hickory, which is part of the Catawba River. The City of Newton's water is drawn from the Jacob Fork River.

Source Water Assessment Program (SWAP) Results

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 Assessment Reports that include maps, background information and a relative susceptibility rating of Higher, Moderate or Lower. The relative susceptibility rating of each source for Town of Maiden 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 well or watershed and its delineated assessment area). The assessment findings are summarized in the table below:

Susceptibility of Sources to Potential Contaminant Sources (PCSs)

Source Name	Susceptibility Rating
City of Hickory (Catawba River/Lake Hickory)	Higher
City of Newton (Jacob Fork River)	Moderate

The complete SWAP Assessment report for Town of Maiden may be viewed on the Web at: <http://swap.deh.enr.state.nc.us/swap/>. 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. If you are unable to access your SWAP report on the web, you may mail a written request for a printed copy to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email requests to swap@ncmail.net. Please indicate your system name, PWSID, 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.

It is important to understand that a susceptibility rating of “higher” does not imply poor water quality, only the systems’ potential to become contaminated by PCS’s in the assessment area.

Violations that Your Water System Received for the Report Year

During 2009, or during any compliance period that ended in 2009, we received no violations.

Water Quality Data Table 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, 2009.** The EPA or the State requires 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.

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 regulation is 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.

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

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 treatment technique is 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.

Extra Note: MCLs are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

TOWN OF MAIDEN TEST RESULTS

Lead and Copper Contaminants

Contaminant (units)	Sample Date	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper (ppm) (90 th percentile)	September 2009	0.177	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb) (90 th percentile)	September 2009	<3.0	0	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits

Disinfectants and Disinfection Byproducts Contaminants

Contaminant (units)	MCL/MRDL Violation Y/N	Your Water (AVG)	Range Low High	MCLG	MCL	Likely Source of Contamination
TTHM (ppb) [Total Trihalomethanes]	N	50.25	25 77	N/A	80	By-product of drinking water chlorination
HAA5 (ppb) [Total Haloacetic Acids]	N	44.06	17 62	N/A	60	By-product of drinking water disinfection
Chlorine (ppm)	N	0.63	0.41 0.84	MRDLG = 4	MRDL = 4	Water additive used to control microbes

WATER PURCHASED FROM CITY OF HICKORY TEST RESULTS

Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
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Microbiological Contaminants – 2009

Total Coliform Bacteria	N	Absent	Presence or Absence	0	5% of monthly samples are positive	Naturally present in the environment
Fecal Coliform and E.coli	N	Absent	Presence or Absence	0	The MCL is exceeded if a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive.	Human and animal fecal waste

Contaminant (units)	MCL Violation Y/N	Hickory Water	MCLG	MCL	Likely Source of Contamination
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Turbidity 2009 – Systems with population > 10,000*

Turbidity (NTU)	N	.184	N/A	TT=1 NTU	Soil runoff
		100%		TT=percentage of samples <0.3 NTU	

** Turbidity is a measure of the clarity 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 0.3 NTU.*

Radioactive Contaminants – 2009

Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Alpha Emitters Last Sample 8/08	N	ND	pCi/L	0	15	Erosion of natural deposits
Beta/Photon Emitters Last Sample 08/08	N	ND	pCi/l	0	50*	Decay of natural and man-made deposits

Combined Radium Last Sample 08/08	N	ND	pCi/l	0	5	Erosion of natural deposits
Uranium Last Sample 08/08	N	ND	pCi/l	0	20.1	Erosion of natural deposits

Inorganic Contaminants – 2009

Copper Last Sample 6/07	N	0.287 90 th Percentile (No sites above AL)	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead Last Sample 6/07	N	10 90 th Percentile (No sites above AL)	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Barium Last Sample 1/09	N	0.012	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride Last Sample 1/09	N	#1.165 *1.15 – 1.18	ppm	4	4	Erosion of natural deposits; water additive, which promotes strong teeth; discharge from fertilizer and aluminum factories.

Note: Average (#) of test results; Range from low (*) to high

Disinfection Byproduct Precursors Contaminants – 2009

Contaminant (units)	MCL/TT Violaton Y/N	Hickory Water	Range Low - High	MCLG	MCL	Likely Source of Contamination
Total Organic Carbon (ppm) (TOC) – RAW Last Sample 11/09	N	1.71	1.45 – 1.96	N/A	TT	Naturally present in the environment.
Total Organic Carbon (ppm) (TOC) – TREATED Last Sample 11/09	N	0.86	0.0 – 1.22	N/A	TT	Naturally present in the environment.

Our water system used (Alt. 2: Treated Water TOC <2.0 mg/L) as the method to comply with the disinfectants/disinfectants byproducts treatment technique requirements. Note: Depending on the TOC in our source water, the system MUST have a certain % removal of TOC or must achieve alternative compliance criteria.

Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
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Volatile Organic Contaminants – 2009

TTHM (Total Trihalomethanes) Last Sample 11/09	N	# 39.4 *36.5 – 43.8	ppb	N/A	80	By-product of drinking water chlorination.
Haloacetic Acid Last Sample 11/09	N	# 32.15 *31.0 – 33.3	ppb	N/A	60	By-product of drinking water chlorination.

Note: Average (#) of test results; Range from low (*) to high

Potable Water Characteristics -- 2009

Physical Analysis	Annual Maximum	Annual Minimum	Annual Average
pH	7.4	6.8	7.0
Alkalinity (ppm)	21.0	7.0	13.7
Hardness (ppm)	17.7	10.6	14.7
Iron (ppm)	0.018	0.002	0.005

**WATER PURCHASED FROM CITY OF NEWTON
TEST RESULTS**

Substance	Newton Result	Highest Level Allowed (MCL)	Ideal Goal MCLG	Major Source
Barium (ppm)	<0.4 mg/l 1/08/2009	2 mg/l	2 mg/l	Erosion of natural deposits
Fluoride (ppm)	1.09 mg/l 1/08/2009	4 mg/l	4 mg/l	Water additive which promotes strong teeth; Erosion of natural deposits
Nitrate (ppm)	<1.0 mg/l 1/08/2009	10 mg/l	10 mg/l	Leaching from septic tanks, sewage; Erosion of natural deposits. Run-off from fertilizer use.
Turbidity NTU (turbidity units)	All below <.3 NTU max/yr. = .15 NTU (11/06/2009)	Max allowed <.3 NTU	<.3 NTU (actual %/yr was 100% compliance/ yr.)	Soil runoff

* A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Table 2. Substances Regulated in the Distribution System

Substance	Result -	Range	Highest Level	Ideal Goal	Major Sources
TTHM (ppb) 2009 Quarterly testing	34.00 ppb yearly average	20.0 to 53.0 ppb	53.0 ppb 3rd quarter 2009	<80 ppb yearly average	Chlorination of water
Haloacetic Acids (HAA5) quarterly 2009	18.75 ppb yearly average	6.0 to 28.0 ppb	28.0 ppb 3 rd quarter 2009	<60 ppb yearly average	Chlorination of water
Total organic carbon Quarterly tested Quarterly 2009	Raw avg. 1.53 ppm for 2009; Filtered <1.05 ppm	0.96 to 1.98 max ppm- Raw; Filtered 1.29-0.77 ppm	1.97 ppm(lake source) Nov 2009	<2.0 ppm	Decomposition of organics
Copper (ppm) Tested in June 2009 90 th percentile	0.21 (ppm) highest detected	Range 0.18 - <0.05 ppm	*Action level = 1.3 (ppm)	<1.3 (ppm)	Corrosion of copper pipes
Lead (ppm) Tested in June of 2009	Highest was 0.003 ppm 90 th percentile of lead was <0.003 ppm	All less than <0.003 ppb	*Action level= 0.015 (ppm)	Ideal goal <0.003 ppm	Corrosion of household plumbing systems, erosion of natural deposits.

RADIOACTIVITY as Gross Beta tested 8/29/2003	Not detected <0.5 pCi/L (8/29/2003)	0 to 4.0 pCi/L	Action level if >4.0 pCi/L	Ideal goal is non or not detected	Natural decay of radioactive materials
ARSENIC tested 1/08/2009	LESS THAN <0.005 PPM	NOT DETECTED	NOT DETECTED	NON	FOUND IN SOIL

Sulfate tested 1/08/2009	< 15 ppm (1/08/2009)	250.00 ppm	Level detected was 5.4 ppm	Ideal goal to be <250.00 ppm	FOUND IN SOIL
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*An action level is the concentration of a contaminant, which, if exceeded, triggers treatment, or other requirements, which a water system must follow.

Table 3. Unregulated Volatile Organic Chemicals (tested 1/08/2009)

Substance	Level Detected	Violation
Chloroform (ppm)	0.028 ppm (avg/2009) quarterly tested	No (high 0.055 ppm – low 0.012 ppm) MCL 0.100 ppm
Bromodichloromethane (ppm)	0.006 ppm (avg/2009) quarterly tested	No (high 0.012 ppm – low 0.003 ppm) MCL 0.100 ppm