



*Campbell Creek Watershed*

**MAGGIE VALLEY  
SANITARY DISTRICT  
WATER SYSTEM  
2015 WATER QUALITY REPORT  
PHONE # 828-926-0145**



We are pleased to present to you our annual Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day.

Our constant goal is to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and providing a safe and dependable supply. This report is a snapshot of last year's water quality.

### **ABOUT YOUR WATER SOURCE**

Our water supply comes from Campbell Creek and Jonathan Creek Watersheds. These two watersheds cover 13,890 acres above their respective intakes. The watersheds border the Great Smoky Mtn. National Park to the North, both Jackson and Swain Counties to the West, and Mt. Lyn Lowry to the South. The district watershed is classified by the State of North Carolina as WS-III.

### **HOW IS MAGGIE VALLEY'S WATER TREATED**

Surface water from either creek is brought in to the Maggie Valley Treatment Plant by gravity flow. The treatment process consists of five steps:

1. **PRE-CHLORINATION** – Chlorine is added to kill disease causing organisms and aid in control of taste and odor.
2. **COAGULATION** – Chemicals are added which cause small particles in the water to clump together.
3. **SEDIMENTATION** – The raw water flow is then slowed to allow gravity to pull these particles downward, thus settling out in large basins where they can be removed.
4. **FILTRATION** – The water then flows through filters of anthracite and sand to remove any remaining particles.
5. **POST-TREATMENT** – Chlorine is added again to provide a residual in the distribution system and to ensure the water is safe when it reaches your tap. Sodium hydroxide is also added to control pH levels.

### **SPECIAL CONCERNS -- What the EPA Wants You to Know**

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, persons 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 (1-800-426-4791).



### Key to Unit Abbreviations

- mg/L** = milligram per liter, or parts per million.  
**MCL** = Maximum Contaminate Level; the highest level of a contaminate that is allowed in drinking water.  
**MCLG** = Maximum Contaminate Level Goal; the level of a contaminate in drinking water below which there is no known or expected risk to health.  
**AL** = Action Level; the concentration of a contaminate that triggers treatment or other requirements that a water system must follow. Action Levels are reported at the 90th percentile for homes at greater risks.  
**TT** = Treatment Technique; a required process intended to reduce the level of a contaminate in drinking water.  
**ppb** = parts per billion, or micrograms per liter.  
**pCi/L** = Picocuries per liter is a measure of the radioactivity of water.  
**ND** = Non-detects; Laboratory analysis indicates that the constituent is not present.  
**NTU** - Nephelometric Turbidity Unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is noticeable to the average person.

### Physical and Mineral Characteristics for Calendar Year 2015

The following constituents analyzed in your water are indicators of the appearance, taste, and mineral content of the drinking water delivered to your tap.

Constituent	Annual Average
pH, standard units	7.8
Iron, mg/L	0.1 mg/L
Chlorine, mg/L	1.0 mg/L
Sodium, mg/L	6.5 mg/L
Turbidity	Average = .03 NTU High .46 Low .02
Hardness, mg/L	3.46 mg/l

**MCL (Maximum Contaminate Level)** is an enforceable level of a contaminate as close to the goal as is practical to achieve in light of available treatment technology and cost/benefit considerations. MCL's 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.

Maggie Valley Sanitary District routinely monitors constituents in your drinking water according to Federal and State laws. The table on the opposite page shows the results of our monitoring for the period of January 1st to December 31st, 2015, and the last test results of contaminants that were not due to be tested in 2015. We are proud to report that our drinking water is safe and meets or exceeds all Federal and State Requirements. As water travels over the land or underground it can pick up substances or contaminants such as microbes, inorganic and organic chemicals, and radioactive substances. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some constituents. It is important to remember that the presence of these constituents does not necessarily pose a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency Drinking Water Hotline at 1-800-426-4791.

TTHM and HAAS is a disinfection by-product of drinking water chlorination.

### Leak Detection

The following table shows leak sizes and their approximate loss in gallons from a pressurized 60 psi pipeline. A pinhole leak can mean an average loss of 18,000 gallons of water per quarter, equaling normal demand from the average family home.

PIPE LEAK SIZE	60 PSI GALLONS LOST	
	PER DAY	PER MONTH
•	360	11,160
•	3,096	95,976
•	8,424	261,144
•	14,952	463,512



<b>Inorganic Contaminants</b>		<b>Nitrate (ND) 2-12-15</b>			<b>Asbestos 7-25-2011</b>	
<b>Tested (ND)</b> <i>Antimony, Arsenic, Cadmium, Chromium, Cyanide, Mercury (inorganic), Thallium, Fluoride.</i>						
	MCL Violation Y / N	Level Detected	Unit Measurement	MCLG	MCL	
Total Asbestos (MFL)	N	.18 mfl	million fibers per/liter	7	7	Decay of asbestos cement water mains; erosion of natural deposits.
Nitrate	N	ND	ppm	2	2	Discharge of drilling wastes; erosion of natural deposits.
7-23-2014						
Lead	N	*ND **0	ppb	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits.
Copper	N	.0052 **0	ppm	1.3	AL=13	Corrosion of household plumbing, erosion of natural deposits.
*90 <sup>th</sup> percentile **Percentage of homes exceeding action level TESTED EVERY 3 YEARS						

<b>Synthetic Organic Contaminants including Pesticides and Herbicides</b>		<b>11-25-2013</b>				
<b>Tested (ND)</b> <i>2,4-d, 2,4,5-TP (Silvex), Acrylamide, Alachlor, Atrazine, Benzo(a)pyrene (PAH), Carbofuran, Chlordane, Dalapon, Di(2-ethylhexyl) adipate, Di(2-ethylhexyl) phthalate, Dibromochloropropane, Dinoseb, Diquat, Dioxin (2,3,7,8-TCDD), Endothall, Endrin, Epichlorohydrin, Ethylene dibromide, Glyphosate, Heptachlor, Heptachlor epoxide, Hexachlorobenzene, Hexachlorocyclopentadiene, Lindane, Methoxychlor, Oxanryl [Vydate], PCBs [Polychlorinatedbiphenyls], Pentachlorophenol, Picloram, Simazine, Toxaphene.</i>						
TESTED EVERY 3 YEARS						

<b>Microbiological Contaminants</b>		<b>2015</b>				
<b>Tested (ND)</b> <i>Total Coliform Bacteria, Fecal Coliform and E-coli.</i>						

<b>Radiological Analysis</b>		<b>2-24-15</b>				
<b>Tested (ND)</b> <i>Beta, Photon emitters, alpha emitters. Radium (226), (228)</i>						

<b>Disinfection By-Products TOCs = quarterly-2015</b>						
TTHM (Total Trihalomethanes)	N	RAA - 18	ppb	0	80	By-product of drinking water chlorination.
HAA5 (Haloacetic acids)	N	RAA - 14	ppb	0	60	By-product of drinking water chlorination.
TOCs - Treated	N	ND	ppb	NA	TT	Naturally present in the environment

\* Range from high to low

**VOCs Tested (ND)** *Benzene, Carbon tetrachloride, Chlorobenzene, o-Dichlorobenzene, p-Dichloroethane, 1,1-Dichloroethylene, cis-1, 2-Dichloroethylene, trans-1,2-Dichloroethylene, Dichloromethane, 1,2-Dichloropropane, Ethylbenene, Styrene, Tetrachloroethylene, 1,2,4-Trichlorobenzene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethylene, Toluene, Vinyl Chloride, Xylenes.*

The table below lists the monitoring results of unregulated contaminants. 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. If you would like more information on unregulated chemicals you may call the EPA Hotline at 1-800-426-4791.

<b>Unregulated Volatile Organic Chemicals</b>		<b>7-13-2015</b>				
Chemical	Detect Y/N	Level Detected	Unit of measurement			
Chloroform	Y	< .0005	ppm ug/L			
Bromodichloromethane	Y	< .0005	ppb ug/L			
<b>Tested (ND)</b> <i>Bromoform, Chlorodibromomethane, Bromobenzene, Bromochloromethane, Bromomethane, n-Butylbenzene, sec-Butylbenzene, tert-Butylbenzene, Chloroethane, Chloromethane, o-Chlorotoluene, p-Chlorotoluene, Dibromoniethane, m-Dichlorobenzene, Dichlorodifluoromethane, 1,1-Dichloroethane, 1,3-Dichloropropane, 2,2-Dichloropropane, 1,1-Dichloropropene, 1,3-Dichloropropene, Fluorotrichloromethane, Hexachlorobutadiene, Isopropylbenzene, p-Isopropyltoluene, Naphthalene, n-Propylbenzene, 1,1,2,2-Tetrachloroethane, 1,2,3-Trichloropropane, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene.</i>						

Note: All sample dates reflect the last analysis required by regulations.



**Maggie Valley Sanitary District**  
P.O. Box 1029  
Maggie Valley, NC 28751

***NOTICE:***

Please keep your water meter accessible to our meter readers. The trees and shrubs surrounding the meter should be trimmed or removed for quick access, and to allow better lighting for more accurate readings!

**Source Water Assessment Program**

The North Carolina Department of Environment and Natural Resources (DENR), Public Water Supply Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose was to determine the susceptibility of each drinking water sources (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 Maggie Valley Sanitary District was determined by combining the contaminate rating (number of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics for existing conditions of the well or watershed and its delineated assessment area). The assessment findings are summarized in the table below:

Source Name	Susceptibility Rating	SWAP Report Date
Campbell Creek	Moderate	February 2010
Jonathan Creek	Moderate	February 2010

The complete SWAP assessment report for Maggie Valley Sanitary District may be viewed on the Web at <http://www.deh.enr.state.nc.us/pws/swap>.

To obtain a printed copy of this report, please mail a written request to: Maggie Valley Sanitary District, P.O. Box 1029, Maggie Valley, NC 28751. Please include your name, address, and phone number. If you have any questions about the SWAP report, 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 system's potential to become contaminated by PCS' in the assessment area.

**Did you know?**

The Earth is known as the water planet since 80% of the earth's surface is covered by this precious resource. What we do to the environment affects the quality of our water. What falls on the ground will end up in our water; the gunk and debris cast into the air will also end up in our water. Therefore, it is important to protect this critical component of our daily lives through education and training.

Did you know that water regulates the Earth's temperature? it also regulates the temperature of the human body, carries life-sustaining nutrients and oxygen to the cells, and removes by-products. Most people can live for about one month without food; yet, without water we will only last a week.

Our rural water operators are the key to providing our great nation with clean, safe, and affordable water supplies. They are dedicated to their profession and are willing to work 24/7/365 to provide us with Quality On Tap. It is their profession and their commitment!

Thanks,  
Neil Carpenter, District Manger  
Maggie Valley Sanitary District - 828-926-0145

Board meetings will be held 2nd Tuesday of each month at MVSD Office at 10:00am