

# **“2016” Annual Drinking Water Quality Report**

## **Town of Sparta**

Water System Number: **01-03-010**

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(s) 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 Bryan Edwards, Town Manager at (336) 372-4257]. 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. They are held at Sparta Town Hall on the 1<sup>st</sup> Tuesday of each month at 7:00 pm.**

### **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. The Town of Sparta 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 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 can also come from gas stations, urban stormwater 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 well water that comes from 9 drilled wells in combination with water purchased from the Virginia/Carolina Water Authority located at 1630 Moxley Ridge Rd, Independence VA 24348.

### **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 The Town of Sparta 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	SWAP Report Date
Well # 1	Moderate	July 2015
Well #2	Moderate	July 2015
Well #8	Moderate	July 2015
Well #9	Moderate	July 2015
Well #10	Moderate	July 2015
Well #15	Moderate	July 2015
Well #17	Moderate	July 2015
Well #18	Moderate	July 2015
Well #19	Moderate	July 2015

The complete SWAP Assessment report for The Town of Sparta may be viewed on the Web at: [www.ncwater.org/pws/swap](http://www.ncwater.org/pws/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@ncdenr.gov](mailto:swap@ncdenr.gov). Please indicate your system name, number, and provide your name, mailing address and phone number. If you have any questions about the SWAP report please contact the Source Water Assessment Program 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 PCSs in the assessment area.

### Help Protect Your Source Water

Protection of drinking water is everyone’s responsibility. You can help protect your community’s drinking water source(s) in several ways: (examples: dispose of chemicals properly; take used motor oil to a recycling center, volunteer in your community to participate in group efforts to protect your source, etc.).

### Violations that Your Water System Received for the Report Year

We are proud that your drinking water meets or exceeds all federal and state requirements. We have learned through our monitoring and testing that some constituents have been detected although below the MCL. The EPA has determined that your water is safe at these levels. We constantly monitor for various contaminants in the water supply to meet all regulatory requirements. During 2016, or during any compliance period that ended in 2016, we had no reporting violations and no MCL violations.

### 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 tables below list all the drinking water contaminants that we detected in the last round of sampling for each 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, 2016.** 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.

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 (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 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.

**Locational Running Annual Average (LRAA)** – The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters under the Stage 2 Disinfectants and Disinfection Byproducts Rule.

**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

### Nitrate/Nitrite Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
Nitrate (as Nitrogen) (ppm)	11-29-16	N	1.58	ND	1.58	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (as Nitrogen)		N	N/A			1	1	Runoff from fertilizer use; leaching from

(ppm)	N/A			N/A			septic tanks, sewage; erosion of natural deposits
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### Volatile Organic Chemical (VOC) Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
Tetrachloroethylene (ppb)	12-5-2016	N	2.4	ND	2.4	0	5	Discharge from factories and dry cleaners

### Lead and Copper Contaminants

Contaminant (units)	Sample Date	Your Water	Number of sites found above the AL	MCLG	AL	Likely Source of Contamination
Copper (ppm) (90 <sup>th</sup> percentile)	6-08-2016	1.86	3	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb) (90 <sup>th</sup> percentile)	6-7-2016	8	1	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits

### Radiological Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
Alpha emitters (pCi/L)	12-15-16	N	N/A	ND		0	15	Erosion of natural deposits
Combined radium (pCi/L)	12-5-16	N	1.7	<1	1.7	0	5	Erosion of natural deposits
Uranium (pCi/L)	12-15-16	N	N/A	ND		0	20.1	Erosion of natural deposits

### Disinfectant Residuals Summary

	Year Sampled	MRDL Violation Y/N	Your Water (highest RAA)	Range		MRDLG	MRDL	Likely Source of Contamination
				Low	High			
Chlorine (ppm)	2015 & 2016	N	0.60	0.22	0.93	4	4.0	Water additive used to control microbes

**During 2016, we received no positive coliform bacteria samples**

### Stage 2 Disinfection Byproduct Compliance - Based upon Locational Running Annual Average (LRAA)

Disinfection Byproduct	Year Sampled	MCL Violation Y/N	Your Water (highest LRAA)	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
TTHM (ppb)						N/A	80	Byproduct of drinking water disinfection
Location B01	2015 &		30					N/A

	2016	N		12	53	N/A	80	
HAA5 (ppb)						N/A	60	Byproduct of drinking water disinfection
Location B02	2015 & 2016	N	31	10	58	N/A	60	N/A

### Trihalomethanes (TTHM) and Haloacetic Acids (HAA5)

Contaminant	Sample Date	Location Code	Your Water	MCL	MCL Violation Y/N	Likely Source of Contamination
Chloroform	9-13-2016	467	0.0182mg/l	0.08mg/L	N	Byproduct of drinking water chlorination
Bromodichloromethane	9-13-16	467	0.0055mg/l	0.08mg/L	N	Byproduct of drinking water chlorination
Dibromochloromethane	9-13-16	467	0.0011 mg/L	0.08mg/L	N	Byproduct of drinking water chlorination
Dichloroacetic Acid	12-06-16	250	0.0159mg/L	0.06mg/L	N	Byproduct of drinking water chlorination
Trichloroacetic Acid	12-06-16	250	0.0190mg/L	0.06mg/L	N	Byproduct of drinking water chlorination

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		SMCL
			Low	High	
Iron (ppm)	12-14-16	2.05	ND	2.05	0.3 mg/L
Manganese (ppm)	12-14-16	0.165	ND	0.165	0.05 mg/L
Sodium (ppm)	11-29-16	12.9	4.3	12.9	N/A
Sulfate (ppm)	12-14-16	25.0	ND	25.0	250 mg/L
pH	12-14-16	7.48	6.41	7.48	6.5 to 8.5

# *Annual Drinking Water Quality Report*

## Virginia-Carolina Water Authority

### **INTRODUCTION**

This Annual Drinking Water Quality Report for calendar year 2016, is designed to inform you about your drinking water quality. Our goal is to provide you with a safe and dependable supply of drinking water, and we want you to understand the efforts we make to protect your water supply. The quality of your drinking water must meet state and federal requirements administered by the Virginia Department of Health (VDH).

If you have questions about this report, please contact:

**Water Operator – Billy Cornett Phone: 276-773-3884 Fax: 276-773-2634**

If you want additional information about any aspect of your drinking water or want to know how to participate in decisions that may affect the quality of your drinking water, please contact:

**Chairman – Bryan Edwards Phone: 336-372-4257 Fax: 336-372-2051**

The times and location of regularly scheduled board meetings are as follows:

**Second Thursday of each month at the Virginia-Carolina Water Treatment Plant, 1360 Moxley Ridge Rd., Independence, VA 10:00am**

### **GENERAL INFORMATION**

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: (1) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. (2) 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. (3) Pesticides and herbicides, which may come from a variety of sources: such as agriculture, urban storm-water runoff and residential uses. (4) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm-water runoff, and septic systems. (5) 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. 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 drinking 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 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. Immune-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).

### **SOURCES OF YOUR DRINKING WATER**

The sources of your drinking water are groundwater as described below:

Groundwater under the direct influence of surface water.

The Virginia Department of Health conducted a source water assessment of our system during 2001. All well sources was determined to be of high susceptibility to contamination using the criteria developed by the state in its approved Source Water Assessment Program. The assessment report consists of maps showing the source water assessment area, an inventory of known land use activities of concern, and documentation of any known contamination within the last 5 years. The report is available by contacting Billy Cornett at the phone number or address given elsewhere in this drinking water quality report.

## DEFINITIONS

Contaminants in your drinking water are routinely monitored according to Federal and State regulations. The table on the next page shows the results of our monitoring for the period of January 1<sup>st</sup> to December 31<sup>st</sup> 2016. In the table and elsewhere in this report you will find many terms and abbreviations you might not be familiar with. The following definitions are provided to help you better understand these terms:

*Maximum Contaminant Level, or MCL* – the highest level of a contaminant that is allowed in the drinking water. MCL's are set as close to the MCLGs as feasible using the best available treatment technology.

*Maximum Contaminant Level Goal, or MCLG* – the level of contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

*Non-detects (ND)* – lab analysis indicates that the contaminant is not present.

*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* – 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.

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

*Action Level* – 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.

*Nephelometric Turbidity Unit (NTU)* – nephelometric turbidity unit is a measure of the clarity, or cloudiness of water. Turbidity in excess of 5 NTU is just noticeable to the average person. Turbidity is monitored because it is a good indicator of the effectiveness of our filtration system.

*Maximum Residual Disinfectant Level Goal or MRDLG* – the level of 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 Disinfectant Level or 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.

## WATER QUALITY RESULTS

Contaminant (units)	MCLG	MCL	Level Detected	Violation (Y/N)	Range	Date of Sample	Typical Source of Contamination
Nitrate (ppm)	10	10	0.7	N	–	2016	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Fluoride (ppm)	4	4	0.27	N	-	2016	Water additive which promotes strong teeth
Barium (ppm)	2	2	0.03	N	-	2016	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Alpha	0	15	0.29	N	ND –	2014	Erosion of Natural Deposits

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Emitters (pCi/l)					0.80		
Combined Radium (pCi/l)	0	5	1.35	N	0.59 – 3.10	2014	Erosion of Natural Deposits
Turbidity (NTU)	NA	TT, 1 NTU Max	0.08	N	0.01 – 0.08	2016	Soil runoff
		TT, ≤0.3 NTU 95% of the time	100%	N	NA		

### **VIOLATION INFORMATION**

Your water system did not have any MCL or TT violations during the year.

The water quality results in the above table are from testing done in 2016. However, the state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though accurate, is more than one year old.

MCL's are set at very stringent levels by the U.S. Environmental Protection Agency. In developing the standards, EPA assumes that the average adult drinks 2 liters of water each day throughout a 70-year life span. EPA generally sets MCLs at levels that will result in no adverse health effects for some contaminants or a one-in-ten-thousand to one-in-a-million chance of having the described health effect for other contaminants.

### **ADDITIONAL HEALTH INFORMATION**

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 Virginia-Carolina Water Authority 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 15 to 30 seconds or until it becomes cold or reaches a steady temperature 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>.

### **VIOLATION INFORMATION**

Did any monitoring, reporting, or other violations occur during the year? ( ) YES (x) NO

If yes, an explanation of the violation, including potential adverse health effects and steps we are taking to correct the violation, is as follows.