



**2017 Consumer Confidence Report**

Virginia PWSID No. VA4041035

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RTCR	Units	MCLG	MCL	Maximum	Average	Comment
Total Coliform	%	0	present in ≤5% monthly samples	0.00% (None Positive)	<b>0.00%</b> (None Positive)	Wholesale customers report directly to VDH. 216 of 216 samples were negative
<i>E. coli</i>	%	0	<b>0</b>	0.00% (None Positive)	<b>0.00%</b> (None Positive)	Wholesale customers report directly to VDH. 216 of 216 samples were negative
TOC (Total Organic Carbon)	n/a	n/a	TT = RAA removal ratio minimum	1.17 (min) / 1.56 (max)	<b>1.37</b>	Daily calculations of TOC removal percentages Minimum allowable RAA ratio = 1.0
Turbidity (Combined filtered water)	NTU	0	TT=1 NTU max	0.143	<b>0.033</b>	No Violations
	NTU	0	TT≤0.3 NTU 95% of readings	100.00%	<b>100.00%</b>	35022 of 35022 readings were <0.3 NTU
<b>Radiological</b>	<b>Units</b>	<b>MCLG</b>	<b>MCL</b>	<b>Highest</b>	<b>Average</b>	<b>Comment</b>
Beta/photon emitters	pCi/l	0	50 <sup>(*)</sup>	4.9 ± 0.8	<b>4.9 ± 0.8</b>	Sample Date 10/8/2014
Alpha emitters	pCi/l	0	15	<0.6	<b>&lt;0.6</b>	Sample Date 10/8/2014
Radium	pCi/l	0	5	<0.6	<b>&lt;0.6</b>	Sample Date 10/8/2014
<b>Inorganics</b>	<b>Units</b>	<b>MCLG</b>	<b>MCL</b>	<b>Min/Max</b>	<b>Average</b>	<b>Comment</b>
Fluoride	ppm	4	4	<0.10 / 0.89	<b>0.63</b>	3-4 Daily analyses at plant
Nitrate + Nitrite	ppm	10	10	0.15	<b>0.15</b>	Sample Date 10/19/2017
Barium	ppm	2	2	0.02	<b>0.02</b>	Sample Date 10/19/2017
<b>Disinfectants</b>	<b>Units</b>	<b>MRDL</b>	<b>MRDLG</b>	<b>Min/Max</b>	<b>Average</b>	<b>Comment</b>
Chlorine Dioxide	ppm	0.8	0.8	<0.10 / 0.12	<b>&lt;0.10</b>	Daily at plant
Chlorine	ppm	4.0 <sup>(**)</sup>	4.0	0.30 / 4.00	<b>3.03</b>	Weekly analysis of transmission system samples.
<b>Disinfection By-products</b>	<b>Units</b>	<b>MCLG</b>	<b>MCL</b>	<b>Min/Max</b>	<b>Average</b>	<b>Comment</b>
Chlorite	ppm	0.8	1.0	<0.1 / 0.45	<b>0.16</b>	Daily at plant
TTHMs @ plant	ppb	0	80	NA	<b>NA</b>	ARWA analyzes weekly. Localities report to VDH.
HAAs @ plant	ppb	0	60	NA	<b>NA</b>	ARWA analyzes weekly. Localities report to VDH.
<b>Unregulated Contaminants</b>	<b>Units</b>	<b>MCLG</b>	<b>MCL</b>	<b>Maximum</b>	<b>Average</b>	<b>Comment</b>
Sulfate	ppm	N/A	N/A	23.1	23.1	Sample Date 10/19/2017
Chloroform	ppb	N/A	N/A	18.0	18.0	Sample Date 10/19/2017
Bromodichloromethane	ppb	N/A	N/A	5.3	5.3	Sample Date 10/19/2017
MTBE	ppb	N/A	N/A	<5.0	<5.0	Sample Date 10/19/2017
Dibromochloromethane	ppb	N/A	N/A	0.6	0.6	Sample Date 10/19/2017
<b>LT2</b>	<b>Units</b>	<b>MCLG</b>	<b>MCL</b>	<b>Maximum</b>	<b>Max 12 mo. Avg.</b>	<b>Comment</b>
<i>Cryptosporidium</i>	oocyst/L	Avg. <0.075	--	0.19	<b>0.039</b>	Reservoir/SOURCE water samples collected monthly between (Mar. 2015 - Feb. 2017).

(\*) The MCL for beta particles is 4 millirem/year. EPA considers 50 pCi/l to be the level of concern.

(\*\*) The RAA (Running Annual Average) of all distribution system samples must be at or below 4.0 mg/L.

**Definitions**

**MCL** - Maximum Contaminant Level - The highest level of a contaminant allowed in drinking water. The MCLs are set as close to the MCLG 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

**RAA** - Running Annual average - removal ratio and the range of the removal for the individual months

**NTU** - Nephelometric Turbidity Units - The measure of turbidity in the water.

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

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

**ppm** - parts per million - (1/1,000,000) or milligrams per Liter (mg/l)

**ppb** - parts per billion - (1/1,000,000,000)

**pCi/L** - picocuries per Liter (a measure of radioactivity)

**NA** - Not Applicable

**ND** - Not Detected

**LT2** - Long Term 2 Enhanced Surface Water Treatment Rule

**RTCR** - EPA's Revised Total Coliform Rule

**Major Sources in Drinking water**

Total Coliform Bacteria	Naturally present in the environment.
Fecal Coliform & <i>E. coli</i>	Human and animal fecal waste.
<i>E. coli</i>	Naturally present in the environment.
<i>Cryptosporidium</i>	Natural occurring pathogen found in surface water.
Turbidity	Soil runoff.
Beta/photom emitters	Decay of natural and man-made deposits.
Alpha emitters	Erosion of natural deposits.
Radium	Erosion of natural deposits.
Barium	Erosion of natural deposits.
Fluoride	Erosion of natural deposits. Water additive which promotes strong teeth; discharge from fertilizer and aluminum runoff.
Nitrates	The runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Sulfate	Naturally present in the environment.
MTBE - finished water	Fuel additive that was used to help fuels burn cleaner.
Chlorine Dioxide	Water additive to control microbes, organics, iron, and manganese.
Chlorine	Water additive to control microbes.
Chlorite	By-product of drinking water disinfection.
TTHM (Total Trihalomethanes)	By-product of drinking water disinfection.
HAA <sub>5</sub> (Haloacetic Acid 5)	By-product of drinking water disinfection.
Chloroform	By-product of drinking water disinfection.
Bromodichloromethane	By-product of drinking water disinfection.
Dibromochloromethane	By-product of drinking water disinfection.
Pharmaceuticals	Residential and agricultural wastes and improper disposal of medications into the environment.

**Notes**

- 1) The ARWA provides water to the Cities of Colonial Heights & Petersburg & the Counties of Chesterfield, Dinwiddie & Prince George
- 2) The Authority obtains its source water from Chesdin Reservoir, a surface water impoundment of the Appomattox River.
- 3) Surface/Source water is pumped from the Chesdin Reservoir to the treatment plant for coagulation, sedimentation, filtration, and finally disinfection with chlorine and chloramines.
- 4) The Virginia Department of Health conducted a source water assessment of the system during 2002. At that time the Chesdin Reservoir (Appomattox River) was determined to be highly susceptible to contamination, using criteria developed by the State in its EPA-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 five years from the date of the assessment. The report is available by contacting Dr. Robert Wichser at (804) 590-1145.
- 5) Currently, no significant sources of contamination to the Chesdin Reservoir have been identified. The Farmville wastewater treatment plant forty miles upstream, numerous animal feed lots and farms exist in the drainage area.
- 6) Turbidity is a measure of the cloudiness of the water. It is monitored as an indicator of the effectiveness of the filtration system.
- 7) *Cryptosporidium* is a microbial pathogen found in surface water throughout the U.S. Although filtration removes *Cryptosporidium*, the most commonly-used filtration methods can not guarantee 100% 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.
- 8) Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than 6 months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.
- 9) 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. [Insert name of waterworks] 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 the 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 (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.
- 10) Additional information can be obtained from EPA's Safe Drinking Water Hotline (1-800-426-4791).