

Radford Army Ammunition Plant
PWSID # 1121643
2018 Consumer Confidence Report (Water Quality Report)

INTRODUCTION

This Annual Drinking Water Quality Report for calendar year 2018 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 or 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 the Radford Army Ammunition Plant.

Advance notification will be given if we have any public meetings to discuss decisions on water treatment issues that affect water quality.

GENERAL INFORMATION

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).

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.

SOURCE OF YOUR DRINKING WATER

The source of your drinking water is surface water. The source of supply for the Radford Army Ammunition Plant's buildings 419 and 474 water treatment plants is the New River.

A source water assessment of our system was conducted in 2002 by Draper Aden Associates Consulting Engineers, in support of the Upper New River Source Water Assessment Program. The New River 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 the Radford Army Ammunition Plant.

In 2018, we monitored for *Cryptosporidium*, a microbial parasite commonly found in surface water and found some evidence of these microbes in the raw source water. However, results were very low and the facility was able to maintain the lowest bin classification and is not required to perform any additional treatment at this time. We are not aware of a specific source of *Cryptosporidium* in the source water. *Cryptosporidium* may come from wildlife or cattle grazing near the reservoir. *Cryptosporidium* must be ingested for it to cause disease, and may be passed through other means than drinking water. Symptoms of infection include nausea, diarrhea, and abdominal cramps. These symptoms can also be the result of food related organisms or flu or ingesting untreated water. Most healthy individuals are able to overcome the disease within a few weeks. However, some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people living with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk. These people should seek advice 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 (1-800-426-4791).

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 1st to December 31st, 2018. In the table and elsewhere in this report you will find many terms and abbreviations for which you may not be familiar. 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 drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- Maximum Contaminant Level Goal, or 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.
- 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.
- 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.
- 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 (µg/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.
- Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.
- 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.
- Level 1 assessment - a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
- Level 2 assessment - a very detailed study of the waterworks to identify potential problems and determine (if possible) why an E. coli PMCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.
- 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.

WATER QUALITY RESULTS

Regulated Contaminants

Contaminant (units)	MCLG	MCL	Level Detected	Violation (Y/N)	Range	Date of Sample	Typical Source of Contamination
Nitrate + Nitrite (ppm)	10	10	0.8	N	ND – 0.80	1/23/18 & 2/13/2018	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Antimony (ppm)	6	6	0.0003	N	ND-0.0003	7/24/2018	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Barium (ppm)	2	2	0.0245	N	0.024-0.0245	7/24/2018	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Copper (ppm)	1.3	AL=1.3	0.0027	N	ND-0.0027	7/24/2018	Corrosion of household plumbing systems; erosion of natural deposits
Alpha Emitters (pCi/L) not	0	15	1.4	N	N/A	10/16/2018	Erosion of Natural Deposits
Beta/photon Emitters (pCi/L)	0	50*	9.9	N	N/A	10/16/2018	Decay of natural and man-made deposits
Combined Radium (pCi/L)	0	5	<0.53	N	N/A	10/16/2018	Erosion of Natural Deposits
Chlorine (ppm)	MRDLG = 4	MRDL = 4	1.27	N	1.01-1.41	2018	Water additive used to control microbes
Total Organic Carbon (TOC)	NA	TT, met when ≥ 1 ; or when alternative compliance criteria is met	1	N	–	2018	Naturally present in the environment
Haloacetic Acids (HAA5)(ppb)	NA	60	41	N	27-59	2018	By-product of drinking water disinfection
Total Trihalomethanes (TTHMs) (ppb)	NA	80	29	N	15-37	2018	By-product of drinking water disinfection
Turbidity (NTU)	NA	TT, 1 NTU Max	0.498	N	NA	2018	Soil runoff
		TT, ≤ 0.3 NTU 95% of the time	100%	N	N/A		

ND=Non-detectable

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

Lead and Copper Contaminants

Contaminant (units)	MCLG	Action Level	90 th Percentile	Date of Sampling	# of Sampling Sites Exceeding Action Level	Typical Source of Contamination
Lead (ppb)	0	AL = 15	4.7	2017	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	1.3	AL = 1.3	0.092	2017	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

Notes:

1. MCL's are set at very stringent levels by the U.S. Environmental Protection Agency. In developing the standards, the 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.
2. The water quality results in the above table are from testing done in 2015. 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, could be more than one year old.
3. 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.

VIOLATION INFORMATION

No PMCL or TT violations for any contaminants occurred during the time period of January 1, 2018 through December 31, 2018 at the Radford Army Ammunition Plant Buildings 419 and 474 as described in the Commonwealth of Virginia/State Board of Health Waterworks Regulations.

OTHER VIOLATION INFORMATION

No monitoring, reporting, or other violations occurred during the time period of January 1, 2018 through December 31, 2018 at the Radford Army Ammunition Plant Buildings 419 and 474 as described in the Commonwealth of Virginia/State Board of Health Waterworks Regulations.

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 Radford Army Ammunition Plant Buildings 419 and 474 are 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>.