

Annual Drinking Water Quality Report

(Radford Army Ammunition Plant, PWSID No. 1121643)

INTRODUCTION

This Annual Drinking Water Quality Report for calendar year 2022 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 Claire Powell at the Radford Army Ammunition Plant at claire.h.powell@baesystems.com or (540) 529-5867. Advance notification will be given if we have any public meetings to discuss decisions on water treatment issues that affect water quality.

GENERAL INFORMATION

Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the land surface or through the ground, it dissolves naturally-occurring minerals and can pick up substances resulting from the presence or activities of animals and humans. Contaminants that may be present in source water include: (i) microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; (ii) 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; (iii) pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; (iv) 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 stormwater runoff, and septic systems; (v) 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, the EPA has established limits on certain contaminants that could be found in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same level of protection for public health.

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 who are 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).

SOURCE(S) and TREATMENT OF YOUR DRINKING WATER

The source(s) of your drinking water is (☒) surface water (☐) groundwater under the direct influence of surface water (☐) groundwater as described below:

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

Is there any treatment of your drinking water supply? (X) Yes (☐) No

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 highly susceptible to contamination as determined by 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 at the phone number given elsewhere in this drinking water quality report.

DEFINITIONS

Your drinking water is routinely monitored for contaminants 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, 2022. In the table and elsewhere in this report you will find many terms and abbreviations that might not be familiar to you. 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. 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 using disinfectants to control microbial contaminants.

Non-detect (ND) - lab analysis indicates that the contaminant is not present.

Parts per million (ppm) or Milligrams per liter (mg/L) – a low concentration of material in a liquid; one part per million can be conceptualized as a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter (µg/L) – even smaller concentration of material in a liquid than milligrams per liter; one part per billion can be conceptualized as a single penny in \$10,000,000.

Picocuries per liter (pCi/L) - a measure of 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* Primary Maximum Contaminant Level (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

Microbiological Contaminants

Contaminant	MCLG	MCL	No. of Samples Indicating Presence of Bacteria	Violation (Y/N)	Month of Sampling	Typical Source of Contamination
<i>E. coli</i>	0	1 routine sample and a repeat sample are total coliform positive, and 1 is also <i>E. coli</i> positive	0	N	Jan. – Dec.	Human and animal fecal waste

Regulated Contaminants

Contaminant (units)	MCLG (Ideal Goal)	MCL (Highest Level Allowed) ¹	Level Detected	Violation (Y/N)	Range of Test Results	Date of Sample(s)	Typical Source of Contamination
Nitrate (ppm)	10	10	0.88	N	0.88	2/8/2022	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Barium (ppm)	2	2	0.023	N	0.0226 - 0.0228	7/19/2022	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride (ppm)	4	4	ND	N	< 0.1	7/19/2022	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Alpha Emitters (pCi/L)	0	15	ND	N	< 0.33	2/9/2021	Erosion of Natural Deposits
Combined Radium (pCi/L)	0	5	1.05	N	ND - 1.05	2/9/2021	Erosion of Natural Deposits
Chlorine (ppm)	MRDLG = 4	MRDL = 4	1.50	N	0.48 – 2.26	2022	Water additive used to control microbes
Total Organic Carbon [TOC] (ppm)	NA	TT, met when ≥ 1	1.0	N	< 1.0 – 1.2	2022	Naturally present in the environment
Haloacetic Acids [HAA5] (ppb)	NA	60	20	N	12.9 – 28.2	2022	By-product of drinking water disinfection
Total Trihalomethanes [TTHMs] (ppb)	NA	80	35	N	14.5 – 42.3	2022	By-product of drinking water disinfection
Turbidity (NTU)	NA	TT, 1 NTU Max	0.499	N	0.015 – 0.499	2022	Soil runoff
		TT, ≤ 0.3 NTU 95% of the time	100%	N	NA		

Lead and Copper Contaminants

Contaminant (units)	MCLG	Action Level	90 th Percentile	Date of Sampling ²	# of Sampling Sites Exceeding Action Level	Typical Source of Contamination
Lead (ppb) ³	0	15	10.1	2020	1 out of 20	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	1.3	1.3	0.096	2020	0 out of 20	Corrosion of household plumbing systems; Erosion of natural deposits

Sodium Monitoring Results (Unregulated - No Limits Designated)

Level Detected (units)	Date of Sample	Typical Source	Guidance
3.97 – 4.02 ppm	7/19/2022	Naturally Occurring; Addition of treatment chemicals/processes	For individuals on a <u>very</u> low sodium diet (500 mg/day), EPA recommends that drinking-water sodium not exceed 20 mg/L. Should you have a health concern, contact your health care provider.

¹ - MCLs are set by the U.S. Environmental Protection Agency (EPA). In developing the standards, EPA assumes that the average adult drinks 2 liters of water each day throughout a 70-year life span. The EPA generally sets MCLs for contaminants at levels that will result in no adverse health effects or a one-in-ten-thousand to one-in-a-million chance of having the described health effect.

² - The state allows the facility to monitor for certain contaminants at a frequency of less than one time per year because the concentrations of these contaminants do not change frequently. Some of our data presented in the above tables, though accurate, is more than one year old.

³ - 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. Radford Army Ammunition Plant 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 two 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 (800-426-4791) or at <http://www.epa.gov/safewater/lead>.

VIOLATION INFORMATION – Did any PMCL or TT violation occur during the year? () Yes (X) No

No PMCL or TT violations for any contaminants occurred during the time period of January 1, 2022 through December 31, 2022 at the Radford Army Ammunition Plant Buildings 419 and 474 as described in the Commonwealth of Virginia/State Board of Health Waterworks Regulations.

VIOLATION INFORMATION – Did any monitoring, reporting, or other violations occur during the year? () Yes (X) No

No monitoring, reporting, or other violations occurred during the time period of January 1, 2022 through December 31, 2022 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. RFAAP 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 two 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 (800-426-4791).