Annual Drinking Water Quality Report

Minitree Glen Water System

INTRODUCTION

This Annual Drinking Water Quality Report for calendar year **2009** 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:

Lawrence A. Dame, Public Utilities Director @ (804) 966-9678

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

Lawrence A. Dame, Public Utilities Director @ (804) 966-9678

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

The second Monday of every month.

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 stormwater 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 stormwater 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 stormwater runoff, and septic systems; (5) Radioactive contaminants, which van 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

All 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. 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 microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

SOURCE(S) and TREATMENT OF YOUR DRINKING WATER

The source of your drinking water is groundwater, as described below:

The well is located on Minitree Glen Drive.

Water from the well is chlorinated year round to kill the bacteria that may grow in the storage tanks.

The Virginia Department of Health conducted a source water assessment of the well serving the Minitree Glen waterworks during 2002. The well was determined to be of low susceptibility 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 concer, and documentation of any known contamination within the last 5 years from the date of the assessment.

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 calendar year **2009**. 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:

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 (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 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 (MRDL) – the maximum allowable level of the residual of a disinfectant in the distribution system.

Maximum Residual Disinfectant Level Goal (MRDLG) – the goal maximum level of the residual of a disinfectant in the distribution system.

WATER QUALITY RESULTS

I. Microbiological Contaminants

Contaminant	**MCLG**	**MCL**	**No. of Samples Indicating Presence of Bacteria**	**Violation (Y/N)**	**Month of Sampling**	**Typical Source of Contamination**
Total Coliform Bacteria	0	Presence of coliform bacteria in more than one sample per month	0	No	N/A	Naturally present in the environment

II. Lead and Copper Contaminants

Contaminant	Units of Measurement	Action level	MCLG	Results of samples for the 90th Percentile Value	Action Level Exceedance (Y/N)	Month of Sampling	# of Sampling Sites Exceeding Action level	Typical Source of Contamination
Lead	ppb	15	0	4	No	9/07	0	Corrosion of household plumbing systems
Copper	ppm	1.3	1.3	0.181	No	9/07	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.

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. New Kent County 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

III. Regulated Volatile Organic Chemicals

Contaminant	Units of Measurement	MCLG	MCL	Level Detected	Violation (Y/N)	Range of Detection at Sampling Points	Date of Sample	Typical Source of Contamination
Toluene	ppm	1	1	0.0016	No	N/A	8/08	Discharge from petroleum refineries.
Ethylbenzene	ppm	0.7	0.7	0.0006	No	N/A	8/08	Discharge from petroleum refineries.
Total Xylenes	ppm	10	10	0.0028	No	N/A	8/08	Discharge from petroleum refineries and factories.

IV. Other Chemical and Radiological Contaminants

Contaminant	Units of Measurement	MCLG	MCL	Level Detected	Violation (Y/N)	Range of Detection at Sampling Points	Date of Sample	Typical Source of Contamination
Fluoride	ppm	4	4	1.33	No	N/A	8/08	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	ppm	10	10	<0.05	No	N/A	7/09	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Combined Radium	pCi/l	0	5	1.5	No	N/A	11/03	Erosion of Natural deposits
Trihalomethanes	ppb	80	80	11	No	N/A	8/07	By-product of naturally occurring organic matter and chlorine added to the water
Haloacetic Acids	ppb	60	60	4	No	N/A	8/07	By-product of naturally occurring organic matter and chlorine added to the water
Gross Alpha	piC/L	0	15	.4	No	N/A	11/03	Erosion of natural deposits.
Gross Beta(1)	piC/L	0	50	6.6	No	N/A	11/03	Decay of natural and man-made Deposits.

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

V. Unregulated Contaminants

Contaminant	Units of Measurement	Level Detected	Range of Detection at Sampling Points	Date of Sample	Typical Source of Contaminant
Sulfate	ppm	10.4	N/A	8/08	EPA and State Regulations require us to monitor this contaminant while EPA reconsiders its MCL

VI. Disinfectants

Disinfectant	Units of Measurement	MRDLG	MRDL	Level Detected (Annual Average)	Violation (Y/N)	Range of Detection at Sampling Points	Year	Typical Source
Chlorine	ppm	4	4	0.38 (Jan-Dec)	No	0.24-0.62 (Jan-Dec)	2009	Water additive used to control microbes

We constantly monitor for various contaminants in the water supply to meet all regulatory requirements. The table lists only those contaminants that had some level of detection. Many other contaminants have been analyzed but were not present or were below the detection limits of the lab equipment.

This report is for calendar year **2009**. 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 the data in Tables II, IV and V, although accurate, is more than one year old.

Other drinking water constituents you may be interested in are as follows:

The sodium concentration was 76.9 ppm in a sample collected in August 2008. Water with a sodium concentration higher than 20 ppm should not be consumed by people on strict sodium intake diets.

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.

VIOLATION INFORMATION

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

This Drinking Water Quality Report was prepared by:

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Dear Utility Customer:

As we move into the summer season, the New Kent County Department of Public Utilities encourages you to consider the direct and indirect costs of lawn irrigation from the potable water system. The typical residential lawn requires approximately one inch of water per week, while the same typical residential lawn actually receives up to one inch of water per day. Over-watered lawns develop poor root structure, as well as being more susceptible to drought, and attack from mold and fungus.

There are steps that every homeowner can take to reduce the cost of lawn irrigation by up to one-seventh. A small investment of time or money, by employing a few of the simple steps listed below, can reap annual returns in utility and lawn maintenance costs for years to come, and result in a healthier, more beautiful landscape. Under the lowest tier of the FY2010 utility rates, a 50 gallon-per-minute irrigation system will operate at a cost of approximately $0.24 per minute. Do you know what your irrigation operating costs are?

TIPS FOR IRRIGATION WATER CONSERVATION

- ✓ Plant native, drought resistant landscaping and incorporate water conservation into your landscape design
- ✓ Collect over 29 gallons of rainwater per square foot of roof area annually from home, garage or shed gutters and roof drains
- ✓ Avoid obvious waste and over-watering by utilizing a rain gauge and a soil moisture sensor
- ✓ Reduce the irrigation pressure from 60 psi to the recommended 30 psi and save approximately 50% by utilizing pressure reducing heads or fittings
- ✓ Prevent system drainage by utilizing backflow prevention devices or check valves
- ✓ Utilize drip irrigation in non-turf areas
- ✓ Utilize high efficiency nozzles in turf areas, and save approximately 30%
- ✓ Utilize advanced control systems to monitor and control system pressure & flow, zones & timing, rain & soil moisture, as well as monitor for system leaks
- ✓ Water between 5 am and 10 am to minimize evaporation

Source http://www.rainbird.com/IUOW/tips/tips_turf.htm

- ✓ While mowing your lawn inspect turf for signs of irrigation problems (dry spots, wet spots, erosion, etc.) and make appropriate adjustments
- ✓ If you are not able to observe your irrigation system on its regularly scheduled run, run it manually once a month to ensure proper operation
- ✓ Adjust irrigation fixtures so that overspray on driveways, structures, streets and sidewalks is eliminated
- ✓ Adjust irrigation schedule and flow according to the season
- ✓ Mow at a higher setting to shade the soil and retain moisture
- ✓ Use a mulching mower to gain more nutrients from grass clippings
- ✓ Aerate and thatch soil annually to maintain proper drainage
- ✓ Consult an irrigation professional to maximize efficiency

Source http://www.owue.water.ca.gov/docs/Landscapes.pdf

Efficient irrigation is not only better for your lawn, it reduces the demand on the potable ground water aquifer, reduces the nutrient-enriched runoff discharged to the Chesapeake Bay, and reduces utility operating costs.

Thank you,

New Kent County
Department of Public Utilities