"REVISED ANNUAL DRINKING WATER QUALITY REPORT FOR 2013 – PLEASE DISREGARD PREVIOUS PUBLICATION"

Annual Drinking Water Quality Report

prepared by

Gloucester County Public Utilities

INTRODUCTION

This Annual Drinking Water Quality Report for calendar year 2013 is designed to inform you, the customer, 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). Gloucester County Public Utilities has not had any violations of a contaminant level during the reporting year. Included in this report are details about where your water comes from, what it contains and how it compares to standards set by the EPA and VDH. Gloucester County Public Utilities is committed to providing you with information about your water supply, because customers who are well informed are our best allies in supporting improvements necessary to maintain the highest drinking water standards. If you have any questions about this report or 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 Martin M. Schlesinger, P.E., Director of Public Utilities, by telephone at (804) 693-1230 or by email at mschlesi@gloucesterva.info.

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 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 agricultural, 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 can be naturally occurring or be the results of oil and gas production and mining activities. 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.

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).

Your drinking water comes from two sources. The first is known as surface water, which comes from the Beaverdam Reservoir. The water is treated at the County's water treatment plant. Your water treatment plant employs state of the art technology which includes chemical coagulation, sedimentation and filtration. Raw water is pumped from the Beaverdam Reservoir where potassium permanganate and carbon are added. Potassium permanganate is used to remove iron, organics and some manganese. Carbon is used to remove color, organics and to control taste and odor. This water is pumped into a mixing basin where alum and polymer are added for coagulation. The mixed water is then drawn into vacuum chambers where it "pulsates" into our super pulsator units, which separates large particles from the water. These large particles are removed from the treatment process and disposed at the local landfill. Settled water from the super pulsator is then filtered where chlorine is first added for disinfection and manganese removal. The filtered water is stored at the plant where it is pumped out into the system. The second source of your drinking water comes from groundwater. The County's Reverse Osmosis (RO) plant went into operation in April of 2003, and we began blending this water with the treated surface water from two deep wells. These wells are approximately 1400 feet deep. The water is then pumped to the RO plant where we first add the only chemical in the process, an antiscalant that prevents fouling of the membranes used in the process. Once at the plant, the well water passes through a series of

sock filters that remove tiny particles that may have been brought up from the well. This also prevents the fouling of the membranes. After the filters, high-pressure pumps are used to pump the water through the membranes used in the reverse osmosis process. This removes dissolved solids from the groundwater, leaving water that is nearly the same as bottled water. We then pump the water over to the County's clearwell, located at the surface water plant where chlorine is added for disinfection and then pumped out into the system for your use.

Under a new program developed by VDH, a detailed source water assessment has been conducted to find ways to better protect our water sources. This assessment allows our staff, along with the VDH, to implement measures to reduce or eliminate the sources of contamination.

As a first step toward protection of our sources of drinking water, the Hampton Roads Planning District Commission (HRPDC) and Virginia Department of Health (VDH) evaluated the susceptibility of this water supply to contamination. Contamination sources and pathways were reviewed using maps, known and observed activities, water quality data and information about the water source. Using criteria developed by the State in its EPA-approved Source Water Assessment Program, the following was determined:

	Source	***Susceptibility***
i.	Beaverdam Reservoir	High
ii.	R.O. Well #1	Low
iii.	R.O. Well #2	Low

This does not mean that your drinking water is currently unsafe. Your current water quality is described in the rest of this report. A copy of the source water assessment report is available by contacting Mr. Martin M. Schlesinger, P.E., Director of Public Utilities, at (804) 693-1230.

DEFINITIONS

Contaminants in your drinking water are routinely monitored according to Federal and State regulations. The tables on the next few pages show the results of our monitoring for calendar year 2013. In the tables 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) 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.

Secondary Maximum Contaminant Level, or SMCL - set recommended levels for contaminants that affect water's taste, color, odor or appearance.

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.

NTU (Nephelometric Turbidity Unit) - the amount of turbidity in a water sample as measured by the amount of light scattered by turbidity of the sample.

Maximum Residual Disinfectant Level (MRDL) - the level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap without an acceptable possibility of adverse health effects.

Maximum Residual Disinfectant Level Goal (MRDLG) - the level of a disinfectant added for water treatment at which no known or anticipated adverse effect on the health of persons would occur.

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 OR less than 5% of samples when 40 or more samples are collected in a month	4	No	July & December 2013	Naturally present in the environment

II. Contaminants Regulated at the Treatment Plant

Contaminant	*Ideal Goals EPA's MCLG*	*Highest Allowable Level EPA's MCL*	*Level Detected*	*Typical Source of Contaminant*
Aluminum			<0.05 ppm	Natural geology, mining
Antimony	6 ppb	6 ppb	<2 ppb	Discharge from petroleum refineries, soldering
Arsenic	N/A	10 ppb	<2 ppb	Natural geology, runoff from orchards
Barium	2 ppm	2 ppm	<0.01 ppm	Natural geology, mining
Beryllium	4 ppb	4 ppb	<2 ppb	Discharge from metal refineries, coal burning
Cadmium	5 ppb	5 ppb	<2 ppb	Natural geology, corrosion of galvanized pipes
Chromium	100 ppb	100 ppb	<10 ppb	Natural geology, discharge pulp mills
Cyanide†	200 ppb	200 ppb	<10 ppb	Discharge metal, plastic, fertilizer factories
Lead	0	AL = 15 ppb	<2 ppb	Corrosion of household plumbing
Mercury	2 ppb	2 ppb	<0.2 ppb	Natural geology, runoff farms
Contaminant	*Ideal Goals EPA's MCLG*	*Highest Allowable Level EPA's MCL*	*Level Detected*	*Typical Source of Contaminant*
Nickel	NA	NA	<10 ppb	Natural geology
Selenium	50 ppb	50 ppb	<10 ppb	Natural geology, discharge metal refinery
Thalium	2 ppb	2 ppb	<2 ppb	Natural geology
Nitrate/Nitrite-Nitrogen+	10 ppm	10 ppm	0.07 ppm	Natural geology, fertilizer runoff, septic leachate
Gross Alpha[a]	0	15 pCi/L	<0.5 pCi/L	Erosion of natural deposits
Gross Beta*[a]	0	50 pCi/L	1.7 pCi/L	Decay of man-made products and natural deposits
Combined Radium[a]	0	5pCi/L	0.9 pCi/L	Erosion of natural deposits

Metals sample was collected on October 1, 2013. +Sample was collected on April 1, 2013. *The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles. †Samples collected April 1, 2013.
[a]Samples collected on January 3, 2011.

Contaminant	*Ideal Goals EPA's MCLG*	*Highest Allowable Level EPA's MCL*	*Highest Detected*	*Lowest Monthly Percentage of Samples Meeting the Turbidity Limit*	*Typical Source of Contaminant*
Turbidity	NA	100% Below 0.3 NTU	0.191 NTU	100%	Soil runoff
Date	-	-	07-04-13		

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.

Contaminant	*MCLG*	*Required Removal Ratio*	*Removal Ratio*		*Typical Source of Contaminant*
			Lowest Running Annual Average	*Monthly Range*	
Total Organic Carbon*	TT	1.0	1.05	.88 – 1.35	Naturally present in the environment

*Total organic carbon results are given as removal ratios. Running annual average equal to or greater than one meets water quality standards.

III. Other Contaminants Regulated in the Distribution System

Contaminant	*MCLG*	*Required Removal Ratio*	*Amount Detected*		*Typical Source of Contamination*
			Highest Compliance Level	*Quarterly Range*	
Trihalomethanes (THM)	N/A	80 MCL	64	29-88 ppb	Disinfection interaction
Haloacetic Acids (HAA)	N/A	60 MCL	27	14-28 ppb	Disinfection interaction

IV. Contaminants Regulated at the Customer's Tap

Contaminant	*Ideal Goals EPA's MCLG*	*Highest Allowable Level EPA's MCL (Action Level)*	*90th Percentile*	*No. of Sites Exceeding A.L.*	*Typical Source of Contamination*
Lead**	0 ppb	15 ppb	<2.0 ppb	0	Corrosion of household plumbing systems; erosion of natural deposits
Copper**	1.3 ppm	1.3 ppm	0.116 ppm	0	Corrosion of household plumbing systems; erosion of natural deposits

**Samples collected in June 2012 did not exceed Action Level.

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. Gloucester County Public Utilities 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. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

V. Disinfectants

Disinfectant	*Units of Measurement*	*MRDLG*	*MRDL*	*Level Detected (Annual Average)*	*Violation (Y/N)*	*Range of Detection at Sampling Points*	*Typical Source*
Chlorine	ppm	4	4	1.55 mg/L	N	0.6 – 2.7 mg/L	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. The water quality results in the preceding tables are from testing done in 2013, unless otherwise noted. The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently.

MCLs 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

There were no MCL or TT violations during the year nor were there any reporting violations during the year for the Gloucester County water system.

ADDITIONAL HEALTH INFORMATION

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).

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A copy of this report is also available by visiting the Gloucester County website at www.gloucesterva.info and accessing the Public Utilities Department home page.

Unregulated Contaminant Monitoring Rule 3

WATER PLANT

Sample Date	Analyte Short Name	Value	Unit
3/20/2013	chromium (total)	0.99	µg/L
3/20/2013	cobalt	< 1	µg/L
3/20/2013	molybdenum	< 1	µg/L
3/20/2013	strontium	96	µg/L
3/20/2013	vanadium	0.41	µg/L
3/20/2013	chromium-6	0.8	µg/L
3/20/2013	chlorate	< 20	µg/L
3/20/2013	1,4-dioxane	< 0.07	µg/L
3/20/2013	1,1-dichloroethane	< 0.03	µg/L
3/20/2013	1,2,3-trichloropropane	< 0.03	µg/L
3/20/2013	1,3-butadiene	< 0.1	µg/L
3/20/2013	bromochloromethane	< 0.06	µg/L
3/20/2013	bromomethane	< 0.2	µg/L
3/20/2013	chlorodifluoromethane	< 0.08	µg/L
3/20/2013	chloromethane	< 0.2	µg/L
3/20/2013	PFBS	< 0.09	µg/L
3/20/2013	PFHpA	< 0.01	µg/L
3/20/2013	PFHxS	< 0.03	µg/L
3/20/2013	PFNA	< 0.02	µg/L
3/20/2013	PFOA	< 0.02	µg/L
3/20/2013	PFOS	< 0.04	µg/L
6/12/2013	chromium (total)	0.49	µg/L
6/12/2013	cobalt	< 1	µg/L
6/12/2013	molybdenum	< 1	µg/L
6/12/2013	strontium	49	µg/L
6/12/2013	vanadium	0.28	µg/L
6/12/2013	chromium-6	0.38	µg/L
6/12/2013	chlorate	< 20	µg/L
6/12/2013	1,4-dioxane	< 0.07	µg/L
6/12/2013	1,1-dichloroethane	< 0.03	µg/L
6/12/2013	1,2,3-trichloropropane	< 0.03	µg/L
6/12/2013	1,3-butadiene	< 0.1	µg/L
6/12/2013	bromochloromethane	< 0.06	µg/L
6/12/2013	bromomethane	< 0.2	µg/L
6/12/2013	chlorodifluoromethane	< 0.08	µg/L
6/12/2013	chloromethane	< 0.2	µg/L
6/12/2013	PFBS	< 0.09	µg/L
6/12/2013	PFHpA	< 0.01	µg/L
6/12/2013	PFHxS	< 0.03	µg/L
6/12/2013	PFNA	< 0.02	µg/L
6/12/2013	PFOA	< 0.02	µg/L
6/12/2013	PFOS	< 0.04	µg/L
9/11/2013	chromium (total)	0.38	µg/L

Unregulated Contaminant Monitoring Rule 3

WATER PLANT

Sample Date	Analyte Short Name	Value	Unit
9/11/2013	cobalt	< 1	µg/L
9/11/2013	molybdenum	< 1	µg/L
9/11/2013	strontium	78	µg/L
9/11/2013	vanadium	0.36	µg/L
9/11/2013	chromium-6	0.36	µg/L
9/11/2013	chlorate	< 20	µg/L
9/11/2013	1,4-dioxane	< 0.07	µg/L
9/11/2013	1,1-dichloroethane	< 0.03	µg/L
9/11/2013	1,2,3-trichloropropane	< 0.03	µg/L
9/11/2013	1,3-butadiene	< 0.1	µg/L
9/11/2013	bromochloromethane	< 0.06	µg/L
9/11/2013	bromomethane	< 0.2	µg/L
9/11/2013	chlorodifluoromethane	< 0.08	µg/L
9/11/2013	chloromethane	< 0.2	µg/L
9/11/2013	PFBS	< 0.09	µg/L
9/11/2013	PFHpA	< 0.01	µg/L
9/11/2013	PFHxS	< 0.03	µg/L
9/11/2013	PFNA	< 0.02	µg/L
9/11/2013	PFOA	< 0.02	µg/L
9/11/2013	PFOS	< 0.04	µg/L
12/16/2013	chromium (total)	0.39	µg/L
12/16/2013	cobalt	< 1	µg/L
12/16/2013	molybdenum	< 1	µg/L
12/16/2013	strontium	80	µg/L
12/16/2013	vanadium	< 0.2	µg/L
12/16/2013	chromium-6	0.33	µg/L
12/16/2013	chlorate	< 20	µg/L
12/16/2013	1,4-dioxane	< 0.07	µg/L
12/16/2013	1,1-dichloroethane	< 0.03	µg/L
12/16/2013	1,2,3-trichloropropane	< 0.03	µg/L
12/16/2013	1,3-butadiene	< 0.1	µg/L
12/16/2013	bromochloromethane	< 0.06	µg/L
12/16/2013	bromomethane	< 0.2	µg/L
12/16/2013	chlorodifluoromethane	< 0.08	µg/L
12/16/2013	chloromethane	< 0.2	µg/L
12/16/2013	PFBS	< 0.09	µg/L
12/16/2013	PFHpA	< 0.01	µg/L
12/16/2013	PFHxS	< 0.03	µg/L
12/16/2013	PFNA	< 0.02	µg/L
12/16/2013	PFOA	< 0.02	µg/L
12/16/2013	PFOS	< 0.04	µg/L

Unregulated Contaminant Monitoring Rule 3

REMOTE LOCATION

Sample Date	Analyte Short Name	Value	Unit
3/20/2013	chromium (total)	0.74	µg/L
3/20/2013	cobalt	< 1	µg/L
3/20/2013	molybdenum	< 1	µg/L
3/20/2013	strontium	77	µg/L
3/20/2013	vanadium	0.34	µg/L
3/20/2013	chromium-6	0.56	µg/L
3/20/2013	chlorate	< 20	µg/L
6/12/2013	chromium (total)	0.46	µg/L
6/12/2013	cobalt	< 1	µg/L
6/12/2013	molybdenum	< 1	µg/L
6/12/2013	strontium	55	µg/L
6/12/2013	vanadium	0.34	µg/L
6/12/2013	chromium-6	0.44	µg/L
6/12/2013	chlorate	< 20	µg/L
9/11/2013	chromium (total)	0.31	µg/L
9/11/2013	cobalt	< 1	µg/L
9/11/2013	molybdenum	< 1	µg/L
9/11/2013	strontium	51	µg/L
9/11/2013	vanadium	0.34	µg/L
9/11/2013	chromium-6	0.3	µg/L
9/11/2013	chlorate	< 20	µg/L
12/16/2013	chromium (total)	0.3	µg/L
12/16/2013	cobalt	< 1	µg/L
12/16/2013	molybdenum	< 1	µg/L
12/16/2013	strontium	54	µg/L
12/16/2013	vanadium	< 0.2	µg/L
12/16/2013	chromium-6	0.23	µg/L
12/16/2013	chlorate	< 20	µg/L

PUBLIC NOTICE

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Monitoring Requirements Not Met for Gloucester County WTP

We violated a drinking water monitoring requirement. Even though this was not an emergency, as our customers, you have a right to know what happened and what we did to correct the situation.

We are required to monitor our groundwater source for the presence of E. coli bacteria anytime a routine bacteriological sample collected from the distribution system is coliform positive. As a result of the coliform positive distribution sample collected on July 2, 2013, we were required to collect a sample directly from our groundwater source. We failed to complete this monitoring requirement for E. coli bacteria and therefore cannot be sure of the water quality of our groundwater source during this monitoring.

What This Means

There is nothing you need to do at this time. The table below lists the contaminant we did not properly test for, how often we are supposed to sample for it, how many samples we are supposed to collect, how many samples we collected, when samples should have been collected, and the date on which last sample was collected.

Contaminant	Required sampling	Number of samples collected	When all samples should have been collected	When samples were last collected
E. Coli bacteria	One triggered source water sample from the well	0	July 2013	August 28, 2013

Steps we are taking

We will ensure that all scheduled bacteriological samples are collected in a timely manner as required by the *Waterworks Regulations.* In addition, all sampling will be conducted in accordance with our approved Bacteriological Sample Siting Plan. A triggered source water sample has been collected on August 28, 2013 and tested negative for *E. Coli* bateria. Our waterworks is now back in compliance.

For more information, please contact Mr. William Fary at phone number (804) 693-4062.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by Gloucester County WTP.

State Water System ID #: 4073311 Date distributed: _____