

The staff of Salisbury Public Works and I are proud to present to our citizens the Water Quality Report. In the area of water, as a public utility, the City has seen several successes recently. They include:

- 1.9 billion gallons of water produced in 2012
- Paleo Water Plant filter re-bedding to increase efficiency
- Replacement of a Park Water Plant pump
- Construction of the Two Million Gallon Milford Street Elevated Storage Tank Project

The report being mailed to you outlines efforts and provides a summary of major water quality testing results. The bottom line is that your water supply meets or exceeds current state and federal requirements. And it tastes good, too! Please contact me with any questions you have about Salisbury's water supply.

James Ireton, Jr.  
Mayor of Salisbury, MD

# Quality Water Report

## The City of Salisbury, Maryland

We are pleased to present you with our **2012** Quality Water Report. This report is designed to educate and inform you about the quality water and services we deliver to you every day. Our constant goal is to provide the consumer with a consistent and reliable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. The following report is provided in compliance with federal regulations and will be provided annually. This report shows the quality of our finished drinking water and what that quality means.

The source of Salisbury's water supply is a shallow unconfined Coastal Plain aquifer, known as the Quaternary System. The city currently uses 11 wells from two Water Plants to obtain our drinking water. The two northernmost wells draw water from the deeper and highly productive paleochannel sediments within the Quaternary System.

An aquifer is a sort of underground reservoir, which is tapped by drilling wells and pumping the water to the surface for distribution. The earth between surface sources of contamination and these underground reservoirs help to purify the water before it actually reaches the aquifer, making it easier for us to treat before we pump it into the water distribution system. The water treatment process includes aeration, pre-chlorination, filtration, iron removal, disinfection, corrosion control and fluoride addition. The water storage towers are routinely removed from service to be cleaned and inspected. Our hydrant-flushing program operates on a routine basis to assist in providing a clear and clean product to our consumers.

Reliable drinking water is collected, treated, tested and delivered to your home and business 24 hours a day, seven days a week. The operations staff consists of one Water Treatment Class T4 Maryland certified Superintendent, six Water Treatment Class T4 Maryland certified Operators, two Water Treatment Class T4 Maryland temporary Operators, and one Water Distribution Operator. The operations staff are members and attend meetings and training seminars of the American Water Works Association (Chesapeake Section), Water and Wastewater Operators Association and the Maryland Rural Water Association. Together they have attended more than 100 hours of Continuing Education training in the past year in an effort to keep up-to-date with the latest in water treatment techniques, safety and homeland security. Their goal is to provide the consumer with the best water possible.

The Maryland Department of the Environment's Water Supply Program has conducted a Source Water Assessment for the City of Salisbury. The susceptibility analysis for Salisbury's water supply is based on a review of the water quality data, potential sources of contamination, aquifer characteristics, and well integrity. It was determined that all of Salisbury's wells are susceptible to contamination by volatile organic compounds, and synthetic organic compounds. In addition, Salisbury's Park well field is susceptible to contamination by nitrate. The water supply is not susceptible to other regulated inorganic compounds, and radiological or microbiological contaminants.

Everyone needs to help prevent contaminants from entering source waters in the first place. Protection of the watershed goes hand-in-hand with ensuring the appropriate treatment is

provided by your utility. For more information, the Wicomico County Public Library has a copy of Salisbury's Source Water Assessment.

All sources of drinking water are subject to potential contamination by substances that are naturally occurring or man made. These substances can be microbes, inorganic or organic chemicals and radioactive substances. All drinking water, including **bottled drinking** water, may be reasonably expected to contain at least small amounts of some contaminants. It's important to remember that the presence of these constituents does *not necessarily* pose a health risk. Maximum Contaminant Levels (MCL's) are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect. More information about contaminants and potential health effects can be obtained by calling the *Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791*.

The City of Salisbury Water Plants routinely monitor for constituents in your drinking water according to Federal and State laws. The following table, entitled "Annual Contaminants Monitoring Report", shows the results of our monitoring for the period of January 1 to December 31, 2012. In this table, you will find many terms and abbreviations you may not find familiar. To help you better understand these terms we've provided the following definitions:

*Maximum Contaminant Level* - The "Maximum Allowed" (MCL) is 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. MCLs are enforceable standards.

*Maximum Contaminant Level Goal* - The "Goal" (MCLG) is 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 and are non-enforceable public health goals.

*Non-Detects (ND)* - laboratory analysis indicates that the constituent is not present or not detectable with best available technology.

*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.

*Picocuries per liter (pCi/L)* - picocuries per liter is a measure of the radioactivity in water.

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

*Unregulated Contaminants* - (UNREG CONT.) are those for which EPA has not established drinking water standards. The purpose of monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

# ANNUAL CONTAMINANTS MONITORING REPORT CITY OF SALISBURY POTABLE WATER SYSTEM

## Regulated at the Park Water Treatment Plant

Contaminant	Violation Y/N	Level Detected Distribution System	Date Sampled	Unit Measurement	MCL or TT	MCL G	Likely Source of Contamination
<b>MICROBIOLOGICAL CONTAMINANTS</b>							
Total Coliform Bacteria	N	ND	monthly		presence of coliform bacteria in 5% of monthly samples.	zero	Naturally present in the environment.
<b>RADIOACTIVE CONTAMINANTS</b>							
Gross Alpha	N	2 pCi/L	11/28/12	pCi/L	15 pCi/L	none	Erosion of natural deposits
Radium 228	N	.8 pCi/L	11/18/12	PCi/L	5 pCi/L	None	Erosion of natural deposits.
<b>INORGANIC CONTAMINANTS</b>							
Barium	N	0.16 ppm	12/05/11	ppm	2 ppm	2 ppm	Discharge of drilling wastes; discharge from metal refineries; erosion of natural

Fluoride	N	0.36 ppm	05/12/11	ppm	4 ppm	4 ppm	deposits. Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Nitrate (as Nitrogen)	N	6.2 ppm	12/06/12	ppm	10 ppm	10 ppm	Runoff from fertilizer use; leaching from septic tanks, sewage, erosion of natural deposits.
Sodium	N	13.9 ppm	12/08/08	ppm	UNREG CONT.	UNREG CONT.	Naturally occurring or result from urban stormwater runoff.

**REGULATED IN THE DISTRIBUTION SYSTEM**

Contaminant	Violation Y/N	Level Detected Distribution System	Date Sampled	Unit Measurement	MCL	MCL G	Likely Source of Contamination
<b>INORGANIC CONTAMINANTS</b>							
Cu 90 Copper 90 <sup>th</sup> Percentile	N	.11 ppm	12/31/12	ppm	TT Action Level=1.3ppm	1.3 ppm	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
PB90 Lead 90 <sup>th</sup> Percentile	N	ND	12/31/12	ppm	TT Action level=0.015	zero	Corrosion of household plumbing systems, erosion of natural deposits

**Disinfection Byproducts**

TTHM (total trihalomethanes)	N	2.22 ppb	12/06/12	ppb	80 ppb	n/a	By-product of drinking water disinfection.
TTHM	N	2.20 ppb	8/09/12	ppb	80 ppb	n/a	
TTHM	N	2.00 ppb	5/10/12	ppb	80 ppb	n/a	
TTHM	N	1.20 ppb	2/15/12	ppb	80 ppb	n/a	
HAA5 (Haloacetic Acids)	N	ND	12/6/12	ppb	60 ppb	n/a	By-product of drinking water disinfection.
HAA5	N	16.05 ppb	8/9/12	ppb	60 ppb	n/a	
HAA 5	<del>N</del> n.	1.10 ppb	5/10/12	ppb	60 ppb	n/a	
HAA 5	<del>N</del> n.	ND	2/15/12	ppb	60 ppb	n/a	

**Regulated at the Paleo Water Treatment Plant Contaminant**

Contaminant	Violation Y/N	Level Detected Distribution System	Date Sampled	Unit Measurement	MCL	MCL G	Likely Source of Contamination
<b>MICROBIOLOGICAL CONTAMINANTS</b>							
Total Coliform Bacteria	N	ND	monthly		presence of coliform bacteria in 5% of monthly samples	Zero	Naturally present in the environment.
<b>RADIOACTIVE CONTAMINANTS</b>							
Gross Alpha	N	2 pCi/L	2/11/03	pCi/L	15 pCi/L	None	Erosion of natural

deposits.

**INORGANIC  
CONTAMINANTS**

Barium	N	.069 ppm	12/05/11	ppm	2 ppm	2 ppm	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Fluoride	N	.28 ppm	12/05/11	ppm	4 ppm	4 ppm	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Nitrate (as Nitrogen)	N	5.1 ppm	2/15/12	ppm	10 ppm	10 ppm	Runoff from fertilizer use; leaching from septic tanks, sewage, erosion of natural deposits
Sodium	N	30.8 ppm	12/08/08	ppm	UNREG CONT	UNR EG CON T	Naturally occurring or result from urban stormwater runoff.

Our system monitoring detected Total trihalomethanes (TTHM), considerably **below the MCL**. It is important to understand that the detection of this substance in the drinking water **does not** constitute a known health threat because it was found only at a level less than the

MCL and below the level, that EPA currently feels may constitute a health threat. Some people who drink water containing trihalomethanes in excess of the MCL over many years experience problems with their liver, kidneys, or central nervous systems, and may have increased risk of getting cancer.

The table shows that our system had no problems with Total Coliform Bacteria this year. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. The Total Coliform Rule requires water systems to meet a stricter limit for coliform bacteria. Our city lab runs 31 total coliform samples per month. We have not experienced any problems in 2012 and we do not anticipate any problems with coliform bacteria.

Nitrates were detected in our groundwater **below the MCL**. Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six 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.

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 City of Salisbury 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 drinking 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 EPA Safe Drinking Water Hotline at 1-800-426-4791 or at <http://www.epa.gov/safewater/lead>.

The table also shows that all of the contaminants, which were monitored in accordance with State and Federal laws, were of levels less than the MCL and below the level, that EPA currently feels may constitute a health threat. EPA believes the water is safe at these levels.

### **Non-Detected Contaminants**

Following is a list of potential drinking water contaminants the City of Salisbury is required to test for, but which **have not been detected "at any level"** in the water supply. The City is only required to provide information on those contaminants it has detected in the finished water supply, but is providing the complete list in order to inform its customers about the extent of testing that is done to their water supply.

#### **Tested in 2010**

Endrin, Hexachlorobenzene (HCB), Benzo(a)Pyrene, Pentachlorophenol, Aldrin, Dicamba, Metribuzin (Sencor), Chlordane, BHC-Gamma (Lindane), Methoxychlor, Di (2-Ethylhexyl) phthalate, Di (2-Ethylhexyl) Adipate, Simazine, Picloram, Dinoseb, Hexachlorocyclopentadiene, Metolachlor, Atrazine, Alachlor (Lasso), Heptachlor, Heptachlor Epoxide, Butachlor (Machete), Propachlor (Ramrod), 2,4-D, 2,4,5-TP (Silvex), 2,4,5-T, Carbaryl, Methomyl, Dalapon, Oxamyl (Vydate), Aldicarb Sulfoxide, Aldicarb Sulfone, Carbofuran, Aldicarb, 3-Hydroxycarbofuran, and Ethylene Dibromide (EDB), 1,2-Dibromo-3-chloropropane, Dieldrin.

## Tested in 2012

P-Isopropyltoluene, Chloromethane, Dichlorodifluoromethane, Bromomethane, Chloroethane, Trichlorofluoromethane, Hexachlorobutadiene, Naphthalene, 1,2,4-Trichlorobenzene, Cis-1, 2-Dichloroethylene, Dibromomethane, 1,1-Dichloropropene, 1,3-Dichloropropane, 1,3-Dichloropropene, 2,2-Dichloropropane, 1,2,4-Trimethylbenzene, 1,2,3-Trichlorobenzene, N-Butylbenzene, 1,3,5-Trimethylbenzene, Tert-Butylbenzene, Sec-Butylbenzene, Bromochloromethane, Dibromochloromethane, Xylenes-Total, P-Xylene, Methylene Chloride, o-Chlorotoluene, p-Chlorotoluene, m-Dichlorobenzene, o-Dichlorobenzene, p-Dichlorobenzene, Vinyl Chloride, 1,1-Dichloroethane, Trans-1,2-Dichloroethylene, 1,2-Dichloroethane, Carbon Tetrachloride, Trichloroethylene, 1,1,2-Trichloroethane, 1,1,1,2-Tetrachloroethane, Tetrachloroethylene, 1,1,2,2-Tetrachloroethane, Monochlorobenzene, Benzene, Toluene, Ethylbenzene, Bromobenzene, Isopropylbenzene, M-Xylene, Styrene, O-Xylene, n-Propylbenzene, 1,1,1-Trichloroethane, Methyl-tert-butyl-ether, 1,2-Dichloropropane, 1,2,3-Trichloropropane, 1,1-Dichloroethylene, Bromodichloromethane.

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).

The City of Salisbury reduced the Fluoride level in the finished drinking water from a 1.0 mg/l to 0.7 mg/l in January 2012. The decrease was recommended by the Environmental Protection Agency, Department of Health and Human Services and the Maryland Department of the Environment. The recommended level of fluoride in drinking water can be set at the lowest end of the current optimal range to prevent tooth decay (0.7 mg/l), and EPA is initiating review of the maximum amount of fluoride allowed in drinking water (4.0 mg/l). These actions will maximize the health benefits of water fluoridation to Americans by continuing to prevent tooth decay while reducing the possibility of children receiving too much fluoride.

You may see our staff at local events around town promoting water conservation. Take time to visit our booth and ask questions. Remember to use water wisely and help us work together to protect this precious resource. If you would like to receive a water conservation packet with water saving tips in the home, garden, or for children, please contact the water plant at 410-548-3199 and one can be mailed to your home.

We are committed to continuing to provide an excellent service that our customers can take for granted. Help us to provide your family with clean, quality water by participating in official City of Salisbury water sampling programs. If you have any questions about this report or concerning your drinking water, please contact **Cori Cameron at the City of Salisbury Water Plant at 410-548-3199.**