

ANNE ARUNDEL COUNTY DRINKING WATER QUALITY REPORT

2017

Exceptional Water for You!

Anne Arundel County Department of Public Works' Bureau of Utility Operations is proud to present the 2017 Drinking Water Quality Report. In this report you will find information about the sources, treatment and delivery of your drinking water. Additionally, this report contains important information about the quality of your drinking water. Inside you will find the results of water quality analysis performed throughout the year.

Anne Arundel County is committed to providing its citizens with drinking water that meets or exceeds all state and federal drinking water standards. As these standards and regulations evolve, we strive to adopt new and better methods to deliver the best quality drinking water in the most cost-effective manner. We encourage you to take the time to read this report to learn more about the quality of your drinking water.



Additional Storage for the Pasadena Area

Construction of the Ft. Smallwood Elevated Storage Tank (EST) is underway. This addition to our distribution system will provide 2 million gallons of storage for the Pasadena area. It is one of 8 tanks supplying water to the areas of Arnold, Glen Burnie and Pasadena. This tank is part of an ongoing mission to supply citizens throughout the County with ample drinking water.

The Ft. Smallwood EST was built using the latest in composite technology. This provides sturdy and long lasting construction with a more aesthetically pleasing look. Construction will be finished soon, and the tank will be officially placed into service.

Contact DPW:

Visit us and learn more online at:
www.DPWandYou.com

24 Hour Emergency Hotline 410-222-8400

(from South County) 410-451-4118

Billing Office 410-222-1144

DPW Customer Relations 410-222-7582

DPW General Information 410-222-7500



Information about your Water System:

In addition to this annual report, information about your water system is provided in "Customer Updates" which are included in your utility bill, as well as comprehensive information on the DPW website. Additional informational materials may be obtained from the Public Works' Customer Relations staff by calling 410-222-7582.

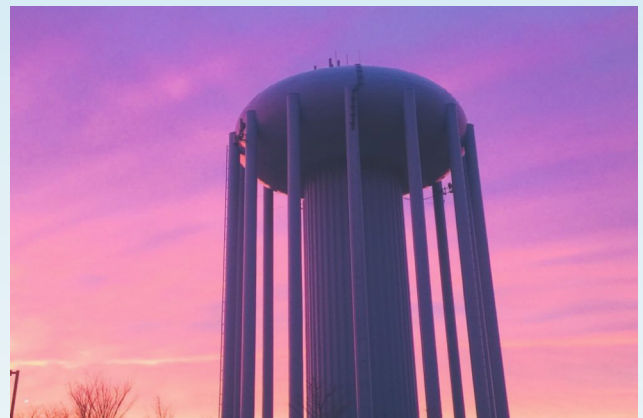
All capital projects, which include improvements and/or additions to the water supply system, are included in the annual budget presented by the County Executive to the County Council each spring. Public hearings are held within the County and public comment is welcome.

The County also maintains a "Ten Year Master Plan for Water and Sewage Systems". The County Budget and Master Plan can be reviewed at any branch of the County library system. For information on the Master Plan, contact the Long Range Planning Section, Office of Planning and Zoning at 410-222-7432.

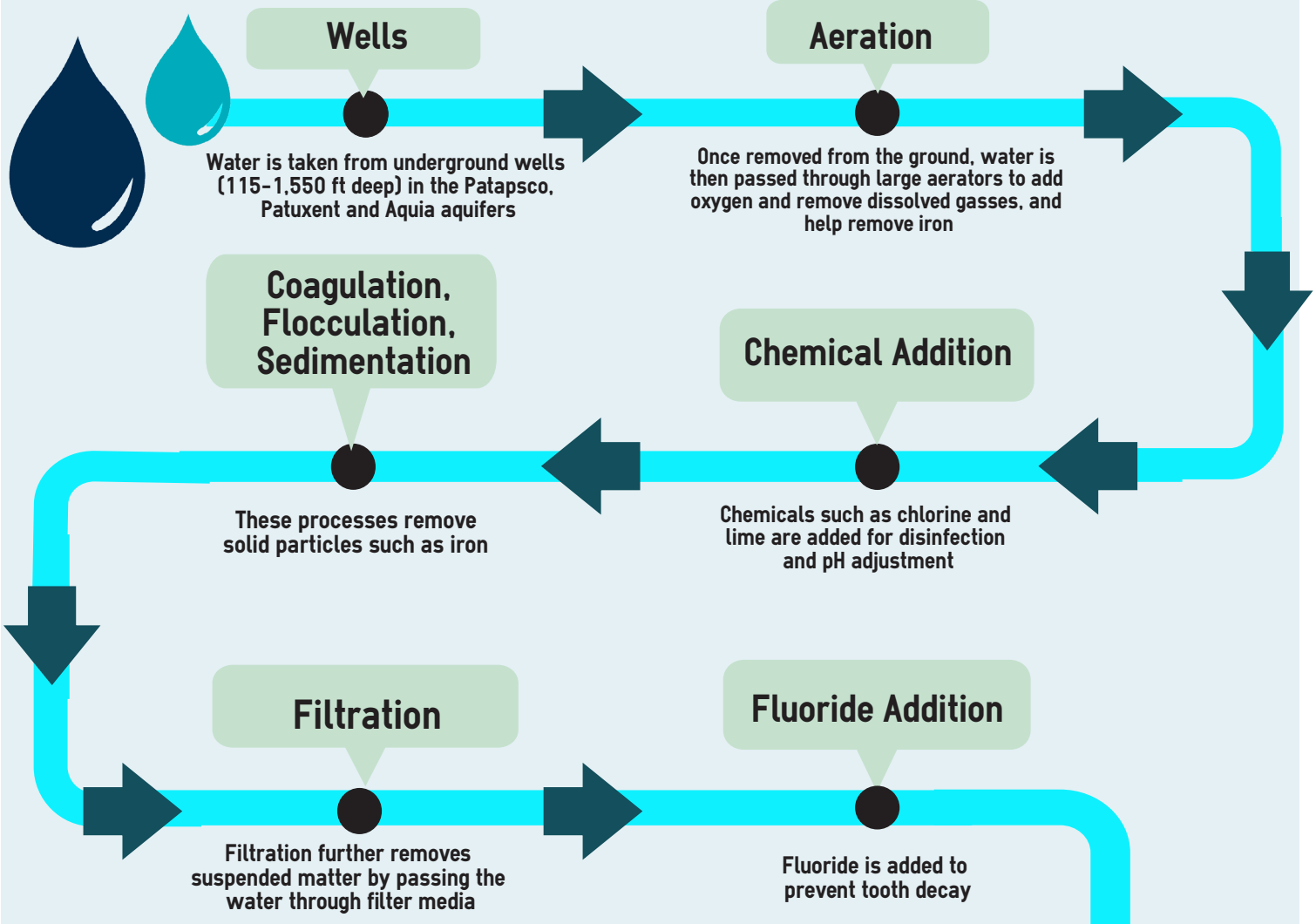
EN ESPAÑOL: ESTE INFORME CONTIENE INFORMACIÓN MUY IMPORTANTE. TRADUSCALO O HABLE CON UN AMIGO QUIEN LO ENTIENDA BIEN.

Definition of Terms Used in the Water Quality Data Table:

- **Maximum Contaminant Level (MCL):** Highest level of a contaminant allowed in drinking water. MCL's are set as close to MCLG's as feasible using the best available treatment technology.
- **Maximum Contaminant Level Goal (MCLG):** Level of contaminant in drinking water below which there is no known or expected risk to health, MCLG's allow for a margin of safety.
- **Action Level:** Concentration of a contaminant which, if exceeded, triggers a treatment or other requirement which a water system must follow.
- **N/A:** Not applicable
- **ND:** Not detected at testing limit
- **NT:** Not tested
- **ppm:** parts per million or milligrams per liter. One ppm is the equivalent of 1 cent in \$10,000 or one minute in two years.
- **ppb:** Parts per billion or micrograms per liter. One ppb is the equivalent to 1 cent in \$10,000,000 or one minute in two thousand years.
- **pCi/l:** Parts per trillion or picocuries per liter (a measure of radiation)
- **NTU:** Nephelometric turbidity units (a measure of water clarity)
- **TT:** Treatment technique, a required process intended to reduce the level of a contaminant in drinking water.



THE WATER TREATMENT PROCESS



Did You Know?

Anne Arundel County's distribution system consists of over 1,400 miles of water mains.



Distribution

Finished water enters the distribution system and is delivered to homes and businesses all over the County

DRINKING WATER QUALITY DATA --- 2017

PARAMETER	UNITS	MAXIMUM CONTAMINANT LEVELS		GLEN BURNIE / BALTIMORE CITY #2 ZONE		PASADENA / BALTIMORE CITY #1 ZONE		BROADNECK ZONE		CROFTON / ODENTON ZONE		BROAD CREEK ZONE		GIBSON ISLAND ZONE		HERALD HARBOR ZONE		ROSE HAVEN ZONE		NOTES	TYPICAL SOURCES OF CONTAMINATION
		MCL	MCLG	highest level	range of detection	highest level	range of detection	highest level	range of detection	highest level	range of detection	highest level	range of detection	highest level	range of detection	highest level	range of detection	highest level	range of detection		
Microbiological Contaminants																					
	#	< 5% positive	0% positive	N/A	2.8%	N/A	2.8%	N/A	0%	N/A	0%	N/A	0%	N/A	0%	N/A	0%	N/A	0%	1	Naturally present in the environment.
Turbidity	NTU	TT	N/A	0.22	100%	0.09	100%	NT	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	2	Soil run-off.
Radioactive Contaminants																					
Alpha Emitters	pCi/l	15	0	5.3	ND - 5.3	ND	N/A	2.4	1.4 - 2.4	1.1	1.1 - 1.1	NT	N/A	NT	N/A	NT	N/A	NT	N/A	3, 6	Erosion and/or decay of natural deposits.
Combined Radium	pCi/l	5	0	3.4	ND - 3.4	ND	N/A	1.7	1.3 - 1.7	NT	N/A	NT	N/A	0.8	0.8 - 0.8	NT	N/A	NT	N/A	3, 6	Erosion and/or decay of natural deposits.
Inorganic Contaminants																					
Arsenic	ppb	10	0	ND	N/A	ND	N/A	ND	N/A	ND	N/A	ND	N/A	3	3 - 3	ND	N/A	1	1 - 1	3, 6	Erosion and/or decay of natural deposits.
Antimony	ppb	6	0	ND	N/A	ND	N/A	ND	N/A	ND	N/A	ND	N/A	1	1 - 1	ND	N/A	ND	N/A	6	Discharge from petroleum factories.
Barium	ppb	2000	2000	17	10 - 17	30	30 - 30	67	7 - 67	18	18 - 18	13	11 - 13	8	8 - 8	ND	ND - ND	70	70 - 70	6	Erosion and/or decay of natural deposits; discharge of drilling wastes; discharge from metal refineries.
Cadmium	ppb	5	5	3	ND - 3	ND	N/A	ND	N/A	ND	N/A	ND	N/A	ND	N/A	ND	N/A	ND	N/A	6	Erosion and/or decay of natural deposits; corrosion of household plumbing systems, discharge from metal refineries.
Chromium-Total	ppb	100	0	ND	N/A	0.3	0.3 - 0.3	ND	N/A	ND	N/A	ND	N/A	ND	N/A	ND	N/A	2	2 - 2	7	Paint and welding industry
Fluoride	ppm	4	4	1.4	ND - 1.4	1.3	ND - 1.3	1.0	ND - 1.0	1.2	ND - 1.2	1.5	ND - 1.5	1.0	ND - 1.0	1.0	ND - 1.0	1.1	ND - 1.1		Erosion and/or decay of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Nitrate	ppm	10	10	1.1	ND - 1.1	2	1.9 - 1.9	ND	N/A	ND	N/A	ND	N/A	ND	N/A	ND	N/A	ND	N/A		Erosion and/or decay of natural deposits; leaching from septic tanks; sewage.
Lead (A)	ppb	AL = 15	0	ND	ND - 3	ND	ND - 3	ND	ND - 3	ND	ND - ND	1.6	ND - 8.6	ND	ND - ND	ND	ND - ND	3.7	ND - 6.3	5, 6	Erosion and/or decay of natural deposits; corrosion of household plumbing systems.
Copper (B)	ppb	AL = 1300	1300	43	ND - 130	43	ND - 130	43	ND - 130	70	ND - 70	60	ND - 562	ND	ND - ND	ND	ND - 50	210	1 - 450	5, 6	Erosion and/or decay of natural deposits; corrosion of household plumbing systems.
Disinfection By-Products																					
Total Trihalomethanes (C)	ppb	80	N/A	42	0.7 - 45.2	23.2	0.9 - 48.6	ND	N/A	7.0	ND - 9.1	16.2	ND - 9.5	3.6	3.6 - 3.6	3.0	3.0 - 3.0	35.6	35.6 - 35.6	4, 6	By-product of drinking water treatment processes.
Total Haloacetic Acids (D)	ppb	60	N/A	24	ND - 9.1	4.7	ND - 12.5	ND	N/A	4.0	ND - 1.8	4.6	ND - 5.0	0.9	0.9 - 0.9	0.7	0.7 - 0.7	17.4	17.4 - 17.4	4, 6	By-product of drinking water treatment processes.
Volatile Organic Contaminants / Synthetic Organic Contaminants																					
Ethylbenzene	ppb	700	0	NT	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	0.9	0.5 - 0.9	6	Used in the petrochemical industry & gasoline
Toluene	ppb	1000	0	NT	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	0.7	0.7 - 0.7	6	Discharge from petroleum factories.
Tetrachloroethylene	ppb	5	0	NT	N/A	2	2 - 2	NT	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	6	Leaching from pvc pipes; discharge from factories and dry cleaners.
Unregulated Contaminants																					
Methyl-tert-butyl-ether	ppb	N/A	N/A	NT	N/A	0.6	0.6 - 0.6	NT	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A		Octane enhancer of fuel products.
Sodium	ppm	N/A	N/A	3.6	2.6 - 3.6	6.9	6.9 - 6.9	10	2.4 - 10	9.4	0.4 - 9.0	5.5	4.5 - 5.5	3.5	3.5 - 3.5	2.6	2.6 - 2.6	8.2	8.2 - 8.2	6, 7	Naturally present in the environment; by-product of drinking water treatment processes.
Nickel	ppb	N/A	N/A	17	7 - 17	19	19 - 19	ND	N/A	9	ND - 9.0	ND	N/A	ND	ND - ND	ND	N/A	ND	N/A	6	Erosion and/or decay of natural deposits; discharge of drilling wastes; discharge from metal refineries.
Chlorate	ppb	N/A	N/A	310	71 - 310	190	190 - 190	240	140 - 240	590	190 - 590	180	160 - 180	NT	N/A	NT	N/A	NT	N/A	7	By-product of drinking water treatment processes; discharge from manufacturing industry.
Cobalt	ppb	N/A	N/A	9.9	ND - 9.9	4	4 - 4	1.6	ND - 1.6	ND	N/A	ND	N/A	NT	N/A	NT	N/A	NT	N/A	7	Erosion and/or decay of natural deposits.
1,1-Dichloroethane	ppb	N/A	N/A	0.1	0.1 - 0.1	ND	N/A	ND	NA	ND	NA	ND	NA	NT	N/A	NT	N/A	NT	N/A	7	Discharge from factories and dry cleaners.
Strontium	ppb	N/A	N/A	76	13 - 76	47	47 - 47	68	12 - 68	34	17 - 34	20	18 - 20	NT	N/A	NT	N/A	NT	N/A	7	Erosion and/or decay of natural deposits.
Vanadium	ppb	N/A	N/A	1.4	ND - 1.4	0.2	0.2 - 0.2	2.2	ND - 2.2	0.4	0.2 - 0.4	ND	NA	NT	N/A	NT	N/A	NT	N/A	7	Erosion and/or decay of natural deposits.
Chloromethane	ppb	N/A	N/A	NT	N/A	2.2	2.2 - 2.2	NT	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	6	Nature, petroleum industry and refrigerant.
o-Xylene	ppb	N/A	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	1.5	0.8 - 1.5	6	Plastic industry
m,p-Xylene	ppb	N/A	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	2.3	1.5 - 2.3	6	Plastic industry, assist with manufacturing plastic bottles.

- (A) MDE requires that the 90th percentile result for lead be recorded in the highest level column.
- (B) MDE requires that the 90th percentile result for copper be recorded in the highest level column.
- (C) MDE requires that the Locational Running Annual Average (LRAA) for Total Trihalomethanes be recorded in the highest level column.
- (D) MDE requires that the Locational Running Annual Average (LRAA) for Total Haloacetic Acids be recorded in the highest level column.

Notes for the Data Table:

Note 1: The MCL and the MCLG for Total Coliforms is based on the percentage of positive coliform results in a given month. The MCL requires that less than or equal to 5% of the samples test positive. The percentage of positive sample results is shown in the range of detection column.

Note 2: Turbidity standards are based on a treatment technique and are only applicable to systems using surface water as a source. The maximum Turbidity allowed in a given month is 1 NTU, and 95% of the results must be less than 0.3 NTU. This % is indicated in the range of detection column.

Note 3: Compliance with the MCL for these contaminants is based on the average of four quarterly samples.

Note 4: The range of detection numbers represents individual analysis results, not an average. There were no MCL violations at any facility.

Note 5: Compliance with the MCL for Lead and Copper is based on the 90th percentile value of all analysis results. The number of sample results exceeding the MCL for these parameters is indicated in the range of detection column.

Note 6: Testing for some parameters is not required on an annual basis. Some results reflect the most recent testing between 2013 and 2017.

Note 7: Testing required by EPA to determine if an MCL/health standard should be set.

General Notes: *The drinking water was analyzed for more than 145 other parameters. These contaminants do not appear in the data table because they were not detected.

Important Information from the Environmental Protection Agency

Radium is a naturally occurring substance which, if exposed to acidic conditions (low pH), can leach into groundwater. The EPA has set maximum contaminant levels for radium that are based on lifetime exposure. The County and State monitor the public water system in accordance with these regulations. Some people who drink water containing combined radium in excess of the MCL over many years may have an increased risk of getting cancer. However, the risk is very small.

Radon is a naturally occurring radioactive gas that may cause cancer, and may be found in drinking water and indoor air. The EPA advises that some people who are exposed to radon in drinking water may have an increased risk of cancer over the course of their lifetime, especially lung cancer. Radon in soil under homes is the biggest source of radon in indoor air, and a greater risk of lung cancer than radon in drinking water. For more information, call EPA's Radon Hotline (800-SOS-RADON) or visit www.epa.gov/radon. Testing has indicated that radon is not present in the public water system at concentrations which would cause any health concerns.

Cryptosporidium is a microscopic parasite that may cause diarrhea, fever and gastroenteric disorders. Cryptosporidium may be found in drinking water that comes from surface water, not from underground aquifers. Baltimore City uses reservoirs and monitors its raw water sources for cryptosporidium. Samples were analyzed and determined to be free of viable organisms. The City protects its reservoirs to prevent these organisms from entering the water supply.

Arsenic is a naturally occurring substance, which, if contained in drinking water, could increase the risk of serious health concerns such as circulatory problems. The current EPA level for this contaminant is 0.01 mg/l. Testing has indicated that there is no arsenic in the public water system.

Lead, when in elevated levels, can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials associated with service lines and home plumbing. The County is responsible for providing high quality drinking water, but cannot control the materials used in plumbing components. Testing shows that lead is not present in the public drinking water system at concentrations that would cause health concerns. Information on lead in drinking water, testing methods, and steps to minimize exposure is available from the EPA Safe Drinking Water Hotline at 1-800-426-4791 or at <http://epa.gov/safewater/lead>.

Source Water Assessment is a process for evaluating the vulnerability to contamination of the source of a public drinking water supply. The assessment does not address the treatment or distribution aspects of the water system, which are covered under separate provisions of the Safe Drinking Water Act. The Maryland Department of the Environment is the lead agency in developing these Assessments, which have been completed for all of the County's water systems.

Drinking water, including bottled water, may reasonably be expected to contain 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 at 1-800-426-4791 or by visiting: www.epa.gov/safewater.

Some people are more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those with cancer, undergoing chemotherapy, those having 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.

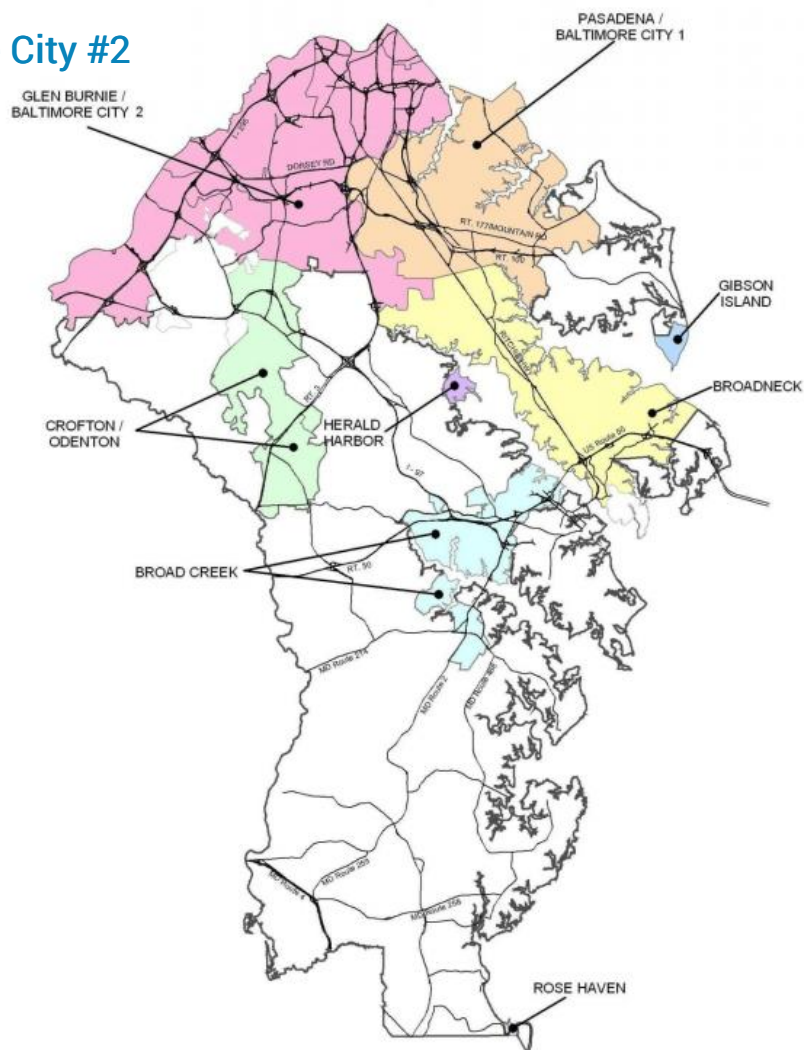
The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive materials, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- **MICROBIAL CONTAMINANTS:** Include viruses and bacteria, which may come from waste treatment plants, septic systems, agricultural livestock operations and wildlife.
- **INORGANIC CONTAMINANTS:** Include salts and metals, which can be naturally occurring or result from urban storm runoff, industrial or domestic discharges, oil and gas production, mining or farming.
- **PESTICIDES & HERBICIDES:** From a variety of sources such as agriculture, stormwater runoff and residential uses.
- **ORGANIC CHEMICAL CONTAMINANTS:** Include synthetic and volatile organic chemicals, which are by products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.
- **RADIOACTIVE CONTAMINANTS:** Naturally occurring or the result of oil and gas production or mining activities.

Anne Arundel County Water Service Areas

The County's public water system is divided into 8 water service areas, as is illustrated on the map below. All of the service areas receive drinking water produced at County water treatment facilities. Two of the service areas may also receive water that is purchased from Baltimore City. The City uses surface water from reservoirs as a supply source. The County only uses ground water from wells as a supply source. Like the majority of utilities in the United States, the County uses a multi-step treatment process to ensure that the water delivered to our citizens is of the highest quality.

- Pasadena/Baltimore City #1
- Glen Burnie/Baltimore City #2
- Broadneck
- Crofton/Odenton
- Broad Creek
- Gibson Island
- Herald Harbor
- Rose Haven





M A R Y L A N D

Department of Public Works

County Executive Steven Schuh

*Anne Arundel County
Department of Public Works
Christopher Phipps, Director
Heritage Office Complex
2662 Riva Road
Annapolis, MD 21401-7374*

*Contact us:
Phone: 410-222-7582
Fax: 410-222-4374
E-mail: pwcust00@aacounty.org
Web site: www.aacounty.org/dpw*

2017 Drinking Water Quality Report

A Message from the County Executive
June 2018

Dear Residents,

I am pleased to present the 2017 Drinking Water Quality Report. The drinking water produced and delivered to each of your homes is clean and safe for consumption. Our number one goal is the safety of Anne Arundel County residents. I encourage you to review this report and the essential information regarding the thousands of water quality tests administered by the Department of Public Works Bureau of Utility Operations in the 2017 calendar year.



Over the course of the past year, Anne Arundel County produced, treated, and delivered over 12.05 billion gallons of drinking water. I urge the citizens of Anne Arundel County to learn more about the important work taking place each day by our DPW employees. My fellow colleagues at the Department of Public Works make it a priority to manage and maintain our public water infrastructure. These continued efforts protect our public safety, protect this valuable resource, and enable us to continue our long-standing record of exceeding all Federal standards for drinking water quality and safety.

Sincerely,

County Executive Steven Schuh

Printed on recycled paper...
Please recycle this report...

