

Presorted Standard
U.S. Postage
PAID
Frederick, Md 21701
Permit #223

Janet S. Owens
County Executive

Anne Arundel County
Department of Public Works
Ronald E. Bowen, Director
Heritage Office Complex
2662 Riva Road
Annapolis, Md. 21401-7374

Contact us:
410-222-7500
Fax: 410-222-4374
E-mail: customer@clark.net
Web site: www.aadpw.org



Printed on 30% Post Consumer Recycled Paper
Please recycle

2001 Drinking Water Quality Report
*Water is a precious resource.
Please use it wisely.*

Message from the County Executive May, 2002

Dear Anne Arundel County Water Customers,

Few commodities are as precious and vital to the public as an abundant supply of clean, safe drinking water. So it is with great pleasure that I bring you the 2001 Drinking Water Quality Report for your public water system. This report brings to you a synopsis of thousands of tests and analyses on more than 12.5 billion gallons of water produced and distributed by our dedicated Department of Public Works' Bureau of Utility Operations' employees. Their dedication is reflected in each and every drop of drinking water that flows from your taps.

We have much to be proud of. Once again this year our public water met all state and federal standards. Your water utility was also chosen by the Association of Metropolitan Water Agencies (AMWA) as one of only 24 utilities nationwide to win the Gold Award for competitiveness. The AMWA Gold Award recognition is presented only to the best-operated water systems in the nation.

Although we are indeed blessed to have an abundant supply of clean, safe drinking water, we must be diligent in protecting those supplies and planning for the needs of future generations. I will continue to champion the infrastructure needed to protect the future of our water system. I also encourage you to use water wisely and to teach your children the importance of this precious resource.

The Department of Public Works and I are proud to present this information about your water system to you. This report is a reflection of the professionalism of our employees and their commitment to providing you the highest quality water.



Sincerely,

Janet S. Owens
County Executive

2001 Drinking Water Quality Report

Anne Arundel County Department of Public Works

A commitment to excellence...



Ordnance Road Water Booster Station

The Department of Public Works, Bureau of Utility Operations is pleased to announce that the drinking water provided to the citizens of Anne Arundel County in 2001 met all state and federal standards. Few items are as precious or valuable as an abundant supply of clean, safe, drinking water and we are proud to bring this outstanding product to you. This annual report brings you the results of our water quality tests performed throughout the year 2001, as well as information on the sources of your water supply, contaminant sources, health related issues, and who to contact for more information.

A Leader in the Industry

In 2001 DPW's Bureau of Utility Operations was one of 24 utilities nationwide to win the Association of Metropolitan Water Agencies (AMWA) Gold Award for competitiveness. The utilities chosen for this honor were described by the AMWA as "in the top ranks of the nation's best-operated water systems."

Improvements

The Department of Public Works is continually planning for the future and putting into place the infrastructure that will ensure our water system meets the demands of future generations. Capital projects are currently focusing on strengthening the transmission system in two major areas—the east and west sides of the county. When completed, if there is a problem or interruption in the system anywhere on

the east or west side of the county, the new transmission main will allow water to be moved throughout the entire system as needed.

System Security

In view of our changing world situation, the Department of Public Works began reviewing the water system's physical security and emergency response plans in the year 2001. The system and plans are currently being upgraded to ensure we can continue to meet our goal of delivering safe drinking water in sufficient quantity to meet all of our customers' needs.

Drought Response/Water Conservation

During the winter of 2001 - 2002, Maryland suffered a drought and consumers were encouraged to conserve water. The Department of Public Works is a strong proponent of water conservation at all times and educates customers on a continual basis through utility bill inserts, the DPW web site, in the public schools and through the distribution of other printed materials.

Testing

Water produced by the Bureau of Utility Operations is tested at our state certified laboratory. In addition, some complex water quality analyses are performed by the state of Maryland or by private laboratories. These tests are performed to ensure that superior quality drinking water is consistently delivered to our customers. In

2001 over 12,900 samples were collected and 47,000 analyses performed for approximately 130 parameters. In this report we summarize for you the results of these tests, which we perform throughout the year to measure for both regulated and unregulated contaminants.

Sources

In 2001 Anne Arundel County distributed over 12.5 billion gallons of water to about 355,000 consumers. Over 9.4 billion gallons of this water was treated and distributed after being taken from deep wells throughout the county. About 3.1 billion gallons were purchased from Baltimore City. Anne Arundel County draws groundwater from numerous wells in the Patuxent and Patapsco aquifers. The wells range from a minimum of 221 feet to over 1000 feet deep. Baltimore City treats and distributes surface water taken from reservoirs.

Treatment

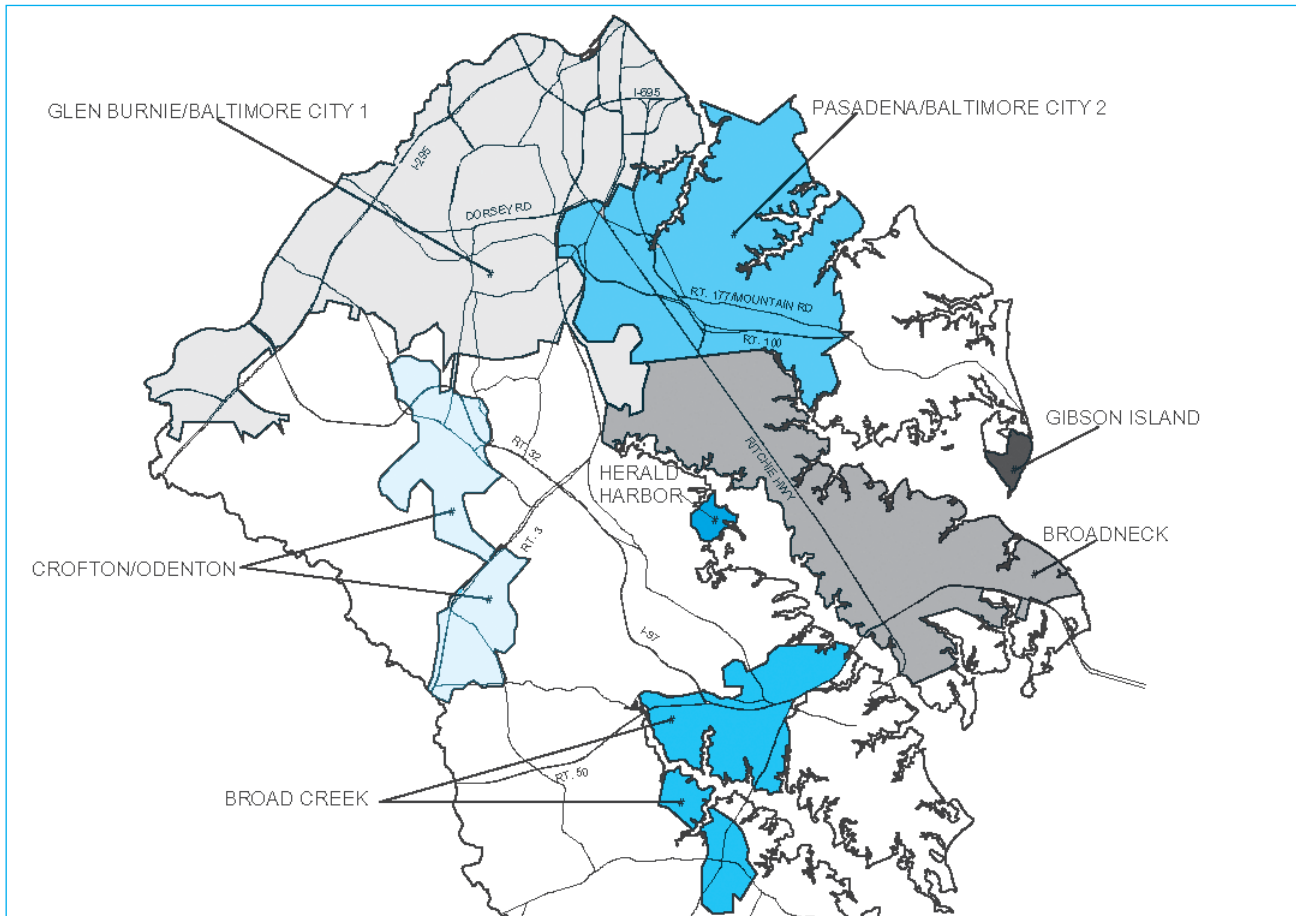
Our treatment facilities treat source water utilizing a series of processes beginning with aeration for oxidation; chlorine addition for disinfection; lime addition for pH adjustment; sedimentation for iron and particle removal; filtration for iron and particle removal, and fluoride addition to prevent dental decay.

There are seven water service areas in the county as indicated in the map on page 2 of this report.



Millersville Elevated Storage Tank

Anne Arundel County Water Service Areas



Terms and Definitions Used in Water Quality Data Table

- Maximum Contaminant Level (MCL)** - highest level of a contaminant allowed in drinking water. MCLs are set as close to MCLGs 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. MCLGs 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 detectable at testing limit
- NT** - not tested
- ppm** - parts per million or milligrams per liter. One part per million is the equivalent of 1 cent in \$10,000 or one minute in two years.
- ppb** - parts per billion or micrograms per liter. One part per billion is the equivalent of 1 cent in \$10,000,000 or one minute in two thousand years.
- pCi/l** - picocuries per liter (a measure of radiation)
- mrem/s** - millirems per liter (a measure of radiation)
- NTU** - nephelometric turbidity units (a measure of clarity)
- TT** - treatment technique; a required process intended to reduce the level of a contaminant in drinking water

DRINKING WATER QUALITY

PARAMETER	(units)	MAXIMUM CONTAMINANT LEVELS		GLEN BURNIE/ BALTIMORE CITY #1 ZONE		PASADENA/ BALTIMORE CITY #2 ZONE		BROADNECK ZONE		CROFTON/ODENTON
		MCL	MCLG	highest level	range of detection	highest level	range of detection	highest level	range of direction	highest level
Microbiological Contaminants										
Total Coliforms	(#)	5% Positive	0 % Positive	0%	N/A	0%	N/A	0%	N/A	0%
Turbidity	(NTU)	TT	N/A	0.4	100%	0.4	100%	NT	N/A	NT
Radioactive Contaminants										
Alpha Emitters	(pCi/l)	15	N/A	2.8	0.7 - 5.0	5.9	1.0 - 11.6	1.7	ND - 13.7	ND
Beta Emitters	(pCi/l)	50	N/A	3	3 - 3	3	3 - 3	NT	N/A	1
Combined Radium	(pCi/l)	5	N/A	2.6	1.5 - 2.6	4.9	3.3 - 6.0	2.0	0.2 - 2.4	1.0
Inorganic Contaminants										
Barium	(ppm)	2	2	0.020	0.007 - 0.020	0.030	0.018 - 0.030	0.022	0.003 - 0.022	NT
Fluoride	(ppm)	4.0	4.0	1.29	0.10 - 1.29	2.18	0.07 - 2.18	1.57	0.41 - 1.57	1.17
Nitrate	(ppm)	10	10	1.69	0.40 - 1.69	2.56	1.02 - 2.56	0.12	ND - 0.12	ND
Mercury	(ppb)	2	2	ND	N/A	ND	N/A	0.0003	0.0003 - 0.0003	ND
Lead	(ppb)	AL = 15	0	ND	1	ND	1	ND	1	ND
Copper	(ppm)	AL = 1.3	1.3	0.1	0	0.1	0	0.1	0	0.1
Disinfection By-Products										
Total Trihalomethanes	(ppb)	100	N/A	21	ND - 68	44	22 - 100	ND	N/A	3
Volatile Organic Contaminants / Synthetic Organic Contaminants										
Tetrachloroethene	(ppb)	5	0	ND	N/A	3.2	ND - 3.2	NT	N/A	ND
Dibromochloropropane	(ppb)	0.2	0	ND	N/A	0.05	ND - 0.05	NT	N/A	NT
2, 4-D	(ppb)	70	70	0.6	ND - 0.6	0.5	ND - 0.5	NT	N/A	NT
Picloram	(ppb)	500	500	4	ND - 4	3	ND - 3	NT	N/A	NT
Unregulated Contaminants										
Radon	(pCi/l)	N/A	N/A	35	35 - 35	130	25 - 130	NT	N/A	ND
Sodium	(ppm)	N/A	N/A	11.10	1.67 - 11.10	14.70	3.01 - 14.70	1.81	0.82 - 1.81	1.93
Sulfate	(ppm)	N/A	N/A	14.1	14.1 - 14.1	15.0	1.84 - 15.0	12.97	10.48 - 12.97	NT
Total Haloacetic Acids	(ppb)	N/A	N/A	39	10 - 56	34	7 - 57	NT	N/A	4

TABLE NOTES:

Note 1: The "MCL" and "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 5 NTU, and 95% of the results must be less than 0.5 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. The "range of detection" numbers represent individual analysis results, not an average. There were no MCL violations at any facility.

Note 4: 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.

QUALITY DATA — 2001

WATON/ WATON ZONE		BROAD CREEK ZONE		GIBSON ISLAND ZONE		HERALD HARBOR ZONE		NOTES	TYPICAL SOURCES OF CONTAMINATION
test	range of detection	highest level	range of detection	highest level	range of detection	highest level	range of detection		
	N/A	0%	N/A	0%	N/A	0%	N/A	1	Naturally present in the environment.
	N/A	NT	N/A	NT	N/A	NT	N/A	2	Soil run-off.
	N/A	NT	N/A	ND	N/A	ND	N/A	3, 5	Erosion and/or decay of natural deposits.
	1 - 1	NT	N/A	NT	N/A	2	2 - 2	3, 5, 9	Erosion and/or decay of natural deposits.
	0.6 - 1.0	NT	N/A	0.9	0.9 - 0.9	1.4	1.4 - 1.4	3, 5	Erosion and/or decay of natural deposits.
	N/A	0.012	0.012 - 0.012	0.005	0.005 - 0.005	0.006	0.006 - 0.006	5	Erosion and/or decay of natural deposits; discharge of drilling wastes; discharge from metal refineries.
	0.44 - 1.17	1.56	0.24 - 1.56	1.49	0.47 - 1.49	3.60	0.84 - 3.60	5	Erosion and/or decay of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
	N/A	ND	N/A	ND	N/A	ND	N/A		Erosion and/or decay of natural deposits; leaching from septic tanks; sewage.
	N/A	ND	N/A	ND	N/A	ND	N/A	5	Erosion and/or decay of natural deposits; discharge of drilling wastes; discharge from metal refineries.
	0	ND	1	6	0	6	1	4, 5	Erosion and/or decay of natural deposits; corrosion of household plumbing systems.
	0	0.1	0	ND	0	0.1	0	4, 5	Erosion and/or decay of natural deposits; corrosion of household plumbing systems.
	ND - 3	6	4 - 6	NT	N/A	NT	N/A	5	By-product of drinking water treatment processes.
	N/A	NT	N/A	NT	N/A	NT	N/A	5	Leaching from pvc pipes; discharge from factories and dry cleaners.
	N/A	ND	N/A	NT	N/A	NT	N/A	5	Run-off from soil fumigant.
	N/A	ND	N/A	NT	N/A	NT	N/A	5	Run-off from herbicide.
	N/A	ND	N/A	NT	N/A	NT	N/A	5	Run-off from herbicide.
	N/A	ND	N/A	ND	N/A	ND	N/A	7	Erosion and/or decay of natural deposits.
	1.14 - 1.93	1.16	0.19 - 1.16	4.94	3.69 - 4.94	2.60	1.86 - 2.60	5, 6	Naturally present in the environment; by-product of drinking water treatment processes.
	N/A	9.53	9.53 - 9.53	18.1	18.1 - 18.1	9.43	9.43 - 9.43	5, 6	Naturally present in the environment.
	ND - 4	9	3 - 9	NT	N/A	NT	N/A	3, 5, 8	By-product of drinking water treatment processes.

Note 5: Testing for some parameters is not required on an annual basis. Some results reflect the most recent testing between 1999 - 2001.

Note 6: Testing required by EPA to determine if an MCL/health standard should be set.

Note 7: Currently, there is no MCL for Radon. The proposed MCL is 300 pCi/l.

Note 8: Currently, there is no MCL for total Haloacetic Acids. The proposed MCL is 60 ppb.

Note 9: EPA considers a level of 50 pCi/l equivalent to the actual MCL of 4 mrems/l.

General Note: The drinking water was analyzed for more than 100 other parameters. These contaminants do not appear in the data table because they were not detected.

“For your information...”



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



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 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:



Microbial contaminants, such as viruses and bacteria, which may come from waste treatment plants, septic systems, agricultural livestock operations, and wildlife.



Inorganic contaminants, such as 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 and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses.



Organic chemical contaminants, including 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, which can be naturally occurring or be the result of oil and gas production and mining activities.

Facts About...

Radium...

Radium is a naturally occurring substance which can, if exposed to acidic conditions (low pH), leach into groundwater. The EPA has set maximum contaminant levels for radium. The County monitors the public water system, and as in past years, the analysis results were within the acceptable levels set by the EPA.

Radon...

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 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 the web site at www.epa.gov/iaq/radon. Testing has indicated that radon is not present in the public water system at concentrations which would cause any health concerns.

Cryptosporidium...

Cryptosporidium is a microscopic parasite that may cause diarrhea, fever and related gastrointestinal disorders in infected humans and animals. Cryptosporidium may find its way into drinking water that comes from surface water, such as reservoirs, rivers or lakes. Cryptosporidium is not a problem in drinking water taken from aquifers via deep wells. Since the source of drinking water from Baltimore City is reservoirs, the City monitors its' raw water sources for cryptosporidium. Samples from the raw water sources were analyzed and determined to be free of viable organisms. The City protects its' water supply reservoirs to help prevent these organisms from entering the water supply.

Arsenic...

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 proposed EPA level for this contaminant is 10 mg/l. Testing has indicated that there is no arsenic in the public water system.

Public Participation...

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 advertised and conducted throughout the County. Public comment is welcome. Copies of the budget are available for review from the County Council offices and at local branches of the County library. The County also maintains a "Ten Year Master Plan for Water Supply and Sewage Systems." This plan can be reviewed at any branch of the County library or at the Office of Planning and Zoning at 2664 Riva Road, Annapolis, or by contacting the Long Range Planning Section at 410-222-7432.

For more information...

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

For more information about the Department of Public Works or to contact us by email, visit our web site at:

www.aadpw.org

En Espanol: Este Informe contiene information muy importante. Traduscalo o hable con un amigo quien lo entienda bien.