



2019  
BALTIMORE CITY  
DEPARTMENT OF PUBLIC WORKS  
**Water Quality Report**



[publicworks.baltimorecity.gov](http://publicworks.baltimorecity.gov)

## About the Report

The excellent quality, great-tasting water DPW (Department of Public Works) provides to its residential and commercial customers meets or exceeds regulatory standards!

This report, covering Jan. 1, 2019, to Dec. 31, 2019, for DPW water system (PWSID#:MD0300002) contains data on the quality of DPW water, educational information and important public health notices and contacts. The information in this Annual Water Quality Report, also known as the Consumer Confidence Report, is being provided as required by the U.S. Environmental Protection Agency.

This is the 22nd edition of the DPW Annual Water Quality Report, and is available on the DPW website at: [publicworks.baltimorecity.gov/waterreport](https://publicworks.baltimorecity.gov/waterreport).

Printed copies of the report can be requested by calling 311 or (410) 396-5352 for Baltimore County residents. Questions about this report, drinking water quality and information on source water assessments should be directed to one of the City's Water Quality Laboratories:  
Montebello - 410-396-6040  
Ashburton - 410-396-0150

## Important Health Information

Uncovered reservoirs used to store treated drinking water can be open to contamination from animals, such as birds or insects. Inadequately treated water may contain disease-causing organisms including bacteria, viruses, and parasites that can result in such symptoms as nausea, cramps, diarrhea, and associated headaches. Some people may be more vulnerable to contaminants in drinking water than the general population.

Immunocompromised people, such as those undergoing chemotherapy or 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 from their health care providers.

Guidelines from the U.S. Environmental Protection Agency and Centers for Disease Control and Prevention regarding appropriate means to lessen the risk of infection from Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791. If you have specific health concerns, consult your doctor.

## Learn More About Your Drinking Water

**View previous years' water quality reports:**

<https://publicworks.baltimorecity.gov/water-quality-reports>

**Access Water and Wastewater billing information:**

[https://publicworks.baltimorecity.gov/waterbilling\\_Information](https://publicworks.baltimorecity.gov/waterbilling_Information)

**Learn about the BH<sub>2</sub>O/BH<sub>2</sub>O Plus financial assistance programs:**

<https://publicworks.baltimorecity.gov/baltimore-h2o-faqs>

## Message from the Acting Director



### Ensuring the Continued Delivery of Safe, Clean Drinking Water

As the Department of Public Works prepares the 2019 Water Quality Report, the Baltimore region is battling the coronavirus (COVID-19) pandemic. In the fight against COVID-19, DPW's workforce has banded together to continue the delivery of safe, clean drinking water.

These are the people who work to protect our reservoirs, operate our filtration and wastewater plants and run our pumping stations. They also repair water mains and test the water supply. Our workers are always on the frontlines of the battle to protect the public's health by ensuring the delivery of safe, clean drinking water to the 1.8 million people that DPW serves throughout the Baltimore region.

The City's rigorous water filtration, disinfection process and testing procedures ensure that drinking water is free of viruses, including COVID-19. The wastewater systems operated by the City of Baltimore also ensure that the water that goes down your drains is processed and cleaned to meet exacting standards.

We continue to make progress adding another layer of protection to our water system by replacing our open-air, treated drinking water reservoirs with massive underground tanks. This year, a milestone has been reached in construction of the finished drinking water tanks at the Druid Lake Reservoir. Workers have now completed the walls and roof on one of the two storage tanks being constructed at the site. Project completion is scheduled for Spring 2022. Guilford Reservoir and Lake Ashburton are also having underground tanks installed at this time.

As the data included in this 2019 Water Quality Report indicates, we have good reason to be confident in our water system. Our water meets or exceeds regulatory standards. If you have questions, concerns, or suggestions about this report, please contact us at (410) 545-6541 or email us at [publicworks@baltimorecity.gov](mailto:publicworks@baltimorecity.gov).

Matthew W. Garbark

Acting Director

Baltimore City Department of Public Works

# Water Quality Testing

To ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water. 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 EPA's Safe Drinking Water Hotline (1-800-426-4791).

<b>Microbiological Contaminants</b> , such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural and livestock operations, and wildlife.	<b>Turbidity</b> , a measure of the cloudiness of the water. It is used to indicate water quality and filtration effectiveness (such as whether disease-causing organisms are present).	<b>Radioactive Contaminants</b> can be naturally-occurring, or the result of oil and gas production and mining activities.
<b>Inorganic Contaminants</b> , such as salts and metals, can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.	<b>Chlorine</b> is added to water to control the growth of bacteria and viruses.	<b>Arsenic</b> , a gray, semi-metallic element that occurs naturally, can be found in certain types of rock and soil. Arsenic can also enter the environment through agricultural and industrial processes.
<b>Lead and Copper</b> enter drinking water primarily through plumbing materials. Exposure to lead and copper may cause health problems ranging from stomach distress to brain damage. Fluoride is a mineral added to water to prevent tooth decay.	<b>Volatile Organic Chemicals</b> are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.	

**Lead and Copper Testing:** DPW conducted monitoring for lead and copper content in 2018. We sent letters to identified households, inviting 50 residents to participate in the monitoring. The results of the sampling found that none of the locations tested had lead and copper concentrations above the EPA action level of 15 parts per billion for lead, and 1,300 parts per billion for copper.

Lead in drinking water is caused primarily by materials associated with service lines and home plumbing. Lead can be released when the water comes in contact with plumbing fixtures that contain lead. That is why DPW carefully treats its water with lime, an anticorrosive agent which helps to prevent lead from leaching out of household plumbing. DPW is required by State and Federal laws to periodically test our drinking water for lead and copper.

Baltimore initially was required to monitor at least 100 different homes once every year. Because the City's water quality consistently exceeds the standards, our lead and copper sampling frequency was reduced to 50 homes every three years.

# How to Read the Water Quality Table

EPA establishes the safe drinking water regulations that limit the amount of contaminants in drinking water. The table on **pages 6 and 7** shows the concentrations of detected substances, in comparison to regulatory limits. Substances not detected are not included in the data table. Footnotes for the data table are located on **page 8**.

The following are definitions of key terms referring to standards and goals of water quality noted on the data table:

<b>MCL</b> Maximum Contaminant Level. The highest level of a contaminant allowed by health regulations established by the Environmental Protection Agency.	<b>MCLG</b> Maximum Contaminant Level Goal. 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.	<b>AL</b> Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a system must follow.
<b>HLD</b> Highest Level Detected of a substance.	<b>PPB</b> Parts per Billion; (or 1 drop in 1 billion gallons)	<b>PPM</b> Parts per Million; (or 1 drop in 1 million gallons)
<b>NTU</b> Nephelometric Turbidity Units of measurement, which is used to report the level of turbidity or "cloudiness" in the water.	<b>pCi/L</b> Picocuries per Liter. A measure of the level of radioactivity in the water.	<b>Total COLIFORMS/ E.COLI</b> Indicator bacteria: this type of bacteriological test is routinely used to determine if contamination has occurred in a drinking water system.
<b>LRAA</b> Locational Running Annual Average is calculated by averaging the results of all the samples collected at a single site within a quarter and then averaging the quarterly averages for the last four quarters at that same site.		

2019 CCR Detected Regulated Contaminants Table

LEAD AND COPPER – Tested at customer’s taps. Testing is done every 3 years. 2018 was a compliance year for testing.

Contaminant	EPA’s Action Level	Ideal Goal (EPA’sMCLG)	90% of Test Levels Were Less Than	# of Tests With Levels Above EPA’s Action Level	Violation	Typical Sources
<b>Lead</b>	90% of homes tested less than 15 ppb	0 ppb	3.06 ppb	0	<b>No</b>	Corrosion of household plumbing
<b>Copper</b>	90% of homes tested less than 1,300 ppb	1,300 ppb	112.5 ppb	0	<b>No</b>	Corrosion of household plumbing

## INORGANIC CHEMICALS

Contaminant	Highest Level Allowed (EPA’s MCL)	Ideal Goal (EPA’s MCLG)	Ashburton Plant		Montebello Plants		Violation	Typical Sources
			Highest Result	Range of Test Results	Highest Result	Range of Test Results		
<b>Arsenic</b>	0.010 ppm	0.010 ppm	<0.003	<0.003 - <0.003	<0.003	<0.003 - <0.003	<b>No</b>	Erosion of natural deposits
<b>Barium</b>	2 ppm	2 ppm	0.024	0.019-0.024	0.0369	0.0303-0.0369	<b>No</b>	Discharges from drilling wastes
<b>Chromium</b>	100 ppb	100 ppb	<0.002	<0.002- <0.002	<0.002	<0.002 - <0.002	<b>No</b>	Discharge from steel or pulp mills
<b>Chlorine</b>	4 ppm	4 ppm	1.20	0.13 – 1.20	1.44	0.53-1.44	<b>No</b>	Water additive to disinfect supply
<b>Fluoride</b>	4 ppm	4 ppm*	1.31	0.07 - 1.31	1.07	0.06 -1.07	<b>No</b>	Water additive that promotes strong teeth
<b>Nitrate</b>	10 ppm	10 ppm	2.87	1.72 – 2.87	2.53	1.06 – 2.53	<b>No</b>	Runoff from fertilizer use

## RADIOACTIVE CONTAMINANTS

Contaminant	Highest Level Allowed (EPA’s MCL)	Ideal Goal (EPA’s MCLG)	Highest Level Detected	Range of Levels Detected	Violation	Major Sources
<b>Combined Radium 226/228</b>	<b>5pCi/L</b>	<b>0</b>	<b>1.6</b>	<b>0.2 – 1.6</b>	<b>No</b>	<b>Erosion of natural deposits</b>

2019 CCR Detected Regulated Contaminants Table

## VOLATILE ORGANIC CHEMICALS

Contaminant	Highest Level Allowed (EPA’s MCL)	Ideal Goal (EPA’s MCLG)	City of Baltimore		Violation**	Major Sources
			Highest Result (Locational Running Annual Average)	Range		
<b>Total THMs</b>	80 ppb	NA	77	20 – 103.1	No	By-product of drinking water chlorination
<b>HAA(5)</b>	60 ppb	NA	55	6 – 61.9	No	By-product of drinking water chlorination

## TURBIDITY

Contaminant	Highest Level Allowed (EPA’s MCL)	Ideal Goal (EPA’s MCLG)	Ashburton Plant		Montebello Plants		Violation	Major Sources
<b>Turbidity</b>	<b>Treatment Technique (TT)</b>	<b>None</b>	<b>Highest Result</b>	<b>Lowest %</b>	<b>Highest Result</b>	<b>Lowest %</b>		<b>Soil Run-off</b>
	<b>Filtration</b>	<b>NA</b>	0.06 NTU	100 %	0.21 NTU	100 %	<b>No</b>	

## BACTERIA IN TAP WATER

Contaminant	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Highest Monthly Percentage of Samples With Total Coliform Present	Violation	Typical Sources
Total Coliform (for systems that collect ≥ 40 samples/month)	5% of monthly samples are positive	0	5.16%***	No	Naturally present in the environment
CHLORINE	4 ppm	4 ppm	Running Annual Average of Samples Computed Quarterly	No	Water additive to disinfect supply
			0.63 ppm (Based on 5,183 distribution system samples collected in 2019)		

## Data Table Footnotes

\*EPA's MCL and MCLG for fluoride is 4ppm, but Maryland has set a lower MCL and MCLG which may improve public health protection.

\*\*Violations for Stage 2 THMs and HAAs are based on a locational annual average. Therefore, unless this exceeds the MCL, there is no violation.

\*\*\*The Revised Total Coliform Rule (RTCR) states that if greater than 5% of the monthly samples are positive for Total Coliforms, a Level 1 Assessment must be performed with the report submitted to the regulating authority for approval.

### Health Effects: Cryptosporidium, Sodium

**CRYPTOSPORIDIUM** is a microorganism commonly found in lakes and rivers which is highly resistant to disinfection, and can cause gastrointestinal problems. DPW's monitoring results indicate that our water sources are not affected by Cryptosporidium.

**CRYPTOSPORIDIUM RESULTS RANGE** Liberty: 0.0 Oocyst/Liter Loch Raven: 0.0 – 0.09 Oocyst/Liter Susquehanna River: 0.0 – 0.10 Oocyst/Liter

**SECONDARY CONTAMINANTS** Sodium naturally occurs in raw waters but the concentration can be increased due to the influence of run-off from road surfaces treated with rock salt during snow and ice removal efforts. During the year 2019, the average sodium concentrations measured in the finished water from the Ashburton and Montebello Water Treatment Plants were 19.4 ppm and 19.6 ppm respectively and are considered low.

## 2019 UCMR4 Results

Baltimore City's Water System participated in the UCMR4 Study, which began in April 2018 and ended January 2019. UCMR is the acronym for Unregulated Contaminant Monitoring Report, the number references the number of times this type of study has been done. It is the part of the Safe Drinking Water Act, which requires increasing the amount of monitoring of tap water to maintain its safety for drinking. These studies are performed to determine if one of these contaminants needs to be regulated due to its widespread prevalence or whether it is more of a local or regional problem.

Contaminant	MRL***	Highest result	Range	Typical Source
Manganese	0.4 ppb	0.601	0.517 – 0.601	Naturally occurring
Bromide	20 ppb	24.9	20.9 – 24.9	By -product of drinking water chlorination
TOC	1000 ppb	1850	1670 – 1850	Decaying natural organic matter
HAA6Br*	NA	7.092	0.449 – 7.092	By -product of drinking water chlorination
HAA9**	NA	57.18	6.219 – 57.18	By -product of drinking water chlorination

**HAA6Br\*** are currently unregulated Haloacetic acids that contain bromine. HAA5 are the regulated Haloacetic acids that are already tested for in the distribution system.

**HAA9\*\*** is the collective group of the regulated HAA5s and the unregulated HAA6Br.

**MRL\*\*\*** is the Minimum Reporting Level for drinking water is defined as the smallest measured concentration of a substance that can be reliably measured by using a given analytical method.



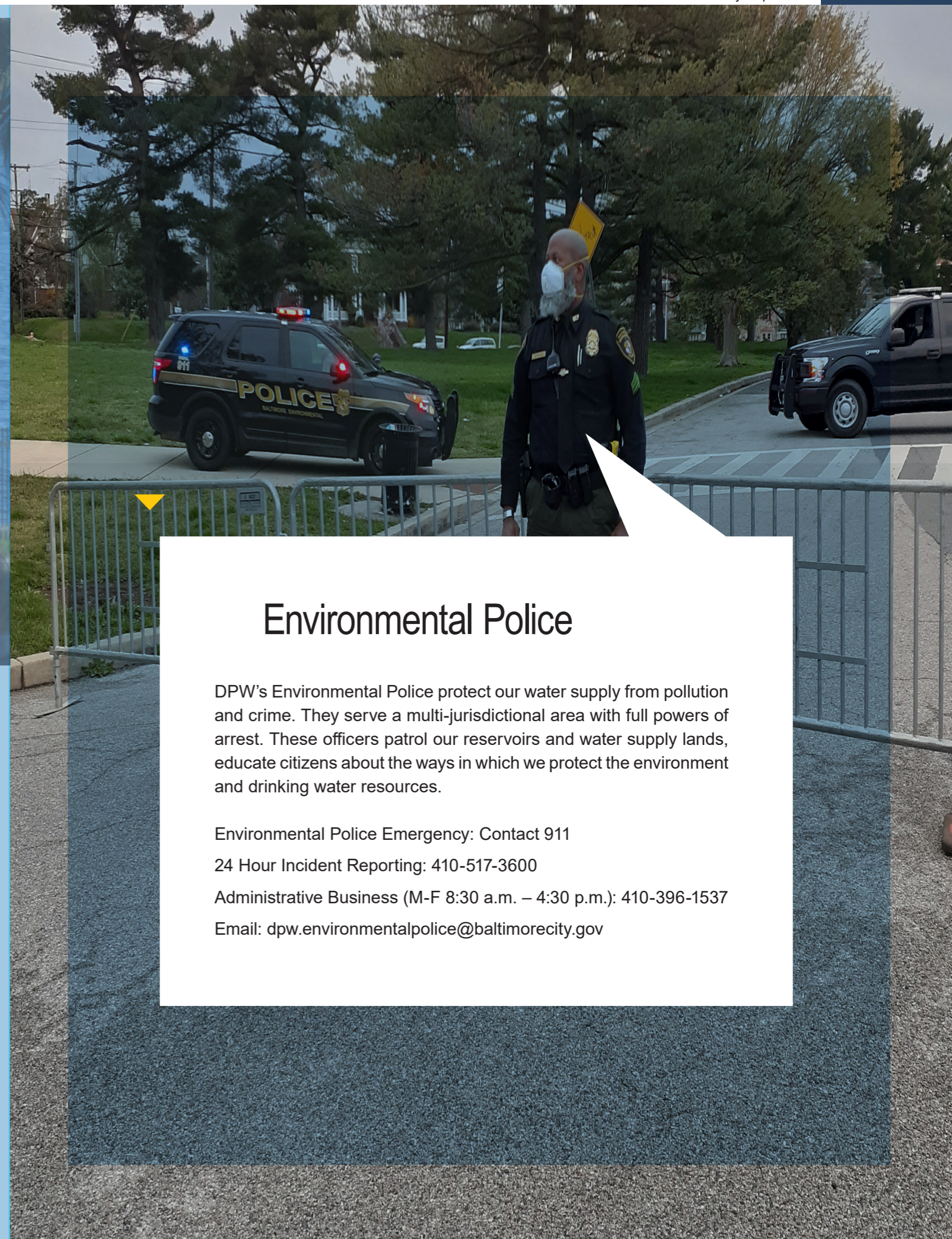
## You Can Help with Water System Security

Water system security continues to be an enormously important issue. If you notice suspicious activities in or around local water utilities, such as persons cutting, or climbing facility fencing, loitering, tampering with equipment or other similar activities, please contact your local law enforcement agency immediately by dialing 911. For other suspicious activities that may appear non-threatening such as persons videotaping or photographing facilities, equipment or structures, please call 410-517-3600.



## Protecting the Baltimore Region's Water

Baltimore uses surface water from rainfall and snowmelt as its water source. This water, approximately 75 billion gallons at available capacity, is collected and stored in the City's Liberty, Loch Raven, and Prettyboy reservoirs. The City water supply is also linked to the Susquehanna River, which flows from Cooperstown, N.Y., to Havre de Grace, Md. Water from the Susquehanna River is only used in time of drought. The reservoirs are surrounded by mostly native woodlands, which filter out pollutants and prevent soil erosion and runoff. These watershed lands were established for the sole purpose of protecting our drinking water supply. Although the reservoirs are the property of the City, all the surrounding jurisdictions have a stake in their well-being.



## Environmental Police

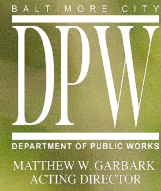
DPW's Environmental Police protect our water supply from pollution and crime. They serve a multi-jurisdictional area with full powers of arrest. These officers patrol our reservoirs and water supply lands, educate citizens about the ways in which we protect the environment and drinking water resources.

Environmental Police Emergency: Contact 911

24 Hour Incident Reporting: 410-517-3600

Administrative Business (M-F 8:30 a.m. – 4:30 p.m.): 410-396-1537

Email: [dpw.environmentalpolice@baltimorecity.gov](mailto:dpw.environmentalpolice@baltimorecity.gov)



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