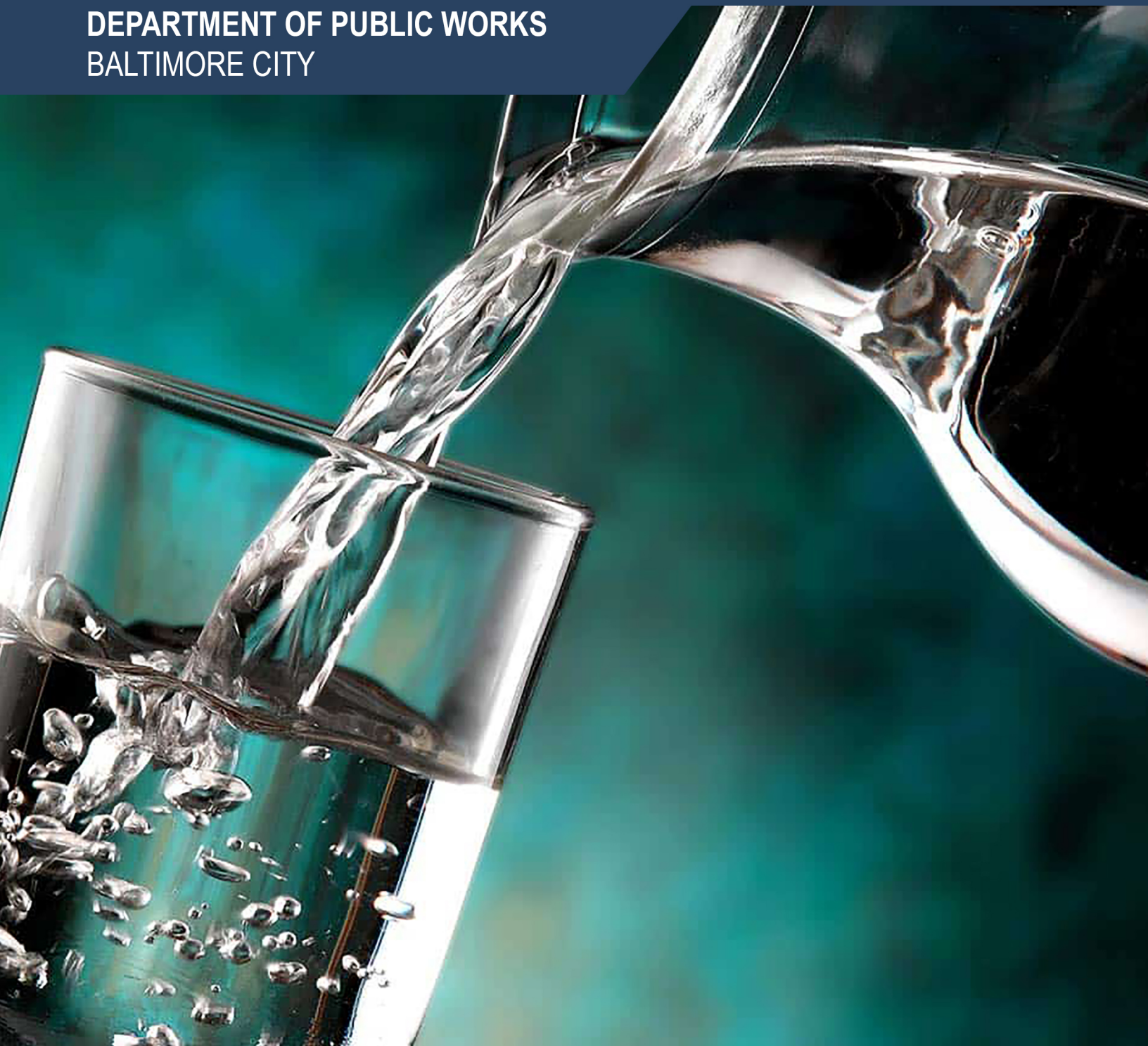


DEPARTMENT OF PUBLIC WORKS
BALTIMORE CITY



Water Quality Report 2021



publicworks.baltimorecity.gov/waterquality

About the Report

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

This report, covering Jan. 1, 2021 to Dec. 31, 2021, 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 24th edition of the DPW Annual Water Quality Report and is available on the DPW website at: 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 Helpline at 1-800-426- 4791. If you have specific health concerns, consult your doctor.



Message from the Director



The last few years have been tough on all of us! A lot has changed throughout the Baltimore region since the arrival of the COVID-19 pandemic. However, the Baltimore City Department of Public Works' (DPW) ability to provide safe, high-quality drinking water has remained consistent.

Furthermore, we've made strides on drinking water projects that will safeguard Baltimore's drinking water for generations to come. Projects to install underground tanks to hold treated drinking water are near completion. *(Please see page 10 for more information on the Druid Tank Project).*

The COVID-19 Pandemic underscored the importance of ensuring affordability, equity and accountability in drinking water operations.

DPW launched a new program designed to provide more equitable access to financial assistance for eligible Baltimore City residents who need help paying their water bills. Water4All, the new water assistance program, provides a monthly discount for water and sewer costs based on a percentage of residents' income. For the first time, tenants who do not directly pay their water bills are eligible to apply for water payment assistance.

The data in this report represents the most recent testing done in accordance with the requirements of Environmental Protection Agency's (EPA) Water Testing Regulations and were the only regulated substances found in your drinking water.

Baltimore City's excellent drinking water meets or exceeds all these 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.

Jason W. Mitchell

A handwritten signature in black ink, appearing to read 'Jason W. Mitchell', written over a horizontal line.

Director

Baltimore City Department of Public Works

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

Report a water emergency:

call 311 (Baltimore City) or 410-396-5352 (Baltimore County).

Testing for Water Quality

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 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).

Microbiological Contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural and livestock operations, and wildlife.

Turbidity is 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).

Arsenic, 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.

Inorganic Contaminants, 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.

Lead and Copper 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.

Chlorine is added to water to control the growth of bacteria and viruses.

Radioactive Contaminants can be naturally-occurring or the result of oil, gas production and mining activities.

Volatile Organic Chemicals are byproducts of industrial processes and petroleum production. They 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 2021. The Department 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. This 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 tap 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.

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

MCL

Maximum Contaminant Level. The highest level of a contaminant allowed by health regulations established by the Environmental Protection Agency.

MCLG

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.**

AL

Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a system must follow.

PPM

Parts per Million; (or 1 drop in 1 million gallons of water).

PPB

Parts per Billion; (or 1 drop in 1 billion gallons of water).

HLD

Highest Level Detected of a substance.

NTU

Nephelometric Turbidity Units. A unit of measurement used to report the level of turbidity or “cloudiness” in the water.

pCi/L

Picocuries per Liter. A measure of the level of radioactivity in the water.

Total COLIFORMS/ E.coli

Indicator bacteria; this type of bacteriological test is routinely used to determine if contamination has occurred in a drinking water system.

LRAA

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.

HAL

Health Advisory Level. EPA establishes a non-regulatory human health-based level of protection from drinking water contaminants that are not regulated under the Safe Drinking Water Act.

2021 CCR Detected Regulated Contaminants Table

LEAD AND COPPER – Tested at customer’s taps. Testing is done every 3 years. 2021 was a compliance year for testing.

Contaminant	EPA’s Action Level	Ideal Goal (EPA’s MCLG)	90% of Test Levels Were Less Than	# of Tests with Levels Above EPA’s Action Level	Violation	Typical Sources
Lead	90% of homes less than 15 ppb	0 ppb	3.53 ppb	0	No	Corrosion of household plumbing
Copper	90% of homes less than 1,300 ppb	1,300 ppb	268 ppb	0	No	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		
Arsenic	10 ppb	0 ppb	ND	<3 ppb	ND	<3 ppb	No	Erosion of natural deposits
Barium	2 ppm	2 ppm	0.0237	0.0194 – 0.0237	0.0409	0.0348 – 0.0409	No	Discharges from drilling wastes
Chlorine	4 ppm	4 ppm	1.20	0.57 – 1.20	1.40	0.50 – 1.40	No	Water additive to disinfect supply
Fluoride	4 ppm	4 ppm	0.83	0.57 – 0.83	1.49	0.06 – 1.49	No	Water additive that promotes strong teeth
Nitrate	10 ppm	10 ppm	1.82	1.26 – 1.82	2.15	0.79 – 2.15	No	Runoff from fertilizer use

ORGANIC CHEMICALS

Contaminant	Highest Level Allowed (EPA’s MCL)	Ideal Goal (EPA’s MCLG)	Ashburton Plant	Montebello Plant	Violation	Typical Sources
			Highest Level Detected	Highest Level Detected		
Atrazine	3 ppb	3 ppb	ND	0.26 ppb	No	Runoff from herbicide use
* Combined PFOA + PFOS	0	0	4.93 ppt	1.98 ppt	No	Man-made chemicals in a range of products

RADIOACTIVE CONTAMINANTS

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

2021 CCR Detected Regulated Contaminants Table

VOLATILE ORGANIC CHEMICALS

Contaminant	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	City of Baltimore Distribution System		Violation	Major Sources
			Highest Result (Locational Running Annual Average)	Range		
Total THMs	80 ppb	NA	74	23 - 99	No	By-product of drinking water chlorination
HAA (5)	60 ppb	NA	52	<1.0 - 66	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
			Highest Result	Lowest %	Highest Result	Lowest %		
Turbidity	Treatment Technique (TT)	None						Soil Run-off
	Filtration	NA	0.09 NTU	100%	0.15 NTU	100%	No	Soil Run-off

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	0.47%	No	Naturally present in the environment
CHLORINE	4 ppm	4 ppm	Running Annual Average of Samples Computed Quarterly 0.51 ppm (Based on 4,967 distribution system samples collected in 2021)	No	Water additive to disinfect supply

* Currently there is no federal regulations (i.e. Maximum Contaminant Levels (MCLs)) for PFAS in drinking water. However, the U.S. Environmental Protection Agency (EPA) has issued a Health Advisory Level (HAL) of 70 parts per trillion (ppt) for the sum of PFOA and PFOS concentrations in drinking water. While not an enforceable regulatory standard, when followed, the EPA HAL does provide drinking water customers, even the most sensitive populations, with a margin of protection from lifetime exposure to PFOA and PFOS in drinking water.

**Radioactive contaminants are monitored on a 9-year schedule. Gross Alpha radioactive contaminant is monitored on a 6-year schedule for Montebello. 2019 was a compliance year for testing of radioactive contaminants. The state allows monitoring of some contaminants less than once per year due to infrequent contaminant concentration level changes. Radioactive contaminants data, though representative, is more than one year old.

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.

Non-Detection (ND): The concentration of a substance that could not be detected at or above the minimum detection limit of that substance.

Units in the Table: ppm is parts per million (or 1 drop in 1 million gallons), ppb is parts per billion (or 1 drop in 1 billion gallons), ppt is parts per trillion (or 1 drop in 1 trillion gallons); NTU is Nephelometric Turbidity Units which is a unit of measure used to report the level of turbidity or "cloudiness" in the water.

Monitoring PFAS

PFAS, short for per- and polyfluoroalkyl substances: A large group of more than 4,000 human-made chemicals that have been widely used since the 1940s in a range of products, including stain-resistant and water-resistant fabrics and carpeting, cleaning products, paints, cookware, food packaging and fire-fighting foams. Some PFAS accumulate in the food chain and can last a long time in the human body and the environment.

Beginning in 2020, the Maryland Department of the Environment initiated a PFAS monitoring program. Results of samples taken at the City of Baltimore's drinking water treatment showed a combined PFOA and PFOS concentration of 4.93 parts per trillion (ppt). No additional actions are planned at this time. MDE anticipates that the Environmental Protection Agency (EPA) will establish an MCL for PFOA and PFOS in the near future. This would entail additional monitoring. Additional information about PFAS can be found on the MDE website: mde.maryland.gov.

Currently there are no federal regulations (i.e. Maximum Contaminant Levels (MCLs)) for PFAS in drinking water. However, the U.S. EPA has issued a Health Advisory Level (HAL) of 70 ppt for the sum of PFOA and PFOS concentrations in drinking water. While not an enforceable regulatory standard, when followed, the EPA HAL does provide drinking water customers, even the most sensitive populations, with a margin of protection from lifetime exposure to PFOA and PFOS in drinking water.

Health Effects: Cryptosporidium, Sodium Levels and Barium

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 - 0.0 Oocyst/Liter Loch Raven: 0.0 – 0.09 Oocyst/Liter Susquehanna River: 0.0 – 0.33 Oocyst/Liter.

Sodium levels in the water supply are often of concern to consumers who contact our facilities. Sodium naturally occurs in raw waters but the concentration can be increased due to the influence of runoff from road surfaces treated with rock salt during snow and ice removal efforts. During the year 2021, the average sodium concentrations measured in the finished water from the Ashburton and Montebello Water Treatment Plants were **19.6 ppm and 23.5 ppm** respectively.

Barium: Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.



Protecting the Baltimore Region's Water Supply

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.



You Can Help with Water System Security

Baltimore uses surface water from rainfall and snowmelt as its water source. This water, approximately 75 billion gallons of 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.

Protecting Our Water Supply



DPW is adding another layer of protection by replacing our open-air, treated drinking water reservoirs with massive concrete tanks buried safely underground. Several buried water tanks, including tanks in Towson and at the Montebello Filtration Plant, have been finished. We're still working on tanks in Ashburton, and perhaps most prominently, Druid Lake. Like many of our construction projects, these tanks are being built in accordance with federal mandates; in this case the Safe Drinking Water Act. The tanks will keep harmful bacteria and chemicals out of our filtered water. Importantly, the tanks will make it much more difficult to intentionally put something harmful into the water supply.

Druid Lake Finished Water Tanks (Water Contract 1204): 93% of work is complete and the remaining scope of work includes laying approximately 1,000 feet of large diameter steel pipe, site restoration, and park development. The estimated completion timeline for completion is the summer of 2023.

Ashburton Reservoir Zone 2 Tanks (WC 1211): 73% of the work is complete and the remaining scope of work includes laying approximately 1,000 feet of large diameter steel pipe, 20% of tank construction work, distribution building construction, site restoration, and park development. Work is expected to be completed on this project in Fall 2023.



Do You Know Baltimore H₂O?

Baltimore City maintains 3,800 miles of water mains in Baltimore City and Baltimore County. If you experience a water emergency, please call 311 (Baltimore City) and (410) 396-5352 (Baltimore County).

DPW Customer Support and Services Division can answer water billing questions. Please call DPW's Customer Support and Services Division at (410) 396-5398 or DPW.Billing@baltimorecity.gov.

The Water4All program provides a monthly discount for water and sewer costs based on a percentage of residents' income. More information can be found online at <https://city-services.baltimorecity.gov/water4all>, or by dialing (410) 396-5555.

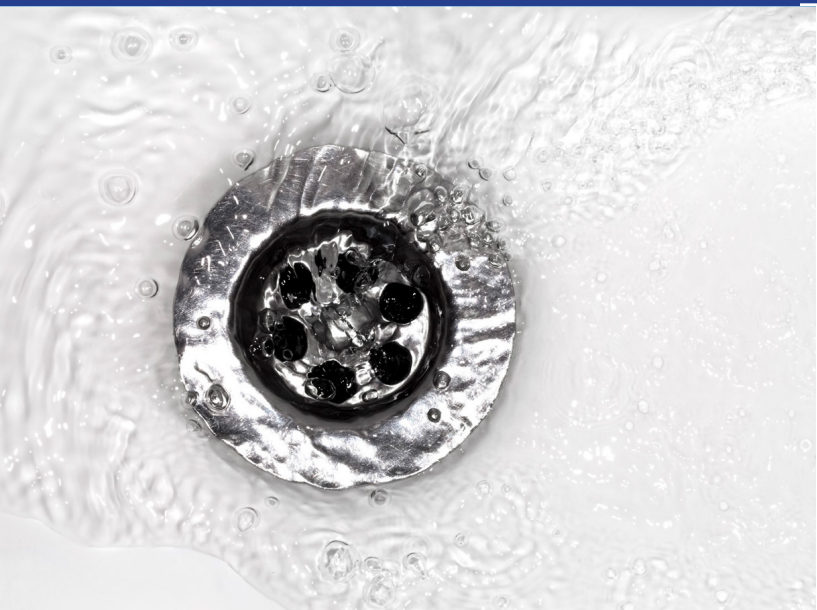
Baltimore's water sources – Liberty, Loch Raven, and Prettyboy reservoirs – are surrounded by woodlands that protect the water.

DPW's water distribution mains are made of either concrete or iron, materials which do not contain lead.





**Abel Wolman Building
200 Holliday Street
Baltimore, MD 21202**



Keep Your Drains Clean!

Wipe loose food and grease from dishes before washing them in the sink.

Pour grease and cooking oil into a covered container and dispose of it in the garbage.

Flush only the three Ps: pee, poop, and toilet paper! Flushable does not mean biodegradable!

Stay in the know. Follow us on social media.



[Facebook.com/BaltimoreCityDepartmentofPublicWorks](https://www.facebook.com/BaltimoreCityDepartmentofPublicWorks)



[Twitter.com/BaltimoreDPW](https://twitter.com/BaltimoreDPW)



[Instagram.com/DPWBaltimoreCity](https://www.instagram.com/DPWBaltimoreCity)



[Nextdoor.com/gov/BaltimoreDPW](https://www.nextdoor.com/gov/BaltimoreDPW)

[Publicworks.baltimorecity.gov/waterquality](https://publicworks.baltimorecity.gov/waterquality)