City of Aberdeen

60 N Parke St, Aberdeen, MD 21001

2025 Annual Drinking Water Quality Report

PWSID No. MD0120001

DEAR CITY OF ABERDEEN RESIDENTS

This report covers water quality monitoring conducted from January 1 through December 31, 2025. The City of Aberdeen Department of Public Works is committed to providing safe, reliable drinking water that meets or exceeds all federal and Maryland Department of the Environment (MDE) standards. In 2025, the city had no contaminant violations, and all detected levels were below regulatory limits.

For questions about this report or your water service, contact the Water Operations Division at (410) 272-2650, Monday–Friday, 7:00 a.m. – 3:00 p.m. City Council meeting information is available at www.aberdeenmd.gov.

What Does All This Information Mean?

EPA regulations require water systems to report detected contaminants and testing results annually. While data tables may appear technical, they demonstrate compliance with federal and state standards. All drinking water, including bottled water, may reasonably be expected to contain small amounts of contaminants. The presence of contaminants does not necessarily indicate a health risk when levels remain below EPA Maximum Contaminant Levels (MCLs).

Additional information is available from the EPA Safe Drinking Water Hotline at 800-426-4791 or www.epa.gov/safewater

Source Water Assessment

The Maryland Department of the Environment conducted a Source Water Assessment for the City of Aberdeen. The assessment evaluated the area contributing water to the system, identified potential contamination sources, and determined susceptibility.

The City's water supply comes from **14 groundwater wells** drawing from the **Talbot Formation aquifer**, up to **600,000 gallons per day (gpd)** purchased from **Harford County Water Treatment Plant** (supplied by the **Susquehanna River, Perryman wellfield, and Abingdon WTP**), and up to **600,000 gpd** from the **Havre De Grace Water Treatment Plant** (also supplied by the **Susquehanna River**). The combined average daily water consumption is approximately **1,392,400 gallons per day**.

Based on monitoring data and aquifer characteristics, the system is considered susceptible to volatile organic compounds but not susceptible to nitrates, synthetic organic compounds, radionuclides, or microbiological contaminants. The full assessment is available through MDE.
www.mde.maryland.gov/programs/water/water_supply/Source_Water_Assessment_Program/documents/www.mde.state.md.us/assets/document/watersupply/SWAPS/Harford/City%20of%20Abedeen.pdf

Definitions

Compliance Level (CL): The value used to determine compliance with EPA and State drinking water regulations

Maximum Contaminant Level (MCL): The highest level of a contaminant allowed in drinking water.

Maximum Contaminant Level Goal (MCLG): The health-based goal below which no known or expected health risk exists.

Non-Detect (ND): The contaminant was not detected by laboratory analysis.

Parts per Million (ppm) / Milligrams per Liter (mg/L): A unit measuring very small concentrations in water.

Parts per Billion (ppb) / Micrograms per Liter (µg/L): A unit measuring extremely small concentrations in water.

Parts per Trillion (ppt) / Nanograms per Liter (ng/L): A unit measuring trace concentrations in water.

Picocuries per Liter (pCi/L): A measure of radioactivity in water.

Nephelometric Turbidity Unit (NTU): A measure of water clarity (turbidity).

Action Level (AL): A concentration that, if exceeded requires treatment or other corrective actions.

Treatment Technique (TT): A required process used to reduce a contaminant in drinking water.

City of Aberdeen Water Supply

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CITY OF ABERDEEN WATER SUPPLY

Regulated Contaminants	Violation Y/N	Level Detected			Unit of Measure	MCL	MCLG	Likely Source of Contaminant
		Low	High	Avg.				
Total Coliform (% of positive tests)	N	0%	0%	0%		< 5%	0	Naturally present in the environment. Zero positive of **180** samples tested.
Barium	N	0.162	0.195	0.179	PPM	2	2	Discharge of drilling waste, discharge from metal refineries, erosion of natural deposits.
**Fluoride	N	0.35	0.51	0.43	PPM	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
† Nitrates (as Nitrogen)	N		2.52		PPM	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Chlorine (as Cl_2)	N	1.02	2.09	1.65	PPM	4	4	Water additive to control microbes.
†† TTHM (Total trihalomethanes)	N	< 1.0	53.3	48.4	PPB	80		Byproduct of drinking water chlorination. ■ Highest locational running annual average by quarter.
HAA5 (Haloacetic Acids)	N	< 2.0	45.0	34.9	PPB	60		Byproduct of drinking water chlorination. ■ Highest locational running annual average by quarter.
Combined Radium 226/228 2020	N		0.4		pCi/L	5	0	Erosion of natural deposits.

Unregulated Contaminants	Violation Y/N	Level Detected			Unit of Measure	Standard	Likely Source of Contaminant
		Low	High	Average			
Sodium 2025	N		45.7		PPM	30 – 60 ppm	Naturally occurring.
MTBE	N		ND		PPB	20 ppb	Gasoline additive.
Perchlorate	N	ND	6.3		PPB	1.0 ppb	Byproduct of explosives; fertilizer.

Lead & Copper	Date Sampled	Unit of Measure	Action Level (AL)	90th Percentile	Range of Tap Sampling	# of sites over AL	Likely Source of contaminant
*Lead	2023	PPB	15	< 1	All < 1	0	Corrosion of household plumbing systems; erosion of natural deposits.
Copper	2023	PPM	1.3	0.315	0.050-0.470	0	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.

Detected Contaminants Definitions

***Lead:** Lead can cause serious health problems, especially for pregnant women and young children. In drinking water, lead typically comes from service lines and household plumbing. While the City provides high-quality water and has addressed known lead service lines, it cannot control plumbing materials within private homes. You can reduce your risk by identifying and removing lead plumbing materials, flushing taps before use, and using an ANSI-certified filter. The City submitted its required service line material inventory to the Maryland Department of the Environment (MDE) on October 14, 2024; it is available upon request

****Fluoride:** Long-term consumption of water containing fluoride above the MCL may increase the risk of skeletal fluorosis, a condition causing joint pain and stiffness. In children, fluoride levels at or above half the MCL during tooth development may cause tooth discoloration or pitting (dental fluorosis).

†Nitrates: As a precaution, the City notifies local physicians and health care providers if nitrate levels exceed normal limits. Nitrate levels above 10 ppm pose a health risk to infants under six months and can cause blue baby syndrome. Levels may temporarily increase due to rainfall or agricultural activity. If you care for an infant, consult your health care provider for guidance.

††TTHM: Some individuals who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems and may have increased risk of getting cancer.

Perchlorate Information and Update

Aberdeen Proving Ground notified the City in April 2002 about a compound called perchlorate which was detected in the groundwater in the vicinity of the wellfield. Perchlorate is an unregulated contaminant used in a variety of products to manufacture air bag inflators, electronic tubes, lubricating oils, rocket propellant, explosives, and other commercial and agricultural applications.

Maryland Department of the Environment (MDE) recommended the City establish standards to assure levels in finished water do not exceed 1.0 ppb (the level established by MDE in the absence of an EPA standard) and installed perchlorate filtration units to wells most at risk.

Since 2005, the city continues to monitor the finished water for this unregulated contaminant. Analysis of perchlorate was undetectable. A fact sheet on perchlorate can be found on the EPA web site at www.epa.gov/fedfac/technical-fact-sheet-perchlorate.

PFAS

PFAS - short for per- and polyfluoroalkyl substances - refers to a large group of more than 4,000 human-made chemicals that have been used since the 1940s in a range of products , including stain- and water- resistant fabrics and carpeting, cleaning products, paints, cookware, food packaging and fire-fighting foams. These uses of PFAS have led to PFAS entering our environment, where they have been measured by several states in soil, surface water, groundwater and seafood. Some PFAS can last a long time in the environment and in the human body and can accumulate in the food chain.

The Environmental Protection Agency (EPA) announced regulations for 6 PFAS compounds in drinking water in April 2024. The MCLs for PFOA and PFOS are 4.0 parts per trillion (ppt). The MCLs for HFPO-DA (GenX), PFNA and PFHxS are 10 ppt. PFAS mixtures containing at least two or more of PFHxS, PFNA, HFPO-DA, and PFBS use a Hazard Index of 1.0 (unitless) to determine if the combined and co-occurring levels of these PFAS pose a risk and require action. Public water systems have three years (by 2029) to implement solutions that reduce these PFAS if monitoring shows that drinking water levels exceed these MCLs.

The Maryland Department of the Environment (MDE) conducted a PFAS monitoring program for Community Water Systems from 2020 to 2022. The results are available on MDE's website at:

https://marylanddepartmentoftheenvironment.shinyapps.io/MDE_PFAS_PublicWaterSystemStudyMap/

PFAS Initial Monitoring Requirements	Collection Date of Highest Value	Highest Value	Range of Sampled Result(s)	Unit
Perfluorobutane Sulfonic Acid (**PFBS**)	5/6/2025	3.75	ND - 3.75	ppt
Perfluorohexane Sulfonic Acid (**PFHxS**)	2/27/2025	7.06	4.36 - 7.06	ppt
Perfluoroctane Sulfonic Acid (**PFOS**)	2/27/2025	9.62	6.02 - 9.62	ppt
Perfluoroctanoic Acid (**PFOA**)	2/27/2025	8.83	5.07 - 8.03	ppt
Perfluorononanoic Acid (**PFNA**)		ND		ppt
Hexafluoropropylene Oxide Dimer Acid (**HFPO-DA**)		ND		ppt

Harford County Water Supply

HARFORD COUNTY
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HARFORD COUNTY WATER SUPPLY

Harford County monitors and reports its water quality under the same **EPA and Maryland Department of the Environment (MDE)** regulations. Water purchased by the City from Harford County contains some constituents at levels **below EPA Maximum Contaminant Levels (MCLs)** and is considered safe. Detected constituents and their **MCL and MCLG values** are shown below. Some contaminants are monitored **less than once per year** because their levels do not change frequently; these results are identified by **bold dates**.

Additional information about the Harford County water system is available at: **www.harfordcountymd.gov/782/water-sewer**

Regulated Contaminants	Violation Y/N	Level Detected			Unit of Measure	MCL	MCLG	Likely Source of Contaminant
		Low	High	CL				
Disinfectants & Disinfection Byproducts								
Chlorine	N	0.3	2.4	2.4	PPM	4	4	Water additive to control microbes. Avg. **= 1.63**
Inorganic Contaminants								
Barium	N	0.03	0.12	0.12	PPM	2	2	Discharge of drilling waste; discharge from metal refineries; erosion of natural deposits.
Fluoride	N	ND	0.66	0.66	PPM	4	4	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories. **Avg = 0.55 ppm.**
† Nitrates (as Nitrogen)	N	1.42	3.87	3.87	PPM	10	10	Runoff from fertilizer use; leaking from septic tanks, sewage; erosion of natural deposits.
Microbial Contaminants								
Total Coliform (% of positive tests)	N	0%	0.8%	0.8%		Presence of coliform bacteria in <5% of monthly samples	0%	Naturally present in the environment. One positives out of **1444** Samples
Turbidity ≤ 0.3 in 95% of samples in a month. Never > 1.0	N	0.017	0.097	100%	NTU	TT	N/A	From soil runoff. Average = **0.033 NTU**
Organic Contaminants								
Total Organic Carbon	N	0.88	1.34	Multiple compliance Criteria	PPM	TT	N/A	Organic Matter. It can provide a medium for formation of disinfection byproducts

Unregulated Contaminants	Level Detected			Unit of Measure	Likely Source of Contaminant
	Low	High	Avg.		
Manganese	0.022	0.024	0.023	PPM	Erosion of natural deposits.
Nickel	ND	0.9	0.2	PMM	Corrosion of pipes and fittings; erosion of natural deposits.
PFHxA	ND	0.9	0.2	PPT	Firefighting foams, industrial waste sites, and insecticides.
Sodium	30.5	83.5	50.3	PPM	Erosion of natural deposits, sodium salts used in water treatment.

Raw Water Contaminants	Level Detected				Likely Source of Contaminant
	Low	High	MCL.	MCGL	
Cryptosporidium (oocyst/liter)	ND	ND	TT	0	Human and animal fecal waste.
Giardia (cyst/liter)	ND	ND	TT	0	Human and animal fecal waste. Susquehanna River (Havre de Grace Plant)

Havre De Grace Water Supply

HAVRE DE GRACE WATER SUPPLY

Havre De Grace monitors and reports its water quality under the same **EPA and Maryland Department of the Environment (MDE)** regulations. Water purchased by the City from Havre De Grace contains some constituents at levels **below EPA Maximum Contaminant Levels (MCLs)** and is considered safe. Detected constituents and their **MCL and MCLG values** are shown below. Some contaminants are monitored **less than once per year** because their levels do not change frequently; these results are identified by **bold dates**.

For additional information about the Havre De Grace water system and water quality, call **410-939-1070**.

Regulated Contaminants	Violation Y/N	Highest Level Detected	Unit of Measure	MCL	MCLG	Likely Source of Contaminant
Disinfectants & Disinfection Byproducts						
Chlorine	N	1.3	PPM	4.0	4.0	Water additive to control microbes.
Halo Acids (HAA5)	N	0-36 LRAA 36 ppb	PPB	60 LRAA	N/A	Byproduct of drinking water chlorination.CL=Highest locational running average
Total Trihalomethanes (TTHM)	N	12.4-95.5 LRAA 49 ppb	PPB	80 LRAA	N/A	Byproduct of drinking water chlorination.CL=Highest locational running average
Inorganic Contaminants						
Barium	N	0.025 (4/14/2025)	PPM	2	2	Discharge of drilling waste; discharge from metal refineries; erosion of natural deposits.
† Nitrates (as Nitrogen)	N	1.37 mg/L (2/3/2025)	PPM	10	10	Runoff from fertilizer use; leaking from septic tanks, sewage; erosion of natural deposits.
Atrazine	N	0.22	PPB	3	3	Runoff from herbicide used on row crops
Microbial Contaminants						
Turbidity	N	0.245	NTU	TT	N/A	From soil runoff.
Organic Contaminants						
Total Organic Carbon	N	1.14-3.68	PPM	TT	N/A	Organic Matter. It can provide a medium for formation of disinfection byproducts

Unregulated Contaminants	Highest Level Detected	Unit of Measure	Likely Source of Contaminant
Sodium	6.95-216	ppm	Naturally present in the environment
Chloride	23-442	ppm	Naturally present in the environment
Alkalinity	29-94	ppm	Naturally present in the environment
Hardness	21-115	ppm	Naturally present in the environment
pH	6.95-7.81	STD	Soil run-off
Nickel	0.001	ppm	Naturally resent in the environment. Byproduct of industrial and chemical production

Health Information

The detection of these substances in the drinking water does not constitute a known threat to public health because they were found at levels less than the MCL and below the level that EPA currently constitutes as a health threat. The MCLs are set at very stringent levels, and the City's water has proved to be below those levels for the constituents listed above.

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.

Thank you for allowing us to continue providing your family with clean, quality water this year. The employees of the City work around the clock to provide top quality water to the entire community. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life, and our children's future. Please call our office if you have questions.

City of Aberdeen

Wellhead Protection Program

The purpose of a Wellhead Protection Plan is to protect the public health, safety, and welfare through the preservation of the groundwater resources of community public water supplies to ensure a future supply of safe and healthy drinking water. The designation of wellhead protection regions, and careful regulation of activities within these areas, can reduce the potential for groundwater contamination.

The groundwater underlying the community water supply wellhead protection areas is a major source for the City's existing and future water supply. Accidental spills and discharges of toxic and hazardous materials can threaten the quality of such water supplies, posing public health and safety hazards.

The wellhead protection regions include differing zones of protection as recommended by MDE. Within the City of Aberdeen, the wellhead protection region or district includes three (3) zones of protection. Each zone is further described below:

- Zone 1 represents the area bounded by a groundwater travel time of *one year to the Aberdeen supply wells.
- Zone 2 represents the area bounded by a groundwater travel time of *10 years to the Aberdeen supply wells.
- Zone 3 represents the remaining land area of the wellhead protection area located within the City of Aberdeen.

* Amount of time a potential hazard excreted in groundwater takes to travel to City wells.

Each zone of the wellhead protection area has identifying roadway signs posted when entering or leaving. The signs are as shown in the example below. More information can be viewed at www.ecode360.com/14368446.

Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides as they contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- Dispose of chemicals properly; take used motor oil to a recycling center.
- Volunteer in your community. Find a watershed or wellhead protection organization in your community and volunteer to help. If there are no active groups, consider starting one. Use EPA's Adopt Your Watershed to locate groups in your community or visit the Watershed Information Network's How to Start a Watershed Team.

Quality Water!

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