ANNUAL WATER QUALITY REPORT

Reporting Year 2024

Presented By
Anne Arundel County,
Department of Public Works

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County Executive Steuart Pittmans' Message

I am proud to share Anne Arundel County's 2024 Consumer Confidence Report with you and let you know that the drinking water produced and delivered to your home is clean and safe for consumption. Providing high-quality drinking water to our communities is the number one goal of the dedicated professionals in the Department of Public Works (DPW) Bureau of Utilities, and this report provides you with important information on the thousands of water quality tests administered over the past year. We have continued our long-standing record of exceeding all federal standards for drinking water quality and safety, and we will continue to provide clean, safe, and reliable water to all who live, work, or visit Anne Arundel County.

Where Does My Water Come From?

Drinking water in Anne Arundel County comes from an abundant underground supply of water-bearing material known as an aquifer. Our 11 water treatment facilities draw from the Upper Patapsco, Lower Patapsco, Patuxent, and Aquia aquifers. Water is pumped to the surface through wells and passes through various processes at the treatment facilities to ensure a clean, safe, and aesthetically pleasing product is delivered to homes and businesses. Combined, our treatment facilities provide roughly 14 billion gallons of clean drinking water every year.

Source Water Assessment

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 (MDE) is the lead agency in developing these assessments, which have been completed for all the county's water systems. For more information, contact the Maryland Department of the Environment, Water Supply Division, at water.supply@maryland.gov. Source water assessments can be accessed through the following link: https://mde.maryland.gov/programs/water/water_supply/Source_Water_Assessment_Program/Pages/by_county.aspx.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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. U.S. Environmental Protection Agency (U.S. EPA)/Centers for Disease Control and Prevention (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 or epa.gov/safewater.

PFAS Monitoring Program

Per- and polyfluoroalkyl substances (PFAS) are a 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 firefighting foams. These uses 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 the human body and can accumulate in the food chain.

Beginning in 2020, MDE initiated a PFAS monitoring program. Perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) are two of the most prevalent PFAS compounds. Neither of these substances were found above the laboratory detection limit in samples taken from our water system in 2022. The U.S. EPA is expected to establish maximum contaminant levels (MCLs) for PFOA and PFOS later this year. This would require additional monitoring as well as certain actions for systems above the MCL. Additional information about PFAS can be found at mde.maryland.gov/PublicHealth/Pages/PFAS-Landing-Page.aspx.

Water Treatment Process

Wells
Water is taken from underground wells (150-1,550 feet deep) in the Upper Patapsco, Lower Patapsco, Patuxent, and Aquia aquifers.

Aeration
Once removed from the ground, water is passed through large aerators to add oxygen and remove dissolved gases.

Chemical Addition
Chemicals such as chlorine and lime are added to adjust the pH and disinfect the water.

Coagulation, Flocculation, Sedimentation
These processes remove solid particles such as iron.

Filtration
Filtration further removes suspended matter by passing the water through filter media.

Fluoride Addition
Fluoride is added to the water to aid in the prevention of tooth decay.

Distribution
After undergoing the treatment process, finished water enters the distribution system, which is a network of water mains, fire hydrants, valves, elevated storage tanks, and various other components. This system delivers the water to homes and businesses throughout Anne Arundel County.

BY THE NUMBERS

14 BILLION

The annual volume in gallons of public water delivered in 2024.

124,000

The amount of customers served by an Anne Arundel County Public Water System.

28,747

The amount of valves in the water distribution system.

14,504

The amount of fire hydrants available for emergency response.

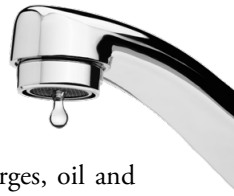
1,528

The total miles of distribution and transmission pipes maintained by Anne Arundel County.

Substances That Could Be in Water

The sources of drinking water (both tap water 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 sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.



Inorganic Contaminants, such as salts and metals, which can occur naturally in the soil or groundwater or may result from urban stormwater runoff, industrial or domestic wastewater 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 occur naturally or can be the result of oil and gas production and mining activities.

To ensure that tap water is safe to drink, U.S. 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 which must provide the same protection for public health.

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 mean that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Safe Drinking Water Hotline at (800) 426-4791 or visiting epa.gov/safewater.

Lead in Home Plumbing

Lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Anne Arundel County is responsible for providing high-quality drinking water and removing lead pipes but cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, or doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute-accredited certifier to reduce lead in drinking water. If you are concerned about lead and wish to have your water tested, contact Anne Arundel County at buo-customer-care@aacounty.org. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at epa.gov/safewater/lead.

To address lead in drinking water, public water systems were required to develop and maintain an inventory of service line materials by October 16, 2024. Developing an inventory and identifying the location of lead service lines (LSL) is the first step for beginning LSL replacement and protecting public health. The lead service inventory may be accessed at aacounty.org/public-works/utilities/water-distribution-system/water-service-inventory-program. Please contact us at (410) 222-7500 if you would like more information about the inventory or any lead sampling that has been done.

What Service Area Does My Water Come From?

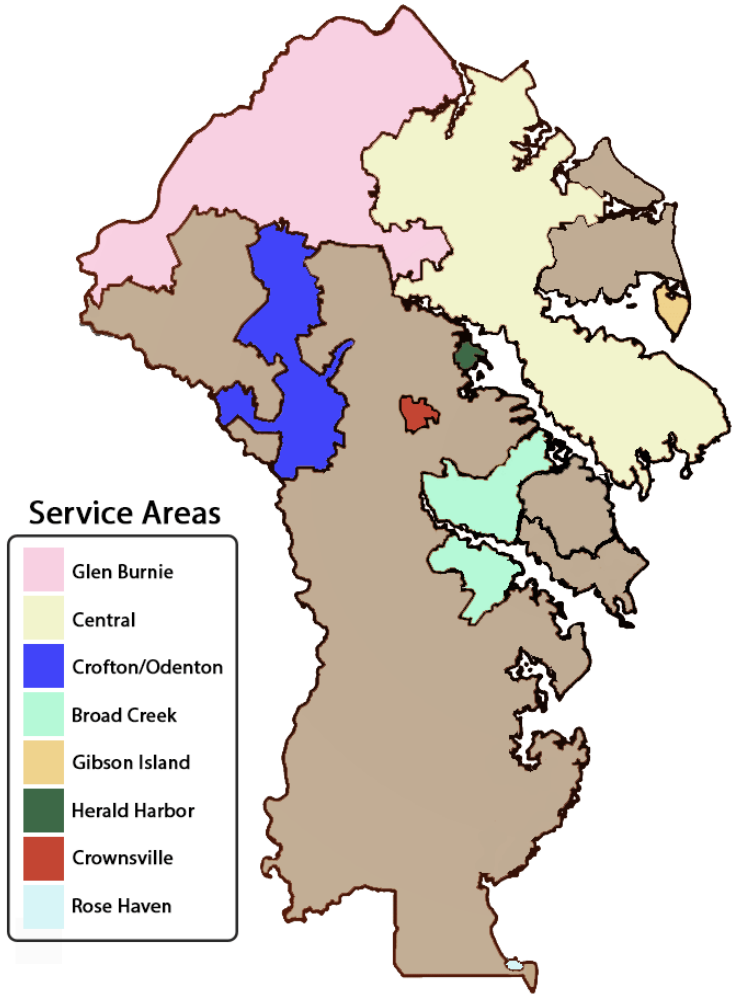
Anne Arundel County maintains a distribution system composed of eight service areas. These service areas are named after a general geographical region of Anne Arundel County. Your residence or business may fall within a service area named after a nearby locality. Use the map to identify your approximate location and then use the data tables to learn more about what is in your water.

Can You Explain More About the Data Tables?

The data tables display a summary of information required by regulatory agencies. Water quality test results are listed for each service area to ensure residents have the most accurate data available for their specific location. Anne Arundel County is committed to delivering high quality water to every service area.

The blue definitions section beneath the table explains some of the commonly used terminology. One important term is the MCL, which is the highest level of contaminant allowed in drinking water. As you can see, most test results show levels far below regulatory requirements.

Thank you for taking the time to read the report and remember to use the contact information section to reach out with comments or concerns.



To Contact the Department of Public Works (DPW):

Visit us at DPWandYou.com.

Dial 311 to reach an Anne Arundel County customer service representative who will listen to your concern and take action.

24-hour emergency hotline: (410) 222-8400; (from South County): (410) 451-4118

Billing information: (410) 222-1144

DPW customer relations: (410) 222-7582

DPW general information: (410) 222-7500

Questions or comments about the Water Quality Report: buo-customer-care@aacounty.org

To view this 2024 Consumer Confidence Report online:

aacounty.org/departments/public-works/utilities/forms-and-publications/WaterQuality2024.pdf

Test Results

These tables of results are detailed due to regulatory requirements, and we understand that the terminology may be overwhelming at times. Please reach out to us using the contact information if you desire clarification about the data. Our water is monitored for many different kinds of substances on a very strict sampling schedule to demonstrate that it meets stringent health standards. Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

You may be surprised to learn that these data tables are just a snapshot of the sampling which occurs throughout the year. Only contaminants detected in the past five years are included in the table. Approximately 10,000 samples were collected and over 40,000 analyses were performed in 2024. Employees are hard at work 365 days a year monitoring water quality to ensure that clean, safe, award-winning water is delivered to the residents and businesses of Anne Arundel County.

The state recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data is included, along with the year in which the sample was taken.

We participated in the fifth stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR5) program by performing additional tests on our drinking water. UCMR5 sampling benefits the environment and public health by providing the U.S. EPA with data on the occurrence of contaminants suspected to be in drinking water to determine if it needs to introduce new regulatory standards to improve drinking water quality. Unregulated contaminant monitoring data is available to the public, so please feel free to contact us if you are interested in obtaining that information. If you would like more information on the U.S. EPA's Unregulated Contaminant Monitoring Rule, please call the Safe Drinking Water Hotline at (800) 426-4791.

REGULATED SUBSTANCES

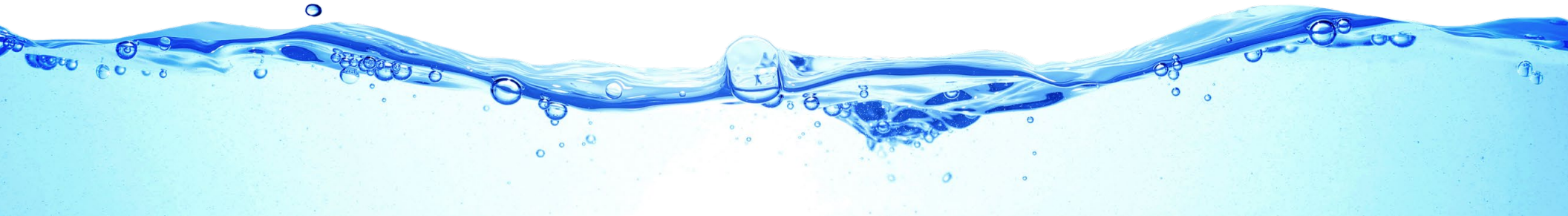
				Glen Burnie Zone		Central Zone		Crofton/Odenton Zone		Broad Creek Zone			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2024	15	0	5.2	ND–9.0	3.2	ND–6.4	4.3[1]	4.3–4.3	ND[2]	NA	No	Erosion of natural deposits
Barium (ppm)	2024	2	2	0.01	0.01–0.01	0.06[1]	0.01–0.06	0.02	0.02–0.02	0.04	0.04–0.04	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beta/Photon Emitters (pCi/L)	2024	50[4]	0	3.2	ND–5.1	4.5	4.5–4.5	ND[1]	NA	ND[2]	NA	No	Decay of natural and human-made deposits
Cadmium (ppb)	2024	5	5	3.6	ND–4	ND[1]	NA	ND	NA	ND	NA	No	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
Chromium (ppb)	2024	100	100	ND	NA	2.8[1]	2.8–3.3	ND	NA	ND	NA	No	Discharge from steel and pulp mills; erosion of natural deposits
Combined Radium (pCi/L)	2024	5	0	1.6	ND–2.8	1.6	1.5–1.7	0.8[1]	0.8–0.8	ND[3]	NA	No	Erosion of natural deposits
Fluoride (ppm)	2024	4	4	1.26	0.05–1.26	0.92	0.12–0.92	0.73	0.24–0.73	0.89	0.13–0.89	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs] (ppb)	2024	60	NA	21	1–21	NA[1]	NA[1]	ND	NA	1.3[1]	1.3–1.3[1]	No	By-product of drinking water disinfection
Nitrate (ppm)	2024	10	10	1.3	ND–1.3	ND[1]	NA[1]	ND	NA	ND[1]	NA[1]	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
TTHMs [total trihalomethanes] (ppb)	2024	80	NA	14.9	4.9–14.9	NA[1]	NA[1]	2.6	2.6–2.6	3[1]	3–3[1]	No	By-product of drinking water disinfection

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	Herald Harbor Zone AMOUNT DETECTED	Herald Harbor Zone RANGE LOW-HIGH	Gibson Island Zone AMOUNT DETECTED	Gibson Island Zone RANGE LOW-HIGH	Rose Haven Zone AMOUNT DETECTED	Rose Haven Zone RANGE LOW-HIGH	Crownsville Zone AMOUNT DETECTED	Crownsville Zone RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2024	15	0	ND[3]	NA	ND	NA	NA	NA	6	2.1–10.5	No	Erosion of natural deposits
Barium (ppm)	2024	2	2	ND[2]	NA	0.01[1]	0.01–0.01	ND[1]	NA	0.01	0.01–0.01	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beta/Photon Emitters (pCi/L)	2024	50[4]	0	ND[3]	NA	NA	NA	NA	NA	8.6	ND–8.6	No	Decay of natural and human-made deposits
Cadmium (ppb)	2024	5	5	ND[2]	NA	ND[1]	NA	ND[3]	NA	ND	NA	No	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
Chromium (ppb)	2024	100	100	ND[2]	NA	3[1]	3–3	ND[5]	NA	ND	NA	No	Discharge from steel and pulp mills; erosion of natural deposits
Combined Radium (pCi/L)	2024	5	0	ND[3]	NA	0.3[2]	0.3–0.3	ND[3]	NA	8	1.6–8	No	Erosion of natural deposits
Fluoride (ppm)	2024	4	4	1.23	0.43–1.23	1.12	0.49–1.12	0.90	0.23–0.90	ND[2]	NA	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs] (ppb)	2024	60	NA	ND	NA	ND	NA	14.9	12.4–14.9	1	ND–1	No	By-product of drinking water disinfection
Nitrate (ppm)	2024	10	10	ND	NA	ND	NA	ND	NA	ND	NA	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
TTHMs [total trihalomethanes] (ppb)	2024	80	NA	1.5	1.5–1.5	3.8	3.8–3.8	33.2	33.2–33.2	9.3	8.9–9.3	No	By-product of drinking water disinfection

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	Glen Burnie Zone AMOUNT DETECTED (90TH %ILE)	Glen Burnie Zone RANGE LOW-HIGH	Glen Burnie Zone SITES ABOVE AL/TOTAL SITES	Central Zone AMOUNT DETECTED (90TH %ILE)	Central Zone RANGE LOW-HIGH	Central Zone SITES ABOVE AL/TOTAL SITES	Crofton/Odenton Zone AMOUNT DETECTED (90TH %ILE)	Crofton/Odenton Zone RANGE LOW-HIGH	Crofton/Odenton Zone SITES ABOVE AL/TOTAL SITES	Broad Creek Zone AMOUNT DETECTED (90TH %ILE)	Broad Creek Zone RANGE LOW-HIGH	Broad Creek Zone SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2024	1.3	1.3	0.025	NA	0/56	0.025	NA	0/56	0.02[2]	NA	0/34[2]	0.03[2]	NA	0/30[2]	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	2024	15	0	ND	NA	0/56	ND	NA	0/56	ND[2]	NA	0/34[2]	ND[2]	NA	0/30[2]	No	Lead service lines; corrosion of household plumbing systems, including fittings and fixtures; erosion of natural deposits



Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	Herald Harbor Zone AMOUNT DETECTED (90TH %ILE)	Herald Harbor Zone RANGE LOW-HIGH	Herald Harbor Zone SITES ABOVE AL/TOTAL SITES	Gibson Island Zone AMOUNT DETECTED (90TH %ILE)	Gibson Island Zone RANGE LOW-HIGH	Gibson Island Zone SITES ABOVE AL/TOTAL SITES	Rose Haven Zone AMOUNT DETECTED (90TH %ILE)	Rose Haven Zone RANGE LOW-HIGH	Rose Haven Zone SITES ABOVE AL/TOTAL SITES	Crownsville Zone AMOUNT DETECTED (90TH %ILE)	Crownsville Zone RANGE LOW-HIGH	Crownsville Zone SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2024	1.3	1.3	0.03[2]	NA	0/10[2]	0.02[2]	NA	0/14[2]	0.187	NA	0/13	0.38[1]	NA	1/10[1]	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	2024	15	0	ND[2]	NA	0/10[2]	ND[2]	NA	0/14[2]	ND	NA	0/13	.006[1]	NA	1/10[1]	No	Lead service lines; corrosion of household plumbing systems, including fittings and fixtures; erosion of natural deposits

UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Glen Burnie Zone AMOUNT DETECTED	Glen Burnie Zone RANGE LOW-HIGH	Central Zone AMOUNT DETECTED	Central Zone RANGE LOW-HIGH	Crofton/Odenton Zone AMOUNT DETECTED	Crofton/Odenton Zone RANGE LOW-HIGH	Broad Creek Zone AMOUNT DETECTED	Broad Creek Zone RANGE LOW-HIGH	TYPICAL SOURCE
Lithium (ppb)	2024	ND	NA	13.1	ND–13.1	9.06	ND–9.06	11.4[1]	ND–11.4	Naturally occurring element
Nickel (ppb)	2024	2.2	ND–2.2	ND[1]	NA	11	11–11	ND	NA	Naturally occurring element
Sodium (ppm)	2022	3.9	2.5–3.9	3.3	2.5–3.3	7.7	7.7–7.7	3.6	3.6–3.6	Naturally occurring element

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Herald Harbor Zone AMOUNT DETECTED	Herald Harbor Zone RANGE LOW-HIGH	Gibson Island Zone AMOUNT DETECTED	Gibson Island Zone RANGE LOW-HIGH	Rose Haven Zone AMOUNT DETECTED	Rose Haven Zone RANGE LOW-HIGH	Crownsville Zone AMOUNT DETECTED	Crownsville Zone RANGE LOW-HIGH	TYPICAL SOURCE
Lithium (ppb)	2024	NA	NA	NA	NA	NA	NA	NA	NA	Naturally occurring element
Nickel (ppb)	2024	NA	NA	ND[1]	NA	NA	NA	9	9–9	Naturally occurring element
Sodium (ppm)	2022	3.8	3.8–3.8	NA	NA	8.1[5]	8.1–8.1	20.5	20.5–20.5	Naturally occurring element

[1] Sampled in 2023.
[2] Sampled in 2022.
[3] Sampled in 2021.
[4] The MCL for beta particles is 4 mrem/year. US EPA considers 50 pCi/L to be the level of concern for beta particles.
[5] Sampled in 2020.
[6] Sampled in 2024.

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

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

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

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.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable.

ND (Not Detected): Indicates that the substance was not found by laboratory analysis.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (µg/L) (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (mg/L) (parts per million): One part substance per million parts water (or milligrams per liter).