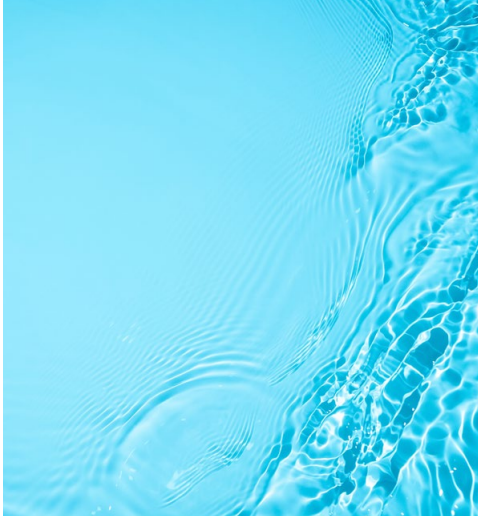

ANNUAL WATER QUALITY REPORT

Reporting Year 2023

Presented By

North Wales Water Authority

NWWA

Our Commitment

We are pleased to present to you this year's annual water quality report. This report is a snapshot of last year's water quality covering all testing performed between January 1 and December 31, 2023. Included are details about your sources of water, what it contains, and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and providing you with this information because informed customers are our best allies.

Lead in Home Plumbing

If present, elevated levels of 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. We are responsible for providing high-quality drinking water, but we cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at (800) 426-4791 or www.epa.gov/safewater/lead.

Sources of Water

In 2023 approximately 96 percent of the water NWWA delivered to its customers was treated surface water from the Forest Park Water Treatment Plant. The source of water treated at Forest Park is the North Branch Neshaminy Creek, which originates as a small stream near Route 413 in central Bucks County. The creek then flows into Lake Galena, which is the reservoir for Forest Park. Water released from Lake Galena flows down the North Branch to where it is drawn into the Forest Park Water Treatment Plant in Chalfont. At times throughout the year, water is pumped from the Delaware River at Point Pleasant and diverted into the North Branch near Gardenville. This diversion controls the level of Lake Galena for recreational and stormwater retention purposes, ensures a sufficient drinking water supply, and maintains base flow in the stream.

The remaining 4 percent of water came from 11 groundwater supply wells that NWWA operates. These wells are located throughout our service territory. The water from these wells is chlorinated before it is delivered to our customers' homes.

Cryptosporidium and Giardia

Cryptosporidium and giardia are microbial pathogens found in surface water throughout the U.S. Monitoring of our source water (before treatment) at Forest Park during March, June, and October 2023 did not indicate the presence of *cryptosporidium* or giardia in any of the three samples collected. Forest Park treatment processes are designed to remove or inactivate *cryptosporidium* and giardia cysts with a high level of certainty. Current available test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immunocompromised people, infants and small children, and the elderly are at greater risk of developing life-threatening illness. NWWA encourages immunocompromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *Cryptosporidium* and giardia must be ingested to cause disease, and they may be spread through means other than drinking water.

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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. Environmental Protection Agency (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 http://water.epa.gov/drink/hotline.

QUESTIONS? If you would like to learn more about your water and our organization, please visit our webpages at www.nwwater.com, view the video about Forest Park Water Treatment Plant, or call us at our main office at 215-699-4836 and ask to speak with one of our water quality experts.

For free additional copies or more information about this report, please reach out to our office.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA and Pennsylvania Department of Environmental Protection (DEP) prescribe regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration and DEP 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 these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases radioactive material, and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring 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 may also come from gas stations, urban stormwater runoff, and septic systems;

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

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Source Water Assessment

In June 2011, a source water assessment of the North Branch Neshaminy Creek intake, which supplies water to the Forest Park Water Treatment Plant, was completed by Spotts, Stevens & McCoy Inc. for DEP. The assessment found that the intake is potentially most susceptible to point sources of pollution from auto repair shops, wastewater treatment plants, boating, quarries, on-lot septic systems, and gas stations. Non-point sources of potential contamination include major transportation corridors and runoff from areas of urban development, livestock farming, and industrial parks. The most serious potential sources are related to accidental release of a variety of materials along transportation corridors and high nutrient levels from Lake Galena.

The Forest Park Water Treatment Plant has the capability to treat a wide array of contaminants and minimize any negative impacts from such sources. Regular, frequent monitoring of the water supply allows us to identify any concerns and remediate any problems in a timely manner. Contingency and emergency response plans are in place to deal with any release of contaminants or accidental occurrences that could compromise the quality of your drinking water.

A source water assessment of our groundwater sources was also completed in June 2011 by Spotts, Stevens & McCoy. Most of the land that surrounds NWWA wells is highly developed residential areas. The assessment found that our groundwater sources are potentially most susceptible to transportation corridors, residential activities, railroad transportation, wastewater disposal, and golf courses.

Summary reports of the assessments are available at https://greenport.pa.gov/elibrary/GetFolder?FolderID=4490/. Complete reports were distributed to municipalities, water suppliers, local planning agencies, and DEP offices. Copies of the reports are available for review at the DEP Southeast Regional Office, Records Management Unit, by calling (484) 250-5910.

Water Main Flushing

Distribution mains (pipes) convey water to homes, businesses, and hydrants in your neighborhood. The water entering distribution mains is of very high quality; however, water quality can deteriorate in areas of the distribution mains over time. Water main flushing is the process of cleaning the interior of water distribution mains by sending a rapid flow of water through them.

Flushing maintains water quality in several ways. For example, flushing removes sediments like iron and manganese. Although iron and manganese do not pose health concerns, they can affect the taste, clarity, and color of the water. Additionally, sediments can shield microorganisms from the disinfecting power of chlorine, contributing to the growth of microorganisms within distribution mains. Flushing helps remove stale water and ensures the presence of fresh water with sufficient dissolved oxygen and disinfectant levels and an acceptable taste and smell.

During flushing operations in your neighborhood, some short-term deterioration of water quality, though uncommon, is possible. You should avoid tap water for household uses at that time. If you do use the tap, allow your cold water to run for a few minutes at full velocity before use and avoid using hot water to prevent sediment accumulation in your hot water tank. Please contact us if you have any questions or if you would like more information on our water main flushing schedule.

Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). 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.

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 are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION Y/N	TYPICAL SOURCE
Barium (ppm)	2023	2	2	0.015	NA	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Bromate (ppb)	2023	10	0	2.3	1.5–4.0	N	By-product of drinking water disinfection
Nitrate (ppm)	2023	10	10	1.18	0.34–3.82	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Uranium (ppb)	2023	30	0	4.80	1.65–4.80	N	Erosion of natural deposits

SECONDARY CONTAMINANT TABLE

CONTAMINANT	SMCL IN CCR UNITS	SMCLG	HIGHEST LEVEL DETECTED	RANGE OF DETECTIONS	SAMPLE DATE	VIOLATION Y/N	SOURCES OF CONTAMINATION
Manganese (ppm)	0.05	N/A	0.09	0.08—0.09	2020	N	Leaching from natural deposits

Secondary contaminants are established as guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color, and odor. These contaminants are not considered to present a risk to human health at the SMCL.

DISTRIBUTION DISINFECTANT RESIDUAL

CONTAMINANT	MRDL	MRDLG	HIGHEST MONTHLY AVERAGE	RANGE OF MONTHLY AVERAGE RESULTS	SAMPLE DATE	VIOLATION Y/N	SOURCES OF CONTAMINATION
Chlorine (ppm)	4.0	4.0	1.28	0.92–1.28	2023	N	Water additive used to control microbes

ENTRY POINT DISINFECTANT RESIDUAL

CONTAMINANT	MINIMUM DISINFECTANT RESIDUAL	LOWEST LEVEL DETECTED	RANGE OF DETECTIONS	SAMPLE DATE	VIOLATION Y/N	SOURCES OF CONTAMINATION
Chlorine — NWWA Wells (ppm)	0.40	0.42	0.42–2.90	2023	N	Water additive used to control microbes
Chlorine— FPWTP (ppm)	0.20	1.27	1.27–1.88	2023	N	Water additive used to control microbes

TURBIDITY AT FOREST PARK WATER TREATMENT PLANT

CONTAMINANT	MCL	MCLG	HIGHEST LEVEL DETECTED	RANGE OF DETECTIONS	SAMPLE DATE	VIOLATION Y/N	SOURCES OF CONTAMINATION
Turbidity (NTU)	TT	N/A	0.07	0.03–0.07	2023	N	Soil runoff

Turbidity is the measure of the clarity of water. 100% of Turbidity samples were below 0.1 NTU. As a member of the Partnership for Safe Drinking Water, our goal is to maintain turbidity levels below 0.1 NTU. This was achieved throughout 2023.

Definitions

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.

Minimum Disinfectant Residual: the minimum level of residual disinfectant required at the entry point to the distribution system.

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 (non-detect): Indicates that the substance was not found by laboratory analysis.

NTU: Nephelometric turbidity unit is a measure of the clarity of water.

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

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

Parts per trillion (ppt): one part substance per trillion parts water (or nanograms per liter).

SMCL: Secondary Maximum Contaminant Level

SMCLG: Secondary Maximum Contaminant Level Goal

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

MICROBIAL – COLIFORM BACTERIA, CRYPTOSPORIDIUM AND GIARDIA

CONTAMINANT	MCL	MCLG	HIGHEST LEVEL DETECTED	RANGE OF DETECTIONS	SAMPLE DATE	VIOLATION Y/N	SOURCES OF CONTAMINATION

Coliform bacteria including Total Coliform and E. coli were monitored on a continuous basis in 2023. Neither parameter was detected in accordance with the regulations of the PA Department of Environmental Protection.

HALOACETIC ACIDS (HAA5)—2023

CONTAMINANT	MCL IN CCR UNITS	MCLG	RANGE OF DETECTIONS	LEVEL DETECTED	VIOLATION Y/N	SOURCES OF CONTAMINATION
Haloacetic Acids (HAA5) (ppb)	60.0	N/A	8.38–31.60	24.24	N	By-products of drinking water disinfection

CONTAMINANT	MCLG	RANGE OF DETECTIONS	LEVEL DETECTED	VIOLATION Y/N	SOURCES OF CONTAMINATION
Dibromoacetic acid (ppb)	N/A	0.00–1.23	0.21	N	By-product of drinking water chlorination
Dichloroacetic acid (ppb)	0	2.90–22.00	15.94	N	By-product of drinking water chlorination
Trichloroacetic acid (ppb)	20.0	2.78–12.20	8.24	N	By-product of drinking water chlorination
Monobromoacetic acid (ppb)	N/A	N/A	0	N	By-product of drinking water chlorination
Monochloroacetic acid (ppb)	70.0	N/A	0	N	By-product of drinking water chlorination

TOTAL TRIHALOMETHANES (TTHMS)—2023

CONTAMINANT	MCL IN CCR UNITS	MCLG	RANGE OF DETECTIONS	LEVEL DETECTED	VIOLATION Y/N	SOURCES OF CONTAMINATION
Total Trihalomethanes (TTHM) (ppb)	80.0	N/A	4.45–84.20	33.24	N	By-products of drinking water disinfection

CONTAMINANT	MCLG	RANGE OF DETECTIONS	LEVEL DETECTED	VIOLATION Y/N	SOURCES OF CONTAMINATION
Bromodichloromethane (ppb)	0	1.09–14.60	6.30	N	By-product of drinking water chlorination
Bromoform (ppb)	0	0.00–1.33	0.08	N	By-product of drinking water chlorination
Chlorodibromomethane (ppb)	60.0	0.00–8.40	2.35	N	By-product of drinking water chlorination
Chloroform (ppb)	70.0	2.85–67.30	24.66	N	By-product of drinking water chlorination

PERFLUORINATED COMPOUNDS AT FOREST PARK WATER TREATMENT PLANT

CONTAMINANT	MCL IN CCR UNITS	MCLG	RANGE OF DETECTIONS	HIGHEST LEVEL DETECTED	SAMPLE DATE	VIOLATION Y/N	SOURCES OF CONTAMINATION
Perfluorooctanesulfonic acid (PFOS) (ppt)	18	14	ND–2.8	1.1*	2023	N	Human-made chemicals used to make items that are resistant to water, grease, or stains, such as cookware, carpets, and packaging. Also used in industrial processes and in firefighting foams.
Perfluorooctanoic acid (PFOA) (ppt)	14	8	ND–4.1	2.2*	2023	N	Human-made chemicals used to make items that are resistant to water, grease, or stains, such as cookware, carpets, and packaging. Also used in industrial processes and in firefighting foams.

*Compliance is based on a running annual average of quarterly results. This value represents the higher running annual average result, not a single sample result.

LEAD AND COPPER

CONTAMINANT	ACTION LEVEL (AL)	MCLG	90TH PERCENTILE VALUE	# OF SITES ABOVE AL OF TOTAL SITES	VIOLATION Y/N	SOURCES OF CONTAMINATION
Lead (ppb) 6/2022	15	0	3.0	0 out of 35	N	Corrosion of household plumbing.
Copper (ppm) 6/2022	1.3	1.3	0.24	0 out of 35	N	Corrosion of household plumbing.

Below is a list of parameters which Forest Park Water Treatment Plant monitored for but did not detect during the 2023 sample year:

Synthetic Organic Contaminants
1,2-Dibromo-3-chloropropane
Benzo[a]pyrene
Di-2(ethylhexyl) phthalate
Endrin
Hexachlorobenzene
Pentachlorophenol
2,4-D
Carbofuran
Dinoseb
Ethylene dibromide
Hexachlorocyclopentadiene
Picloram
2,4,5-TP [Silvex]
Chlordane
Dioxin [2,3,7,8-TCDD]
Glyphosphate
Lindane
PCBs [Polychlorinated biphenyls]
Alachlor
Dalapon
Diquat
Heptachlor
Methoxychlor
Simazine
Atrazine
Di-2(ethylhexyl) adipate
Endothall
Heptachlor epoxide
Oxamyl [Vydate]
Toxaphene

Regulated Volatile Organic Contaminants
1,1,1-Trichloroethane
Toluene
o-Dichlorobenzene
cis-1,2-Dichloroethylene
1,2-Dichloropropane
Trichloroethylene
1,1,2-Trichloroethane
trans 1,2-Dichloroethylene
Benzene
Dichloromethane
Styrene
Vinyl Chloride
1,1-Dichloroethylene
p-Dichlorobenzene
Carbon tetrachloride
Ethylbenzene
Tetrachloroethylene
Xylenes, total
1,2,4-Trichlorobenzene
1,2-Dichloroethane
Chlorobenzene

Regulated Inorganic Contaminants
Antimony
Chromium
Nickel
Arsenic
Cyanide
Nitrite
Beryllium
Fluoride
Selenium
Cadmium
Mercury
Thallium

Regulated Radiological Contaminants
Gross Alpha Particle Activity
Radium 226
Radium 228

Polyfluoroalkyl Substances (PFAS)
perfluorobutanesulfonic acid (PFBS)
perfluoroheptanoic acid (PFHpA)
perfluorohexanesulfonic acid (PFHxS)
perfluorononanoic acid (PFNA)