

Annual Drinking Water Quality Report

Medford Township Utility Department

For the Year 2021, Results from the Year 2020

We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our 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.

Our Drinking Water sources include groundwater wells and water purchased from New Jersey American Water (NJAW). Our eight active wells draw groundwater from the Upper Potomac-Raritan-Magothy (PRM) Aquifer System and the Mount Laurel-Wenonah (MLW) Aquifer System. Our groundwater is treated with an iron-sequestering agent and chlorine disinfection. Fluoride is not added to our drinking water system. The NJDEP strictly regulates the volume of water that can be pumped from the PRM and MLW aquifers because they are being depleted at a faster rate than they are replenished. To supplement our water supply, Medford Township purchases water from NJAW. NJAW's sources include nine active wells that draw groundwater from the Upper & Lower PRM Aquifer System and surface water treated at the Delaware River Regional Treatment Plant.

The Medford Township Utility Department and New Jersey American Water routinely monitor for contaminants in your drinking water according to Federal and State laws. The table below shows the results of our monitoring for the period of January 1st to December 31st 2020. The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, may be more than one year old. The Safe Drinking Water Act regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for asbestos and synthetic organic chemicals. Our system received monitoring waivers for both of these types of contaminants, asbestos and synthetic organic chemicals. NJAW received a monitoring waiver for synthetic organic chemicals.

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).

Medford Township Utility Department Test Results						
PWSID # NJ0320001						
Contaminant	Violation Y/N	Level Detected	Units of Measurement	MCLG	MCL	Likely Source of Contamination
Radioactive Contaminants:						
Gross Alpha Test results Yr. 2020	N	Range = ND – 4.1 Highest detect = 4.1	pCi/l	0	15	Erosion of natural deposits
Combined Radium Test results Yr. 2020	N	Range = ND – 5.2 Highest detect = 5.2	pCi/l	0	5	Erosion of natural deposits
Inorganic Contaminants:						
Barium Test results Yr. 2020	N	Range = 0.0105 – 0.152 Highest detect = 0.152	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper Test results Yr. 2020	N	90 th Percentile = 0.284 No samples exceeded the action level	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Chromium Test results Yr. 2020	N	Range = ND – 0.763 Highest detect = 0.763	ppb	100	100	Discharge from steel and pulp mills; Erosion of natural deposits
Cyanide Test results Yr. 2020	N	Range= 0.00094 – 0.044 Highest detect = 0.044	ppm	0.2	0.2	Discharge from steel / metal factories; Discharge from plastic and fertilizer factories
Fluoride Test results Yr. 2020	N	Range = 0.06 – 0.228 Highest detect = 0.228	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Lead Test results Yr. 2020	N	90 th Percentile = 1.99 1 sample exceeded the action level	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Mercury Test results Yr. 2020	N	Range = ND – 0.394 Highest detect = 0.394	ppb	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills and croplands
Nickel Test results Yr. 2020	N	Range = 0.56 – 2.06 Highest detect = 2.06	ppb	N/A	No MCL	Erosion of natural deposits.
Nitrate (as Nitrogen) Test results Yr. 2020	N	Range = ND – 0.102 Highest detect = 0.102	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

If a system is rated highly susceptible for a contaminant category, it does not mean a customer is or will be consuming contaminated drinking water. The rating reflects the potential for contamination of source water, not the existence of contamination. Public water systems are required to monitor for regulated contaminants and to install treatment if any contaminants are detected at frequencies and concentrations above allowable levels. As a result of the assessments, DEP may customize (change existing) monitoring schedules based on the susceptibility ratings.

Pathogens: Disease-causing organisms such as bacteria and viruses. Common sources are animal and human fecal wastes.

Nutrients: Compounds, minerals, and elements that aid growth, that are both naturally occurring and man-made. Examples include nitrogen and phosphorus.

Volatile Organic Compounds: Man-made chemicals used as solvents, degreasers, and gasoline components. Examples include benzene, methyl tertiary butyl ether (MTBE), and vinyl chloride.

Pesticides: Man-made chemicals used to control pests, weeds, and fungus. Common sources include land application and manufacturing centers of pesticides. Examples include herbicides such as atrazine, and insecticides such as chlordane.

Inorganics: Mineral-based compounds that are both naturally occurring and man-made. Examples include arsenic, asbestos, copper, lead, and nitrate.

Radionuclides: Radioactive substances that are both naturally occurring and man-made. Examples include radium and uranium.

Radon: Colorless, odorless, cancer-causing gas that occurs naturally in the environment. For more information go to <http://www.nj.gov/dep/rpp/radon/index.htm> or call (800) 648-0394.

Disinfection Byproduct Precursors: A common source is naturally occurring organic matter in surface water. Disinfection byproducts are formed when the disinfectants (usually chlorine) used to kill pathogens react with dissolved organic material (for example leaves) present in surface water.

Medford Township Utility Department Source Water Assessment Summary - PWSID # NJ0320001

The Medford Township Utility Department is a public community water system consisting of 8 active wells.

This system's source water comes from the following aquifers: Upper Potomac-Raritan-Magothy Aquifer System and the Mount Laurel-Wenonah Aquifer System.

This system purchases water from the following water system: New Jersey American Water – Mount Holly System

Susceptibility Ratings for Medford Township Utility Department Sources

Sources	Pathogens			Nutrients			Pesticides			Volatile Organic Compounds			Inorganics			Radionuclides			Radon			Disinfection Byproduct Precursors		
	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L
Wells - 8			8			8			8			8		4	4		4	4		4	4			8

If you have questions about this report or concerning your water utility, please contact us at 609-654-6791. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled Township Meetings. Times and dates for those Meetings are posted in the Township's Calendar.

We at the Medford Township Utility Department work around the clock to provide you with top quality drinking water. We ask that our customers and residents help us protect our water sources, which are the heart of our community, our way of life, and our children's future.

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Contaminant	Violation Y/N	Level Detected	Units of Measurement	MCLG	MCL	Likely Source of Contamination
Disinfection Byproducts:						
THM Total Trihalomethanes Test results Yr. 2020	N	Range = 1 – 24.8 Highest LRAA = 19.9	ppb	N/A	80	By-product of drinking water disinfection
HAAs Haloacetic Acids Test results Yr. 2020	N	Range = ND - 17 Highest LRAA = 11.7	ppb	N/A	60	By-product of drinking water disinfection
Regulated Disinfectants		Level Detected	MRDL	MRDLG		Likely Source
Chlorine Test results Yr. 2020		Range = 0.21 – 0.39 ppm Average = 0.29 ppm	4.0 ppm	4.0 ppm		Water additive used to control microbes
Secondary Contaminants (Aesthetic):						
Contaminant	Violation Y/N	Level Detected	Units of Measurement	MCLG	RUL	Likely Source of Contamination
Iron Test Results Yr. 2020	N ¹	Range = 0.13 – 0.424 Highest detect = 0.424	ppm	N/A	0.6 ¹	Leaching from natural deposits; industrial wastes

¹ In accordance with N.J.A.C. 7:10, the Iron RUL is raised from 0.3 ppm to 0.6 ppm since iron sequestering treatment is provided.

Lead: 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. The Medford Township Utility Department and New Jersey American Water are responsible for providing high quality drinking water but 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 2 minutes before using water for drinking and 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 or at <http://www.epa.gov/safewater/lead>.

Iron: The recommended upper limit for iron is based on unpleasant taste of the water and staining of laundry. Iron is an essential nutrient, but some people who drink water with iron levels well above the recommended upper limit could develop deposits of iron in a number of organs of the body.

Unregulated Contaminant Monitoring

The Medford Township Utility Department monitored for the following unregulated contaminants in 2020. Unregulated contaminants are those for which the US Environmental Protection Agency (EPA) or the New Jersey Department of Environmental Protection (NJDEP) has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA and NJDEP in determining the occurrence of unregulated contaminants in drinking water and whether regulation is warranted. Per- and poly-fluoroalkyl substances (PFAS) are widely found in the environment. EPA has identified a health advisory level for two PFAS analytes, PFOA and PFOS of 0.070 ppb either singly or combined, and NJDEP has adopted new drinking water standards (Maximum Contaminant Levels (MCLs)) for PFOA and PFOS of 14 ng/L (ppt) and 13 ng/L (ppt), respectively, as of January 2021.

Contaminant	Level Detected	Units of Measurement	Likely Source
PFOS (Perfluorooctane Sulfonate)	ND	ppt	Used in the manufacture of fluoropolymers
PFOA (Perfluorooctanoic Acid)	ND	ppt	Used in the manufacture of fluoropolymers

What are PFOA and PFOS? Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) are per- and poly-fluoroalkyl substances (PFAS), previously referred to as perfluorinated compounds, or PFCs, that are manmade and used in industrial and commercial applications. PFOA was used as a processing aid in the manufacture of fluoropolymers used in non-stick cookware and other products, as well as other commercial and industrial uses based on its resistance to harsh chemicals and high temperatures. PFOS is used in metal plating and finishing as well as in various commercial products. PFOS was previously used as a major ingredient in foams for firefighting and training, and PFOA and PFOS are found in consumer products such as stain resistant coatings for upholstery and carpets, water resistant outdoor clothing, and grease proof food packaging. Although the use of PFOA and PFOS has decreased substantially, contamination is expected to continue indefinitely because these substances are extremely persistent in the environment and are soluble and mobile in water. More information can be found at: [https://www.state.nj.us/dep/wms/bears/docs/2019-4-15-FAQs_PFOA-PFOA-websites-OLA%204-24-19SDM-\(003\).pdf](https://www.state.nj.us/dep/wms/bears/docs/2019-4-15-FAQs_PFOA-PFOA-websites-OLA%204-24-19SDM-(003).pdf)

Unregulated Contaminants for Which EPA Required Monitoring: The Medford Township Utility Department participated in the Unregulated Contaminant Monitoring Rule (UCMR) from 2018 to 2020 to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. The following substances were found during monitoring conducted in 2020.

Contaminant	Level Detected	Average Detected	Units of Measurement	Likely source
Manganese	8.51	8.51	ppb	Manganese is an essential nutrient, and toxicity is not expected from levels which would be encountered in drinking water.

New Jersey American Water – Mount Holly System Test Results PWSID # NJ0323001						
Contaminant	Violation Y/N	Level Detected	Units of Measurement	MC LG	MCL	Likely Source of Contamination
Inorganic Contaminants:						
Barium Test results Yr. 2020	N	Range = ND – 0.1 Highest detect = 0.1	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper Test results Yr. 2020	N	Range = ND – 0.084 Highest detect = 0.1	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits

New Jersey American Water – Delaware River Regional Treatment Plant Test Results PWSID # NJ0327001						
Contaminant	Violation Y/N	Level Detected	Units of Measurement	MC LG	MCL	Likely Source of Contamination
Microbiological Contaminants:						
Turbidity Test results Yr. 2020	N	Highest Single Measurement = 0.1 100 % < 0.3 NTU	NTU	0	TT: 95% of monthly samples ≤ 0.3 NTU	Soil runoff
Total Organ Carbon (TOC) Test results Yr. 2020	N	Range = 45% - 66% Removal		N/A	TT ≥ 35 % of removal	Naturally present in the environment
Actual / Required TOC Removal (Ratio) Test results Yr. 2020	N	Range of Ratio Removal Achieved = 1.29 to 1.89		N/A	TT: Running Annual Average ≥ 1	Naturally present in the environment
Inorganic Contaminants:						
Nitrate (as Nitrogen) Test results Yr. 2020	N	0.99	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Regulated Disinfectants		Level Detected	Minimum Chlorine Residual	MRDLG	MRDL	Likely Source
Entry-Point Chlorine Residual Test results Yr. 2020		Range = 0.56 – 1.46 ppm	TT ≥ 0.20	4.0 ppm	4.0 ppm	Water additive used to control microbes
Unregulated Perfluorinated Compounds:						
Perfluorooctanoic Acid (PFOA) Test results Yr. 2020		Range = 2.4 – 5.0 ppt Average Result = 3.46 ppt	Used for its emulsifier and surfactant properties in or as fluoropolymers (such as Teflon), fire-fighting foams, cleaners, cosmetics, lubricants, paints, polishes, adhesives, and photographic films.			
Perfluorooctanesulfonic Acid (PFOS) Test results Yr. 2020		Range = 1.8 – 4.8 ppt Average Result = 3.13 ppt	Manmade chemical; used in products for stain, grease, heat, and water resistance			

NJAW Mount Holly System - Unregulated Contaminant Monitoring Rule (UCMR4) 2020					
New Jersey American Water – Mount Holly System participated in the Unregulated Contaminant Monitoring Rule. Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether regulation is warranted. The following substances were found.					
Contaminant	Unit	MRL	Average	Range Detected	Use or Environmental Source
Manganese	ppb	0.4	0.67	ND to 1.9	Naturally-occurring elemental metal; largely used in aluminum alloy production. Essential dietary element.

NJAW Delaware River Regional Treatment Plant - Unregulated Contaminant Monitoring Rule (UCMR4) 2020					
New Jersey American Water Delaware River Regional Treatment Plant participated in the Unregulated Contaminant Monitoring Rule. Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether regulation is warranted. The following substances were found.					
Contaminant	Unit	MRL	Average	Range Detected	Use or Environmental Source
Manganese	ppb	0.4	1.02	ND - 1.8	Naturally present in the environment; used in steel production, fertilizer, batteries and fireworks; drinking water and wastewater treatment chemical

Definitions: In the “Test Results” tables you may find some terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions: Action Level - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. Maximum Contaminant Level - The “Maximum Allowed” (MCL) is 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. Maximum Contaminant Level Goal -The “Goal” (MCLG) is 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. Maximum Residual Disinfectant Level (MRDL) - 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. Maximum Residual Disinfectant Level Goal (MRDLG) - 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 contamination. Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person. Non-Detects (ND) - laboratory analysis indicates that the contaminant is not present. Parts per million (ppm) or Milligrams per liter (mg/l) -one part per million corresponds to one minute in two years or a penny in \$10,000. Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000. Parts per trillion (ppt) or nanogram per liter - one part per trillion corresponds to one minute in 20,000 years, or a single penny in \$100,000,000. Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water. Recommended Upper Limit (RUL) – Recommended maximum concentration of secondary contaminants. These reflect aesthetic qualities such as odor, taste or appearance. RUL’s are recommendations, not mandates. Secondary Contaminant - Substances that do not have an impact on health. Secondary Contaminants affect aesthetic qualities such as odor, taste or appearance. Secondary standards are recommendations, not mandates. Total Organic Carbon (TOC) - We are required to remove a certain percentage of (TOC) from our drinking water on a monthly basis. Total Organic Carbon has no adverse health effects. However, TOC provides a medium for the formation of disinfection byproducts. Treatment Technique – A required process intended to reduce the level of a contaminant in drinking water. Turbidity – A measure of the particulate matter or “cloudiness” of the water. High turbidity can hinder the effectiveness of disinfectants.
<u>Drinking Water Sources</u>

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 the 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 be naturally occurring or 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, septic systems, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, 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 indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency’s Safe Drinking Water Hotline at 1-800-426-4791.

Source Water Assessment Summary

The New Jersey Department of Environmental Protection (NJDEP) has prepared Source Water Assessment Reports and Summaries for all public water systems. Further information on the Source Water Assessment Program can be obtained by logging onto NJDEP’s source water assessment website at www.state.nj.us/dep/swap or by contacting NJDEP’s Bureau of Safe Drinking Water at (609) 292-5550. You may also contact your public water system. Medford Township Utility Department’s Source Water Assessment Summary is included here.

The table below illustrates the susceptibility ratings for the seven contaminant categories (and radon) for each source in the system. The table provides the number of wells that rated high (H), medium (M), or low (L) for each contaminant category. The seven contaminant categories are defined below. For susceptibility ratings of purchased water, refer to the specific water system’s source water assessment report.