

MOON TOWNSHIP MUNICIPAL AUTHORITY



Public Water Supply

2021 Water Quality Report

This report is designed to inform you about the quality of water and the service we deliver to you every day. Our constant goal is to provide you with a dependable supply of excellent quality drinking water that meets or exceeds all federal and state requirements.

The Moon Township Municipal Authority (MTMA) water supply is obtained from an alluvium deposit of sand and gravel in the flood plain of and beneath the Ohio River and from the Ohio River. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River. The treatment facility is operated to provide very reliable treatment of a blend of groundwater and surface water.

We encourage public interest and participation in our community's decisions affecting drinking water. Regular Municipal Authority meetings occur on the third Wednesday of each month, at 5:00 p.m. in the second-floor meeting room at the Moon Township Community Service Center 1700 Beaver Grade Road. The public is welcome.

We are pleased to report that our drinking water meets or exceeds all federal and state requirements. MTMA (Public Water Supply #5020011) routinely monitors for contaminants in your drinking water according to Federal and State laws. The tables on the following pages show the results of monitoring for the period of January 1st to December 31st 2021. As you can see by the data table, our system had no water quality violations for 2021.

All sources of drinking water are subject to potential contamination, either naturally occurring or manmade. Contamination of a ground water supply may occur as a result of a transportation or industrial spill on land near the area of the wells. Wellhead protection practices are in place to reduce the potential for groundwater contamination. Surface water contamination may result from a spill reaching the Ohio River or one of its tributaries. In the event of surface water contamination, the MTMA WTP can utilize 100% well water until the river contamination has cleared.

Este informe contiene informacion muy importante sobre su agua de beber. Traduzcalo o hable conalquien que lo entienda bien. (This report contains very important information about your drinking water. Translate it, or speak to someone who understands it).

If you have any questions about this report or concerning your water utility, please contact John Riley, MTMA General Manager, at 412-264-4300 ext. 114 between the hours 8 a.m. and 4:45 p.m.

A handwritten signature in black ink, appearing to read "John J. Wink".

John J. Wink
President

Is my water safe?

We are pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best allies.

Do I need to take special precautions?

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/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Why are there contaminants in my drinking water?

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 water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791). 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 human activity. Microbial contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. Inorganic contaminants, such as salts and metals, can be naturally occurring or result from urban storm water runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming. Pesticides and herbicides may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses. Organic chemical contaminants, including synthetic and volatile organic chemicals are by-products of industrial processes and petroleum production. Organic contaminants can also come from gas stations, urban storm water runoff, and septic systems. Radioactive contaminants 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 that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Source Water Protection Tips

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 - they contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- If you have your own septic system, properly maintain your system to reduce leaching to water sources or consider connecting to a public water system.
- 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.
- Organize a storm drain stenciling project with your local government or water supplier. Stencil a message next to the street drain reminding people "Dump No Waste - Drains to River" or "Protect Your Water." Produce and distribute a flyer for households to remind residents that storm drains dump directly into your local water body.

Source water assessment and its availability

In 2009, the PA Department of Environmental Protection (PADEP) approved the Source Water Protection Plan for our three (3) groundwater wells and surface water supply. These provide water to the MTMA Water Filtration Plant. The assessment has found that our sources are potentially susceptible to a spill from the CSX Railroad and PA Route 51 as the primary sources of contamination risk. Copies of the complete report are available for review at the PADEP Pittsburgh Regional Office or on the PADEP website at www.dep.state.pa.us (Keyword: "DEP source water"). You can also use the following:

<http://www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm>

Water Conservation Tips

Did you know that the average Moon Township household uses approximately 140 gallons of water per day or 55 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference - try one today and soon it will become second nature.

- Take short showers - a 5-minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath.
- Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.
- Use a water-efficient showerhead. They're inexpensive, easy to install, and can save you up to 750 gallons a month.
- Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- Water plants only when necessary.
- Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait. If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model

can save up to 1,000 gallons a month. **A leaking toilet losing just a ¼ gal per minute equals 360 gals/day or 131,400 gals/year causing a significant cost to you!**

- Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.
- Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!
- Visit www.epa.gov/watersense for more information.

Results of Cryptosporidium Monitoring

The MTMA was required by the EPA and Pa DEP to sample our raw water from the Ohio River for Cryptosporidium and Giardia monthly starting October 2016 until September 2018. Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes cryptosporidium, the most commonly-used filtration methods cannot guarantee 100 percent removal. Ingestion of cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water. The MTMA Fern Hollow Water Plant has a multi-barrier system to remove Cryptosporidium including Granular Activated Carbon Filtration and UV disinfection. The following table is from MTMA testing of **Ohio River** source water.

CONTAMINANT	RESULT (OOCYSTS/L)	DATE SAMPLED	DATE ANALYZED
Cryptosporidium	0.273	01/17/17	01/20/17
Cryptosporidium	0.100	01/09/18	01/15/18
Cryptosporidium	0.100	06/12/18	06/21/18
Cryptosporidium	0.091	07/10/18	07/18/18
Cryptosporidium	0.182	09/11/18	09/21/18

Water Quality Data Table

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the tables.

Contaminants	MCLG	AL	Your Water	Sample Date	# Samples Exceeding AL	Exceeds AL	Typical Source
Lead - action level at consumer taps (ppb)	0	15	1.42	2019	0	No	Corrosion of household plumbing systems.
Copper - action level at consumer taps (ppm)	<1.0	1.3	0.16	2019	0	No	Corrosion of household plumbing systems

Note: Lead & Copper testing for the Moon Township Municipal Authority occurred in the summer of 2019, 32 homes built after 1982 thru December 1988 were tested and the results shown above are the 90th percentile detection level. There are no lead service lines going to any of the homes, schools or businesses served by the Moon Township Municipal Authority.

Additional Information for Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant woman and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Moon Township Municipal Authority is 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 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 or at <http://www.epa.gov/safewater/lead>.

Disinfectants	MCLG or MRDLG	MCL, TT, or MRDL	Level Detected	Range		Sample Date	Violation	Typical Source
				Low	High			
Free Chlorine (ppm) (Entry Point) Lowest level detected	0.2 Min.	4 Max.	0.40	0.40	2.09	2021	No	Water additive used to control microbes.
Free Chlorine(ppm) (Distribution)(a)	0.2 Min.	4 Max.	0.23	0.23	1.89	2021	Yes *	Water additive used to control microbes.
Disinfection By-products Contaminants								
Haloacetic Acids (HAA5) (ppb)	NA	60	16 LRAA	9	21	2021	No	By-product of drinking water disinfection.
TTHMs [Total Trihalomethanes] (ppb)	NA	80	65 LRAA	20	101	2021	No	By-product of drinking water disinfection.
Total Organic Carbon (TOC)								
TOC (% Removal) (Acc) (b)	25	TT	35	35	39	2021	No	Naturally present in the environment.
Inorganic Contaminants (IOC)								
Barium (ppm)	2	2	0.05	NA		2021	No	Discharge from drilling waste.
Fluoride (ppm) (c)	0.6	2	0.6	NA		2021	No	Water additive which promotes strong teeth; Erosion of natural deposits, Discharge from fertilizer and aluminum factories.

Inorganic Contaminants (IOC)	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Low	High	Sample Date	Violation	Typical Source
Nitrate [measured as Nitrogen] (ppm)	0	10	0.6	NA	0.6	2021	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Microbiological Contaminants								
Total Coliform (% positive samples/month) (d)	0	0	1	1	1	2021	No	Naturally present in the environment
Turbidity (NTU) (Entry Point) (e)	NA	<0.3	0.07	.02	0.07	2021	No	Soil runoff.
<p>(a) Free Chlorine in the distribution system is the monthly average of 40 samples. (There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants).</p> <p><i>*We failed to submit a laboratory monitoring report after properly conducting monitoring in a timely manner for August 2021 distribution chlorine samples. The report was submitted in October 2021 instead of September 2021.</i></p> <p>(b) Total Organic Carbon (TOC): The TOC quarterly monitoring samples meet the Alternative Compliance Criteria (Acc) requirement is for 25-35% removal. The organic carbon removal occurs at the WTP and is the difference between Raw and Finish water.</p> <p>(c) Fluoride concentration in your drinking water has a targeted residual of 0.6 ppm to 0.7ppm, a 0.7 ppm is recommended by the US Department of Health and Human Services and the CDC. Additional Fluoride is added at the WTP to the natural source water to achieve 0.6 ppm. The Pa max. MCL for Fluoride is 2ppm.</p> <p>(d) There are 40 Total Coliform samples taken per month throughout the distribution system. A violation occurs if <40 samples/month are taken or there is more than 1 coliform positive monthly sample.</p> <p>(e) 95% of all NTU samples taken at the entry point to the distribution system must be below 0.3, a value less than 95% constitutes a TT violation. Any measurement in excess of 1 NTU is a TT violation.</p>								

Additional Monitoring

These Unregulated Contaminants were tested in 2019-20 as directed by the EPA. The Moon Township Municipal Authority water system has sampled for a series of unregulated contaminants. Unregulated contaminants are those that don't yet have a drinking water standard set by the EPA. The purpose of monitoring for these contaminants is to help the EPA decide, by using sound science, whether the contaminants should have a standard. As our customers, you have the right to know the results of sampling. If you are interested in examining the results, please contact the MTMA office at (412)264-4300, or visit our office at 1700 Beaver Grade Road, Suite 200, Moon Twp.

CONTAMINANTS (UNITS)	SAMPLE	Average Level Found	Range of Detections	
	YEAR		Low	High
Bromide (ppb) Source Water	2020	59.1	28.7	88.9
Total Organic Carbon (TOC) (ppb) Source Water	2020	1777	1470	1960
Manganese (ppb)	2020	0.573	<0.05	1.04
Haloacetic Acids (HAA5) (ppb)	2020	12.09	7.66	20.91
Haloacetic Acids (HAA9) (ppb)	2020	23.81	14.41	37.48
Haloacetic Acids (HAA6Br) (ppb)	2020	13.68	8.94	23.07

PFOA & PFOS DRINKING WATER HEALTH ADVISORIES IN PENNSYLVANIA

On May 19, 2016, the United States Environmental Protection Agency (EPA) established health advisories for PFOA and PFOS. Health advisories (HA) provide information on contaminants that can cause human health effects and are known or anticipated to occur in drinking water. EPA's health advisories are non-enforceable and non-regulatory and provide technical information to state agencies and other public health officials on health effects, analytical methodologies, and treatment technologies associated with drinking water contamination. EPA's health advisory level for PFOA and PFOS offers a margin of protection for all Americans throughout their life from adverse health effects resulting from exposure to PFOA and PFOS in drinking water. To provide Americans, including the most sensitive populations, with a margin of protection from a lifetime of exposure to PFOA and PFOS from drinking water, EPA has established the PFOA AND PFOS health advisory levels at **70 parts per trillion (ppt)**. When both PFOA and PFOS are found in drinking water, the combined concentrations of PFOA and PFOS should not exceed the 70 ppt HA. At this time, the PaDEP is evaluating what the MCL limits of PFOA and PFOS chemicals will be for Pa. Samples taken by the Pa DEP on March 11, 2021 at the Fern Hollow WTP discharge to distribution (EP 101). Results with a "<" less than symbol means that the result is above the MDL but below the laboratory's reporting limit.

Sample Collected from Entry Point 101	
Contaminate	Sample Result (ng/L)
Perfluorobutanesulfonic acid (PFBS)	<1.8
Perfluoroheptanic acid (PFHpA)	<1.8
Perfluorohexanesulfonic acid (PFHxS)	<RL
Perfluorononanoic acid (PFNA)	<RL
Perfluorooctane sulfonate (PFOS)	3.8
Perfluorooctanoic acid (PFOA)	<RL

Important Drinking Water Definitions	
Term	Definition
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Entry Point	When potable water first enters the distribution system.
HAA5	Haloacetic Acids (HAA) are a group of disinfection byproducts that form when chlorine compounds that are used to disinfect water react with other naturally-occurring chemicals in the water. There are five significant HAA potentially found in disinfected drinking water and their combined concentration is referred to as <i>total HAA5</i> .
LRAA	Locational Running Annual Average. Based on four quarters of sampling for each site.
MCL	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	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.
MDL	MDL is: " The method detection limit (MDL) is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MPL	MPL: State Assigned Maximum Permissible Level
MRDLG	MRDLG: Maximum residual disinfection level goal. The level of a drinking water disinfectant below which there is no known or expected risk to health.
MRDL	MRDL: Maximum residual disinfectant level. The highest level of a disinfectant allowed in drinking water.
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required, but recommended.
NTU	NTU: Nephelometric Turbidity Units. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.
90 th Percentile	The highest concentration of lead or copper in tap water that is exceeded by 10% of the sites sampled during the monitoring period. This value is compared to the lead and copper action levels (AL) to determine whether an (AL) has been exceeded.
% positive samples/month	% positive samples/month: Percent of samples taken monthly that were positive for microbes.
ppb	ppb: parts per billion, or micrograms per liter ($\mu\text{g/L}$) – one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.
ppm	ppm: parts per million, or milligrams per liter (mg/L) - One part per million corresponds to one minute in two years or a single penny in \$10,000.
ppt	ppt: parts per trillion, or nanograms per liter (ng/L) – one part per trillion corresponds to one second in nearly 32,000 years or one grain of sand in an Olympic size swimming pool.
RL	Reporting Limit
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
TTHM	TTHMs (Total Trihalomethanes): Byproduct of the disinfection of water. Some people 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 an increased risk of cancer.

Other Violations:

MTMA was required to submit an Uninterrupted System Service Plan in August 2021. MTMA completed the plan and submitted it in November 2021.