

MONROE MUNICIPAL UTILITIES AUTHORITY

Gloucester County
372 South Main Street
Williamstown, New Jersey 08094

Annual Drinking Water Quality Report

We're pleased to present our Twentieth Annual Drinking Water Quality Report to you covering JANUARY 1ST TO DECEMBER 31ST, 2018. The Federal Safe Drinking Water Act (SDWA) requires that Utilities issue an annual Consumer Confidence Report besides other notices that may be required by law. We designed this report to inform you about the quality of our water and services we deliver to you every day.

The Monroe Municipal Utilities Authority is committed to delivering a safe and reliable supply of drinking water to the approximate 24,000 residents of Monroe Township that the Authority serves. Informed customers are the best allies in maintaining safe drinking water. The Authority is pleased to report that water delivered by our Utility meets or surpasses all federal and state drinking water standards.

We believe in education and our employees attend various classes and seminars on water treatment processes and distribution system operations. The Authority's Water Quality Supervisor holds the required New Jersey water treatment and water distribution licenses. During the year, our State certified lab collects numerous water samples for various testing. The data presented in this report is the same data collected to comply with U.S. Environmental Protection Agency and New Jersey Department of Environmental Protection monitoring and testing requirements.

WATER SOURCE

The Monroe Municipal Utilities Authority water supply is from ground water. We have eight wells, six draw water from the Cohansey Aquifer and Wells #12 and #13 which draw water from the Piney Point Aquifer. These wells range in depth from 143 feet to 355 feet. The Authority has developed two Aquifer Storage and Recovery (ASR) wells in the Potomac-Raritan-Magothy (P.R.M.) Aquifer. This will allow us to pump system water down into the aquifer in the winter to be recovered in the summer when water demands are much higher. Also we purchase 15.25 million gallons of water per month from New Jersey American Water.

We have four interconnections in our water distribution system, two with the Borough of Clayton and one each with Glassboro and Washington Township. This enables us in the event of an emergency to obtain water through the interconnections and/or supply water to these communities.

The New Jersey Department of Environmental Protection (NJDEP) has completed and issued the Source Water Assessment Report and Summary for the public water system, which is available at www.state.nj.us/dep/swap/ or by contacting the NJDEP, Bureau of Safe Drinking Water at 609 292 5550.

Table 9: Susceptibility Rating for Drinking Water Source(s)

EPTDS ID	Source ID	Source Name	Contaminant Category							
			Pathogens	Nutrients	Pesticides	VOCs	Inorganics	Radionuclides	Radon	DBPs
			Rating	Rating	Rating	Rating	Rating	Rating	Rating	
02	005	WELL 5 / WATER STREET	L	H	M	H	H	H	M	M
03	007	WELL 6/ LAKE AVENUE	L	H	M	H	M	H	M	M
04	011	WELL 7 / CORKERY LANE	L	H	M	H	M	H	M	M
04	022	ASR WELL#11 COKERY LANE	L	L	L	L	M	M	L	M
05	015	WELL 8	M	H	L	H	M	H	M	M
05	024	ASR WELL#14 RT. 42 BLACK HORSE PIKE	L	H	L	L	M	M	L	M
08	019	WELL 9/ TUCKAHOE RD	L	H	M	H	L	H	M	M
08	020	WELL 10 / TUCKAHOE RD	L	H	M	H	L	H	M	M

If a system is rated highly susceptible for a contamination 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.

AN EXPLANATION OF THE WATER QUALITY DATA TABLE

The charts on the following pages provide representative analytical results of water samples routinely collected in 2017 and 2018 from the Authority's system. In the table that follows, you will find terms and abbreviations you might not be familiar with. To help you better understand these terms, we've provided the following definitions:

90th Percentile - the ninth highest reading (of ten samples), which is used to determine compliance with the Lead and Copper Rule.

Non-Detects (ND) - laboratory analysis indicates that contaminant is not present.

Action Level - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Treatment Technique (TT) - (mandatory language) A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

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

Maximum Contaminant Level Goal - (mandatory language) 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.

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..

Recommended Upper Limits (RUL) - Recommended maximum concentrations of secondary contaminants. These reflect aesthetic qualities such as odor, taste or appearance. RUL's are recommendations, not mandates.

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 microbial contaminants are available from the Safe Drinking Water Hotline (1 800 426 4791).

TEST RESULTS

Key:

mcl=maximum contaminant level

Mclg=maximum contaminant level goal

ppm=parts per million, or milligrams per liter (mg/l)

ppb=parts per billion, or micrograms per liter (ug/l)

Contaminant	Units	Range Detected	Highest Level Detected	MCLG	MCL	Meets Standards Y/N	Likely Source Contaminant
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Microbiological Contaminants

1. Total Coliform Bacteria	100 ml	ND	ND	0	Presence of coliform bacteria in 5% of monthly samples	Y	Naturally present in the environment
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Radioactive Contaminants

2. Gross Alpha (2017)	pci/l	1.10 to 10	10	0	15	Y	Erosion of natural deposits
3. Radium Combined (226,228) (2017)	pci/l	.475 to 2.31	2.31	0	5	Y	Erosion of natural deposits

Inorganic Contaminants

4. Mercury	ppb	ND to 1.0	.9	N/A	2	Y	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from crop land.
5. Nitrates	ppm	ND to 3.62	4.2	N/A	10	Y	Runoff from fertilizer use; leaching from septic tanks, sewage, erosion of natural deposits.
6. Copper (2017) 90th Percentile	ppm	4.2	25.5 average	N/A	AI = 1300	Y	Corrosion of household plumbing systems.
7. Lead (2017) 90th Percentile	ppm	10	.600 average	N/A	AI = 15	Y	Corrosion of household plumbing systems.
8. Barium (2017)	ppb	5.9 to 121	121	N/A	2000		Naturally occurring
9. Arsenic (2017)	ppb	ND to .69	.69	N/A	5		Naturally occurring
10. Beryllium (2017)	ppb	ND to .12	.12	N/A	4		Weathering of rocks and soils
11. Thallium (2017)	ppb	ND to .14	.14	N/A	2		Metals found in natural deposits
12. Cadmium (2017)	ppb	ND to .27	.27	N/A	5		Natural occurring metal

Stage 2 DBPR

13. Total Trihalomethanes	ug/L or ppb	6-29	29	N/A	80	Y	By-product of drinking water disinfection.
14. Haloacetic Acids	ug/L or ppb	ND- 9	9	N/A	60	Y	By-product of drinking water disinfection.

Secondary Standards

1. Chlorides (2017)	ppm	2.2-28.1	28.1	N/A	250		Runoff from natural deposits.
2. Hardness	ppm	22.8	22.8	N/A	250		Naturally occurring.
3. Sodium	ppm	15.6-82	82	N/A	50		Naturally occurring.
4. Fluoride	ppb	ND	ND	N/A	2		Mineral deposit
5. Manganese	ppm	.02	.02	N/A	.05		Erosion of natural deposits
6. Aluminum (2017)	ppm	ND-.290	.290	.200	.200		Natural mineral deposit

Volatile Organic Chemicals

1. Xylenes (2017)	ppb	ND-.1500	1500		1000	N	Used in household products such as paints and lacquers and emissions for motor vehicles.
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UCMR 4 - unregulated compounds tested 2018

Contaminates	Units	MCL+	MCLG+	Highest Level Detected	Range
Manganese	ug/l	N/A	N/A	45	3-45
Chlorpyrifos	ug/l	N/A	N/A	ND	ND
Dimethipin	ug/l	N/A	N/A	ND	ND
Ethoprop	ug/l	N/A	N/A	ND	ND
Oxyflofen	ug/l	N/A	N/A	ND	ND
Profenofos	ug/l	N/A	N/A	ND	ND
Tebuconazole	ug/l	N/A	N/A	ND	ND
Permethrin, cis trans	ug/l	N/A	N/A	ND	ND
Tribufos	ug/l	N/A	N/A	ND	ND
Bytylated Hydroxyanisole	ug/l	N/A	N/A	ND	ND
O-Toluidine	ug/l	N/A	N/A	ND	ND
Quinoline	ug/l	N/A	N/A	0.06	ND-.06
1-Bytanol	ug/l	N/A	N/A	ND	ND
2-Methoxyethanol	ug/l	N/A	N/A	ND	ND
2-Propen-1-01	ug/l	N/A	N/A	ND	ND
Bromochooroacetic Acid	ug/l	N/A	N/A	1.09	ND-1.09
Bromodichloriacetic Acid	ug/l	N/A	N/A	0.65	ND-.650
Chloridbromoacetic Acid	ug/l	N/A	N/A	0.845	ND-.845
Dibromoacetic Acid	ug/l	N/A	N/A	3.16	ND-3.16
Dicholoroacetic Acid	ug/l	N/A	N/A	0.778	ND-.778
Monobromoacetic Acid	ug/l	N/A	N/A	0.355	ND-.355
Monochloroacetic Acid	ug/l	N/A	N/A	ND	ND
Tribromoacetic Acid	ug/l	N/A	N/A	ND	ND
Trichloriacetic Acid	ug/l	N/A	N/A	ND	ND

Unregulated contaminants are those that don't yet have a drinking water standard set by USEPA. The purpose of monitoring for these contaminants is to help USEPA decide whether the contaminants should have a standard.

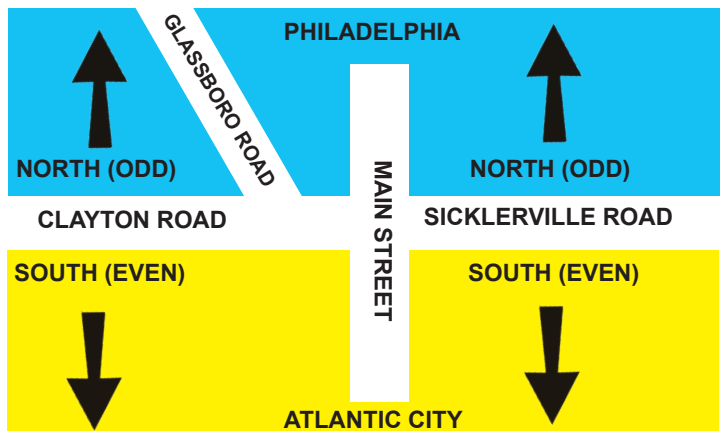
Water Conservation Measures

Water conservation measures have been instituted by the Monroe Municipal Utilities Authority.

Restrictions are in effect for non essential outdoor use of water by the residential and commercial customers between the hours of 10:00 a.m. through 6:00 p.m. Non essential use includes the sprinkling of lawns, washing of cars, filling of pools and power washing. Outside use of water may take place only from 6:00 a.m. to 10:00 a.m. and from 6:00 p.m. through 9:00 p.m. based on an odd/even calendar day system, which has been established on a geographical basis as detailed by the following map.

You may use water outside on ODD NUMBERED CALENDAR DAYS from 6:00 a.m. to 10:00 a.m. and from 6:00 p.m. to 9:00 p.m., if your property is located to the NORTH SIDE of Clayton Road and Sicklerville Road.

You may use water outside on EVEN NUMBERED CALENDAR DAYS from 6:00 a.m. to 10:00 a.m. and from 6:00 p.m. to 9:00 p.m., if your property is located to the SOUTH SIDE of Clayton Road and Sicklerville Road.



HEALTH EFFECTS OF DETECTED CONTAMINANTS

Combined Radium - Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.

Copper - Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

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 Monroe Municipal Utilities 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 is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

Mercury - Some people who drink water containing inorganic mercury well in excess of MCL over many years could experience kidney damage.

Nitrate - Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and if untreated may die. Symptoms include shortness of breath and blue baby syndrome.

Xylene - Slightly toxic to the human body. May cause dizziness, nausea and vomiting.

Barium - Some people who drink water above the drinking water standards over a short period of time can experience increased blood pressure, stomach irritation, muscle weakness, kidney and heart damage.

Arsenic - The consumption of water containing high concentration of arsenic 100ug/l (PPB) and higher have been associated with health affects including cardiovascular and peripheral vascular disease, hypertension, diabetes, anemia, neurological disorders, hearing loss and high blood pressure.

Beryllium - People who drink water containing Beryllium in excess of the (MCL) maximum contaminant level for many years could develop internal lesions.

Thallium - People who drink water containing Thallium in excess of the (MCL) maximum contaminant level for many years could experience hair loss, changes in their blood, kidney, intestines and liver problems.

Cadmium - People who drink water containing Cadmium in short or high exposures can experience kidney disease as older adults. Low level exposure to Cadmium can decrease bone density and disrupt bone composition in children.

Quinoline - High exposure may cause headaches, nausea, vomiting, abdominal cramps, fever, fatigue and dizziness. The EPA has provisionally classified quinoline as a possible carcinogen. Quinoline is used in polymers, corrosion inhibitors and solute or resins and terpenes.

Manganese - Neutral occurring substance found in many types of rocks and soil. The EPA is not concerned with the health effects until concentrations are approximately 10 times high than average.

SPECIAL CONSIDERATIONS REGARDING CHILDREN, PREGNANT WOMEN, NURSING MOTHERS, AND OTHERS

Children may receive a slightly higher amount of a contaminant present in the water than do adults, on a body weight basis, because they may drink a greater amount of water per pound of body weight than do adults. For this reason, reproductive or developmental effects are used for calculating a drinking water standard if these effects occur at lower levels than other health effects of concern.

If there is insufficient toxicity information for a chemical (for example, lack of data on reproductive or developmental effects), an extra uncertainty factor may be incorporated into the calculation of the drinking water standard, thus making the standard more stringent, to account for additional uncertainties regarding these effects. In the cases of lead and nitrate, effects on infants and children are the health endpoints upon which the standards are based.

Nitrate: Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.

Lead: Infants and your children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home plumbing. If you are concerned about elevated lead levels in your home water, you may wish to have your water tested and flush your tap for 30 seconds to two minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (1 800 426 4791).

MISCELLANEOUS INFORMATION

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 sometimes, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

To ensure that tap water is safe to drink, EPA prescribes limits on the amounts of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled 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 show 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).

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 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**, which 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, which are by products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

***Radioactive contaminants**, which can be naturally occurring or be the results 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 some 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.

If you have any questions about this document or concerning our water utility, please contact our office at 856-226-3628, between the hours of 8:00 A.M. to 3:30 P.M. Monday thru Friday. Additionally, you may contact us through our Web Page www.monroemuanj.com, or attend one of our regularly scheduled Board meetings.



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2018 Annual Water Quality Report

Public meetings of the Authority's Board of Directors are held the third Wednesday of each month. Meetings begin at 7:00 p.m. in the conference room of MUA's Administration Building located at 372 South Main Street, Williamstown

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