

Annual Drinking Water Quality Report

Monroe Township Utility Department

For the Year 2017, Results from the Year 2016

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 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 currently operate eight groundwater wells and one interconnection (pumping station) with New Jersey American Water. Three of our groundwater wells are located in the Old Bridge Sands aquifer and five are in the Farrington Sands aquifer. About 90% of the water that is delivered to our consumers is derived from wells deep within aquifers, and the remaining 10% of our water is purchased from New Jersey American Water.

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).

Monroe Township Utility Department Test Results						
PWS ID# NJ1213002						
Contaminant	Violation Y/N	Level Detected	Units of Measurement	MCL G	MCL	Likely Source of Contamination
Inorganic Contaminants:						
Arsenic Test results Yrs. 2014 & 2015	N	Range = ND – 2.5 Highest detect = 2.5	ppb	N/A	5	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium Test results Yrs. 2014 & 2015	N	Range = ND – 0.01 Highest detect = 0.01	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium Test results Yrs. 2014 & 2015	N	Range = ND – 9.4 Highest detect = 9.4	ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Copper Test results Yr. 2016 Result at 90 th Percentile	N	0.18 1 sample out of 30 exceeded the action level	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead Test results Yr. 2016 Result at 90 th Percentile	N	ND 1 sample out of 30 exceeded the action level	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Nickel Test results Yrs. 2014 & 2015	N	Range = ND – 9.1 Highest detect = 9.1	ppb	N/A	N/A	Erosion of natural deposits
Nitrate (as Nitrogen) Test results Yr. 2016	N	Range = ND – 4 Highest detect = 4	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium Test results Yrs. 2014 & 2015	N	Range = ND – 9.8 Highest detect = 9.8	ppb	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Disinfection Byproducts:						
TTHM Total Trihalomethanes Test results Yr. 2016	N	Range = 4 - 46 Highest LRAA = 40	ppb	N/A	80	By-product of drinking water disinfection
HAA5 Haloacetic Acids Test results Yr. 2016	N	Range = ND – 27 Highest LRAA = 17	ppb	N/A	60	By-product of drinking water disinfection
Radioactive Contaminants:						
Combined Radium 228 & 226 Test results Yr. 2016	N	Range = ND – 1.8 Highest detect = 1.8 Highest average = 0.5	pCi/L	0	5	Erosion of natural deposits
Gross Alpha Test results Yr. 2016	N	Range = ND – 5.1 Highest detect = 5.1 Highest average = 1.3	pCi/l	0	15	Erosion of natural deposits
Regulated Disinfectants		Level Detected		MRDL		MRDLG
Chlorine Test results Yr. 2016		Average = 0.5 ppm		4.0 ppm		4.0 ppm

HAA5 and TTHM compliance is based on the Locational Running Annual Average (LRAA), calculated at each monitoring location. The LRAA calculation is based on four completed quarters of monitoring results.

Secondary Contaminant	Level Detected	Units of Measurement	RUL
Sodium Test results Yrs. 2014 & 2015	Range = 15 - 51	ppm	50

Sodium

We slightly exceeded the Recommended Upper Limit (RUL) for sodium. For healthy individuals, the sodium intake from water is not important, because a much greater intake of sodium takes place from salt in the diet. However, sodium levels above the Recommended Upper Limit (RUL) may be of concern to individuals on a sodium restricted diet.

The Monroe Township Utility Department and New Jersey American Water routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables show the results of that monitoring for the period of January 1st to December 31st, 2016. The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently.

New Jersey American Water Company (Raritan System)						
PWS ID# NJ2004002						
Year 2016 Test Results						
Contaminant	Violation Y/N	Level Detected	Units of Measurement	MCLG	MCL	Likely Source of Contamination
Inorganic Contaminants:						
Copper Result at 90 th Percentile	N	0.34 No samples out exceeded the action level	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Fluoride	N	Range = 0.06 – 0.7 Highest detect = 0.7	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Lead Result at 90 th Percentile	N	4 1 sample out of 54 exceeded the action level	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Nitrate (as Nitrogen)	N	Range = 0.6 – 1.2 Highest detect = 1.2	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Disinfection Byproducts:						
TTHM Total Trihalomethanes	N	Highest LRAA = 41	ppb	N/A	80	By-product of drinking water disinfection
HAA5 Haloacetic Acids	N	Highest LRAA = 25	ppb	N/A	60	By-product of drinking water disinfection
Bromate	N	Range = ND – 1.9 Highest detect = 1.9	ppb	0	10	By-product of drinking water disinfection
Microbiological Contaminants						
Total coliform Bacteria	N	Highest Percentage = 0%		0	5% of monthly samples	Naturally present in the environment
Turbidity	N	100% < 0.3 Highest detect = 0.26	NTU	N/A	TT <0.3 in 98% of monthly samples	Soil runoff
Total Organic Carbon (%)	N	Range = 0.9 – 2.6 Highest detect = 2.6	ppm	NA	TT = % removal	Naturally present in the environment
Regulated Disinfectants		Level Detected		MRDL		MRDLG
Chloramines		Range = ND – 2.3 ppm Average = 1.1		4.0 ppm		4.0 ppm

HAA5 and TTHM compliance is based on the Locational Running Annual Average (LRAA), calculated at each monitoring location. The LRAA calculation is based on four completed quarters of monitoring results.

The Monroe Township Utility Department and New Jersey American Water participated in the Unregulated Contaminant Monitoring Rule. Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

Unregulated Contaminant Monitoring (New Jersey American Water)

Contaminant	Level Detected	Units of Measurement	Likely source
Chlorate	Range = ND – 310	ppb	Agricultural defoliant of desiccant; disinfection byproduct; used in the production of chloride dioxide
Chromium (Total)	Range = ND – 1	ppb	Naturally-occurring element; used in the making of steel and other alloys; chromium -3 or -6 are used for chrome plating, dyes and pigments, leather tanning, and other wood preservation
Chromium (VI)	Range = 0.05 – 0.75	ppb	Naturally-occurring element; used in the making of steel and other alloys; chromium -3 or -6 are used for chrome plating, dyes and pigments, leather tanning, and other wood preservation
Strontium	Range = 78.9 – 175.9	ppb	Naturally-occurring element; historically commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions
Vanadium	Range = ND – 0.5	ppb	Naturally-occurring element metal; used as vanadium pentoxide which is a chemical intermediate and a catalyst

Unregulated Contaminant Monitoring (Monroe Township Utility Department)

Contaminant	Level Detected	Units of Measurement	Likely source
Chlorate	Range = 74 - 930	ppb	Agricultural defoliant of desiccant; disinfection byproduct; used in the production of chloride dioxide
Chromium (Total)	Range = ND - 0.6	ppb	Naturally-occurring element; used in the making of steel and other alloys; chromium -3 or -6 are used for chrome plating, dyes and pigments, leather tanning, and other wood preservation
Chromium (VI)	Range = ND - 0.13	ppb	Naturally-occurring element; used in the making of steel and other alloys; chromium -3 or -6 are used for chrome plating, dyes and pigments, leather tanning, and other wood preservation
Strontium	Range = 4 - 26	ppb	Naturally-occurring element; historically commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions
Cobalt	Range = ND - 14	ppb	Naturally-occurring element found in the earth's crust and at low concentrations in seawater, and in some surface and ground water; cobaltous chloride was formally used in medicine as a germicide

The New Jersey Department of Environmental Protection (NJDEP) has completed Source Water Assessment Reports and Summaries for these public water systems, which are available 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 to obtain information regarding these water systems Source Water Assessments. The Monroe Township Utility Department's source water susceptibility ratings and a list of potential contaminant sources is included.

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 be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas projection, 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 byproducts 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 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.

The Safe Drinking Water Act regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for asbestos, volatile organic chemicals and synthetic organic chemicals. Our system received a monitoring waiver for synthetic organic contaminants.

Cryptosporidium is a microbial pathogen found in surface water throughout the United States. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100% removal. New Jersey American Water monitoring indicates the presence of these organisms in their source water. Current test methods do not allow them to determine if the organisms are dead or if they are capable of causing disease. 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, infants and small children, and the elderly are at a 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.

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 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 second 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>.

If you have questions about your water, please call us at 732-521-1700 or 609-655-1050. Additional information is also available on our website at www.monroetud.com Monthly Council meetings are generally held on the first Monday of each month at 7:00 P.M. Visit <http://www.monroetwp.com> to see the schedule for upcoming meetings.

We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future. Please call our office if you have questions.

DEFINITIONS:

In the following table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

Non-Detects (ND) - laboratory analysis indicates that the constituent 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 single 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.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

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.

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

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

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 Limit (RUL) – Recommended maximum concentration of secondary contaminants. These reflect aesthetic qualities such as odor, taste or appearance. RUL's are recommendations, not mandates.

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

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.

Turbidity – A measure of the particulate matter or “cloudiness” of the water. High turbidity can hinder the effectiveness of disinfectants.

Monroe Township Utility Department - PWSID NJ1213002

Monroe Township MUA is a public community water system consisting of 8 wells and 1 purchased surface water source.

This system's source water comes from the following aquifer: Old Bridge Sand Aquifer and the Farrington Sands Aquifer.

This system purchases water from the following water system: New Jersey American Water

Susceptibility Ratings for Monroe Township Utility Department Sources

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 and intakes that rated high (H), medium (M), or low (L) for each contaminant category. For susceptibility ratings of purchased water, refer to the specific water system's source water assessment report.

The seven contaminant categories are defined at the bottom of this page. DEP considered all surface water highly susceptible to pathogens, therefore all intakes received a high rating for the pathogen category. For the purpose of Source Water Assessment Program, radionuclides are more of a concern for ground water than surface water. As a result, surface water intakes' susceptibility to radionuclides was not determined and they all received a low rating.

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.

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		1	7	7		1		6	2	5		3	3	3	2	5	2	1		6	2		7	1

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.