

Annual Drinking Water Quality Report

Township of Freehold

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 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 water source: Our ten (10) wells draw groundwater from the Englishtown Aquifer System and the Potomac-Raritan-Magothy Aquifer System. We also purchase water from Suez Water New Jersey Matchaponix System. The New Jersey Department of Environmental Protection (NJDEP) has completed and issued the Source Water Assessment Report and Summary for this public water system and the Suez Water New Jersey Matchaponix System 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 your water system's Source Water Assessment. This water system's source water susceptibility ratings and a list of potential contaminant sources is included.

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).

The Freehold Township Water Department and Suez Water New Jersey Matchaponix System 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.

Freehold Township Water Department Detected Contaminants						
Contaminant	Violation Y/N	Level Detected	Units of Measurement	MC LG	MCL	Likely Source of Contamination
Inorganic Contaminants:						
Antimony Test results Yr. 2014	N	Range = ND – 0.1 Highest detect = 0.1	ppb	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic Test results Yr. 2014	N	Range = 0.1 – 0.2 Highest detect = 0.2	ppb	N/A	5	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium Test results Yr. 2014	N	Range = 0.009 – 0.05 Highest detect = 0.05	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper Test results Yr. 2014 Result at 90 th Percentile	N	0.2 No samples exceeded the action level	Ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits.
Lead Test results Yr. 2014 Result at 90 th Percentile	N	ND No samples exceeded the action level	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Nickel Test results Yr. 2014	N	Range = 0.2 – 0.3 Highest detect = 0.3	ppb	N/A	N/A	Erosion of natural deposits
Thallium Test results Yr. 2014	N	Range = 0.02 – 0.08 Highest detect = 0.08	ppb	0.5	2	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
Disinfection Byproducts:						
TTHMs Total Trihalomethanes	N	Range = 7 - 66 Highest LRAA = 38	ppb	N/A	80	By-product of drinking water disinfection
HAA5s Haloacetic Acids	N	Range = ND - 50 Highest LRAA = 18	ppb	N/A	60	By-product of drinking water disinfection
Regulated Disinfectants		Level Detected		MRDL	MRDLG	
Chlorine		Average = 0.9 ppm		4.0 ppm		4.0 ppm

For Total Halocetic Acids (HAA5s) and Total Trihalomethanes (TTHMs), which are disinfection byproducts, compliance is based on a Locational Running Annual Average (LRAA), calculated at each monitoring location. The LRAA calculation is based on four completed quarters of monitoring results.

Unregulated Contaminant Monitoring Rule (UCMR)

Freehold Township Water Department participated in the UCMR. 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.

Contaminant	Level Detected	Units of Measurement
Chlorate	Range = 56 - 1209	ppb
Chromium VI (Hexavalent Chromium)	Range = 0.032 – 0.132	ppb
Strontium	Range = 30 – 199.6	ppb

Chlorate: Agricultural defoliant or desiccant; disinfection byproduct and used in the production of chlorine.

Chromium VI: Naturally occurring element; used in making steel and other alloys; chromium -3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning and wood preservative.

Strontium: Naturally occurring element; historically commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions.

2016 Suez Water New Jersey Matchaponix System Detected Contaminants						
PWS ID # NJ1326004						
Contaminant	Violation Y/N	Level Detected	Units of Measurement	MC LG	MCL	Likely Source of Contamination
Microbiological Contaminants:						
Turbidity	N	Range = 0.026 – 0.26 100% < 0.3 NTU	NTU	N/A	TT 95% of monthly samples < 0.3 NTU	Soil runoff
Total Organ Carbon (TOC)	N	Range = 0.74 – 1.49/	ppm	N/A	TT % of removal	Soil runoff
Inorganic Contaminants:						
Nitrate (as Nitrogen)	N	Range = 0.5 – 0.5 Highest detect = 0.5	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Disinfection Byproducts:						
TTHM Total Trihalomethanes	N	Range = 7 - 77 Highest LRAA = 48	ppb	N/A	80	By-product of drinking water disinfection
HAA5 Haloacetic Acids	N	Range = 2 - 57 Highest LRAA = 29	ppb	N/A	60	By-product of drinking water disinfection
Regulated Disinfectants		Level Detected		MRDL		MRDLG
Chlorine		Average = 0.9		4.0 ppm		4.0 ppm

For Total Haloacetic Acids (HAA5s) and Total Trihalomethanes (TTHMs), which are disinfection byproducts, compliance is based on a Locational Running Annual Average (LRAA), calculated at each monitoring location. The LRAA calculation is based on four completed quarters of monitoring results.

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Contaminant	Level Detected	Units of Measurement
Chlorate	Range = 91 - 180	ppb
Chromium	Range = ND – 0.41	ppb
Chromium VI (Hexavalent Chromium)	Range = 0.072 – 0.091	ppb
Strontium	Range = 71 - 100	ppb

Chlorate: Agricultural defoliant or desiccant; disinfection byproduct and used in the production of chlorine.

Chromium: Naturally occurring element; used in making steel and other alloys; chromium -3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning and wood preservative.

Chromium VI: Naturally occurring element; used in making steel and other alloys; chromium -3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning and wood preservative.

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Cryptosporidium

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. Our monitoring indicates the presence of these organisms in our source water. Current test methods do not allow us 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. Suez Water New Jersey Matchaponix started the second round of source water monitoring in accordance with the requirements of EPA’s Long Term 2 Enhanced Surface Water Treatment Rule. This monitoring will continue through September of 2018. The data collected in 2016 is listed below.

*Cryptosporidium, Oocysts/L – Range Detected = ND – 0.29

*Giardia Cysts / L – Range Detected = ND – 0.29

*Microbial pathogens found in surface water throughout the United States

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 a monitoring waiver for synthetic organic chemicals.

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 Freehold Township Water Department and Suez Water New Jersey Matchaponix System 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>.

DEFINITIONS:

In the "Test Result" tables 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 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.

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 water.

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.

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.

Drinking Water Sources:

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, and 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.

If you have questions about this report or concerning your water utility, please call the Freehold Township Water Department at 732-294-2170. If you want to learn more, please attend any of our regularly scheduled Township meetings. Thank you.

Freehold Township Water Department- PWSID # NJ1316001

Freehold Township Water Department is a public community water system consisting of 10 wells.

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

This system purchases water from the following water system: Suez Water New Jersey Matchaponix System.

Susceptibility Ratings for Freehold Township Water 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 - 10			10			10			10			10		2	8		6	4			10		9	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.