



Keansburg Water and Sewer Department

29 Church Street

Keansburg, New Jersey 07734

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We're pleased to present to you this year's annual water quality report.

This report is a snapshot of last year's water quality. Included are details about where your water comes from, what it contains and how it compares to the EPA and New Jersey Department of Environmental Protection (NJDEP) standards. We are committed to providing you with information because informed customers are our best allies.

Your water comes from three (3) underground wells located within the Borough of Keansburg. The Keansburg Water and Sewer Department wells range from 350 to 362 feet in depth and draw their water from the upper portion of the Potomac-Raritan Magothy Aquifer (Old Bridge Formation). In November of 2002, The N.J.D.E.P. Water Allocation Permit allows us to pump water out of the ground. According to the Permit, we are allowed to pump 327.33 million gallons a year, not to exceed 52.24 million per month. In addition to pumping water from our wells, we purchased 60 million gallons a year. This water is purchased between October 1st thru April 30th. The water is taken from NJAWC at a rate of about 280,000 gallons a day and is blended with our own well water at the Water treatment Plant.

At the end of 2004, the NJDEP completed a Source Water Assessment for all public water systems in NJ. The goal of the assessment was to measure each system's susceptibility to contamination, not actual (if any) contamination measured in a water supply system. The DEP evaluated the susceptibility of all public water systems to eight categories of contamination. Each system was given a rating of low, medium, & high for each contaminant, based on the potential for contamination of that system. The following is a table showing the ratings given to Keansburg Water Dept. for the eight contaminants:

Source	Pathogens			Nutrients			Pesticides			Volatile Organic Compounds			Inorganics			Radio-nuclides			Radon			Disinfection Byproducts 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 - 4			3			3			3			3			3			3			3			2	1
GUDI - 0																									
Surface water intakes - 0																									

A copy of the Source Water Assessment Report can be obtained at www.state.nj.us/dep/swap or by calling (609) 292-5550, or (732) 787-3903.

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

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

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

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

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

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

Treatment By-product Precursors: A common source is naturally occurring organic matter in surface water. Treatment by-products are formed when the disinfectants (usually chlorine) used to kill pathogens react with dissolved organic material (for example, leaves) present in surface water.

If you have questions about the CCR report or about your water quality, please contact Steve Ussmann, the Superintendent of Operations for Keansburg Water and Sewer Department at (732) 787-3903. We want you to be informed about your water supply and distribution system. If you want more information or have comments about the water utility, you may attend any of the regular Borough meetings held at our office at Borough Hall, 29 Church Street, Keansburg.

The Keansburg Water and Sewer Department routinely monitors for contaminants in your drinking water according to federal and state laws. The attached table shows the results of our monitoring for the period of January 1st to December 31st, 2017.

We have learned through our monitoring and testing that some contaminants have been detected. The EPA has determined that your drinking water is safe at these levels.

In December of 2011, the Borough of Keansburg put on line its reverse osmosis de-salination treatment process. This new treatment will remove sodium, chlorides and dissolved solids which will bring us into compliance with NJDEP Bureau of Safe Drinking Waters standards for secondary contaminants.

We work hard to provide top quality water to every tap. We ask that all our customers help us protect our community, our way of life and our children's future.

All drinking water including bottled drinking water may be reasonably expected to contain at least small amounts of some contaminants. It is important to remember that the presence of these contaminants does not necessarily pose a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water hotline at 1-800-426-4791.

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 for 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, 1-800-426-4791 or on the internet at www.epa.gov/safewater/hfacts.html.

The sources of drinking water (both tap water and bottled water) includes rivers, lakes, streams, pond 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 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 agricultural, 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 run off and septic systems.
- Radioactive contaminants which can be naturally occurring or be the result of oil and gas production and mining activities.

Results from the Year 2017

Keansburg Water and Sewer Department Annual Drinking Water Quality Report 2018



TABLE DEFINITIONS

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

MCLG (Maximum Contaminant Level Goal) - The level of a contaminant in drinking water which there is no known or expected risk to health. MCLGs allow for a margin of safety.

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.

MRDLG (Maximum Residual Disinfectant Level Goal) - The level of a drinking water disinfectant 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.

MRDL (Maximum Residual Disinfectant Level) - The highest level of disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for control of microbial contaminants.

pCi/L (picoCuries per liter) - Measurement of the natural rate of disintegration.

ppb (Parts per billion) - One part substance per billion parts of water (or micrograms per liter).

ppm (Parts per million) - One part per million parts of water (or micrograms per liter) measure of the radioactivity in water.

NA - Not applicable

ND - Not detected

NTU (Nephelometric Turbidity Units) - Measurement of the clarity, or turbidity of water.

RUL (Recommended Upper Limit) - Recommended limits for secondary contaminants.

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

Notes:

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

As part of our water quality monitoring program, hundreds of quality tests are performed on our water each year. We test for over eighty contaminants, and perform additional daily monitoring at our water treatment facilities, and throughout the water distribution system. The table herein lists only contaminants which were detected in the water.

The health effects of each DETECTED contaminants listed in the table are as follows:

TTHMs (Total Trihalomethanes) and Haloacetic Acids: 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 system, and may have an increased risk of getting cancer.

In order to ensure that tap water is safe to drink, the 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.

Since a portion of the water consumed by Keansburg residents is purchased from the NJAWC, a copy of the NJAWC Water Quality Test Results had been appended to the Keansburg Water and Sewer Department Report.

Special Considerations Regarding Children, Pregnant Women, Nursing Mothers and Others:

Children may receive a slightly higher amount of a contaminant in the water than do adults, on body weight basis, because they drink a higher amount of water per pound of body weight than 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, effect on infants and children are the health endpoints upon which the standards are based.

Lead Education Statement

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. Keansburg Water Department 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>.

Arsenic Education Statement

Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

NJ American Water Co. CCR

(Keansburg purchases a portion of their water from NJAWC between October through April)

Monmouth - PWS ID# NJ1345001

Table of Detected Contaminants - 2017

Towns Served by this system: Shrewsbury area of system-Aberdeen, Allenhurst, Asbury Park, Bradley Beach, Colts Neck in part, Deal, Eatontown, Elberon, Fair Haven, Highlands Holmdel, Interlaken, Little Silver, Loch Arbor, Long Branch, Middletown, Monmouth Beach, Neptune, Neptune City, Ocean Grove, Oceanport, Ocean Township, Red Bank, Rumson, Sea Bright, Shrewsbury Borough, Shrewsbury Township, Tinton Falls, Wanamassa, West Long Branch, Howell Township

Those substances not listed in this table were not found in the treated water supply.

Regulated Substances ¹							
Contaminant	Units	MCL	MCLG	Range Detected	Highest Level Detected	Compliance Achieved	Typical Source
Microbiology							
Total coliform	cfu	coliform detected no more than 5% of monthly samples	0	NA	0.09 % ⁸	Yes	Naturally present in environment
Inorganic Chemicals							
Fluoride ²	ppm	4	4	0.1 to 0.84	0.84	Yes	Erosion of natural deposits; Water additive which promotes strong teeth
Total Chromium	ppb	100	100	ND to 1.4	1.4 ⁷	Yes	Discharge from steel and pulp mills; Erosion of natural deposits
Nitrate	ppm	10	10	0.09 to 0.35	0.35	Yes	Runoff from fertilizer use; industrial or domestic wastewater discharges; erosion of natural deposits
Treatment Byproducts Stage-2							
Total Trihalomethanes [TTHMs]	ppb	80	NA	4.3 to 89.7	59.9 ³	Yes	By-product of drinking water disinfection
Total Haloacetic Acids [THAA5]	ppb	60	NA	0.0 to 41.0	24.0 ³	Yes	By-product of drinking water disinfection
Turbidity							
Turbidity ⁹	ntu	TT	NA	0.07 to 0.28	0.28	Yes	Soil runoff
Treatment Byproducts Precursor Removal							
Total Organic Carbon	ppm	TT	NA	0.84 to 2.07	2.07	Yes	Naturally present in the environment
Disinfectants							
Chlorine / Chloramine	ppm	MRDL = 4	MRDLG = 4	0.09 to 2.85	1.40 ⁴	Yes	Water additive used to control microbes
Tap water samples were collected for lead and copper analysis from homes in the service area							
Contaminant	Units	Action Level	MCLG	Amount Detected (90th%tile)	Homes Above Action Level	Compliance Achieved?	Typical Source
Copper 2017	ppm	1.3	1.3	0.125	none	Yes	Corrosion of household plumbing systems
Lead 2017	ppb	15	0	3	4	Yes	Corrosion of household plumbing systems

Secondary Contaminants			
Contaminant	Units	RUL	Amount Detected
Sodium ⁸	ppm	50	25.5 to 48.6 ⁷
Hardness	ppm	250	76 to 84 ⁷
Aluminum	ppm	0.05	ND to 0.02 ⁷

Unregulated Contaminant Monitoring	Units	NJDEP Guidance Level	Range Detected	Highest Level Detected	Use or Environmental Source
Chlorate	ppb	NA	ND to 760	760	Agricultural defoliant or desiccant; disinfection byproduct; and used in production of chlorine dioxide.
Hexavalent Chromium	ppb	NA	ND to 0.53	0.53	Major sources of hexavalent chromium (chromium-6) in drinking water are discharges from steel and pulp mills, and erosion of natural deposits of chromium-3. Hexavalent Chromium is not currently regulated as an individual substance. NJ American Water voluntarily performed this monitoring based on recommendations from USEPA. For more information on Hexavalent Chromium (Chromium 6), please visit our web site.
Strontium	ppb	NA	37.6 to 508.5	508.5	Naturally occurring element; commercial use of strontium has been in the faceplate of glass cathode-ray tube televisions to block x-ray emissions.
1,4- Dioxane	ppb	NA	ND to 0.50	0.50	Used as a solvent in manufacturing and processing of paper, cotton, textile products, automotive coolant, cosmetics and shampoos.

1. Under a Waiver granted by the State of New Jersey Department of Environmental Protection, our system does not have to monitor for synthetic organic chemicals/pesticides because several years of testing have indicated that these substances do not occur in our source water. The SDWA regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for volatile organic chemicals and synthetic organic chemicals. Our system received monitoring waivers for synthetic organic chemicals.

2. Fluoride is added to the water (Shrewsbury and Ocean County areas of Coastal North System.)

because the concentrations of these substances do not change frequently.

3. This level represents the highest annual quarterly Locational Running Average calculated from the data collected.

4. This level represents the highest annual quarterly Average calculated from the data collected.

5. 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 may be of concern to individuals on a sodium restricted diet.

6. Turbidity is a measure of the cloudiness of the water. 100% of the turbidity readings were below the treatment technique requirement of 0.3 ntu. We monitor it because it is a good indicator of the effectiveness of our filtration system.

7. The State of New Jersey allows us to monitor for some substances less than once per year. Some of our data, though representative, is more than one year old.

8. Maximum percentage of positive samples collected in any one month.

CONTAMINANTS DETECTED IN 2017 FROM KEANSBURG'S WELL WATER

Contaminants	Units	MCL	MCGL	Range Detected	Highest Level Detected	Compliance Achieved	Major Sources
Treatment Byproducts - STAGE 2							
Total Trihalomethanes	ppb	80	NA	9 to 87	(1) 80	YES	By-product of drinking water disinfection
Total Haloacetic Acids	ppb	60	NA	0 to 45	(1) 45	YES	By-product of drinking water disinfection
Inorganics							
Barium	ppm	2	2	0.018	0.018	YES	Naturally found in the ground
Flouride	ppm	4	4	0.37 to 0.57	0.57	YES	Water additive for teeth
Arsenic	ppm	0.05	0	(3) 0.0006	0.001	YES	Naturally found in the ground
Microbiology							
Total Coliform	CFU	No more than 1 monthly routine single total coliform positive	0	0 to 1	1	YES	Naturally found in environment
Disinfectants							
Chlorine	ppm	MRDL=4	MRDLG=4	0.26 to 1.94	(2) 0.85	YES	Water additive used to control microbes

SECONDARY CONTAMINANTS

Contaminants	Units	RUL (4)	Amount Detected
Chloride	ppm	250	74.8
Sulfate	ppm	250	17
Iron	ppm	0.3	0.115
Manganese	ppm	0.05	0.0039
Aluminum	ppm	80	0.0048
Sodium (5)	ppm	50	26 to 58.4

1. This level represents the highest annual quarterly locational running average calculated from the data collected. Byproduct rule took effect for this system the second quarter of 2012.
2. This level represents the highest annual quarterly average from the data collected.
3. The level represents the running annual average.
4. This value shown for secondary contaminants is the recommended upper limit (RUL), which is based on aesthetics (color, taste, appearance), rather than health concerns.
5. *Note:* On 6/7/2017, the sodium result of 58.4 single exceeded the RUL of 50mg/l. 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 may be a concern to individuals on a sodium restricted diet.