



NORTH JERSEY DISTRICT WATER SUPPLY COMMISSION

2017 Consumer Confidence Report with 2016 Water Quality Report

This report contains information about your drinking water. Last year, 2016, your tap water was tested to comply with all EPA and NJDEP health standards. North Jersey District Water Supply Commission's (NJDWSC) Wanaque Water Treatment Plant (WTP) uses surface water from the Wanaque Reservoir. This surface water is treated by conventional processes: coagulation, flocculation, sedimentation, filtration, and disinfection. The purified finished water is then pumped from a clearwell to the NJDWSC chemical and administration buildings. NJDWSC is required to distribute an annual Water Quality Report, or Consumer Confidence Report (CCR), to each customer as a result of amendments made in 1996 to the Safe Water Drinking Act. This report provides a summary of information collected during the calendar year 2016 with regard to compliance monitoring required by both the United States Environmental Protection Agency (EPA) and the New Jersey Department of Environmental Protection (NJDEP). The quality of the water delivered to the NJDWSC facility is represented by the data sets provided for the NJDWSC Wanaque WTP. For questions or other information, please contact Lew Schneider at 973-831-6244. The NJDWSC Board of Commissioners meets monthly.

TECHNICAL DATA TABLES

The data present in the tables in this Report are from the most recent testing done in accordance with regulations. The State allows us to monitor for some contaminants less than once a year because the concentrations of these contaminants do not change frequently. Though representative, some of our data is more than one year old. The data tables show concentrations of contaminants detected in the effluent of the treatment plant and in the pipes of NJDWSC buildings, typical sources of those contaminants in drinking water, status of compliance with primary and secondary drinking water standards, and related health information if compliance is not achieved.

SOURCE OF CONTAMINANTS FOR TAP AND BOTTLED WATER

Drinking water, including bottled water, may be expected to contain at least small amounts of some contaminants, within reason. The presence of contaminants does not necessarily mean that the water poses a health risk. More information about contaminants can be obtained by calling the EPA's Safe Drinking Water Hotline at 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, and some elderly can be particularly at risk from infections. These people should seek advice 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 also. The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land 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 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 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 establishes 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.

LEAD

NJDWSC reported that the 90th percentile value for our water system, which is the federal lead action level, was not exceeded for one of the most recent monitoring period. Under authority of the Safe Drinking Water Act, the EPA set the action level for lead in drinking water at 15 parts per billion (ppb), or 0.015 milligrams of lead per liter of water (mg/L). This means that utilities must ensure that water from the customer's tap does not exceed this level in at least 90 percent of the sample points tested (90th percentile value). The action level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements the water system must follow. If water from taps exceeds this limit, the utility must take certain steps to correct the problem. Because lead may pose serious health risks, the EPA set a Maximum Contaminant Level Goal (MCLG) of zero for lead. The MCLG is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

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 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, immune-compromised people, infants and small children, and the elderly are at greater risk of developing life threatening illness. We encourage immune-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease, and it may spread through other means than drinking water.

In 2008 and again in May of 2017, NJDWSC completed two 2 year source water monitoring programs in accordance with requirements of the EPA's Long Term 2 Enhanced Surface Water Treatment Rule. There is no evidence of *Cryptosporidium* in the Wanaque Reservoir.

ARSENIC

Arsenic is derived from erosion of natural deposits, runoff from orchards and runoff from glass and electronics production wastes. 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.

NJDWSC drinking water levels of arsenic were non-detectable in 2016 or less than 2 µg/L, well below the MCL of 5 µg/L.

NITRATES

Nitrates may be present in drinking water because of runoff from fertilizer use, leaching from septic tanks and sewage or erosion of natural deposits. 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.

The Nitrate level in NJDWSC drinking water for 2016 was non-detectable or less than 0.5 mg/L or well below the MCLG of 10 mg/L.

TRIHALOMETHANES

Trihalomethanes (TTHM) are a by-product of drinking water chlorination. 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 getting cancer.

NJDWSC drinking water level of TTHM's for 2016 was 50.6 µg/L or well below the MCL of 80 µg/L.

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

Children may receive a slightly higher amount of a contaminant present in water than do adults on a body weight basis, because they may drink a greater amount of water per pound of body weight than adults do. For this reason, reproductive or developmental effects are used to calculate a drinking water standard if these effects occur at lower levels than other health effects of concern. If there is not sufficient toxicity information for a chemical (such as lack of data on reproductive or developmental effects), an added uncertainty factor may be incorporated into the calculation of the drinking water standard. This makes 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.

WATER TREATMENT

This process consists of a series of steps to refine the quality of the source or raw water. Chemicals are added to the raw water causing small particles to adhere to each other making them heavy enough to settle into basins and the residuals are discharged to a residual treatment facility. The water is then filtered through layers of fine anthracite coal filters and sand removing suspended particles. During filtration, turbidity is removed and clear water emerges. Prior to the water being sent to the distribution system, sodium hypochlorite (chlorine) is added to ensure that the water remains free of any virus or bacteria. These treatment processes are manned and operated by a team of highly trained, state certified water treatment professionals assisted by computerized supervisory control and data acquisition systems.

SAMPLING

Regular sampling and testing is an important assurance of the quality of water and includes the following:

Daily:	Chlorine Residuals, Turbidity, pH, Temperature and Color (NTU)
Monthly:	Bacteria (Total Coliform)
Yearly:	Trihalomethanes, Haloacetic Acids
Semi-Annually:	Lead and Copper
Yearly:	Inorganics, Volatile Organic Contaminants, Nitrates
9 years:	Radioactivity

The Table below lists all the drinking water analytes that we detected during calendar year 2016.

The presence of these analytes in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from January 1 through December 31, 2016. The state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year.

Inorganic Compounds	NJDWSC Result	Min	Max	Federal/State MCL	MCL Meets Std?	MCLG	Typical source of Contaminant
Barium (ppm)	0.014	----	0.014	2 / 2	Yes	2	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Nitrate (ppm as N)	0.284	----	0.284	10 / 10	Yes	10	
Turbidity (NTU) (Combined Filtered Water)	0.38	highest single measurement 1/01/16 - 12/31/16	TT = 1 NTU	Yes	NA		Soil Runoff
	99.7%	Lowest monthly % of samples <0.3 NTU	TT = 95% of samples <0.3 NTU	Yes			
	0.12	Average for 2016					
Total Organic Carbon (TOC) ppm	1.0 Running Annual Average by % Removal Ratio or Alternative Compliance Criteria Removal Ratio	Removal Ratio	TT = Percent (%) removal or meeting alternative criteria removal ratio of 1.0.	Yes	N/A		Naturally present in the environment.
		0.76 - 1.0					
Lead & Copper (2016) 2x/yr Jul-Dec) 20 samples	90th Percentile	Samples > AL	AL	MCL Meets Std?	MCLG	Typical source of Contaminant	
Lead (ppb) Commission Facility	0.00230	0	15	Yes	0	Corrosion of household plumbing; Erosion of natural deposits; Leaching from wood preservatives.	
Copper (ppm) Commission Facility	0.130	0	1.3	Yes	1.3		
Lead (ppb)	Note: Municipality to insert their respective Lead results.					Corrosion of household plumbing; Erosion of natural deposits; Leaching from wood	
Copper (ppm)	Note: Municipality to insert their respective Copper results.						
Organic Disinfection by-products Annual (Aug 2016)		NJDWSC Result	Min	Max	MCL Meets Std?	Typical source of Contaminant	
Total Trihalomethanes (ppb)		OTP - 42.2 Admin Bldg - 50.6	NA	NA	Yes	By-product of drinking water disinfection	
		Note: Municipality to insert their respective DBP results.					
Total Haloacetic Acids (ppb)		OTP - 32.8 Admin Bldg - 33.9	NA	NA	Yes	By-product of drinking water disinfection	
		Note: Municipality to insert their respective DBP results.					

Regulated Disinfectants NJDWSC Facility		NJDWSC Result	MRDL	MRDLG	Typical source of Contaminant	
Chlorine as Cl ₂ (ppm)		0.55 Annual Average	4.0	4.0	Treatment Process	
Secondary Compounds Plant Effluent		NJDWSC Result	Federal/State Secondary Standards (Recommended Upper Limit)		Meet Recommended Standards	Typical source of Contaminant
ABS/LAS	ppm	< 0.021	500		yes	Naturally present in the environment
Alkalinity	ppm	43.9	NS		yes	
Aluminum	ppm	0.045	≤ 0.200		yes	
Chloride	ppm	77.2	≤ 250		yes	
Color	SU	2	≤ 10		yes	
Copper	ppm	0.009	≤ 1.0		yes	
Hardness	ppm	71.7	50 - 250		yes	
Iron	ppm	0.0059	≤ 0.3		yes	
Manganese	ppm	0.0021	≤ 0.05		yes	
Odor	TON	< 1.0	3		yes	
Sodium	ppm	41.9	≤ 50		yes	
pH	units	7.98	6.5 - 8.5		yes	
Sulfate	ppm	10.3	≤ 250		yes	
Total Dissolved Solids	ppm	186	≤ 500		yes	
Zinc	ppm	0.008	≤ 5		yes	
Microbiologicals		NJDWSC Result	MCL	MCLG	MCL Meets Std?	Typical source of Contaminant
Total Coliform Bacteria (%)		0.00%	< 5% of monthly sample total	0	Yes	Naturally present in the environment

Microbiologicals

Microbiologicals: The NJDWSC treatment plant, based on serving a current non-transient population of 150 persons, is required to collect one Total Coliform sample per month of it's Finished Water per NJDEP.

Specific municipalities to insert results for their respective total coliform results.

Source Water Pathogen Monitoring	NJDWSC Source Water Results	Typical source of Contaminant
Cryptosporidium, Oocysts/L	0 - 0.1	Microbial Pathogens found in surface water throughout the United States
Giardia, Cysts/L	0 - 0.1	Microbial Pathogens found in surface water throughout the United States

Definitions of Terms in Table of Water Quality Characteristics

ABS/LAS: Alkylbenzene Sulfonate and Linear Alkylbenzene Sulfonate (surfactants)

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

Inorganic Compounds - Chemicals associated with minerals and metals.

Maximum Contaminant Level (MCL) - 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 (MCLG) – 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 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.

Microbiologicals - Microorganisms such as bacteria, viruses, and protozoa, which may be potentially harmful. These organisms may occur naturally or can be introduced into the environment from sewage treatment plants, septic systems, and runoff.

Primary Standards – Maximum allowable levels set by Federal drinking water regulations, which are based on human health criteria.

Secondary Standards – Recommended levels set by Federal drinking water regulations for substances that are not health related. These reflect aesthetic qualities of

TON - Threshold Odor Number

TT - Treatment Technique – A required process intended to reduce the level of contamination in drinking water.

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

NA - Not Applicable

ND - Non-Detectable

ug/L - Concentration in parts per billion

NS - No Standard.

NTU – National Turbidity Unit – unit of turbidity measurement.

ppb - Concentration in parts per billion.

ppm - Concentration in parts per million.

RAA – Running annual average

pCi/L - Picocuries per liter