



Sayreville Water Department

CONSUMER CONFIDENCE REPORT

2019 PWSID# 1219001

The Borough of Sayreville is pleased to present the 2019 Annual Consumer Confidence Report to the public. The information and tables included in this report represent monitoring results for the period of January 1, 2019 to December 31, 2019. We have provided a key for deciphering some of the technical language and invite anyone with questions to call the Water Treatment Plant at (732) 390-7067 between the hours of 10:00 a.m. to 3:00 p.m. for further clarification. Borough Council meetings are held on the second and fourth Monday of every month at the Borough Hall, 167 Main Street. The Water committee is also present at these meetings.

The Borough's source of water is well water from the Duhernal Water System. These wells are part of the Old Bridge Sands and Farrington Aquifers.

The Borough currently has a 14-MGD (million gallon per day) water treatment plant that is operated 24-hours per day/7-days per week. In accordance with EPA/NJDEP regulations, the Borough of Sayreville routinely monitors for constituents in our drinking water supply to ensure the safety of our drinking water.

Some people may be more vulnerable to contaminants in the 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 deficiency disorders may be at risk. Some infants and the elderly 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 (800-426-4791)

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

Due to the possibility that children may consume a greater amount of water per pound of body weight, they may receive a slightly higher amount of a contaminant present in the water 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.

Important Information about 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.

Why there may be contaminants in the Water

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 or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances such as microbes, inorganic chemicals, organic chemicals, and substances resulting from the presence of animals or human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, 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 may originate from a variety of sources such as agriculture, urban storm water runoff, and residential use.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, are primarily by-products of industrial processes and petroleum production. They may also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants 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, the United States Environmental Protection Agency (EPA) and the New Jersey Department of Environmental Protection (NJDEP) prescribe regulations that 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 water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791).

DEFINITIONS

Non-Detected (ND)– laboratory analysis indicated 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, or 1 inch in 16 miles.

Parts per billion (ppb) – or Micrograms per liter (ug/l) – one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000 or 1 inch in 16,000 miles.

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

Maximum Contaminant Level (MCL) – The “Maximum Allowed” is the highest level of a contaminant that is allowed in the drinking water. MCL’s are set as close to the MCGL’s as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG) – The “goal” is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG’s allow a margin for safety.

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

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

< = Less than the detection limit of the analytical method.

Iron – The recommended upper limit for iron is based on unpleasant taste of the water and staining of the laundry. Iron is an essential nutrient, but for some people who drink the water with iron levels well above the recommended upper limit could develop deposits of iron in a number of organs in the body.

Manganese – The recommended upper limit for manganese is based on staining of laundry. Manganese is an essential nutrient, and toxicity is not expected from levels which would be encountered in drinking water.

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

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

Maximum Residual Disinfectant Level (MRDL) – The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfection 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. MRDLG’s do not reflect the benefits of this use of disinfectants to control microbial contamination.

Coliform Sampling

As a state requirement, the Borough was required to take 600 bacteriological samples per year (an average of 50 per month). In 2019, 616 bacteriological samples were taken and the results were all negative.

Lead and Copper Sampling

The Borough successfully completed its lead and copper testing requirements for 2019. Please see the table for the 90th percentile results.

Regarding concerns about lead in your drinking water

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 your service lines and home plumbing. The Borough of Sayreville 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. However, for those served by a lead service line, flushing times may vary based on the length of the service line and plumbing configuration in your home. If your home is set back further from the street, a longer flushing time may be needed. To conserve water, the other household water usage activities such as showering, washing clothes, and running the dishwasher are effective methods of flushing out water from a service line. To determine if you have a lead service line, contact us at (732) 390-7000 (x7361). 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>.

Radium Sampling

The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that Radium poses health concern at certain levels of exposure. The EPA has estimated that the additional lifetime risk associated with drinking water that contains the MCL level for Radium is about 1 in 10,000. **This means that if 10,000 people were to consume two liters of water per day for 70 years, we would expect to see one additional cancer in the 10,000 people exposed.** Increased risk of bone cancers and cancers of the head sinuses have been associated with the ingestion of Radium. Man has always been exposed to natural radiation from water, food and air. The quantity of radiation a person is exposed to varies with the background radioactivity. Water of high radioactivity is unusual; nevertheless, it is known to exist in certain areas from natural sources. The EPA has set an enforceable drinking water standard for radium to reduce the risk of these adverse health effects. The water utility is committed to address this problem if excessive levels are discovered in our source water.

LT2ESWTR Cryptosporidium and Giardia Sampling

The Borough of Sayreville successfully completed its three year sampling schedule of Giardia and Cryptosporidium (LT2ESWTR) in 2017. Compliance was achieved with all samples with 0.000 Oocysts/Liter for Cryptosporidium and 0.000 Cysts/Liter for Giardia. Giardia and Cryptosporidium are microscopic parasites that can be found in water. Giardia causes an intestinal illness called giardiasis or “beaver fever.” Cryptosporidium is responsible for a similar illness called cryptosporidiosis. Filtration and chlorine contact times are methods used to treat these microbes. Currently, a future sampling schedule has not been established by the NJDEP.

Sampling Waivers

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 has received monitoring waivers for all of these types of contaminants.

The Borough has not exceeded any MCL for the year 2019. The following table is a list of detected chemicals.

INORGANIC CHEMICALS									
Sayreville									
Parameter	Units	MCL	MCLG	RUL	Result	Range	Violation	Health Effects Language	Major Sources in Drinking Water
Copper *	ppb	1300 (90th Percentile) 2019 Results	1300		180.7	N/A	No	Short term exposure: Gastrointestinal distress Long term exposure: Liver or kidney damage. People with Wilson's Disease should consult their personal doctor if the amount of copper in their water exceeds the action level	Corrosion of household plumbing; erosion of natural deposits; leaching from wood preservatives.
Lead *	ppb	15 (90th Percentile) 2019 Results	15		1	N/A	No	Infants and children: Delays in physical or mental development; children could show slight deficits in attention span and learning abilities Adults: Kidney problems; high blood pressure.	Corrosion of household plumbing; erosion of natural deposits.
* 90th Percentile - 90 Percent of the samples taken, must be below this level.									
Barium	ppm	2,000	2,000		0.0225	N/A	No	Low acute oral toxicity, high doses may cause gastrointestinal disturbances and muscular weakness.	Naturally occurring chemical typically found as an inorganic salt. Usually released in the atmosphere by mining or refining.
Nickel	ppb	No MCL	No MCL		0.72	N/A		Exposure to Nickel and its compounds may result in the development of a dermatitis known as "nickel itch" in sensitized individuals. Skin contact with nickel contaminated soil or water may result in nickel exposure. In small quantities, nickel is essential, but too high can be a danger to health.	Leaching from metals in contact with drinking water such as pipes and fittings. However, Nickel may also be present in some groundwaters as a consequence of dissolution from Nickel ore-bearing rocks. Nickel can also be found in jewelry.
REGULATED CONTAMINANTS/MICROBIOLOGICAL									
Turbidity (TT)	NTU's	0.3	N/A		0.05	N/A	No	Turbidity is a measure of the cloudiness of water. It is used to indicate water quality and filtration effectiveness (such as whether disease-causing organisms are present). Higher turbidity levels are often associated with higher levels of disease-causing microorganisms such as viruses, parasites and some bacteria. These organisms can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.	Soil runoff.
Total Coliforms	>5%	0	0		No failure	N/A	No	Not a health threat in itself; it is used to indicate whether other potentially harmful bacteria may be present.	Coliforms are naturally present in the environment; as well as feces; fecal coliforms and E. coli only come from human and animal fecal waste.
Disinfectant Residuals (Chlorine)	ppm	4	4		1.14	N/A	No	Eye/nose irritation; stomach discomfort.	Water additive for disinfection and to control microbes.
Secondary Standards									
Aluminum	ppm			0.2	0.01092	N/A	No	Aluminum is a natural element. Uptake of Aluminum can take place through, breathing, skin contact and ingestion. It can lead to the following health issues: damage to central nervous system, dementia, loss of memory, listlessness, and trembling.	Natural element abundant in the earth's crust.
Alkalinity	ppb				77.5			There are no health concerns related to alkalinity.	The primary source of natural alkalinity is carbon dioxide in the atmosphere and in soil gases that dissolves in rain, surface water, and groundwater. Water with low levels of alkalinity (less than 150 mg/L) is more likely to be corrosive. High alkalinity in water (greater than 150 mg/L) may contribute to scaling.
Chloride	ppm			250	0.04436	N/A	No	An increased level of blood chloride (called hyperchloremia) usually indicates dehydration but can also occur with other problems that cause high blood sodium, such as Cushing Syndrome or kidney disease.	Natural and anthropogenic sources, such as run off containing road de-icing salts, the use of inorganic fertilizers, landfill leachates, septic tank effluents, animal feeds, industrial effluents, irrigation drainage and seawater intrusion in coastal areas.
Fluoride	ppb	2	2		0.08	N/A	No	Bone disease (pain and tenderness of the bones); Children may get mottled teeth.	Erosion of natural deposits; water additive; discharge from fertilizer and aluminum factories.
Manganese	ppm			0.05	0.00057	N/A	No	Health supplement for bone support, skin/wound healing.	Natural mineral. Erosion of natural deposits.
Sodium	ppm			50	25.13	N/A	No	Sodium is an essential element required for normal body function including nerve impulse transmission, fluid regulation, and muscle contraction and relaxation. However in excess amounts, sodium increases individual risk of hypertension, heart disease, and stroke.	Naturally occurring, or can be the result of road salt application, water treatment chemicals or ion-exchange water softening units. Sodium levels can also vary in bottled water and carbonated water, depending on brand.
Sulfate	ppm			250	0.0335	N/A	No	Although not a significant health hazard, sulfates can have a temporary laxative effect on humans and young livestock.	Naturally occurring, often the result of the breakdown of leaves that fall into a stream of water passing through rock or soil containing gypsum and other common minerals.
Total Hardness (as CaCO3)	ppm			250	162	N/A	No	Hard water is not a health risk, but it is a nuisance because of mineral buildup on plumbing fixtures and poor soap and or detergent performance.	Water hardness is the amount of dissolved calcium and magnesium in the water. Hard water is high in dissolved minerals, largely calcium and magnesium.
Zinc	ppm			5	0.00072	N/A	No	The presence in drinking water does not generally present health risks, and in small amounts is essential for health.	Zinc is naturally present in water. The average concentration in sea water is 0.6-5 ppb, rivers generally contain between 5-10ppb, algae contain 20-70 ppm, sea fish and shells contain 3-25 ppm, oysters contain 100-900 ppm, and lobsters contain 7-50 ppm.
DISINFECTION BY-PRODUCTS									
Total Trihalomethanes (THM)	ppb	80	N/A		59.91	39.64-78.54	No	Liver, kidney or central nervous system problems; increased risk of cancer.	Byproduct of drinking water disinfection.
Total Haloacetic Acid (HAA)	ppb	60	N/A		13.28	7.13-22.19	No	Increased risk of cancer.	Byproduct of drinking water disinfection.
RADIOLOGICAL									
Alpha Emitters	pCi/;	15	0		<3	N/A	No	Increased risk of cancer.	Erosion of natural deposits.
The Borough of Sayreville's radiological results have been consistently below the Gross Alpha MCL. The next sampling will be in 2020.									
UCMR4 (Unregulated Monitoring Rule)									
HAA5	ppb	not regulated	N/A	N/A	3.39 avg.	<0.30-8.4	N/A		By-product of drinking water disinfection.
HAA6Br	ppb	not regulated	N/A	N/A	1.62 avg.	<0.30-2.9	N/A		By-product of drinking water disinfection.
HAA9	ppb	not regulated	N/A	N/A	3.65 avg.	<0.30-8.4	N/A		By-product of drinking water disinfection.
VOCs									
Chloroform	ppb	100	100	N/A	18.33	N/A	No	Long term exposure by inhalation has resulted in effects to the liver, including hepatitis and jaundice, and central nervous system effects such as depression and irritability.	By-product of drinking water disinfection
Bromodichloromethane	ppm	100	100	N/A	7.75	N/A	No	No studies available about health effects in people exposed. Animals exposed to high amounts, develop kidney and liver injuries.	By-product of drinking water disinfection
Dibromochloromethane	ppb	100	100	N/A	2.74	N/A	No	No studies available about health effects in people exposed. Animals exposed to high amounts, develop kidney and liver injuries.	By-product of drinking water disinfection

The UCMR4 (Unregulated Contaminant Monitoring Rule) mandates the monitoring of unregulated monitoring of contaminants as set forth by the EPA and NJDEP. The EPA/NJDEP do not yet have an available MCL or MCGL for these contaminants because they are not regulated, but the Borough is required to sample for them. Should you require information regarding the UCMR4 contaminant list, please contact of the NJDEP at (609) 292-5550 for further information. The sample results are from 2018. Monitoring will continue in 2019 and 2020 at which time the remaining sample results will be posted in our consumer confidence report.

Postal Customer

Some information about our Source Water Assessment

The New Jersey Department of Environmental Protections (NJDEP) has completed and issued the Source Water Assessment Report and Summary for this public water system. It is available on the NJDEP's source water assessment web site at www.state.nj.us/dep/swap/index.html or by contacting NJDEP's Bureau of Safe Drinking Water at (609) 292-5550 or watersupply@dep.nj.gov. **The goal of this assessment is to measure each water system's susceptibility to contamination, not actual (if any) contamination measured in a water supply system.**

The source water assessment was performed on five wells in the Morgan Section of Sayreville, 10 wells under the influence of surface water at our Bordentown Treatment Facility, two surface water intakes at the Old Bridge Pumping Station, and one purchased water source (Middlesex Water Supply). The 10 wells under the influence of surface water at our Bordentown Facility are no longer in use and have not been in use since 1992. The wells in our Morgan Section are also not in use.

Please note that the Source Water Assessment Report and Summary was completed in 2003. At that time, the Duhernal Water System was not required to be a participant in the survey and no data is represented in the table below for this system. The Duhernal Water System currently has 25 wells under the influence of surface water, 14 of which are currently in use. If additional Source Water Assessment data becomes available in the future, it will be published in this report.

The system's source water comes from the following aquifer(s) and/or surface water body(s) (if applicable): middle Potomac-Raritan-Magothy aquifer, upper Potomac-Raritan-Magothy aquifer, Sayreville Lagoon, and the South River.

Susceptibility Ratings for Sayreville Water Department Sources

The table below illustrates the susceptibility ratings for seven contaminant categories (and radon) for each source in the system. The table provides the number of wells and intakes that rate high (H), medium (M), or low (L) for each contaminant category. For the susceptibility ratings of purchased water, please refer to the Borough's specific water systems source water assessment report.

If a system is rating high susceptible for a contaminant category, it does not mean a customer is or will be consuming contaminated drinking water. This rating just 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			Pesticides			Volatile Organic Compounds			Inorganics			Radio-nuclides			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		
Wells - 5		4	1	3	2				5	5			4	1		5			5			5	
GUDI -10	10			9		1			10	6	4		9	1		6	3	1	9	1	10		
Surface water Intakes - 2	2			1		1		1	1		2		1	1				2		2	2		

- **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/rrp/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.