

WATER QUALITY REPORT

PWSID# NJ1214001 – NEW BRUNSWICK, NEW JERSEY

Dear Water Consumer,

The City of New Brunswick is committed to providing consumers with both high quality drinking water and information about the water we provide.

As part of our plan for the 2014-2015 fiscal year, the City is currently upgrading its two critical raw water pumping stations to further increase reliability and efficiency. The first phase, valued at \$750,000, includes the installation of variable speed drives on the two largest pumps and an improved control system. This phase has been completed.

The second phase, valued at \$3 million, is anticipated to be completed in 2015 and includes the replacement of five pumps and traveling screens and provides for architectural improvements to maintain the raw water pump station buildings. In addition, an emergency generator will be added to the D&R Canal Raw Water Pump Station and a secondary emergency generator will be added at the water treatment plant to provide continued operation during power outages. Long-term improvements include rehabilitation of the sedimentation basins and gravity filters.

The United States Environmental Protection Agency (USEPA) and the New Jersey Department of Environmental Protection (NJDEP) set drinking water health and safety standards, and we regularly test our water to ensure that it meets these standards.

A violation occurred during June 2013, which required public notification. A copy of this notice can be viewed at:

<http://thecityofnewbrunswick.org/water-utility/water-department-public-notification>.

Since that time, the City has conducted a Comprehensive Performance Evaluation (CPE) and a Comprehensive Technical Assistance (CTA) evaluation. Several "performance limiting factors" were identified and corrected.

These improvements include: updates to continuous monitoring equipment; implementation of a maintenance management system; a restructured plan of water system management and supervision; updates to the Supervisory Control and Data Acquisition (SCADA) system; and adoption of new performance goals and operating guidelines.

The CPE and CTA reports can be viewed at:

<http://thecityofnewbrunswick.org/water-utility/water-utility-reports>.

The Water Quality Report is provided annually to all water consumers and contains information about the water provided by the City of New Brunswick. This report meets the Federal and State requirements for Consumer Confidence Reports. We encourage you to read this report and study the water quality test results for the 2013 calendar year. We hope you find this report informative and that the information provides you with a better understanding of what is involved in the production of drinking water for your use.

If you would like additional information or if you have any questions concerning this report, please call the City of New Brunswick at (732) 745-5243. You can also call the United States Environmental Protection Agency Safe Drinking Water Hotline at (800) 426-4791 or the New Jersey Department of Environmental Protection at (609) 292-5550 for further information about drinking water.

Sincerely,

James M. Cahill

Mayor of New Brunswick

Please share this information with all the people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses.) You can do this by posting this notice in a public place or distributing copies by hand or mail.

IMPORTANT INFORMATION This report contains important information about your drinking water. If you do not understand it, please have someone translate it for you.

Para obtener una copia en Español favor llamar a La Alcaldía al 732-745-5004.



Sources of Drinking Water

Both tap water and bottled water may come from groundwater (springs, wells) or surface waters (rivers, lakes, ponds, streams, and reservoirs). As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity.

Surface waters are the source of the supply for the City of New Brunswick. Water is pumped to the New Brunswick Water Treatment Plant from the following two locations: Weston's Mill Pond, which is fed by the Lawrence Brook, and the Delaware and Raritan Canal. The City will utilize the two different sources at various times of the year depending on raw water quality in order to provide the highest quality water delivered to New Brunswick customers. The water is filtered and disinfected before distribution.

The New Jersey Department of Environmental Protection (NJDEP) has completed and issued the Source Water Assessment Report and Summary for this public water system in 2004. It is available at www.state.nj.us/dep/swap/ or by contacting the NJDEP, Bureau of Safe Drinking Water at 609.292.5550.

The assessment found medium to high susceptibility to contamination by pathogens, nutrients, pesticides, inorganics and disinfection by-products; and low susceptibility to radionuclide and radon contamination. This is typical for surface water sources in developed areas.

If a system is rated highly susceptible for a contamination 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.

Potential Contaminants

The types of contaminants that may be found in the raw water before it is treated to produce drinking 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 residential uses.
- Organic Chemical Contaminants, including synthetic (SOC) and volatile organic chemicals (VOC), which are the by-products 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.

Water System Improvements

The City of New Brunswick is committed to providing water that meets or exceeds all Federal and state requirements for drinking water. In general, the water system is in good condition as a result of rehabilitation and improvements to the water system.

Concerning decisions that may affect the quality of water, the opportunity for public participation is provided during the regularly scheduled council meetings held on the first and third Wednesday of every month at 6:30 pm and 5:30 pm during the summer.

During 2013, the City performed numerous upgrades to its water treatment facility. During this time, it was necessary to supplement our supply with water from North Brunswick and East Brunswick. We have therefore included water quality data for these systems in our report.

Compliance with Drinking Water Standards

In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA), and the NJDEP prescribe regulations which limit the amount of certain contaminants in water provided by public water systems and require water suppliers to monitor and treat for potentially harmful contaminants.

Bottled water is similarly regulated by the Food and Drug Administration and must provide the same protection for public health as tap water. Our water, which is treated according to the EPA's and NJDEP's regulations, continually surpasses the quality standards set by those agencies.

TERMS AND ABBREVIATIONS

- **N/A:** not applicable.
- **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.
- **MCLG (Maximum Contaminant Level Goal):** 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.
- **AL (Action Level):** the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **TT (Treatment Technique):** a required process intended to reduce the level of a contaminant in drinking water.
- **ND:** not detected.
- **ppm:** parts per million; (comparable to one minute in two years or 1 cent in \$10,000.00).
- **ppb:** parts per billion; (comparable to one minute in two thousand years or 1 cent in \$10,000,000.00).
- **pCi/L:** picocuries per liter, a measure of the radioactivity in water.
- **MRDL (Maximum Residual Disinfectant Level):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for the control of microbial contaminants.
- **MRDLG (Maximum Residual Disinfectant Goal):** 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.
- **CFU/100mL:** Colony forming unit per 100 milliliters

Hydrant Flushing

Water mains can accumulate all sorts of things that cause discolored water, taste and odor, and even hydraulic problems. These include sediment, debris, and biological material. To keep these situations from turning into complaints, water mains need to be periodically flushed.

Flushing a water main simply means opening fire hydrants in a specific order so that fresh water replaces standing water in the main. In other words, hydrant flushing is housekeeping for the water mains that improves water quality and service. The City of New Brunswick flushes its water mains twice a year. It is not uncommon for the water to be slightly discolored for a short period of time after the flushing is completed. Simply allow the water to run for a short period until the discoloration is gone.

2013 Water Quality Report - City of New Brunswick - PWSID# NJ1214001

Contaminant	Unit	MCL	MCLG	New Brunswick Maximum Detected Level	North Brunswick (American Water) Maximum Detected Level	East Brunswick (Middlesex Water) Maximum Detected Level	Violation Y/N	Major Sources in Drinking Water
Turbidity ⁽¹⁾	NTU	TT: 1 NTU; 5% samples/month ≥ 0.3 NTU	N/A	2.77 96-100% ≤ 0.3	0.52	0.13	Y	Soil runoff.
MICROBIOLOGICAL								
Total Coliform Bacteria ⁽⁶⁾	Number of Samples	5% Positive samples/month	0	3% positive	N/A	N/A	N	Naturally present in the environment.
DISINFECTANTS AND DISINFECTANT BY-PRODUCTS⁽²⁾								
Chlorine	ppm	> 0.2 and < 0.4	> 0.2 and < 0.4	0.55	1.7	0.7	N	Water additive used to control microbes.
Total Trihalomethanes (TTHM) ⁽⁶⁾	ppb	80	N/A	Highest LRAA: 71.8 Range: 18-110	N/A	N/A	N	By-product of drinking water disinfection.
Five Haloacetic Acids (HAA5) ⁽⁶⁾	ppb	60	N/A	Highest LRAA: 29.7 Range: ND-35.9	N/A	N/A	N	By-product of drinking water disinfection.
INORGANIC CONTAMINANTS								
Antimony	ppb	6	6	0.41	ND	ND	N	Discharge from petroleum refineries, fire retardants, ceramics, electronics and solder.
Barium	ppm	2	2	0.0405	0.03	0.023	N	Discharge of drilling wastes; Discharge from metal refineries; erosion of natural deposits.
Chromium	ppb	100	100	ND	0.5	ND	N	Erosion of natural deposits.
Copper ⁽³⁾⁽⁶⁾	ppm	AL = 1.3	1.3	90 th percentile: 0.02 0 sites > AL	N/A	N/A	N	Corrosion of household plumbing systems; erosion of natural deposits.
Fluoride	ppm	4	4	0.06	ND	0.07	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Lead ⁽³⁾⁽⁶⁾	ppb	AL = 15	0	90 th percentile: 2 0 sites > AL	N/A	N/A	N	Corrosion of household plumbing systems.
Nickel	ppb	No MCL - Monitoring Required	N/A	1.94	0.9	1.1	N	Erosion of natural deposits.
Nitrate	ppm	10	10	0.33	ND	1.2	N	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion from natural deposits.
RADIOLOGICAL CONTAMINANTS⁽³⁾								
Beta & Photon Emitters ⁽⁴⁾	pCi/L	0	50	N/A	N/A	3.6	N	Erosion of natural deposits.
Alpha emitters ⁽⁵⁾	pCi/L	0	15	N/A	N/A	3.75	N	Erosion of natural deposits.

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1. Turbidity is a measure of the cloudiness in the water. We monitor it because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants. In March 2013, New Brunswick experienced equipment failures that resulted in an exceedance of the limit for turbidity. A public notice was issued and the City continues to replace and upgrade equipment to prevent a recurrence.
2. "Maximum Detected Level" indicated is the maximum running annual average (RAA). "Range" indicates the monthly averages detected.
3. The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Radiological monitoring was conducted by East Brunswick (MWC) in 2011. Lead and copper monitoring was conducted by New Brunswick in 2011, and will be performed again in 2014. New Brunswick will monitor for radiologicals in 2015.
4. The MCL for Beta Particles is 4 mrem/yr. The EPA considers 50pCi/L to be the level of concern for Beta Particles.
5. Alpha concentration compliance is determined after subtracting contributions from radium and uranium.
6. Monitoring for this parameter is performed in the distribution system; therefore only results for New Brunswick's distribution system are shown. All other parameters are monitored when leaving the water treatment facility.

CITY OF NEW BRUNSWICK

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Health/Educational Information All 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 EPA Safe Drinking Water Hotline at: 800.426.4791. MCLs are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

Special Consideration Regarding Children, Pregnant Women, Nursing Mothers, and Others: Children may receive a slightly higher amount of a contaminant present in the water than do adults, on a body weight basis, because they may drink a greater amount of water per pound of body weight 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 cases of lead and nitrate, effects on infants and children are the health endpoints upon which standards are based.

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 City of New Brunswick 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 is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

Iron: New Brunswick monitors iron levels regularly at the water treatment facility and in the distribution system. Results are typically below detection limits. However, 0.57 ppm of iron was detected in one distribution sample during the year, and this is above the New Jersey Recommended Upper Limit of 0.3 ppm for iron. The Recommended Upper Limit for iron is based on unpleasant taste of the water and staining of laundry. Iron is an essential nutrient, but some people who drink water with iron levels well above the recommended upper limit could develop deposits of iron in a number of organs of the body.

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Contaminant	Unit	MCL	MCLG	New Brunswick Maximum Detected Level	North Brunswick (American Water) Maximum Detected Level	East Brunswick (Middlesex Water) Maximum Detected Level	Violation Y/N	Major Sources in Drinking Water
UNREGULATED CONTAMINANTS ⁽⁷⁾								
Perfluoro octane sulfonate (PFOS)	ppb	N/A	N/A	0.0072	N/A	ND	N/A	Used in manufacture of fluoropolymers.
Perfluoro octanoic acid (PFOA)	ppb	N/A	N/A	0.008	N/A	0.007	N/A	Used in manufacture of fluoropolymers.
Perfluorohexanoate (PFHA)	ppb	N/A	N/A	ND	N/A	0.003	N/A	Used in manufacture of fluoropolymers.
UCMR3 ⁽⁷⁾								
Strontium	ppb	N/A	N/A	120	80.1	108.3	N/A	Erosion of natural deposits.
Vanadium	ppb	N/A	N/A	0.44	0.6	ND	N/A	Erosion of natural deposits.
Chromium VI	ppb	N/A	N/A	0.1	0.15	0.12	N/A	Erosion of natural deposits.
Chlorate	ppb	N/A	N/A	410	470	99.4	N/A	Erosion of natural deposits.
Chromium (total)	ppb	N/A	N/A	0.25	0.3	0.27	N/A	Erosion of natural deposits.
Molybdenum	ppb	N/A	N/A	ND	ND	1.1	N/A	Erosion of natural deposits.

7. Unregulated contaminants are those which EPA has not established drinking water standards. New Brunswick is participating in the third round of EPA's Unregulated Contaminant Monitoring Rule (UCMR3). 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.

PFOA, PFOS, PFBA, and PFHA are a group of Perfluorinated compounds widely found in the environment. The health risk has not been determined but NJDEP has identified a guidance level of 0.040 ppb for PFOA ONLY. These samples were analyzed independently of the UCMR3 testing for informational purposes only.