

Annual Water Quality Report (Water testing performed in 2007)

Batavia City Water Bureau
480 Lehigh Avenue
Batavia, NY 14020

PWSID#: NY1800544

Meeting the Challenge

We are once again proud to present to you our annual water quality report. This edition covers all testing completed from January 1 through December 31, 2007. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal drinking water standards. We continually strive to adopt new and better methods for delivering the best quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the challenges of source water protection, water conservation and community education while continuing to serve the needs of all our water users.

Please share with us your thoughts about the information in this report. After all, well-informed customers are our best allies.

For more information about this report, or for any questions relating to your drinking water, please call Matt Worth, Superintendent of Water and Sewer, at (585) 345-6315.

Community Participation

Major decisions concerning your drinking water are made by the Batavia City Council. Meetings are held in the Council Chambers of City Hall, at One Batavia City Centre, on the second and fourth Mondays of each month at 7 p.m. You are invited to attend these meetings to become more informed or to voice your opinion in the decision-making process affecting your water.

Important Health Information

Some people may be more vulnerable to disease causing microorganisms or pathogens 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 from their health care provider about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Giardia and other microbial pathogens are available from the Safe Drinking Water Hotline at (800) 426-4791.

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. We 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 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 www.epa.gov/safewater/lead.

Substances That Might be in Drinking Water

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 can pick up substances resulting from the presence of animals or from human activities. Contaminants that may be present in source water include: microbial contaminants; inorganic contaminants; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants.

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. In order to ensure that tap water is safe to drink, the State and the U.S. EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Department's and the U.S. FDA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.

Where Does My Water Come From?

Batavia receives its water from two sources. Two wells located at Cedar Street draw water from the Tonawanda Valley Watershed, one of the largest underground bodies of water in New York State. Our well water is exceptionally clear, with an average turbidity of less than 0.05 NTU. However, well water in this area is hard water containing dissolved minerals and requires softening to bring it to the condition most residents find acceptable. The Tonawanda Creek is our other source of water. While the creek has provided us with an adequate quantity and quality of water for more than 90 years, it is a surface water source and is therefore susceptible to rapid changes in quality. Runoff can quickly increase levels of turbidity, making the creek water less cost-effective to process. Creek water is used to supplement our wells and serves as a backup water supply. In an emergency, the city can even purchase water from the Monroe County Water Authority through connecting water lines.

Source Water Assessment

A source water assessment was prepared through the New York Department of Health in 2002. It evaluated our well water sources and determined that there were no significant potential sources of contamination that could be identified. A comprehensive performance evaluation of the water treatment plant was prepared in 1998. Both of these documents are available for inspection at the Water Office located in City Hall at One Batavia City Centre, Main Street.

How Is My Water Treated and Purified?

Batavia's well water is very clear and requires little treatment other than softening. Soft water cleans better using less soap to wash effectively. Tonawanda Creek water enters the water plant through mechanical screens. These screens prevent creek debris from getting into the plant. Creek water is mixed with well water in the flash mixers, where water treatment chemicals are added. Ferric sulfate is added as a coagulant, neutralizing the charges on particles suspended in the water, allowing them to clump together and drop out. Calcium oxide, also called lime, is added to the raw water to soften it. Lime will cause compounds of calcium, magnesium, and other minerals to "precipitate" or drop out of the water. The water is then sent out to the softening tanks, where large paddles slowly churn the chemically treated water, forming a sludge layer of muddy water. The sludge is made up of chemicals we added and chemicals from the water, as well as suspended dirt, clay, silt, and microorganisms. Most of the impurities will now drop out of the water. The next step is the settling basin, where the water's velocity is reduced so that suspended matter can drop to the bottom. We add carbon dioxide to the water to adjust the pH. We add chlorine as a disinfectant, which will prevent growth of organisms in your drinking water. We also add fluoride, which has been proven to reduce tooth decay. From the settling basin, the water must now pass through sand filters. Rapid sand filters pass the water through, yet hold back most of the remaining particles. Our water is then very clear, usually having a finished turbidity of around 0.02 NTU. Finally, we add a small amount of polyphosphate corrosion inhibitor. These compounds also prevent minerals dissolved in the water from precipitating out onto your pipes. Pumps push our finished water out into the distribution system, up into two elevated tanks, and to your homes and businesses, at a pressure of around 70 pounds.

Non-Detected Substances

The following is a complete list of all the substances that we tested for in 2007 but did not detect in our water supply:

Inorganics: Antimony, Arsenic, Beryllium, Cadmium, Copper, Cyanide, Iron, Lead, Manganese, Mercury, Nickel, Selenium, Sulfide, Thallium, Silver, Zinc, Nitrite, and Coliform Bacteria.

SOCS: Alachlor, Aldrin, Atrazin, Aldicarb, Aldicarb Sulfone, Aldicarb Sulfoxide, Arochlor (PCB's), Benzo(a)pyrene (PAH), Butachlor, Carbaryl, Carbofuran, Chlordane, Dalapon, Dicamba, Dieldrin, Dinoseb, Dioxin, Diquat, Endrin, Endothall, Heptachlor, Heptachlor epoxide, Hexachloro benzene, Hexachlorocyclopentadiene, Glyphosate, Lindane, Methomyl, Methoxychlor, Metolachlor, Metribuzin, Oxamyl, Pentachlorophenol, Pichloram, Propachlor, Simazine, Toxaphene, 3-Hydroxy carbofuran, 2,4-D, 2,4,5-TP (Silvex), bis (2-Ethylhexyl) Adipate, bis (2-Ethylhexyl) Phalate, 1,2-Dibromoethane (EDB), 1,2-Dibromo-3-Chloropropane.

VOCs: Benzene, Bromo benzene, Bromochloromethane, Bromomethane, Sec-Butyl benzene, n-Butyl benzene, tert-Butyl benzene, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloromethane, 2-Chloro toluene, 4-Chloro toluene, Dibromomethane, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichloro benzene, Dichlorodifluoromethane (Freon 12), 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethene, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, 1,2-Dichloropropane, 1,3-Dichloropropane, 2,2-Dichloropropane, 1,1-Dichloropropene, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene, Ethyl benzene, Hexachlorobutadiene, Isopropylbenzene, 4-Isopropyl toluene, Methylene chloride, n-Propyl benzene, Styrene, 1,1,1,2-Tetrachloroethane, 1,1,2,2-Tetrachloroethane, Tetrachloroethene, Toluene, 1,2,3-Trichloro benzene, 1,2,4 -Trichlorobenzene, 1,1,1 Trichloroethane, 1,1,2-Trichloroethane, Trichloroethene, Trichlorofluoromethane (Freon 11), 1,2,3-Trichloropropane, 1,2,4-Trimethyl benzene, 1,3,5-Trimethyl benzene, Vinyl chloride, m-Xylene, o-Xylene, p-Xylene, MTBE.

Water Conservation Tips

Water conservation measures are an important first step in protecting our water supply. Such measures not only save the supply of our source water, but can also save you money by reducing your water bill. Here are a few suggestions.

Conservation measures you can use inside your home:

- Fix leaking faucets, pipes, toilets, etc.
- Replace old fixtures; install water-saving devices in faucets, toilets and appliances.
- Wash only full loads of laundry.
- Do not use the toilet for trash disposal.
- Take shorter showers.

You can conserve outdoors as well:

- Water the lawn and garden in the early morning or evening.
- Use mulch around plants and shrubs.
- Repair leaks in faucets and hoses.

Information on other ways that you can help conserve water can be found at www.epa.gov/safewater/publicoutreach/index.html.

Facts and Figures

The city filtration plant processed a total of 949 million gallons of water last year, treating an average of 2.6 million gallons each day. We serve a city population of 16,310 and supply water to about 5,800 city customers. We sold a total of 749 million gallons of water in 2007. Of this, 578 million gallons were sold in the city and 171 million gallons were sold through the Genesee County meters. A total of 200 million gallons of water (or 21%) was not metered. This was water from hydrants, city maintenance, parks, or water lost in leaks and breaks. The average charge for water billed for 2007 was \$3.07 per thousand gallons.

During this last year service was done to rebuild softening equipment in the water plant. Master water meters for water leaving the city were also rebuilt to ensure accuracy in metering of water usage. A study of water flows and leak detection was done during 2007 in an effort to more efficiently supply safe drinking water to the public.

Special Footnote for Beta Particle

The State considers 50 pCi/L to be the level of concern for beta particles.

Special Footnote for Sodium

Water containing more than 20 ppm of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270 ppm of sodium should not be used for drinking by people on moderately restricted sodium diets.

Lead in Drinking Water

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).

Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any biological, inorganic, volatile organic or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. Although all of the substances listed here are under the Maximum Contaminant Level (MCL), we feel it is important that you know exactly what was detected and how much of the substance was present in the water.

The state requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

Regulated Substances

Batavia City Water Bureau

Substance (Unit of Measure)	MCL [MRDL]	MCLG [MRDLG]	Date Sampled	Amount Detected	Range Low- High	Violation	Typical Source
Barium (ppm)	2	2	08/29/2007	0.015	NA - NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Beta Particle/Photon Activity [from manmade radionuclides] (pCi/L)	50	0	10/10/2000	1.2	NA - NA	No	Decay of natural deposits and man-made emissions
Chloride (ppm)	250	NA	8/29/2007	80	NA - NA	No	Naturally occurring or indicative of road salt contamination
Chlorine Residual (ppm)	[4]	NA	2007 (hourly)	.95	0.60 - 1.44	No	By-product of drinking water

Combined Radium [226 and 228] (pCi/L)	5	0	10/10/2000	0.15	NA - NA	No	chlorination Erosion of natural deposits
Fluoride (ppm)	2.2	NA	2007 (daily)	1.00	ND - 1.46	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Gross Alpha Activity [including radium 226 but excluding radon and uranium] (pCi/L)	15	0	10/10/2000	0.029	NA - NA	No	Erosion of natural deposits
Haloacetic Acids (ppb)	60	NA	2008 (quarterly)	15	2 - 19	No	By-product of drinking water disinfection needed to kill harmful organisms
Nitrate (ppm)	10	10	8/29/2007	0.65	NA - NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Sodium (ppm)	(see footnote)	NA	8/29/2007	39	NA - NA	No	Naturally occurring; Road salt; Water softeners; Animal waste
Sulfate (ppm)	250	NA	8/29/2007	29	NA - NA	No	Naturally occurring
Total Trihalomethanes [TTHMs] (ppb)	80	NA	2007 (quarterly)	39	16 - 66	No	By-product of drinking water chlorination needed to kill harmful organisms. TTHMs are formed when source water contains large amounts of organic matter
Turbidity (NTU)	TT	NA	2007 (Daily)	0.02	0.02 - 0.02	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	TT	NA	2007 (Daily)	100	NA	No	Soil runoff

Tap water samples were collected from 30 sample sites throughout the community

Batavia City Water Bureau

Substance (Unit of Measure)	Action Level	MCLG	Date Sampled	Amount Detected (90th%tile)	Range Low-High	Sites Above Action	Violation	Typical Source
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						Level		
Copper (ppm)	1.3	1.3	8/14/2008	0.036	ND - 0.061	0	No	Corrosion of household plumbing systems; Erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	15	0	8/14/2008	3.8	ND - 26	2	No	Corrosion of household plumbing systems; Erosion of natural deposits

Haloacetic Acids Footnote for Batavia City Water Bureau

Amount detected is the highest running average for all quarters during 2008

Sodium Footnote for Batavia City Water Bureau

Water containing more than 20 ppm of sodium should not be used for drinking water by people on severely restricted sodium diets. Water containing more than 270 ppm of sodium should not be used for drinking by people on moderately restricted sodium diets.

Total Trihalomethanes [TTHMs] Footnote for Batavia City Water Bureau

The detected amount is the highest running average for all quarters in 2008.

Turbidity Footnote for Batavia City Water Bureau

Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system. TT is dependent upon filtration method: conventional (0.3 NTU), slow sand (1.0 NTU) or diatomaceous earth filtration (1.0 NTU).

Table Definitions

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

pCi/L (picocuries per liter): A measure of radioactivity.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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 below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

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 control of microbial contaminants.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

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

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG as possible.

MRDLG (Maximum Residual Disinfectant Level 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.