Annual Drinking Water Quality Report

Berlin Borough Water Department

For the Year 2012, Results from the Year 2011

We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water.

Our drinking water source is wells. Our five wells draw groundwater from the Mount Laurel-Wenonah, Cohansey and PRM Aquifers. Our wells range in depth from 453 to 746 feet deep. Our water system purchases a limited amount of water from the New Jersey American Water Company. The New Jersey Department of Environmental Protection (NJDEP) has completed and issued the Source Water Assessment Report and Summary for this public water system, which is available at WWW.state.nj.us/dep/swap or by contacting NJDEP's Bureau of Safe Drinking Water at (609) 292-5550. You may also contact your public water system at 856-767-0056 to obtain information regarding your water system's Source Water Assessment. This water system's source water susceptibility ratings and a list of potential contaminant sources is attached.

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 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 microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Berlin Borough Water Department Test Results
PWS ID# NJ0405001

Contaminant	Violation Y/N	Level Detected	Units of Measurement	MCLG	MCL	Likely Source of Contamination
Radioactive Contaminants:						
Alpha emitters Test results Yr. 2011	N	Range = ND – 3.9 Highest detect = 3.9	pCi/1	0	15	Erosion of natural deposits.
Combined Radium 228 & 226 Test results Yr. 2011	N	Range = ND – 3.4 Highest detect = 3.4	PCi/L	0	5	Erosion of natural deposits.
Inorganic Contaminants:						
Arsenic Test results Yr. 2011	N	Range = ND – 0.2 Highest detect = 0.2	ppb	n/a	5	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium Test results Yr. 2011	N	Range = ND – 0.07 Highest detect = 0.07	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper Test results Yr. 2011 Result at 90th Percentile	N	0.16 No samples exceeded the action level	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead Test results Yr. 2011 Result at 90th Percentile	N	1 1 sample out of 30 exceeded the action level	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Volatile Organic Contaminants / Disinfection Byproducts:						
TTHM [Total trihalomethanes] Test results Yr. 2011	N	Range = 20 - 41 Average = 25	ppb	0	80	By-product of drinking water disinfection
HAA5 Haloacetic Acids Test results Yr. 2011	N	Range = 5 - 14 Average = 8	ppb	0	60	By-product of drinking water disinfection

Regulated Disinfectants	Level Detected	MRDL	MRDLG
Chlorine	Average = 0.1 ppm	4.0 ppm	4.0 ppm

The Berlin Water Department and the New Jersey American Water Company routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables show the results of that monitoring for the period of January 1st to December 31st, 2011. The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently.

DEFINITIONS

In the following table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

Non-Detects (ND) - laboratory analysis indicates 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.
Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.
Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.
Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
Action Level - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.
Maximum Contaminant Level - The "Maximum Allowed" (MCL) is 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 -The "Goal"(MCLG) is 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 Level 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
Total Organic Carbon – Total Organ Carbon (TOC) has no health effects. However, TOC provides a medium for the formation of disinfection byproducts. The *Treatment Technique* for TOC requires that 35% - 45% of the TOC in the raw water is removed through the treatment processes.
Turbidity – Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium microbial growth. Turbidity is measured as an indication of the effectiveness of the filtration process. The *Treatment Technique* for turbidity requires that no individual sample exceeds 1 NTU and 95% of the samples collected during the month must be less than 0.3 NTU.

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 Berlin Borough Water Department is responsible for providing high quality drinking water, but can not 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 second to 2 minutes before using water for drinking and 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

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 from the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

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, 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 the 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, 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.
- Pesticides and herbicides, which may come from a variety of sources such as; agriculture, urban storm-water runoff, and residential uses.

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

To insure the continued quality of our drinking water supply we use sodium hypo-chloride for disinfection. We use aeration, filtration to guarantee the removal of potential contaminants, and we also do Ph adjustment.

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 received monitoring waivers for asbestos and synthetic organic chemicals.

New Jersey American Water Company
Western System PWS ID # NJ0327001
Year 2011 Test Results

Contaminant	Violation Y/N	Level Detected	Units of Measurement	MCLG	MCL	Likely Source
Microbiologicals:						
Turbidity	N	Range = 0.04 – 0.10 100% of samples < 0.3 TT = % of samples <0.3 NTU	ntu	n/a	TT	Soil runoff, Naturally present in the environment
Total Organic Carbon	N	Range = 44% - 77% Lowest removal = 44%		n/a	TT >35-45% removal	Soil runoff, Naturally present in the environment
Inorganics:						
Barium	N	Range = ND – 0.1 Highest detect = 0.1	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride	N	Range = ND – 0.5 Highest detect = 0.5	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nickel	N	Range = ND – 14 Highest detect = 14	ppb	N/A	N/A	Erosion of natural deposits
Nitrate	N	Range = ND – 4.6 Highest detect = 4.6	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Treatment Byproducts:						
Chlorine	N	Range = 0.22 – 0.59 ppm	ppm	4.0 ppm MRDL	4.0 ppm MRDLG	Water additive used to control microbes
Bromate	N	Range = ND – 6 Highest detect = 6	ppm	N/A	10	By-product of drinking water ozonation
Radioactives:						
Uranium	N	Range = ND – 19 Average = 4.8	ppb	0	30	Erosion of natural deposits
Combined Radium 226 & 228	N	Range = ND – 3.4 Average = 3	ug/L	0	pCi/L	Erosion of natural deposits
Volatile Organics:						
1,1 – Dichloroethane	N	Range = ND – 1.4 Highest detect = 1.4	ppb	0	50	Discharge from industrial chemical factories
1,1 - Dichloroethylene	N	Range = ND – 0.6 Highest detect = 0.6	ppb	2	2	Discharge from industrial chemical factories
Methyl *tertiary* butyl ether (MTBE)	N	Range = ND – 0.6 Highest detect = 0.6	ppb	70	70	Leaking underground gasoline and fuel oil tanks. Gasoline and fuel oil spills.

Secondary Contaminant	Level Detected	Units of Measurement	RUL
Iron	Range = ND - 480	ppb	300
Sodium	Range = 5.4 – 58.4	ppm	50

Iron
The secondary Recommended Upper Limit (RUL) 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 RUL could develop deposits of iron in a number of organs in the body.

Sodium
For healthy individuals the sodium intake from water is not important, because a much greater of sodium takes place from salt in the diet. However sodium levels above the Recommended Upper Limit (RUL) may be of concern to individuals on a sodium restricted diet.

Unregulated Substances	Units	Range detected
Hexavalent Chromium	ppm	Range = ND – 1.33

Hexavalent Chromium (Chromium 6) is not currently regulated. New Jersey American Water voluntarily performed this monitoring based on recommendations from USEPA. For more information on Chromium 6 please visit our website.

If you have questions about this report or concerning your water utility, please contact Mark Mauger at 856-767-0056. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled Borough Council meetings at Borough Hall, 59 South White Horse Pike. Meetings are held on the first Monday of each month at 7:30 p.m.

We at the Berlin Borough Water Department work hard to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future. Thank you.