

ANNUAL
WATER
QUALITY
REPORT

Water testing performed in 2008



The Pearl of the Bayshore™
Keyport
NEW JERSEY

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, 2008. 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.

About Your Water Supply

The Borough of Keyport supplies its customers with drinking water from a combination of three sources.

Source #1: Between May 20th and August 2008, the Borough supplied water to all of its customers through its own water treatment plant. The source of the water derives from two groundwater wells in the Potomac-Raritan-Magothy Aquifer System. This water passes through an iron removal treatment plant where the water is filtered, pH levels are adjusted, and then the water is disinfected with chlorine and pumped into the distribution system to be delivered to the customers.

Sources #2 and #3: From January through May 20th and September through December of 2008, the borough purchased water from Shorelands Water Company, which purchases water from the New Jersey American Monmouth System as well. During this period of time the borough could be supplied from one or both of the sources of purchased water.

For more information regarding the vulnerability of both our own water source and the purchased water sources, refer to the Source Water Assessment Summary in this report.



Water Treatment Process

The treatment process consists of a series of steps. First, raw water is drawn from our water source (wells) and sent to an aeration tank, which allows for oxidation of the high iron levels that are present in the water. The water then goes to a mixing tank where aluminum sulfate and lime are added. The addition of these substances causes small particles to adhere to one another (called "floc"), making them heavy enough to settle into a basin from which sediment is removed. Chlorine is then added for disinfection. At this point, the water is filtered through layers of fine coal and silicate sand. As smaller, suspended particles are removed, turbidity disappears and clear water emerges. Chlorine is added again as a precaution against any bacteria that may still be present. (We carefully monitor the amount of chlorine, adding the smallest quantity necessary to protect the safety of your water without compromising taste.) Finally, the water is pumped to sanitized, underground reservoirs, water towers, and into your home or business.

Community Participation

The Borough of Keyport encourages public comment. If you have any concerns or comments regarding your water utility, please call (732) 739-3900 or attend the regularly scheduled borough council meetings at Borough Hall, 70 West Front Street, on the first and third Tuesday of each month. All are welcome.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. 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 these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases radioactive material, and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may 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 and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Lead and 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 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.

Questions?

For more information about this report, or for any questions relating to your drinking water, please call the Keyport Water Department at (732) 264-0900.

Source Water Assessment Program

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/creport.htm or by contacting the NJDEP Bureau of Safe Drinking Water at (609) 292-5550.

The table below illustrates the susceptibility rating for each individual source for each of the contaminant categories in the Borough of Keyport's system. For susceptibility ratings of purchased water, refer to the specific water system's source water assessment report. We purchased water from Shorelands Water Company (PWSID NJ1339001) and from the New Jersey American Monmouth System (PWSID NJ1345001) from January to May and from September to December of 2008. If a system is rated highly susceptible for a contaminant category, this 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 initiate treatment if any contaminants are detected at

frequencies and concentrations above allowable levels. As a result of these assessments, NJDEP may customize (change existing) monitoring schedules based on the susceptibility ratings. If you have questions regarding source water assessment reports or summaries, please contact the Bureau of Safe Drinking Water at swap@dep.state.nj.us or at (609) 292-5550. The source water assessment performed on our source of water (two wells) determined the following:

Potential Contaminant Category	Well Susceptibility Ratings (total number of wells for each category)		
	Low	Medium	High
Pathogens		2	
Nutrients	1	1	
Pesticides	2		
VOCs			2
Inorganics	2		
Radionuclides		2	
Radon		2	
DBPs		1	1

Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected 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.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.

REGULATED SUBSTANCES ¹											
				Borough of Keyport		Shorelands Water Company		NJ American			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2007	15	0	ND	NA	1.27 ²	ND–1.27 ²	ND ³	NA	No	Erosion of natural deposits
Arsenic (ppb)	2008	5	0	NA	NA	NA	NA	1	ND–1	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2008	2	2	0.02	0.02–0.02	NA	NA	0.030	0.025–0.030	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2008	[4]	[4]	0.69	0.14–1.30	1.45	0.34–1.45	1.88	0.07–1.88	No	Water additive used to control microbes
Combined Radium (pCi/L)	2007	5	0	0.56	0.56–0.56	1.59 ²	0.31–1.59 ²	1.28 ³	1.28–1.28 ³	No	Erosion of natural deposits
Fluoride (ppm)	2008	4	4	ND	NA	1.1	ND–1.1	0.9	0.4–0.9	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2008	60	NA	14	ND–29.0	30.85	1.25–74.16	17.2	ND–31.5	No	By-product of drinking water disinfection
Nitrate (ppm)	2008	10	10	ND	NA	0.78	ND–0.78	0.58	0.15–0.58	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Selenium (ppb)	2008	50	50	NA	NA	NA	NA	2	ND–2	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
TTHMs [Total Trihalomethanes] (ppb)	2008	80	NA	36	9.47–66.27	47.66	0.83–79.16	56.7	0.5–110.2	No	By-product of drinking water chlorination
Total Organic Carbon (ppm)	2008	TT	NA	NA	NA	NA	NA	2.02	1.02–2.02	No	Naturally present in the environment
Turbidity ⁴ (NTU)	2008	TT	NA	NA	NA	NA	NA	0.27	0.03–0.27	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2008	TT	NA	NA	NA	NA	NA	100	NA	No	Soil runoff
Tap water samples were collected for lead and copper analyses from sample sites throughout the community											
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL	VIOLATION	TYPICAL SOURCE				
Copper (ppm)	2006	1.3	1.3	0.04	0	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives				

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Borough of Keyport			Shorelands Water Company		NJ American		VIOLATION	TYPICAL SOURCE	
		RUL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED			RANGE LOW-HIGH
Iron ⁵ (ppb)	2008	300	NA	40	ND–160	220	ND–220	700	ND–700	No	Leaching from natural deposits; Industrial wastes
Manganese ⁶ (ppm)	2008	0.050	NA	0.01	ND–0.03	0.110	ND–0.110	0.203	ND–0.203	No	Leaching from natural deposits
Sodium ⁷ (ppm)	2008	50	NA	9	9–9	50.6	ND–50.6	41	22–41	No	Naturally occurring

OTHER SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Borough of Keyport		Shorelands Water Company		TYPICAL SOURCE
		AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	
Carbon Disulfide (ppb)	2007	0.23	0.23–0.23	NA	NA	NA
Haloacetic Acids [HAA]–IDSE Results ⁸ (ppb)	2008	38.4	5.0–38.4	19.16	2.77–19.16	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes]–IDSE Results ⁸ (ppb)	2008	42.17	3.479–42.17	37.40	1.50–37.40	By-product of drinking water disinfection

¹ Under a waiver granted on December 30, 1998, by the NJDEP, our system does not have to monitor for synthetic organic chemicals/pesticides because several years of testing have indicated that these substances do not occur in our source water. The SDWA 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 synthetic organic chemicals and asbestos.

² Sampled in 2006.

³ Sampled in 2008.

⁴ 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. The turbidity rule requires that 95 percent or more of the monthly samples must be less than or equal to 0.3 NTU (no sample may exceed 1 NTU).

⁵ 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.

⁶ The recommended upper limit for manganese is based on staining of laundry. Manganese is an essential nutrient, and toxicity is not expected from high levels which would be encountered in drinking water.

⁷ 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 a concern to individuals on a sodium restricted diet.

⁸ The U.S. EPA has required water utilities to conduct an evaluation of their distribution system. This is known as an Initial Distribution System Evaluation (IDSE) and is intended to identify locations in the distribution system that have elevated disinfection by-product concentrations. Disinfection by-products (e.g., HAAs and TTHMs) result from continuous disinfection of drinking water and form when disinfectants combine with organic matter that naturally occurs in the source water.

Definitions

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

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.

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.

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 contaminants.

NA: Not applicable.

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

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.

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

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

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

RUL (Recommended Upper Limit): The highest level of a contaminant recommended in drinking water. RULs are set to protect the odor, taste, and appearance of drinking water.

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