

BARTON HILLS VILLAGE

WATER CONSUMER CONFIDENCE REPORT for 2016

Introduction As required by the Safe Drinking Water Act, Barton Hills Village (BHV) provides this annual report which includes information on where water comes from, compliance with federal and state testing requirements and on-going efforts to ensure that BHV water meets or exceeds quality standards.

Water Testing In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. BHV water is treated according to EPA regulations, which are administered by the State of Michigan Department of Environmental Quality (MDEQ). Monthly samples are tested by a certified laboratory to ensure that any contamination is dealt with immediately. In addition, periodic tests are performed for over 100 possible 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. Food and Drug Administration (FDA) 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 (800-426-4791) or online at www.epa.gov/safewater.

Lead BHV has been testing for lead and copper in drinking water according to EPA standards since 1989. As indicated in the table on Page 3, BHV levels of lead in drinking water are well below the allowable limit. In 2015 testing, only one sample out of five indicated any lead detection (that result was 2 parts per billion (ppb); acceptable limit is 15 ppb). If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children.

Lead can enter drinking water when service lines and plumbing components containing lead corrode, which can happen when water sits in pipes for several hours. All BHV water mains are either cast iron or cement-lined ductile iron and phosphate/chlorine are added to BHV water to minimize corrosion. However, BHV cannot control the variety of materials used in private water service lines or household plumbing components.

When water has been sitting for several hours, the potential for lead exposure can be minimized by flushing the tap for 30 seconds to 2 minutes before using water for drinking or cooking. Homeowners may wish to have the water in their house tested for lead. Information on lead in drinking water, testing methods, and steps to take to minimize exposure is available from the Safe Drinking Water Hotline (800-426-4791) or at www.epa.gov/safewater/lead.

1,4 Dioxane Due to the presence of 1,4 dioxane in water sources west of BHV, testing for this contaminant was conducted in May 2016. Test results indicate that 1,4 dioxane was not detected in BHV source water. New testing was also required by MDEQ in 2016 for cyanide; none was detected in BHV water.

BHV Water Sources BHV water comes from two primary wells, with two back-up wells, to service the village's 145 customers. The wells draw from aquifers extending to the north and northeast of BHV. A Wellhead Protection Plan, first approved by the MDEQ in April 1997 with an update approved in December 2013, identifies BHV water sources, possible risks of contamination and strategies to ensure the future safety of the water supply. The complete Wellhead Protection Plan is available from the BHV Clerk's office (734-222-5209, bhvclerk@comcast.net), and online at www.vil-bartonhills.org.

Source Water Assessment The MDEQ performed an assessment of BHV source water in 2003 to determine the susceptibility, or relative potential, of contamination. The susceptibility rating is on a six-tiered scale from "very-low" to "high" based primarily on geologic sensitivity, water chemistry and contaminant sources. Data from all four BHV wells indicate that the groundwater is obtained from a confined aquifer. The geologic sensitivity for a confined aquifer is characterized as "low." For more information about the Source Water Assessment report, contact the BHV Clerk's Office (734-222-5209, bhvclerk@comcast.net)

Contaminant Review The contaminant source inventory developed for the BHV Wellhead Protection Plan lists residential septic systems, agricultural areas, transportation corridors and cemeteries as potential contaminant sources within the Wellhead Protection Area. Other than an agricultural location with a State-approved Response Activity Plan (fertilizer/pesticide contamination from a 1978 building fire; expected to be completed in late 2014), no other significant sources of contamination were identified. In addition, Barton Hills Village adopted Ordinance #21 in 2001 which requires regular maintenance of BHV residential septic systems. BHV records indicate a continued high rate of resident compliance with the ordinance.

Contaminant Sources The sources of drinking water for most communities (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 source water before it is treated 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.

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

Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

At Risk Populations 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, persons 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 Center for Disease Control 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). BHV water sampling included one sample above the acceptable level of copper. Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

BHV Water The following table lists all the drinking water contaminants that were detected in BHV water during the 2016 calendar year (January 1-December 31). Terms and abbreviations used in the table are listed following the table.

	MCL	MCLG	Barton Hills Water	Range of Detections	Sample Date	Violation	Typical Source of Contaminant
Inorganic Contaminants							
Arsenic (ppb)	10	0	3	3	8/27/14	No	Erosion of natural deposits Runoff from orchards Runoff from glass and electronics production wastes
Barium (ppm)	2	2	0.22	0.18-0.22	8/27/14	No	Erosion of natural deposits Discharge of drilling wastes Discharge of metal refineries
Fluoride (ppm)	4	4	0.43	0.35-0.43	8/24/16	No	Erosion of natural deposits Discharge from fertilizer and aluminum factories
Sodium (ppm)	n/a*	n/a*	19	16-19	8/24/16	No	Naturally occurring in groundwater
*Sodium is a specially monitored contaminant and there is no MCL or MCLG assigned to it. Special monitoring helps the EPA to determine whether there is a need to regulate that contaminant.							
Bacteriological Monitoring							
Total coliform	More than 1 positive sample in 1 month	0	0 positive monthly sample	0		No	Naturally present in the environment
Total Trihalomethanes (ppb)	80	80	0.58	0.31-0.58	8/24/16	No	By-product of drinking water disinfection
Chlorine Residual at the Sampling Site (ppm)	MRDL =4	MRDLG =4	0.37	0.15-0.49	Monthly	No	Water additive used to control microbes
Lead/Copper Monitoring at Customer's Tap				# of samples > AL			
Lead (ppb)	AL =15	0	2	0-4	9/2/15	No	Corrosion of household plumbing systems
Copper (ppb)	AL =1300	1	1205	0-1205	9/2/15	No	Erosion of natural deposits

The MDEQ requires monitoring for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old. Terms and abbreviations used in the table:

Maximum Contaminant Level (MCL): 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 (MCLG): 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.

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

Maximum Residual Disinfection 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 Disinfection Level 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 the use of disinfectants to control microbial contaminants.

n/a: not applicable *nd*: not detectable at testing limit *ppb*: parts per billion or micrograms per liter
ppm: parts per million or milligrams per liter *pCi/L*: picocuries per liter (a measure of radiation)

Violations None. While coliform bacteria may be present in monthly samples, this is not a violation of standards. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. No coliforms or harmful bacteria were found in BHV water testing during 2016.

Iron BHV water meets or exceeds federal/state water quality standards; however it does contain a high level of iron. Iron does not make the water unsafe but it does present aesthetic concerns. Well maintained water filtration/softening systems can minimize the impact of the iron content.

Water System Improvements The BHV Board of Trustees budgeted funds for replacement of a section of water main along Barton Shore Drive that had a higher history of leaks. This project is expected to be completed in the coming year. Other repairs/maintenance issues were typical. The Board of Trustees, the Water Committee and the Superintendent continue to monitor and plan for future needs.

Water Quality Programs BHV continued stormwater protection activities under their state-issued Municipal Separate Storm Sewer System Jurisdictional General Permit, including membership in the Huron River Watershed Council and the Community Partners for Clean Streams.

Looking Ahead The Barton Hills Village Water Committee is undertaking an in-depth study of water-related issues as they continue efforts to ensure the highest quality water possible. Residents are encouraged to participate by maintaining septic systems, using fertilizers sparingly and disposing of hazardous materials properly. Prudent use of sprinkling systems is also an important factor in water conservation. Information regarding water resources is included in the Barton Bulletin, which is distributed to BHV residents every few weeks. Residents may also relay concerns to the Board of Trustees, which meets the second Monday of each month at 6:00 PM at the Village Hall. For more information, contact the Barton Hills Village Clerk's Office at 734-222-5209.