ANNUAL WATER QUALITY REPORT

WATER TESTING PERFORMED IN 2016

Presented By
Ambridge Water Authority

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

We've Come a Long Way

Once again we are proud to present our annual water quality report covering the period between January 1 and December 31, 2016. In a matter of only a few decades, drinking water has become exponentially safer and more reliable than at any other point in human history. Our exceptional staff continues to work hard every day—at any hour—to deliver the highest quality drinking water without interruption. Although the challenges ahead are many, we feel that by relentlessly investing in customer outreach and education, new treatment technologies, system upgrades, and training, the payoff will be reliable, high-quality tap water delivered to you and your family.

Lead in Home Plumbing

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/lead.

Important Health Information

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 or at http://water.epa.gov/drink/hotline.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA and DEP prescribe regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration and DEP 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 storm-water 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 storm-water 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 storm-water 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.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. We meet the third Tuesday of each month, beginning at 6 p.m. in Council Chambers, 600 11th Street, Ambridge PA.

Water Treatment Process

The treatment process consists of a series of steps. First, raw water is drawn from Service Creek Reservoir, pretreated with a disinfectant, and sent to the water purification plant. The water goes into a mixing tank where a coagulant is added, which causes small particles in the water to adhere to one another (called floc), making them heavy enough to settle to the bottom of sedimentation basins for removal. Caustic soda is added to adjust pH, and chlorine is added for disinfection. The water is filtered through layers of fine coal and filter-grade sand. As this process is completed, turbidity is reduced and clear water emerges. A corrosion inhibitor (used to protect distribution system pipes) is added. Finally, chlorine is added again as a precaution against any bacteria that may still be present. (We carefully monitor the amount of chlorine, using the smallest amount necessary to protect the safety of your water without compromising taste.) The water is then pumped to sanitized underground reservoirs, water towers, and into your home or business.

Protecting Your Water

Bacteria are a natural and important part of our world. There are around 40 trillion bacteria living in each of us; without them, we would not be able to live healthy lives. Coliform bacteria are common in the environment and are generally not harmful themselves. The presence of this bacterial form in drinking water is a concern, however, because it indicates that the water may be contaminated with other organisms that can cause disease.

In 2016, the U.S. EPA passed a new regulation called the Revised Total Coliform Rule, which requires additional steps that water systems must take in order to ensure the integrity of the drinking water distribution system by monitoring for the presence of bacteria like total coliform and *E. coli*. The rule requires more stringent standards than the previous regulation, and it requires water systems that may be vulnerable to contamination to have in place procedures that will minimize the incidence of contamination. Water systems that exceed a specified frequency of total coliform occurrences are required to conduct an assessment of their system and correct any problems quickly. The U.S. EPA anticipates greater public health protection under the new regulation due to its more preventive approach to identifying and fixing problems that may affect public health.

Though we have been fortunate to have the highest-quality drinking water, our goal is to eliminate all potential pathways of contamination into our distribution system, and this new rule helps us to accomplish that goal.

Where Does My Water Come From?

Ambridge Water Authority (AWA) customers are fortunate because they enjoy an abundant water supply from an outstanding source. The water treatment plant draws water from Service Creek Reservoir, a spring-fed, surface water–influenced, upland reservoir containing 3.5 billion gallons of water, which may well be the highest quality source water in western Pennsylvania. This lake was created by AWA and built in the early 1950s, and it is dedicated exclusively to providing water for the residents within our service area and our other customers.

The water is piped over seven miles to the treatment plant. Here, the water propels a turbine that produces about 25 percent of the electricity needed to operate the plant in an efficient manner. During 2015, our treatment facility provided an average of 4.4 million gallons per day of clean drinking water. Water is pumped to service Ambridge, Harmony Township, Economy, Bell Acres, Baden, and parts of New Sewickley Township, as well as to Edgeworth Municipal Authority (which also serves Leet Township and Leetsdale), with our service population being almost 30,000 individuals. Interconnections with West View Water Authority and Conway Borough provide a backup supply of water for emergencies. To learn more about our watershed on the Internet, go to the U.S. EPA Surf Your Watershed at www.epa.gov/surf.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Michael Dominick, General Manager, at (724) 266-4847.

About Our Violation

Our water system did not meet the requirements for the removal of total organic carbon (TOC) in the third quarter of 2016 (September). The standard for TOC is a removal ratio running annual average (compounded quarterly) of 1.0. The third quarter running annual average TOC removal ratio was 0.95. This was not an immediate risk and an alternative water supply was not necessary. Because AWA usually begins with a low amount of TOC in our raw water, it is difficult to receive a monthly reading of anything greater than 1.0. Therefore, we expect it will take until the third quarter of 2017 for the running annual average to be at or greater than 1.0, and in compliance.

Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection by-products. These by-products include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these by-products in excess of the MCL may lead to adverse health effects, liver, or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.

Fact or Fiction

A person can live about a month without food, but only about a week without water.

(Fact: Dehydration symptoms generally become noticeable after only 2% of one's normal water volume has been lost.)

A person should consume a half-gallon of water daily to live healthily.

(Fact: A person should drink at least 64 ounces, or 8 cups, of water each day.)

Methods for the treatment and filtration of drinking water were developed only recently.

(Fiction: Ancient Egyptians treated water by siphoning water out of the top of huge jars after allowing the muddy water from the Nile River to settle. And, Hippocrates, known as the father of medicine, directed people in Greece to boil and strain water before drinking it.)

There is the same amount of water on Earth now as there was when the Earth was formed.

(Fact: The water that comes from your faucet could contain molecules that dinosaurs drank!)

A typical shower with a non-low-flow showerhead uses more water than a bath.

(Fiction: A typical shower uses less water than a bath.)

About half the water treated by public water systems is used for drinking and cooking.

(Fiction: Actually, the amount used for cooking and drinking is less than 1% of the total water produced!)

One gallon of gasoline poured into a lake can contaminate approximately 750,000 gallons of water.

(Fact!)

Source Water Assessment

Spotts, Stevens and McCoy, Inc., an environmental company under contract with the Pennsylvania Department of Environmental Protection (DEP), performed a source water assessment in accordance with the Source Water Assessment Plan in 2002. This was done in accordance with requirements under the Safe Drinking Water Act. Land use is an important consideration in identifying potential point and nonpoint sources of contamination. Point sources are those that emanate from known discharge locations, such as an industrial outfall. Nonpoint sources are the runoff that occurs naturally through rainfall and snowmelt, picking up potential contaminants such as herbicides or farming by-products such as manure. In addition to point and nonpoint sources, accidental spills and known or unknown sources of contamination may occur, such as a spill during delivery of home heating oil or leaking from pipelines or gas/oil wells. These contamination sources are unlikely to occur because of the relatively undeveloped nature of the watershed. Watershed criteria that result in a high risk of contamination are transportation corridors, residential development, agriculture, and pipelines.

For more information, access the PA DEP website at www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm for a summary of this report or for information regarding the Source Water Protection Program. You may also contact the DEP regional office at (412) 442-4000.

Test Results

Our water is monitored for many different kinds of contaminants on a very strict sampling schedule. The information below represents only those substances that were detected; our goal is to keep all detects below their respective maximum allowed levels. The State recommends monitoring 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.

We participated in the 3rd stage of the EPA's Unregulated Contaminant Monitoring Rule (UCMR3) program by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if EPA needs to introduce new regulatory standards to improve drinking water quality. Contact us for more information on this program.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2016	2	2	0.03	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine [Distribution] (ppm)	2016	[4]	[4]	0.68	0.48–0.68	No	Water additive used to control microbes
Chlorine [Entry Point][1] (ppm)	2016	MinRDL = 0.2	NA	0.3	0.3–1.5	No	Water additive used to control microbes
Cryptosporidium	2016	TT	0	0	NA	No	Naturally present in the environment
Fluoride[2] (ppm)	2016	4	4	0.119	0–0.119	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2016	60	NA	38.0	22.7–46.9	No	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes] (ppb)	2016	80	NA	54.9	42.7–64.8	No	By-product of drinking water disinfection
Total Coliform Bacteria (positive samples)	2016	TT	NA	0	NA	No	Naturally present in the environment
Total Organic Carbon[3] (% removal)	2016	TT	35–45%	NA	-38.6–26.1%	Yes	Naturally present in the environment
Turbidity[4] (NTU)	2016	TT	NA	0.19	0.04–0.19	No	Soil runoff
Turbidity (lowest monthly percent of samples meeting limit)	2016	TT = 95% of samples meet the limit	NA	100	NA	No	Soil runoff

Tap Water Samples 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/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2016	1.3	1.3	0.01	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2016	15	0	8	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

OTHER SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH
DOC[5] (ppm)	2016	NA	1.38–2.52
SUVA[6] (ppm)	2016	NA	1.49–2.91
UV254[7] (ppm)	2016	NA	2.42–5.46

UNREGULATED CONTAMINANT MONITORING RULE PART 3 (UCMR3)

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH
Chlorate [Distribution]	2013	14.93	ND–31
Chlorate [Entry Point]	2013	16.25	ND–22.5
Chromium, Total [Distribution]	2013	0.12	ND–0.24
Chromium, Total [Entry Point]	2013	0.05	ND–0.2
Hexavalent Chromium [Distribution]	2013	0.05	ND–0.09
Hexavalent Chromium [Entry Point]	2013	0.04	ND–0.07
Strontium [Distribution]	2013	84.63	83.3–86.3
Strontium [Entry Point]	2013	84.25	80.9–90.8

[1] The amount-detected value for chlorine [entry point] represents the lowest level that was detected. Average for the year: 1.16 ppm.

[2] AWA does not add Fluoride to our water.

[3] AWA's source water can have a lower amount of TOC than treated water, thus, creating a negative removal percentage. AWA uses the SUVA method as an alternate method for determining TOC.

[4] Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

[5] Dissolved organic carbon (DOC) is the accumulation of broken-down organic matter. We test this for the purpose of using it in the SUVA calculation.

[6] Specific Ultra-Violet Absorbance at 254 nm wavelengths (DOC/UV254 x 100 = ppm). This parameter is an alternate method for determining total organic carbon (TOC).

[7] Ultra-Violet Absorbance at 254 nm wavelengths. We test this for the purpose of using it in the SUVA calculation.

Definitions

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

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as the highest LRAAs.

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.

MinRDL (Minimum Residual Disinfectant Level): The minimum level of residual disinfectant required at the entry point to the distribution system.

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.

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.

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).

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