

Meeting the Challenge

We are once again proud to present our annual water quality report covering all testing performed between January 1 and December 31, 2016. Over the years we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals 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 or concerns 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 Sam Sutherland, Public Utilities Director-Water or the Laboratory Staff at (740) 456-4946.

Where does my water come from?

The City of Portsmouth Waterworks customers are fortunate because we enjoy an abundant water supply from the Ohio River. The Ohio River begins at Pittsburgh, Pennsylvania, and then travels approximately 350 miles to Portsmouth. The City of Portsmouth Water Treatment Plant, located at 4862 Gallia Street, was constructed in 1950 to treat water from the Ohio River. The treatment plant currently provides roughly 6 million gallons of clean drinking water every day. Treated water is pumped from the treatment plant to the east 25 miles, to the west 15 miles and to the north 8 miles. Our system serves approximately 43,000 customers in the cities of Portsmouth, Sciotoville, Wheelersburg, West Portsmouth and Rosemount.



City of Portsmouth
4862 Gallia Street
Portsmouth, OH 45662

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. Portsmouth City Council meets the 2nd and 4th Monday of each month beginning at 6 p.m. at the Portsmouth Municipal Building, 728 2nd Street, Portsmouth, OH. You are also invited to contact City Manager Derek K. Allen or his staff at (740) 354-8807.

City of
Portsmouth
PWS ID#: OH7300111

Annual Drinking Water Quality Report 2016



*Derek K. Allen, City Manager
Sam Sutherland, Director of Public Utilities*

Tap vs. Bottled

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council, bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25 percent of bottled water is actually just bottled tap water (40 percent according to government estimates).

The food and Drug Administration is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children. Further, the FDA completely exempts bottled water that's packaged and sold within the same state, which accounts for about 70 percent of all bottled water sold in the United States. People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to \$1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you'd pay for bottled water.

For a detailed discussion on the NRDC study results, check out their website at www.nrdc.org/water/drinking/bw/execute.asp.

Substances That Could Be in Water

To ensure that tap water is safe to drink, 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 and bottled) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it can acquire 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.

Water Main Flushing

Distribution mains (pipes) convey water to homes, businesses, and hydrants in your neighborhood. The water entering distribution mains is of very high quality; however, water quality can deteriorate in areas of the distribution mains over time.

Water main flushing is the process of cleaning the interior of water distribution mains by sending a rapid flow of water through the mains. Flushing maintains water quality in several ways. For example, flushing removes sediments like iron

and manganese. Although iron and manganese do not pose health concerns, they can affect the taste, clarity, and color of the water. Additionally, sediments can shield microorganisms from the disinfecting power of chlorine, contributing to the growth of microorganisms within distribution mains. Flushing helps remove stale water and ensures the presence of fresh water with sufficient dissolved oxygen, disinfectant levels, and an acceptable taste and smell. During flushing operations in your neighborhood, some short-term deterioration of water quality, though uncommon, is possible. You should avoid tap water for household uses at that time. If you do use the tap, allow your cold water to run for a few minutes at full velocity before use and avoid using hot water, to prevent sediment accumulation in your hot water tank. Please contact us if you have any questions or if you would like more information on our water main flushing schedule.

What are PPCPs?

When cleaning out your medicine cabinet, what do you do with your expired pills? Many people flush them down the toilet or toss them into the trash. Although this seems convenient, these actions could threaten our water supply. Recent studies are generating a growing concern over pharmaceuticals and personal care products (PPCPs) entering water supplies. PPCPs include human and veterinary drugs (prescription or over-the-counter) and consumer products, such as cosmetics, fragrances, lotions, sunscreens, and house cleaning products.

Over the past five years, the number of U.S. prescriptions increased 12 percent to a record 3.7 billion, while nonprescription drug purchases held steady around 3.3 billion. Many of these drugs and personal care products do not biodegrade and may persist in the environment for years. The best and most cost-effective way to ensure safe water at the tap is to keep our source waters clean. Never flush unused medications down the toilet or sink. Instead, check to see if the pharmacy where you made your purchase accepts medications for disposal, or contact your local health department for information on proper disposal methods and drop-off locations. You can also go on the Web at www.Earth911.com to find more information about disposal locations in your area.

Water Conservation

You can play a role in conserving water and saving yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water.

Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

Source Water Information

The City of Portsmouth's public water system uses surface water drawn from the Ohio River. Surface waters are by their nature susceptible to contamination, and numerous potential contaminant sources along their banks make them more so. The protection areas around the Ohio River include numerous potential contaminant sources, including municipal and

industrial wastewater discharges, combined sewer overflows, runoff from urban, residential, mining, and agricultural areas, and transportation spills related to rail and highway crossings, commercial shipping and recreational boating. As a result Portsmouth's public water system is considered to have a high susceptibility to contamination. Historically, The Portsmouth public water system has effectively treated this source water to meet drinking water quality standards. The potential for water contamination can be further decreased by implementing measures to protect the Ohio River. More detailed information is provided in the City of Portsmouth's Drinking Water Source Assessment Report, which can be obtained by calling Sam Sutherland, Public Utilities Director Water, at (740) 456-4946.

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 <http://water.epa.gov/drink/hotline>.

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/safewater/lead.

Definitions

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

Action Level Goal (ALG): The level of a contaminant in drinking water below which there is no known or expected risk to health. ALGs allow for a margin of safety

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.

N/A: 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.

ppb (parts per billion): micrograms per liter or parts per billion - or one ounce in 7,350,000 gallons of water.

ppm (parts per million): milligrams per liter or parts per million - or one ounce in 7,350 gallons of water.

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

We have a current, unconditioned license to operate our water system.

Disinfectants and Disinfection By-Products

Contaminant (Units)	Collection Date	Level Detected	Range of Levels Detected	MCLG	MCL	Violation (Y/N)	Likely Source of Contamination
Chlorine (ppm)	2016	0.66	.55-.81	MRDLG = 4	MRDL= 4	N	Water additive used to control microbes
Haloacetic Acids (HAA5) (ppb)	2016	22.7	8-27.9	No goal for the total	60	N	By-products of drinking water chlorination
Total Trihalomethanes (TTHM) (ppb)	2016	60.38	19.9-75.9	No goal for the total	80	N	By-products of drinking water chlorination

Inorganic Contaminants

Contaminant (Units)	Collection Date	Level Detected	Range of Levels Detected	MCLG	MCL	Violation (Y/N)	Likely Source of Contamination
Barium (ppm)	2016	0.037	NA	2	2	N	Discharge of drilling wastes, metal refineries; erosion of natural deposits
Fluoride (ppm)	2016	1.27	0.80-1.27	4	4.0	N	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (measured as Nitrogen) (ppm)	2016	1.10	.50 - 1.10	10	10	N	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

Lead and Copper

Contaminant (Units)	Collection Date	90th Percentile	# Of Samples over AL	MCLG	Action Level (AL)	Violation (Y/N)	Likely Source of Contamination
Copper (ppm)	2014	0	0	1.3	1.3	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems
Lead (ppb)	2014	0	1	0	15	N	Corrosion of household plumbing systems; Erosion of natural deposits

Treatment Technique

Contaminant (Units)	Collection Date	Level Detected	Range of Levels Detected	MCLG	MCL	Violation (Y/N)	Likely Source of Contamination
Turbidity (NTU) ¹	2016	0.17	0.03-0.17	N/A	TT	N	Soil runoff
Turbidity (% samples meeting standard)	2016	100.00	NA	N/A	TT	N	Soil runoff
Total Organic Carbon ²	2016	1.35	1.00-2.56	N/A	TT	N	Naturally present in the environment

¹ Footnote: Turbidity is a measure of the cloudiness of water. It is monitored because it is a good indicator of the effectiveness of the filtration system. The turbidity limit set by the EPA is 0.3 in 95% of the daily samples and shall not exceed 1.0 at any time. As reported above, the City of Portsmouth's highest recorded turbidity result for 2015 was .39, and the lowest percentage of samples meeting the turbidity limit 99.59 percent.

² Footnote: The value reported under "Amount Detected" for Total Organic Carbon (TOC) is the lowest ratio between the percentage of TOC actually removed to the percentage of TOC required to be removed. A value of greater than one (1) indicates that the water system is in compliance with TOC removal requirements. A value of less than one (1) indicates a violation of TOC removal requirements.

