CITY OF XENIA
DRINKING WATER CONSUMER CONFIDENCE REPORT 2016

Meeting the Challenge

We are proud to present our annual water quality report covering all testing performed between January 1 and December 31, 2016. We have dedicated ourselves to producing drinking water that meets all state and federal standards. We have a current, unconditioned license to operate our water system. We strive to adopt new methods for delivering the best quality drinking water to you. The City of Xenia, Xenia Township, residents and businesses in the area are involved in a source water protection program to preserve and protect the water supply.

Where Does My Water Come From?

Our City receives its drinking water from the Little Miami River Buried Aquifer. The well fields are located near the intersection of U.S. Highway 68 and State Route 235. We have 11 active wells that can produce up to ten million gallons of water a day to process and supply your drinking water.

The aquifers have a high susceptibility to contamination. This is due to the sensitive nature of the aquifers location and potential contamination sources identified. Between 1991 and 2016 water quality data collected resulted in detectable levels of nitrate. Future contamination can be avoided by continuing to develop and implement protective measures.

More information is available in the City's Source Water Protection Report and Susceptibility Analysis, which can be obtained by calling Joe Bates at (937) 376-7269.

We are pleased to report that The City of Xenia's drinking water continues to meet all federal and state requirements!

The Water Treatment Plant:

The City of Xenia Water Treatment Plant (WTP) is an iron and manganese removal plant. These contaminants are removed to prevent staining of laundry and plumbing fixtures. The first part of this process is aeration. The ground water is aerated to remove naturally occurring hydrogen sulfide and to introduce more oxygen into the water where it combines with ionic forms of iron and manganese. The next stage of treatment is filtration. The iron and manganese compounds precipitate in the gravity fed filters. The last stage of treatment is disinfection. The filtered water is chlorinated. A small amount of a blended phosphate solution is added to prevent pipe corrosion and sequester metals in the distribution system. The water is then pumped to the distribution and storage system. A residual amount of disinfectant is required to be present in the distribution system for your protection.

The Xenia WTP does not "soften" the water. The water is considered very "hard" with a **total hardness** of near 400 mg/L (**23 grains per gallon**). We do not add fluoride to the water. The naturally occurring fluoride is approximately 20% of the therapeutic dose of 1 mg/L, used in the prevention of dental caries.

Who needs to take special precautions?

Some people are more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as someone with cancer who is undergoing chemotherapy, persons who have undergone organ transplants, persons with HIV/AIDS or other immune system disorders are more vulnerable. Some elderly and infants can be particularly at risk from infection. These people should seek advice about drinking water from their health care providers. The Environmental Protection Agency (EPA) and the Center for Disease Control (CDC) guidelines on the 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.

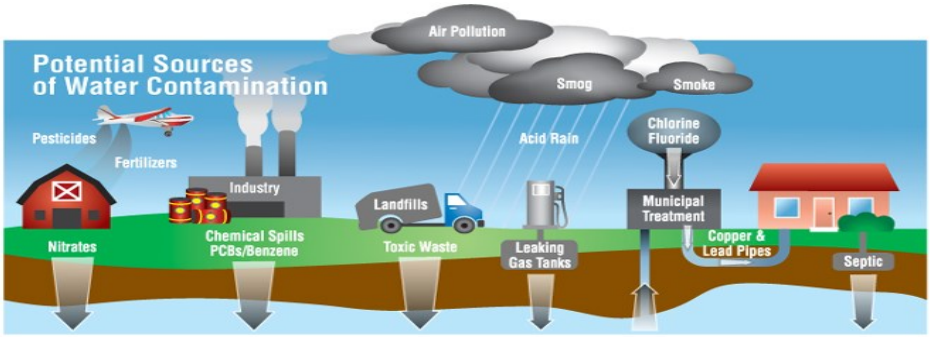
What are the sources of contamination to drinking water?

The sources of drinking water, both bottle and tap, 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. It can also pick up substances resulting from the presence of animal or human activity. A system of monitoring wells have been established to provide early warning of certain contaminants.

Contaminants that may be present in source water include:

- **Microbial contaminants,** such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic contaminants,** such as salts and metals, can be naturally occurring or result from urban storm runoff, industrial or domestic waste water discharges, oil and gas production, mining, or farming.
- **Pesticides and herbicides** may come from a variety of sources such as agriculture, storm water runoff, and residential uses.
- **Organic chemicals,** including synthetic and volatile organics, are by-products of industrial processes and petroleum production and may come from gas stations, fuel oil containers, urban storm water runoff, and septic systems.
- **Radioactive contaminants,** can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the Ohio and United States Environmental Protection Agencies (OEPA and USEPA) prescribe regulations which limits the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection of public health. 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. More information about the contaminants and potential health affects can be obtained by calling the EPA Safe Drinking Water Hotline at (800) 426-4791.



About your drinking water:

The EPA requires regular sampling to ensure drinking water safety. The City of Xenia conducted contaminant sampling for nitrate, lead, copper, total coliform bacteria, total chlorine, total trihalomethanes (TTHM's), and total haloacetic acids (HAA5) in 2016. Samples were collected for 4 different categories of regulated contaminants, most of which, were not detected in the City of Xenia Public Water System. The Ohio EPA requires us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though accurate, is more than one year old. Listed in the table is information on those contaminants that were found.

Two metals of concern found in drinking water are lead and copper. These two metals leach from the pipes and plumbing fixtures within the home itself. Homes built before 1950 may have lead water line service connections. Homes built before 1987 may have copper pipes with lead solder. 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 Xenia WTP is 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* at 800-426-4791 or at http://www.epa.gov/safewater/lead.

Public participation and comment are encouraged at regular meetings of the Xenia City Council which meets every 2nd and 4th Thursday of the month at City Hall, located at 101 N. Detroit Street. For information about this report please contact Joe Bates, Water Treatment Supervisor, at (937) 376-7269.

This Consumer Confidence Report (CCR) reflects changes in drinking water regulatory requirements during 2016. All water systems were required to comply with the Total Coliform Rule from 1989 to March 31, 2016, and begin compliance with a new rule, The Revised Total Coliform Rule, on April 1, 2016. The new rule maintains the purpose to protect public health by ensuring the integrity of the drinking water distribution system and monitoring for the presence of total coliform bacteria, which includes E. coli bacteria. The U.S. EPA anticipates greater public health protection under the new rule, as it requires water systems that are vulnerable to microbial contamination to identify and fix problems. As a result, under the new rule there is no longer a maximum contaminant level for multiple total coliform detections. Instead, the new rule requires water systems that exceed a specified frequency of total coliform occurrences to conduct an assessment to determine if any significant deficiencies exist. If found, these must be corrected by the public water system.

The City of Xenia water treatment plant had an E. coli-positive violation during the month of August, 2016, following a total coliform-positive routine sample. E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short term effects such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, the elderly, and people with severely compromised immune systems. The presence of E. coli bacteria triggered the City to look for potential problems in the water treatment and water distribution systems. We were required to complete a level 2 assessment of the water system in conjunction with the Ohio Environmental Protection Agency. As a result, we were required to take 4 corrective actions and we completed 4 of these actions. The corrective actions were as follows: evaluate and update bacteriological sampling plan, direct a privately owned facility connected to the public water system to install a containment backflow preventer, fill depressions around wells level to ground, and inspect the W. Second St. Tower and correct any deficiencies found.

The assessment, conducted by both city and state personnel, exposed a cross contamination between the sewer connection and the potable water service of a privately owned structure. While replacing the sewer line to this facility, a plumbing contractor broke the water line which was in the same trench while work was being performed on the sewer line. This most likely allowed for a cross contamination and the positive bacteriological samples taken from this location.

The Third Unregulated Contaminate Monitoring Rule (UCMR 3) List 1

UCMR 3 List 1	Collection Date	Sample Locations	Results	Units	PQL/ MRL	Use or Environmental Source
Chlorate	06/25/14	Entry Point	122	ppb	20.0	Agricultural defoliant or desiccant; disinfection byproduct; and used in production of chlorine dioxide.
Chlorate	06/25/14	Distribution	127	ppb	20.0	Agricultural defoliant or desiccant; disinfection byproduct; and used in production of chlorine dioxide.
Molybdenum	06/25/14	Entry Point/ Distribution	2.2/2.1	ppb	1/1	Naturally-occurring element found in ores and present in plants, animals and bacteria; commonly used form molybdenum trioxide used as a chemical reagent.
Strontium	06/25/14	Entry Point/ Distribution	420/420	ppb	.3/.3	Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x -ray emissions..

UCMR 3 - Unregulated contaminants are those that don't yet have a drinking water standard set by USEPA. The purpose of monitoring for these contaminants is to help EPA decide whether the contaminants should have a standard. UCMR examines what is in the drinking water, but additional health information is needed to know whether these contaminants pose a health risk.
MRL - Minimum Reporting Level: Represent an estimate of the lowest concentration of a compound that can be quantitatively measured by members of a group of experienced drinking water laboratories.
PQL - Practical Quantitation Level defined as "the lowest achievable level of analytical quantitation during routine laboratory operating conditions within specified limits of precision and accuracy".
ppb - parts per billion or ug/L.

2016 TABLE OF DETECTED CONTAMINANTS

Microbiological	Collection Date	# of Positive Total Coliform Samples	# of Positive Fecal/E. Coli Samples	MCLG	MCL	Units	Violation	Likely Source of Contamination
Total Coliform (TCR)	Monthly	2	1	0	1 positive /month	#/ month	yes	Naturally present in the environment.
Disinfectants and Disinfection By-Products	**Collection Date**	**Highest Level Detected**	**Range of Levels Detected**	**MCLG**	**MCL**	**Units**	**Violation**	**Likely Source of Contamination**
Chlorine	Daily	1.63	0.64 - 1.63	MRDLG = 4	MRDL = 4	ppm	None	Water additive used to control microbes.
Total Haloacetic Acids		**Jan-Mar**	**Apr-Jun**	**Jul-Sept (08/30/16)**		**Oct-Dec**		**Likely Source of Contamination.**
DS-201 sample value (ppb)		None	None	10.7		None		By-product of drinking water disinfection.
DS-201 LRAA		None	None	**10.7**		None		By-product of drinking water disinfection.
DS-202 sample value (ppb)		None	None	9.9		None		By-product of drinking water disinfection.
DS-202LRAA		None	None	**9.9**		None		By-product of drinking water disinfection.
CCR Report Values		Highest Compliance Value = **10.7 ppb** Range of Values = 9.9 to 10.7 ppb		Results are below MCL of **60 ppb**, No Violation.				
Total Trihalomethanes		**Jan-Mar**	**Apr-Jun**	**Jul-Sept (08/30/16)**		**Oct-Dec**		**Likely Source of Contamination.**
DS-201 sample value (ppb)		None	None	30.7		None		By-product of drinking water disinfection.
DS-201 LRAA		None	None	**30.7**		None		By-product of drinking water disinfection.
DS-202 sample value (ppb)		None	None	25.5		None		By-product of drinking water disinfection.
DS-202 LRAA		None	None	**25.5**		None		By-product of drinking water disinfection.
CCR Report Values		Highest Compliance Value = **30.7 ppb** Range of Values = 25.5 to 30.7 ppb		Results are below MCL of **80 ppb**, No Violation.				
Inorganic	**Collection Date**	**Highest Level Detected**	**Range of Levels Detected**	**MCLG**	**MCL**	**Units**	**Violation**	**Likely Source of Contamination**
Barium	06/24/14	0.137	NA	2	2	ppm	None	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Fluoride	06/24/14	0.218	NA	4	4.0	ppm	None	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer & aluminum factories.
Nitrate [measured as Nitrogen]	02/16/16	2.05	NA	10	10	ppm	None	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Lead an Copper	**Collection Date**	**90% of test levels were less than**	**# of Samples Over AL**	**ALG**	**Action Level (AL)**	**Units**	**Violation**	**Likely Source of Contamination**
Copper	08/09/16	0.97	0	1.3	1.3	ppm	None	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
	0 out of 32 samples were found to have copper levels in excess of the copper action level of 1.3 ppm.							
Lead	08/09/16	0.00	0	0	15	ppb	None	Corrosions of household plumbing systems; Erosion of natural deposits.
	0 out of 32 samples were found to have lead levels in excess of the lead action level of 15 ppb.							

AL - Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
ALG - Action Level Goal: 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.
LLRA - Locational Running Annual Average calculation with multiple sampling locations.
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 Disinfection Level Goal. The level or 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.
ppm - parts per million or mg/l: milligrams per liter is one ounce in 7,350 gallons of water.
ppb - parts per billion or ug/l: micrograms per liter is one ounce in 7,350,000 gallons of water.
Level 2 Assessment-a very detailed study of the water system to identify potential problems and determine (if possible) why an E.coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system.