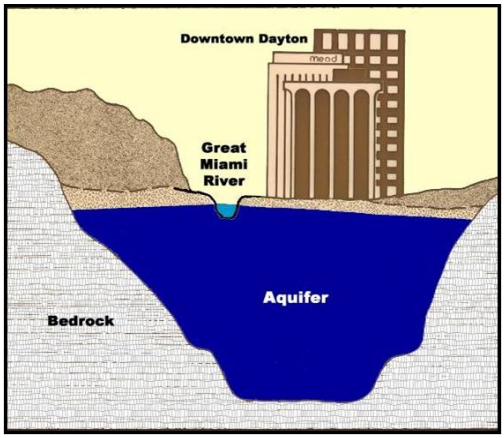
City of Dayton Department of Water ***2017 Water Quality Report***

CITY OF DAYTON
water
one source
Regional • Reliable • Renewable



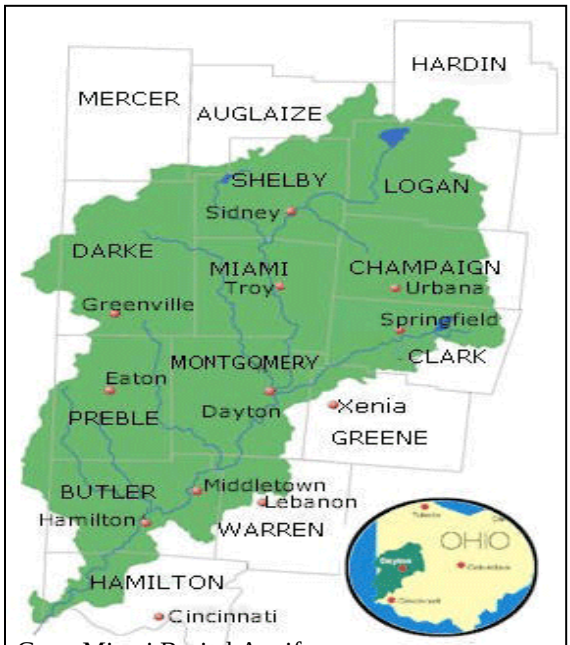
City of Dayton – Source of Water

High quality and abundant water is the single most important resource in the world. The Great Miami River Buried Valley Aquifer is one of the largest and most productive aquifer systems in the country.

An aquifer is an underground sand and gravel layer saturated with water. Water is stored in this vast underground reservoir. The Great Miami River Buried Valley Aquifer has sufficient water supply for many Southwestern Ohio communities.

Rainfall and thousands of miles of rivers and streams recharge this vast aquifer resource. These waterways recharge the groundwater supplies within the aquifer making the groundwater a truly "renewable" resource. The aquifer holds more than a trillions gallons of water, making our area very drought resistant and a water source you can depend upon. This valued resource serves as the principal water source for an estimated 1.5 million people in southwest Ohio.

Our regional aquifer resource is protected with an award winning source water protection program and sole source aquifer designation by the U.S. Environmental Protection Agency. This program includes land use control zoning, treatment of contaminated groundwater, early warning monitoring wells, and emergency preparedness. The City of Dayton received the first National Exemplary Wellhead Protection Award from the American Water Works Association and has been designated as a Groundwater Guardian Community by the Groundwater Foundation every year since 1995.



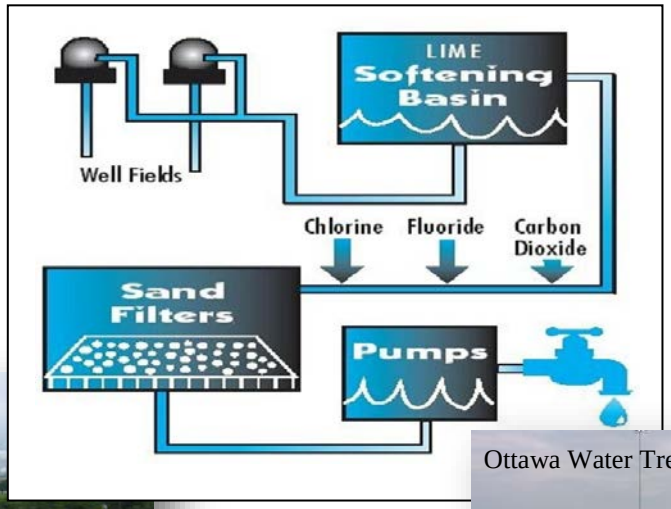
Great Miami Buried Aquifer

This Aquifer is a large underground area of water-bearing sand and gravel deposits. This groundwater is influenced by surface water. 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 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 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; organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

The City of Dayton Water Department treats and pumps drinking water to over 400,000 people in Montgomery County and part of Greene County. Water is supplied to water treatment plants by the Miami and the Mad River Well Fields. Wells pump groundwater from the Great Miami River Buried Valley Aquifer. Dayton uses recharge lagoons to help maintain the water table and allow large wells to efficiently pump water to the water plants. Dayton has approximately 110 production wells. Each of these large wells can pump from one to four million gallons per day.

Water Treatment Process

Dayton's water treatment plants use conventional lime (calcium oxide) softening processes. After softening, the pH of the water is adjusted using carbon dioxide. The water is fluoridated and then later disinfected using with chlorine. Rapid sand filtration is the final step in the water treatment process. Dayton's Ottawa Water Plant and Miami Water Plant have rated treatment capacities of 96 million gallons of water per day (for each plant). In 2016, Dayton treated and pumped approximately to 23.9 billion gallons of water.



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. In order to ensure that tap water is safe to drink, USEPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which shall provide the same protection for public health. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

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***We are proud to report that the City of Dayton complied with all MCL* standards for drinking water during* 2016.**

The following results summarize thousands of tests performed **in 2016**

Regulated Substance	Highest Level Allowed (MCL)	Ideal Goals (MCLG)	Highest Level Detected	Range of Detection	Violations	Sources of Contaminants
Regulated at the Treatment Plant						
Fluoride (ppm)	4	4	**1.06**	0.64-1.06	**No**	Natural geology/supplement
Nitrate (ppm)	10	10	**1.61**	0.11-1.61	**No**	Fertilizer runoff/natural geology
Turbidity (NTU)	TT = 1	N/A	**0.73**	0.02-0.43	**No**	Lime softening residuals
	TT: ≥ 95% must be ≤ 0.3		**100 %[1]**			
Cis-1,2-Dichloroethylene (ppb)	70	70	**0.67**	ND-0.67	**No**	Discharge from factories
Total Organic Carbon (TOC) (ppm)	TT	N/A	**0.93[2]**	0.36-0.93	**No**	Naturally in the environment
Regulated at the Customer's Tap						
Lead (ppb)	AL = 15	0	**4.1**	No samples >AL ND – 12.2	**No**	Corrosion of household plumbing materials
Copper (ppm)	AL = 1.3	1.3	**0.042**	No Samples >AL ND –0.108	**No**	Corrosion of household plumbing materials
90% of samples were less than 4.1 ppb for lead and less than 0.042 ppm for copper. Lead and copper were not detected in most of the water samples. Results from samples collected in 2016.						
Regulated in the Distribution System						
Trihalomethanes (THMs) (ppb)	80[3]	0	**27.65[3]**	16.76-46.88	**No**	By-product of chlorination
Haloacetic Acids (HAAs) (ppb)	60[3]	N/A	**5.92[3]**	4.4-8.61	**No**	By-product of chlorination
Chlorine (ppm)	MRDL = 4	MRDLG=4	**1.11[3]**	0.26-1.72	**No**	Water additive to control microbes
Coliform Bacteria (% positive/month)	5%	0	**4.8%[5]**		**No**	Naturally present in the environment
Unregulated Compounds – concentration in ppb & ppm (average and range are shown for water plant effluent samples)						
Bromodichloromethane	N/A	N/A	**1.45**	1.06-1.99	**N/A**	(concentration in ppb) By-products of drinking water chlorination
Bromoform	N/A	N/A	**ND**	ND-0.73	**N/A**	
Chloroform	N/A	N/A	**1.01**	0.57-1.73	**N/A**	
Dibromochloromethane	N/A	N/A	**1.65**	0.90-2.41	**N/A**	
cis- 1,2 dichloroethene	N/A	N/A	**ND**	ND-0.673	**N/A**	

1 Dayton complied with requirements for every month in 2016. Turbidity is used to measure the performance of sand filters.
2 Dayton complied with alternate compliance criteria for TOC regulations under the D/DBP Rule. The level reported is "average".
3 Highest running annual average.
4 Highest running quarterly average
5 In 2016 ten distribution samples were positive for coliform bacteria. There were 1,540 samples analyzed.

***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. **NTU** = Nephelometric Turbidity Units (measure of "cloudiness")
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 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.
TT = Treatment Technique – A required process intended to reduce the level of a contaminant in drinking water.
AL = Action Level – The concentration of a contaminant which, if exceeded, triggers treatment or other requirements for a water system.
pCi/l = picocuries per liter (a measure of radioactivity) **ppm** = parts per million **ppb** = parts per billion **N/A** = Not applicable
≤ = less than or equal to ≥ = greater than or equal to > = greater than < = less than **ND** = Not detected

City of Dayton Department of Water has a current unconditioned license to operate our public water system.

Other Information

Lead Information

"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 City of Dayton 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 thirty seconds to two 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. A list of laboratories certified in the State of Ohio to test for lead may be found at http://www.epa.ohio.gov/ddagw or by calling 614-644-2752. 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." **Paint chips and other exposures are significant sources of lead exposure. Lead was not detected in most of the samples collected at City of Dayton homes. Call 937-333-6093 for details.**

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 can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/CDC 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)"

Source Water Assessment

The Ohio EPA conducted a source water assessment of Dayton's water source. The assessment concluded that the aquifer supplying water to the City of Dayton's well fields has a high susceptibility to contamination. This determination is based on: the influence of surface water recharge to the aquifer; the presence of a relatively thin protective layer of clay overlying the aquifer; the shallow depth of the aquifer; contaminant plumes in Dayton's well field protection area; the presence of significant potential contaminant sources in the protection area; and the presence of contaminants in treated water. More information about the source water assessment or what consumers can do to help protect the aquifer is available by calling the Division of Environmental Management at (937) 333-3725.

For More Information

City of Dayton citizens can participate in decisions about water quality by attending City Commission meetings and Environmental Advisory Board meetings. Call the Water Department Administration Office at 333-3734 for meeting dates and times. For more information on water quality: City of Dayton Water Dept., 3210 Chuck Wagner Lane, Dayton, Ohio 45414 or call 937-333-6093.