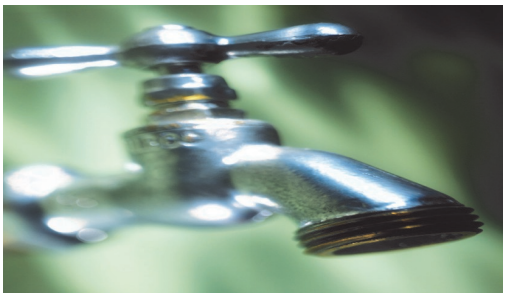
2013 Drinking Water Consumer Confidence Report

Public Service



City of Gahanna

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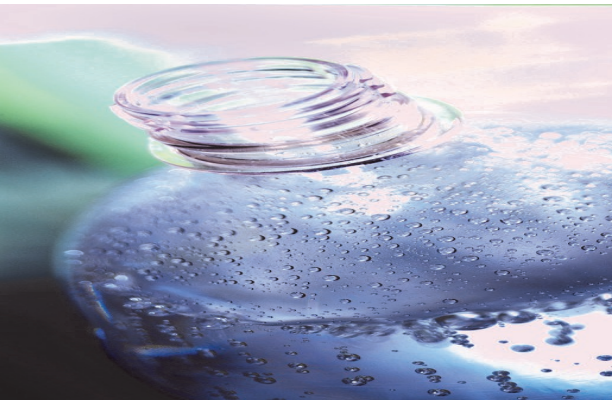

Overview

The goal of the Department of Public Service Water Division is to ensure that any contaminants in your drinking water are restricted below a level at which there is no known health risk and properly distribute quality water in a manner that is consistent with the Environmental Protection Agency (EPA). The Safe Drinking Water Act (SDWA) requires that drinking water quality information be made available to the public. The City of Gahanna Department of Public Service has prepared the following report to provide information to you, the consumer, on the quality of the drinking water. Included within this report is general health information, water quality test results, how to participate in decisions concerning your drinking water and water system contacts.

SERVING CITIZENS SINCE

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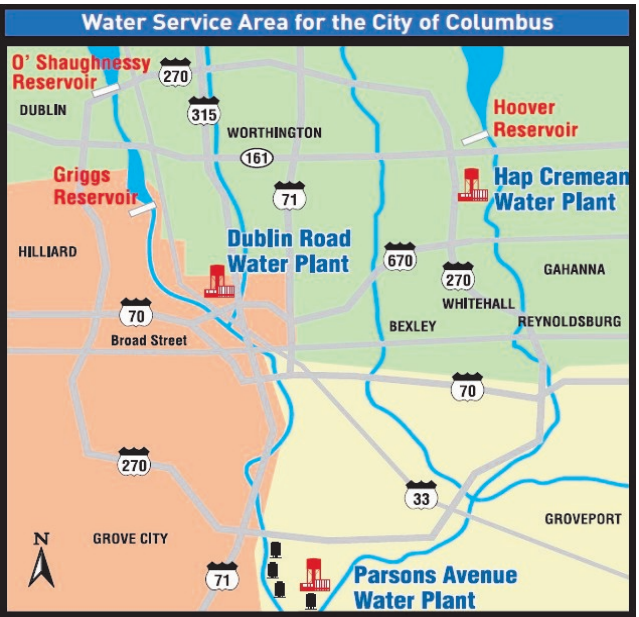
Source Water Information

The City of Gahanna receives its drinking water from the City of Columbus' Hap Cremean Water Plant (HCWP). The water source for the HCWP is the Hoover Reservoir via the Big Walnut Creek.

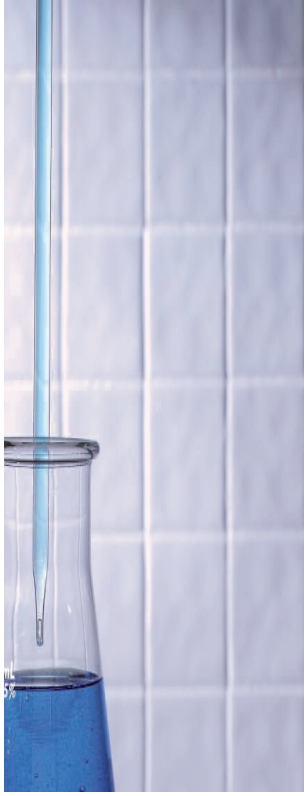


License to Operate (LTO) Status Information

The City of Gahanna has a current, unconditioned license to operate its water system.

Photo Left:
Dublin Road Water Plant (DRWP): Serves northwestern and southwestern residents. The water source is the Griggs and O'Shaughnessy Reservoirs.
Hap Cremean Water Plant (HCWP): Serves OSU and northern residents. The water source is the Hoover Reservoir via the Big Walnut Creek.
Parsons Avenue Water Plant (PAWP): Serves southeastern residents. The water source is water wells.

Source: City of Columbus Department of Public Utilities, www.publicutilities.columbus.gov



What Are Sources of Contamination to Drinking Water?

The sources of drinking water, both tap 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: (A) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife; (B) Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming; (C) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses; (D) 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 storm water runoff and septic systems; (E) radioactive contaminants, which 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, U.S. EPA prescribes regulations which limit 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 for 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 contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791).

Who Needs to Take Special Precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised individuals such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune systems disorders, some elderly and infants can be particularly at risk from infection. These people should seek advice about drinking water from their health care providers. EPA and Centers for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the EPA's Safe Drinking Water Hotline (1-800-426-4791).

Contaminant Monitoring

The EPA and Safe Drinking Water Program establish the regulations that limit the amount of contaminants allowed in drinking water and require regular sampling to ensure drinking water safety. The Ohio EPA requires some contaminants to be sampled less than once per year due to the fact that the concentrations of these contaminants do not change frequently. Therefore some of the data, though accurate, may be more than one year old. The table below shows the sampling results performed by the City of Columbus at the Hap Cremean Water Plant and the City of Gahanna during 2013. It illustrates the concentrations of detected substances in comparison to the regulatory limits.

	Sample Year	What's Allowed? Maximum Contaminant Level (MCL)	What's the Goal? Maximum Contaminant Level Goal (MCLG)	Level Found	Range of Detection	Violation	Where Did It Come From? (Typical Source of Contaminant)
HAP CREMEAN WATER PLANT							
INORGANIC CONTAMINANTS							
Fluoride (ppm)	2013	4	4	1.04	0.80 - 1.04	No	Erosion of natural deposits, water additive which promotes strong teeth and discharge from fertilizer and aluminum factories
Nitrate (ppm)	2013	10	10	1.6	< 0.5 - 1.6	No	Runoff from fertilizer use, leaching from septic tanks, sewage and erosion of natural deposits
MICROBIOLOGICAL CONTAMINANTS							
Total Organic Carbon	2013	TT (removal ratio > 1)	No goal set	2.24	1.90 - 2.80	No	Naturally present in the environment
Turbidity (NTU)	2013	TT (< 1)	No goal set	0.38	0.04 - 0.38	No	Soil runoff
Turbidity (% meeting standard)	2013	TT (> 95%)	No goal set	100%	100% - 100%	No	Soil runoff
SYNTHETIC ORGANIC CONTAMINANTS							
Alachlor (ppb)	2013	2	0	ND	ND	No	Runoff from herbicide used on row crops
Atrazine (ppb)	2013	3	3	0.26	< 0.10 - 0.98	No	Runoff from herbicide used on row crops
Simazine (ppb)	2013	4	4	< 0.10	< 0.10 - 0.20	No	Herbicide runoff
UNREGULATED CONTAMINANTS							
Bromodichloromethane (ppb)	2013	No set level	0	8.2	N/A	No	By-product of drinking water disinfection
Bromoform (ppb)	2013	No set level	0	< 0.5	N/A	No	By-product of drinking water disinfection
Dibromochloromethane (ppb)	2013	No set level	60	1.2	N/A	No	By-product of drinking water disinfection
Metolachlor (ppb)	2013	No set level	No goal set	ND	ND	No	Herbicide runoff
Metribuzin (ppb)	2013	No set level	No goal set	ND	ND	No	Herbicide runoff
VOLATILE ORGANIC CONTAMINANTS							
Chloroform (ppb)	2013	No set level	70	31.0	N/A	No	By-product of drinking water disinfection
CITY OF GAHANNA							
INORGANIC CONTAMINANTS							
Asbestos* (mfl)	2011	5.6	< 5.6	< 0.2	N/A	No	Decay of asbestos cement water mains and erosion of natural deposits
Copper* (ppm)	2012	1.35	1.35	0.067	< 0.050 - 0.083 (0 of 32 sites above AL)	No	Corrosion of household plumbing systems and erosion of natural deposits
Lead* (ppb)	2012	15	0	< 5.0	< 5.0 - 10.6 (0 of 32 sites above AL)	No	Corrosion of household plumbing systems and erosion of natural deposits
MICROBIOLOGICAL CONTAMINANTS							
Total Coliform Bacteria	2013	Present in < 5% of monthly samples	0%	0%	N/A	No	Naturally present in the environment
RESIDUAL DISINFECTANTS							
Total Chlorine (ppm or mg/L)	2013	4 (MRDL)	4 (MRDLG)	1.68	1.51 - 1.84	No	Disinfectant
VOLATILE ORGANIC CONTAMINANTS							
Total Haloacetic Acids, HAA5 (ppb)	2013	60	No goal set	50	6.0 - 63.0	No	By-product of drinking water chlorination
Total Trihalomethanes, TTHM (ppb)	2013	80	No goal set	85	34.0 - 83.0	Yes**	By-product of drinking water chlorination

* Asbestos testing has been scheduled for 2020. The next lead and copper testing is scheduled for 2015.

TTHM Exceedances

Trihalomethanes (TTHMs) are four volatile organic chemicals that form when disinfectants react with natural organic matter in the water. Some people who drink water containing trihalomethanes in excess of the standard, or maximum contaminant level (MCL), over many years may experience problems with their liver, kidneys or central nervous systems and may have an increased risk of getting cancer. The standard for TTHMs is a Locational Running Annual Average (LRAA) of 80 parts per billion (ppb) at an individual monitoring location over the year. Gahanna exceeded the MCL for total TTHMs in the 1st and 2nd quarters of 2013. In February 2013 the TTHM level at Site DS202 was 85 ppb and in May 2013 was 81 ppb. Modifications to the system have brought site DS202 back into compliance and ensures an adequate level of disinfection to protect customers from exposure to bacteria.

Definitions

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

Greater Than Symbol (>): A symbol which means greater than.

Less Than Symbol (<): A symbol which means less than. A result of <5 means that the lowest level that could be detected was 5 and the contaminant in that sample was not detected.

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.

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 Residual Disinfectant Level Goal (MRDLG): 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.

Maximum Residual Disinfectant 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.

MFL: Million fibers per liter

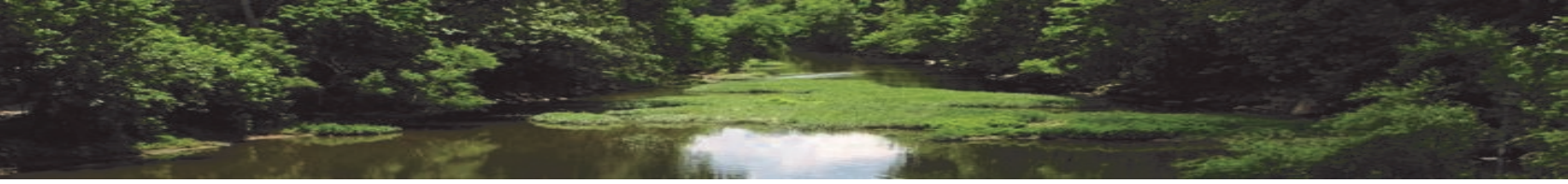
ND: Not detected

Nephelometric Turbidity Unit (NTU): A measure of particles held in suspension in water.

Parts per Billion (ppb) or Micrograms per Liter (µg/L): Unit of measure for concentration of a contaminant. A part per billion corresponds to one ounce in 7,350,000 gallons of water or one second in 31.7 years.

Parts per Million (ppm) or Milligrams per Liter (mg/L): Unit of measure for concentration of a contaminant. A part per million corresponds to one ounce in 7,350 gallons of water or one second in a little over 11.5 days.

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



Total Organic Carbon

The value reported for total organic carbon (TOC) is the lowest running annual average ratio between the percentage of TOC actually removed to the percentage of TOC required to be removed. A value greater than one indicates that the water system is in compliance with TOC removal requirements. A value less than one indicates a violation of the TOC removal requirements.

Turbidity

Turbidity is a measure of the cloudiness of water and is an indication of the effectiveness of the filtration system. The turbidity limit set by the EPA is 0.3 NTU in 95% of the daily samples and shall not exceed 1 NTU at any time. As reported in the Table of Detected Contaminants, the highest recorded turbidity in 2013 for water supplied to Gahanna (by Columbus' Hap Cremean Water Plant) was 0.38 NTU and the lowest monthly percentage of samples meeting the turbidity standard was 100%.

Nitrate

Nitrate in drinking water at levels above 10ppm is a health risk for infants less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. Local television, radio and print media will be notified within 24 hours if the level of nitrate rises above 10ppm. The media will similarly be notified once the level decreases. If you are caring for an infant, you should seek advice from your health care provider. None of the water supplied to Gahanna (by Columbus' Hap Cremean Water Plant) exceeded the nitrate maximum contaminant level (MCL) in 2013.

Lead

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 Gahanna Department of Public Service Water Division 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 EPA's Safe Drinking Water Hotline at 1-800-426-4791 or online at www.epa.gov/safewater/lead. None of the water supplied to Gahanna (by Columbus' Hap Cremean Water Plant) exceeded the lead action level in 2013.

Unidirectional Flushing

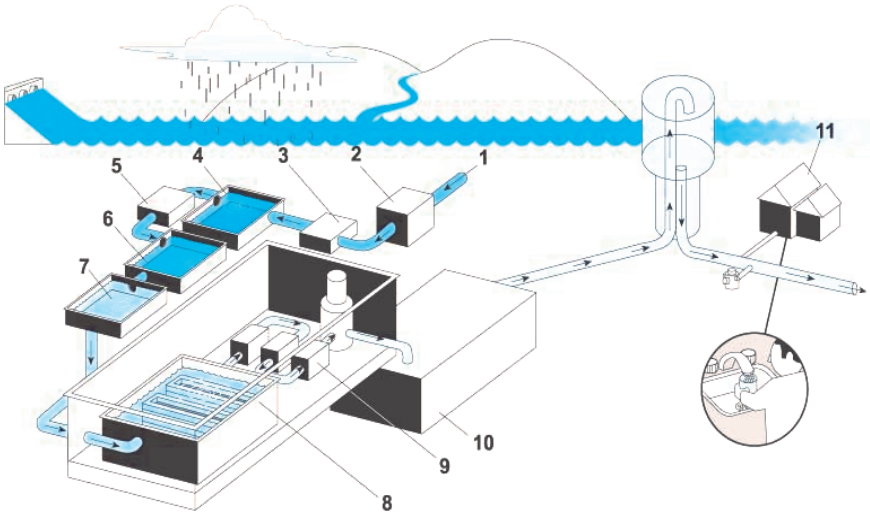
The City of Gahanna Department of Public Service Water Division completed another year of unidirectional waterline flushing. This innovative technique allows the Water Division to clean waterlines using less water while achieving proven results. The technique includes closing specific valves on each waterline to allow the water to flow quickly through the pipes and exit a specified hydrant. The fast moving water cleans out the waterlines and provides better quality drinking water. This method is endorsed and encouraged by the Ohio EPA.

Waterline flushing occurred in central, northern and northeast Gahanna in 2013. Specific areas include: Academy, Cherry Bottom, Crossing Creek, Highmeadow, Laurel Ridge, Nob Hill, Deer Run, Foxboro, Gahanna Greens, Gahanna Heights, Olde Gahanna, Sycamore Mill, Sycamore Woods, Bryn Mawr, Bryn Mawr Woods, Hensel Woods North, Rose Run, Saratoga Estates, Greens at Clarenton, Harrison Pond and Villages at Rocky Fork.

Water Treatment Process

1. Water flows from the reservoir or stream to the treatment plant.
2. It passes through rotating screens that remove large debris.
3. Water is then pumped into the plant where alum is added to cause coagulation.
4. After rapid mixing, the water remains in a settling basin while sedimentation of residual matter/floc occurs (2-4 hrs). The settled floc is pumped from the bottom of the pools and stored in holding lagoons to dry.
5. The water is softened by adding sodium carbonate (soda ash) or caustic soda and hydrated lime. This removes calcium and magnesium ions that are responsible for water hardness. This process takes an additional 2-4 hours. For each pound of chemical used in the treatment process, two pounds are removed.
6. Carbon dioxide is added to lower the pH level to approximately 7.8.
7. Water is held in a stabilizing basin for another 2-4 hours.
8. Water then flows through large dual-media rapid sand filters made up of layers of gravel, sand and antracite coal.
9. Chlorine is added to the water to disinfect. Fluoride to protect teeth and a corrosion inhibitor are also added.
10. Water is held in large underground clearwells until it is needed.
11. Water is delivered to customer as needed.

Please Note: Steps 2-4 are not needed when ground water is used.



Water Treatment Process: *1. Inflow 2. Large debris removal 3. Coagulation 4. Sedimentation 5. Softening 6. pH lowered to 7.8 7. Stabilization 8. Filtration 9. Disinfection 10. Holding tanks 11. Delivery to customer*

Water Quality Assurance

The City of Columbus' Water Quality Assurance Laboratory (WQAL) is a large modern water lab with a long history of distinguished public service starting under the noted water quality chemist Charles Hoover. The lab continues to maintain that tradition of excellence and technical innovation in the ongoing use of state-of-the-art equipment for water analysis, while continuing to research the latest advancements in water treatment techniques.

The WQAL performs water quality monitoring and treatment research to ensure that Columbus' drinking water meets or is better than all federally mandated Safe Drinking Water Act (SDWA) standards. The WQAL also provides water quality information to the water treatment plants (along with master meter cities such as Gahanna) and addresses customer complaints and inquiries regarding water quality. In 2013, the WQAL's EPA licensed and certified laboratory staff completed over 40,000 analyses relating to 29 different organic, inorganic and microbiological water quality parameters.

To maintain compliance with current SDWA regulations, WQAL activities in 2013 were again directed at developing information regarding new and upcoming rules. These include the Unregulated Contaminant Monitoring Rule (UCMR), Stage 2 of the Disinfectant/Disinfection Byproducts Rule (D/DBP) and the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR). Additionally, the lab has been closely involved in planning the improvement of watershed and water distribution system surveillance and detection measures for security concerns in the wake of the 9/11 attacks and the associated heightened security protocols.

As with the WQAL staff, the State of Ohio licenses and certifies the water plant operators who are charged with running and maintaining each of the water treatment plants. These operators also perform the critical task of treatment and process monitoring to insure the water leaving the plant is of the highest quality. In order to stay current in the ever-changing technical field of water purification, these operators spend many hours of continuing education in the classroom every year.

Source: City of Columbus Department of Public Utilities, www.publicutilities.columbus.gov

Contact and Further Information

If you have questions regarding any of the information contained in this report, contact City of Gahanna Water Resources Engineer, Jeff Feltz, at 614-342-4005. This report can also be found on our website at: www.gahanna.gov/Uploads/Documents/PDFs/Service/Dept-News-Feed/CCR/CCR-2013.pdf.

More detailed information on common water quality concerns and the water treatment process can be found on the City of Columbus Department of Public Utilities website at: www.columbus.gov/publicutilities.

CITY OF GAHANNA

DEPARTMENT OF PUBLIC SERVICE

200 S Hamilton Rd | Gahanna, OH 43230

P: (614) 342-4005 | F: (614) 342-4100

www.gahanna.gov

The mission of the Department of Public Service is to continually strive to improve service to residents through open, honest communication, top-notch infrastructure, building and equipment maintenance, and the refusal to allow the department to settle into complacency.