



2016 Consumer Confidence Report

City of Pataskala Utility Department 2016 Water Quality Report

Utility Director:

- Nathan W. Coey

Utility Superintendent:

- Ryan Brown

Utility Operators and Utility Field Technicians:

- Eric Winkler
- Mitch Rader
- Chris Sharrock
- Rich Obar
- Tony Gardner

Utility Billing Manager:

- Stephanie Tallman

Utility Billing Clerk:

- Steve Crane

Message from the Utility Director

Dear Valued Customer, I invite you to read this report and learn more about your Utility Department. This report provides to you information about the quality of your drinking water. The 2016 calendar year was a very productive year for the Utility Department, funds were utilized to operate the Utility Department treatment plants and systems. The goal for 2017 is "Continual Growth and Progress" as we continue our efforts in protecting and revitalizing the utility infrastructure and investments, while looking to the future with short term and long term goals. Our staff is

diligent in their duties ensuring the highest quality of drinking water to our customers in a safe, economical, and environmentally friendly approach. Our staff is the first line of defense protecting our water and our environmental water resources. Not only do we strive to provide excellent drinking water we also strive to provide excellent customer service to repair, replace, and revitalize our "liquid" investments with minimal disruption of service to you the customer. Our staff spends countless hours on plant operation and plant maintenance, water distribution ser-

vice as well as maintenance, and billing and customer service related duties, to ensure the highest quality of water service to you.

On behalf of the City of Pataskala's Mayor, Council, Administrator and the employees of the Utility Department, I am pleased to present our 2016 Water Quality Report. Our water quality testing and monitoring assures you the highest quality of drinking water. We are also pleased to share that we exceed the Ohio EPA's expectations on water delivered to you.

Highest Regards,

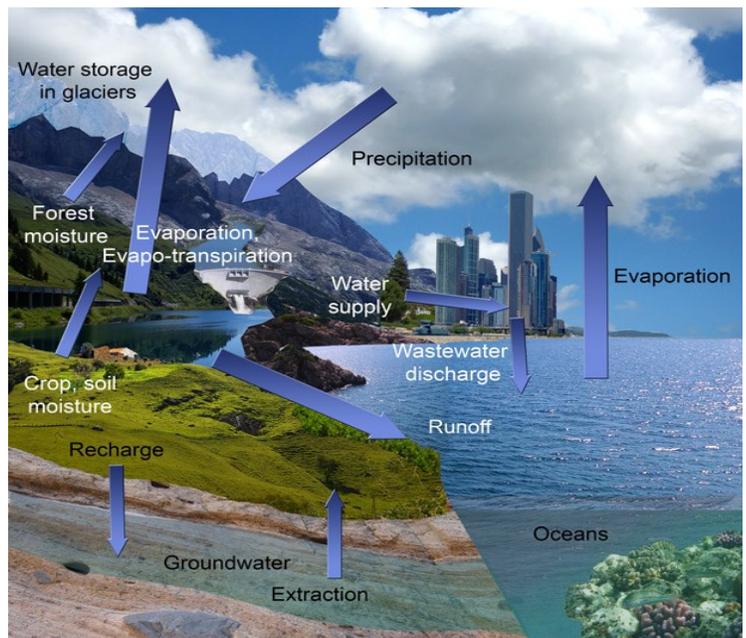
Nathan W. Coey, Utility Director
740-927-4134

The Water Cycle

Information provided by the USGS:

The Earth's water is always in movement, and the natural water cycle, also known as the hydrologic cycle, describes the continuous movement of water on, above, and below the surface of the Earth. Water always changes states between liquid, vapor, and ice, with these processes happening in the blink of an eye and over many years. Everyday the water cycle is in movement. Twenty thousand feet above the earth's surface, water molecules change from vapor to liquid in a storm cloud. The water falls to earth as precipitation, precipitation soaks into the earth, flows to rivers, streams, and oceans. In Pataskala the precipitation flows into underground aquifers, which is our water supply source. The ground water is treated by our Water Treatment Plants and distributed to our customers. After the water is used for drinking, cleaning, cooking, and sanitary uses the polluted water is drained and sent to our Wastewater Treatment Plant. The Wastewater is cleaned, disinfected and discharged to the South Fork Licking River. After leaving the Wastewater Plant the water has begun its trip back to nature, and ultimately the water flows to the Great Mississippi and eventually to the Gulf of Mexico. Along the way the water may be used for other Cities as a source of drinking water and it may evaporate into the atmosphere and return again to the earth to replenish the water resources of the earth. Our Public Water and Wastewater Treatment Plants are a critical part of the water cycle, water is a finite resource, and must be protected.

Did you Know? About 70% of the earth's surface is covered with water, 97% of the water on earth is salt water which is not potable and difficult to treat, 2% is bound in glacial ice, and less than 1% of all of earth's water is fresh water that can be utilized for consumption.



Utility Department Contacts

Utility Director:
740-927-4134

Utility Office:
740-964-6275

24 Hour Utility Emergency:
740-927-6867

Water Reclamation Facility:
740-927-7739

Water Plant:
740-919-4394

For information regarding the treatment process, tours, future system plans, or how to participate in decisions concerning your drinking water please call the Utility Office at 740-964-6275. Concerns about the water system may also be addressed at the City Council Meetings, which are held on the 1st and 3rd Monday's of each month at 7:00 pm in Council Chambers located at 621 W. Broad Street, Pataskala Ohio.



Water Sources and Treatment Techniques:

The City owns and operates two Water Treatment Facilities; Water Treatment Plant #1 is located at 7024 Hazelton-Etna Road, and Water Treatment Plant #2 is located at 8000 Refugee Road. At each plant water is drawn from underground well water sources. The well system consist of 6 wells and 2 well fields; 4 Wells at WTP#1 and 2 Wells at WTP#2. Both well fields pump from the sand and gravel deposits of the South Fork Licking River Buried Valley Aquifer. The aquifer is covered by 8 to 60 feet of low-permeability material, which provides protection from contamination in some areas and little protection in others. The water pumped from the wells flow to the treatment plants where excess iron is removed via filtration, the water is then softened via the Ion Exchange Process and then disinfected prior to distribution, additionally orthophosphate is added to keep iron and manganese compounds sequestered and to keep the water from absorbing lead or copper present in your plumbing.

Well field Susceptibility:

A November 2011 Source Water Assessment by the Ohio EPA indicated that our source water has a high susceptibility to contamination due to the presence of a relatively thin and variable protective layer of clay overlaying the aquifer, the shallow depth (less than 20 feet below the ground surface in some areas) of the aquifer, and the presence of potential contaminate sources in the protection area. This does not mean the well field will become contaminated; only that conditions exist that have the potential for contamination. The Utility Department in 2012 completed our Source Water Protection Plan which includes Protective Strategies as approved and endorsed by the Ohio EPA. If you would like more information on the Source Water Protection Plan or would like to get involved in this program please contact Nathan Coey, Utility Director.



US EPA Lead Education 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 Pataskala Water System 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> For more information on the City of Pataskala's 'Lead and Copper Drinking Water Quality Assurance Program' go to <http://www.cityofpataskalaohio.gov>



What are sources of contamination to drinking 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: (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, USEPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. 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 Environmental Protection Agency'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. Immuno-compromised people 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 infection. These people should seek advice about drinking water from their health care providers. EPA/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 (1-800-426-4791).

The City of Pataskala has a current, unconditioned license to operate our water system by the Ohio EPA. Listed below are Regulated Health Related Standards for Water Quality Testing in 2016 as required by the Ohio EPA.

OH4502512		City of Pataskala								
Ohio EPA Required Water Quality Testing 2016	Disinfectants and Disinfection By-Products	Collection Year	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination	
	Total Chlorine	2016	1.27	.79 - 1.27	MRDLG = 4	MRDL = 4	ppm	No	Water additive used to control microbes.	
	Total Trihalomethanes (TTHM)	2016	27.6	25.6 - 27.6	No goal for the total	80	ppb	No	By-product of drinking water chlorination.	
	Haloacetic Acids (HAA5)	2016	Below Detection	<6.0 - <6.0	No goal for the total	60	ppb	No	By-product of drinking water chlorination.	
	Coliform Bacteria	Collection Year	# of Positive Total Coliform Samples	# of Positive Fecal / E-Coli Samples	MCLG	MCL	Units	Violation	Likely Source of Contamination	
	Total Coliform	2016	0	0	0	5% of monthly samples		No	Naturally present in the environment.	
	Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detecte	MCLG	MCL	Units	Violation	Likely Source of Contamination	
	Fluoride [measured at source]	2016	1.17	1.09 - 1.17	4	4	ppm	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.	
	Nitrate	2016	0.62	.57 - .62	10	10	ppm	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.	
	Lead and Copper	Collection Date	90th Percentile	# of Samples Over AL	MCLG	Action Level (AL)	Units	Violation	Likely Source of Contamination	
	Copper	2016	0.525	0	1.3	1.3	ppm	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.	
	Lead	2016	<.015	1	0	0.015	ppm	No	Corrosion of household plumbing systems; Erosion of natural deposits.	
	Synthetic Organic Contaminants	Collection Date	Test Result				Units	Violation	Likely Source of Contamination	
	SOC's	2014	All test results are below detectable limits or non detectable.				ppb	No	Runoff from herbicide used on row crops.	
	Radiologicals	Collection Date	Test Result				Units	Violation	Likely Source of Contamination	
	Gross Alphah and Raduim	2015	All test results are below detectable limits or non detectable.				ppb	No	Industrial production	
Volatile Organic Contaminants	Collection Date	Test Result				Units	Violation	Likely Source of Contamination		
VOC's	2015	All test results are below detectable limits or non detectable.				ppb	No	Discharge from chemical / industrial facilities.		

About Your Drinking Water. Your drinking water met all Ohio EPA regulatory standards in 2016. The Ohio EPA requires regular sampling and specific testing to ensure drinking water safety. The Ohio EPA requires the Utility Department 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. In 2016 the Utility Department conducted more than 4,000 tests on our drinking water through a certified laboratory. On average 10 quality tests are conducted daily as our treatment facilities are staffed 365 days a year to ensure water quality.

Glossary

Please see the bottom of the next page for a glossary of terms used in the test reporting data.

The City of Pataskala has a current, unconditioned license to operate our water system by the Ohio EPA. Please see the chart below for operational information for the Water Treatment System.

Non-Regulated Secondary Standards- Non-Mandatory Water Quality Standards and Production Data								
	Required Test	Frequency	Yearly Average	MCLG	MCL	Units	Violation	Test Information
Water Treatment Plant #1	Iron-Fe (mg/l)	Weekly	Yearly Average: <.08	N/A	0.3	ppm	No	Iron is not a health related standard but is aesthetically unpleasant from its yellowish to brownish color and stale taste.
	Manganese-Mn (mg/l)	Weekly	Yearly Average: <.03	N/A	0.05	ppm	No	Manganese is not a health related standard but is aesthetically unpleasant due to the ability to cause stains.
	Hardness (mg/l)	Daily	Yearly Average: 98	N/A	N/A	ppm	No	Hardness consists of calcium and magnesium salts. Soft water creates soap suds easier. Water too soft can be corrosive. The harder the water the more residual deposits. Plant Operational hardness goal is 100-130 mg/l.
	Phosphate-P (mg/l)	Twice a Month	Yearly Average: 0.47	N/A	N/A	ppm	No	Added to help prevent leaching of copper or lead into the water and sequester any residual iron or manganese.
	Sodium-Na (mg/l)	Twice a Month	Yearly Average: 158	N/A	N/A	ppm	No	Information for those who may be on a sodium restricted diet. Average estimate 37 mg per 8 oz. serving.
	Total Gallons Produced	117.12 Million Gallons	Average Daily Flow: .32 MGD					
Water Treatment Plant #2	Iron-Fe (mg/l)	Weekly	Yearly Average: <.08	N/A	0.3	ppm	No	Iron is not a health related standard but is aesthetically unpleasant from its yellowish to brownish color and stale taste.
	Manganese-Mn (mg/l)	Weekly	Yearly Average: <.03	N/A	0.05	ppm	No	Manganese is not a health related standard but is aesthetically unpleasant due to the ability to cause stains.
	Hardness (mg/l)	Daily	Yearly Average: 104	N/A	N/A	ppm	No	Hardness consists of calcium and magnesium salts. Soft water creates soap suds easier. Water too soft can be corrosive. The harder the water the more residual deposits. Plant Operational hardness goal is 100-130 mg/l.
	Phosphate-P (mg/l)	Twice a Month	Yearly Average: .24	N/A	N/A	ppm	No	Added to help prevent leaching of copper or lead into the water and sequester any residual iron or manganese.
	Sodium-Na (mg/l)	Twice a Month	Yearly Average: 146	N/A	N/A	ppm	No	Information for those who may be on a sodium restricted diet. Average estimate 34 mg per 8 oz. serving.
	Total Gallons Produced	194.75 Million Gallons	Average Daily Flow: .53 MGD	2016 total production of <u>311.8 MG</u> <u>Average daily flow .85 MGD</u>				

Glossary

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. MRDLG's 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.

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

ppm: milligrams per liter or parts per million - or one ounce in 7,350 gallons of water or 1 second in 11.5 days.

ppb: micrograms per liter or parts per billion - or one ounce in 7,350,000 gallons of water or 1 second in 31.7 years.

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.

The City of Pataskala's Source Water Protection Plan

The City of Pataskala has an Ohio EPA endorsed *Source Water Protection Plan (SWPP)* which is a written, adaptive plan of action for protecting the water we drink at the source. The plan also includes emergency action plans in the event of contamination or major infrastructure that affects the quality and/or deliverance of water. Pataskala's SWPP includes active education and outreach opportunities to educate the general public on our plan and how residents can help protect our most precious natural resource. A SWPP Task Force has been formed with members of our community that desire to protect our Drinking Source Water. The Source Water Protection Plan and other helpful documents including an informational document "Potential Impacts on Your Source of Drinking Water" can be located on the City's Web under the Utility section at :

<http://www.cityofpataskalaohio.gov>

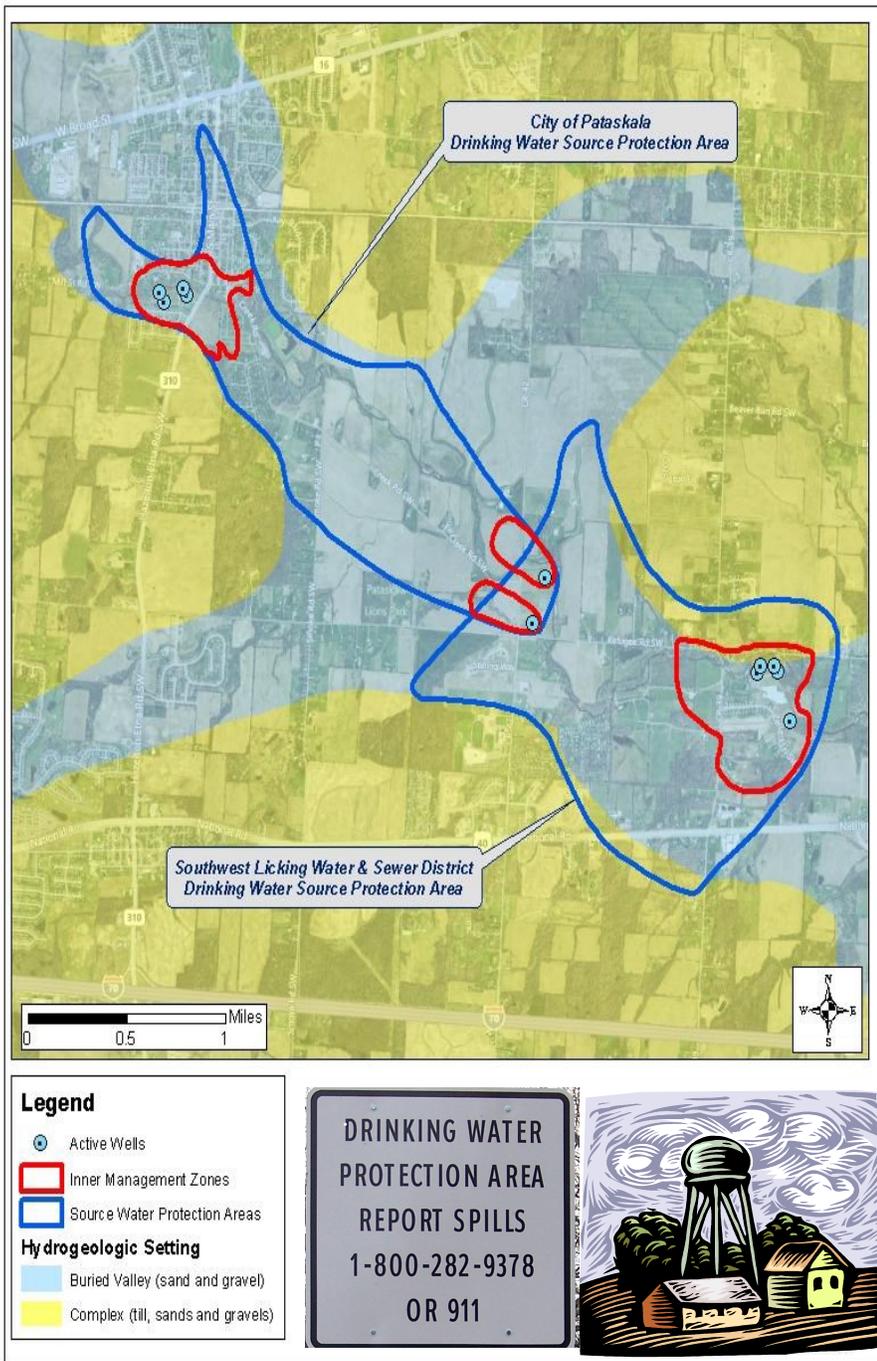
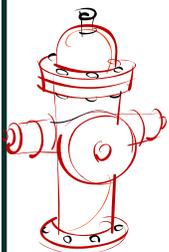


Figure 6. Overlapping Drinking Water Source Protection Areas



Hydrant Flushing

The Utility Department has scheduled to flush the fire hydrants throughout the City the week of **September 25-29, 2017**. Hydrant flushing is performed to ensure proper operation of the hydrants, and to purge sediments from the main lines. During the flushing program you may experience temporary pressure changes and you may observe slightly discolored water. It is recommended that if you see discolored water to notify the Utility Department and flush your water lines prior to running a load of laundry.

Backflow Prevention Program



Every time you turn on a faucet in your home you expect a flow of high quality drinking water. Safe, clean drinking water is not something we should take for granted. Every utility customer can play a role in protecting our water and ensure we have clean water every time we turn on the faucet.

Do you know that common hazards in and around your house can contaminate your drinking water as well as your neighbors?

These hazards are known as “cross connections”, and can result in contaminated water backflowing into your home’s drinking water supply without you even knowing.

What is a Cross Connection?

Any physical connection created between a possible source of contamination and any drinking water system piping.

Why be concerned?

ALL cross-connections pose a potential health risk. Backflow can be a health hazard for your family or other consumers if contaminated water enters your water supply plumbing system and is used for drinking, cooking or bathing. Chemical burns, fires, explosions, poisonings, illness and death have all been caused by backflow through cross-connections.

What are some common residential cross connection hazards.

- * Hose connections to chemical solution aspirators to feed lawn and tree herbicides.
- * Lawn irrigation systems.
- * Chemically treated heating systems / boilers.
- * Hose connections to a water outlet or laundry basin.
- * Swimming pools, hot tubs, and spas.
- * Private and/or non-potable water supply sources located on the property.
- * Water-operated sump pump drain devices.
- * Feed lots/livestock holding areas or barnyards fed through pipes or hoses from your water supply plumbing.

What can I do?

- * Be aware of and eliminate cross-connections.
- * Maintain air gaps. Do not submerge hoses or place them where they could become submerged.
- * Use hose bib vacuum breakers on fixtures (hose connections in the basement, laundry room and outside).
- * Install approved, testable backflow prevention devices on lawn irrigation systems.
- * Do not create a connection between an auxiliary water system (well, cistern, body of water) and the water supply plumbing.
- * [Complete the online Cross Connection Survey](#)

What must be done to protect the public water system?

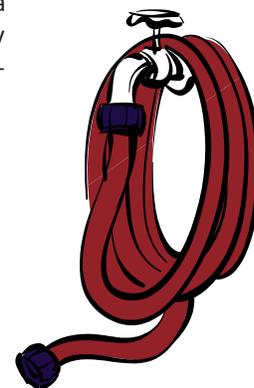
The City of Pataskala Utility Department must determine potential and actual hazards. If a hazard exists at a customer’s water supply service connection, the customer will be required to install and maintain an appropriate backflow prevention device at the meter and/or at the source of the hazard. You can help protect our water supply by completing our on line survey to determine if any cross connections exist.

Pataskala’s Backflow Prevention Program:

For more information on Pataskala’s Backflow Prevention Program and to complete the [Cross Connection Survey](#) type the following link into your internet web browser

<http://www.cityofpataskalaohio.gov>

or contact the Utility Director, Nathan Coey at [740-927-4134](tel:740-927-4134) or ncoey@ci.pataskala.oh.us



Facts about your water meter

General Water Meter Information

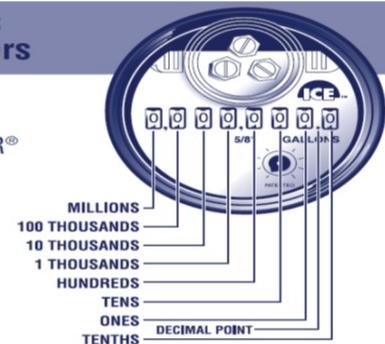
Your water meter is owned and maintained by The City of Pataskala Utility Department. The Utility Department utilizes Sensus SR II® Displacement Type Magnetic Drive Cold Water Meters as they have been proven to be highly accurate and dependable. Each standard residential meter includes a register with a straight-reading (left to right), odometer type totalization display in gallons; a 360° test circle with center sweep hand; and a low flow (leak) detector. Gears are self lubricating, molded plastic for long life and minimum friction. About half of our meters have electronic reading devices that allow the meter reader to drive or walk past your home and pick up the meter reading remotely.

How do Water Meters Work?

Water flows through the meter's strainer and into the measuring chamber where it drives the piston. The hydro-dynamically balanced piston oscillates around a central hub, guided by the division plate. A drive magnet transmits the motion of the piston to a driven magnet located within the hermetically sealed register. The driven magnet is connected to the register gear train. It reduces the piston oscillations into volume totalization units dis-

Gallons Registers

Sensus
5/8", 3/4"
and 1" SR®
meters.



Meter Accuracy



The mechanical design of water meters do not allow for adjustments of the dials or accuracy calibration of the meter. Similar to automobiles, odometers, or other mechanical devices, the meter slows down with age and eventually stops registering completely. The Utility Department has the ability to test for meter accuracy and a meter will be used until the accuracy is less than 97% accurate. The meter will not arbitrarily run faster than it was designed to run or run backwards. The mechanical parts are not capable of "speeding up" or registering a significantly higher reading than actual usage. Having a meter register 20,000 gallons of consumption when the usage was actually 4,000 gallons would be like a vehicle with a maximum speed of 100 mph suddenly being able to intermittently run at speeds of 500 mph, it isn't mechanically possible.

Is it possible for a meter to be read incorrectly?

Although it is very uncommon, the meter reader can incorrectly read the meter or incorrectly enter the reading in the hand-held device. For this reason, the Utility Department utilizes a monthly report through the Billing System that indicates any suspected high or low consumption numbers. This report is reviewed, and suspected misreads are automatically scheduled to be reread. We re-read every suspected misread on a monthly basis by manually reading the meter inside the home. The radio transmitter records each gallon of usage based on an electrical impulse from the meter, but if the electronic device malfunctions, usually due to the wire being broken or the battery running out, a manual read can be taken from the dials. In any event, the reading from the manual dials is always the official reading and will be used to adjust your bill if there is a problem. For this reason any manual read will let us know if there has been any previous billing error due to reading errors.

Helpful tips on Water Leaks

Every month the Utility Office is contacted by residents with high use reflected on their bill. Often residents are surprised at the volume of water used. If you feel your water consumption is higher than it should be, you should check for leaks. Leaking water produces a high water bill without your knowledge. Some leaks are sporadic and require some detective work. Other leaks are very obvious. It doesn't matter what type of leak you have, they both have solutions. **High usage is never related to a meter "reading" or "running" fast!**

The most common cause of high water usage and leaks in the home are TOILETS!

Toilet leaks often occur without audible or visual evidence. Leaking toilets can waste in up to 200 gallons of water per day and if undetected it could lead to an additional 6,000 gallons or more of additional water usage over the course of a month. Pin-pointing a toilet leak is easy and usually inexpensive. Follow these procedures to locate a toilet leak:

- Wait 5-10 minutes after the last flush.
- Remove tank cover. Is the water level in the tank too high and spilling into the overflow tube? If it is you have a leak.
- While you have the tank cover off, put food coloring in the toilet tank. Wait at least 30 minutes. If the colored water appears in the bowl, you have a leak.



How to detect a leak

First make sure all water using fixtures in your home are not in use. Check to see if the red circle on the face of the meter is moving; it is a low flow indicator. If it is moving, you either have a leak or something in your home is using water. Go find it! Places to look are toilets (flappers get old and wear out) faucets, hot water heaters, water softeners, etc.

Service Line Leak

Many leaks occur underground and, because of gravity and saturation of the ground can leak tens of thousands of gallons per month without visible evidence. Water leaks can develop in the home's water service line. The Utility Department maintains the main line and service line in the right of way up to the "curb box" or shut off in the yard. Property owners are responsible from the curb box to the home. Although such leaks can be difficult to detect, there are some telltale signs which may indicate that you have a leak in your service line. You should be continuously observant for:

Wet spots in your yard between the curb box and your house.

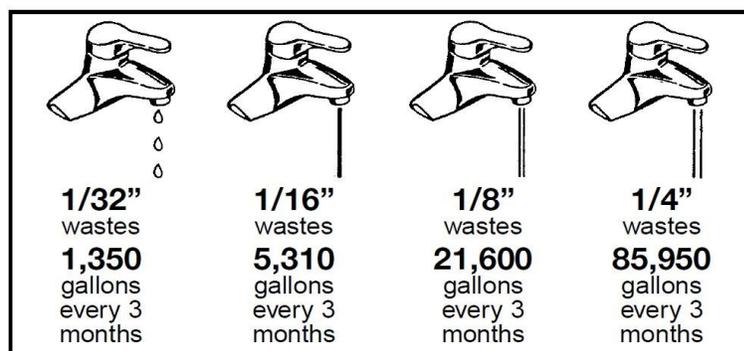
The sound of running water or a hissing sound coming from your main shut off valve when water is not being used in your home.

Water leaking into your basement or crawl space near the location of your water service line.

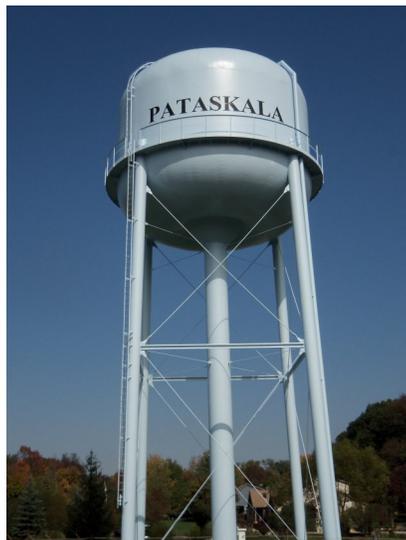
A noticeable loss in water pressure or flow throughout your home.

Water bills showing progressively higher water consumption that cannot be explained otherwise.

Note below how many gallons even a very small leak can use during a 3 month period:



The City of Pataskala
Utility Department
621 W. Broad Street
Pataskala, Ohio 43062



The City of Pataskala
Utility Department
2016 Water Quality Report

“We think of our land and water and human resources not as static and sterile possessions but as life-giving assets to be directed by wise provisions for future days.” Franklin D. Roosevelt
