

The Facts About Your Water Meter

General Information

Your water meter is owned and maintained by the Augusta Utilities Department (AUD), and is a highly accurate and dependable water measuring device. Located in a small box in the ground near the street or the edge of the property, it registers all the water used in your home or building in gallons. Some 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. However, the remote-read meters are of the same design as manual read meters with manual read dials that are always the official read in case a question comes up regarding the accuracy of the electronic reading. Most of the meters are read by sight. The meter is read by a meter reader every month.

Meter Accuracy

The design of the water meter does not allow for AUD to adjust the dials or the accuracy of the meter. Much like an automobile or other mechanical device, the meter slows down with age and eventually can stop registering completely, but it cannot arbitrarily run faster than it was designed to run. The mechanical parts are not capable of “speeding up” or registering a significantly higher reading than actual. 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.

All meters are calibrated and tested in the factory before they are shipped. The American Water Works Association requires meters to be within 98.5 and 101.5% accuracy to be usable. This means an error rate of 1.5% low or high. All of your water bills are charged per 1,000 gallons, which is the industry standard. This means if your perfectly accurate usage was 1,000 gallons, the registered consumption could actually be 15 gallons high or low per 1,000 each month and be within AWWA guidelines. To put this in perspective, if you had an average billed consumption of 7,000 gallons, you could have actually used a minimum of 6,895, or 105 fewer gallons per month if the meter was running fast but within AWWA guidelines. Over a year, this would amount to a total overbilling of 1,260 gallons. Since we round all consumption amounts down to the nearest 1,000 gallons, this would result in an excess charge of only \$2.24 for an entire year using 2010 rates. On the contrary, you also could be just as easily undercharged the same amount based on this acceptable meter variance. In reality, rarely does a meter test high enough to exceed 100% and significantly more often the meter slows down to a point where it under-registers and will eventually stop.

Your Meter Reading

The meter dial is like the odometer on your car. It continually reads your water consumption and is a cumulative total of the water that has run through that meter since it was installed. At any point in time you can get the consumption for a period of time by comparing the beginning reading to the ending reading. Please refer to the attached picture of one of our residential water meters. The first digit on the right is a “dead zero” because it doesn’t actually move. This is because each 10 gallons is registered by the sweep hand on the face of the register. The red hand that sweeps the dial measures usage by the gallon. Each revolution of this hand is 10 gallons of usage and moves the second dial on the right one unit. Each dial to left then turns every time the dial to its right turns over to zero. The meter pictured shows a current reading of approximately 60,816.5 gallons. Since AUD only bills per 1,000 gallons, the meter reader only reads the four digits pictured in white and enters those numbers into his hand-held as the meter reading, in this case 0060. This reading is electronically transmitted from the meter to the hand-held device for radio-read meters. This reading is subtracted from the previous reading for your account by the billing software, not your meter reader, to arrive at your consumption.

In order for you to monitor the accuracy of your meter reading, you can do the following:

- Note on your bill the approximate read date on your previous bill.
- Write down your reading on approximately the same date of the following month.
- Using only the digits to the left (in white most likely,) subtract this reading from the previous reading on your bill to determine your consumption during this period.
- Note that the exact reading date may be a few days before or after the date you read due to scheduling, weekends, etc.
- Compare your calculated consumption to your next bill.
- If you want to narrow down the time period for excess consumption, take your reading on a weekly basis (or daily if you’re really ambitious!)

Is it possible for the 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, AUD runs a monthly report that “kicks out” any suspected high or low consumption numbers. This report is reviewed, and suspected misreads are automatically scheduled to be reread. With over 67,000 accounts, this task can be daunting, but AUD tries to reread every suspected misread on a monthly basis. The good news is that any time there is a misread, AUD is able to tell by doing a manual reread, even if the meter is a radio-read meter. This is because 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.

Reading the Meters in Your Neighborhood

Each month our billing software creates a file that is uploaded into a hand-held device that is a small computer and is carried by your meter reader. Each route is scheduled and loaded into this device monthly and carried into the field. Each address in the route is brought up on the screen, in order, so the meter reader knows enough information to be sure he/she has the right address. It shows the meter reader the address and the meter serial number, and gives him/her a place to manually enter four digits for the meter reading. The prior month reading is not in the hand-held for the meter reader to refer to, so he/ she is unable make any kind of estimate for your reading as he/she will have no way to know what the prior reading was. If the meter is a radio-read meter, this field will be automatically populated, if not, the meter reader has to enter a reading or the device will not allow him/her to continue to the next meter. He or she cannot enter readings in a batch, they must be done one at a time and in order. When each reading is recorded in the hand-held, a date and time stamp is created and a report can be run to show when the meter reading was taken.

Maintaining Your Meter Box

To assist the reader, please keep the meter box free of garbage cans, boxes, piles of yard waste, or parked vehicles, as it is against Augusta ordinance to cause a meter to be inaccessible. Please do not install fences or plant trees or shrubs which restrict access to your meter or they may need to be removed. It is very common for meter boxes to become filled with dirt, leaves and other yard debris. There are many factors contributing to this. Meter boxes are generally slightly lower than ground level and are also typically at lower spots in your yard, so all run-off makes it into the meter box. It is our procedure to clean out the meter boxes so that the meter register is free from dirt and debris and easily read. However, it is common to clean out a meter box one month only to find the meter covered the following month. All it takes is a good rain or watering of the lawn for dirt to resettle over your meter from run-off. Dirt over the meter does not mean your meter is not being read. Your meter reading has to be entered into the hand-held (see explanation above) in order to be billed and cannot be estimated by the meter reader. Usually when we have reports of meter boxes being full of dirt and debris, the debris is easily cleared away and a meter reading can be taken. Dirt that is cleared away to read the meter can recover the meter even from insect or rodent activity or the result of slamming down the meter box lid. If your meter box is full of debris, call us at the number below and the meter box will scheduled to be cleaned out.

High Consumption

We also take calls from customers who report that their consumption is much higher than normal and these accounts are reread as well. When we do these rereads, we also do a visual check for evidence of leakage as indicated on the meter. Please note the small asterisk-shaped indicator on the center-left side of the meter in the picture attached. Most of our meters have these “flow indicators,” although some of them may be in the shape of a triangle. Steady movement of this indicator while there is no water usage taking place in the residence indicates there is usage taking place that is not visible to the casual observer. This indicator can show even the smallest amount of consumption. If this dial is moving with nothing using water visibly inside the premises, then there is leak or dripping taking place somewhere in the system. If the leak seems serious, you may wish to turn off your master valve, until the problem is located and repaired. If you do not have a master valve, you may call AUD to turn off your service. However, be aware that by Augusta ordinance, all customers are required to have their own shut-off valve so that AUD should not have to shut off your water when you want to perform plumbing repairs. It is to your advantage to repair all leaks and drips as soon as detected.

Some Facts on Water Leaks

Toilets can run without visible or audible evidence. This type of leakage can cause the most difficult to detect type of leak, an intermittent leak that is only detectible on the flow indicator if it is occurring while you are looking at the meter. This can easily be occurring at night or when you are at work, without any noticeable evidence. To help detect this problem, put some food coloring in the tank of your toilet before going to bed or while you are at work and let it sit without flushing. If there is leakage occurring, the food coloring will travel to your toilet bowl without it being flushed. To prevent this type of leak, replace your internal toilet mechanisms annually.

When your excess occurs during the summer months while you are using your sprinkler system, you may have a malfunctioning sprinkler timer that is running your system longer than you plan or on more days than you intend. You may also have an underground leak in your sprinkler system that will not be visible above ground and only affects your water bill during months when you are using your sprinkler system. You may be able to determine if this is the problem by monitoring your consumption by doing meter readings daily for a period of time and calculating your usage on days you use the sprinkler versus those days you do not. You can also do the meter readings before and after turning on your sprinkler for a cycle to really get a clearer picture of your water usage for the sprinkler system alone. You may be surprised to find this accounts for your excess consumption and you can call your sprinkler maintenance company to investigate.

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. Note below how many gallons even a very small leak can use during one month:

1/16"	25,000 gallons
1/8"	100,000 gallons
3/16"	220,000 gallons
1/4"	400,000 gallons

A leak detection company or a plumber may have electronic devices that can detect underground leaks that may be using thousands of gallons.

Meter Maintenance

AUD has a schedule to check your meter periodically to be sure it is working correctly and to repair it if necessary. The meter won't cheat you--meters in need of repair will under-register, rather than over-register your water usage. However, if you feel strongly that your meter is not working properly, you may request that your meter be tested. The charge for a meter test is \$50, but if test results show that the meter is over-registering water usage, you will not be charged for the test.

Meter Change-Out Program

AUD regularly replaces meters which are ten or more years old. When your meter is changed, a meter shop employee will knock on the door and notify you that your water will be turned off briefly while your meter is changed. There is no direct charge for a new meter. The new meter will be a radio-read meter that emits the reading electronically so that the meter reader can walk or drive-by and get the reading and therefore, does not require the meter reader to stop at your meter box. However, note that since meters typically slow down as they get older, chances are a new meter may result in higher consumption due to more accurate readings compared to the old, under-registering meter.

If you have any further questions about meters and meter readings, please call AUD Metering at 706-821-1857.