

Computer Corner

Meter register: singles, tens, hundreds or thousands

Q. Recently I was talking to another utility clerk who asked me if we should enter meter readings into the computer by the single gallons, the tens of gallons, the hundreds of gallons, or the thousands. I was a little embarrassed because I wasn't sure what she meant. I probably should have just asked her but I thought about it a moment and then answered that the readings are in the thousands. I answered that way because I know that we charge \$3.30 per thousand along with our standard minimum.

Later when I was talking to our meter reader he said that he brings me the readings in the hundreds of gallons and that is what I am entering into the computer, so the correct answer would be "the hundreds". He went on to try to explain that there are two numbers he doesn't write on the meter reading worksheet, one turns and the other is static. I still wasn't sure about it so looked up "water meters" on the Internet. Under "How to read a meter" at the Wikipedia Encyclopedia Website it explains how meters come in, as it says, "different resolutions". It talks about non-rotating numbers and sweeping hands and how some will have different colored odometer wheels. Even with our meter reader's explanation and the one off the Internet, I'm afraid I'm still not sure why we call what we do reading in the hundreds.

This feature of *The Kansas Lifeline* will address a handful of frequently asked computer questions in each edition. Readers are invited to e-mail questions to krwa@krwa.net to be answered in future articles.

A. While this is basic to folks experienced in the waterworks industry, don't feel bad because many clerks answer the same way you did, and for the same reason. They are accustomed to thinking in terms of how much is charged per thousand gallons of water and since they usually do not collect the meter reading themselves, and in fact may have never even looked at a meter before, it just may never have occurred to them exactly what the numbers they're typing into the system mean. In this day and age of machines doing arithmetic for us, once formulas are set up in a computer's software to figure the usage and the resulting bill, the computer does the math. Persons entering data are not always aware of precisely what the figures they type represent.

As your Web site research indicated, not all meters are created equal. However, most standard residential meters are fairly similar, and yet the way in which the district or city reports on them may vary.

The graphic of a water meter accompanying this article displays a seven-digit number. Six of the digits change while the seventh is a painted on zero representing the single gallons. On this meter, one revolution of the dial equals the use of ten gallons causing the first changing wheel, in black with white lettering, located to the far right of the turning numbers, just to the left of the printed zero, to increase by one. In the case of the meter shown here, once the dial that is pointing to the 8.3-gallon mark completes one revolution, the two, representing 20 gallons will change to a three, representing 30 gallons. Once one hundred gallons is used, the hundreds slot, presently displaying a four in this example, will change to a five.

Water systems reading in the single gallons would enter this meter's reading as 54720 (ignoring the 8.3 gallons shown by the dial). If the previous reading was 52510 the usage would be 2,210 gallons. For these systems, all readings and usage and the usage total for the month will end in a zero. If any of these numbers end in anything but

zero it is a dead give away that an error was made keying in readings. There are exceptions to this rule as sometimes there are meters, very few, in which the single gallons are not a static, i.e. painted on zero.

Water systems reading in the tens would enter this reading as 5472. If the earlier reading was 5251 then the usage would be 221 units of ten gallons each, which is like saying 221 ten gallon buckets, translating to 2,210 gallons. There is no difference in the outcome of billing in single gallons or tens, just a difference in how many times the clerk is required to hit the zero key.

Water districts reading in the hundreds of gallons would enter this reading as 547. If the previous reading was 525, the resulting usage would be 22, which translated to gallons would mean a usage of 2,200 gallons of water, which is a common monthly usage size for many households. The remaining ten gallons will be counted and billed once ninety additional gallons is used causing the dial representing the hundreds to change.

If your water district entered readings in the thousands instead, only the white dials, i.e. odometer wheels, would be entered. The reading would be merely 54. If last month's reading was 52 then the usage would be reported as simply 2, which would translate to 2,000 gallons. The remaining 200 gallons would not be counted until a later reading when 800 more gallons were used changing the dial representing the thousands of gallons. Commonly it is just these white dials that are read and reported.

When a water system's computer software has been set up correctly from the beginning, and the reading is always entered in the correct corresponding register, the software does the math. However, there is good reason for you to make this inquiry and come to an understanding of what the numbers you are entering stand for.

The perfect example of this is a water district that had just added a new customer – a school. This particular



district had their software set up to enter meter readings down to the detail of the tens of gallons. Before the newly built school all of their customers had common residential meters that had the one painted on zero like the meter shown in the example so they would have entered that reading as 5472. As is often the case

with commercial properties that use large quantities of water, a larger two-inch meter was installed for the school. The last two numbers, the tens of gallons and the single gallons, were each represented by a painted on static zero. It was actually the meter salesman that misinformed her. He told the utility clerk that she needed to be sure and include both zeros. This produced a huge bill she just couldn't believe was correct so she tried leaving off both zeros, which produced a tiny bill. If her district read in the hundreds that would have been the right thing to do. Fortunately she called and got the right advice and explanation.

When the clerk entering the numbers doesn't understand what the figures represent and therefore enters more or less of the numbers than they are supposed to for the way their water system is setup the bill will be incorrect. This, of course, translates into dollars and if the situation goes unchecked for months or years the losses can be dramatic.

There was a little town that went on for years and years charging a nursing home for using a few thousand gallons a month instead of the many tens of thousands they actually used. If the clerk had understood or if the maintenance man had been vigilant and hadn't been faking the water loss reports all those years, the mistake would have been caught in the beginning and the town would be many thousands of dollars richer.

Linda Winder and her husband Merle are owners of Thoroughbred Systems, Inc., Topeka. The company specializes in utility billing for cities and rural districts, computer networking and associated training. She has also provided assistance with graphic arts for the KRWA conference. Contact: lindawindler@yahoo.com

