

Washington RWD 1, First RWD in Kansas to Use Satellite Meter Reading

Rural Water District No. 1, Washington County, KS is the first rural water district in Kansas to install the latest automated meter reading technology. And according to manager Darrel Schlabach, the district is already experiencing good results with only a couple of months of operation.

Washington RWD 1, like many other rural water districts in Kansas and across the U.S., has the challenge of reading water meters that are spread over hundreds of square miles. Washington RWD 1 services 650 rural users and provides wholesale water to the cities of Hanover and Morrowville. The district's service territory extends 24 miles east to west and 20 miles north to south. The district's water sources include 14 wells operated from locations on the extreme east and west edges of the system and other well fields in the northeast and another in the northwestern section of the district. The capacity of the wells ranges from 40 gallons per minute to 100 gallons per minute. The district sells approximately 120 million gallons annually.

Another reason that Washington RWD 1 began installing the new satellite meter reading is because this RWD is the most likely candidate of all systems in Kansas to have located and repaired more leaks than any other system. The system has many miles of 1.5-inch solvent weld PVC pipeline. Since installation in the mid-70s, this pipeline has been prone to breakage at the weld joints. In 2012, the district repaired 142 leaks, with nearly all being on the 1.5-inch pipe. From 2006 to December 2012, the district has made an astonishing 884 repairs to the distribution system.



Several initial units were mounted on posts adjacent to meter pits in the more remote locations.

Satellite technology shows benefits

As of June 1, the district has installed 58 of the new IDT Harmony[®] satellite meter reading units. The technology provides these features:

- ◆ Full 2-way communication with the remote readers
- ◆ Daily loss detection through comparison of produced and sold amounts
- ◆ Reports and views by service area or zone
- ◆ Built-in structure allows for service area or zone comparisons

Schlabach explains that the new meter reading system downloads the meter reading from each meter at the same time each day. Various triggers or thresholds can be programmed for each of the individual customer meters.

"The technology is really helping the district – and the customers," Schlabach says. "Since we installed the first units in early March, and as of June 1 with only 58 units

installed, we have already been able to alert numerous customers that their water use is above normal for some period. And while reporting leaks on the customers' side of the meters sells less water for the RWD, our business is to serve the customers and they appreciate being notified," he says.

RWD 1 has been and still is largely a self-read system. However, nearly 200 of the customers have requested and have agreed to pay \$10 per month to have their meters read. That support by customers alone helped the RWD board and management to determine that the new satellite meter reading system would be a good investment. Amortizing all costs associated with the satellite unit, software fee and a new smart water meter, the district will recover its total investment in ten years based on the \$10 per month reading fee, not to mention the savings in costs otherwise to manually read the meters or the benefit of improved monitoring for water loss. The RWD board of directors recently adopted a new regulation that formalizes the district's "Meter Reading Program". The cost of meter reading of \$10 per month is part of that regulation. See it printed in the sidebar at right.

Washington RWD 1 plans to install about 60 of the new satellite meter reading units each year until the entire district transitions to the technology. Any new installations are immediately equipped with the satellite-read units.

Schlabach also says that the IDT Harmony® technology provides an advantage in that the technology does not require a specific meter. The RWD is installing new smart

Washington RWD 1 recently adopted the following Article 4 to its Rules and Regulations:

BILLS: Self-Read Meters: Consumers not on the Meter Reading Program will read their meters on the first day of each month or as soon thereafter as possible and will send or deliver the reading and payment to the District office not later than the 15th day of the same month. Meters without a reading on the 15th day of the month will be read and the consumer's bill will be subject to a \$10 meter-reading fee.

BILLS: Meter Reading Program: The District has instituted a program whereby all meters will be read by the District. When prior to the first day of a month the consumer receives a written notice that the consumer is enrolled in the program, the consumer is no longer responsible for reading the meter. The District will read the consumer's meter at the end of the month. A statement, which will include a \$10 meter reading fee, will be sent to the consumer on the first business day of the month and payment is due on the 15th day of the month.

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meters but is also converting many existing meters to the "smart-read" technology. The data gathered by the satellite meter reading is funneled into a Web application for easy integration into the district's existing billing and accounting software.

Washington RWD 1 uses Thoroughbred Utility Billing software.

The district has been somewhat selective in deciding where to install these initial units. For example, the RWD has customers who have usages that vary widely, even from day to day. Because the district can access the meter readings from anywhere through the Internet, having immediate access to those meter readings has already saved the district time that would have otherwise been spent looking for leaks when in reality it was use by customers that required the additional production of water. For



IDT Harmony® satellite reading antennae mounted on backside of rock post.



This customer in Washington RWD 1 has a sense of humor.



Glenn Davis, trainer for IDT, instructs Washington RWD 1 Manager Darrell Schlabach on the installation of a satellite meter reading unit.



The corner of this house in Washington RWD 1 has three antennae, with the center unit being the IDT Harmony® water meter reading technology.

example, in March nearly 10 percent of the district's customers used more than 50,000 gallons. Some of those customers' usage will vary from 50,000 to more than 500,000 gallons in any month, mainly because of livestock use. The new daily reading report allows the district staff to see what's going on instead of speculating if there's another leak somewhere.

The district surprised a business customer recently by reporting to him that the business had used hundreds of gallons of water on a Sunday. The business was not open that day nor was anyone at the location during the period. The customer appreciated being notified; they found a toilet ball valve failure that was allowing a continuous flow of water.

The system allows the RWD to securely access data from any connected web browser. From there, the district can read, manage and control meters through a simple, familiar Web site.

There are many applications where this technology could be of significant and immediate benefit to RWDs in Kansas. Many systems are or have the potential for subdivision; many systems have hundreds of miles of distribution system. Master meters at pumping stations or at points of entry to subsections are perfect locations to apply the satellite meter reading technology to help operators get a better handle on operations.

Yes, there are other ways of accomplishing remote meter reading but those generally require a power source or other telecommunications equipment at much greater cost than the satellite-based technology. To learn more about the technology, see IDT's Web site at www.idt.us.com.

The latest feature that IDT has introduced is a solenoid valve that can be installed on individual meter settings. The valve is a satellite-enabled valve that allows rural water utilities to remotely turn off or on customer's water supply in the field. The valve is controlled using the Internet via a secure login.

As the price of producing or purchasing and delivering water continues to increase, the satellite-meter reading technology provides unique opportunities for water systems to improve operations and their efficiency.

Elmer Ronnebaum is KRWA General Manager; he has been employed by KRWA since 1983. He served seven years on the KRWA board of directors prior to that. He also helped develop a large RWD and served for fourteen years on a water district board of directors.

