

With a pump and motor stuck in a well casing, Scammon works to complete a new well

In the 1890's the city of Scammon drilled its first water well for municipal use. Since that time that well provided the people of Scammon with clean, safe drinking water. In 2006 that changed when pulling the pump for routine maintenance.

The city had set up a preventative maintenance schedule to pull the pump every seven years to service the pump and motor and replace any pipe that showed signs of deterioration. As a contract crew began to pull the pump, the submersible pump and motor broke off at the threads attaching it to the well pipe. This caused the pump and motor to lodge into the sides of the well casing. On several occasions crews were brought in to try and remove the pump and motor from the well; none were successful. Thankfully the city had a second well to use as a backup to the primary well.

Mayor Jerry Grant knew the city had little option but to replace the old well. Due to the moratorium on drilling new wells in the state of Kansas, the city would have to drill the new well within 100 feet of the old well to maintain the same water rights. This would prove problematic as the original well was located inside the city public works building and the city's only water tower was located directly outside the building. Luck was however on the city's side and they were able to find a suitable location at the edge of city property that was within the desired distance.

The next obstacle to overcome was funding for the project. The city applied for a Community Development Block Grant (CDBG) thru the Department of Commerce and matching funds from the Kansas Public Water Supply Loan Fund. The city was awarded the CDBG grant in the amount of \$110,284; the Kansas Department of Health and Environment also approved the loan for the funding match.

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It's was a bright July 8, 2008; the flag was flying from a drilling rig owned by Tichenor Drilling of Wheaton, MO. on a well project in Scammon, KS.

Engineering out of Joplin, Missouri was hired to prepare plans and specifications and to prepare the project for bid. Tichenor Drilling of Wheaton, MO was the low bidder at \$175,500.

Drilling of the new well began on July 8. The first day of drilling went well, reaching a depth of 500 feet. That progress was short lived however as weather and mechanical problems plagued the Tichenor crew. After several delays the crew was able

to complete the first phase of the drilling operation and on the 17th of July, set the well casing to a depth of 600 feet. After setting the casing the drilling continued and on July 29, the final well depth of 1108 feet was achieved.

A test of the well's pumping capacity and water quality was the next phase of the project. Subcontractor Tiff City Pump of Tiff City, MO was selected to handle that phase of the operation. On September 8, 2008, a crew for Tiff City Pump was on site to conduct the test. A total of 500,000 gallons of water was pumped from the well at a rate of 380 gallons per minute. The original static water level was at 240 feet; drawdown tests were taken throughout the pumping cycle. The average draw down for the well was calculated to be in the area of 20 ft. Water quality tests were also taken during this time and sent to an independent lab for analysis. These tests showed that the water was of an acceptable quality and the project was ready to continue.

The pump selected to be installed in the city's new well was a 4-inch, 15 horsepower submersible that has the capability of delivering 120 gallons per minute to the city's water plant. Also installed in a pit next to the well was the city's new raw water meter and strainer. A flush hydrant was installed outside the meter vault so the city would be able to check the accuracy of the raw water meter.

On December 18, after five months of work, the new well was ready to be put into service. Greg Taylor of the Kansas Department of Health and Environment, Chanute,



A crew member from Tichenor Drilling watches the gauges as the drilling reaches a depth of 500 feet the first day.

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KS, was on hand to do a final inspection of the project; he gave the go ahead to begin pumping.

The final aspect of the project which remains to be completed could prove to be the most challenging to date; it is plugging the old well. The problem is that to complete this task a pipe must be lowered into the well so that grout can be pumped in, filling the well. This could prove complicated because of the pump and motor that

remain lodged in the well. The city of Scammon has been granted a variance that would allow them to only cap the portion of the well above the lodged pump and motor but only if they are unable to get a pipe past the obstacle.

The city of Scammon faced a difficult situation. As everyone in the water business understands, it sometimes takes perseverance to see through problems that crop up in spite of due diligence in planning. Getting this project completed is a testament to the community and its personnel as they were able to overcome the problems and continue to provide quality drinking water to their customers.

Eric Davolt began work as a Technical Assistant for KRWA in 2008. Eric holds a Class IV Water and Class III Wastewater operator certifications. Prior to his service with KRWA Eric was employed with the city of Columbus for eight years.



This new well in Scammon is equipped with a 4-inch, 15 hp pump that produces 120 gpm. The well is 1180 feet deep.