

City of Haven Spends \$4.9 Million On Water System Upgrades

The city of Haven, KS, population 1,237, is located just off K-96 Highway between Hutchinson and Wichita. Although some might consider it a bedroom community, Haven does have its share of small businesses and its location is convenient. With two automotive dealerships, Haven Steel, Kincaid Equipment, Stinger LTD, Pan Handle Eastern Pipeline Co., Mid Kansas Coop, Kauffman Seed, a grocery store, a hardware store, Post Office, a convenience store, several financial institutions and variety of other small businesses and professionals, Haven, Kansas has a lot going on.

Haven's infrastructure, like so many small towns, is showing its age. The water system dates back to 1921. Waterline valves were non-functional and or buried beneath asphalt; fire hydrants were hard to operate or wouldn't shut down once opened. The city also has a nitrate level in two of the city's well ranging from 16 to 27 mg/L. The nitrates began to increase in 1996 – 1999. Two wells were discontinued since they exceeded the drinking water standard (Maximum Contaminant Level or MCL) of 10 mg/L. Two wells have nitrate at less than the MCL with present readings of 5 mg/L to 7 mg/L.

The city contracted with the Kansas Geological Survey to investigate the groundwater in the area and the possibility of developing a new well field. A total of 35 wells were sampled and six test wells were drilled. Of those, 17 of the wells that were tested exceeded the MCL for nitrates and had poor basic water quality with high Total Dissolved Solids (TDS) ranging from 362 to more than 2,500 mg/L. These results led the city to chose the treatment plant option. It was also determined that two of the city's wells had been contaminated with nitrate from wastewater due to leaking sewer lines or old septic systems.

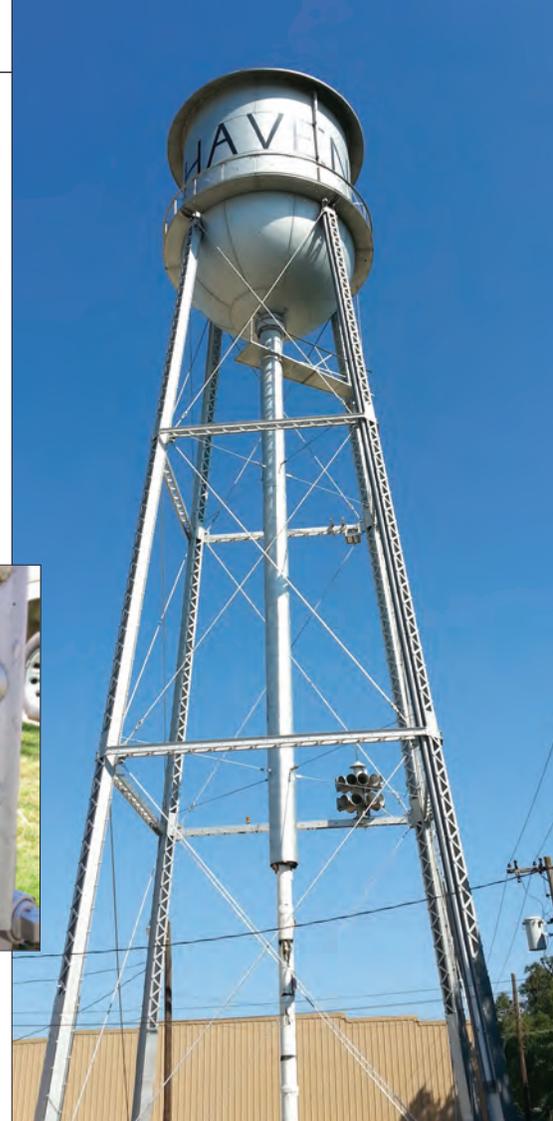
Minor improvements have been undertaken in the last ten years by the city to replace some fire hydrants and valves, however no major improvements have been made until recently. An entirely new addition was added on the west side of town next to Haven Steel. Talk about bad timing! After the new water lines were installed the manufacturing plant decided it

needed to expand and the new line had to be moved even before anyone had been connected to it.

In all 1,425 feet of 8-inch and 3,600 feet of 6-inch and 4,725 feet of 4-inch C-900 PVC pipe has been installed in the present project in 2013. There are 90 new mainline valves and 21 new fire hydrants installed. Also the city is constructing a new 300,000-gallon water storage tank to replace the original 50,000-gallon riveted tank.



The original 1921 tag is very legible on the old tank from Chicago Bridge & Iron Works Builders. Right: Haven's 50,000-gallon riveted tank will be taken down when the new tank goes into service.



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Gerard Tank & Steel, Concordia, KS, prepares large tank sections for welding.

The old tank will be dismantled once the new one tank is in service. To address the nitrate issue the city is constructing an ion exchange nitrate removal plant. There will be more information on that project upon completion. The distribution system and new transmission line upgrades have already been completed. And once the new plant is completed the water will be rerouted directly to the plant for nitrate removal instead of feeding directly into the distribution system as has been the manner of operation. The improvements have gone smoothly with the residents being very understanding according to City

Administrator Alan Blake. This was probably due to the fact that the city was good about notifying and preparing the residents for the project. While the tie-ins were being made with new lines, the water was sometimes off several times per day.

All of this is not without a tremendous cost at \$4.9 million which has a \$3.435 million loan and a \$1.472 million grant. This is some of the last of the American Recovery Act funding through USDA Rural Development. Water rates have also had to be increased to service the new debt. Three rate increases have been made since the planning stages of the project

from a minimum charge of \$17.26 for 3,000 gallons included and \$1.04 per 1,000 gallons for the next 33,000 gallons. The new rates are \$34.70 minimum with 3,000 gallons included and \$2.08/1000 gallons for the next 3,000 gallons. The city uses an increasing block rate for water used beyond that amount.

The project consultant is Aqua Tech of Augusta, Kansas. The distribution system contractor was APAC of Hutchinson, KS. The water tower is being constructed by Gerard Tank and Steel of Concordia, KS. The new water treatment plant is being constructed by Walters Morgan Construction of Manhattan, Kansas.

USDA Rural Development is but one of several agencies that provides funding support for water or wastewater system improvements. The agency can be contacted through its Web site at www.rurdev.usda.gov/KS_Home.html.



Jon Steele has been employed by KRWA as a Circuit Rider since 1995. Jon is certified as a water and wastewater operator. He has more than twenty-five years experience in public works, construction and industrial arts.

