

Kensington Uses Water Rights Conservation Program to Secure Water Supply

The city of Kensington, located on U.S. Highway 36 in western Smith County, Kansas, has just completed a long journey, meeting a community goal of water right compliance and security of their water future.

Kensington, population 443 (estimated, 2016), was founded in 1887, and was named by the President of the Chicago, Kansas & Nebraska Railroad after his hometown in England, when the rails of his company's railroad reached this location. Water lines were installed in 1909 and the water storage tank (still standing) was erected in 1910. All water wells the city has ever used for municipal purposes, except for one or two, are still authorized under their water rights. The city once had its own electrical plant, which partly accounts for at least some of the eleven wells it has. The original well used by the railroad remains on their water rights.

The railroad well is available for irrigation of athletic fields and for fire protection. Two of the three wells on the west side of town are impacted with elevated contaminants. These two wells are very close to each other, yet one has a higher than acceptable level of nitrate and the other arsenic. Because of their proximity, the water from both wells is blended together in a common mixing tank. The resulting mixed water is diluted to meet drinking water standards, and is further diluted with water in the distribution system. There are three wells on the north side of town which provide some of the water needed by the residents. One has levels of nitrate that occasionally exceeds drinking water standards. This well is used by the local co-op for mixing with various agricultural spraying compounds.

The Kensington water storage tank stands tall more than 107 years after it was constructed.

The best wells are located south of town not far from Middle Cedar Creek, a tributary of the North Fork Solomon River. Unfortunately, these best wells are authorized by the city's vested water right, which is only authorized 10.000 million gallons per year on five wells. Primarily because of the properties of the aquifer (saturated thickness, sand grain size, etc.) used by the in-town wells, overpumping of the south wells happened occasionally during the dry years. This could not continue legally, nor was it advisable to be in a situation where overpumping would likely occur if there was a major leak, a fire, or if a well collapsed. A solution to the water right dilemma was needed.

In 1949, an application to establish a vested water right were filed by the city. This information was used to issue a Vested Right Order in 1954, listing 4 water wells to be authorized, with 10 million gallons per year. Three of these wells are located in town and the fourth one is located approximately 1½ miles south of town.

To alleviate the overpumping at the (now) two wells south of town, a water right solution was determined to be the least expensive solution. The first question to be asked was whether or not the Chief Engineer would grant a permit or two to develop new water rights on the existing wells. Answer: No. New permits in this area were judged to negatively impact previously established water rights in the North Fork Solomon River Basin and therefore no new permits from aquifers connected to the alluvium would be issued.

The next possibility to explore was the supply of water from another public water supply system. Located near the city was a pipeline for Rural Water District No. 1, Smith County. The city



The new municipal water supply well is located very near the irrigation well it replaced. Electrical service was already present, and the properties of the aquifer at that location were known to be satisfactory. The well is not located in a cultivated field and the irrigation well that was replaced has been plugged.

contacted the District to inquire about the possibility of becoming a customer, and the District asked their engineer, Schwab Eaton P.A., to provide information to make a reasonable reply. Mike Butler of Schwab Eaton replied in a March 2013 letter, which was shared with the city. The letter referenced a 2007 Water System Evaluation that was prepared for Smith RWD 1 by their office. At that time, it was believed that peak day production was reached in 2005 & 2006. The recommendation was then, and reconfirmed in the letter, that no new commitments to new customers be made and that the District develop an alternate source of supply, if a new location could be located. The District declined the request of the city.

If no new permits can be issued in the Kensington area, and the closest public water supply system could not take them as a customer, then maybe a solution could be identified within the city's existing water rights. As the four original wells were grouped together under one water right, it was logical to promote the transfer of other nearby city-owned water rights (and their authorized quantities) a similar distance to the south wells. A complicated scenario was proposed with the filing of applications in September of 2013, where nearly all of

the city's wells would be authorized under a different city-owned water right. Most of the in-town wells would see a reduction of quantity (which would be closer to the actual annual use) while the south wells would see an increase in quantity if approved. This was based on the premise that all the wells under a single water right, and under all of the other city's water rights, share the same "local" source of supply.

Water right diversion locations can be changed,

but Kansas water law requires that the new location be within the "same local source of supply" as the original diversion location. None of the five Chief Engineers to serve in the Division of Water Resources has chosen to assign a specific distance to proposed changes in point of diversion for those changes to remain "local". Regulations in some of the Kansas groundwater management districts have limited relocations to 1,320 feet in the past but it appears that all of them now allow a new location up to 2,640 feet away from the original location. Hydrological calculations estimating well drawdown or pumping influence can be submitted to argue for longer changes of distance. This kind of justification is more favorable to water rights with high diversion rates. This wouldn't be an option for Kensington due to the low rates of diversion authorized by the city's water rights.

In October of 2014, the Division of Water Resources staff indicated that the applications could not be approved because some of the water rights were proposed to authorize wells in a different "local" source of supply, and some proposed wells would be closer to Middle Cedar Creek, reducing the distance between the wells and from the stream by more than 10 percent.

K.S.A. 82a-741. Water conservation program; enrollment; application; fees; administration; rules and regulations.

(a) The chief engineer may administer a water rights conservation program. An eligible water right in good standing may be enrolled in the program, subject to the approval of the chief engineer.

(b) A water right may be enrolled in the program for a period that shall not exceed 10 years. A water right enrolled in the program may be re-enrolled within two years of the expiration date of the previous enrollment period, subject to the approval of the chief engineer.

(c) Each application for enrollment in the program and each application for renewal of enrollment shall include a non-refundable fee not to exceed \$300.

(d) All fees collected by the chief engineer pursuant to this section shall be remitted to the state treasurer as provided in K.S.A. 82a-731, and amendments thereto.

(e) The chief engineer shall adopt rules and regulations to effectuate and administer the provisions of this section.

History: L. 2011, ch. 89, § 25, July 1.

The regulations adopted by the Chief Engineer pursuant to K.S.A. 82a-741(e) for new enrollments of water rights in the Water Rights Conservation Program are found in:

K.A.R. 5-7-4b. Water rights conservation program; tier 2.

While contemplating whether to challenge the state's determination, another solution was coming together that would provide additional quantity and reduce the dependence on the south wells.

While working on the potential water right change solution, the new-water-right-permit solution in a different location was still being evaluated. If a location could be identified that had sufficient groundwater resources, and not too many other water rights in the area, the thought was that maybe a new well could be drilled and the water delivered by a pipeline into town. Southwest of Kensington, it was noticed that there was a small irrigation water right authorized. Maybe the aquifer extended a mile or so in the direction of Kensington, and maybe a landowner would give permission to do some exploratory drilling to assess the presence and quality of the groundwater. To understand the potential of a new water right, the

existing irrigation right would give a few clues as to the quantity of water that was certified and the rate of diversion that might be possible.

What was found was that the quantity of water certified (based on actual use during the perfection period) was slightly less than the quantity that was originally permitted. The authorized place of use was relatively small, only consisting of 35 acres. The land was not very level and it appeared to be a challenge for efficient flood irrigation. Being a smaller than average Kansas irrigation water right, it might be a more attractive water right to a small town than an irrigation water right authorizing 160 acres. But before deciding to start a new water right project, the mayor decided to discuss the possibility of purchasing the water right with the owner.

The timing was right to do this, as the water right had been enrolled in the Water Rights Conservation Reserve Program or WRCP (see sidebar). The deadline to re-enroll or to resume irrigation was the end of the current year! Water rights can be enrolled in this program, resulting in a contract

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that prevents the use of groundwater for a specific period of time, up to ten years. The Chief Engineer stipulates in the contract that during the period of enrollment, the contract will be “due-and-specific” cause for non-use, and that the water right will not be considered to be abandoned by the non-use during the contract period. As discussions continued, permission was granted to view the authorized irrigation well. Visually, time did not appear to be kind to the well and pump that sat idle for the ten years the water right was enrolled in the WRCP. There also did not appear to be any irrigation pipe present to carry water to and through the field authorized for irrigation. A sizable reinvestment in irrigation equipment appeared to be necessary to resume that activity.

Research and negotiations occurred to set a price for the water right and permanent easement that was acceptable to both parties. This purchase was contingent on successful approval of the change of the water right to municipal use. It was also agreed that payments for the water right would be spread over 21 years.

Before the purchase was completed, a water right application to change the water right was filed and approved. The quantity that was authorized for irrigation was 50 acre-feet (or 16.293 million gallons per year (MGY)) and the quantity that was allowed to be converted to municipal use was

14.549 MGY, based on the maximum number of acres irrigated during the water right’s perfection period. The authorized rate of diversion remains at 80 gallons per minute (gpm).

The city hired Schwab Eaton, P.A. to design the well, chlorination building and the pipeline to town.

To pay for the water right and wellsite easement, the design work for the well, chlorination building,

pipeline, meter, etc., the city took advantage of the Kansas Public Water Supply Revolving Loan Program.

Clarke Well & Equipment of Great Bend, Kansas, won the bid to drill a test well and a new well to replace the irrigation well. It was completed in September of 2017. The top thirty feet of the irrigation well casing was pulled and the original irrigation well hole was plugged to prevent the migration of surface water and shallow groundwater into the aquifer.

Larson Construction of Manhattan, Kansas, constructed the chlorination building and installed the 5.25 mile-long pipeline to connect the new well to the city’s distribution system.

The results of this project are a new well, from a new and separate location. The wells and water rights in and near town remain as they were, but with less water demand upon them. The cost of the water for customers of the city has increased to satisfy the purchase agreement through 2037. However, with a higher total quantity and less reliance on the most productive wells, enterprises with low to moderate water demand may find Kensington to be an attractive community in which to build a new facility.

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