



Observation wells to provide data on water usage

— By Wally Kennedy

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ASBURY, Mo. — Jim Triplett said he was thrilled to learn that Missouri is drilling two wells near Asbury to gather data on groundwater use in the region.

“I have been jumping up and down and waving my hands in the air about this for a long time,” said Triplett, head of the biology department at Pittsburg (Kan.) State University and the most recent chairman of the Neosho River Basin Advisory Committee.

“The advisory committee is happy to see this getting serious attention on both sides of the state line.”

The two observation wells were drilled by the Missouri Department of Natural Resources north of Asbury in the Mon-Shon Conservation Area to shed light on a question of critical importance to residents and communities in Kansas: Is the supply of groundwater in Southeast Kansas being affected by the withdrawal of groundwater in Missouri?

The Asbury wells and eight others across Southwest Missouri are being drilled to fill data gaps, said Cynthia Brookshire, hydrologist with the DNR.

“We have 80 observation wells in the state. After looking at the information provided by those wells, it was clear we had some data holes — places where we need information and just did not have it,” she said.

The wells — a shallow one and a deep one — were strategically located north of Asbury to determine whether demand for groundwater in Missouri was affecting the supply of water across the state line.

Shared aquifer

Both regions pull water from the Ozark Aquifer to meet municipal, agricultural and industrial demands, but the aquifer only goes a short distance into Southeast Kansas before it encounters salt water. As the demand for groundwater increases in Southeast Kansas and Southwest Missouri, the concern is that the salt water will migrate to the east. Wells that once pumped clean water from the ground could be shut down because of salt-water intrusion.

Triplett said the concern is real.

“The dewatering of the aquifer probably will occur at the upper ends of the aquifer first and then the lower end, where salt water could be drawn up

from the bottom,” he said. “In addition, depletion of the aquifer would increase the migration of surface water into the aquifer, and increase the migration of water between the upper and lower aquifers.”

The migration of water between the aquifers is a concern for Southwest Missouri because of the abandoned lead and zinc mines that exist there, he said. Much of the shallow aquifer, known as the Springfield Aquifer, is contaminated with heavy metals.

Jim Vandike, a water specialist with the DNR, said the new monitoring wells are being placed in specific areas to provide specific information. The wells north of Asbury will gauge the influence of two large water users in that area — the Asbury Power Plant owned by The Empire District Electric Co. and the city of Pittsburg. In addition, the irrigation of crops in summer is on the upswing in Barton County.

Litigation

Kansas, a “prior appropriation” state where water use is regulated, has sued other states over water. Vandike said there is a concern that could happen in the future with Missouri. The data supplied by the wells will help the state respond to the possibility of litigation.

“No one but lawyers benefits from a lawsuit,” Triplett said. “We will not serve anybody well if either side forges ahead unilaterally. We are tied together on this issue. I have great hopes we can work together to figure out a solution that optimizes the water resource.”

At the same time Missouri is moving forward on the issue, the U.S. Geological Survey is putting together a groundwater model of both the Springfield and Ozark aquifers in Southwest Missouri, Northeast Oklahoma and Southeast Kansas. The new wells in Missouri, Vandike said, will help the agency calibrate that model.

Vandike said the wells in Southwest Missouri were among the first in the state to be drilled because of groundwater issues in the region, including increasing use.

The other wells in Southwest Missouri were placed at Mount Vernon, Neosho, Butterfield and Springfield. The wells at Mount Vernon are on the west side of the town at a maintenance building operated by the Missouri Department of

Transportation. The site was selected because there are no monitoring wells in that area and because Mount Vernon was forced to lower its municipal pumps last summer to meet demand.

The wells at Butterfield will monitor water usage in the area of George's poultry-processing plant. Vandike said the state has received reports that private wells around the plant have been impacted.

The wells at Neosho will be in the Fort Crowder Conservation Area to monitor water usage by MOARK, an egg-production company near Neosho.

Brookshire said, "These wells make good sense scientifically because we will know the true facts about what is happening. We're drilling one shallow well and one deep because we don't know that much about interaction between the two aquifers."

The wells will have satellite hookups to provide real-time data on water usage, which Missouri has been monitoring since the 1950s. The wells will measure the impact of precipitation, and recharge within the shallow and deeper aquifers.

Usage up 60 percent

The observation wells are being drilled at a time when groundwater usage in Southwest Missouri has risen sharply, according to Ryan Mueller, with the Water Resources Center of the Missouri Department of Natural Resources.

Groundwater usage from the Ozark Aquifer, he said, has increased 60 percent between 1990 and 2000. The aquifer holds an estimated 116 trillion gallons.

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Photos



Globe/Raymond Hillegas Redd Blevins (left) and Brian Bauer, with Sunbelt Environmental Services Inc., work at the site of a rotary well rig at the Mon-Shon Conservation Area north of Asbury. The rig is being used to drill a well so that a water-level monitoring station can be set up to provide the Department of Natural Resources with accurate water levels.