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Water worries: Chicken house movement brings groundwater aquifer shortages to light

By KELLY BOSTIAN Tulsa World Aug 25, 2018



OAKS — It was the second so-called “chicken house” meeting at Oaks, and under the glow of the golden-tinted windows of Eben Ezer Lutheran Church, Jonathan Allen fielded questions from a crowd beginning to sound less and less church-like.

Among the 130 people that filled the pews, at least a dozen had earlier raised their hands to say their household water supplies were depleted or dry. They wanted answers, and Allen, assistant general counsel for the Oklahoma Water Resources Board, had responses but not the ones this group wanted.

In Oklahoma’s Green Country, known for its clear water streams, lakes and rolling wooded hills, the idea that water could be in short supply is shocking, upsetting and depressing for rural residents on domestic wells. A common refrain is heard at meetings among members of a coalition formed in opposition to a growing number of poultry operations under construction in Delaware, Mayes, Cherokee and Adair counties.

“Water is life,” they say.

But the answers lie in an in-depth study that will be required to know what is happening or to set new rules. Study of the shallow Boone Aquifer and the underlying Roubidoux Aquifer of this region is only just beginning. Ordered one year ago by the OWRB, it will take another

four years for the USGS to wrap it up, and it appears the answers this group wants lie in the data and the research.

Most residents blame a sudden increase in the number of poultry farm operations in the region. Each chicken house may hold tens of thousands of chickens at a time and may produce hundreds of thousands annually. One farm might hold 12 or more houses. A 2013 University of Arkansas study showed commercial flocks consumed an average of 50.32 gallons of water per 1,000 birds per day.

While poultry operations are required to self-report their water use, metering of water in Oklahoma is required only on municipal systems. Otherwise, the water belongs to the landowner.

If a majority of landowners in a basin want to start metering, there is a process to make it happen, Allen said. But if a basin decided to try it, it would be a first. The metering would not just apply to select large users but everyone.

OWRB does have a complaint process for people who believe a commercial operation in their area is pulling down water supplies and a protest process that applies to permit applications for new operations.

The OWRB only deals with water quantity use issues and not contamination or operation issues that might fall to the Department of Environmental Quality or the Agriculture Department. Allen admits it can be confusing.

“If they have a domestic well that has gone dry, they need to let us know why they think it’s dry,” he said. “Is it a nearby well, or they suspect incorrect construction or it’s operated without a permit ... What relates to the actual water right is what we can rule upon.”

Leach resident Mick Foreman shared his worries about water he pulls from the Boone at what used to be a little clear-water pool in a shady hollow below his home. The shallow Boone is characterized by many sinkholes and springs open to the surface. The Roubidoux is in porous rock far below.

A small earthen dam in the drainage at Foreman’s house would hold back a supply of the spring water, and he would pump it up to his horse barn, until about a year ago. He trains roping horses and always has a few roping calves around, too.

Now, the old pump hangs useless on a nearby tree, and the electric supply is cut off. About 36 poultry houses now stand within a mile of his home, and he said he believes the extra wells bored for the poultry operations have pulled down groundwater levels and all but dried up that shallow spring.

Recent rains filled the holding pond again, but after it sat dry for so long — save for one tiny pool about 8 feet long — the runoff that filled it is full of nutrients, it's a dark color and it's growing duckweed on its surface. The pool in the drainage is just about 3 miles upstream from Spring Creek, one of Oklahoma's most pristine clear water streams.

"It's 4 feet deep, and it used to be you could see right down to the bottom," Foreman said. "I don't have tests to tell you. I don't know what turned it black, I can just show people something's wrong."

Problems at the pond coincided with well-water issues in the home his family has owned for more than 20 years. "The well just wouldn't recharge fast enough anymore," he said.

Foreman called a pump service company and had an extra-large holding tank installed. That gives the family a ready reservoir to use, but they still have to be careful about how much they use at one time.

Jay resident Shirlene Denny put it this way: "Everyone is worried about water quality issues, but I'm worried about water, period."

She is another with water supply issues that cropped up recently. She was advised not to drill her 375-foot well any deeper, and she installed a 175-gallon holding tank.

“Now, there are 12 new chicken houses going in within a quarter-mile as the crow flies and then what’s going to happen?”

John “Doodle” Christian, who took over his father’s Jay Pump Service business in 1980, confirms the well issue is relatively new in the area. He doesn’t claim to know what’s going on but “it’s keeping us busy.”

A few years ago, he was thinking earthquakes may have had an impact on some of the wells, many of which have a relatively low yield of 8 to 10 gallons a minute. “It doesn’t take much to knock those out,” he said.

“I’m not a certified geohydrologist, but I can tell you what I’ve seen,” he added. “I had a guy call me last month that had 12 houses go in right next to him a month before that, and he said he was running out of water there about a month later. That’s about how it goes. The chicken houses go up and then they’re calling me.”

USGS groundwater specialist Shana Mashburn said she wishes it could be that easy to determine what’s happening. The Oklahoma native recently returned after 16 years in Colorado, where water supplies and new taps are monitored closely.

Not so in Oklahoma, and in the Roubidoux and Boone, “a slew” of wells are open to both aquifers, she said. Until an in-depth study is done to better define the aquifers and how they are being used, it is hard to know what may be the issue in any given spot.

It should be noted that the majority of municipalities in northeast Oklahoma, including Tulsa, rely on reservoirs and runoff for water supplies, so these issues likely won’t touch them. Tulsa pulls some of its water from the Spavinaw Drainage, which is encompassed by the Roubidoux.

Future answers and hope for rural Northeast Oklahoma residents lie in the study, which is the next phase of the Oklahoma Comprehensive Water Plan spurred by 2012 House Bill 3055, the Water for 2060 Act. Each aquifer in the state will come under intensive study, and the Boone-Roubidoux system is now on the docket.

Oklahoma was the first state to establish a statewide goal of consuming no more fresh water in 2060 than in 2010. While the act emphasizes use of education and incentives while promoting development, rather than mandates, it has led to new legislation.

On Nov. 1, for example, a rule previously in place only in the Arbuckle-Simpson area that limits the proximity of wells will be drafted for statewide application, according to Cole Perryman, OWRB director of communications.

“That is a huge development for people interested in spacing between their wells and new commercial wells in that basin,” he said.

Kelly Bostian

918-581-8357

kelly.bostian@tulsaworld.com

Twitter: @KellyBostian

Kelly Bostian

Staff Writer

Kelly Bostian writes about and photographs all things involving the environment, conservation, wildlife, and outdoors recreation. Phone: 918-581-8357