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## Water tests raise questions in E. coli outbreak in northeast Oklahoma

By John David Sutter  
Staff Writer

The state Health Department says its inquiry into a deadly E. coli outbreak in northeast Oklahoma remains focused on food from a buffet restaurant in Locust Grove, even though tests of the restaurant's well water show possible bacterial contamination.

Water tests released Friday by the state Department of Environmental Quality show a private water well at the Country Cottage restaurant may be contaminated with potentially harmful bacteria. But the tests are inconclusive and "may be a very peripheral finding" in the state's overall investigation into the outbreak, state epidemiologist Kristy Bradley said.

One person has died, 116 are sick and at least 50 have been hospitalized in connection with the outbreak of E. coli O111, a rare toxin-producing strain of bacteria that has caused three previous illness outbreaks in the United States, according to the Oklahoma Health Department.

Victims have become ill with severe stomach cramps, vomiting and bloody diarrhea. Most of them ate at the Country Cottage buffet restaurant between Aug. 15 and 17, Bradley said.

Skylar McElhane, spokeswoman for the state Department of Environmental Quality, said it's unclear whether the bacteria tests are relevant to the outbreak.

"Can we say for sure it was the water that caused the outbreak? No, we can't. But we also can't rule it out," she said.

### Public supply called safe

No problems have been found with Locust Grove's public drinking water supply, which comes from Lake Hudson. The state will continue testing public water to make sure that continues to be the case, McElhane said. People with private wells should not be alarmed, she said, because there is no evidence of further well contamination; she added that the contamination — which is not known to include E. coli — appears to be isolated.

DEQ collected its well water samples from the restaurant on Monday and tested them for certain types of bacteria that simply indicate whether other, more dangerous types of bacteria may be present. The state Health Department is conducting further tests to determine whether E. coli is present in the well water. That process should take two to three days, Bradley said.

E. coli are a group of bacteria found in the innards and feces of animals. Some are harmful, some aren't, and some types of E. coli that would make humans very sick would be a normal part of the digestive process for other animals.

Little is known about E. coli O111, the strain that officials announced Friday was found in stool samples of the victims of the Oklahoma outbreak. Bradley said the bacteria likely originate in nonhuman mammals, since the strain makes people so ill. Some other forms of E. coli, like O157:H7, which was blamed for nationwide spinach contamination in 2006, always start out in the stomachs of cattle, Bradley said.

The mystery clouding E. coli O111 in some ways inhibits the state from being able to quickly point to the original source. If the bacteria were associated with cattle, for instance, the investigators might have reason to believe the cattle ranches near Locust Grove would be to blame because manure from the cows could mix with rainwater and contaminate a well. Beef at the buffet or vegetables that could come in contact with cow manure would be other suspects in such an instance.

Bradley said food is the likely culprit, although it's not clear whether any particular food item is to blame.

"We are very confident though that the source of the outbreak was eating at the restaurant and that the outbreak has been contained," she said. "We are hearing that the number of persons becoming ill with severe diarrhea and bloody diarrhea have decreased significantly in the Tulsa area."

### Well used during outage

Country Cottage normally used city water, which was found to be clean. Its water well was a backup water source, McElhane said.

On Aug. 10, days before the outbreak, a city water line broke and the restaurant chose to use its well water for a limited time. It's unclear how long the questionable well water was used at the restaurant, McElhane said, but Country Cottage is thought to have switched back to city water before the outbreak occurred.

That's part of the reason Bradley thinks food is more likely to blame for the outbreak than water.

The restaurant's water well is listed as private under state records, which means it does not receive state inspections, officials said. McElhane said it is possibly a violation of state law that the restaurant apparently served customers with water from a well that isn't part of the public inspection system.

The restaurant and other water wells in the area likely get their water from the Boone Aquifer, which is fractured and potentially vulnerable to contaminants from the surface, said Brian Vance, spokesman for the Oklahoma Water Resources Board.

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