

## **Studies target health, fracking - Denton Record-Chronicle (TX) - March 3, 2015 - page NEWS\_A01**

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Dogs serve as living recorders of toxic exposure. Cattle have trouble breeding. People report headaches, dizziness, difficulty breathing and a raft of other ills.

Those are a few of the findings in a new suite of academic studies on natural-gas production and health being published today.

People's and animals' troubles subside, one study found, when they move away from places where companies are producing natural gas with unconventional methods - that is, hydraulic fracturing, or fracking, the process already used on tens of thousands of wells in North Texas.

The research, mostly by university scientists, centers mostly on another region where gas production has moved into established communities, the Marcellus Shale field in Pennsylvania. But it explores the same questions that arise in North Texas neighborhoods that now find wells and processing plants as newcomers.

Volunteers and activists with **Frack Free Denton** often cited concerns about the potential health effects as they campaigned to ban fracking in the city limits.

One of the group's officers, Rhonda Love, a retired public health professor, prepared a white paper for city leaders several years ago citing some of the earliest research into health concerns over fracking.

Bit by bit, science is plugging the gaps in public understanding left by limits and inadequacies of past research.

"This is a great time to be researching and writing about the topic of air pollution associated with unconventional natural gas production," said Robert Swarthout, a postdoctoral investigator at Woods Hole Oceanographic Institution. He has published research on shale gas production and health but was not involved in this week's new studies.

"Public interest is high and, while we are making rapid progress towards understanding the issue, there are still many questions that have not been definitively answered," Swarthout said. "So this is one area where environmental scientists have real potential to provide the information that we as a society need in order to make sound decisions about UNG production, which will affect the lives of all Americans."

Unsolved riddles abound. No one can say, for example, how the combination of airborne chemicals from gas production in any one spot might affect a person's health, in part because the array

might change with each shifting wind.

Some early studies involve just a few people. And people's accounts of their symptoms aren't proof of medical harm. That would require more in-depth inquiries.

But the picture is becoming clearer as more studies appear, such as those in this week's *Journal of Environmental Science and Health, Part A*.

The journal, which publishes peer-reviewed science papers on toxic and hazardous substances and environmental engineering, devoted its latest issue to the health implications of unconventional gas production.

The Dallas Morning News provided advance copies of relevant studies to the Texas Commission on Environmental Quality, which regulates air emissions, and the Texas Railroad Commission, which oversees oil and gas, on Friday with requests for comment.

Only the Railroad Commission responded. The agency refuted one study's assertion that Texas ranked last among states studied in providing public information on oil and gas operations.

Controversies over fracking - in which high-pressure injections crack solid deposits of shale and free the trapped natural gas - have led to a local fracking ban in **Denton** that took effect in December and an effort to ban it in Mansfield, based in part on health concerns.

All attempts at local control are expected to face challenges in court and in the state Capitol. Gov. Greg Abbott, in his inaugural address in January, condemned local fracking bans as over-regulation that threatened Texas' economy.

Supporters of the bans say they're needed because Texas officials have failed to protect communities from the impacts of gas production.

The Barnett Shale region stretches from western Dallas County across 18 counties and 5,000 square miles. From 2000, when the boom began, through January 2015, Texas has issued 24,994 drilling permits in the Barnett Shale.

Complaints rose as drilling moved closer to homes and schools, but until now little comprehensive research has taken place.

One study published this week looks at long-term health effects on people and animals. A consulting veterinarian and a Cornell University researcher interviewed people living within two miles of gas or oil wells in five states, not including Texas, and did follow-ups about 25 months later.

In the second interviews, people who had since left the production area, and those living where operations had slowed or stopped, reported fewer symptoms in themselves and their animals than in their first interviews. People who stayed where gas production continued didn't report such relief.

The sample was small, with 21 people taking part in the follow-ups. The study's authors called it

"only the first stages" in finding new methods for investigating reports of health problems.

Another new study found that government information rarely tells the whole story about possible health risks from high exposures over short periods. Using a computer model, researcher David R. Brown of the Southwest Pennsylvania Environmental Health Project and two colleagues showed that without data on wind patterns, pollution readings don't reveal enough to say whether the air is safe.

But weather and other detailed information is almost never available, even to regulators, said Brown, a former senior federal and state environmental health official.

"The only entity that can take action to reduce the health risks is the individual resident," he said, since regulatory agencies are bound by existing rules and inadequate resources. "Even if the agencies wanted, they cannot do the monitoring needed to define this problem."

Another study, by scientists from Yale University, the University of Washington and Colorado State University, found that animals, especially dogs, might be important indicators of what people are breathing in gas production areas.

Researchers randomly selected 157 homes in Washington County, Pa., and interviewed occupants about the health of 2,452 animals belonging to them.

Overall, researchers found no link between animal illness and nearby wells.

But when dogs were singled out, problems appeared, mostly skin disorders.

Lead author Peter Rabinowitz of the University of Washington said the study, while limited, should lead to more investigations.

"These results suggest that natural gas extraction may impact the health of animals living nearby, either through water or airborne exposures to contaminants as well as other environmental hazards such as noise and road traffic," Rabinowitz said. People living near gas operations with pets should discuss potential risks with their veterinarian, he said.

The most Texas-specific of the studies looked at how easy it was to get information from state oil and gas regulators.

Researchers from FracTracker Alliance, a data clearinghouse that works with advocacy groups, and three universities ranked the Texas Railroad Commission the worst, largely because it charged for some information.

Nye, the commission spokeswoman, said the agency has improved its online information access since the researchers' inquiries and makes voluminous data available for free.

Any fees the agency charged the researchers, she said, were authorized under the Texas Public Information Act.

"Transparency is among the highest priorities of the Railroad Commission of Texas," Nye said.

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