

Cars not only culprit for smog Texans don't measure Emit, flare, vent Rating the risk

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Author: Peggy Heinkel-Wolfe Staff Writer

Bright, blue skies are turning hazy for the summer, and no one knows yet whether last year's spike of unhealthy ozone days will subside.

While experts say much of the pollution comes from cars, trucks and construction equipment, there's a new variable in the Denton area's dirty air equation: gas drilling in the Barnett Shale. And while drivers must submit their vehicles for emission inspection, gas drillers aren't required to submit their practices to similar checks.

Individual drilling sites vary in their emissions, as do pipeline and production facilities. Scientists know, for example, that certain drilling practices such as venting and flaring emit hydrocarbons and volatile organic compounds into the air. In addition, those emissions, along with hydrogen sulfide, often leak from pipelines and production facilities.

Not only do emissions from gas fields add to the region's problems in meeting the environmental standards, but also the compounds themselves are known to affect human health.

But operators say the gas they extract from the Barnett Shale is too valuable not to use the best practices in their recovery, which are usually the most environmentally sound, too.

Little research has been done since a 2003 air quality study found extensive hydrocarbon pollution in North Texas, the kind commonly attributed to oil and gas extraction, according to Donald Blake, a University of California professor of atmospheric chemistry and a lead researcher in the study. Blake said that his group set out to study ozone in eight smaller cities with air pollution problems.

They gathered samples around the country in November 2002. Surprised by results from Oklahoma City, they came back to the region two times, casting a wider net of samples and going deeper into North Texas each time, in search of answers.

"Oklahoma City was highest for alkanes - precursors to ozone - of any city," Blake said. "They hang around for a long time. Our concern was the ratio was worse in November than in August."

The team gathered a grid of samples far from roads and highways in order to get counts that didn't include vehicle emissions - a sort of baseline reading. But they still found hydrocarbons at high levels; so high, in fact, that they established a total count for the region that was once thought to be the entire country's annual emissions, six teragrams in all, he said.

Although the study provided a good bird's-eye view, Blake said more study is needed to know how much of the area's hydrocarbon pollution occurs naturally, how much is the result of previous drilling and how much can be attributed to the current boom.

In Denton County alone, more than 1,800 wells have been drilled in the past five years.

Although both the Texas Commission on Environmental Quality and the Texas Railroad Commission are empowered to monitor industry emissions, Ramona Nye, spokesperson for the railroad commission, said that monitoring is really up to the environmental commission.

But Lisa Wheeler, spokesperson for the environmental commission, said the agency only monitors from its fixed-site air quality stations.

"We might pick up some kind of off-property concentrate, but actually going to a site when there's a plume or flare, no, we don't do that," Wheeler said.

In addition to the intense level of activity in basic well operations, drillers will vent (leak) or flare (burn) gas at the site. These practices release a host of compounds, including hydrogen sulfide, volatile organic compounds and other hydrocarbons, according to Jim Rata, of the Garfield County Health Department in Colorado, who is studying drilling emissions there.

In Texas, railroad commission rules permit operators to flare and/or vent for 10 days after a new well is finished, and even longer on older wells.

"When unloading an older well, they can flare off and clean up longer to get that gunk down in the well," Nye said, adding that the gas in the Barnett Shale is too valuable for much venting or flaring. "But some may not have gas [transmission] lines out there to do the separation [of the gas from the saltwater that comes up with it.]"

Furthermore, very small leaks, called fugitive emissions, can occur from the wellhead, transmission and storage systems, Blake said.

While Blake's interest in hydrocarbon pollution was tied to global warming, a number of area residents have been concerned for some time about the effect of the drilling on the environment and human health locally. They point to asthma and other breathing difficulties, along with more serious afflictions, such as cancer. Byproducts of venting and flaring - including benzene, toluene, ethylbenzene and xylene - affect the nervous and reproductive systems, and cause blood disorders and cancer, according to reports issued by the nonprofit group, Earthworks. Formerly known as the Mineral Policy Center, the group was founded by former Secretary of the Interior Stewart Udall, scientists and engineers, and has a long, successful reputation of helping the industry clean up mining practices.

But Brenda Mokry, a cancer epidemiologist with the Texas Department of Health, said it is difficult to link suspected cancer clusters with environmental problems.

"[It is] partly due to the long latency period, or the time from possible exposure to diagnosis," Mokry said.

Until recently, no one in the nation was studying the human health risk of drilling in close proximity to large populations, Rata said. He started such an air quality study last year using both some tax dollars and money recovered in a settlement after a gas-drilling contamination there. Garfield County is similar to Denton County, he said, in that it is about five years into a gas-drilling boom expected to last for two to three decades, while at the same time many more people are moving into the area.

He said the study will take about two years and he is enlisting the help of residents by training them how to catch and document grab samples.

"We're seeing some volatile organic compounds, but it's too early to draw real conclusions," Rata said.

Thomas LaPoint, director of the University of North Texas Institute of Applied Sciences, said their department has no one researching emissions or air quality, but have been desperately trying to get the university to recognize its value.

"This is an important topic that someone should be looking at," LaPoint said.

PEGGY HEINKEL-WOLFE can be reached at 940-566-6881. Her e-mail address is pheinkel-wolfe@dentonrc.com.

DRC/Gary Payne

Caption: A gas well flare on FM1171 and Scenic Drive on May 7 in Flower Mound.

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Correction: 20060530 On Page 1A Sunday, in a story about gas drilling and smog, Jim Rada's name was spelled incorrectly. CLARIFICATION On Page 5A Sunday, an activities and emissions chart for a story about gas drilling and smog misplaced the definition for fugitive emissions (small leaks from wellheads, tanks and pipelines). 20060531 On Page 5A Sunday, in a story about gas drilling and smog, the rule for flaring older gas wells was incorrect. Texas Railroad Commission rules say that gas from an older well may be vented in one continuous event, not to exceed 24 hours, or a total of 72 hours in one calendar month.

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