A natural gas operator in Garfield County has proposed developing 200 gas wells on nine well pads located as close as 500 feet from residences.

Air pollution caused by hydraulic fracturing raises the risk of acute and chronic health problems for those living near natural gas drilling sites, according to researchers from the Colorado School of Public Health.

The study published in the journal *Science of the Total Environment*, estimated health risks for exposure to air emissions from natural gas projects in Garfield County, Colorado, by measuring levels of potentially toxic hydrocarbons in the air over three years.

Researchers separated air samples into two groups: those taken within a half of a mile from wells and those taken farther than half a mile from wells.

Researchers found that people who live within a half mile of a fracking well are at a high risk of developing health problems because of the emissions, especially during the well completion period in which fracking fluids and natural gas return to the surface.
The results indicated a number of toxic compounds in the air near the wells including benzene (a known carcinogen), ethylbenzene, toluene and xylene (collectively known as BTEX compounds).

The effects of inhaling these pollutants include "effects from ranging eye, nose, and throat irritation to difficulty in breathing and impaired lung function" as well as "dizziness, headaches, fatigue at lower exposures to numbness in the limbs, incoordination, tremors, temporary limb paralysis, and unconsciousness at higher exposures," according to the study.

People living farther than a half mile from wells have also reported symptoms but with less frequency, and the study found that the chemical benzene "is the major contributor to lifetime excess cancer risk for both scenarios."

The study noted that the site is at least 4 miles upwind from any other major emission source and that in 2009 the levels of benzene, xylene and trimethylbenzene in the county were higher than at 27 out of 37 EPA air toxin monitoring sites where non-methane organic compounds were measured.

The researchers said that were not able to completely measure exposure risk because several hazardous pollutants found—such as formaldehyde (a known carcinogen), acetaldehyde (a known carcinogen), crotonaldehyde and naphthalene (a known carcinogen)—were not measured.

By Michael Kelley, March 21, 2012

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