What is Wrong with Fracking?

Hydraulic Fracturing is a how natural gas is extracted from shale rock hundreds of feet below ground. Because dangerous chemicals and explosions are used in the process, environmentalists are demanding that safeguards are in place to protect ground and surface waters, air, land, and the health of humans and livestock. Currently, these safeguards are NOT in place, thanks to gas industry lobbyists.
Green Acres

Think Kansas folks want this near their homes?
The lure of “easy money” for landowners with underground gas deposits to sign a lease with a gas company to allow hydraulic fracturing on their property, can blind landowners to the reality of what will happen to their land.
Drilling for Natural Gas Has Changed.

1. Your Grandaddy's Well
   Non-Associated Pool of Natural Gas
   Relatively short diameter impact.
   80,000 gallons

2. Conventional Hydro Fracturing
   Bore hole extends for a mile horizontally.

3. High Volume Slick Water
   Horizontal Hydro Fracturing
   5 million gallons

Land surface
Aquifer
Seal
Sandstone
Tight Sand Gas
Gas-rich shale
What is hydraulic fracturing?

**Conventional method**
- Drill into porous rock
- Gas comes out
- Small footprint during and after

**Hydrofracking**
- Drill into solid rock
- Pump millions of gallons of water & chemicals per well
- Apply extreme pressure and explosives to fracture rocks
- Chemicals, heavy metals & radioactive substances come up with gas
- This mix can migrate underground
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Then comes the frack …
Injecting the Toxic Brew

Drillers explode charges to perforate casing

Pump millions of gallons of water, mixed with sand and chemicals, into well — up to 16,000 PSI — to fracture rock

Sand and chemicals forced into rock fractures, holding cracks open, facilitating flow of gas
Water withdrawals

- ~120,000 wells
- Up to 16 wells per pad
- 5.5 million gals *average* per well per frack
- ~1,600 truck trips per well

- Deplete fresh water sources
- Billions of gallons of water contaminated forever
- Locals pay for damage to country roads

Each well can be fracked several times, multiplying the damage
How the heck did Fracking become Exempt??

Why, if fracking is safe as the gas industry maintains, did they get the Bush administration in 2005, to make fracking exempt?

The Oil & Gas Industry is Exempt from Sections of the Following U.S. Laws

Clean Water Act
Safe Drinking Water Act
Clean Air Act
Resource Conservation and Recovery Act
CERCLA, also known as the Superfund Law

The Industry is also not Covered by The Planning and Community Right-to-Know Act (EPCRA)
Why would sensible Americans want to allow extremely toxic chemicals, dangerous carcinogens, radioactive elements, and other damaging materials to be used in fracking without legal and regulator recourse for citizens against the gas companies?

<table>
<thead>
<tr>
<th>Pollutants</th>
<th>Toxins Released During Oil and Gas Operations</th>
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<tbody>
<tr>
<td>Arsenic</td>
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<tr>
<td>Hydrogen Sulfide</td>
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<td>Mercury</td>
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<tr>
<td>Polycyclic Aromatic</td>
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<tr>
<td>Volatile Organic Compounds</td>
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<td>(VOCs)</td>
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<td>Acetone</td>
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<td>Benzene</td>
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<td>Ethylbenzene</td>
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<td>Toluene</td>
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<td>Xylene</td>
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VOCs cannot be removed from water once it has been combined with water!!
It is only reasonable to ask for regulations that protect us, our air, our water and our land from the health and environmental damage caused from fracking.

<table>
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<th>Pollutants</th>
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<tr>
<td>Arsenic</td>
<td>Cancer</td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>Headaches, nausea, vomiting, loss of memory, and motor function. Death.</td>
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<tr>
<td>Mercury</td>
<td>Damages brain, kidneys, developing fetus.</td>
</tr>
<tr>
<td>Polycyclic Aromatic</td>
<td>Cancer</td>
</tr>
<tr>
<td>Volatile Organic Compounds (VOCs)</td>
<td></td>
</tr>
<tr>
<td>Acetone</td>
<td>Headaches and confusion. Birth defects.</td>
</tr>
<tr>
<td>Benzene</td>
<td>Cancer. Leukemia.</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>Respiratory problems, fatigue, headaches.</td>
</tr>
<tr>
<td>Toluene</td>
<td>Birth defects, central nervous system damage.</td>
</tr>
<tr>
<td>Xylene</td>
<td>Headaches, problems with balance, memory loss.</td>
</tr>
</tbody>
</table>
Fugitive methane (CH4): A “greenhouse” concern.

Infrared imaging shows methane emissions coming from tanks not visible with the naked eye.
Capturing flowback waste

(Drilling fluid splashing past the liner, Dimock, PA, Spring 2009)
Flowback is advertised as produced “water”

Liquid waste can look benign, but . . .
Thousands of trucks haul materials and supplies in and out of fracking sites, resulting in road damage and disruption.
Sample holding pond from contaminated water withdrawn from ground after injection.
Method for moving water into holding ponds using cannon-like transfer method. Fracking operations include water injection methods that shoot toxic brews into the air where they are caught by winds that transport them far from the site.
Fracking Chemical Storage

Millions of pounds can sit at one pad.
Is this on a floodplain?
What’s the evacuation plan?
Drillers remove the "produced" water

- 600–800 more truck trips
- **DANGER:** These trucks haul hazardous waste!
- "Produced" water can be put down injection wells or abandoned mines
- It can be dumped into waterways
- There's no practical way to treat it

Quick & dirty solution: dump onto a West Virginia country road
Gas companies claim fracking is safe, but the chemicals they use ARE NOT SAFE.

Kansans must insist gas companies provide a list of the chemicals they use. That is the only way we can hold them accountable!!
Who pays?

First responders must deal with

- Fires
- Explosions
- Chemical hazards
- Lawless migrant crews
Silt, Colorado  March 10, 2007
250 yards from the Hoffmeister home
Don't worry — fracking fluids by law are *not* hazardous.

Tell these cows in Shreveport, LA
• At least 40% of fracking chemicals are endocrine disruptors and can cause falling reproductive rates, stillbirths, and birth defects.

• Small spills can have huge effects on livestock, who often drink from surface water sources and are attracted to the salty taste.

• There are growing, documented reports of livestock illness and death from acute toxicity.
Thousands of wells planned for Kansas

- 5 acres per well pad
- Roads / pipelines through field and forest
- Very deep drilling
- 24/7 light and noise
- Drilling waste laced with chemicals & radioisotopes
- Up to 16 wells per well pad
Who pays?

Example: Stephanie’s and Chris's dream home invaded by the reality of the fracking process.
Our point is this… We don’t want the natural gas industry to drill and blast away with no one making sure they are operating safely. Kansas farmers and ranchers property values are at stake. The health of their families and livestock are at stake.

Certainly, natural gas can plan an important role as a bridge fuel to a safe, clean, renewable energy future. However, we would be foolish not to insure their operations are safe.

Demand that fracking has the needed oversight to insure safe operation, and that the natural gas industry will be held accountable.