

Fracking with Propane

Just when we thought we understood conventional ***slick water hydraulic fracturing of shale rock for natural gas***, along comes a new twist. This one is called ***propane hydraulic fracturing of shale rock for natural gas***. We need to understand the differences and the similarities between these two technologies and be prepared for both.

Slick water hydraulic fracturing of shale rock for natural gas is familiar to many of us by now. We understand that a well bore is sent vertically downward some thousands of feet and then turned 90 degrees and bored horizontally some additional thousands of feet. The horizontal pipe is then perforated with explosive charges to make many small openings in the pipe. Then vast quantities of water, mixed with sand and noxious chemicals are forced down the pipe under enormous pressure using huge compressors, and has the effect of fracturing the shale rock so that the natural gas can flow back.

The problems associated with the chemicals themselves are becoming quite well known. The use of billions of gallons of water, and the disposal of the billions of gallons of resultant waste water are also quite well known by now. The leaking of the methane gas (natural gas) into private and public water supplies is also quite well known to us as a serious problem.

Now along comes propane fracking. How does this work ? Large quantities of liquid propane (expensive and in limited supply) and some Butane also, are turned into a gel by mixing and reacting with a diester phosphoric acid gelling agent. Then the gel is mixed with sand and secret, proprietary chemicals to form a hydraulic fluid.

This gelled hydraulic fluid is then forced down the perforated well bore exactly in the same manner as the slick water is under the conventional method. Once the rock is fractured, the high pressure is released. This causes the gel to flash back into gaseous propane. The propane gas, and the methane gas, now come roaring back up the well bore as a mixed, high explosive gas. Here they are controlled, it is hoped, by a blowout preventer, and are gradually separated into the two gasses.

The methane of course enters the pipelines and is sold. The propane gas is recovered and can be re-gelled and eventually re-used. The secret chemicals supposedly remain buried deep in the ground. Either type of gas, propane or methane, can of course leak around the well casing and enter the aquifers, as the methane has done in the past.

