

THE COMBINATION OF HORIZONTAL DRILLING AND HIGH-VOLUME HYDROFRACTURING (HD/HV/HF) HAS NEVER BEEN PRACTICED IN NEW YORK STATE.

WELL TYPES

The gas well targeted for your neighborhood is not the last one you'll experience — or the largest. The Department of Environmental Conservation (DEC), New York State's permitting agency, is currently reviewing standards for horizontal drilling / high-volume hydrofracking (HD/HV/HF) in shale formations. Meanwhile, it continues to permit vertical wells. Marcellus wells planned for Chenango and Broome counties are *vertical test wells* used to sample formations and to test fracking to prepare for the giant horizontal drilling operations that will gradually fill your town. See <http://un-naturalgas.org/This%20is%20not%20your%20grandfather-1.pdf>

HOW HD/HV/HF MARCELLUS WELLS DIFFER FROM EXISTING GAS WELLS

Producing gas wells in central New York are “conventional” wells. Vertical or horizontal bores intersect existing fractures in porous sandstones and limestones. They require either no fracturing or low-volume fracturing.

Shales, on the other hand are very hard and must be fractured. The Marcellus shale is also a very thin formation, 100' to 150' thick in our area. Vertical drilling in the Marcellus therefore creates a short ~125' bore length that can be fractured. Horizontal drilling creates a ~7500' bore length that is subjected to fracturing.

For this reason, HD/HV/HF wells bring up more dangerous drill cuttings, require more hydrofracking fluids, create more wastewater, generate more air pollution, create more truck traffic and entail more risk.

See <http://un-naturalgas.org/This%20is%20not%20your%20grandfather-1.pdf>

WELL DENSITY AND SPACING

Even small leased properties may, over time, host several drilling / fracturing operations that target different gas-bearing formations. Besides Marcellus Shale wells, seven other gas-bearing underground rock formations have been drilled in Delaware, Chenango and Otsego counties. See <http://un-naturalgas.org/Spacing%20text.pdf>

DRILLING UNITS

Several Drilling Units can be established on a single leased property, and extended by Compulsory Integration (below) to include nearby unleased properties. When a gas corporation applies for a well permit, it proposes a “Drilling Unit” — a rectangular surface area that corresponds (supposedly) to the area that will be drained of gas by the drilling / fracturing operation. Each formation will have its own Drilling Unit; the size is mandated by law. See <http://un-naturalgas.org/NYS%20law%20concerning%20gas.pdf>

COMPULSORY INTEGRATION

Compulsory Integration allows the drilling corporation to take gas from properties that are not leased if they are within the Drilling Unit established when the permit is issued. The Compulsory Integration of unleased properties within the Drilling Unit is based on the gas corporation's “affirmation” that it controls 60% of the subsoil rights in that Unit. See

<http://un-naturalgas.org/Is%20your%20unleased%20property%20facing%2000908181.pdf>

SETBACKS

Setback distance from the well bore varies with the target formation. Generally, setbacks are 50 to 100 feet from water bodies; 50 to 150 feet from homes, schools, nursing homes and private wells within the Drilling Unit; and 330 feet from Drilling Unit boundary lines. These figures apply to the well bore, *not the pad*, which will be anywhere from

½ acre to 5 acres in size. Through Compulsory Integration, an *unleased* property within the Drilling Unit may have a well pad within 100 feet of its residence. See

<http://un-naturalgas.org/NYS%20law%20concerning%20gas.pdf>

WATER USE AND TRUCK TRAFFIC

While the vertical Marcellus well about to be — or already — permitted in your neighborhood may require only 15 round trips by tanker trucks (each carrying 5,500 gallons of water), **a built-out HD/HV/HF Marcellus well pad with eight well bores will require about 4800 such trips.** For sandstone and limestone formations that have been drilled in our counties, each well bore has required less than 80,000 gallons for fracking. But a *single* Marcellus HD/HV/HF well requires on average 5.5 gallons of fresh water, and there will be between 6 and 12 wells per well pad.

The quantities of water required for Marcellus and Utica shale exploitation are so great that withdrawal from surface waters must be permitted by the Susquehanna River Basin Commission or the Delaware River Basin Commission. Outside of the Delaware / Susquehanna river basins, tankers can back up to any stream (on leased land or public access sites) to take water out. See

http://www.un-naturalgas.org/hydraulic_fracturing_a-z.htm#water%20consumption%20&%20disposal

WASTE (FLOWBACK) DISPOSAL

Every HD/HV/HF well creates millions of gallons of toxic waste, which is stored in plastic-lined pits — subject to leakage — until the stuff is hauled away. When each large shale gas well is hydrofracked, as many as 9 million gallons of fluid (water, sand and chemicals) are pumped into the well under very high pressure to fracture the stone and release the gas. Approximately 35% of this fluid (called “flowback”), burdened with heavy metals and radioactive substances, comes back up the well bore and is stored in a pit until it’s hauled away. If the well site is on your leased property, make sure no one punches holes in the pit liner. See

http://www.un-naturalgas.org/Fracking_Facts.pdf

Amazingly, the Department of Environmental Conservation (DEC) does not regulate these fluids that the projected wave of gas well drilling can produce. No other agency has any plan to deal with them! There are several ways the gas industry, nationally, disposes of this toxic mix:

- 4 “Treatment” in municipal sewage treatment plants by *diluting* the waste and releasing it into rivers
- 5 Mixing with wood chips and landfilling
- 6 High-pressure Injection into empty gas wells
- 7 Formation water can be spread on roads to “hold down dust” or “melt ice”

ROAD USE

The HD/HV/HF wells that will follow the test wells in your neighborhood will require about 9,000 truck trips — from preparing the site to completing the wells. The most obvious initial element of gas drilling / hydrofracking will be the size and number of trucks servicing each well. Local governments cannot prevent road damage, but some are developing local laws for road-use permitting that ensure that local taxpayers won’t foot the repair bills. Has yours? Industry-backed alternatives include revolving escrow accounts and bonds, but since these don’t involve a permit from the locality, the drillers don’t have to sign them — and the DEC will still issue them permits. See

<http://un-naturalgas.org/Rev%201%20Truckloads+to+service+a+well+pad+--+DJC.pdf>

DRILL CUTTINGS

The creation of a single vertical well bore to an average depth of 3,000 feet brings up about 54 cubic yards of rock chips, including radioactive substances and heavy metals from below, mixed with the chemicals in the drilling fluid

("mud"). Horizontal wells will produce *much* more of this material as do vertical wells, and the increase will include radioactive material (the shale). These cuttings have so far been stored in holding ponds on site, then buried there. This practice is being phased out in Pennsylvania, which is now exporting its cuttings *to NY landfills*. Do NOT accept these muds as fill. If the well site is on your leased property, make sure no one punches holes in the pit liner.

WATER POLLUTION

Pennsylvania assumes that water-well pollution within 1,000 feet of a well bore is caused by the drilling. New York does not. Thus, the individual landowner could have the expense and aggravation of dragging a polluting corporation through the courts for years to get satisfaction, even though the owner's needs are immediate.

While the state requires water testing around the drill site, it does not require fracking chemicals to be tested. Without such information, test results are far less able to demonstrate contamination. What's more, testing may give a false sense of security to the property owner since the state does not require that this testing be done in a manner that would be admissible in a court of law.

The methane that naturally occurs in some water proves that pathways already exist. Because fracking itself creates more such pathways, and since the fracking process leaves some of the fracking fluid underground, the heavier fracking chemicals left behind may eventually migrate into drinking water.

Despite statements that there are no *proven* cases of aquifer pollution from hydrofracking, there are numerous documented cases of aquifer pollution from *drilling*. To the landowners who've lost their drinking water and much of the value of their property, the distinction between drilling and fracking is academic. See

<http://un-naturalgas.org/weblog/category/drilling-accidents/>

County health departments are charged with investigating water pollution from fracking. Ask your county health department if it has the financial capacity to do the kind of investigation required by this unfunded mandate.

PIPELINES

"Gathering" pipelines can only be laid on leased land, as of now. However, **transmission pipelines that are utilities, meaning that any gas producer / distributor can use them, can be sited by Eminent Domain.** Pipeline rights-of-way are forever, can be bought and sold whether there is an actual pipeline planted there or not, and impose many legal and contractual limitations on the property that hosts them. See

http://www.un-naturalgas.org/hydraulic_fracturing_a-z.htm#pipelines

GAS STORAGE

Private underground gas storage units can be established by Eminent Domain. The DEC grants a permit when the applying gas company controls, by lease or ownership, 75% of the subsoil rights in the proposed storage area. (ENV 23-1303)

OTHER INFRASTRUCTURE

Gas doesn't come out of the ground in a marketable form. The infrastructure needed to purify it can end up in your neighborhood.

Raw-gas transport requires on-site removal of liquid water, which contains contaminants. On-site tanks contain this water until it can be removed by tankers or pumped to a remote location.

Besides methane, the chemical name for natural gas, raw gas also contains other volatile gases. Natural gas liquids, such as ethane and propane, are stripped out, saved for removal by tanker and sold. "BETX" volatiles (butane, ethylbenzene, toluene and xylene), are odorless, invisible and extremely dangerous. They are *vented as waste* at compressor stations.

Compressor stations will be required to bring the gas pressure in smaller gathering pipelines up to the pressure in

larger pipelines. Each compressor station will service gas wells within a 4- to-6-mile radius and will have dehydration units to remove water vapor from the gas. Compressor stations are extremely noisy — the equivalent of a propeller plane flying overhead or a concrete mixer — and operate 24 / 7. Since the compressors are diesel-powered, they too emit pollutants, including the BTEXs.

Where company-owned pipelines meet transmission *utilities* (like the Millennium, Tennessee and Dominion pipelines), the stations hold multiple compressors. These are industrial-scale installations that may require as many as 50 acres each.

The siting of compressor stations does not require a State Environmental Quality Review Act (SEQRA) review and is governed by the Public Service Commission — not the DEC. This means that compressor siting is not covered by DEC regulations. Eminent Domain may be used for siting compressor stations.

PROTECTIVE LAWS

State law preempts local law-making powers — controlling the location of dangerous industries, their operating hours, noise and nighttime light levels, and storm water run-off. (ENV 23-0303 ss. 2) County and town governments can only regulate the use of *town* roads and few of them have chosen to do so.

The gas / oil industry is exempt from provisions of the Clean Water Act, the Clean Air Act, the Safe Drinking Water Act and a host of other reporting and oversight laws enacted to protect the public. See <http://un-naturalgas.org/Exemptions%20are%20subsidies%20Rev%201%20MB-1.pdf>

LIABILITY ISSUES

Since owners of leased properties are — legally speaking — in business with the gas companies, these owners share in the liability for damages to their neighbors' assets, leased or otherwise. Although many leases have “hold harmless” clauses, the lessor landowner will have to sue to enforce them. Properties that are part of a Drilling Unit through Compulsory Integration do not share that liability as long as they choose “Royalty Owner” status at the Compulsory Integration hearing. *Choosing Non-participating Owner status and Participating Owner status at the Compulsory Integration hearing makes the landowner liable.*

MORTGAGES

The value of your property depends in part on whether a bank will extend a mortgage to a prospective buyer.

Some local banks have already made it their policy to deny mortgages on properties with subsoil leases. The FHA will not back mortgages on dwellings “located closer than 300 feet from an active or planned drilling site or 75 feet from an operating well; this applies to the site boundary, not to the actual well location.” See

<http://www.disasterhousing.gov/offices/hsg/sfh/ref/sfh1-18g.cfm>

No computer access? The detailed information offered at the web addresses above can be had in print form. Write

CDOG

PO Box 443

Delhi NY 13753

Specify the web address of the document you want. For example:

<http://un-naturalgas.org/Spacing%20text.pdf>