

A photograph of a pond with several large, round, green lily pads floating on the water. Two white water lilies are in bloom, one in the upper center and one in the lower center. The water is dark and reflects the surrounding environment. A red rectangular box is overlaid on the image, containing the text 'Marcellus Shale Drilling'.

Marcellus Shale Drilling

What does it mean to us?

New York City has Good, Clean Water




So does most of New York
State...



A photograph of a pond with dark water, numerous green lily pads, and two white water lilies in bloom. A teal rectangular box with a halftone pattern is overlaid on the center of the image, containing the text "But...".

But...

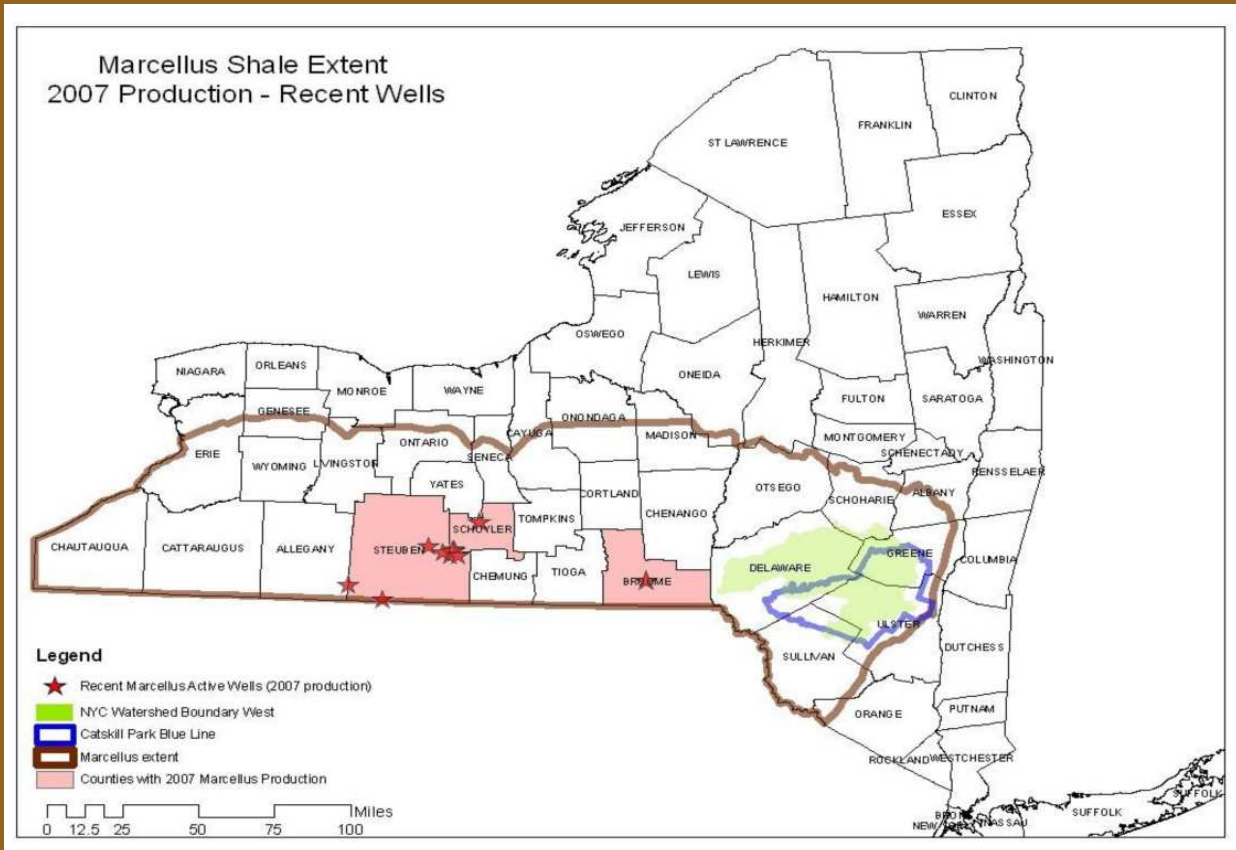
A photograph of a pond with dark water, numerous green lily pads, and two white water lilies in bloom. The lilies are positioned in the upper and lower center of the frame. A semi-transparent cyan rectangular box with a fine grid pattern is overlaid in the middle of the image, containing the text.

**The water in our state is
endangered...**

By Gas Drilling




Where?

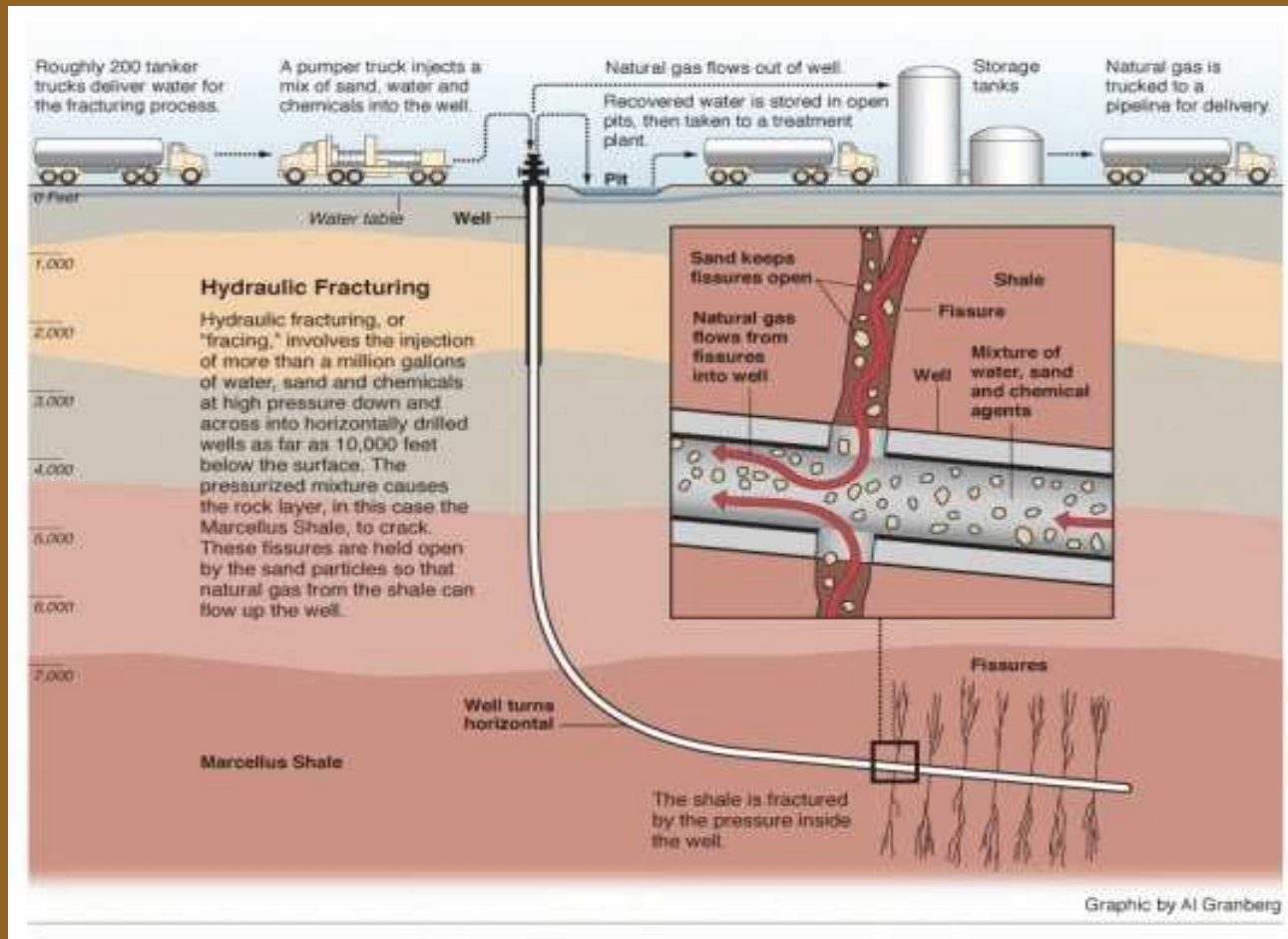


Source: <http://www.catskillmountainkeeper.org/node/290>

29 New York State counties, including five that contribute most of the water in the NYC water supply.

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HOW?



A drilling technique called **hydraulic fracturing**, which uses huge amounts of fresh water and toxic chemicals to break the gas-containing shale, allowing the gas to rise to the surface to be collected in tanks.

Step One



Source: <http://www.pikrite.com/content/marcellus-shale-gas-drilling-water-truck-and-vacuum-tankers>

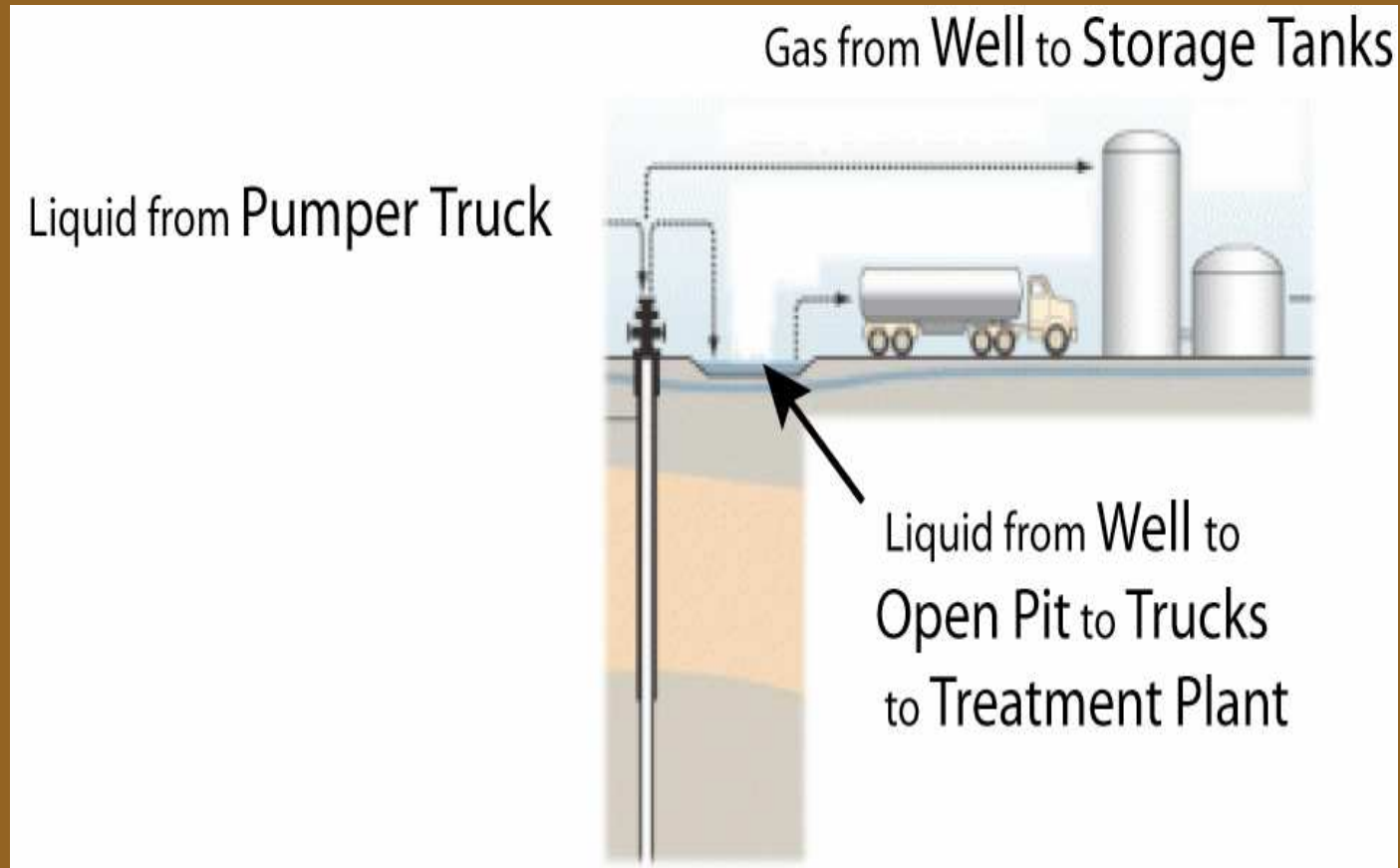
Roughly **200** tanker trucks deliver **water** for the fracturing process.

Step Two



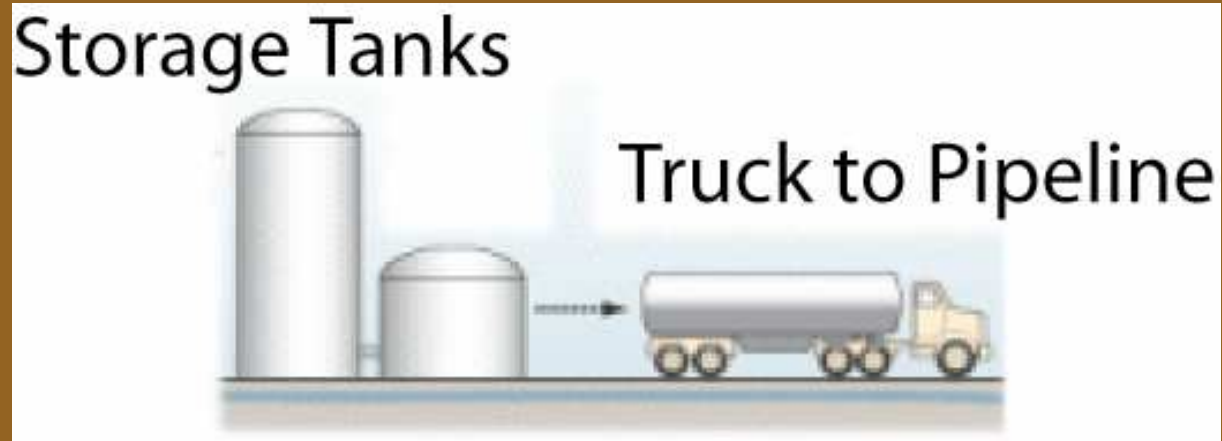
A **pumper truck** injects a mix of sand, **water** and **chemicals** into the well.

Step Three



Natural **gas** flows out of the **well** to **storage tanks**. Recovered **water** is stored in **open pits**, then taken to a **treatment plant**.

Step Four (trucking option)




Natural gas is either trucked to a pipeline for delivery, or is connected directly to a feeder pipeline.

Step Four. Feeder Pipeline (preferred method)

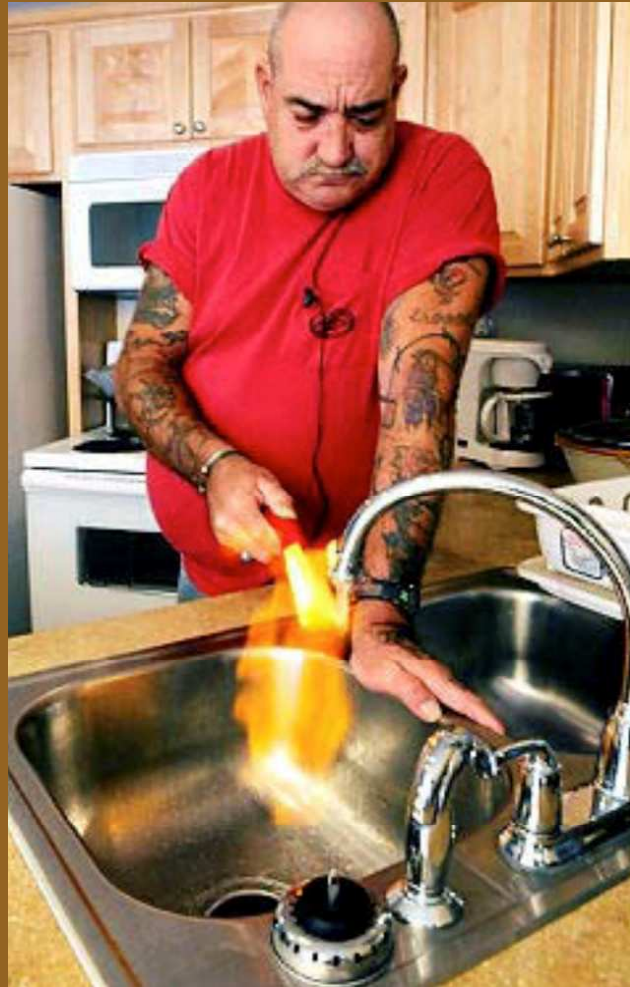


A Gas Drilling Rig in Amwell Township, PA, with feeder piping under construction in the foreground

Source: <http://www.marcellus-shale.us/>

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**IF ALL GOES WELL, WHICH
DOESN'T ALWAYS
HAPPEN...**



Greenlar/AP

Fred Mayer of Candor, N.Y., uses a charcoal grill lighter to ignite water running from his kitchen faucet.

Source: http://www.toxicstargeting.com/sites/default/files/news_articles/pdfs/ignitable_water_articles.pdf

What does it take to drill ONE gas well using hydrofracking?

- Approximately 2.4--7.8 **million gallons** of fresh water (source: NYSDEC SGEIS, p. 5-73)
- Unknown quantities of chemicals (such as **benzene, toluene, ethylbenzene** and **xylene** or BTEX; **naphthalene, trimethylbenzene, diethylbenzene, dodecylbenzene, cumene**) as additives (source: NYSDEC SGEIS, p. 5-62)

What can a well “produce” besides gas?

- **Injected, then extracted** : Salt, Biocides, Detergents, Various Toxic Chemicals
- **Extracted**: Salt; metals such as aluminum, arsenic, barium, cadmium, calcium, chromium, iron, lead, lithium, manganese, strontium
- **Extracted**: Radioactive elements, including radium 226

(source: NYSDEC SGEIS pp. 5-1-1-102; pp 6-128-129)

How Many Gas Wells Can We Expect to See in NY State?

Estimates range from
40,000 to *80,000* wells

Source: personal communication with Mr. Al Appleton,
former NYC Commissioner of Environmental Protection
12/16/09

A photograph of a pond with several large, round, green lily pads floating on the water. A single white water lily flower is in bloom in the lower right foreground. The water is dark and reflects the surrounding environment. Two semi-transparent teal rectangular boxes with a fine grid pattern are overlaid on the image, containing text.

THINK ABOUT IT.

**JOIN THE THREE PARKS
ANTI-FRACKING CAMPAIGN!**