

WASTEWATER (FLOWBACK) FROM HYDRAULIC FRACTURING

DID YOU KNOW?

Hydraulic fracturing (sometimes called fracking) has been used since the 1950s in Ohio as part of the oil and gas drilling process. About 80,000 wells have been drilled in Ohio using hydraulic fracturing.

After a well is drilled, a mixture of water, sand and chemical additives is injected under pressure to fracture the shale reservoir, which enhances the flow of oil and gas for collection.

Most of the water used in fracturing remains thousands of feet underground, however, about 15-20 percent returns to the surface through a steel-cased well bore and is temporarily stored in steel tanks or lined pits. The wastewater which returns to the surface after hydraulic fracturing is called flowback.



An on-site impoundment is one option for temporary fresh-water storage prior to fracking.

- It can take up to 4 million gallons of water to fracture a horizontally drilled shale well, compared to 4-5 million gallons used weekly by an average golf course.
- Sand helps keep the fractures open which enables the natural gas to migrate through the shale reservoir to the steel-cased well bore to reach the collection point.
- Chemical additives make up less than one-half of 1 percent of the water used. Benefits provided by these chemicals include preventing corrosion and eliminating friction. Most additives have other common uses including water treatment and household cleansers.

In Ohio, oil and gas operators must either recycle their wastewater or inject the flowback into deep injection wells (called Class II wells) which lay thousands of feet underground below the water table. Permits for these types of wells are closely regulated by ODNR's Division of Mineral Resources Management.



As an alternative to a lagoon, some drill sites use a series of stainless steel frack tanks to collect flowback.



Frack tanks must be hauled by trailer to a disposal location.

Additional Resources

Dept. Natural Resources:
www.ohiodnr.com

Ohio EPA:
www.epa.ohio.gov.us

Penn State Marcellus Center:
www.marcellus.psu.edu

Frac Focus:
www.fracfocus.org

