

# Frackinade

## fact sheet

### What is “fracking”?

Hydraulic fracturing—“fracking”—is a process of natural gas extraction which uses pressurized water to fracture rock and release trapped natural gas. While hydro-fracturing itself is not new, the present combination of technologies has only been used in PA since 2005.

Each frac job requires injecting **4-8 million gallons** of water mixed with sand and chemicals, including known carcinogens.

10% of this fluid returns to the surface laden with salts and heavy metals, and responsible disposal is a challenge. The industry recently admitted that **high levels of pollutants in regional water sources are partly due to drilling.**

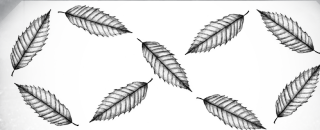
### PA is the only gas producing state without a severance tax.

Revenue from natural gas would help balance the state budget; to denounce a tax, as Gov. Corbett has, is irresponsible.

### Public health and accidents are huge concerns:

Pennsylvanians living near wells have reported well water contamination, pollutants in the blood, rashes, asthma, illness, and death of livestock.

Marcellus wells committed over 1,200 violations in 2010. In April a well blowout spilled over 10,000 gallons of frac fluid, resulting in a fine of almost \$1 million. Although the largest fine in PA to date, that amount is miniscule compared to overall drilling revenue.



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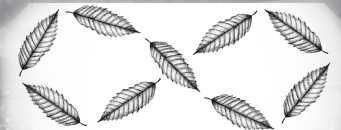
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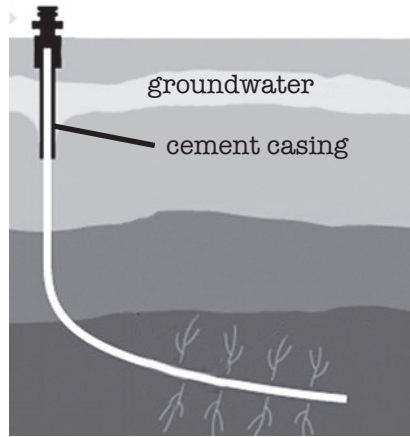
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The industry repeatedly tells us,  
***“There are no cases of groundwater contamination due to fracking.”***  
**Are they lying?**

Not technically, although they are intentionally confusing people. The industry defines “fracking” as the moment the shale is fractured, thousands of feet underground. Most contamination is due to damage to cement casings between the well and shallow groundwater, occurring outside the industry’s narrow definition of “fracking” yet still part of the entire drilling process.

The public’s definition of “fracking.”

The industry’s definition of “fracking.”

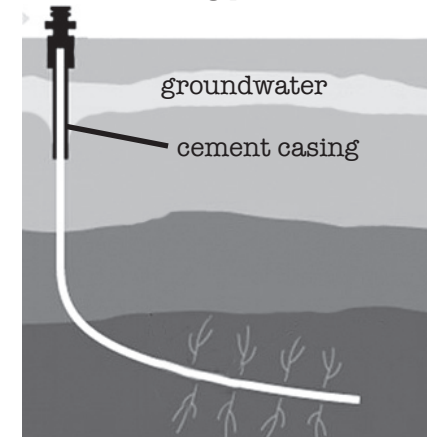


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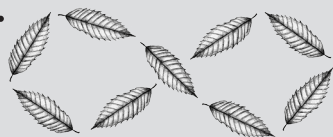


## Get Involved

We need to act now if we don’t want frackinade coming out of our faucets. First, **get informed**: the Post-Gazette’s [shale.sites.post-gazette.com](http://shale.sites.post-gazette.com) is a good place to start. Next, **speak up**: voice your concerns to your legislators. Call, email, or write a letter and tell them you want PA to adopt a precautionary moratorium, like New York has. Third, **get involved**: tell your friends and family, organize a screening of Gasland, attend a rally. Citizens do have the power, we just need to exercise it!

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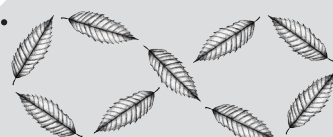
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# *Frack/nade Stand Chemicals*

**Benzene:** Carcinogen even in very small doses.

**Hydrochloric acid:** Highly corrosive, a strong acid.

**Naphthalene:** Active ingredient in moth balls, poisonous and carcinogenic in high doses.

**Ethylene Glycol:** Used in anti-freeze. Sweet tasting and deadly.

**Thiourea:** Chronic exposure is harmful.

**Methanol:** Highly toxic, can cause blindness and death.

**Ammonium Sulfate:** Used in fertilizer, explosives, anti-freeze, and flame retardants.

**Sodium Hydroxide:** Commonly known as lye, highly caustic, used in drain-cleaner.

**Flowback Salts:** The salts in frac water come from the shale itself (deposited by an ancient ocean, very salty). The water that returns to the surface is saltier than ocean water. Removing salt from frac waste is one of the biggest problems with the industry. Many companies now recycle their waste water, but eventual disposal still poses a problem.

**Heavy Metals:** Metals in frac fluid come from the shale. These include copper, strontium, arsenic, barium, cadmium, chromium, lead, and mercury. Barium poisoning has affected several people. Most people have 0ppm (parts per million) in their blood, people with contaminated wells have reported as much as 300ppm.



The following is a sample chemical disclosure from [FracFocus.org](http://FracFocus.org) that lists the chemicals used in the Chesapeake well in Bradford county that blew out in April 2011, spilling over 10,000 gallons of frac fluid into the Towanda creek, a tributary of the Susquehanna river and incurring the largest DEP Marcellus Shale fine to date, almost \$1 million.

For more information see the article [\*Bradford County Blowout Frustrates Officials\*](#) on [FracTracker.org](http://FracTracker.org) and [Chesapeake Energy's Marcellus Shale page](#).

## Hydraulic Fracturing Fluid Product Component Information Disclosure

<b>Fracture Date:</b>	4/18/2011
<b>State:</b>	PENNSYLVANIA
<b>County:</b>	BRADFORD
<b>API Number:</b>	3701521237
<b>Operator Name:</b>	CHESAPEAKE APPALACHIA LLC
<b>Well Name and Number:</b>	ATGAS 2H
<b>Longitude:</b>	-76.710095
<b>Latitude:</b>	41.666349
<b>Long/Lat Projection:</b>	NAD27
<b>Production Type:</b>	Gas
<b>True Vertical Depth (TVD):</b>	6,741
<b>Total Water Volume (gal)*:</b>	1,565,298

**NOTE:** Because the information was provided to Pennsylvania regulators on April 20, 2011, Chesapeake requested that FracFocus publish the chemical composition used in the hydraulic fracturing process on the Atgas 2H well in Bradford County, Pennsylvania, prior to final completion operations as would be typical.

For more information, please go to:  
<http://www.askchesapeake.com/MARCELLUS-SHALE/PA/Pages/information.aspx>

### Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by Mass)**	Maximum Ingredient Concentration in HF Fluid (% by Mass)**	Comments
Fresh Water		Carrier/Base Fluid				87.85900%	
Sand (Proppant)		Proppant				11.10203%	
Acid HCL	PUMPCO SERVICES	Acid	Hydrochloric Acid	007647-01-0	15.00%	0.04395%	
Ferriplex 40	PUMPCO SERVICES	Iron Control Agent	Water	007732-18-5	60.00%	0.00158%	
			Trisodium NTA	018662-53-8	40.00%	0.00105%	
			Sodium Sulfate	007757-82-6	2.00%	0.00005%	
			Sodium Hydroxide	001310-73-2	1.00%	0.00003%	
Plexhib 256	PUMPCO SERVICES	Corrosion Inhibitor	Methanol (Methyl Alcohol)	000067-56-1	60.00%	0.00044%	
			Ethoxylated Alcohols^ C14-15	068951-67-7	30.00%	0.00022%	
			Modified Thiourea Polymer	068527-49-1	30.00%	0.00022%	
			Propargyl Alcohol (2-Propynol)	000107-19-7	10.00%	0.00007%	
			Alkenes^ C>10 alpha-	064743-02-8	5.00%	0.00004%	
Plexslick 921	PUMPCO SERVICES	Friction Reducer	Water	007732-18-5	40.00%	0.05438%	
			Petroleum Distillate Hydrotreated Light	064742-47-8	35.00%	0.04758%	
			POLY(ACRYLAMIDE-co-ACRYLIC ACID	009003-06-9	28.00%	0.03807%	
			Polyethoxylated Alcohol Surfactants	N/A	7.00%	0.00952%	
Plexbreak 145	PUMPCO SERVICES	Non-Emulsifier	Water	007732-18-5	65.00%	0.00052%	
			2-Butoxyethanol (Ethylene Glycol Monobutyl Ether)	000111-76-2	15.00%	0.00012%	
			Methanol (Methyl Alcohol)	000067-56-1	15.00%	0.00012%	
			Coconut oil, Diethanolamide	068603-42-9	7.00%	0.00006%	
			Diethanolamine	000111-42-2	3.00%	0.00002%	
B84***	X CHEM	Anti-Bacterial Agent	Glutaraldehyde (Pentanediol)	000111-30-8	27.00%	0.01084%	

	OILFIELD CHEMICALS					
			Didecyl Dimethyl Ammonium Chloride	007173-51-5	8.00%	0.00321%
			Quaternary Ammonium Compound	068424-85-1	5.50%	0.00221%
			Ethanol	000064-17-5	4.00%	0.00161%
SC30W***	X CHEM OILFIELD CHEMICALS	Scale Inhibitor	Methanol (Methyl Alcohol)	000067-56-1	30.00%	0.00352%
			Sodium polyacrylate	N/A	30.00%	0.00352%

\* Total Water Volume sources may include fresh water, produced water, and/or recycled water

\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

\*\*\* The remaining mass balance in products listed is water as confirmed by the chemical suppliers

All component information listed was obtained from the supplier's Material Safety Data Sheets (MSDS). As such, the Operator is not responsible for inaccurate and/or incomplete information. Any questions regarding the content of the MSDS should be directed to the supplier who provided it. The Occupational Safety and Health Administration's (OSHA) regulations govern the criteria for the disclosure of this information. Please note that Federal Law protects "proprietary", "trade secret", and "confidential business information" and the criteria for how this information is reported on an MSDS is subject to 29 CFR 1910.1200(i) and Appendix D.

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