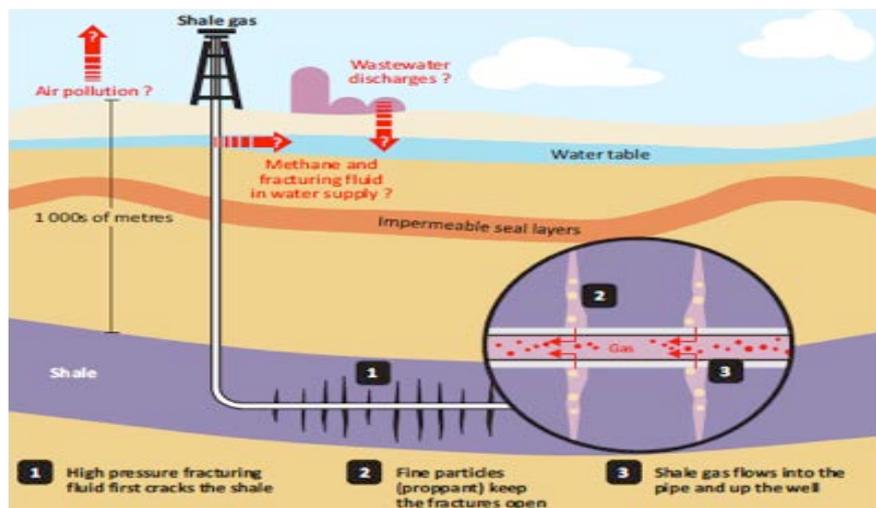


## Hydraulic fracturing.

*Elena Kappers, Queensbridge Secondary School, year 8.*

For many years people have been hearing of man-made and natural disasters that can cause major or minor damage. These can be an imposing threat to life and change the world around them. Hydraulic fracturing (also known as fracking) is a man-made procedure that can lead to one of these disasters. In this essay, I will be explaining the stages leading up to it, what it is used for, and the effects it can have on the earth or just the area. (positive or negative) Also I will ask the question: does it count as the cause for a natural disaster?



First of all, hydraulic fracturing is used to extract gas from shale rock for purposes of providing energy. This is done by pumping hot fluid down a pipe into the ground. This then travels past the water table (beneath the ground) down approximately more than 1000 metres. The pipe then enters an area where there is shale rock. This is a type of rock that is fine-grained and a mix of flakes and tiny fragments. Also this rock is characterised by its fissionability properties. (This is when the rock can be very weak and split. A higher fissile rock would be a rock that is the most sensitive or weak and can crack.)

When the fractures in the rock are made, fine particles keep them from crushing or closing. This then allows the gas that is in the shale rock to enter the pipe and then flow back up. Afterwards this gas can be used for other purposes. Some say this is a very efficient way to provide necessary energy, while others point out its down falls and the potential for disasters.

Some of its negative points can be air pollution above the site, fracking fluid, and methane entering the water bed beneath (causing the water to be contaminated). Adding to this, there is a major risk that has been growing in size over the years. These are the earthquakes that happen as a result. The cause of this is that after the gas has been extracted and the shale cracks are made, these holes in the weak rock can collapse, thereby sending tremors and earthquakes up to the surface.

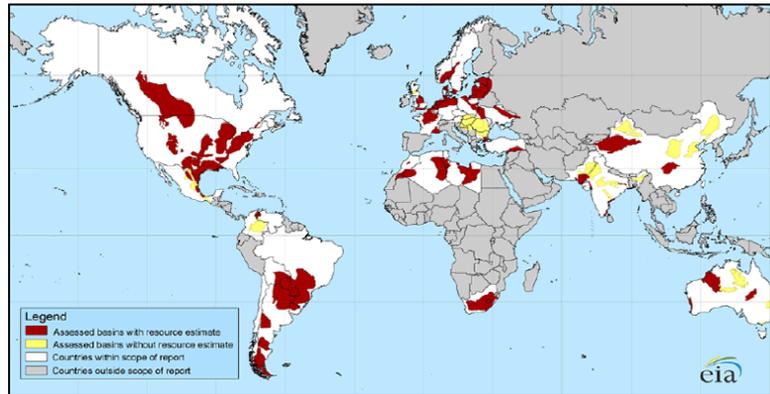
This has been noticed to have happened and seems to have been growing in size and frequency. There are debates about what to do: One argument is that there are huge risks that follow the procedure. On the other hand, it is a vast provider of cheap energy. Many countries now use this method, and for some that live nearby, this means problems.

As you can see in this picture, one problem is the damage it can do in the area.



People who would live close or around the area where this is done have experienced pollution in their water: either by sand or grease or even an increased level of methane.

Despite this, there are some highlights for countries who choose to use this method. Some countries have large areas of shale rock land. Since most of the world is usually in great need of energy or gas, this (in their opinions) would be the perfect way to help and supply a lot of their demands if they chose to use the Hydraulic fracturing method. Also it is a very cheap way to supply vast amounts of energy. This is why some still choose to use this method over other ways.



Areas that use fracking methods.

Last of all, I have asked the question at the beginning if Hydraulic fracturing can be counted as a major cause for destruction. As you may have heard, there are many different views on the subject of fracking: positive and negative. Throughout the world its effect ends up either to provide a cheap and plentiful energy source, or that it causes destruction and complaints. It can in some cases be either side, or even something between them. That can only be decided if you are the recipient of the effects it has produced (positive or negative). If the negative effects become stronger and have a worse impact on people and communities: then it can be counted as a cause for destruction. But if it can help by providing more energy than its potential for destruction then it can't be counted as a major cause for destruction. All in all, hydraulic fracturing has had mixed reviews and different opinions. As long as we use this method of extracting energy, these debates will continue.

### **References:**

1. <http://www.dangersoffracking.com/>
2. <https://stateimpact.npr.org/texas/tag/earthquake/>
3. <http://www.compression.org/wpcontent/uploads/2012/09/fracking.png>
4. <http://uk.ask.com/wiki/Shale?lang=en>
5. [http://uk.ask.com/wiki/Fissility\\_\(geology\)?qsrc=3044&lg=en](http://uk.ask.com/wiki/Fissility_(geology)?qsrc=3044&lg=en)
6. <http://www.biggerpieforum.org/How-does-fracking-work>