

## Geoscientists Working Together

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Geoscientists are constantly working towards improving our lives by finding new energy sources, keeping pollution in check, ensuring clean water and much more. Earth scientists have used improvements in technology and scientific understanding to recently open up vast energy reserves for commercial use. The new technology is called hydraulic fracturing; an example nearby is the Barnett Shale Reserve. It takes a lot of coordination among teams of geoscientists to get the energy extracted safely without damaging the environment.

Hydraulic fracturing is done by drilling a well into the ground and then injecting millions of gallons of water, sand, and chemicals down the well at high pressure. This pressure causes the shale to crack and release natural gas up the well. Then the natural gas is collected into a storage tank from where it is piped to the market.

This process involves collaboration between many different types of earth scientists. Petroleum geologists locate the natural gas inside the rock formations and find the best path to extract it. Seismologists ensure the drilling does not disrupt the rock structures underneath so as to cause earthquakes or land subsidence. Atmospheric geoscientists ensure air quality is maintained at a healthy level following standards. Hydrologists monitor water tables which supply drinking water so that the chemicals do not accidentally pollute water supply for nearby towns. So geoscientists working together ensure the success of hydraulic fracturing.

We have an abundant supply of natural gas in the US which can be extracted using hydraulic fracturing. Natural gas emits less carbon than oil. It also costs less to heat homes using natural gas as compared to oil. Thus hydraulic fracturing provides an example of geologists working together to ensure we get the benefits from a local, cleaner and cheaper energy source while reducing dependence on foreign oil.

### References:

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