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**Clean Rivers Trust.**

**The organisation's position on the issues of fracking and its use to access the large reserves of carbon derived gas and oil.**

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The environmental lobby and the mining, oil and gas sector are mustering their battalions for a rhetorical campaign about the safety and threats to the environment from the use of 'fracking' to allow the harvesting of gas from oil-shale beds located around the UK coastline and on shore. There are fears expressed that the technologies are experimental and unsafe.

What is Fracking?

At its simplest the process of fracking is the act of fracturing a host rock to liberate a liquid, gas or heat fraction housed within the strata. This can be coal bed methane, shale gas, oil, heat or water. It can be as a single item or combination harvest.

The method used is by sinking a borehole into the region of the strata that possesses the required material and monitoring the level, quality and quantity of the resource. If this resource is as hoped for; of a purity and quantity the borehole can be linked into production immediately. This is not the case in many instances and there is a need to open up the pores of the strata to allow the resource to flow in useful quantities.

This is where the technologies for fracking are used. Some methods use sound waves that are calculated to as a high note from a singer to a glass; or there is the more traditional pressure waves method. This requires some form of explosive action to break the bonded strata to allow the resource to flow

This form of operation has been used in the US on around 90% of their shale gas wells and in other hydrocarbon wells. The technology has been actively exploited since the mid 1940s. (Forbes 2011)

In the water industry the explosive charge has been used from ancient times, in Europe it has been widely used to develop water availability for both public and private water supply enhancement since at least the mid-Victorian era.

The Concerns.

The main concerns are;

- The shock waves of the act of fracking will encourage earthquakes.

- The fracturing of the strata would allow for aquifers above the target area to be polluted by by-products of the operation.
- The fracking exercise may cause ground stability problems.

Trust Response.

The first issue regarding the triggering of earthquakes is that there is little or no evidence to warrant concern. In the over 60 years of such operations in the US there have been no notable changes in earthquake frequency. Earthquakes are happening all the time around the world; but no evidential links have been shown to have stemmed from fracking. There have been several long-term studies carried out by academics and also by the US Department of Mines.

The second issue of pollution to aquifers has much to recommend support, in Spain the project in Alcaniz (funded in part by UK Dti 1995-8) where coal was burnt in seam after fracturing. This operation did not just polluted the aquifer; which directly overlay the coal measures, but the flood of water meeting the burning coal seam coursed a blowback of many thousands of gallons of phenolic liquer that sprayed across a large area of farmland. The test facilities were cleaned and make as if ready to work again; but never did. (Trust report to the Dti 1998)

Another instance of similar concern is the Nottinghamshire Sherwood Sandstone aquifer which overlies the now closed coalfield. The workings are filling up with polluted mine drainage water. The concern, both of UK government (Environment Agency,Defra, Coal Authority) and Clean Rivers Trust, Severn Trent Water, Anglian Water and Yorkshire Water is that this contaminated water will interact with the water in the aquifer if the workings' water levels are not regulated. The mechanism for this possible but likely scenario is though fracturing and subsidence within the closed workings. (Clean River Trust 1992, 1995 and 1998. British Geological Survey 1993 and 1997.) Uk Government has invested a several million pound bond to manage the flooding of the workings, eventual pumping and water treatment.

The difference between the above instances and the development of shale-gas is that there is now a far better understanding of the technical issues involved. The geology and hydrological issues are well known as are the ground conditions. The gas resource is at depth that should negate the fears of cross contamination. It should be remembered that the gas production companies do not wish for their reserves of gas to be contaminated by a flood of aquifer derived water.

The third concern regarding ground stability has been brought up in response to the collapse of oil shale cliff segments of the Dorset coast. There is no proven causal link to landslide by blasting at quarries or the seismic shock surveys that, periodically, are undertaken across many countries ever year. The number of fracking events that can be expected in the development of a shale-gas field would be small and of momentary inconvenience.

The Trust Considers;

that the risks for shale-gas exploration and development are small. In all endevopurs to benefit the population with fuel reserves there are risks that are not understood; the identification of these risks are the unknown in any venture. The risks that have been put forward for the exploitation of these gas reserves by the environmental lobby may need some explanation. There are several links to other forms of energy production who consider gas to be a step back and away from or certainly delaying aulternative energy technologies.

The safeguard for these projects should be that each development is considered on its merits and the specifics of the conditions of each site. Local communities should be involved as partners and should feel proprietorial of ‘their’ local scheme.