

Gas Industry Myths Exposed

Myth 1: The depth of shale & tight gas deposits means fracking is safe. There is no threat to groundwater which is a concern on the east coast of Australia where CSG is extracted from shallower coal seams.

A number of US studies have implicated shale gas drilling in the contamination of groundwater with heavy metals, salts and gas. Depth is not the only factor deciding whether pollution will occur - if a gas well is faulty, it will be a pollution risk no matter how deep it is. Wells can fail due to faulty construction, repeated hydraulic fracturing or corrosion. Data from one US state shows that 6-7% of new shale gas wells were faulty and leaking gas. Also, the hazardous wastewater that is produced from fracking is a major risk to soil and water during storage, transport and disposal.

Myth 2: Small amounts of chemical additives are used in fracking, and these are found in familiar household products.

Chemical additives make up only 0.5-2% of fracking fluid but this still translates into very large actual quantities. For example, a typical 15 million litre shale gas fracking operation uses between 80 and 330 tonnes of chemicals. Many fracking chemicals have not been assessed for their long-term impacts on the environment and human health. Fracking compounds used in Australia have been shown to include many hazardous substances, including: carcinogens, neurotoxins, reproductive toxins, and endocrine disruptors.

Myth 3: The gas industry will create jobs and revive ailing rural economies.

The oil and gas industry is one of the smallest employers in Australia, employing less than 0.2% of the Australian workforce. Most workers are flown in each week from major cities, and very little money is spent in the local economy. Most gas is exported overseas and 84% of mining profits in Australia go to overseas shareholders.

Shale and tight gas in the Northern Territory

A number of potential shale gas targets have been identified in the Northern Territory and there may also be prospective tight gas resources. More than 90% of the NT is covered by exploration licenses and applications and there are a number of companies actively exploring for shale gas across the Territory. These activities include exploratory fracking operations.

The Territory's most treasured and iconic natural and cultural areas are NOT protected from gas exploration and production. Arnhem Land and the Red Centre, river systems and wetlands, National Parks and Reserves, marine and coastal habitats and important cultural areas are all at risk. Fracking operations in the Northern Territory threaten vital groundwater resources relied upon for domestic use and grazing operations. The pollution of wetlands and rivers with contaminated wastewater is also a significant concern in the monsoonal environments of the Territory.



** All photos from US unconventional gas operations*

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info@lockthegate.org.au or visit
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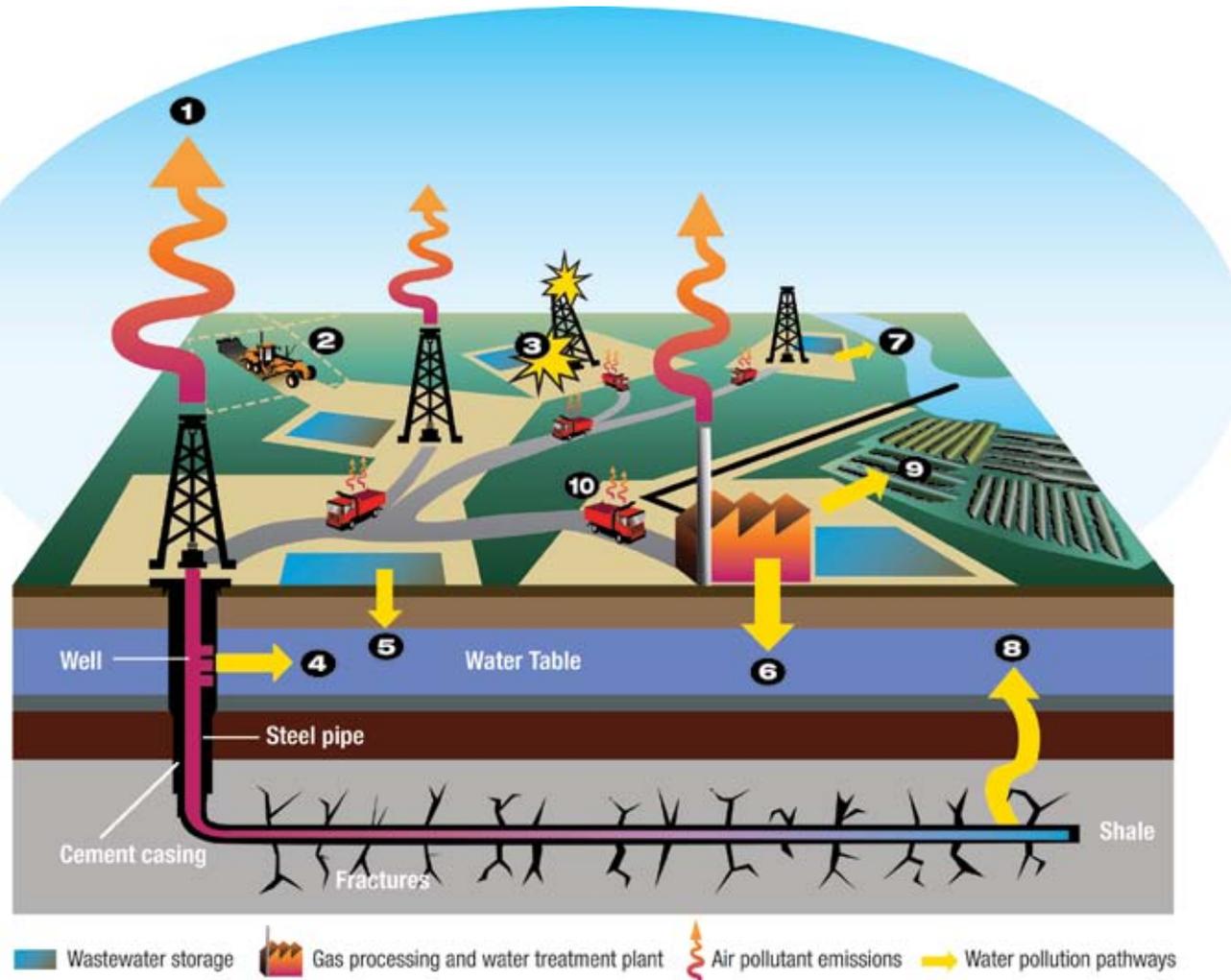
Shale & Tight Gas **FRAKING**



**A threat to
land, water
& communities**

Impacts of unconventional gas operations:

- 1 Air pollution from a wide range of hazardous air pollutants released from wells and infrastructure.
- 2 Loss of large areas of farmland & bushland for well pads, pipelines & roads.
- 3 Fugitive emissions from leaks in wells, pipes & infrastructure.
- 4 Contamination of underground water resources due to well casing failure.
- 5 Soil & water pollution from spills, leakage & overflow of toxic wastewater.
- 6 Soil & groundwater contamination from reinjection of poorly treated or untreated wastewater.
- 7 Pollution of waterways from wastewater & chemical spills and release of poorly treated wastewater.
- 8 Migration of gas and toxic substances into groundwater through natural faults and fracking induced pathways.
- 9 Water, soil and crop contamination from reuse of poorly treated or untreated wastewater on farmland.
- 10 Noise & air pollution from trucks, drill rigs and machinery.



Unconventional gas: Involves using invasive 'unconventional' methods to crack rocks that hold methane gas deep underground. Unconventional techniques are used to extract methane from shale rocks (known as 'shale gas') and from low permeability sandstone rocks (known as 'tight gas').

Invasive industrial gasfields: Shale and tight gasfields involve the industrialisation of entire landscapes with numerous closely spaced wells. Typical gasfields contain thousands of wells. Gasfields also require vast networks of access roads, gas pipelines, processing plants, compressor stations, and wastewater holding dams and treatment plants.

Fracking: Techniques such as horizontal drilling and hydraulic fracturing (fracking) are used to extract shale and tight gas. Fracking involves pumping large volumes of water, chemicals and sand into the ground at high pressure to release gas. Tight gas also requires acidation, which involves pumping acids into the well to dissolve the cements between rock grains.

Water use: Fracking is an extremely water-intensive practice. A single shale gas frack uses 11-34 million litres of water in the fracking fluids. That's roughly 360 – 1100 truckloads. Wells are often fracked on multiple occasions, sometimes up to ten times, multiplying overall water use. Some of this fluid returns to the surface as flowback, but most stays underground and is never recovered - estimates suggest 70% or more remains underground.

Wastewater: Wastewater from gas operations includes flowback from fracking and 'produced' water that is present in the source rock. This produced water is brought to the surface during gas production. The wastewater may contain heavy metals, salts, radioactive materials and volatile organic compounds. The massive volumes of wastewater produced may be stored in large ponds, partially 'treated' and released into waterways or re-injected back underground - a process that often leads to earth tremors and earthquakes.

*Sources for all information provided are available at:
http://www.lockthegate.org.au/about_shale_and_tight_gas