

Submission to:  
WA Scientific Inquiry into Hydraulic Fracture Stimulation in WA 2017

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I am a retired schoolteacher, born in Moora and raised on a farm in the shire of Dandaragan, now living in the city. I am from a family that has farmed in Dandaragan for five generations and have two brothers continuing to farm in the area. These farms are now under threat of unconventional gas mining. The alarm this threat has generated in the area is considerable.

Dandaragan is a prime farming area, being fortunate in having both a reliable rainfall and access to groundwater which many farmers use to supplement their water catchment for watering their livestock and homes. It has provided grain, lamb and beef to the local and overseas market for decades. The small town has thriving businesses dependent upon the farming population for their survival.

I was part of a team of concerned people who door knocked every home in this farming area. The results of this survey revealed that 96.4% of the local population were opposed to unconventional gas mining, including fracking, in their area.

My main concern is of the effect that unconventional gas mining could have on our water supply. This method of mining uses huge amounts of water (11-34 million litres in a single gas frack<sup>1</sup>) which will be drawn from our underground water supply. This supply, which is also used to provide water to the city, is already under stress from the demands of a growing population. Trees are dying because of the fall in the water table, and the use of bore water for gardens has been restricted.

As well as the huge drain this gas mining would place on our underground water supply, there is the very large risk that our underground water could become polluted<sup>2</sup>. The aquifers can be contaminated by faults caused by fracking, leakages from wells and surface spills of waste water.

While the gas mining companies assure us that their mining methods are safe, the evidence does not inspire confidence. A study in Pennsylvania has shown

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<sup>1</sup> Lock the Gate fact sheet – shale and tight gas extraction. Available at [www.lockthegate.org.au/about shale and tight gas](http://www.lockthegate.org.au/about_shale_and_tight_gas)

<sup>2</sup> Jackson 2014. The integrity of oil and gas wells. PNAS. Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4121783/#r10>;  
Sherwood et al 2016. Groundwater methane in relation to oil and gas development and shallow coal seams in the Denver-Julesburg Basin of Colorado. Available at <http://www.pnas.org/content/113/30/8391.full>

that 6% of gas wells leaked within the first year, and up to 75% of existing wells could be compromised<sup>3</sup>. In Australia we already have incidents of water pollution, with gas bubbling out of the Condamine River, groundwater in the Pillaga polluted with uranium and arsenic, polluted water being discharged into Bohena Creek and unlined pits in NT flooding and overflowing with contaminants into the area. Santos alone show spills and leaks from all parts of the operations, at well sites, in pipelines, waste water treatment sites and evaporation ponds.

As wells age there is more likelihood of breakdown resulting in leakage. A fifty year old well in the Northern Territory corroded and was polluting the great artesian basin, and had to be plugged at great expense to the government.

Apart from the risk to our water supply, I am also very concerned for the ill effect the mining infrastructure will have not only on farming land but also our beautiful native landscape. A network of roads, wells and evaporation ponds would have a dire effect on both farming and tourism. A 2016 CSIRO report showed a loss in gross economic terms of up to 10.9% due to coal seam gas infrastructure on farmland. Total losses to gross revenues ranged between \$1.32m and \$3.29m per property.<sup>4</sup>

Australia profits little from coal and gas, 80% of the industry is foreign owned<sup>5</sup>. Most of the gas is shipped overseas. With so little benefit to our country, it seems vastly ridiculous to endanger our water and agriculture industry by allowing unconventional gas mining. I don't believe a regulatory framework can ever address or remove the risks of accidental spills or deterioration on infrastructure resulting in toxic leaks.

I urge you to ban unconventional gas mining on our land.

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<sup>3</sup> Ingraffea 2013. Some scientific failings within high volume hydraulic fracturing proposed regulations. <https://www.psehealthyenergy.org>

Davies et al 2014. Oil and gas wells and their integrity: Implications for shale and unconventional resource exploitation, Marine and Petroleum Geology 56:239-254  
<https://doi.org/10.1016/j.marpetgeo.2014.03.001>

<sup>4</sup> <http://www.abc.net.au/news/2016-12-16/coal-seam-gas-mining-costs-farmers-millions-csiro-study-finds/8124834>;  
<https://publications.csiro.au/rpr/download?pid=csiro:EP1410076&dsid=DS8>

<sup>5</sup> <http://www.smh.com.au/business/comment-and-analysis/minings-economic-contribution-not-as-big-as-you-might-think-20170203-gu4r5l.html>