

19 March 2018

Independent Scientific Panel Inquiry
Locked Bag 33
Cloisters Square
Perth, Western Australia 6850

Frogtech Geoscience submission: Independent Scientific Panel Inquiry into Hydraulic Fracture Stimulation in Western Australia 2017.

Frogtech Geoscience welcomes the Western Australian Government's Scientific Panel Inquiry into Hydraulic Fracture Stimulation in Western Australia. As a leading Australian scientific provider of earth-sciences including non-seismic geophysics, geodynamics, structural geology, seismic and well interpretation, stratigraphy and petroleum systems, we have drawn on our unique expertise to respond to the questions put by the inquiry.

As a stakeholder from the Australian scientific community, our submission aims to assist the Independent Scientific Panel Inquiry in address the input, within their terms of reference, to form views on:

1. A full and appropriate understanding of the environmental values potentially at risk from unconventional oil and gas developments involving hydraulic fracture stimulation;
2. Any data or other evidence that might inform a scientific risk analysis of those impacts, with an emphasis on the local geographies and geologies, and local evidence from Western Australia; and
3. Any reflections or experience on what a regulatory framework should ideally look like if the Government lifts the current Moratorium.

We have limited our response to the above questions to our domain experience in geology, and the important role science has in providing inputs to de-risk petroleum exploration and production activities where hydraulic fracturing features.



Environmental values

A full and appropriate understanding of the environmental values potentially at risk from unconventional oil and gas developments involving hydraulic fracture stimulation.

Environmental values potentially at-risk focus on ground water contamination from flowback and its associated effects.

It is our strong view that hydraulic fracture stimulation, associated with unconventional exploration and production, when correctly engineered, developed and regulated with appropriate geological scientific input, is unlikely to pose a greater risk when compared to conventional petroleum exploration practices.

Correct and appropriate geological scientific input of unconventional exploration activities is required to mitigate potential risks.

A detailed scientific assessment of structural geology to determine the architecture and location of natural resources within a target area, along with natural fractures, is a vital input to any exploration activity. Without a detailed assessment of geology, the risk of environmental impact, including those associated with flowback, increases.

Data for risk analysis

Data or other evidence that might inform a scientific risk analysis of those impacts, with an emphasis on the local geographies and geologies, and local evidence from Western Australia.

Significant data available

Western Australia Department of Mines, Industry Regulation and Safety (DMIRS) holds are significant data that may be used to inform scientific risk. Frogtech Geoscience has contributed to DMIRS' significant body of knowledge by producing independent detailed regional geological assessments.

On the 4 January 2018, DMIRS and the Geological Survey of Western Australia Published the 2017 Canning Basin SEEBASE® Study and GIS Data Package (Report 182), by Frogtech Geoscience. Included in the report is a detailed interpretation the geology of the Canning Basin along with its structural evolution, including the identification of existing basin faults; each important inputs to a comprehensive assessment of risks associated with any exploration activity within the Canning Basin.

Report 182, is but one example of in depth geological scientific data available to the Panel to conduct scientific analysis of the local geographies and geologies of Western Australia.

Further, and on an evidential basis, the Panel should consider scientific evidence of impacts from extensive hydraulic fracture activities already completed within Western Australia and further afield documented in literature.



Regarding ALCOA report

In 2013, Frogtech Geoscience was commissioned by the Australian Council of Learned Academies (ALCOA) to report on the geological risks of shale gas production in Australia.

In connection with our report to ALCOA, and for the benefit of the Panel, we note the persistent misquoting of the ALCOA report, by activist organisations.

In the main we have observed third party commentary on hydraulic fracturing in Western Australia citing the ALCOA report, and stating a figure of 41,722 shale gas wells could be developed in the Canning Basin. We reject such third-party assertions as manifestly perverse and damaging to proper debate.

For clarity and avoidance of doubt, the reported figure of 41,722 wells in the ALCOA report represents an 800-meter grid space covering the entire Canning Basin only. It does not prescribe the number of wells for economic recovery, a number that is materially less than 41,722.

For clarity and avoidance of doubt, there is no scientific basis to suggest petroleum resources are equally distributed across the Canning Basin to enable the economic recovery of petroleum resources via conventional or unconventional methods on an 800-meter grid spacing.

Regulatory considerations

Reflections or experience on what a regulatory framework should ideally look like if the Government lifts the current Moratorium.

The Panel should consider regulations that require inclusion of detailed regional structural geology modelling, detailing petroleum and water resources as part of required Environmental Impact Assessment (EIA) for drilling permits.

The panel should consider the benefits of having independent regulators and that regulatory bodies should include appointments of qualified geologists, suitably skilled to assess the risks local geologies may have on unconventional exploration and production.

Sincerely,

Ryan Murphy
Chief Executive Officer