

From: Close, David
To: [fracking inquiry](#)
Cc: [REDACTED]
Subject: Interim regulatory recommendations
Date: Thursday, 28 September 2017 8:28:00 PM
Attachments: [image002.png](#)
[170928 NT Fracking Inquiry Regulatory Recommendations Final.pdf](#)

Dear Justice Pepper.

Please find attached some draft, specific regulatory recommendations for your review and consideration with regard onshore activities in the Northern Territory.

Please feel free to contact us should you require any additional information or clarification with regards to the attached.

Regards,
David

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Legislative and Regulatory Review Process

The updating of legislation, and associated regulations/guidelines/schedules, is an exercise that must be undertaken by:

1. appropriately qualified experts with knowledge of both the implementation of government policy and legislation; and
2. a deep understanding of all facets of the modern oil and gas industry.

Below are high-level principles that could be regulated robustly and would not prejudice any broader legislative reform process. Although principles such as 1.1 below can be stated simply, the equivalent directive in the Alberta regulations (Directive 008: Surface Casing Depth Requirements) is detailed over 11 pages (excluding appendices); therefore the codification of the below principles would require detailed work to ensure practicable, auditable and enforceable regulations are in place.

It is reasonable that the Northern Territory Government will approve onshore *gas developments* that involve hydraulic fracturing only once the relevant and applicable legislative reform is complete, however, the practice and regulation of hydraulic fracturing in the Northern Territory has a long history of safe performance and the current Act and Regulations are applicable and relevant to allow critical exploration, appraisal and piloting activities to continue upon a lifting of the moratorium on hydraulic fracturing.

The below principles, once codified into regulations, would provide the fundamental protections to ensure activities undertaken during exploration, appraisal and piloting are conducted responsibly by all operators.

Regulatory Recommendations: exploration, appraisal and piloting

1) Well Construction and Integrity

- 1) Wells must be designed to prevent cross flow with or contamination of regional aquifers; this will require a 'surface casing' string to be set across the regional aquifer and cemented at least 25m below the regional aquifer but above any potentially permeable, hydrocarbon bearing zone
- 2) Production casing is to be designed with the following minimum safety factors:
 - a) Burst: 1.1
 - b) Collapse 1.0
- 3) The cementing program must be designed to ensure cement coverage above the shallowest hydrocarbon bearing zone

- a) If log evaluation subsequently indicates a permeable, hydrocarbon bearing zone occurs shallower than the designed cement top, then the cementing program shall be modified to ensure the zone is covered and the regulator must be notified
- 4) A successful pressure test of the well must be conducted prior to any hydraulic fracture stimulation operations
 - a) The pressure test must not exceed the lower of the burst-rating of the production casing or any other element of the well exposed to pressure
 - b) The pressure test must be submitted to the regulator as confirmation of its successful completion
- 5) The maximum allowable pumping pressure must not exceed the pressure that the well was pressure tested to
 - a) Operators must demonstrate how they will ensure that the pumping pressure does not exceed the maximum allowable pumping pressure

2) Water Sourcing and Usage

- 1) All water users (including the Oil and Gas industry) are required to follow the Water Act
 - a) All water extraction shall be recorded and the volume reported
 - b) The volume of water extracted shall be monitored by the government or an independent, accredited third party to ensure the sustainable management of the water resource

3) Ground water monitoring

- 1) Hydraulically fracture stimulated exploration and appraisal wells must have a ground water monitoring bore within 500 meters (this may comprise existing water bores)
 - a) Samples must be collected pre and post Hydraulic Fracture Stimulation
 - b) Results must be submitted to the appropriate regulatory body(ies)

4) Operating in the Wet Season

- 1) If the ground water level rises above the lease grade (i.e. the location is in flood), then drilling and/or HFS activities must cease and the pad and wells are to be secured
- 2) Any open storage (tanks, pits, etc.) that are in use to contain fluids other than fresh water during the wet season must have freeboard equal to 150% of the maximum recorded Frequency-Duration-Intensity event in that region to prevent overflow from any rain event

5) Minimising Land Disturbance

- 1) An operator's surface footprint may not exceed 4% of the area of an individual five minute by five minute graticular block
 - a) Surface footprint includes the area from well pads, surface facilities (including plants, compressor stations, above ground water facilities, camps, etc.), pipeline right of way, and new roads

6) Orphaned and Abandoned Wells - Decommissioning

- 1) To mitigate the risk of improperly abandoned oil and gas wells or facilities, operators must provide a bank guarantee or bond to an "Orphan Fund" to ensure necessary funds are available to decommission wells or facilities in the event an operator is no longer a going concern.
 - a) The guarantee is to be provided prior to the construction of any physical entity (pad, well, pipeline, facility, etc.) that will require abandonment or rehabilitation and is irrespective of the project maturity (i.e. exploration, appraisal, development, etc.)
 - b) The guarantee or fee is to be held as a bond and returned to the operator upon the successful abandonment or rehabilitation of the physical entity