



Alice Springs – Lisa Gray, Miles Jennings

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3 August 2017

Alice Springs Convention Centre, Alice Springs

Speakers: Lisa Gray, Miles Jennings

Lisa Gray: Hello. My name is Lisa Gray, and I'm appearing as a resident of the Northern Territory.

Hon. Justice

Rachel Pepper: Thank you. Yes.

Lisa Gray: I'd like to start by thanking the panel for the opportunity to present today. As I said, I'm presenting as a concerned member of the local community. I've lived in Alice Springs for eight years, and during this time I've lived and worked here in Alice Springs and in remote communities in the region. One of the things I really love about living here is connecting to the desert environment. This environment is really special to me, and my sense of connection to the country is an important factor in my decision to live here in Central Australia. I'm presenting today at the inquiry because I'm concerned about the impact of unconventional shale-gas mining on the environment, and particularly on our water resources. I'm also worried about the impact of unconventional gas extraction on human and animal health.

Hon. Justice

Rachel Pepper: I'm just going to stop you here. We have another gentleman who's sitting at the table.

Miles Jennings: Sorry to interrupt. I just had to go to the toilet. I'm just here as a support for Lisa today.

Hon. Justice

Rachel Pepper: Okay. Could you please state your name for the recording please?

Miles Jennings: Miles Jennings.

Hon. Justice

Rachel Pepper: Thank you. Thank you. Please continue.

Lisa Gray: As I said, I'm also worried about the impact of unconventional gas extraction on human and animal health. In 2016, residents from Old East Side suburb in Alice Springs was surveyed about their views on hydraulic fracturing, and 89% of survey respondents supported a total ban on unconventional shale-gas mining in the Territory. Those community surveys indicate that there's widespread community support in Alice Springs for a total ban on hydraulic



fracturing in the Northern Territory due to the related environmental and health risks. The results of the community survey are also reinforced by my own personal experience. Anecdotally, in conversations I've had with a wide range of people in my community both in Alice Springs and remote communities, people have expressed concern about the impact of unconventional fracking on the environment and on our health.

I'm also concerned about the lack of accessibility of these hearings for people living in remote Aboriginal communities, particularly residents of smaller communities in Central Australia. I'm making a personal submission, although I'm also a member of an alliance of concerned residents in Central Australia as well. I'd like to start by making the point that unconventional shale-gas mining processes require vast amounts of water, and risk depletion of precious water resources here in the Northern Territory. As acknowledged by the panel in the interim report, shale-gas extraction is an extremely water intensive practise requiring the use of large quantities of local surface or ground water. Other sources also indicate that fracking for shale-gas requires vast amounts of water. According to a European parliament report, each unconventional gas well may require up to 10 fracks over its production life. This corresponds to the Australian gas industry estimate that one shale frack requires approximately 11 million litres of water.

However, other estimates are that a single frack operation on a shale-gas well can use between 11 and 34 million litres of water. This amounts to between 360 and 1,100 truck loads of water. I'd like to acknowledge that in the interim report, the panel argues that, and I quote, "The use of surface water for shale-gas operations should be prohibited in arid and semi-arid zones." However, in the same section of the report, the panel also states, "There seems to be little consensus among previous submissions on the actual sustainable yield of the Betaloo Sub-basin aquifer. In particular, I'm concerned that the panel, and again, I quote, "Has no estimate for the recharge rate of the Cambrian Limestone aquifer in the southern part of the Betaloo Sub-basin."

This links to evidence from the US that shows that in areas of fracking, water supplies for towns and pastoral properties have been seriously affected. These towns and properties have had to compete with fracking operators for water. As an example, in Texas, extraction of water for fracking has contributed to serious problems of ground and surface water depletion during drought conditions. Future security of water resources is also an issue for Alice Springs. According to Alice WaterSmart, the town's current water supply is currently pumped from a bore 150 metres below the surface, and is dropping by about one metre per year. This bowl draws on water from local aquifers linked to the Amadeus Basin.

While the Amadeus Basin is large, these local aquifers are much smaller. Most importantly, since pumping began in 1964, over 250,000 mega litres of ground water has been extracted with minimal replenishment. Hydraulic fracturing puts the future of our water resources at risk. Water is an



incredibly important resource in arid and semi-arid environments here in the Northern Territory. Any risk of depletion of our water resources also risks local industries, such as tourism and pastoral properties. Even more importantly, water is an essential element in the health of people and animals in the territory. We need to protect our water from the risks associated with hydraulic fracturing.

The second point I'd like to make is that allowing fracking gas fields across the Northern Territory places underground water resources at risk of contamination from heavy metals, salts, and gas. Linkage of wastewater from gas wells poses real risks for drinking water, and disposal of wastewater from shale-gas operations is a serious environmental problem. The interim report on hydraulic fracturing states that, and I quote, "Where adequate toxicological information is available, the chemicals used in fracturing fluid appear to have low toxicity, and the concentrations used in hydraulic fracturing fluid, ingestion would be unlikely to represent an acute health risk."

However, the report does not identify which of these chemicals of concern are, or the expected levels of concentration of the chemicals, which raises questions about the statement I've just quoted, that chemicals of concern appear to have low toxicity. I'd like to ask the panel how they will be able to assess the impact of COCs on public health if the type and concentration of those chemicals is unknown. Will this data be made available to the public before the panel delivers its final report? Moreover, according to a 2012 European commission report, there is an overall high risk of ground and surface water contamination resulting from fracking. Also, US studies have linked shale-gas to the contamination of ground water with heavy metals, salts, and gas. Contamination can occur from well casing failure due to corrosion, faulty construction, or repeated fracturing. Data from one US state shows that 6 to 7% of new shale-gas wells were faulty and leaking gas.

Moreover, this well failure rate can increase to 50% as wells corrode and cement casings degrade. Surface water pollution can also occur when there are accidental spills of fluids or solids at surface, when well blowouts occur, and through discharge of insufficiently treated wastewater into waterways. Studies from Duke University in the US have found high levels of radioactivity in a creek used for disposal of wastewater. Though, as someone who has lived in the Northern Territory for eight years, I've witnessed regular flooding from periods of heavy rainfall. For this reason, I argue that there's a major risk of contamination of areas well away from the initial well site due to flooding of waterways during extreme rainfall events.

I'd also like to talk about the disposal of wastewater from shale-gas operations. It's another serious problem that carries risk of environmental contamination. It's another key concern I have about hydraulic fracturing in the NT. It relates to the contamination of aquifers from flowback and produced water. In the interim report, it states that, and I quote, "The COC found in flowback and produced water may be more of a health concern



than the chemicals found in hydraulic fracturing fluid, and include other volatile organic compounds, and naturally occurring radioactive materials."

As flowback COC, and again, I quote, "May reach levels that would exceed health-based water quality guidelines." In addition, although the report argues that the dilution should reduce these concentrations in an aquifer, it also suggests that any evaluation of human health risks resulting from water contamination needs to be carried out on a site specific basis. According to industry sources, around 30% of fracking fluid flows back to the surface. However, as little as 6 to 8% of this fluid may be recovered. Underground water in the drilling area can also come to surface during unconventional gas production. For a typical shale-gas well, daily produced water volumes can range from 300 to 4,500 litres. The large volumes of wastewater from shale-gas mining are likely to be re-injected into aquifer formations, partially treated, and reused, or released into waterways, or trucked to holding plants for storage and evaporation.

83% of the Northern Territory is currently licenced for gas, oil, or petroleum exploration, so there is potential for much of the Northern Territory to be affected by water contamination from hydraulic fracturing. Overall, there's increased evidence from across the US of significant depletion and contamination of water resources and waste management issues from unconventional gas extraction. Unconventional gas extraction poses serious risk of environmental contamination, particularly of drinking water from wastewater leakage. In addition, there is no safe way of disposing of wastewater from hydraulic fracturing. Therefore, the Northern Territory government must ban hydraulic fracturing to protect water resources from future contamination.

Finally, as a non-indigenous person, I don't want to speak on behalf of Aboriginal people from Central Australia, however, I am concerned about the lack of opportunity for people from remote communities to participate in this stage of the inquiry process. I'd like to start by acknowledging that the panel recognises that, and I quote, "Aboriginal people have not yet been given enough information about the potential risks and benefits of hydraulic fracturing. It is imperative that accurate information be provided to the Aboriginal communities likely to be directly affected by the development of shale-gas industry well in advance of the development to ensure that the development will not pose a risk to Aboriginal people or their culture."

However, to date, the panel has only visited two Central Australian remote Aboriginal communities as part of the inquiry, that's and Hermansberg. There are 22 remote Aboriginal communities and areas covered by the Central Desert Regional Council and McDonnell Regional Council. Many of these communities lack the public transport to major hubs where they could have the opportunity to present to the panel. In addition, residents from these communities face barriers to accessing the information about hydraulic fracturing. Information is presented in complex, and at times, technical language that may not be accessible for people who speak English as a second or third language. Although this information is available online,



community members may not have the skills or internet access to engage with this data.

The panel states in the interim report that it will hold community consultations in remote communities between the 21st of August and the 1st of September. I'm asking members of the inquiry panel to visit more remote Aboriginal communities in Central Australia who would be affected by hydraulic fracturing, not just the two that have been visited so far to give community members the opportunity to engage with the information generated by the inquiry, and to give their ideas and opinions about hydraulic fracturing on their country.

I'd just like to thank the panel for the opportunity to present today, and ask if they have any questions.

Hon. Justice
Rachel Pepper:

How do we get ahold of your ... the 2016 community survey results?

Lisa Gray:

I can forward this information to the panel.

Hon. Justice
Rachel Pepper:

If you could please, that would be good, because we've had trouble getting ahold of that type of data so that would be quite useful. I guess, just a comment in relation to the visits to remote communities. The communities that we are visiting are ones which were more accessible. Let me emphasise the more bit, rather than necessarily accessible by other communities as you can well appreciate, and as I have certainly discovered the territory's a vast place. We have a year to complete this inquiry, and we simply cannot get to every single community, but we're certainly doing our very best, and my experience has been to date that where we have gone to particular areas, they haven't just been ... The community visits haven't just been populated by people from that immediate area. Other people have come in to the consultations and have participated. We haven't had any negative feedback in relation to that so far.

Lisa Gray:

Sure. I guess I have questions around still for people from communities that are more remote from those regional hubs, how much they're aware of the process that's going on. How much they have the opportunity to engage. If they're not even aware of it, and also how do you find out or capture information about who is engaged, who isn't. I just feel that it seems to me that two communities out of 22 is a really small proportion.

Hon. Justice
Rachel Pepper:

Is that based on what people have told you?

Lisa Gray:

I'm basing that on information in the report about how communities in Central Australia, so I'm talking about I guess the area covered by McDonnell Regional Council and Central Desert Regional Council. Within that, Hermansberg and have been visited. Are there other communities that have been visited that I'm not aware of?

Hon. Justice



Rachel Pepper: My question was in relation to the criticisms you've made, has that been based on what Aboriginal people have told you?

Lisa Gray: No. It's based on my observation of that.

Hon. Justice
Rachel Pepper: Thank you. Yes, Dr. Andersen?

Dr Alan Anderson: I think just a bit of broader context to that too, and the panel fully appreciates the importance of properly engaging remote Aboriginal communities that are likely to be directly impacted by fracking, and as we all know, there's a lot of them..... in the NT, but I think it's important to realise that it's very unlikely that there'll be any fracking in the central arid zone within the next decade. That should not be an issue for at least many years, local people.

Hon. Justice
Rachel Pepper: Any other questions or comments? Miss Gray, thank you very much for taking the time to present today. Considerable effort has gone into your presentation. The panel's very appreciative. Thank you.

Lisa Gray: Thank you very much.