

COVER PAGE for the

WA Scientific Inquiry into Hydraulic Fracture Stimulation in WA 2017
(also known as Fracking, Horizontal Drilling, Unconventional Gas Extraction)

Submission by:

Linda Ray



Date 1st March 2018.

Submission to:

WA Scientific Inquiry into Hydraulic Fracking Stimulation in WA 2017/18

Submitted by:

[linda ray](#) as an independent living being supporting peace. Cover Page attached.

For the attention of Dr. Tom Hatton, Mr. Philip Commander, Dr. Fiona Haslam McKenzie, Dr. Jackie Wright and Dr. Ben Clennell.

Introduction:

As a 64 year old West Australian, since moving here from the UK in 1976, now residing in the City of Rockingham area, I have, over these years here, become appreciative of the rare beauty of this landscape in Western Australia and the need for its preservation.

I am very concerned about the threat posed by the Shale and Tight Gas Industry in Western Australia, since being first alerted to the dreadful processes destroying lands in Tara, Queensland, where a friend lived and experienced exactly what it is like. Also another friend became involved in the Pillaga Push and shared the huge issues there, as he joined the protests and camped overnight during them.

A warning from Qld: http://www.csqfreenorthwest.org.au/qlds_story

Excerpted quote: “Would you like to go visit a forest covered with access roads, gaswells and potentially leaking fugitive toxic gases and chemicals? Many of those State forests have now been turned predominantly into gasfields, hardly an ideal location for the family holiday.”

[Greg and Joanne Vines's story – Wallumbilla, Qld.](#)
<https://www.youtube.com/watch?v=8ZwjNWxgrQk>

[David Monk Producer: \(2017\) Signing your life away – experience of Wayne Walker with Origin Energy](#)
<https://vimeo.com/212700855/70d67dbd16>

I started to investigate further and watched ‘The Frackman’ movie after it was first introduced to me, about a landowner in Tara, who was moving back to relax and enjoy his land. It was a big shock to find out about the invasion by the Gas and Oil Industry intending to start hydraulic fracturing through the shale rock, with a spreading number of wells. What he experienced led him to becoming an ‘accidental’ activist, or rather, actionist.

<http://www.documentaryaustralia.com.au/films/549/the-frackman-frack-off>

<http://www.abc.net.au/lateline/frackman-the-movie/6330708>

This was not what he was prepared for and the information shared was a shock and warning to all of us. The destruction of his property, the methane gas expiration above ground, (which could be lit easily and right next to trees), the cover-ups of evidence collected about the methane gas, the hazardous chemicals used, the trucks, the number of wells, which proliferated all over his land in Tara, was appalling. More so were the dangers posed to underground water by the toxic chemicals leaching into it, used during the ‘fracturing’ of shale rock at high pressure to break the rock allowing the wanted gas to escape and be captured. The fact we already have water shortages in Australia, with restricted usage times, is another huge problem posed by the industry in relation to the amount used for each well.

Venting gas Qld: <https://youtu.be/Jx-jWcRzndw> Tim Forcey, from the University of Melbourne, shows how the infra red camera exposes the methane gas emissions, not visible to the naked eye or ordinary camera (example in Chinchilla). He is a chemical engineer who has spent 35 years in the Oil and Gas Industry. The companies only tend to count the well head emissions, instead of wherever it is occurring as in migratory emissions from leaks in the pools and equipment, rock fissures created in the hydraulic fracturing simulation process.

<http://concernedhealthny.org/compendium/>

To then learn about families and communities around Australia, experiencing such negative health effects, broke my heart, especially in relation to the children being affected, as a result of these Oil and Gas processes. I have taken it upon myself, with others, to do what I can to have this dreadful industry halted from doing any more harm. One step was to join Frack Free Future. A total ban, in my opinion, is the ONLY solution to all the threats to water usage, water poisoning, climate change release of methane gas, farms/agriculture destroyed, land clearing, trucks dumping high volumes of toxic water effluent, failure of equipment and pipes used, the chemicals used, not forgetting landowners and their communities being so badly affected and destroyed in many cases - ALL of it.

https://www.rees-journal.org/articles/rees/full_html/2017/01/rees170014s/rees170014s.html

Excerpt: 5 Conclusion

This paper concludes that onshore gas fracking without any control mechanism could not be considered as a transition fuel for climate change mitigation in Australia. Fracking emissions could be a highly significant source of GHG emissions nationally as well as globally. In this context, it will be important to invest in the development of renewable energy resources to meet national climate goals. Also, it is vital to closely examine all fracking proposals and tighten up the legislation on venting, flaring and other emissions across the production stages...

I have watched movies like Fractured State <https://www.dontfrackwa.com.au/2017/12/18/afracturedstate/> as well as Fractured Country http://www.lockthegate.org.au/our_films and was appalled at conservative estimates suggesting that the Kimberley could see 41,720 gas wells and the Perth Basin with more than 14,000. http://www.lockthegate.org.au/gas_film_webisodes

Estimates of the number of gas wells in the Canning and Perth basins (Frogtech, 2013) can also be found here: https://www.acola.org.au/PDF/SAF06FINAL/Frogtech_Shale_Gas_Geology_and_Risks%20Jan2013.pdf

<https://www.gpo.gov/fdsys/pkg/STATUTE-86/pdf/STATUTE-86-Pg816.pdf>

In fact if it weren't for Miklo Corpus, one of the traditional owners holding 'country' for the people for so long, we would be in a worsened state already.

The use of such enormous amounts of water (an Olympic size swimming pool equivalent amount of water used for EVERY well, in fact the final draft reports say much much more, (An average of about 20 to 30 megalitres is used per horizontal well, which should fill about 6-10 Olympic sized swimming pools). This alone should mean STOP – Do not go ahead. On top of that are the 244 gallon drums of mixed toxic chemicals, most of which are not fully investigated, in relation to the harm to human health, environment and wildlife effects. This beggers disbelief if any responsible government was really serious about looking after Australia. The effect of the toxic combinations on our body systems, and our water, is probably never going to be fully known, as it takes generations to accumulate the facts, which should nullify any startups beginning in the first place. Any risks to health of the farmers, their families, landowners, communities alone should be enough to call for cessation of these operations for Unconventional Gas, permanently.

Clean Water Act of 1972. 1972. Public Law 92-500. Available: <http://www.gpo.gov/fdsys/pkg/STATUTE-86/pdf/STATUTE-86-Pg816.pdf> [accessed 2 July 2014].

Refer page 16 on amounts of water used: Fracking – The Evidence pdf <https://docs.google.com/file/d/0B1cEvov1OlyHdzRBRjk4dElfbVE/edit?pli=1>

http://www.lockthegate.org.au/gas_film_webisodes Webisode two on Water <https://youtu.be/BLTsuLR9gbY>

Doctors for the Environment shared some of the information that is known about some of the chemicals used such as:

- Methane Gas
- BTEX (benzene, toluene, ethylbenzene, xylene)
- polycyclic aromatic hydrocarbons (PAHs)
- heavy metals and other volatile organic compounds (VOCs) (6.5, 6.6, 6.7, 6.8)
- naturally occurring radioactive materials (NORMs)

<https://frackinginquiry.nt.gov.au/inquiry-reports?a=398476> See page 9 of 29 (Section 3.5) about chemicals used.

<https://ehp.niehs.nih.gov/1307866/>

Although the production chain of gas development is far reaching, we focused on the processes that begin with trucking the water, sand, chemicals, and other materials to the well pad, and end with the disposal of wastewater. Evidence suggests that these processes present the greatest risks to environmental public health and therefore have received the most attention in the scientific literature (Korfmacher et al. 2013; McKenzie et al. 2012; Rozell and Reaven 2012; Witter et al. 2013).

Methane Gas released from the hydraulic fracturing/drilling process, for shale and tight gas extraction, is another huge area for concern. It can be lit above ground, which has been clearly demonstrated in many videos relating to these gasfields. This, right next to bush and trees, in a country already threatened by 'bush fire' risks anyway. Even the fact that the Paris Climate Treaty Agreement on Climate Change was ratified for Australia on 10th November 2016, after coming into force on 4th November 2016. Although targets seem to be being reached for Australia on links shared below, there seems to be insignificant data yet recorded, except for small amounts relating to methane release during completion wells stages, not other stages. All aspects oil and gas hydraulic fracturing Stimulation processes are needing data collection of methane gas, for full risk assessment as the article determines. It needs better consideration for a truer picture than currently seen.

<http://www.environment.gov.au/system/files/resources/862e56d7-664a-4479-a30b-a2d58470d953/files/csiro-csg-well-completions-report.pdf>

https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp1718/Quick_Guides/ParisAgreement

<http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;query=Id%3A%22media%2Fpressrel%2F4926485%22>

The draft report seems only to be taking note of the chemicals released from the ground, after fracturing has taken place, but not the ones used for the hydraulic pressuring process? This seems highly inadequate and therefore how can anyone know the dangers posed, if these are not being investigated thoroughly? Tests on every chemical used should be done BEFORE they are even entered into such uses as in fracking (Unconventional Hydraulic Fracturing Stimulation). Detailed records should be kept on community inhabitants, changes to health and the environment accordingly, but this would be after the effects of harm, so this is hardly ideal. I believe that the Doctors for the Environment did start to collate much data on this matter, based on the lecture I attended a while ago at Frack Free Future in West Perth and they have been involved in submissions already for the Northern Territory Inquiry:

<https://www.dea.org.au/wp-content/uploads/2018/02/Scientific-Inquiry-into-Hydraulic-Fracturing-in-the-NT-02-18.pdf>
Refer to their Principal Recommendations on Page 2 in relation to this industry.

<https://www.dea.org.au/health-and-environment/unconventional-gas/>

<https://frackinginquiry.nt.gov.au/inquiry-reports?a=398476> Refer Page 19 Public Health
<https://frackinginquiry.nt.gov.au/inquiry-reports?a=479268>

<http://concernedhealthny.org/compendium/>

Excerpt: Given the rapidly expanding body of evidence related to the harms and risks of unconventional oil and gas extraction, we plan to continue revising and updating the Compendium approximately every year. It is a living document, housed on the websites of Concerned Health Professionals of New York and Physicians for Social Responsibility, which serves as an educational tool in important ongoing public and policy dialogues.

Final Draft Report – Summary Refer Page 4, Item 63. <https://frackinginquiry.nt.gov.au/inquiry-reports?a=479268>

I was so alarmed by the movies and the research, that I decided to get involved by attending lectures and to learn more through CCWA, Frack Free Future, as well as other meetings. I then became involved in a local actionist group to spread this information, helping others wake up and become aware. It is well known by many now that Mainstream Media is not sharing this information honestly, until more recently, and if anything, deliberately misleading the public on this matter.

Why did I do this? For the future of my grandchildren, to help save the Australian tourism industry, to save our agricultural produce, farms and these communities, to help end corporate lies and vested interested in dirty political decisions, until a BAN of this unwanted industry in Unconventional Gas Exploration pursuits is made permanent. There is no shortage of gas anyway and vested interests are pushing it and sell the majority of the gas overseas.

http://www.lockthegate.org.au/gas_film_webisodes Webisode Four on Food <https://youtu.be/OZHQXNqr-3Q>

The fact there is no gas shortage in WA, was also shared in an audio on the Kimberley inquiry boards site, recorded/live streamed, by a man who worked inside the gas and oil industry and his subsequent investigations into the matter. Another incredible indictment of how the public is being hoodwinked because of money, instead of realising that renewables are growing incredibly well and are the future for our environment and earth.

<https://theconversation.com/memo-to-coag-australia-is-already-awash-with-gas-80960>

<https://keptapwatersafe.org/global-bans-on-fracking/>

John Fenton, a farmer from Wyoming, came over to Western Australia to share his dreadful experience with hydraulic fracturing for gas. I attended his lecture and saw the evidence on videos he shared of the body sores all over his skin, the loss of hair, to having no eyebrows and bald patches spreading on his head, the closeness of the wells, right near his house. The sickness created by the toxins from the nearby wells expunging methane gas into the air and water in his home, to his family and children, became serious when one of them was increasingly having seizures and on more medication as a result, so much so, that the only solution was to leave this precious family farm eventually. This was an organic healthy farm, where they dared to drill a well within a 100 metres of his home and then more all over his land. He also saw the travesty of the web of wells spread across Wyoming, which are able to be seen on aerial photographs online. This is also the case in Queensland, Tara, shown on one of the shots on the Fractured State movie too.

http://www.lockthegate.org.au/gas_film_webisodes Webisode three on Health:
<https://youtu.be/xtmgAK0JgG0>

https://www.health.ny.gov/press/reports/docs/high_volume_hydraulic_fracturing.pdf Refer page 12 for Summary.

<http://www.dmp.wa.gov.au/Documents/Petroleum/PD-SBD-NST-108D.pdf>

The cost to his family, the farm loss, the upheaval is not measurable in money, but despite that who holds these companies accountable for relocation or destroying the value of their land? It appears not to be a cost born by the industry hardly at all. In fact, we the taxpayers end up bearing the brunt of these disasters in more ways than monetary ones. When John Fenton started looking into what was going on in America and Australia, he realised that we were at the stage of exploration licence approvals over the South West, the Kimberley, the Swan Valley, all iconic tourist industries and beautiful landscapes to be enjoyed by the people. He realised that, in fact, we could still stop it from going further if we mobilised and spread the word, and gathered/shared the knowledge in as many ways as we could. He decided to use his knowledge and experience to warn West Australians of what we could be faced with and came here to help us stop it. (It took him two years to recover from the skin lesions and hair loss after moving).

http://www.lockthegate.org.au/gas_film_webisodes Webisode Five on Natural Icons
<https://youtu.be/WvOp4W0bCF8>

<http://www.psr.org/environment-and-health/hydraulic-fracturing.html>

<http://www.psr.org/assets/pdfs/too-dirty-too-dangerous.pdf>

<https://www.dea.org.au/indaily-why-fracking-the-south-east-threatens-more-than-agriculture/>

<http://www.mandurahmail.com.au/story/4473989/gas-find-renews-south-west-mining-fears/>

<https://www.dontfrackwa.com.au/2017/08/01/humanhealthanducg/>

Other States in Australia, like Victoria, have already banned it, despite threats from mining moguls, like Gina Rhinehart, who tried to use her money and power to sue the Government for banning hydraulic fracturing.

It is this sort of vested interest problem which needs to end, pressuring the Liberal Governments and other political bodies/representatives to support the Oil and Gas Companies for the money promised in return by allowing the exploration and mining into the political arena. This does not lead to a correct, balanced, environmentally protected result for Australia and its people.

Family farms have been destroyed, thereby losing valuable and needed agricultural, livestock farms, life quality reduced by illness to the point they lose so much value, which is not even compensated for, nor could be in fact when you see the outcomes for these land 'owners' who get no chance to say 'NO' to the industry, due to the legislation robbing them of perceived full ownership, indicating that they only own the top layer of their land, as with any landowners in Australia. The 1967 Petroleum and Geothermal Energy Act, which was created between wars, is needing to be changed to correct this situation via a Supreme Act of law, to return the right to veto this sort of access.

<https://frackinginquiry.nt.gov.au/inquiry-reports?a=476740> See page 54 and

https://www.dnrm.qld.gov.au/data/assets/pdf_file/0004/442633/land-access-code-2016.pdf April 26, 2014 –
[A](#)

Excerpt from Page 15 of Texas jury awarded a family \$2.8 million because, according to the lawsuit, a fracking company operating on property nearby had “created a ‘private nuisance’ by producing harmful air pollution and exposing [members of the affected family] to harmful emissions of volatile organic compounds, toxic air pollutants and diesel exhaust.” The family’s 11-year-old daughter became ill, and family members suffered a range of symptoms, including “nosebleeds, vision problems, nausea, rashes, blood pressure issues.” 17 Because drilling did not occur on their property, the family had

initially been unaware that their symptoms were caused by activities around them.

Excerpt from: https://www.zotero.org/groups/248773/pse_study_citation_database/items/itemKey/4BASXT82?

Our study demonstrates how farmers' intersectoral dependence conditions procedural inequities and greater environmental risk. We show how farmers of small and mid-sized operations experience rural environmental injustices as they endure corporate bullying; face procedural inequities negotiating and enforcing lease terms; and increasingly contend with environmental risks associated with unconventional natural gas production.

Who wants to be surrounded by wells and toxins, with poisoned water and land, animals and wildlife? These families are sometimes so reduced to nothing that they are relocated, but often made to keep quiet as a result of so-called 'assisted' re-location via these Oil and Gas Companies.

<https://www.theguardian.com/environment/2013/dec/14/fracking-hell-live-next-shale-gas-well-texas-us>

Shonkoff, Hays and Finkel, 2014, Environmental Public Health Dimensions of Shale and Tight Gas Development, Environ Health Perspect; DOI:10.1289/ehp.1307866 <https://ehp.niehs.nih.gov/1307866/>

My concern for WA relates to the future of my family and their children. Do you think any of these actionists are wanting to do this? Of course not. It is because we HAVE to do this or lose all Australia stands for.

<http://www.theland.com.au/story/5213428/activism-a-growing-necessity-in-our-regions/?src=rss>

The issues of concern include:

1. Water Pollution – Contamination of underground water reservoirs and resources, due to failure of wells.
2. Loss of pristine areas of farmland, bushland and their produce due to the pipelines, the roads, well pads.
3. Fugitive emissions from the leaks in the wells, which has already happened when they have tried to drill.
4. Air pollution from a wide range of hazardous air pollutants released from wells and the infrastructure.
5. Soil and water pollution from spills, leakage and overflow of toxic wastewater.
6. Migration of gas and toxic substances into groundwater through natural faults and fracking induced pathways.
7. Water, soil and crop contamination from re-use of poorly treated or untreated wastewater on farmlands.
8. Noise and air pollution from trucks, drill rigs and machinery especially when so close to a house/farm (can be as little as 100 metres) and pumps/drills running all night.
9. Soil and groundwater contamination from re-injection of poorly treated or untreated wastewater.
10. Evaporation ponds – flooding if it rains and thereby spreading chemical toxins.

Already the South West (Whicher Range) experienced a case where half a million litres of diesel was being used in the hydraulic process, which ended up going seriously wrong and the majority of which was left in the ground after, to seep and affect the surrounding areas. This in a highly valued tourist region too. The lack of integrity on such matters, is not something we can continue to hide: The favt they intend to cap it off in some way is hardly a solution to the environmental damage.

In South West WA, companies claim they are targetting conventional gas, when it is tight sandstone and limestone in the area. The company which originally applied for the gas licence over Capel, Boyanup and Dardanup was called 'Unconventional Resources Pty Ltd'. After community protest, they changed their nameto **Bunbury Energy.**

<https://www.dea.org.au/indaily-why-fracking-the-south-east-threatens-more-than-agriculture/>
<https://www.dontfrackwa.com.au/2017/07/18/whicher-range-a-gasfield/>

It is obvious that no amount of regulation can make this a safe industry when cases like the Kimberley, as well as over East, shows that every well leaks at some point and very little can be done to stop further harm to the environment. Then there is the issue of land seepage as migratory emissions from the cracks and disturbed land created by the facturing method.

www.tai.org.au/sites/default/files/Migratory_emissions_20170417-LowerRes.pdf

http://www.pnas.org/content/108/20/8172?ijkey=978a25eccc71113c6151226a506a0588e0e91694&keytype=tf_ipsecsha

<http://www.pnas.org/content/pnas/108/20/8172.full.pdf>

Excerpt: Based on our groundwater results and the litigious nature of shale-gas extraction, we believe that long-term, coordinated sampling and monitoring of industry and private homeowners is needed. Compared to other forms of fossil-fuel extraction, hydraulic fracturing is relatively poorly regulated at the federal level. Fracturing wastes are not regulated as a hazardous waste under the Resource Conservation and Recovery Act, fracturing wells are not covered under the Safe Drinking Water Act, and only recently has the Environmental Protection Agency asked fracturing firms to voluntarily report a list of the constituents in the fracturing fluids based on the Emergency Planning and Community Right-to-Know Act. More research is also needed on the mechanism of methane contamination, the potential health consequences of methane, and establishment of baseline methane data in other locations. We believe that systematic and independent data on groundwater quality, including dissolved-gas concentrations and isotopic compositions, should be collected before drilling operations begin in a region, as is already done in some states. Ideally, these data should be made available for public analysis, recognizing the privacy concerns that accompany this issue.

The use and magnitude of water is not even something we should risk using or contaminating especially when our artesian wells should be kept safe and pure for all West Australians now and for our future. We have water shortages and restricted usage in many areas, so how can anyone in this industry even justify using such vast amounts for each well, let alone contaminating much that remains after. There are thousands of wells proposed and it doesn't take much to see how outrageous it is to consider continuing with any of them.

The use of hydraulic pressure with the water, chemicals and dump trucks of sand used to 'explode' the shale rock by fracturing it beneath the water tables is to allow the gas to be thus released through the cracks. This is not acceptable in my opinion under any circumstance. As mentioned before the majority of the gas is sold overseas, as experts have already shared - there are no gas shortages.

The gasfields are invasive, ugly, destructive in so many ways, aforementioned, and it is more about money making and vested interests than it is about what's right for the land, the people and the jobs. The jobs purported to be created by this industry, do not stack up in actual fact from studies undertaken.

Would a politician allow a well to be drilled 100 metres from his home and then all over his/her land? If it is so safe as they proclaim ... why not? We have seen pretences by politicians on main stream media, made at drinking water from a well, but we also know, it wouldn't be the sludge left behind, nor the level of polluted water others are left to drink and get sick from on the affected properties. This information is well supported by John Fenton's personal story along with others here in Australia, in the Frackman movie.

Why do we have no veto rights to say no? Why do our Indigenous Protectors of the land have their rights railroaded over or misled by incorrect information, into ignorantly signing away their land, for this untruthful industry.

<https://frackinginquiry.nt.gov.au/inquiry-reports?a=476740>

This report shares some of the outcomes and suggestions to protect those in the Kimberley, which should be part of all considerations in other areas of the South West too.

[List of wells recently fracked in WA](#)

<http://www.dmp.wa.gov.au/Petroleum/Recent-activities-involving-18011.aspx>

‘Voices from the Gasfields’ by Ian Smith, in the UK, is another man whose lecture I attended here in West Australia as part of another event, shares many, many videos on youtube under that first heading. He helped to halt the trend in the UK and came over to Australia to share what’s going on and was on his way then to help halt the Queensland onslaught of fracking. He too believes it needs to be totally banned.

[Voices from Gasfields – it started with just one well 2015.](#) <https://www.youtube.com/watch?v=V3K0kV7UcME>

Pressure to have a moratorium to hold off on the proposed lease approvals, came to pass due to raised awareness and people’s concerns expressed via petitions handed over to Parliament House, where I attended on a couple of occasions and in marches against Fracking. Labor took up that baton at that stage during local elections and our local member then became Premier of WA, Hon. Mark McGown. The next issue was to further increase pressure on Labor to agree to halt and current exploration or mining leases granted, until 2020.

Unfortunately, even the current levels of exploration are too invasive, doing harm, even before any further approval were to take place or the ban lifted in any way.

[Ingraffea, A. R. \(2016\) Video: Well failure.](#) https://www.youtube.com/watch?v=Dxis-vYGM_M

There should be a total assessment from health groups involved in opposing these dangers to community health, individuals. Doctors from the Environment have done a great deal of work in understanding, helping as much as possible, by researching the true effects that hydraulic fracturing for gas and oil is having. I attended a meeting at Frack Free Future where this was outlined in detail.

If you believe this cannot be safely regulated, as I do, then this practise to obtain Shale and Tight Gas should be banned, for good, not to be able to be overturned by an new political party’s whim. Budget constraints are another issuing not helping full facts be revealed. Until this industry can prove all of it is safe, then none of it should be approved to go ahead. End of story. This whole approach has been back to front. Research should always be done first, not after the harm is done, as in prevention is better than cure. Unfortunately the Gas and Oil Industry, since introducing this invasive drilling approach with its high volume fracturing processes, has done the exact opposite.

www.health.ny.gov/press/reports/docs/high_volume_hydraulic_fracturing.pdf

HVHF is a complex activity that could affect many communities. The number of well pads and associated HVHF activities could be vast and spread out over wide geographic areas where environmental conditions and populations vary. The dispersed nature of the activity magnifies the possibility of process and equipment failures, leading to the potential for cumulative risks for exposures and associated adverse health outcomes. Additionally, the relationships between HVHF environmental impacts and public health are complex and not fully understood.

Comprehensive, long-term studies, and in particular longitudinal studies, that could contribute to the understanding of those relationships are either not yet completed or have yet to be initiated. In this instance, however, the overall weight of the evidence from the cumulative body of information contained in this Public Health Review demonstrates that there are significant uncertainties about the kinds of adverse health outcomes that may be associated with HVHF, the likelihood of the occurrence of adverse health outcomes, and the

effectiveness of some of the mitigation measures in reducing or preventing environmental impacts which could adversely affect public health.

If it was to even be considered, there should be compensation paid to the farmer for every hour the mining industry is working/attending on their land and also for the safety of the farming families children, there should be checks on gas and oil employees for previous child abuse potential issues, as they are wandering freely around on the farming land, while they work, thereby kids may not be safe. Any occurrences of harm to any one of the family members, or property damage, or from unsafe well leaks; all of this needs to be compensated for, to be made in agreement in explicit terms, with land owners on paper first, using expert advice that is not a cost borne by the farmers/landowners themselves. This would require a totally independent board of legal advisors/lawyers who are not part of the Oil and Gas Companies' industry, but with all costs paid for by Oil and Gas the Industry, as the perpetrators of the harm in fact.

If anyone in the family becomes ill or progressively shows evidence of these effects from this industry presence on their land, they should be compensated for by the oil and gas industry insurance companies with any medical assistance or health affects/needs met and paid for immediately and going forward. The depreciation of the land is another area that should be written into any agreement and be more than compensated for, if the family has to be relocated, without any gag orders being enforced or threats applied to families to suppress the truthful facts of this industry. If that isn't indictment enough then I don't know what is.

HOWEVER, NONE of these steps, no matter how high we make them, could compensate those affected on their land by these hydraulic fracturing stimulation practises in Western Australia, or anywhere in the Australia or globally, but at least this is a way to establish some protection for those affected and should be legally enforceable by the farmers against the offending industry, with those legal costs to be covered by the Oil and Gas industry as mentioned above.

Any idea of regulating this industry (which I don't believe is even possible nor should be considered) must include zero emissions, with enforceable, very large, bonds on every lease, needs to have protections in place for the children due to the workers who can access them, (i.e. a register of workers, to be vetted and registered/checked for background and police clearances, before being hired). There has to be some policy in place to ensure that each site has someone responsible for this type of check/report to update the register daily, with names of workers and photos included on the record. Commission costs should be ongoing relating to assessing health impacts. Re-compensation for every step, in place first. Value of land recompenations in place, agreed ahead and in the open, using other independent and unbiased agencies to ensure fairness if need be. Relocation of families should be the last resort and be avoided by halting the industry and its actions, but if it has to happen as has been the case to date, then all costs should be fully paid for by the gas and oil companies themselves. *Where do you move a family to anyway after destroying their lives and community and land to the point they couldn't sell due to the loss of value to their land by the mining industry?* **Again I do not agree with anything less than a total ban.**

Who is the government going to allocate responsibility to when the land becomes contaminated? This is not a taxpayer caused problem and should never be theirs to pay. It should rest always on the industry shoulders, the relevant company. They milk the money from all of this, sell it overseas and so they should pay. This approach by the Oil and Gas Industry, based on greed and power is part of an overall problem as part of a system controlled by globalist elites and their manipulation of the markets and money flows, fossil fuels, political power. The track record of the mining actions shows no one in the industry is showing any respect or caring for the people affected so drastically, the indigenous owners, their history and native land titles, the land, the agriculture, the tourism industry, farming produce, farms, communities - This is why we have to change how we deal with

these matters in WA, (and the planet) before we lose everything worth living and fighting for, before it is too late.

David Monk Producer: (2017) Signing your life away – experience of Wayne Walker with Origin Energy
<https://vimeo.com/212700855/70d67dbd16>

In Wallumbilla, Qld - Greg and Joanne Vines's story
<https://www.youtube.com/watch?v=8ZwjNWxgrQk>

Neil Stanley's story, Kogan Qld – Desecration of sacred site:
<https://www.youtube.com/watch?v=cOhwhHKCihE>

These suggestions are based on the results and behaviours of the track records of the Oil and Gas Companies involved in Hydraulic Fracking Simulation in Western Australia and everywhere it has occurred in Australia, and other countries. The track records are appalling, so the impacts on areas in Australia, have already shown the total disregard for care of the farming communities, families affected in so many ways, the loss of land value, lack of proper rehabilitation, lack of supervision of workers around children, health impacts, lack of ability to say 'no' to Oil and Gas Companies coming onto their land... all lead, in my opinion, to the fact that there is no way to safely regulate all aspects of this industry, not without full accountability by them, financially and honestly and even that would never be enough. Therefore I am totally of the opinion we must legislate to end this hydraulic fracturing industry for good.

Any companies who have been charged, like Santos, \$50,000, were for paltry amounts compared to the damage done to those affected. Nothing will be enough, but let's at least pretend it can be and get that in place first, to help halt it.

We need the expertise of Public Health Members, Economic Environmentalists and Seismologists with reports be included to widen the scope of any proposals, if we are to achieve more open and full assessments. Why were these areas not included as it seems to be so logical to do so? The Northern Territory Inquiry was expanded to cover these areas of expertise, see link to that panel's background: <https://frackinginquiry.nt.gov.au/meet-the-panel>

The moratorium ban is temporary at the moment and people are being led to believe it is done and dusted when it is not and that's why we need a total ban supported by permanent legislation/regulation. The people of Western Australia need nothing less, and, in fact, all of Australia should follow and do the same, if not already banned.

Fracking: The evidence: <https://docs.google.com/file/d/0B1cEvov1OlyHdzRBRjk4dElfbVE/edit?pli=1>

Job creation by renewables is also much more a relevant fact of where we should be heading and is already growing very well. Australia can no longer afford disastrous levels of control and manipulation by the corporate big boys, without any regard for the environment, the people, earth. This is the time to do the right thing for beautiful Australia and her inhabitants so we may continue to enjoy a wonderful tourist industry, incredible organic farming and increasing permaculture practises, renewable alternatives to energy and so we do not need Oil and Gas fracturing industries being kept going. Even the number of jobs predicted by the Oil and Gas Industry do not stack up and seem grossly distorted especially in relation to any true lasting positions with fly in and fly out workers eventually spending their money elsewhere and creating a false economy by their wages, which doesn't fit the real scenario overall for Western Australia or other areas, as we have already seen when the mines close and leave a 'ghost' town in effect, with devastation of land etc as a result.

[Gas industry and jobs in Australia. TAI submission to NT Fracking Inquiry media release](#)

<http://www.tai.org.au/content/economies-shale>

http://www.frackfreewa.org.au/industry_mythbuster

Excerpt: Overall, the gas industry fails to provide the *long term, sustainable, locally sourced* employment opportunities and pathways that are needed to properly address rural and remote unemployment. In the US, experiences in various states and accompanying studies have shown that the oil and gas industry's promises for job creation from drilling for natural gas have been greatly exaggerated. Likewise, in Queensland, with the 4 year construction phase of the CSG production gasfields in the Surat Basin now coming to an end, the gas 'boom-towns' of Dalby, Roma and Chinchilla are experiencing a crippling economic down turn with associated job losses and loss of revenue for local businesses[9].

<http://www.tai.org.au/content/economies-shale>

Some references have been made to always having enough water by desalinating the oceans and bottling water – American Gas Fields – see Plastics on the First Nations site. Really? At what costs to run and plastic bottles, what effects on the remaining oceans as they become saltier, on the remaining sea life going forward? Plastic bottles are already a major issue to be dealt with and have been evidenced inside fish and sealife already, as small molecules and found on beaches they have been swept up on, e.g. Cottesloe in Western Australia. This is not the answer we need at this time. Again it gets away from how to maximise collection points for water, not add to pollution by plastic bottles and is about making money, controlling our water sources and choices.

In summary, I think the harm and damage already done to other states in Australia, the evidence and experience shared by other countries and their farmers of the wrecked landscapes, the community disruption to lives, farms, produce, health, air quality, water quality, degradation of total landscapes make it a no brainer. This is a dying industry and the fossils should stay in the ground. No matter how much they try to sell it or tell us it can be made safe, we know it just isn't so. There is a reason other countries and states have totally banned fracking (hydraulic unconventional gas extraction). Why would we ignore this evidence?

http://www.frackfreewa.org.au/industry_mythbuster

There is now so much evidence worldwide of the environmental and health risks from fracking that many governments have imposed bans and moratoriums. Jurisdictions with bans/moratoriums in place include Victoria & Tasmania, the US States of New York and Maryland, and the countries of Scotland, Wales, Germany and France.

We already know the industry is chomping at the bit to do more of this, regardless of the harm, but we only have to look at aerial photographs to see the aftermath and read all the reports on toxins etc ... so we should be asking.. is that what we want to live like or near or on? Do we want poisoned water to drink? Do we want toxic air to breathe in? Do we want a gas well next to our house? Do we want all our trees and beautiful land devastated by trucks, chemical spills, toxic water, bush clearing, fire risks, well proliferation? Do we want our tourism industry destroyed because there are no safe havens left? Do we want false jobs that don't last? Do we want an industry that thinks it is above accountability? NO THANK YOU!

Thank you for your consideration of my submission and I appreciate all you are doing to try to make a difference.

More Links following to refer to and also referred to:

<https://frackinginquiry.nt.gov.au/inquiry-reports?a=479268>

Final Draft Report – Summary

<https://frackinginquiry.nt.gov.au/meet-the-panel>

Meet The Panel – Backgrounds included

<https://frackinginquiry.nt.gov.au/inquiry-reports/background-and-issues-paper>

https://www.health.ny.gov/press/reports/docs/high_volume_hydraulic_fracturing.pdf

<http://www.psr.org/assets/pdfs/fracking-compendium-5-water-excerpt.pdf>

Excerpt from page 5 and 6 of 44 About Depletion of Water

December 11, 2017 A report by the Texas Observer

Investigated groundwater depletion by fracking operations in west Texas at the southern edge of the Ogallala Aquifer. Groundwater conservation districts lack legal financial resources to restrict groundwater pumping or even compel metering on water wells that would monitor exactly how much water is pumped. In Howard County alone, water used for fracking is now believed to constitute about 20 percent of average annual water use.

And also

November 16, 2017 Excerpt

The 2005 Energy Policy Act prohibited the U.S. Environmental Protection Agency from regulating fracking under the Safe Drinking Water Act and from requiring that operators disclose their chemicals. According to an investigation by InsideClimate News, the scientific study that justified this provision (which is widely known as the Halliburton loophole) was the subject of a whistleblower complaint. The study was also disavowed by its authors, who said the conclusion of the report that fracking posed no risk to groundwater was not supported by the evidence. These authors removed their names from the final document.

http://www.csgfreenorthwest.org.au/the_spills

Then, despite being formally warned by the EPA for a water discharge incident in 2011, in 2013 Santos itself was fined for a pollution incident which involved a leak from a CSG wastewater storage pond.

Santos has also been fined more than \$50,000 by the NSW Land and Environment Court for four separate breaches of the conditions of its petroleum title, including the failure to report a leak of CSG water from another of its storage ponds in 2014.

Close to 200 chemicals are used in the fracking process and the WA Health Department noted in its report into fracking and human health in 2015 that of those 78 (40%) did not have a guideline or relevant approval by a regulatory agency.

<https://www.dontfrackwa.com.au/2017/11/15/frackingchemicals/>

Excerpt: The DOH also noted that 13 of the chemicals are known human carcinogens. A further 28 are known as carcinogenic in animal studies and 35 are listed as animal developmental and reproductive toxicants.

Common fracking compounds include benzene, toluene, aldehyde, polyacrylamides, chromates, hydrochloric acid and formaldehyde.

Benzene, Toluene, Ethylbenzene, Xylene or BTEX are volatile organic compounds (VOCs) found naturally in crude oil, coal and gas deposits and associated groundwater (4.9). While they are prohibited from use in WA, they can be released from the coal seam via drill holes or fractures (4.10). The short term health effects of BTEX include skin, eye / nose irritation, dizziness, headache, loss of coordination and impacts to respiratory system. Chronic exposure can result in damage to kidneys, liver and blood system. Benzene is strongly linked with leukemia (4.11) and diseases such non-Hodgkin's lymphoma (NHL).

<https://www.dea.org.au/indaily-why-fracking-the-south-east-threatens-more-than-agriculture/>

<https://www.dontfrackwa.com.au/2017/07/18/whicher-range-a-gasfield/>

TUESDAY JUNE 20, 2017: A new academic paper on the tight gas reserves of the Whicher Range east of Margaret River suggests that the best way to get the problematic gas out of the ground is via a proliferation of wells.

The paper presented to the Society of Petroleum Engineers at a conference in Saudi Arabia in April this year was put together by a team of academics including three from Curtin University.

The paper entitled “*Optimization of Infill drilling in Whicher Range Field in Australia*” looks at the various attempts to get the gas out of the range and concludes that 58 new wells drilled in two stages will optimise the production of the gasfield.

The conclusions are in stark contrast to statements by CalEnergy, the company holding the lease over the range, that a maximum of seven gas wells would be needed in the gasfield and that the footprint of the gasfield would be minimal.

The paper also acknowledges that the gasfield is tight sands, an unconventional gas, a fact that the gas company has attempted to downplay.

<https://www.dontfrackwa.com.au/2017/08/01/humanhealthanducg/>

<http://www.mandurahmail.com.au/story/4473989/gas-find-renews-south-west-mining-fears/>

The discovery of gas in two mining licenses between Bunbury and Mandurah has raised concern among environmental activists in South Western communities.

EP480, which extends south from North Mandurah to Lake Preston, and EP416, stretching from Lake Preston to just north of Brunswick, are two exploratory gas mining leases majority owned by Pilot Energy Pty Ltd.

<https://www.theguardian.com/environment/2013/dec/14/fracking-hell-live-next-shale-gas-well-texas-us>

Nausea, headaches and nosebleeds, invasive chemical smells, constant drilling, slumping property prices – welcome to Ponder, Texas, where fracking has overtaken the town. With the chancellor last week announcing tax breaks for drilling companies, could the UK be facing the same fate?

North Dakota, Ohio, Pennsylvania and, most recently, California. [More than 15 million Americans now live within a mile of an oil or gas well](#), 6 million of them in Texas.

<http://www.tai.org.au/content/economies-shale>