

INQUIRY INTO COAL SEAM GAS

Name: Name suppressed

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Partially Confidential

SUBMISSION
to the General Purpose Standing Committee No. 5
NSW Coal Seam Gas Inquiry

I am concerned about the potential health risks and environmental impacts caused by the Coal Seam Gas Mining Industry in Australia.

The effects could be:

- Potential health risks
- Risk of affecting ground water and surface streams now and into the future
- Increased heavy traffic and air pollution
- Risk of gas explosions/coal gas fires
- Devaluation of property and breakdown of communities

I recommend that the State and Federal governments:

-----Call a Royal Commission into all impacts and contingent liabilities associated with coal seam gas mining and complete a comprehensive hazard assessment for all hydraulic fracturing chemicals used in Australia, including their impacts on human health, their ecotoxicology and environmental fate (air emissions; releases to groundwater and watercourses)

-Coal seam gas exploration and mining to be made subject to all relevant environmental legislation, such as Native Vegetation act 2003, and the Water Management Act of 2000.

-New legislation be implemented to ensure that the community has full legal rights to challenge and enforce environmental laws under which coal seam gas companies are operating.

-The provision of a right in the Petroleum (Onshore) Act to allow landholders to refuse consent for coal seam gas exploration or production on their land.

-A prohibition on coal seam gas exploration and mining in important bushland, valuable farmland, groundwater aquifers, residential areas and public lands.

-Make a comprehensive health and environmental assessment of all chemical impacts associated with CSG activities including gas flaring, intentional venting, fugitive emissions, diesel use, and waste water management

-Make a full cost-benefit analysis to investigate the long-term impacts of the industry in terms of clean-up and remediation of contaminated areas, treatment of wastewater, and increased landfill capacity to dispose of waste products created by CSG.

-Implement a moratorium on Coal Seam Gas mining until the outcome of the Royal Commission

-Ban the extraction technique known as “Hydraulic Fracturing” until all chemicals used in coal seam gas drilling or fracking must be assessed by the chemical regulator for use for that purpose before being approved for use.

-A further requirement that assessment & study be made of naturally occurring chemicals produced via drilling and extraction within and around the Coal Seam - PRIOR to any extraction.

-A further requirement that if drilling is to go ahead, that adequate compensation laws be in place as well as laws to effect an immediate ceasing of this mining - should environmental damage be proven and shown.

-Stop any new coal seam gas mines or power plants; and invest in renewable energy sources.

Investment in energy must be limited to technologies that can move us to a zero emissions economy, not commit us to other carbon polluting technologies. Start seriously funding renewable energy solutions for our energy needs, such as using Solar thermal technologies.

(http://en.wikipedia.org/wiki/Solar_thermal_energy)

We stand at a crossroads and this is a pivotal point for all of us as a state and nation to ask that there be transparency in the decision making processes for the sake of future generations. I ask that we look deep into this issue and our heavy reliance on mining the resources from this land thereby destroying our environmental and cultural heritage in chasing economic stability. We are all in this together. There needs to be a new way to look at our energy consumption and dependency on non-renewable fossil fuels. We have a choice to start creating a future that we can all feel safe and secure in for generations to come. What Australia does effects the whole world. Everything is interconnected.

The government has wilfully put land and environment at risk. I am alarmed at the lack of regulatory oversight in NSW that is allowing the burgeoning coal seam gas industry to run rampant throughout this state, especially when it comes to the disturbance of rural land productivity and people's livelihoods. I believe tighter environmental safeguards need to be put in place before projects are allowed to continue. Farmers, environmentalists, and hydro-geologists fear that this industry could cause pollution and contamination of groundwater and land. Our food security should come first before profits. The priorities need to be seriously reviewed.

Australia is not the only country questioning this industry. There is worldwide concern about this industry thought to be a new "gold rush" and there simply is not enough evidence that there will not be devastating effects to the environment now and way into the future considering the heavy investments already made. Some things like water purity are irreparable. We are moving into a time where water resources are becoming more and more compromised. There are already examples of people's water becoming polluted by chemicals used in the mining process, people who can light their water on fire because of the methane leakage. Water is supposed to put out fires not light them. There are things that are happening that never have happened before. Analysis from waste in areas found hundreds of industrial chemicals, and carcinogens linked to leukaemia at levels 6 to 15 times safe drinking water standards. (National Toxics Network. August, 2011. 'Gas industry plays down

BTEX levels in groundwater')

Why have the governments of France, and the United Kingdom suspended Coal Seam Gas Mining?

France became the first nation to ban the use of hydraulic fracturing, or fracking in drilling for natural gas and oil on June 30 when French senators voted to ban the practice. Oil and gas companies operating in France with fracking permits will have them revoked according to the legislation passed by a 176 to 151 vote. Why has the New York Attorney General of the United States filed a lawsuit in the Federal Court in an attempt to require a full environmental review of hydraulic fracturing under the Federal National Environmental Policy Act?

Particular concerns with mining coal seams for gas should require policy to address existing projects - include possible water, air and environmental contamination with toxic and radioactive compounds, salt and heavy metals; damage to aquifers and groundwater systems; gas explosions and flammability; sizeable footprint of gas fields and the networks of wellheads, pipelines and roads that fragment the environment; fugitive emissions and truck movements. Coal seam gas mining has also been linked to increased rates of cancer, kidney, heart lung and neurological problems, asthma, eye irritation, endocrine disruption and headaches.

The following information was taken from the National Toxic Network briefing paper:

(<http://ntn.org.au/wp-content/uploads/2011/07/NTN-CSG-Report-July-2011.pdf>)

The National Water Commission states:

"The Commission considers that unless and until it can be demonstrated otherwise, surface water and groundwater resources should be assumed to be connected, and water planning and management of the resources should be conjunctive. This is the reverse of the current situation." -

Biennial Assessment 2009

Also on the National Water Commission site states (www.nwc.gov.au):

Groundwater can contribute to base flows in streams when it is discharged from aquifers, surface water can recharge groundwater resources when it seeps down into aquifers.

Although it is not always apparent, surface water in many rivers, dams, lakes and wetlands is connected to underground water resources in aquifers. There are several different examples of these connections:

- groundwater can contribute to base flows in streams when it is discharged from aquifers.
- surface water can recharge groundwater resources when it seeps down into aquifers. The risks of affecting ground water, groundwater can contribute to base flows in streams when it is discharged from aquifers.

The chemicals being used have not been adequately assessed for their health and environmental effects and there is a growing concern that they may have significant negative impacts on the environment and surrounding communities. For instance, toxic spills can occur, and air, soil and water may also be polluted with hydraulic fracturing chemicals as a by-product of the CSG extraction process.

If water is interconnected, then the risks of water contamination are too great.

Consider this, it took Australia longer to ban DDT, it was banned in 1972 in the US, and we banned it in 1987, 15 years later. For some reason the government in this country likes us to be behind the times. Maybe with this issue we can take bigger steps to ensure the safety of the people and environment. Hopefully, we can move towards a renewable energy future where ECOLOGY is more important than ECONOMY. It may be a paradigm shift. We need to think about the longevity of life on this land, not the short term. What we do now effects generations to come. Please consider the effects this industry and any mining industry for that matter has on the environment, agriculture and community.

Water is a precious resource in Australia. It needs to be protected.

Taken from the the University of New South Wales Connected Waters web site,

<http://www.connectedwaters.unsw.edu.au/>:

“Australia is often said to be the driest inhabited continent on Earth, but that's only because of its low rainfall. In fact, we have massive reserves of the most precious of natural resources right beneath our feet in our groundwater. Bore water, for example, from the Great Artesian Basin made it possible to open up vast inland areas for grazing livestock. Natural springs provide the millions of bottles of mineral water we consume every year. Groundwater makes it possible to grow many of our crops and pastures. And we're looking increasingly to aquifers to provide drinking water for our growing towns and cities.

Groundwater is found in the voids between sediment grains in the subsurface. It can flow slowly like a river through aquifers or pool in great underground "lakes". Although hidden from view it is intimately connected with the rivers, streams, creeks, ponds, lakes and wetlands we can see above ground. So, effective water management must consider surface water and groundwater as "connected" - a single resource.

Australia has doubled its groundwater use in recent decades. It now makes up more than one-fifth of all the water we harvest. *Yet we don't know enough about the many and complex interactions between groundwater and surface water. In many cases, we're still treating them as if they were separate resources and we know far too little about how to manage them sustainably.*

UNSW has recently become a key part of the National Centre for Groundwater Research and Training (NCGRT). The Australian Research Council and National Water Commission funded the NCGRT led by Flinders University and research partners around the nation.”

"There appears to be much misunderstanding about groundwater, and some seem to believe it is a magic pudding of infinite good quality water."

Peter Cullen, 1943-2008.

“The circulation of groundwater resources can occur over both very short and very long time scales.

The Great Artesian Basin in central and eastern Australia is one of the largest confined aquifer systems in the world, extending for almost 2 million square kilometres. By analysing the trace elements in water sourced from deep underground, hydrogeologists have been able to determine that water extracted from these aquifers can be more than 1 million years old.

By comparing the age of groundwater obtained from different parts of the Great Artesian Basin, hydrogeologists have found it increases in age across the basin. Where water recharges the aquifers along the Eastern Divide, ages are relatively young. As groundwater flows westward across the continent, it increases in age, with the oldest groundwater occurring in the western parts.

This means that in order to have travelled almost 1000 km from the source of recharge in 1 million years, the groundwater flowing through the Great Artesian Basin travels at an average rate of about 1 metre per year.

However, since the extraction of large amounts of groundwater from the Great Artesian Basin began in the late 1800s, there has been a decrease in the pressure of the confined aquifer. This has caused a drop in the quantity of water yielded by bores dug for agriculture and industry, as well as reducing the output from naturally occurring springs that support fragile ecosystems.

Understanding the rate of recharge and flow is essential for the sustainable management of this important groundwater resource. If the extraction of groundwater exceeds the rate of recharge, this could have serious implications for the resource and the ecosystems and industries that depend on the Great Artesian Basin.”

Sources:

Bentley et al., 1986. Chlorine 36 dating of very old groundwater. 1. The Great Artesian Basin, Australia. Water Resources Research, 22:1991-2001.

Deming, D., 2002. Introduction to hydrogeology. McGraw-Hill, New York.

Mudd, G.M., 2000. Mound springs of the Great Artesian Basin in South Australia: a case study from Olympic Dam. Environmental Geology 39: 463-476.

Following is information from a study that the University of New South Wales has done that reveals the concerns of the impact of "coal mining" in the Liverpool Plains. It took them "10 years" of extensive research to come to their conclusions. The coal seam gas industry and the gas extraction method known as hydraulic fracturing has the potential of effecting groundwater, it has not been proven otherwise. There needs to be more studies into the impacts of coal seam gas mining on the interconnected water systems. Even if there is not an immediate impact, what about in 5 years, 10 years, 50 years, 100 years, or a 1,000 years? The future is in OUR hands.

From <http://www.connectedwaters.unsw.edu.au/>:

"Based on the extensive research that has been carried out in the past 10 years, we believe that coal mining on the Liverpool Plains will impact on the groundwater system used for irrigation, stock and domestic use if mining is carried out beneath the flat-lying plains. Management strategies on the Liverpool Plains are currently addressing the adverse impacts that irrigation development has had on the groundwater system. If coal mining is to proceed, the additional impacts on groundwater recharge, groundwater levels and water quality will require careful investigation and management.

Taken from the website <http://www.saveliverpoolplains.com/>, from a letter that was written to the government:

“The NSW Labor Government has granted exploration rights for coal seam methane gas mining over the whole of the Liverpool Plains, and Santos is currently drilling for gas.

If leases to establish a gas field are granted to Santos, farmers will be forced to give Santos access to their properties to dig wells (which can be as close as 250 meters apart), lay underground pipes for both water and gas, build pumps, compressors, water treatment plants, and lay all weather access roads connecting each well.

Vast quantities of highly toxic saline water are extracted from each well to release the gas. Each individual well can produce enough of this harmful water each week to fill an Olympic size swimming pool.

If this saline water came in contact with the highly productive soil of the Liverpool Plains, it would destroy the soil's capacity to grow crops, leaving these farmers without their livelihoods.

The Liverpool Plains is recognised as being among the best farming land in the world and by far the most productive dryland farming land in NSW. These flood plains represent about 1.5% of the area of NSW and are located about 400kms north-west of Sydney.”

Perhaps the National Groundwater Assessment Initiative will help make the necessary studies into the impacts of the coal seam gas industry?

<http://www.nwc.gov.au/www/html/350-groundwater-action-plan.asp>

Thank you for setting up the NSW Coal Seam Gas Inquiry. I live in the Northern Rivers Byron Shire of NSW. This has been my home for the past 6 years. I was born on this land, and I probably will die on this land. I care deeply for what happens. Do you? In this area we live in we have an

exploratory licence over our region, and the proposal of a gas pipeline to go through the Border Ranges not too far in the hinterland. I don't want this to happen. Please do the correct investigations and save us from walking down the wrong path.

Sincerely,