

**Submission
No 383**

INQUIRY INTO COAL SEAM GAS

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Date received: 6/09/2011

NSW Legislative Council

Coal Seam Gas Inquiry Submission

My wife and I own a property at High Range which is within PEL 469. We are involved in grazing cattle. We rely upon a domestic and stock bore for our water together with a number of small dams and rainwater tanks. The recent dry years has made it clear that we cannot rely on surface water collection and ground water is a vital part of our water security.

The legislative scheme under the *Petroleum (Onshore) Act 1991* (NSW) does not allow landowners to deny access to our land to the holder of the Petroleum Exploration Licence (PEL). It only provides for negotiation in relation to the terms of that access with an arbitration process available in the event agreement is not achieved. Given the impact of Coal Seam Gas (CSG) exploration and extraction on landholdings, particularly small landholdings, this is a fundamental erosion of freehold title. The impact is more particularly so when the exploitation of this resource is about commercial profit and not the sovereign energy needs of NSW and Australia.

We object to CSG exploration and extraction because it involves unacceptable risk to our water and natural environment. We have addressed the terms of reference below.

Term of Reference 1

^ CSG exploration and extraction represents a serious threat to water resources due to:

1. The potential for drawdown and contamination of groundwater aquifers, including potential for major cumulative impacts on the Great Artesian Basin. We cannot accept that the aquifers at different levels below the surface are not interrelated and that draining or substantially pumping out the lower levels where the coal and CSG is located will not impact upon the higher aquifers upon which landholders rely for their water security. It is necessary to pierce the higher aquifers to access the coal seam levels creating a high risk of contamination.
2. The pollution of surface water systems from 'waste' water, leading to serious reductions in water quality.
3. The use of large volumes of water for drilling and hydraulic fracturing or 'fracking' in

water systems that are already over-allocated, such as the Murray-Darling Basin.

4. The location of CSG wells on sensitive floodplains and in water catchments.

Examples: Discharge of treated 'waste' water by Eastern Star Gas into a creek in the Pilliga; location of CSG wells on the floodplain at Casino; exploratory drilling near Woronora Dam in water catchment areas of Sydney and the Illawarra; drilling near the Tomago sandbeds water catchment area in the Hunter.

- ▲ CSG mining produces vast quantities of waste that represent a serious environmental risk:
 1. Management of waste water is highly problematic and leads to environmental degradation where storage, leakage, spillage and discharge occurs.
 2. Treatment of waste water results in the production of a highly concentrated 'brine' by-product that is extremely difficult to dispose of without causing harm.

Examples: Spillage of waste water leading to extensive tree death in the Pilliga; deliberate discharge of saline water leading to pollution event near Broke; native animal deaths at drill ponds in the Pilliga.

The impact of high intensity rainfall such as that which recently occurred in Toowoomba illustrates the dangers involved in surface storage of contaminated water and other waste from CGS exploration and extraction. In the event of such a catastrophe will the licence owner or the NSW Government pay for full rehabilitation and will full rehabilitation be possible? What then for the landholders left with the problem?

- ▲ CSG mining represents a major threat to natural areas:
 1. It leads to extensive clearing and fragmentation of native bushland and threatened species habitat and increases the risk of catastrophic bushfires.
 2. It represents a major threat to wetland systems, even distant ones that are hydrologically connected.

3. It transforms major vegetation remnants, refuges and corridors into industrial zones
4. Even protected areas and public lands are not safe – CSG mining can occur in areas bordering National Parks, and is permitted in State Conservation Areas and State Forests.

^ *Examples: Pilliga CSG mining will clear at least 2,400 hectares and fragment 85,000 hectares of public lands, including State Forests and State Conservation Areas; at Putty drilling is planned next to the World Heritage-listed Wollemi NP; at Pogy, drilling is occurring on an inholding in Goulburn River NP; in north-west NSW, Travelling Stock Routes are targeted for drilling and gas pipeline infrastructure; in the north-east, a pipeline is proposed through the World Heritage-listed Border Ranges NP.*

^ CSG mining represents a serious risk to human health:

1. Due to potential contamination of water used for human consumption and agricultural production with chemicals used in drilling or fracking as well as those present in the coal seam.
2. From leakage of toxic methane and other gases during gas production and migration of methane into water supplies.
3. Through poor management of chemicals and use of toxic chemicals without full disclosure, particularly during fracking and drilling.
4. Landholders in the Southern Highlands have significant constraints placed upon them by the Sydney Water Catchment area. The risks of contamination by CSG exploration and extraction make the risk of on-site sewer management systems and agriculture seem minimal by comparison. It appears that the concerns of the Sydney Water Catchment Authority about CSG are being withheld due to the interest of the Government in the royalties from CSG exploitation.

^ *Examples: The recent foamy discharge from a well at Camden; methane leaking from gas pipelines and a water drain in the Pilliga and from well-heads at Casino.*

^ Other major environmental problems with CSG mining include:

1. The complete failure of remediation, even at the exploratory phase – such as at Casino where drill ponds had not been remediated and in the Pilliga where there has been no rehabilitation of well-pads.
2. The fact that regulatory processes, including assessment, approval and compliance, are all drastically inadequate – this was evident in the approval of the Gloucester AGL project without details about what it entailed, and the lack of resources or political will to enforce compliance in the Pilliga.
3. Coal seam gas (CSG) is a fossil fuel and a significant source of greenhouse gas pollution. It generates more than 40 times the amount of greenhouse gas per unit of energy generated than solar or wind. Coal seam gas will make a major contribution to global warming, particularly when fugitive emissions and liquefaction prior to export are fully considered.
4. Given the cost of establishing CSG infrastructure it is questionable whether limitations or prohibition of fracking, which is necessary to extract the last third of the reserve, would be complied with in an industry that relies heavily upon self reporting of contamination events. Offenders may be prosecuted but the landholders ultimately have to live with the contaminated outcome.

Term of Reference 2

^ CSG exploration and exploitation causes major social impacts:

1. Landholders face the prospect of losing control of their land, and property values are degraded and options for re-sale lost once exploration licences are issued.
2. The social fabric of communities is drastically weakened, with evidence that communities dominated by fly-in/fly-out workers show higher incidence of violence and crime, soaring rents and worsened mental health outcomes.

^ The rapid expansion the CSG industry looks set to have major economic impacts:

1. Food security is threatened by risks to groundwater and loss of arable land.
2. It is undermining economic diversity and leading to a skills shortage in other rural

industries, and can lead to collapse of businesses unable to compete for staff.

3. It is likely to impact negatively on a whole range of other industries such as organic farming, tourism, vineyards and orchards.
4. It leads to important local infrastructure, such as roads, being run-down and damaged at a cost to the taxpayer.
5. There is only a relatively small area of high quality arable farming land in NSW and Australia. The alluvial flood plains such as the Liverpool Plains and Edgeroi-Bellata are fragile and unique. The risk to the long term security of these precious areas for short term commercial gain by largely foreign owned mining and petroleum companies with relatively modest royalties to the Government is short sighted because if contaminated or damaged they cannot be replaced.

Examples: Food security is threatened by CSG mining proposals on the Liverpool Plains, around Moree and Bellata, and the in Northern Rivers region; pipelines threaten to cause major erosion to self-mulching black soil plains around Mullaley; and CSG mining poses a threat to the vital hot springs tourist attractions from Pilliga to Moree.

- △ Other socio-economic issues with CSG exploration and exploitation include:
 1. Licence fees and royalties paid to the State as well as the costs of exploration create an expectation that projects will be approved if viable reserves are identified, whilst failing to deliver sufficient funds to offset the impact of CSG.
 2. Local Government and local communities are currently largely excluded from the planning process and public participation and their legal standing is inadequate.

Term of Reference 3

- △ CSG is not required to meet the future energy needs of NSW. Most gas in NSW is extracted for export, not to meet local energy needs.
- △ There is a lack of information about the whole lifecycle emissions for CSG production. US studies suggests unconventional gas has huge fugitive emission impacts.
- △ The only way to deliver energy security is to switch to renewable energy now, particularly

solar thermal. There are vast solar thermal resources in the major areas where CSG is now proposed, such as Narrabri and Moree.

- ⌘ The massive expansion in CSG production is delaying the transition to renewable energy alternatives.

Term of Reference 4

- ⌘ CSG exploration and exploitation mining is exempt from a number of other environmental statutes, including the Native Vegetation Act 2003 and the Water Management Act 2000.
- ⌘ Legislation controlling activities on public lands are inadequate to prevent CSG exploration and exploitation, which when approved effectively privatises public lands.
- ⌘ Interaction with Federal legislation at the exploration phase is poorly understood and not enforced – ie extensive exploration without getting Federal approval in the Pilliga.

Term of Reference 5

- ⌘ Experience from Queensland: significant problems with leaking wells; impacts on groundwater evidenced from drops in bore levels; growing social discord; an exploding well at Dalby; major impacts on natural values near Gladstone; alienation of farmland and clearing of bushland.
- ⌘ Experience from overseas: regular fires associated with CSG wells, pipelines and facilities; chemicals used in fracking shown to be toxic to humans; systematic contamination of groundwater with methane; increased incidence of earthquakes after fracking.

In conclusion, CSG represents an unacceptable risk to our water security, our farming land and food production as well as our natural environment. Existing exploration and exploitation licences should be suspended indefinitely and no further licenses should be granted.

David Allen

6 September 2011