

**Submission
No 87**

INQUIRY INTO COAL SEAM GAS

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General Purpose Standing Committee No.5
Inquiry into Coal Seam Gas

Dear Sirs,

I wish to lodge the following submission. In particular I wish to address clause 1a of the Terms of Reference viz. "Effect on ground and surface water systems."

I am sure many submissions will be addressing this issue in detail but I would like to address the specific area of SUBSIDENCE.

1. The scale of the subsidence is unknown

It is well known that underground mining, of coal in particular, can cause widespread subsidence. The attached Primefact no 21 dated February 2006 details the protocols that mining companies are obliged to implement. This is included because it illustrates the complexities faced by traditional mining which has had 150 years of experience. CSG is a newer, far more complex technology and therefore needs an even greater surveillance/legislative framework.

Underground coal mining compared to CSG extraction is a relatively precise process. The position of the mine is precisely known, the extraction rates are precisely calculated and the impact of extracting coal on the immediate area surrounding the mine can be studied and the potential impacts calculated fairly accurately.

In contrast the extraction of gas and the associated large water volumes is extremely imprecise. Gas and water are extracted across a wide area. The volumes to be extracted (particularly of water) seem to be relatively unknown until the extraction is

completed. The gaps or cavities left by gas and water extraction across a wide area, where the composition of the rock and associated structures are relatively unknown, creates the potential for significant and unequal subsidence.

In many parts of the world subsidence as a result of water extraction is an immense problem. Attached is a Wikipedia illustration of the subsidence in the San Joaquin Valley in the USA. In some areas of this valley the subsidence has been more than 30 feet (9 metres), and caused primarily by the extraction of ground water.

2. The subsidence doesn't stop when the mining ceases

While the gas extraction wells could potentially operate and be active for up to 30 years, the consequent process of land settlement and subsidence will continue long after the gas extraction has ceased. However, at that late stage, any accountability for such damage will be very difficult to prove. The landowner will have few avenues of appeal.

3. Subsidence can disrupt road and rail

Any subsidence poses an obvious threat to existing road and rail infrastructure which means costly and disruptive remediation. The Hunter Valley already has ongoing problems maintaining roads due to the impacts of nearby coal mining.

4. Soil movement is already a problem for housing

My property enjoys the rich benefits of black basalt soil. The downside of such soil is the continual movement that occurs in buildings and fencing when the soil dries or swells depending on the season. The prospect of additional instability through mining activity is alarming.

5. State records re mining are inadequate

Finally, I would like to draw the Inquiry's attention to the inadequacy of State Government records on mining rights. Attached is the result of a search I had undertaken this month on my property. You will note that mining licence PEL 456 is noted as being owned by Macquarie Exploration. After further enquiries I now understand that PEL 456 has been purchased by Dart Energy, which in turn has sold options of up to 50% of the rights to Santos. None of these transfers of ownership are captured in the State Government records.

The impact of the CSG activity will have many detrimental impacts on our environment, and especially on the ground and water systems. The industry still makes mistakes when extracting coal using traditional extraction methods. The potential for catastrophic subsidence from the infant CSG industry is immense. The impact on creeks, buildings and farmland has, in my opinion, not begun to be addressed by this industry.