

# Standing on shaky ground



**Water worries:** Farmer Rosemary Nankivell is concerned about the impact of coal seam gas exploration on underground aquifers in the region. Photos: **Barry Smith** 300609BSA14

Gas exploration company Santos is excited about the future for natural gas on the Liverpool Plains, but it seems they'll have a fight on their hands. **Alysia Ferguson** reports

**R**OSEMARY Nankivell has been farming the rich black soil of the Liverpool Plains for more than 50 years. She farms cattle, grain, sorghum, barley and wheat on her property west of Quirindi and is passionate about seeing it remain that way.

But Rosemary is one of a growing number of Liverpool Plains residents who feel their farming way of life is under threat.

An Australia oil and gas exploration and production company is undertaking an 18-month exploration program for coal seam gas in the Gunnedah Basin.

Santos has exploration licences for about 20,000sq km that takes in the districts around Gunnedah, Coonabarabran, Scone, Quirindi and Boggabri.

It is hoping to find coal seam gas, a predominantly methane gas stored within coal seams.

Coal seam gas is formed as part of the same natural processes that produce coal over millions of years.

Santos commenced its exploration program in May 2008, with seismic exploration on roads and the drilling of exploratory core holes.

When the exploration program is completed, Santos will consider whether it is viable to continue exploration. If it is, more detailed testing will be done over a period of two to three years starting in 2010.

Before coal seam gas could be commercially extracted in the Gunnedah Basin area, several more years of testing, analysis and planning would be required.

At the moment, Santos has NSW Government approval to only explore

for coal seam gas.

No approval has been sought for commercial extraction of gas.

But although the project is only in the exploration and appraisal stage, residents and members of the Carroona Coal Action Group (CCAG) are opposing the presence of the oil and gas company.

They have claimed gas extraction would damage their own water supplies and those feeding into the Murray Darling Basin by contaminating town water supplies, aquifers and stock bores; extracting water with gas, thereby lowering the water tables; creating vast quantities of waste water; and by exploring along the stressed Hunter-Mooki fault systems.

Rosemary told *The Leader* this week her concerns lay primarily with the destruction of underground aquifers and the disposal of waste water from the wells.

"I would have thought that given the state of the Murray Darling Basin, an extremely water intensive industry like the extraction of coal seam gas would cause huge environmental damage," she said.

"The process de-waters or drains the whole aquifer during the removal of the gas and is extremely concerning.

"Not to mention fracking, which is used to force the gas out by using explosives, and cracks the aquifers, destroying them."

Fracking is stimulation of the coal reservoir using water to weaken and fracture the seam.

Rosemary said the loss and destruction of underground aquifers could prove devastating for agriculture.

"When you look at how good this country is, how good this soil is, the fact they want to drain the aquifer and remove water is extraordinary," she said.

"And they can't tell us how much or what impact gas extraction will have on our underground aquifers."

A spokesperson for Santos said while water was removed from coal seams until the water pressure in the seam was low enough for the gas to escape, the seam was not totally drained.

"All currently available data shows that there is no communication between the shallow aquifers used by farmers, and the deep water- and gas-containing coal seams," the spokesperson said.

"Santos' Water Management Team is conducting ongoing research in this area.

"A large part of our work over the next couple of years will focus on the volume and quality of the water in gasified coal seams.

"Once this information is known, Santos will research how best to treat the water so that it is of use to landholders and the community."

Rosemary said CCAG had embarked on an awareness campaign to educate people on coal seam gas extraction.

"Once people realise the dangers and what it will do if they allow this to happen, I'm sure even more people will oppose it," she said.

"This district is so united in not wanting this."

An education and awareness day will be hosted by the Mullaley chapter of the CCAG in conjunction with the NSW Farmers' Association on July 17 at Mullaley hall from 10am.

Residents and landholders are invited to attend the day to receive information kits.

Rosemary said too many questions to Santos from residents were going unanswered or being answered unsatisfactorily.

"We have general locations they are thinking about but not specific sites for

wells," she said. "In this area, of the seven well sites, I think I have one within eyesight, one over the hill and one directly west of here."

Rosemary said at the first community consultation meeting, many landholders were ignorant of what coal seam gas extraction involved.

"At the second meeting we were able to ask more in-depth questions and the answers were posted on the Santos website but not to our satisfaction," she said.

"A lot of the time affected landholders aren't given information because we are told its commercial in confidence."

The spokesperson said Santos was committed to closely consulting with the community on the Gunnedah project.

"We continue to run community consultation sessions where feedback from sessions is brought back to the project team and included in project planning," they said.

The community can contact Santos at any time by calling 1800 071 278 or emailing [info@santosGBG.com](mailto:info@santosGBG.com)

## Fears of earthquakes, water contamination

THE Hunter-Mooki fault line is being cited as reason to oppose coal seam gas exploration in the Liverpool Plains region.

Santos, an Australian oil and gas exploration and production company, is undertaking an 18-month exploration for coal seam gas in the Gunnedah Basin.

Members of the methane gas committee of the Carroona Coal Action Group claim the proximity of drilling to the Hunter-Mooki fault line could potentially damage underground water aquifers.

Rosemary Nankivell said the seismicity of the area, combined with drilling at depths of 850m, could prove damaging to water supplies.

"The Newcastle earthquake has been attributed to several decades of mining in the region and was caused by a shift on the Hunter-Mooki fault lines," she said.

"That same fault line runs through this region and it's not something that has been paid a lot of attention."

A Santos spokesperson said the theory was linked to coal mining and not coal seam gas extraction, which were completely different processes

under completely different licensing legislation. Santos has been and is still conducting seismic testing in the Liverpool Plains region.

For commercial reasons results of seismic testing are confidential for two years after collection.

"However, after the raw seismic data has been processed (which takes about six months), we have offered to meet with farmers and explain what our seismic exploration shows is beneath their property," a spokesperson said.

"When the two years has elapsed, Santos sends the seismic results to the NSW DPI who may decide to make them public."

In 2007, a United States academic claimed the 1989 earthquake which devastated Newcastle was triggered by coal mining in the region.

Dr Christian Klose from the Lamont Doherty Earth Observatory said the mines weakened and reactivated a major fault line below Newcastle, which caused the quake.

The tremor killed 13 people and caused billions of dollars worth of damage.

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— Rosemary Nankivell