



The Wilderness Society Newcastle
90 Hunter Street
Newcastle, NSW 2300
26th April 2013

Dear Sir/Madam,

RE: Supplementary Submission to the Senate Committee Inquiry into the Impacts of Air Quality on Health

Following our presentation to the Senate Committee in Newcastle last Tuesday 16th of April we would like to present a supplementary submission and table papers that offer further insights into this little known area of health and a response to the question by Senator Richard Di Natale on the proportion of existing coal seam gas projects located in residential areas.

There was great interest from the Senators on the health impacts of coal seam gas due to limited information being put forward from other organisations on this important emergent issue. We would recommend that the inquiry invite representative of the National Toxics Network and Doctors for the Environment Australia to speak further on this issue.

Since the original submission from The Wilderness Society Newcastle on 7th of February 2013, there have been some important developments regarding the human health risks of coal seam gas. In particular, the Queensland Government has produced a report entitled, 'Coal seam gas in the Tara region: Summary risk assessment of health complaints and environmental monitoring data.'

The risk assessment is a compilation of seven studies and reports on health complaints, air and water quality monitoring in gas fields a number of which find that the study is inconclusive. The risk assessment recommends further strategic ambient air quality monitoring.

The short nine day air quality study in Tara found one exceedence related to the concentration of benzene in an overnight sample from one of the sites. The raw data indicated the result is 25 micrograms per cubic meter and the NEPM value is 10.3 micrograms per cubic meter. Whilst the report did not identify any analytes at detectable concentrations that would be associated with the adverse health effects of the type reported by residents in the area, the report had some serious limitations. It states:

"The total monitoring period was nine days, the methodology resulted in limits of reporting for some analytes that were substantially higher than reference air quality criteria and the monitoring was not designed to identify short-term peaks or troughs in air concentrations. It is considered a more strategic air quality monitoring program could be implemented to provide more useful information on the impacts of the CSG industry, if any, on ambient air quality in the region."

In addition to benzene other toxic chemicals detected were 3-7 VOC's (Volatile Organic Compounds) in each of the nine short-term peak air quality samples. One of these was Acrolein a biocide used in oil and gas drilling which is an acute irritant, found at a level of 0.5-0.6 parts per billion. Whilst these levels were below the standards that have been set in established gas field regions in America (Ontario: 2.0 parts per billion and Texas: 1.6 parts per billion) it is concerning that the authors of the report were dismissive of these findings.

The report states that these levels were not high enough to cause the reported symptoms from the Tara residents, however the presence of these harmful chemicals should warrant further studies and ongoing monitoring. There is no information presented in the report about the air quality monitoring and standards for the dangerous impacts of benzene and acrolein and it is not clear whether the QLD Government has conducted their own detailed risk assessment into the human health impacts of coal seam gas more broadly.

What is telling in this instance is that some media covered these results to report "QLD health report says CSG not making people sick in Tara" (ABC news Mar 21st 2013). Again, due to the limitations of the data and the actual findings of harmful chemical substances in the air, these simplified and premature statements are misleading. Without further research, statements of this nature could subject Tara residents and other unstudied communities to ongoing inappropriate health risks.

Whilst there is limited peer reviewed science on this issue, a study from the Colorado School of Public Health also had concerning outcomes with regards to benzene exceedances (see attached McKenzie et al, 2011). The report states:

"Our results show that the non-cancer HI (Hazard Index) from air emissions due to natural gas development is greater for residents living closer to wells. Our greatest HI corresponds to the relatively short-term (i.e., subchronic), but high emission, well completion period. This HI is driven principally by exposure to trimethylbenzenes, aliphatic hydrocarbons, and xylenes, all of which have neurological and/or respiratory effects. We also calculated higher cancer risks for residents living nearer to wells as compared to residents residing further from wells. Benzene is the major contributor to lifetime excess cancer risk for both scenarios."

Certainly the document did not dismiss the findings and continued to state that:

"These preliminary results indicate that health effects resulting from air emissions during unconventional NGD warrant further study. Prospective studies should focus on health effects associated with air pollution."

The report by the Queensland Health Department and a critique of the study prepared by the National Toxics Network are attached and found at the following web addresses:

<http://www.health.qld.gov.au/publications/csg/documents/report.pdf>

<http://www.ntn.org.au/wp/wp-content/uploads/2013/04/Critique-of-CSG-Health-Study-april20131.pdf>

Another report by the National Toxics Network on the 'Toxic Chemicals in the Exploration and Production of Gas from Unconventional Sources' released in April 2013 further supports the need for a comprehensive health assessment into coal seam gas:

http://www.ntn.org.au/wp/wp-content/uploads/2013/04/UCgas_report-April-2013.pdf

Clearly there is a need for an independent and comprehensive risk assessment into the human health impacts of coal seam gas. We therefore would like to request that the Federal Government prepare such a risk assessment that may then better inform the State Government's in their regulation of this emergent industry. We also recommend:

- Baseline air quality and health testing prior to any coal seam gas development
- The development of national standards for the chemicals associated with coal seam gas exploration and production that currently have no NEPM.
- Air quality monitoring of at risk areas, this monitoring must be informed by the independent and comprehensive health risk assessment
- Health Impact Assessment's for all coal seam gas exploration and production development applications

We would also like to address the question that was taken on notice at the Senate Committee hearing in Newcastle. The questions from Senator Di Natale was:

The coal seam gas issue is an issue which we have not spoken about today. I live outside New South Wales. I understand there is now legislation to prevent new coal seam gas wells within two kays of residential area, but what proportion of existing projects are in residential areas?

The two largest approved coal seam gas projects in NSW are the AGL project in Camden and the recently approved AGL project in Gloucester and there have been small pilot production projects by Eastern Star Gas now Santos.

AGL has approval to develop up to 110 gas wells in Gloucester and there are 134 wells at Camden, 60 kilometres south of Sydney, with 117 of those wells hydraulically fractured or 'fracked' (Institute of Sustainable Futures, Drilling Down Coal Seam Gas: A background Paper, 2011). Whilst the 2km buffer zone appears to impact the latest AGL expansion in the Camden and Campbelltown areas there are significant concerns regarding air pollution within their existing operations, as the SMH reported on the 1st April, 2013:

AGL has breached its environment protection licence by failing to properly monitor emissions from a gas plant south-west of Sydney since 2009. The coal seam gas processing plant at

Rosalind Park, near Menangle, operated between 2009 and last year without continuous monitoring of nitrogen oxide emissions, as required by its licence.

Read more: <http://www.smh.com.au/environment/agl-failed-in-its-duty-to-properly-monitor-gas-emissions-20130331-2h1dy.html#ixzz2RXZKTAun>

There are 56 onshore petroleum exploration licences held in NSW. These include 27 that are for CSG alone, 15 for CSG and conventional gas, 12 for conventional gas and 2 for CMM. The figure below from the Institute of Sustainable Futures report 'Drilling Down' shows the locations of the proposed and existing coal seam gas projects. This map is prior to the approval of the Gloucester project.

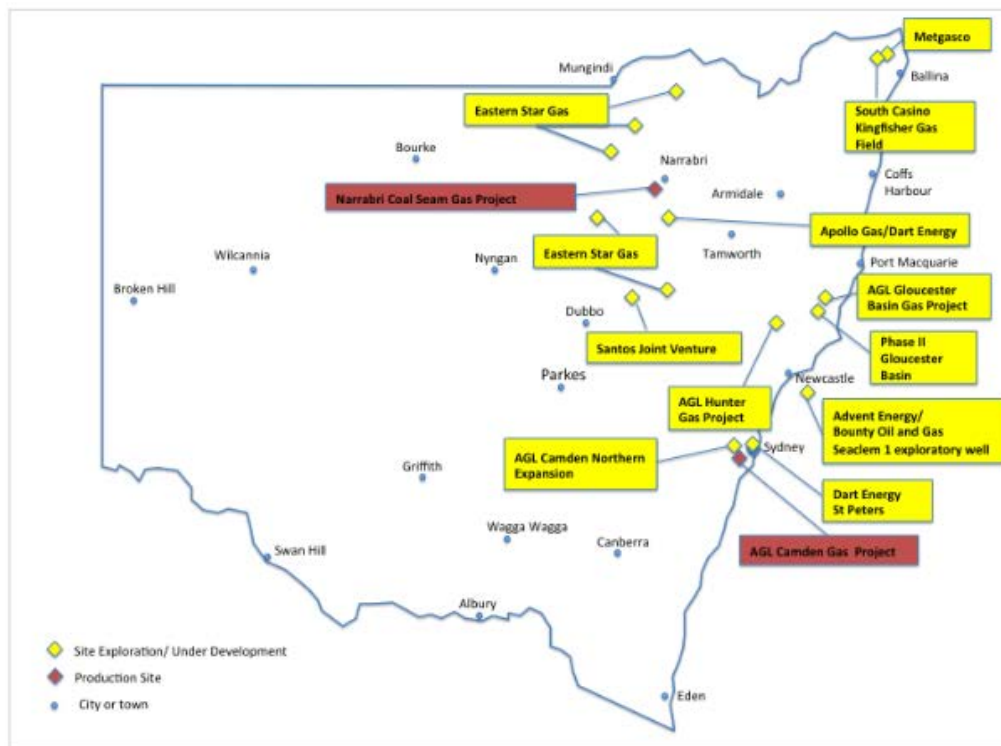


Figure 15 Active and proposed CSG projects in NSW
Source: NSW DPI, 2011

Regarding the Gloucester project I have received detailed information from Dr Steve Robinson a Medical Professional, long-term Gloucester resident and member of Doctors for the Environment Australia.

The license area for PEL 285 includes the town of Gloucester which has a population of 2,500 persons and it also includes rural residential area and rural areas which together have a further 1,500 persons. The company (AGL) have stated the Project is only viable if the whole area is 'developed'. This will involve 300+ wells down the 35km of the Gloucester Valley. The closest exploration well was less than 1km from the residential area but I understand that well was not thought to be potentially productive. Altogether so far 17 Pilot wells have been sunk and all but 1 or 2 dry wells have been fracked and we have strong evidence of fugitive

emissions as a result of fracking. We have been told that because a provisional license to produce has already been granted we will not be covered by the 2km buffer zone legislation.

We believe this is grossly unfair since the license has been granted prematurely by a disgraced minister conditional to a satisfactory comprehensive water study and the company is unable to do such a study. Additionally no baseline studies of methane levels were done prior to fracking and no levels have been done after fracking. In addition no air quality studies were done during the nine months that continuous flaring took place. Doctors for the Environment of Australia should be asked to present in person on health impacts of CSG.

Again, the lack of a comprehensive risk assessment for the health impacts of coal seam gas is concerning given the extent of the gas proposals in NSW. These gas wells will potentially impact on residential areas where projects have already been approved prior to the 2km buffer zone, potentially on residents outside of the 2km buffer zone, on families in farm houses next to gas wells, small villages and peri-urban regions. We are calling for a moratorium on all coal seam gas development until the health impacts from coal seam gas are understood.

Thank you for this opportunity.

Sincerely,

Prue Bodsworth and Naomi Hogan

Of The Wilderness Society Newcastle