

**Submission
No 99**

**INQUIRY INTO ADEQUACY OF WATER STORAGES IN
NSW**

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Adequacy Of Water Storages in NSW (Inquiry)

Terms of Reference a)

I would like to stress the importance of the Tomago-Stockton aquifers, which store approximately 600 Gigalitres, to many people & businesses as well as local ecosystems, particularly the wetlands. The Tomago aquifer normally provides up to 30% of the Newcastle region's drinking water & takes on even more importance during drought or when other storage systems experience outbreaks of blue-green algae.

The Department of Land and Water Conservation's (DL&WC) groundwater management plan says of the Stockton aquifer "There is little or no apparent difference in water quality between groundwaters contained within the Stockton Sand Member and the Tomago Sand Member... These (Stockton) groundwaters are suitable for most purposes including town water supply."

Groundwater use is increasing for commercial and domestic users with spearpoint access to both aquifers, especially in non-reticulated areas. This significantly reduces demand on other water storage systems.

Terms of Reference f)

Significant risks are being posed to the ongoing viability of both these aquifers by the proposed coal seam gas mining at Fullerton Cove – a location at which the DL&WC classifies the vulnerability of the aquifers to be Very High, because the water table is very shallow and the soils above it extremely permeable.

The following quotes are from the DL&WC groundwater management plan & reveal the risks to be of two kinds:

- "the Tomago and Stockton Sandbeds are thought to connect in some places well below the surface. Therefore any contaminants that enter one of these connected beds may be transferred to the other, and for some issues the Tomago-Stockton Sandbeds will need to be managed as one unit."
Note: Coal seam gas drilling takes place at great depths bringing many contaminants from the coal seam to the surface, which in this case is an area of Very High vulnerability. This is to say nothing of the chance of underground leakages; contamination by the closer to the surface acid sulphate soils, which have already been poorly managed at this site before drilling commences; or potential spills of the massive amounts of contaminated water that is to be stored on site before being trucked away.
- "Over-extraction of groundwater would lessen the downward pressure in these ridges and has the potential to cause salt water intrusion. If saline water were to

enter the aquifer it would threaten drinking water supplies and natural ecosystems”.

“pumping the whole (or large amounts) of the recharge from a small area can lead to localised lowering of the water table. This could cause problems of saline water intrusion, take water from wetlands in the area, or trigger the release of iron and other metals (eg. arsenic, cadmium and manganese) into groundwater. This may cause heavy metal levels to rise above drinking water standards in some areas.”

Note: The coal seam gas operation at Fullerton Cove, combined with the associated Maria’s Farm, will be pumping mega-litres of water from a small area very close to the saline Hunter River, thereby exacerbating the risk of contamination of both aquifers.

“Experience from other parts of the world has shown that trying to clean up groundwater pollution is generally very difficult, costly and time-consuming, and is not always successful. Often, the affected sections of the aquifer cannot be used for such a long time that the damage may effectively be regarded as permanent. Many overseas aquifers are so polluted that they are now of little value to the communities they once supported”.

Since this report, & its associated technical studies, call into question the advice given to Government about the presumed safety to continuing potable water supply of coal seam gas extraction at Fullerton Cove, I hope that the Inquiry can acknowledge the importance of this water source and recommend its protection in its report to Government.

Lorraine Yudaeff