

## Groundwater data in the **Gloucester Basin**

The NSW Government is installing state of the art water monitoring sites in the Gloucester Basin to gather essential groundwater data.

This will build on existing data captured by mining and coal seam gas operators in the region.

The existing water data explains the geology of the Gloucester Basin and its groundwater sources. It examines existing groundwater entitlements and use. It shows the groundwater monitoring networks and highlights water level behaviour over time in key groundwater sources.

### **Water and coal seam gas in the Gloucester Basin**

The coal within the porous rocks of the Gloucester Basin in NSW was deposited some 250-300 million years ago.

AGL holds the petroleum exploration licenses in the Gloucester Basin. There is also a number of coal mining exploration leases in the area and two operating coal mines.

NSW Office of Water undertakes regular monitoring of water sources to assess the impact of agriculture, industry, mining and coal seam gas in the area. To safeguard the environment and community, there is limited and controlled use of groundwater in NSW under the *NSW Water Act 1912* and *Water Management Act 2000*.

There are two main water source 'types' within the Gloucester Basin area - the Gloucester Basin porous rocks and the shallow overlying alluvial systems. These units are used by the NSW Office of Water in their management of groundwater extraction and sharing for this area.

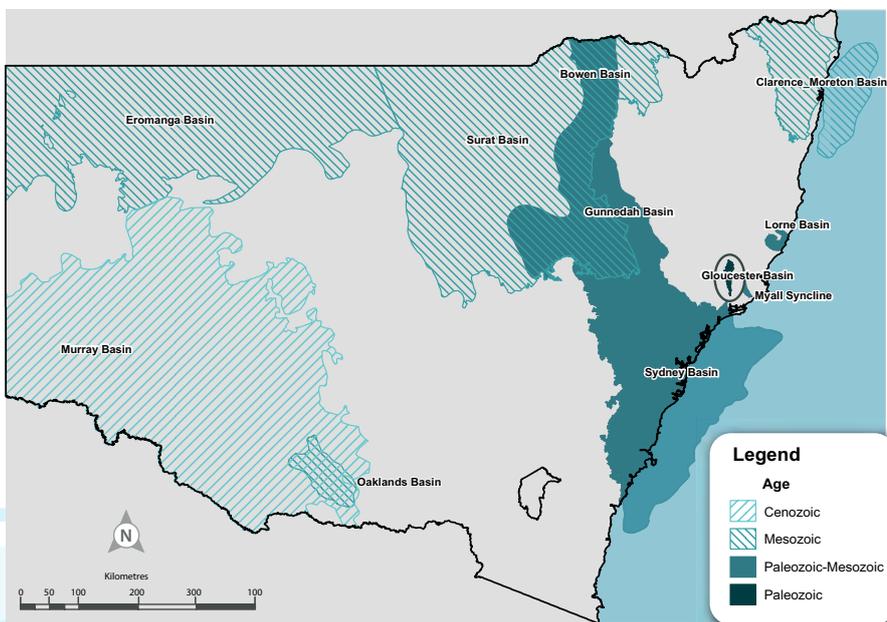
The volume of groundwater rights in the Gloucester Basin and overlying alluvium is small, at approximately two gigalitres (GL)/yr, which is well under half of the long term sustainable extraction limit.

The estimated water use for the AGL Gloucester project is expected to peak at 0.73 GL/yr (less than 300 Olympic swimming pools), which represents 16 per cent of the total long term average annual extraction limit. The water will be taken from the porous rock sediments.

The current rights to take groundwater for irrigation, stock and domestic use, and town water supply are from shallow systems that are typically less than 100 metres below ground.

Coal seam gas operators focus on coal seams within the rock at depths more than 300 metres below ground.

There is very limited irrigation, town water supply, domestic and stock water use, therefore mining activities account for most of the groundwater rights.



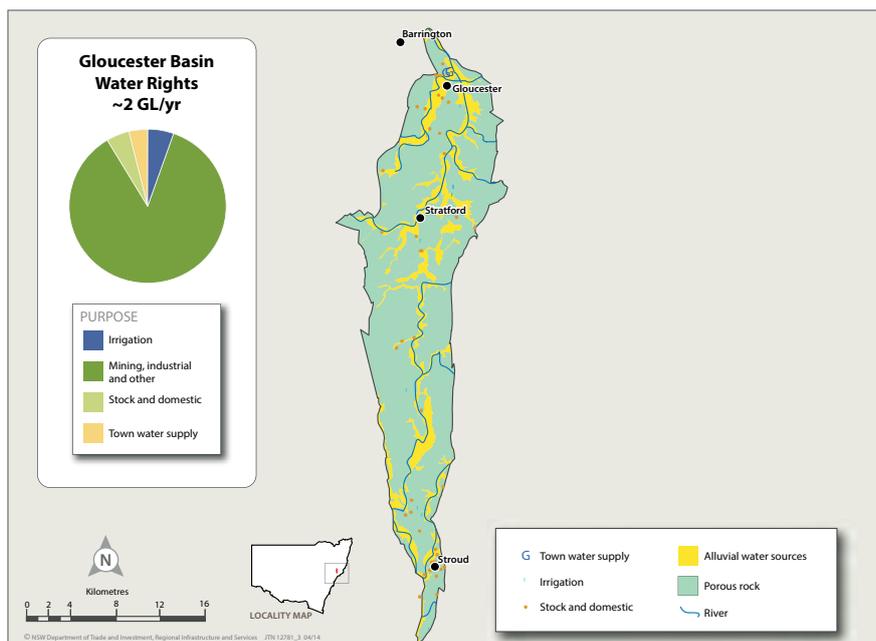
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### NSW Aquifer Interference Policy

The NSW Aquifer Interference Policy manages the impacts of aquifer interference activities on NSW's water resources. It balances the water needs of towns, farmers, industry and the environment.

Three key elements of the policy include:

- All water taken must be properly accounted for.
- The activity must address minimal impact considerations on the water table, water pressure and water quality.
- Planning for measures in the event that the actual impacts are greater than predicted, including making sure that there is sufficient monitoring in place.

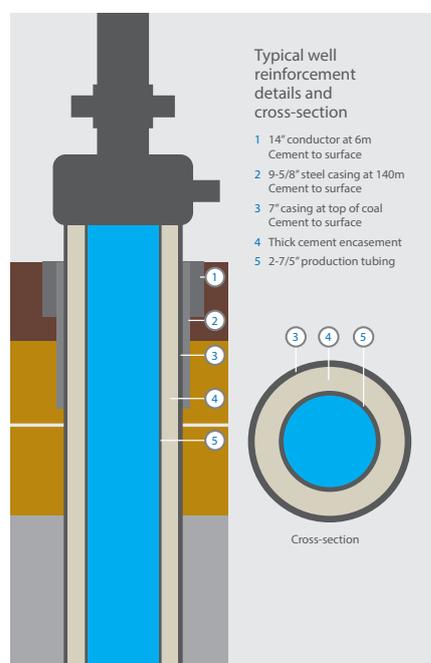


*Gloucester Basin: Distribution and purpose of groundwater rights*

### Well integrity in the Gloucester Basin

The NSW Government protects the quality of the community's water in a range of ways, including:

- The *Code of Practice for Coal Seam Gas Well Integrity* which ensures the strength of wells and the protection of underground water from contamination. The Code also specifies technical requirements for the design, construction, production, maintenance, closure and rehabilitation of coal seam gas wells in NSW. The requirements include that a well is triple-cased in cement and steel.
- The Office of Coal Seam Gas well inspectors undertake announced and unannounced inspections throughout the drilling and construction process. Once constructed, wells are subject to ongoing testing and integrity reporting as well as incident reporting.
- More stringent requirements for drilling and construction of gas bores than for water bores.
- Further information on the hydraulic fracturing process is available on the CSIRO website - [www.csiro.au](http://www.csiro.au)



### More information about water and coal seam gas

More information about water in the Gloucester Basin and coal seam gas can be found at [www.water.nsw.gov.au](http://www.water.nsw.gov.au)