



# Groundwater Monitoring Bore Drilling Project: Narrabri

September 2014

## Increasing the coverage of NSW Office of Water's groundwater monitoring bore network

The NSW Office of Water is responsible for the management of groundwater resources in NSW, with over 3,000 monitoring bores already in operation throughout the state.

An important natural resource in NSW, groundwater is a source of drinking water for many rural towns and also supports the domestic and stock requirements of farms or remote households and communities, as well as being used for irrigation. Groundwater is also used for industrial needs such as mining, including Coal Seam Gas production.

Of all water use in NSW, 11 per cent is sourced from groundwater. Groundwater level data from over 300 of the Office of Water's monitoring bore sites is available on the real-time data site:  
[www.water.nsw.gov.au/Realtime-reports/groundwater/default.aspx](http://www.water.nsw.gov.au/Realtime-reports/groundwater/default.aspx).

## Water Monitoring Framework

The NSW Government's recently announced 'Water Monitoring Framework' will transform how water data and information is captured and used to protect precious water resources.

The framework is part of the NSW Government's commitment to providing the community with improved access to transparent and factual information on regional water systems. Implementation of the framework will enhance data monitoring and real-time reporting to provide greater confidence to the community about impacts on water quality and quantity from various extractive industries, like Coal Seam Gas.

The framework will ensure that water monitoring and evidence-based information adequately supports the long-term sustainable management of the State's water resources.

## What's happening and when?

As part of the Water Monitoring Framework, the Office of Water is increasing the spatial coverage of our monitoring bore network through the drilling of new groundwater bores in the Gunnedah Basin near Narrabri.

While the NSW Office of Water operates a vast existing network of monitoring bores across the State, the focus of this monitoring is the alluvial aquifers from which most groundwater is produced. The goal of this project is to expand our network and provide real-time data to be used as 'baseline data' in an area of proposed Coal Seam Gas development and, if the development goes forward, the bores will serve to monitor the status of the deeper groundwater resources in the vicinity of these developments.

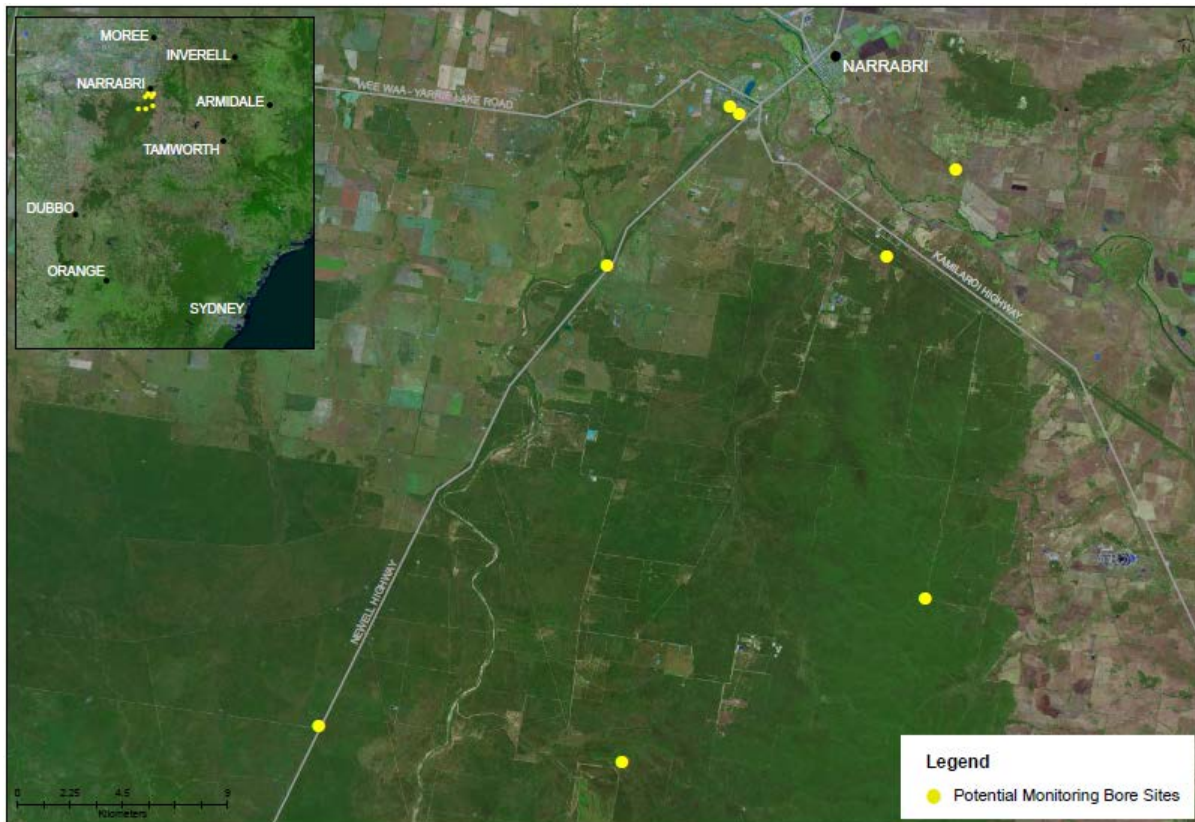
These monitoring bores will be constructed between September 2014 and March 2015 and are located in the Gunnedah Basin near Narrabri. The Narrabri drilling program aims to construct monitoring bores in aquifers and coal seams, at depths ranging between 100 and 500 metres.

NSW is currently experiencing growth in mining projects, in particular coal seam gas developments. It is therefore important to gather baseline information on groundwater levels and water quality throughout NSW.

Increasing the spatial coverage of the Office of Water's groundwater monitoring bore network in the vicinity of the Gunnedah Basin, will improve our understanding of the hydrogeologic environment. Over

the long-term, information from monitoring bores can be used to more effectively manage the state's groundwater resources.

Figure 1: Location of potential monitoring bores in the Narrabri program



## What is the environmental assessment process?

The potential environmental impacts associated with the monitoring bore drilling program are being assessed via a Review of Environmental Factors (REF) - to fulfil the Office of Water's obligations as a Determining Authority under Part 5 of the *Environmental Planning and Assessment Act 1979*. Figure 1 shows the location of potential drill sites where a REF will be undertaken. Current plans based on estimated costs are that bores will be drilled and constructed at 3 sites. Final site selection will be based in part on the results of the REF process.

The REF addresses matters for consideration listed under Clause 228 of the *NSW Environmental Planning and Assessment Regulation 2000* and provides an assessment of environmental impacts and suggested mitigation measures to minimise impacts during construction and operation of the bores. The REF will be available on the Office of Water's website once completed.

## What will happen?

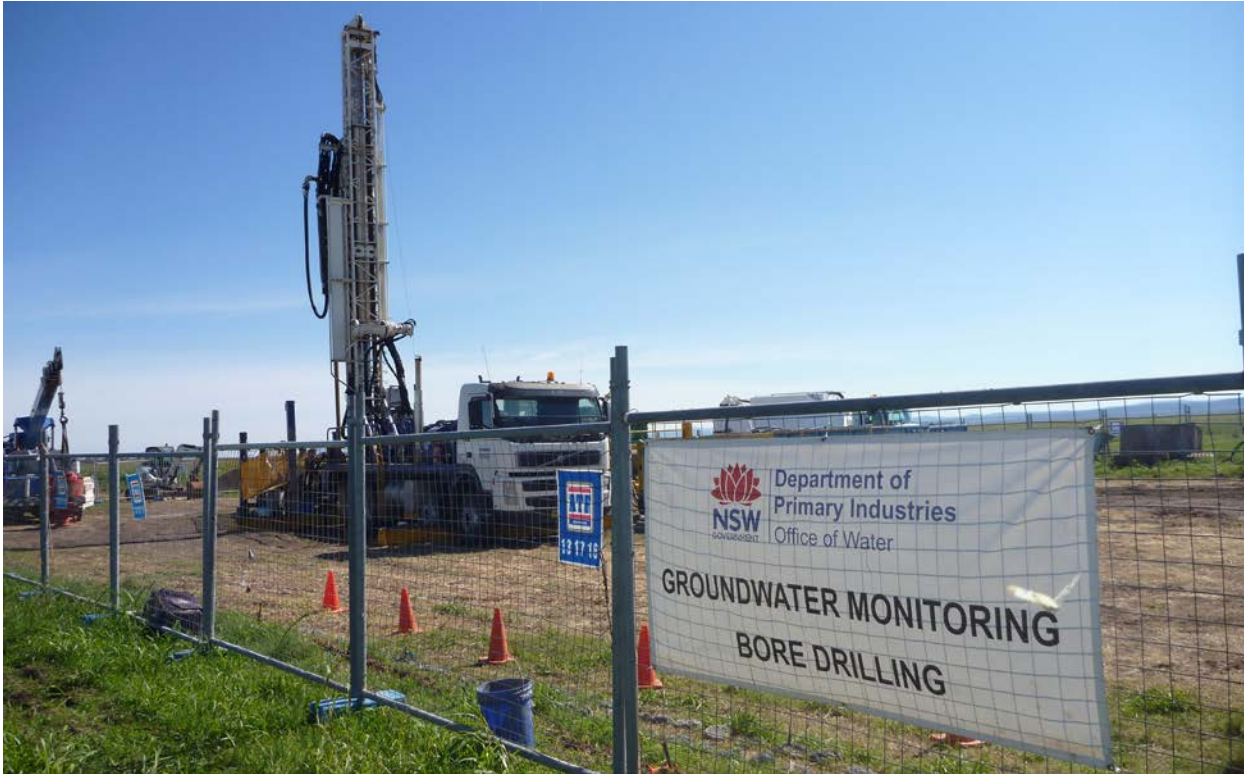
The process of drilling each bore may take between three to six weeks, depending on the ground conditions encountered at each site. The work will be carried out each day of the week - Monday to Sunday - from 7am to 7pm and will be supervised by the Office of Water's Groundwater Drilling Unit.

The installation of the groundwater bores may involve two drilling processes known as 'rotary mud drilling' or 'air rotary drilling'. Access to each site will be restricted by fencing. The footprint of the site will be based on the local setting and likely to be a fenced area of between 70 m X 35 m or 60m X 40m. All equipment will be located within the fenced area during bore installation. The drill site will include equipment such as:

- drilling rig
- portable site office
- portable toilet

- mud recycling system
- three 10 metre long portable water tanks of 15,000 litre capacity
- rubbish skip

Figure 2: A drill rig similar to this will be used to install the monitoring bores



### What can I expect during the monitoring bore installation?

During the monitoring bore installation process, residents may hear the drill rig. Mitigation measures to minimise noise are to be outlined in the 'Narrabri Review of Environmental Factors'. Residents may also see the drill rig and associated equipment at each site.

Drill support trucks, service vehicles and other smaller support vehicles can be expected in the area. Dedicated parking areas will be established at each site for all vehicles. Temporary signage will be erected to alert traffic that trucks are entering and crossing.

### What will the monitoring bore look like?

Once the bores have been installed, there will be permanent fixtures at each site to allow for ongoing data collection. The permanent fixtures will be located within a five square metre footprint.



**Figure 3: Example of the above ground features permanently installed at each site**



## Who can I contact for more information?

For further information regarding the groundwater monitoring bore drilling program, please call

**1800 353 104.**

[www.water.nsw.gov.au](http://www.water.nsw.gov.au)

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