



Department of Water Resources
NEW SOUTH WALES
NARRABRI
HYDROGEOLOGICAL MAP

LEGEND

AQUIFERS

Aquifers are rock formations from which water can be obtained in useful quantities. They occur in a variety of geological units which can be grouped into three major types: unconsolidated sediments, sedimentary rocks and fractured rocks. Although all types may be represented on one area, only the major occurrences are shown on this map.

Unconsolidated Sediments

- Alluvium**
These sediments are generally Mid-Miocene (10 million years BP) to Recent age and have been deposited by the ancient and present day Murrumbidgee and major tributary creeks. Clean sand and gravel flows deposited in the city, alluvial clay terraces, are the main source of water.
- Calcareous**
These formations are generally Recent age, although there are some remnants of older deposits. They are generally mudstone and siltstone, and are deposited in the Murrumbidgee valley.

Sedimentary Rocks

Jarvis and Cretaceous rocks (25 to 100 million years BP) occur over most of the sheet area except in the far eastern areas, but are generally obscured by unconsolidated sediments.

- Sandstone**
Clean sandstone beds deposited by alluvial and alluvial sequences on the main source of water: The Murrumbidgee. (Cretaceous and the Pliocene Sandstone) (Jarvis) are important aquifers in the Great Artesian Basin. Sandstone outcrops in the north-east are made up of the Basin.
- Shale, Siltstone, Mudstone and Clay**
These sediments are covering layers in the sandstone area and are mainly aquifers. The Bungle Formation (Cretaceous, Ordovician Formation (Jarvis) and Permian Formation (Jarvis) are the main geological units in the part of the Great Artesian Basin.
- Unconsolidated Lower Mesozoic and Palaeozoic Rocks**
A variety of sedimentary rocks of Triassic (120 million years BP) and Permian age (200 million years BP) crop out in the far eastern part of the sheet and occur below the sedimentary rocks of the Great Artesian Basin in the Cretaceous Basin. Sandstone units are local sources of water.

Fractured Rocks

Groundwater is stored in fractures in these rocks and there are considerable variations in yield. The ability of the groundwater varies with a wide range, being generally dependent on the rock type and the resistance time of the groundwater.

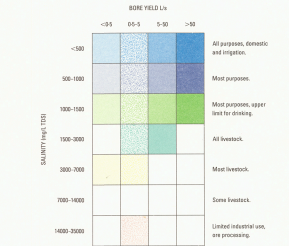
- Basalt**
Extensive basalt flows of Early Miocene age (18 million years BP) crop out in the north-west part of the sheet. These highly fractured rocks yield considerable quantities of water. Basalt and dolerite of Jurassic age (180 million years BP) occur in the south-west. These are generally poor aquifers.
- Dolerite, Basaltic**
Small occurrences of these rocks occur in the eastern part of the sheet. They are of Permian age (200 million years BP) and are mainly aquifers.
- Dolerite**
Dolerite rocks of Lower Palaeozoic age (200 to 500 million years BP) form the basement to the Great Artesian Basin and Cretaceous Basin sediments. They comprise slate, phyllite, schist, granite and volcanic and are not shown on this map.

GROUNDWATER MANAGEMENT AREAS

Several groundwater management areas have been defined for the groundwater reserves, particularly those located within the unconsolidated sediments. The allocation and control of these resources is shown on the map. The Murrumbidgee Valley area (Management Area 501), there is an embargo on new groundwater entitlements from the Great Artesian Basin.

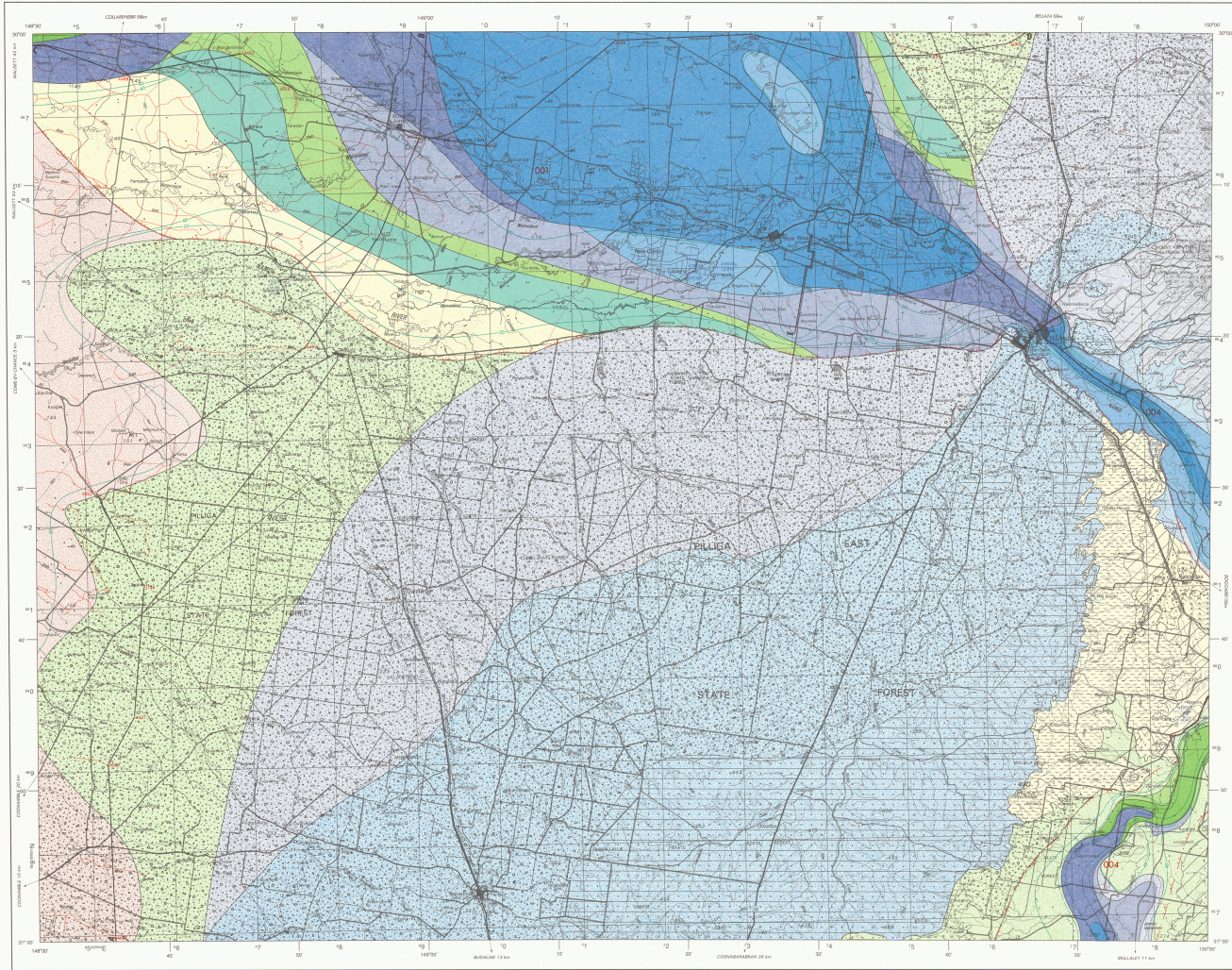
GROUNDWATER SALINITY/YIELD

The main map shows the salinity and yield of the aquifer systems. In the area underlain by alluvium there are multiple aquifers but only the most productive aquifers are shown on this map. The inset shows the first, salinity and yield of the two major underlying sedimentary aquifers - the Murrumbidgee and the Pliocene Sandstone.



REFERENCE

- Contours indicating the depth to the base of the alluvial sediments (100 metre intervals).
- Water table contours for groundwater contained in alluvial sediments, with elevations in metres (100 metre intervals).
- Drainage Gaging Station (1911 - 1912).
- Direction of Groundwater Flow.
- Bore and Registered number, Bore data.
- Boundaries of groundwater management areas with numbers.



CONTINUOUS INTERVAL (METRES)
TRANSVERSE INTERVAL (PROJECTION)
GREY NUMBERED LINES OUTSIDE THE SHEETLINE INDICATE THE 10 000 METRE AUSTRALIAN MAP GRID. ZONE 56, AUSTRALIAN NATIONAL SPHEROID

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- Reference
- Phosphate: Shaded two or more lines. Shaded one line.
 - Phosphate: Unshaded two or more lines. Unshaded one line.
 - Vehicle track: Foot track or trail.
 - Railway: Multiple track with station; single track.
 - Build-up area: Hatched.
 - Town/Residential: Large, Small, Yard.
 - Lake: Permanent, intermittent.
 - Power or dam.
 - Subject to inundation: Marsh or Swamp.
 - Crestline: CMT.
 - Altimetric contour point: Spot elevation.



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