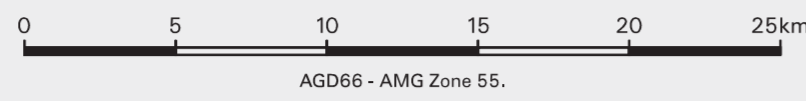


# NORTHEAST TASMANIA GROUNDWATER QUALITY MAP

SCALE 1:250000



The map is complementary to the main 1:250,000 NE groundwater map. There is usually a degree of vertical stratification in the groundwater quality within the aquifers and results presented represent a composite value of salinity from drill holes at a particular time. Natural groundwater quality is influenced by annual rainfall and the evaporation (e.g. high rainfall, low evaporation areas tend to have better quality groundwater than low rainfall, high evaporation areas). The composition of the rock types through which the groundwater passes and is stored is a very physical property of the rocks such as permeability and porosity. Human activities such as extensive groundwater pumping, pollution from various waste disposal activities and use of chemicals (agriculture, industry, etc.) also may have negative effects on groundwater quality.

AQUIFER TYPE	PROSPECTIVITY (Index of Tasmania)	ROCK GROUPS	NUMBER OF BORES	SALINITY RANGE (mg/L)	GROUNDWATER QUALITY COMMENTS	VULNERABILITY TO POLLUTION
POREUS (INTERGRANULAR)	HIGH	Quaternary alluvial deposits marginal to the coast consisting of fine to medium grain size sand.	5	57 - 2500	Quality is often good enough for the water to be used for a wide range of purposes.	High.
POREUS (INTERGRANULAR)	MODERATE-HIGH	Quaternary coastal plain deposits consisting of sand, clayey sand, and gravel occurring on low lying areas near the coast.	101	57 - 2500	Quality is variable but the groundwater can often be used for a wide range of purposes. Most analyses are towards the lower part of the salinity range (average of analyses about 600 mg/L). A small area of extreme salinity of up to 2714 mg/L occurs at Cape Portland in a low lying area with low permeability material. A few boreholes occur at some locations, for example Lady Sorensen (17000 mg/L).	Moderate to high. Depending on whether low permeability material overlies the aquifer.
POREUS (INTERGRANULAR)	LOW-MODERATE	Quaternary alluvium and sand deposits. The alluvium usually consists of clay, siltstone with sand and gravel deposits with varying clay content. The sandstone consists of sandstone and usually has a moderate to high clay content. Minor sandstone sand on sloping bedrock.	25	2150	Water quality in the coarse grained alluvial sandstones is often good as the deposits are usually near to surface streams and may be directly recharged by them. The sandstone is contained in the upper range of salinity for this unit on a statewide basis.	Low to high. Only if present at the surface will it protect groundwater at depth including underlying strata. Coarse grained aquifers without such protection are vulnerable to surface infiltration during storm events.
POREUS (INTERGRANULAR)	LOW-HIGH	Tertiary sandstone (fine and coarse) and gravel of non-marine origin (glaciated and alluvial deposits) ranging from small bedrock to several hundred metres.	452	38 - 2160	Quality is variable but the water is often suitable for a wide range of uses including domestic and irrigation. Quality is usually poor in the Tamar area and in coastal pebble water table aquifers in low rainfall areas. In the northwest part of the state nearly half of the analyses have low pH values and this water is potentially corrosive to metals.	Low to high. Low permeability clay layers cover aquifers (e.g. Longford area), high where gravel aquifers reach or almost reach the surface (e.g. Westmeath).
RACTURED ROCK (Intergranular on some horizons)	HIGH	Tertiary sandstone (fine and coarse), mudstone, minor coal, terrestrial origin. From the Devonian to the Permian. Permian is mainly of marine origin with small zones of terrestrial origin.	27	250 - 4500	Quality is variable but the water is usually suitable for a wide range of uses. The higher salinity values are often present in low rainfall areas or in an aquifer with low permeability and limited recharge.	High. A thick layer of low permeability material covering the aquifer will reduce vulnerability.
RACTURED ROCK (High in the west)	MODERATE-HIGH	Ordovician to Devonian turbidite sequence of sandstone and mudstone (Muller's Supergroup).	30	44 - 2230	Salinity is commonly low which allows the water to be used for a wide range of purposes. The Muller's Supergroup includes around 80% of the state's population and some other metropolitan regions contain more saline water.	High. A thick layer of low permeability material covering the aquifer will reduce vulnerability.
RACTURED ROCK	HIGH	Ordovician, Cambrian and Precambrian limestone, siltstone, slate, sandstone, quartzite and conglomerate.	44	64 - 3300	Quality of groundwater is usually good and a wide range of uses is usually possible. In lower rainfall areas salinity may increase and use becomes more restricted. Occasional bore waters have low pH (i.e. acid water).	High. Only not developed on the basis of soil salinization of Tertiary age (e.g. Westbury area) would offer some protection.
RACTURED ROCK	MODERATE	Tertiary basalt.	507	45 - 2700	Quality of groundwater is usually good and a wide range of uses is usually possible. In lower rainfall areas salinity may increase and use becomes more restricted. Occasional bore waters have low pH (i.e. acid water).	Moderate. Can be high if highly fractured zones are not covered by low permeability material.
RACTURED ROCK	LOW-MODERATE	Triassic dolomite. Tertiary basalt - O'Malley. Tertiary basalt - Scottsdale, Ringarooma, Tamar.	146	85 - 1470	Quality is variable but is seldom saline enough in this region to limit use markedly.	Low to moderate. Can be high if highly fractured zones are not covered by low permeability material.
RACTURED ROCK	LOW-MODERATE	Devonian granite and porphyry. Cambrian gneiss and dolerite dykes.	60	200 - 1900	Quality is variable and sometimes the water is a little saline for many uses. Groundwater associated with the granitic rocks tends to have low pH values which could be corrosive to metals.	Low to moderate. Can be high if highly fractured zones are not covered by a layer of low permeability material.

**BOREHOLE QUALITY - TDS**  
(See separate groundwater map for borehole yield)

Base Location Accuracy - Milligrams / Litre  
500 - 2000 m 1' - 300 m

- Unknown
- <= 500
- 500 - 1000
- 1000 - 1500
- 1500 - 3000
- 3000 - 7000
- > 7000

The bores shown are those recorded in the Mineral Resources Tasmania groundwater database (BORIS) with locations mainly supplied by drillers or by location in the field by MRF staff.

**GROUNDWATER QUALITY**  
Expressed as Total Dissolved Solids (TDS)

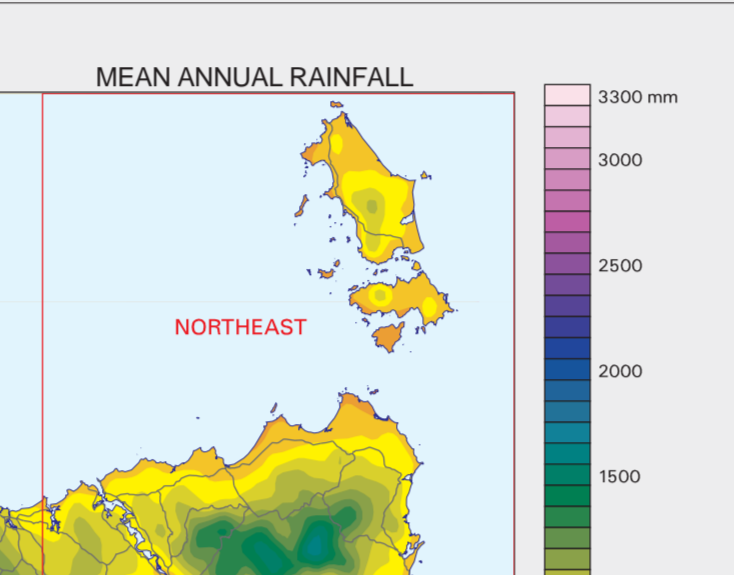
TDS in mg/L

- <= 500
- 500 - 1000
- 1000 - 1500
- 1500 - 3000
- 3000 - 7000
- > 7000

Potential usage of groundwater based on water quality

- All purposes, domestic and irrigation
- Most purposes, general upper limit for irrigation
- Most purposes, upper limit for drinking, limited irrigation
- All livestock, very limited irrigation
- Most livestock (not pigs or horses)
- Limited stock use (beef cattle, sheep)

Areas of similar groundwater quality across different rock types are shown by shading as above. Solid lines indicate deep aquifers while broken lines, --- indicate shallow aquifers. Boundaries are approximate only.



**SALINITY CONTOURS**

Salinity contours of deeper Tertiary Aquifers (500 mg/L contour interval)  
Longford Area (Geological Bulletin 29)

The data for this map were derived from the Tasmanian Geological Atlas 1:250,000 digital series and Mineral Resources Tasmania Groundwater data base (BORIS) and are based upon the potential for groundwater within broad rock groups.

These are general limits for the use of groundwater. The use of water for irrigation with the higher levels of salinity in the above table should only be considered on particularly suitable soil types with the adoption of specific management practices, or if the bore water is mixed with fresh water. For further information see Australian and New Zealand guidelines for fresh and marine water quality.

Other groundwater and hydrogeology maps and reports are available from Mineral Resources Tasmania. Borehole data is available from the Mineral Resources Tasmania web site - [www.mrt.tas.gov.au](http://www.mrt.tas.gov.au)

This map is not the result of a concise survey therefore groundwater potential and salinity areas are indicative only. This map does not remove the need for site specific investigations.

Groundwater potential data compiled by: M.L. Matthews B.Sc. and M.L. Matthews B.Sc.(Hons)

The rainfall map shows the mean annual rainfall over Tasmania for the period 1961 to 1990. It was derived by the Climate and Forecasting Centre, Tasmania and Regional District Office of the Bureau of Meteorology. It is a public domain product of the Bureau's Regional District Office. The rainfall map is not intended to be used as a basis for hydrological modelling or other purposes. It is a public domain product of the Bureau's Regional District Office. The rainfall map is not intended to be used as a basis for hydrological modelling or other purposes. It is a public domain product of the Bureau's Regional District Office.

Map first published July 2008  
Base data from the LIST - State of Tasmania

While every care has been taken in the preparation of this data, no warranty is given as to the correctness of the information and the user is advised to check the information against other sources. The data are indicative only. This map does not remove the need for site specific investigations. It is a public domain product of the Bureau's Regional District Office. The rainfall map is not intended to be used as a basis for hydrological modelling or other purposes. It is a public domain product of the Bureau's Regional District Office.

