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Report on groundwater surveys for the period 1 July to 31 December 1968

by P. C. Stevenson

The section consisted of a senior geologist and three geologists for most of this period, but M. J. Longman left the Department on 30 November, and two geologists now remain. Dr Leaman is still with the University of Tasmania.

Water work has occupied 46% of the section's time. There has been a sharp rise in engineering work.

Surveys in progress

- The Longford Basin (including the Epping Forest–Campbell Town area).
- The Scottsdale–Bridport area.
- Other water surveys and bore siting.

The Longford Basin

Drilling has continued with two machines, the Failing rotary machine operating on deep bores in the clay and sand deposits of the area around Longford and Cressy, and the G33 percussion rig drilling the shallow gravels near Epping Forest.

Results have been as follows.

Longford area

Bore No.	*Owner*	*Locality*	*Depth*	*Yield (g.p.h.)*
38	Paterson	Home Vale, South Longford	500	1500 (120 artesian)
39	A. K. Archer	Brickendon, Longford	500	About 20
40	W. E. Franklin	Lynfield, South Cressy	502	2000
41	T. Hogarth	West Cressy	500	1700
42	Humphries	Mt Vernon, SW Longford	500	2000
43	G. Cox	Spring Banks, NW Longford	502	2000
44	Du Maresq	Calliards, South Carrick	502	1700
45	J. Masters	NE Bracknell	512	1650
46	C. Dixon	Woollen Park, SW Longford	1000	1800
47	R. Freeman	Lonsdale, Little Hampton	500	1800

No development was attempted on these bores. The fine sand aquifers will present problems in this direction. Estimates of yield are limited by the pumps available and are conservative. Water quality generally has been less than 1,000 ppm TDS.

Epping Forest area

Bore No.	*Owner*	*Locality*	*Depth*	*Yield (g.p.h.)*
4	Mrs Gibson	East Conara	60	bailed, unable to lower
			120	
5	A. McKinnon	Snares Brook, north Campbell Town	67	about 700
6	A. McKinnon	Glen Esk, east Epping Forest	175	350
7	J. Reynolds	SW Epping Forest	155	450–500
8	R. Taylor	Valleyfield, west Epping Forest	30	
			180	250
9	T. Gibson	Esk Vale, NE Epping Forest	130	incomplete

Water quality varied from 1,000 to 3,500 ppm TDS.

Bailing tests only have been carried out on these and the bailing rate is probably the limit in most cases. Bores would probably yield more if pumped tested.

Two previous bores were recently pump tested.

2	McKinnon	Vaucluse, Cleveland	2,250 gph
3	Chilvers	West Cleveland	1,420 gph

Flow rates could probably be increased by development as the aquifer is gravel with some sand. In addition, two holes were drilled on a contract basis.

A. McKinnon	Snares Brook	37’	1,000 gph	bailed
J. Reynolds	South Epping Forest	95’	250–300 gph	bailed

Work in the Longford Basin occupied geologist W. L. Matthews for 17 weeks and several weeks by drilling crews.

Scottsdale–Bridport area

Geologist W. R. Moore has continued geological work which is now largely complete. Eight bore sites have been selected and more will follow further seismic and resistivity work. In the last days of December the first bore hole was begun but no results have yet been reported.

Work in the area has occupied 22 geologist weeks.

Other water surveys and bore siting

Some preliminary work has been done to examine the potential of coastal sand aquifers on the East Coast. The solid rocks on the Coast are often dolerite and granite and so offer little prospect of groundwater, but blown sand covers appreciable areas and could produce some volume of good quality water. The preliminary work which was prompted by the drought on the East Coast has shown that variable, but some good quality water can be obtained in shallow auger holes in sand hills close to the coast. The work continues and will expand.

This, and the siting of bores for farmers, has occupied 2½ geologist weeks.

Groundwater map of Australia

P. C. Stevenson is a member of the committee compiling the new edition of the *Groundwater Map of Australia*, and is responsible for the Tasmanian information. He has also attended a symposium on Land Evaluation in Canberra. Some aspects of this study have a direct bearing on groundwater resources, and geomorphological studies to this end continue.

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