

BORING FOR UNDERGROUND WATER AT THE
RESERVATION, CAPE BARREN ISLAND.

In August and September of this year a series of bore-holes was sunk on The Reservation at Cape Barren Island, with the object of proving the supply and testing the quality of underground water in the area for domestic purposes.

Eighteen holes of 3 inch diameter were put down by means of hand-boring plant. The total depth of the holes was 529.5 feet, while the average depth of the bores was 29.4 feet.

The accompanying plan shows the number and position of each bore-hole.

The sediments passed through consisted of horizontal layers of sands, lightly consolidated sandstone, arenaceous limestone and limestone, which in every instance were overlying granite.

Table No. 1 indicates the depth of the bores, the point at which water was encountered, and the results, where taken, of pumping tests to determine the flow.

No. of Hole	Depth of Bore	Water Encountered	Flow in gallons per hour.
<u>A. Line</u>			
1	6	No water	
2	6	" "	
3	35	Water 2 ft. from surface.	
4	50	Water 25 ft. from surface.	
5	50	Water 30 ft. from surface.	
<u>B. Line</u>			
1	12.5	Water 6 ft. from surface	36
2	20	Water 1 ft. from surface	36
3	46	Water to surface	
4	50	" " "	18
5	45	Water 25 ft. from surface.	12
<u>C. Line</u>			
1	18	No water	
2	18	" "	
3	45	Water 20 ft. from surface.	12
<u>D. Line</u>			
1	24	Water 6 ft. from surface.	18
2	26	Water 6 ft. from surface.	144
3	15	Water showing freely to surface.	144

A.A. Line

1	33	Water 8 ft. from surface
2	30	Trace of water

Analyses of water samples from some of the bores, undertaken with the object of determining the mineral salt content, were as follows:-

TABLE No. 2

	Parts per million							
	A line No.4	B line No.1	B line No.2	B line No.5	C line No.3	D line No.1	D line No.2	D line No.3
Total solids	2230	1447	1482	3290	1380	571	3238	1370
Colour	Fairly high	20	2000-2500					
Calcium	14.3	100	17.8	2.8	18.6	7.1	114.3	114.3
Magnesium	32.7	32.7	32.7	26.2	21.8	9.6	87.4	52.4
Chloride	1055	534.8	633	668	633	48.4	1316	442
Sulphate	151	115	16.5	57.6		16.5	222	36.2
SiO ₂ .Fe ₂ O ₃ .Al ₂ O ₃ .	48	35	30			280		
Fe ₂ O ₃ . Al ₂ O ₃				924			Nil	Nil
SiO ₂				1230			30	30

The Government Chemist & Assayer reports that the samples from A. Line, No. 4 Bore, D. Line, No. 1 Bore, and B. Line, No. 5 Bore, contained moderate to large amounts of colloidal clayey matter in the above order. The last was remarkable in regard to this impurity totalling, after filtration through a thick asbestos pad, 2,154 parts per million of SiO₂, Fe₂O₃, and Al₂O₃.

D. Line, No. 1 and 3 bores offer the best possibilities for domestic supply. Of these two samples the former is a good water from a mineral salt viewpoint, although purification would be necessary for removal of colloidal matter. This could be accomplished by treatment with Aluminium, Sulphate and Lime.

If a supply, similar to this sample is to be considered for domestic purposes it would be desirable to investigate any likelihood of Chlorine content other than that of purely mineral origin, and also to obtain a fresh sample for bacteriological tests; this could be undertaken by the Commonwealth Health Laboratory, Launceston.

It is of interest to compare these analyses with those of several Australian city supplies.

Parts per million.

	<u>Total solids</u>	<u>Chlorine</u>
Launceston	55	10
Melbourne	77	10
Sydney	-	24
Adelaide	342	94
Brisbane	250 - 400	78 - 127

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ACTING GOVERNMENT GEOLOGIST.

*Refer plan at back of
book.*

Department of Mines,
HOBART.

21st November, 1935.

*Plan at back
of book.*

