RB 36/34 D.M.855/53

UNDERGROUND WATER SURVEY OF PORTION OF SOUTHERN YORKE PENINSULA. (Hundreds of Warrenben and Coonarie)

As requested by the Director of Lands, an underground water survey of Hundreds of Warrenben and Coonarie was carried out during the period May 19 to 22 inclusive, 1953.

Object of Investigation.

The object was to determine the prospects of obtaining stock water supplies for proposed land settlement holdings in portion of the Hundreds of Warrenben and Coonarie.

Previous Investigations.

Portion of the Hundred of Warrenben has been previously examined geologically and hydrologically by Geologist D. King of the South Australian Mines Department, in connection with an investigation of the Stenhouse Bay gypsum deposits.

Ceology of the Area.

The entire area is marked by travertine limestone or soil cover, except on the sea front where some good exposures are seen in cliff faces. Here calcareous sand dune formations of Pleistocene age up to 200 ft. thick, overly hard basement rocks, mainly granitic gneisses with numerous intrusions of basic dikes.

Away from the coast, the only available geological information is the spoil heap from wells and logs of bores. This information is very scanty, but tends to indicate that the same general geological conditions apply inland as along the coast, i.e. soft sediments, sands, shelly limestone, etc., varying in thickness from 40 to over 120 ft., overly hard basement rocks.

Climate, etc.

The climate for most of the year is cool, with higher temperatures in summer, modified by sea breezes. The rainfall is reliable, and

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averages 17 inches per annum at Varooka, increasing to 21 inches per annum at Marion Bay. The bulk of the rain falls during the winter-spring period, and the period November-March is relatively dry.

Topographically, the area comprises numerous low ridges separated by flats or hollows, with no pronounced features. Accessibility is generally poor, the mantle of travertine limestone making the few tracks very rough.

Hydrology of the Area.

Numerous wells and bores have been sunk for stock watering points, and these were inspected and sampled as far as time and terrain permitted. The details are recorded on the attached summary of bore records sheets, and accompanying plan.

The hydrological picture is a very complex one, and no generalised statement fits the whole area. Non-pressure groundwaters of local origin in this area are commonly variable in supply and salinity, and in addition a further complication here is the presence of very hard bedrock at unknown and varying depths.

Results at complete variance are obtained on adjoining blocks which, superficially at least, appear very comparable on hydrologic and geologic grounds. For instance in the central portion of the Hundred of Coonarie, Mr. Murdoch on Section H has sunk many wells and bores without establishing a single stock watering point - all were salt or dry. Mr. C. Lee on the adjoining property to the east, has established three good stock watering points from six attempts.

Mr. R.A. Webb, Sections 38 and 40, Hundred of Warrenben, has sunk more than twelve bores or wells, but has only established one satisfactory water supply in the extreme North-Bastern corner of Section 38. His neighbours to the east, Messrs. A.J. Webb and T.G. Bennett, have both obtained several good water supplies without great difficulty. It is suggested that the contours of the bedrock basement may exert a strong influence on the quantity of water available - where basement extends fairly close to the surface prospects are poor, but where basement is well below surface

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(100 feet or more), prospects are probably better. Geophysical methods might be of assistance here in outlining basement rock 'highs' and 'lows'.

The problem of quality of water struck affords no obvious solution, though it is possible that the basement rocks also exert some influence in this regard, perhaps by interference with movement of waters underground.

CONCLUSIONS:

Although sufficient bores and wells have not been sunk in the particular portions of the area under consideration for closer settlement, to enable a positive expression of opinion, results will probably be comparable to the rest of the district.

It can therefore be anticipated that while satisfactory underground water supplies may be established on some blocks with relative ease, considerable difficulty will be experienced elsewhere.

Surface dams cannot be considered as an alternative, and it appears that test drilling will be necessary if the scheme is to proceed.

DEPUTY GOVERNMENT GEOLOGIST

10/8/53.

DEPARTMENT OF MINES, ADELAIDE

SUMMARY OF BORE RECORDS

Table No.

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*					Ĺ	Jnderg	round Wa	ater Survey	ot County					2m-3.53 1033
		· Total Depth Ft.	Depth at which Water Cut, Ft. below Surface	Static Level, Ft. Below Surface	l, Tested Output, Gall. per Hour	Analysis No.	s Total Salinity, Grains per Gall.		NOTES ON	USAGE FOR	SURFACE ELEVATION			
Serial No.	Section No.							Stock	Lucerne	Garden and Domestic	Form	Height above Sea Level	Remarks and Strata	Occupier's Name
8	72	209			ar search where the second winds, states and				No	details	an other an the same the same the	1999 1999 1999 1999 1999 1999 1999 199	20. 1999 YOF THE	u den and inn eas now definition
13		18	9	10-12	100+		198	Yes 20 yrs	skany; .	Not tried				G.F. Lee, Warooka
34	Immed- iately opposi G (Sec 106 Hd Moorow	te te	, ភ្	Lj,	100?		682	Yes - sheep		就 \$	Level ground			Not known
1 5	И	Variou	ls ·	Ms	any aban	idone d	bores	and wells	- A11	salt or dry	ann anna anna sann ann sann ann ann ann		No water on block	Murdoch
16A	Ĺ	65 O	48	48	100+		698	Yes - sheep		Not tried	Slight ridge		No. 1 bore	G.F. Lee, Warooka
163	T	50	?	35	100		1220	Not use	đ	療 健			No. 3 bore	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
160	t	25	2	12-15	100?		97	Yes - sheep & horses 20 yrs.	Not tried	Washing and drin ing for 20 yrs.	k- Gully		No. 4 bore	₹₹. \$ ₹
18	AX AX	70			Dry								Bedrock - 2 bores	B.H. Baker, Yorketow
19A	- 8	60-70			Dry								<u> Nedrock</u> - 4 bores	5g 8 g
1 9B	8	40	-	÷.	100+	Not	sampled	Yes	- 1	•. đetails -				19 種
21	16	30	time t	-	100 maxm.	†9	韃.	Yes.	- N	o details -				J. Hearn
22	23	40		ક્રપેલ્સ	100	1	靜	Yes		o detaíls -				Baker
23A	24	30		3000	100		1170	Not us	eđ				New bore	G.F. Lee, Warooka
23B	24	i2		****	-		Salt	4					Abandoned	12 88 12
24	Ţ	52		48	100+	~~~	29	Yes	siji -	No details	Level ground			B.H. Baker, Yorketow
25	86	6		4	100		102	Yes	Yes	Yes - many years	Gully		Three wells	L.C. Kreig, Private Bag, Warooka
26A	7	9	****	6	100+		755	Not co pletel	ni- y lactory	Not tried	Level ground			L.G. Seibert, Yorket
263	81	star.	a natura sugar sunsy signer nilaya popul tanan 1995.	No	detail	.s	and the state and the state of the state	Bart Saide Of Julya Bart and						94 \$B
271	IO	38	-	- 469	100+	Not	sample	d Good water	tock					E.W. Baker, Warooka
27B	6	6		. 4	100		215	Yes		No details				17 17
28A	11	7			100	Not	sample	a Yes		No details				Not known
28B	5	69			٢.	Ť	2. 2. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 5. 3. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5.							Not known
29	13	7	ndas.	5호	1005		174	Yes		No details				Bichner, Warooka
30A	102	43	, ,	3	1009		142	Yes		No details	Edge of swamp			K. Smith, Warooka
30B	102	7		5	100+		738	Not satisfa	tory		Near sa dunes	ind		दृष्टी भ म्

COONARIE Hundred :

DEPARTMENT OF MINES, ADELAIDE SUMMARY OF BORE RECORDS

Table No.

	5				Į	Jnderg	round Wa	iter Survey	of Count	Y YORKE				
	Section No.	Total	Depth at which Water	Static Level, Ft. Below Surface	Tested		Total Salinity, Grains per Gall.	- WHICH LOUDS A BENT CH	NOTES O	N USAGE FOR	SURFACE	SURFACE ELEVATION		
Serial No.		Depth Ft.	Cut, Ft. below Surface		Gall. per Hour	Analysis No.		Stock	Lucerne	Garden and Domestic	Form	Height above Sea Level	Rema	
1	38	40	38	38 1	100+		183	Yes	Not	tried	High level			
2A	41	70					Salt	united water search to contract the search to contract to the search to contract to the search to contract to t					Abandone	
2B	41	30			100	Not	sampled	Good		9 9			Ellerowi	
20	41	90			100	11	輕		¢\$	18				
2D	41	50			Poor	tt	ŶŦ	, the second sec	鋉	\$ \$		-		
2E	41	50			Poor	¥¥	Ħ	star Kar	¥\$, 17 ,				
3A	7	22			100+	\$ \$	Ħ							
-		1.0			Deem	1	98		Not	tried				
<u>عر</u>		40		lio Imman	1001		20	Yog -	Not	tried	Level			
4	60	52		40 Appro.	x. 100 Maxm.		50	sheep.	nt tried	urred	ground			
5 A	40	70	52	52	<u>*</u> 2		110	Yes	Not	tried	Gully		Well to bore. bottom.	
5B	40	55			Under	20	64	Yes	Not	tried	10000000000000000000000000000000000000	-		
5 C-J	40	40-90											Abandone either	
6 A	8B	60			100+	Not	sampled	Yes		Yes	Gully			
œ	8B	90	80	50	100+		49	Yes	Not	tried	Slight ridge		Mi caceou	
6 C	8 B	90			100+			Fair						
6D	8B	55			Dry	A							Bedrock.	
. 7	60		1996 XIII 440 440 444 749 444 749	and interview and a set of the set of the second	ante ausari attade espan dallas dada	k NAR AND	No	detail	S -	at			Old mine	
9	6	25			Poor			Good						
104	4 A	4		· , , · e	Small	Not	sample	d Good	-	No deta	118	ani ann 1870		
lob	4 A	?		ante algo pode 4404 com 1000 4007 4606 ilgo		9 etain statik utter eine tatat	- No	detail	s	्र भ्रान करन प्राप्त कुल असेन प्राप्त केंद्र प्राप्त केंद्र प्राप्त करने प्राप्त करने प्राप्त केंद्र करने प्राप्त क			Old mine Abando	
	3A	6			Fair			Good					Jones We	
11B	3A	20			Dry		-					•	Bedrock	
11C	3A	3			Fair			Fair					Bedrock	
JID	3A	20					39?	Feir					Quality	
11E	3A	?			Large			Good					Abandone	
11F	3A	6			100		42.9	Yes			Concernence and			
11 2 G	3A	6			100			Good				•		
5								×						

Hundred : WARRENBEN 2м—3.53 1033 arks and Strata Occupier's Name R.A. Webb, Warooka A.J. Webb, Warooka эđ ŧŧ 财 Le Native Well 鏈 轉 Ħ ŧ 甧 葃 A.P. Anderson? Stansbury đo. A.P. Anderson, Stansbury R.A. Webb, Warooka 60 ft. then Bedrock in 轐 翰 ed bores salt or dry T.G. Bennett, Private Bag, Warooka is rock in bottom) đo. đo. Abandoned. e shaft. Greenslade ? shaft. oned. ? ell. Abandoned. ? ? Abandoned. ? ? reported to vary. ? eđ. 9

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DEPARTMENT OF MINES, ADELAIDE

SUMMARY OF BORE RECORDS

Table No.

Underground Water Survey of County												2м3.53 1033		
	Section No.	Total Depth Ft.	Depth at which Water Cut, Ft. below Surface	at ater Static Levėl Ft. Below ow Surface e	l, Tested Output, Gall. per Hour	Analysis No.	Total Salinity, Grains per Gall.	NOTES ON USAGE FOR			SURFACE ELEVATION			
Serial No.								Stock	Lucerne	Garden and Domestic	Form	Height above Sea Level	Remarks and Strata	Occupier's Name
12A	4B	50			Poor	Not	sampled	Good	- No	details -				?
12B	4B	50			100	11	锋	Good	11	Ť	en concestantation en un			9
120	4B	20			do.			Fair			111 111 111 111 111 111 111 111 111 11			?
14A	4D	6			Good			Good			en anno ann ann ann ann ann ann ann ann a			2
149	4D	30			100?	are a mean way work way a		Good			energy of the second			ę
15	5 A	120			?			Good?		•	er Stock-Angel			?
16	6 A	60			Dry						na od		Bedrock - Abandoned	?
18	28	100+			?	er commune en a per a	Salt	and and the second s			45 Y + + + + + + + + + + + + + + + + +		Abandoned	?
21A	31	6			Fair			Fair			A Shi na ku		Hill well	?
22A	43	8			100+	р. с		Good						የ
22B	43	22			100+			Good						9
220	43	? `					Salt	Characteristic Control of Control					Several wells - abandoned.	
23	C	6			Fair			Fair						઼
24	E	4	~		?		558	Yes - sheep						
25 A	Pt.4D	30			100+		72						}	
25B	18	16			Poor			Good						Private Bag, Warooka
250		12			100		86	Yes	Yes	Yes)	
26A	5	100			Dry								Bedrock - abandoned.	
26B	5	70		40	100?	1997 - 19	172	Yes	- No	information -	Level		Deep well.	K. Butler, Minlaton.
2.60	5	120	100?		100		160	Yes	Not	tried	Stony		Bedrock in bottom.	2章
26D 28	26A	200 ±			50 App	. Not	sampled No	d Good detai	18		1 LUEV		Old oil bore - abandone	đ.
30	1	Ħ		and the state water and and			- No	detai	ls				15 19 19 19	
31	2	ŧŧ		alle and all star the star and	-		- No	detail		ana ang aga ang aga ang ing ang ang ang ang ang ang ang ang			\$\$ \$\$ \$\$	
32	33	9			?			Fair						?
33A	46	8			Fair			Fair						
33B	469	9			100		35	Yes	*	Yes				?
						a and a second se				-			· · · · · · · · · · · · · · · · · · ·	

Hundred : WARRENBEN

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