

GYPSUM DEPOSITS NEAR PORT BROUGHTON AND TICKERA.

Introduction.

A geological survey was made of the coastal area between Port Broughton and Tickera, in the hope of discovering gypsum deposits other than those already investigated.

The following gypsum leases have already been taken out in this area: Nos. 470 and 471, 545 and 546, 537 and 538 (all held by the State Bank of South Australia) and a private lease on Section 214. The deposits on section 214 and on leases 470 and 471 are worked intermittently and along with leases 470/1 and 537/8 have been surveyed in detail by D. King, but the remainder have not yet been investigated by the Department of Mines.

Plans.

A plan showing the location of the gypsum deposits and leases accompanies this report. 52-2

General Geology.

The known deposits of gypsum occur in old lake beds in inter-dune depressions near the Mid-Recent Anadara shore-line. This is coincident with the eastern edge of the low mud and shell flats adjacent to the coastal dunes of the present shore line.

In these gypseous depressions, a few feet of flour usually overlies fairly high grade seed and rock gypsum, which in turn rests upon vari-coloured clay. In general, the quality of the gypsum is fairly consistent (between 85 and 90% gypsum) and is independent of the thickness present.

The Gypsum Deposits.

(a) Lease No. 545 (Section 576, Hd. Tickera). Post holes were unable to penetrate to the base of the gypsum in this lake but proved that there is over 5 ft. of seed gypsum at least in the central portions and over 1½ feet on the margins, underlying 1½ ft. of flour gypsum. The area of the deposit is about 5,000 sq. yards.

Lease No. 546 (Section 198, Hd. Tickera). Three post holes indicated that over an area of about 2,500 sq. yards a maximum of 1½ feet

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of seed gypsum would be obtained, under a similar thickness of flour overburden and resting on a wet clay. The deposit is not considered workable.

(b) Deposits outside leases.

(1) Section 186, Hd. Tickers: North-east of leases 470/1 there is a small gypsaceous lake and post holes proved a maximum of 1ft. of seed gypsum under 1½ ft. of overburden and resting on clay. The area of the lake is about 5,000 sq. yards.

(2) Section 419, Hd. Mundooru: This is a small deposit on the Fisherman's Bay promontory north of Pt. Broughton. A post hole in the centre revealed only 1½ ft. of seed gypsum of rather poorer quality than the other deposits. The seed was covered by 1ft. of overburden and rested on sticky clay.

(3) Section 214, Hd. of Tickers: A very small gypsaceous area occurs just north of the private lease in which 2ft. of seed gypsum was encountered under 2 ft. of overburden and resting on clay.

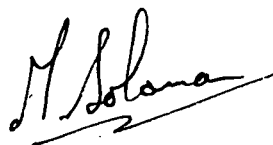
The accompanying table lists the partial analyses from each deposit.

Conclusions.

Deposits on Section 214 and under leases 470 and 471 are by no means worked out and those on leases 537 and 538, surveyed by D/ King, have not yet been opened up. The latter two should provide 21,000 tons.

The deposit under lease No. 545 appears to be of similar thickness and quality to those now being worked although perhaps rather smaller in size and warrants further investigation.

The remaining deposits are not yet considered economic propositions as they only contain about 1½ ft. or less of seed gypsum which ^{thickness} would be further reduced in many cases to leave a floor for working.



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MS:EAK
21.1.52.

TABLE OF ANALYSES.

	Lease 545, Section 576 Hd. Tickera			Lease 546 Section 198 Hd. Tickera		Section 214 Hd. Tickera	Section 186 Hd. Tickera	Section 499 Hd. Mundocora
	1st Hole		2nd Hole	1st Hole	2nd Hole			
	1'6" - 3'	3'-4'9" ±	1'6"-29' ±	1'6" - 3'	1'6" - 3'	2' - 4'	1'6" - 2'6"	1' - 2'5"
Insoluble matter	1.68	1.27	1.55	.95	.68	1.40	2.27	1.05
Gypsum	81.54	81.21	79.89	84.4	90.7	90.99	88.2	79.98
Calcium carbonate	15.45	15.37	14.62	11.15	6.29	6.30	5.89	15.35
Ferric oxide	0.15	0.20	0.11	0.09	0.10	0.09	0.28	0.11

GEOLOGICAL PLAN showing GYPSUM DEPOSITS PT. MUNDODORA		Req. No. D.M.	
Associated Drawing		Compiled from Plan of D. King & M. Solomon.	
No.	No.	Amendment	Exd.
S.A. DEPT. OF MINES		TICKERA - PT. BROUGHTON AREA	
Approved J. H. Brown Director of Mines		Passed M. C. R.	
Dm. J. M. C.		Ctd. R. R.	
Date 2-1-52		Scale 52-2 Gc 1 + 13	

