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PRELIMINARY REPORT ON BAUXITE NEAR CAMPBELL TOWN, TASMANIA

by

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AUSTRALIAN ALUMINIUM PRODUCTION COMMISSION.

PRELIMINARY REPORT ON BAUXITE NEAR CAMPBELL TOWN, TASMANIA.

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1947/80

(The following introductory remarks were not included in the original report as the points mentioned had been covered in previous correspondence.---

Introductory. Laterite, more or less aluminous, outcrops at a number of places on Rosedale, Meadowbank and Riccarton Estates in close proximity to Campbell Town, Tasmania.

During recent years some testing of these occurrences was conducted by the State Mines Department.

Campbell Town is 41 miles by road from Launceston on the Midland Highway and it is also on the main railway from Hobart to Launceston.

Rosedale and Meadowbank are adjoining estates lying about 3 miles north-west from the town between the Midland Highway and the Campbell Town to Cressy road.

The laterite occurrences on Riccarton are about 2 miles north-north-east from the town proper and just outside the north-east corner of the twon reserve. There are small deposits within the town area.).

Bauxite deposits on Rosedale, Meadowbank and Riccarton Estates at Campbell Town were tested by shaft-sinking and boring during November and December 1946. Earlier than this the Tasmanian Mines Department had sunk a number of shafts on the deposits, mainly at widely spaced inetrvals.

The work undertaken by the Aluminium Commission chiefly consisted of testing between the shafts sunk by the Mines Department so that the interval between the points tested was reduced to 200 feet or less. A few of the old shafts were cleaned out and resampled.

A. ROSEDALE ESTATE.

There are three separate bauxite areas of which No. 1 and 2 have been tested. No. 3 area is a small residual of insufficient area ob thickness to be of any commercial significance. No. 1 area also is small (about 300 feet diameter), and No. 2 area occupies a flat-topped ridge about half a mile long by 200 feet wide.

The Mines Department shafts were, for the most part, sunk from higher points on the gently undulating surface of the deposit, and consequently intersected a greater thickness of laterite (or bauxite) than the holes which were sunk between the existing shafts.

Results of both campaigns of testing are summarized in the following tables.

TABLE I.

Shaft No.	Tasmanian Mines Dept.			Aluminium Commission.		
	Thickness Ft.	Al_2O_3 in NaOH %	SiO_2 in NaOH %	Thickness Ft.	Avail. Al_2O_3 %	Loss Na_2O Cwt. per ton Al_2O_3.
1.	6.3	23.3	7.9	5 sampled - not bauxite.		
2.	7.8	30.3	5.1	4	34.1	1.03
3.	5.0	36.6	6.6	Not re-sampled		
4.	4.0	44.7	3.7	Not re-sampled		
5.	7.0	33.3	2.4 X	Not re-sampled		
6.	6.2	28.8	5.5	1	36.5	1.44
7.	4.5	44.7	3.8	3.5	43.0	0.65

X (Shaft 5) Some clay rejected from sample.

TABLE II
Figures for shafts sunk by Aluminium Commission.

Shaft or Bore.	Thickness sampled Ft.	Thickness of econ. bauxite Ft.	Avail. Al_2O_3. %	Na_2O loss Cwt. per ton Al_2O_3.
R 1.	5.5	Nil	--	--
R 2.	Nil	--	--	--
R 3.	13	3	31.6	1.03
R 4.	Nil	--	--	--
R 5.	22	Nil	--	--
R 6.	10.5	Nil	--	--
R 7.	4	Nil	--	--
R 8.	4.	Nil	--	--
R 9.	24	Nil	--	--
R10.	19	Nil	--	--

No comment on these figures appears necessary. Of 17 shafts on No. 2 area only four showed the presence of economic bauxite, and the maximum thickness revealed was only 4 feet.

B. MEADOWBANK ESTATE.

This property adjoins Rosedale on the east. There are five separate bauxite areas, but only one of them, No. 4, is large, being approximately the same area as No. 2 area on Rosedale Estate.

The Mines Department sank 10 shafts at intervals ranging from 500 feet to 200 feet on No. 4 area, and a group of 20 shafts at intervals of 25 feet near the southern end of the same area.

Of the first 10 shafts only three were deemed by the Mines Department to be worth sampling. One of these three and two others were re-opened and sampled by the Commission. Results :-

TABLE III

Shaft No.	Tasmanian Mines Dept.			Aluminium Commission.		
	Thickness Feet.	Al_2O_3. in NaOH.	SiO_2 in NaOH.	Thickness Feet.	Avail. Al_2O_3.	Loss Na_2O Cwt/ton Al_2O_3
8	5	36.2 %	6.2 %	(3	34.0	1.24)
				(3	31.8	1.33)
11	Not sampled			8	bauxite nodules in red clay.	
12	Not sampled			3	23.6	--
16	2.5	33.3	2.1	Not re-opened		
17	4.2	37.1	6.0	Not re-opened		

TABLE IV Shafts sunk by Commission.

Shaft No.	Thickness sampled Ft.	Thickness econ. bauxite Feet.	Avail. Al_2O_3. %	Loss Na_2O Cwt/ton Al_2O_3.
M 1				
M 1	3	Nil	--	--
M 2	4.5	4.5	33.5	0.75
M 3	Nil	--	--	--
M 4	Nil	--	--	--
M 5	3.5			
M 6	4	Nil	--	--
M 7	Nil	--	--	--
M 8	5			

These results effectively dispose of Area No. 4 at Meadowbank as a potential source of bauxite.

It is known that high grade bauxite occurs in Area 8, Meadowbank, but the deposit is very small and not likely to contain more than 1500 tons of bauxite per vertical foot.

C. RICCARTON ESTATE.

The supposed bauxite deposits on Riccarton lie about 1½ miles north-east from Campbell Town. The largest areas, No. 13 and 14, both of which were tested, are characteristised by the highly ferruginous nature of their outcrops, which are typical laterite. (One sample - 34.6 % Al_2O_3, 39.9% Fe_2O_3; 1.75 % SiO_2.)

The results of testing these two areas were most discouraging. Four shafts on No 13 Area failed to penetrate bauxite except in the form of sparse nodules of highly ferruginous matter embedded in red clay. Ten bores on No. 14 area also failed to encounter any bauxite and all passed into kaolinixed basalt at shallow depth.

Any bauxite which exists on Riccarton is confined to the comparatively limited outcrop areas and is highly ferruginous.

Analyses of three samples representative of a vertical succession on Area 15, Riccarton are not without interest.

TABLE V. Samples from Area 15, Riccarton.

Sample No.	1/C	2/C	3/C

TABLE V. Samples from Area 15, Riccarton.

Sample No.	1/C	2/C	3/C
SiO_2	1.9%	3.8%	11.6%
Al_2O_3	28.4	41.0	41.6
Fe_2O_3	43.0	21.7	13.4
TiO_2	4.5	8.7	8.3
Ign. loss	16.9	25.4	24.1
Avail. Al_2O_3	--	39.6	33.5
Loss Na_2O in Cwt. per ton Avail. Al_2O_3	--	0.45	2.95
Approx. thickness in Feet.	4	3	3
Description.	Ferruginous capping.	Underlying light brown, soft bauxite.	Soft bauxite showing basaltic textur

D. SUMMARY OF RESULTS.

The testing carried out by the Commission has served to prove what was already indicated by the work of the Tasmanian Mines Department.

Bauxite of economic grade does not exist in sufficient quantity at Campbell Town to make the occurrences of commercial value.

Small patches of good ore may exist on Meadowbank in Areas 6, 7, and 8, but there is no reason as far as 6 and 7 are concerned, to expect better results than those obtained on the areas tested already. As mentioned above Area 8 is very small.

The occurrences are fairly typical ferruginous laterites. In some instances migration of iron upwards to form the limonitic capping has left a narrow zone impoverished in iron and consequently enriched in alumina (as at Area 15). This high-alumina zone appears to be not only thin but very limited in horizontal extent, and not present on Rosedale or Meadowbank where the bauxite, such as there is, consists of highly aluminous nodules embedded in a clayey matrix.

It is suggested that no steps be taken to acquire leases at Campbell Town over the areas tested.

(Sgd). H. B. OWEN.
Geologist.

Melbourne,
4th May, 1947.

Copied with minor alterations 25/10/47.

H B Owen.