REPORT ON TESTING OF DOLOMITE LEASE AT SMITHTON.

Location and Access.

This lease 10759/M is situated two and a half miles south-west of Smithton township, on the West side of Duck River, and comprises 129 acres in the name of The Australian Magnesium Company Proprietary Limited.

Access is gained by means of Smithton-Xmas Hills motor road along the south boundary of the lease. Two cart roads connect with the motor road and traverse the area in a north-westerly direction.

Topography.

The area is of low relief, and almost flat. It is broken to a slight extent by a small south-east flowing creek traversing the middle portion of the lease and joining Duck River further east. Duck River flows along the north and north-eastern boundary of the land and is entrenched to an approximate depth of fifty feet below the general level of the country.

Geology.

The bedrock of the area consists of west dipping beds of dolomite of Cambro-Ordivician age which has been fully described in Bulletin No. 41.

Overlying the dolomite are Pleistocene sea sands extending to various depths. At one point an unbottomed shaft was still in sand at a depth of twelve feet.

Testing by Shafts.

A commencement was recently made to test the property with the object of proving depth of overburden and quality of dolomite bedrock, to enable a suitable site to be selected for quarrying.

Up to the present, seven shallow shafts have been sunk in sand. Of these, four are situated within the lease near the east boundary, immediately south-west of a small quarry reserve. The remaining three are to the south east and included in 31 acres 3 roods 19 perches of land purchased from the Crown by B.M. Miller.

The following table shows details of the shafts.

SHAFTS ON LEASE 10759/M.

Number of Shaft	Depth in feet	Material	Remarks.
1.	7 feet	Sand with little fine quartz gravel.	Dolomite in Bottom.
2.	9 "	" " "	" "
3.	9 "	" " "	" "
4.	6½ "	" " "	Quartz "

SHAFTS ON 31 Acres 3 roods 19 perches,
B.M. Miller purchaser.

Number of Shaft	Depth in feet	Material	Remarks
5.	3 feet	Sand with little fine quartz gravel.	Not bottomed.
6.	4 "	Sand " " "	Dolomite in Bottom.
7.	12 "	" " " "	Not bottomed

The accompanying plan shows the position and numbering of the shafts.

Dolomite is exposed in the bottoms of shaft numbers, 1,2,3 and 6 while the bottoms of numbers 5 and 7 shafts are still in sand. In number 4 shaft bedrock is exposed in one corner and is here represented by silica in the form of white quartz. This does not appear to be of the reef quartz variety but rather a cherty or opalised quartz and suggests a local replacement of the dolomite by silica. The material is finely honeycombed and contains cavaties lined by minute quartz crystals..

Some similar material on the dump of No.3 shaft which had been removed from that hole was evidently a loose boulder, since bedrock at that point proved to be dolomite.

In adjacent areas, as at Nabageena and Irishtown, irregular patches of cherty quartz and quartz veins are common in the dolomite but in Duck River Valley only two similar impregnations are known. One of these occurs in No. 4 shaft, and the other is a wide quartz reef at the old bridge over Duck River, on the north side of Watsons Bend. The small amount of silica so far exposed on the dolomite lease is negligible and could readily be discarded during quarrying.

Future Operations.

The most suitable position for opening quarries to mine the dolomite would be from river level along the north and north eastern portions of the lease. In this area faces up to approximately 50 feet could be obtained and access to the quarries by means of motor lorries would be practicable.

Before carrying out quarrying operations it would be first requisite to institute a scheme for testing the depth of overburden, and to prove the bedrock. This would probably be best expedited by means of a hand boring plant. It would be necessary to case the holes and extract the sand by means of a sand pump. Bedrock could then be broken with a chisel bit and brought to the surface with the pump or a suitable bit.

The bore sites should be set out in lines parallel to the river and spaced evenly at frequent intervals.

(signed) J.F. Blake.
ACTING GOVERNMENT GEOLOGIST.

Mines Department,
HOBART.
27/11/34.