

UR1973_17

Drilling for clay, Grierson's pit (762/M), Forcett.

V.M. Threader

A hammer drilling programme was carried out at Grierson's clay pit for the Hobart Brick Company. The purpose of the drilling was to prospect for cream clay for brick making. The drilling was done by Wreckair company, the hole pattern was surveyed by G. Benn of the Department of Mines and the ceramic testing was carried out by D. Clements in the Department's laboratory at Launceston.

The clay pit is adjacent to the Sorell Municipality stone quarry on the Forcett-Dodges Ferry road 2 km from the Arthur Highway (fig. 1).

GEOLOGY

The material is a white to brown sandy clay of Permian or Triassic age. The pale colour is attributed to leaching for surface water. This leaching action removed not only the iron content but some of the clay as well resulting in poorer ceramic properties of the lighter coloured material.

The deposit is bounded on the north by a south-westerly dipping fault beyond which is an indurated mudstone which is crushed for road making material. To the south-east is a low hill capped by siliceous grit. The grit has been worked on a small scale from several pits on the southern flank of the hill.

DRILLING

A 100 ft (30 m) grid was set out in the unmined area and holes were drilled to a depth of 30 ft (9 m). This depth is unlikely to be exceeded in quarrying operations. Samples were collected at 1.5 m intervals and tested as shown in Table 1.

RESULTS

Reserves of clay which bonds well on firing to produce a white, cream or light pink brick have been calculated to be 38000 cubic yards (29000 m³) or sufficient to produce approximately ten million bricks. This figure will be less if light pink is not tolerated. It should be possible to use material from holes 1 and 4 which had good colour but poor bond, if it is blended with the other clay. It will be noted that holes 5 and 10 were not drilled. These sites were inaccessible due to dumping of overburden. The floor of the existing quarry was not included in the reserves calculations. An additional 8400 m³ would be contained in this area if the colour was acceptable. It may be possible to further increase reserves by prospecting to the west and south of the lease area.

CONCLUSIONS

The variable nature of the material in this deposit demands more systematic methods than those in current use. It is suggested that the full depth be worked in the existing area before mining any new ground. This will provide a dumping area for overburden which previously has been dumped on potentially suitable ground. Secondly, the working face should be extended to cover as great a length as possible. This will allow high colour clay to be avoided and also blending of the remainder to allow a more uniform quarry product to be obtained. Thirdly, overburden should be stripped ahead of the working face to prevent soil and vegetation spilling over and contaminating usable material which is happening at present.

If these suggestions are adopted the maximum life would be obtained for this deposit. If the area to the south and west is prospected, a backhoe could be used for an initial investigation.

Even if this is done, it appears unlikely that the entire deposit contains more than a few months reserves of cream clay.

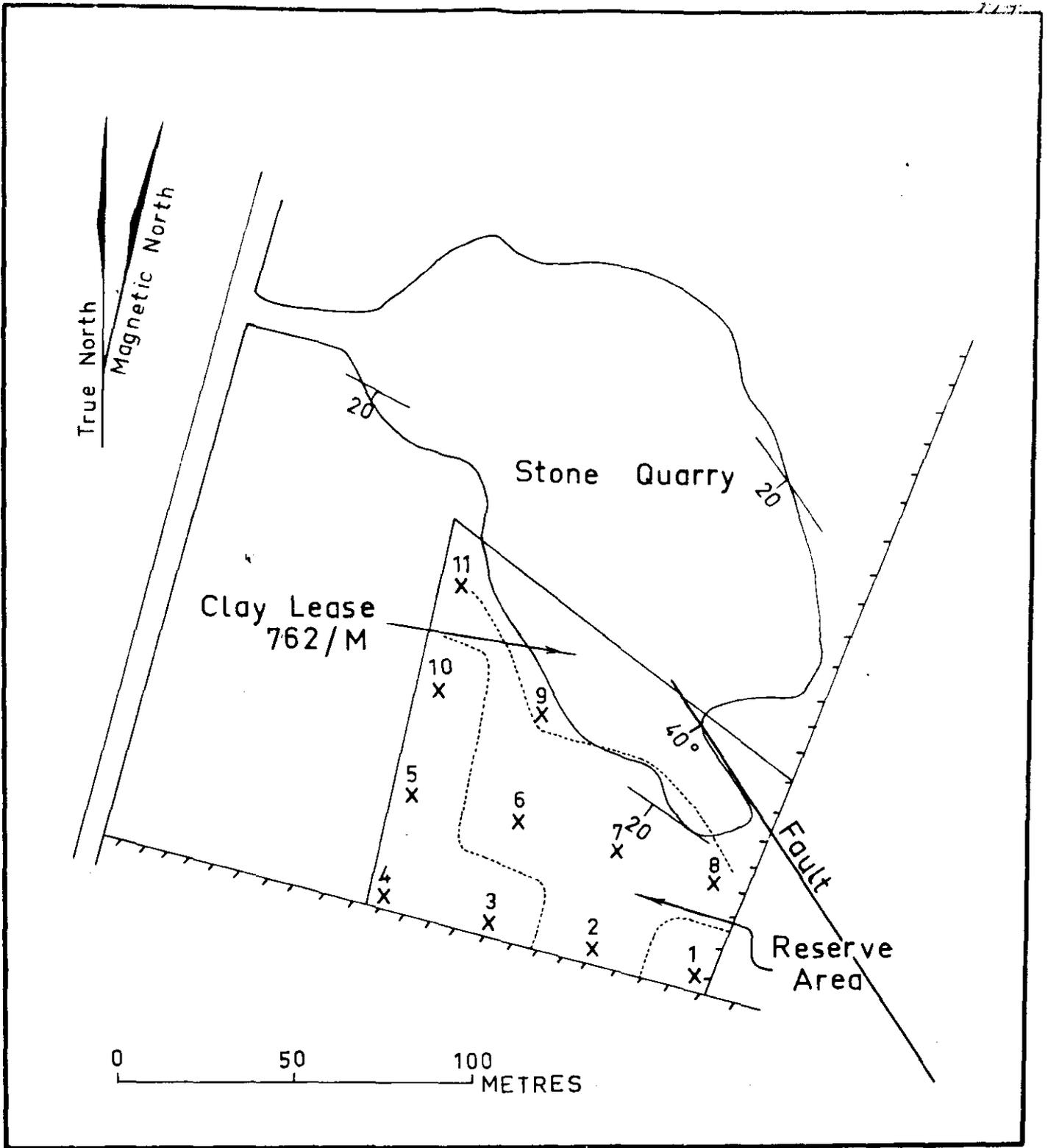
Table 1. RESULTS OF DRILLING AND CERAMIC TESTING

Hole	Depth (m)	Colour	% Sand (>20 μ m)	Colour of fired product	Bond
1	0-1.5	grey brown	88	Light pink	Nil
	1.5-3.0	light grey	56		
	3.0-4.5	light grey	63		
	4.5-6.0	white and cream	63		
2	0-1.5	grey brown yellow	79	Light pink	Good
	1.5-3.0	white pink cream	48		
	3.0-4.5	cream and white	58		
	4.5-6.0	cream and white	71	Pink	Nil
	6.0-7.5	white and cream	71		
	7.5-9.0	white and cream	72		
3	0-1.5	brown grey	90	Light red	Good
	1.5-3.0	grey cream	61		
	3.0-4.5	cream white grey	46		
	4.5-6.0	cream	30	Dark red	Good
	6.0-7.5	cream	41		
	7.5-9.0	cream white	53		
4	0-1.5	cream	79	White	Nil
	1.5-3.0	cream and white	76		
	3.0-4.5	white	77		
	4.5-6.0	white	76		
	6.0-7.5	off white	84		
	7.5-9.0	off white	84		
6	0-1.5	grey cream	54	Light pink	Good
	1.5-3.0	cream	32		
	3.0-4.5	white cream	62		
	4.5-6.0	cream	36	Pinky white	Good
	6.0-7.5	cream	42		
	7.5-9.0	cream white	53		
7	0-1.5	cream yellow	57	Pink	Good
	1.5-3.0	grey	56		
	3.0-4.5	white grey	59		
	4.5-6.0	off white	44	White	Good
	6.0-7.5	cream	47		
	7.5-9.0	cream	52		
8	0-1.5	darkish cream	47	Off white	Good
	1.5-3.0	cream	55		
	3.0-4.5	cream	63		
	4.5-6.0	cream	52	Light pink	Good
	6.0-7.5	cream	65		
	7.5-9.0	cream	68		

Table 1. (continued)

Hole	Depth (m)	Colour	% Sand ($>20 \mu\text{m}$)	Colour of fired product	Bond
9	0-1.5	grey cream	61	Pink	Good
	1.5-3.0	creamy	67		
	3.0-4.5	grey cream white	66		
	4.5-6.0	off white	40	White	Good
	6.0-7.5	off white	47		
	7.5-9.0	off white	56		
11	0-1.5	creamy	67	Pink	Good
	1.5-3.0	creamy	78		
	3.0-4.5	creamy	70		
	4.5-6.0	creamy	76	Pinky white	Good
	6.0-7.5	creamy	38		
	7.5-9.0	creamy	66		

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DEPARTMENT OF MINES — TAS.
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 ON GRIERSON'S LEASE, FORCETT.**

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