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DEPARTMENT OF MINES.

SOUTH AUSTRALIA.

# RUTILE DEPOSIT, SECTION 52 HUNDRED OF ENCOUNTER BAY.

## INTRODUCTION.

Samples of rutile containing 40.5% titanium were submitted from the above locality by Mr. L. Hutchinson of Myponga. Further to this, Mr. Hutchinson requested some assistance from the Department of Mines to investigate the possibility of up-grading this material. A geological inspection of the area has now been carried out and specimens from the locality have been examined petrographically.

## LOCATION AND ACCESS.

The deposit is located about 6 miles east of Myponga township and 2 miles north of the Myponga — Victor Harbour road in steep, heavy scrub country on the south side of Mt. Cone.

At present access is possible only by foot but a track could be constructed, on a moderate grade from an existing road near Mt. Cone summit.

## GEOLOGY.

The deposit is in Archaean gneisses and schists. In the immediate vicinity outcrop is poor and no structural trends are visible. The area appears to be heavily pegmatized and 200 yards south of the rutile occurrence there is a vertical shaft 20 feet deep in pegmatitic material containing a 6" vein of a brown-green mica.

The rutile is associated with massive white quartz and is found scattered in a zone about 2 chains wide and 3 chains long. Five small pits have been sunk in this zone, each on a concentration of rutile, but the amount of rutile float indicates that there would probably be many more occurrences within this zone.

All pits show the rutile to be present as disconnected lumps up to 6" in diameter in irregular vein-like structures.

The surrounding material, apart from the quartz has weathered much more deeply giving the appearance of isolated floaters of rutile in a soft sub-soil. In this stage the rutile is easily separated from the matrix but in a deeper zone where the country rock is also unweathered it would not be possible to selectively mine the rutile and the rock would first need coarse crushing to produce a concentrate with a grade similar to the sample originally submitted by Mr. Hutchinson.

Petrographic examination of the sample submitted showed it to be a granular rutile-hematite intergrowth, from which it would be difficult to produce a pure rutile concentrate cheaply.

CONCLUSIONS.

The rutile exists as a fine-grained intergrowth with hematite, scattered through a zone approximately 2 chains wide and at least 3 chains long with the possibility of further extensions.

The extraction of a pure rutile concentrate would require firstly a separation of the coarse material from the country rock then a further process to produce a pure rutile concentrate from the rutile-hematite intergrowth.

In the weathered zone a small tonnage of the rutile-hematite mixture can be easily obtained but with the present price of titanium even this could not be economically treated.

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