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TASMINEX E.L.S.

1/69, 17/68, 8/69

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A REPORT ON EXPLORATION LICENCE AREAS
 IN THE BURNIE-ARTHUR RIVER REGION OF
 NORTH WESTERN TASMANIA.

by

HALL, RELPH & ASSOCIATES PTY. LTD.

SYDNEY, AUSTRALIA

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1.

INTRODUCTION

The Company has acquired the following Exploration Licences for a total area of 473 square miles in North Western Tasmania:-

E.L. 1/69 - Devon and Wellington District:
190 square miles

E.L. 17/68 - Devon and Russell District:
234 square miles

E.L. 8/69 - Russell District:
49 square miles

E.L. 1/69 - and E.L. 17/68 are contiguous areas in which iron, tin, copper and barytes mineralization is known to occur. E.L. 8/69 covers an area south of the Arthur River in which chalcopyrite and pyrite mineralization in schists and slates would appear to invite further exploration.

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2. E.L. 1/69

Iron deposits in the form of magnetite, hematite and limonite occur at intervals along a line from West of the Emu River to East of the Blythe River. They lie at or near the surface in Cambro-Ordovician siliceous siltstones near and parallel to a Devonian granite intrusive contact.

The deposits range from small magnetite lenses at Highclere in the South West to siliceous hematite at Cuprona in the North East.

Leases held by E.H. McDonald (E.L. 14/68) at Natone and D.W. Hinkley (E.L. 13/68) at Cuprona occupy a portion of these deposits. These areas are being drilled by other companies at present for iron and other minerals.

Estimates of ore reserves have been made by various Department of Mines officials and private companies since the beginning of the century. These estimates appear to have been largely inconclusive, having been based on insufficient evidence.

The proximity of the Copper King Mine to the Cuprona iron deposits would appear to be of interest.

3. E.L. 17/68

Magnetometer surveys carried out by officers of the Department of Mines in 1964 and more recently by principals of the Company have revealed the presence of magnetite lenses in siliceous calcareous sediments of Cambrian Age. These occur at the contact with Devonian granite intrusives near the village of Hampshire, approximately 17 miles from the Port of Burnie, and have been named Kara Iron.

Outcrops are rare but interpretation of magnetic anomalies together with drilling carried out by the Department of Mines and principles of the Company suggest that the lenses are near vertical and occur near the surface.

The Northern lenses in this area appear to lie in a sediment roof pendant enclosed by granite. That this has probably limited the vertical dimensions of the lenses to 60-80 feet, has been borne out by drilling results.

The drilling completed to date has been insufficient to establish the size of the lenses or the total ore reserves in the area with any degree of accuracy. Reserves as interpreted from magnetic anomalies are highly suspect and are always required to be verified by drilling. In the case of the Hampshire deposits the existence of 1,500,000 tons of magnetite ore has been inferred from those magnetic surveys completed to date.

Hematite and limonite occur in conjunction with the magnetite in this area, but since these minerals are not detectable by magnetometer survey, no indication has been gained of their magnitude. Additional drilling would be required to achieve this.

Samples taken at outcrops and from drill holes show a wide range of iron content (45% - 68% Fe). This could be accounted for by two factors:

- (1) The uppermost portions of the lenses could have been subject to secondary enrichment by

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replacement of siliceous material by hematite.

(2) The majority of the holes drilled have been exploratory in nature and have not been sited to obtain representative assay values.

Sulphur, phosphorus and other impurities are below the maximum levels accepted in world iron ore markets.

Metallurgical tests conducted by the Department of Mines have not been based on representative samples. When prepared for -50mm + 6mm and -30mm + 6mm size specifications, a range of 74% - 90% has been obtained for +6mm ore. Inspection of outcrops suggests that the average lumps $\frac{1}{2}$ fines ratio is likely to be nearer 9:1 than 3:1.

It would appear that the near surface occurrence of these deposits together with their proximity to the Hampshire siding of the Emu Bay Railway ($\frac{1}{2}$ miles) would encourage the search for extensions to present known magnetite lenses.

The lack of geological maps of the area to the South of Hampshire precludes the possibility of recommending areas (granite-sediment contacts) favourable to the occurrence of further iron deposits. Mapping of the area to this purpose is recommended.

Approximately half of the Hampshire iron deposit is covered by a mineral lease held by A and D.D'O. Pearson of Ulverstone. An agreement has been entered into with the aforementioned whereby they are entitled to be paid a sum of \$0.08 per long ton iron ore F.O.B. Burnie.

Other types of mineralization which have been reported in E.L. 17/68 area:

- | | |
|---------------|---|
| <u>Tin</u> | - Alluvial tin fields with values in excess of 2 lb. SnO ₂ per cubic yard have been claimed to exist. |
| <u>Copper</u> | - At Laurel Creek, chalcopyrite has been reported to occur in a chlorite quartz vein situated in a decomposed siliceous rock and dipping approximately 50° to the South East. |

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Barytes

- Barytes lodes have been reported in a fault zone in volcanic tuffs approximately $\frac{1}{4}$ mile east of the Hummocks.

Exploration trenches have been excavated but have not penetrated the overlying alluvium.

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4. AEROMAGNETIC SURVEYS

Aeromagnetic surveys covering the area from six miles south of Hampshire to the coast East of Burnie have been conducted by the Bureau of Mineral Resources. Anomalies in the vicinity of the various iron deposits have been detected.

However since flight paths have been spaced from $\frac{1}{4}$ mile to one mile apart, the anomalies have been of a general nature. In addition Tertiary basalts which cover a large part of the area have resulted in anomalous results which tend to confuse the general picture.

It is possible that small lenses of magnetite have remained undetected, and would require ground surveys for their presence to be made known.

5. E.L. 8/69

There are two main points of interest in this area:-

Copper Creek - Three quartz veins containing chalcopyrite and pyrite mineralization have been reported in this area. One of these, which intersects Copper Creek, was inspected. The vein occurs in NNE-SSW striking Neasey (Precambrian) Slates and dips approximately 60° to the west. Swollen streams prevented inspection of the remaining two. A hand sample taken at the first vein revealed the following mineralization:

- Cu - 1.05%
- Au - Trace
- Ag - 0.2 oz/ton
- Ni - less than 0.05%

The area includes three 50 acre mineral leases held in the names of S.P. Lohrey, S. Charles and G.A. Charles. The Directors of the Company have entered into an agreement with these leaseholders whereby the latter are entitled to an equity equal to 10% of profits received from the sale of minerals mined from within their leases.

Lyons River - At a distance of 1½ - 2 miles from the Copper Creek prospect, pyrite mineralization over approximately 15 feet occurs in quartz sericite schists of the Keith Beds (Precambrian). The schists have a similar strike and dip to the Neasey Slates at Copper Creek. Inadequate maps of the area prevented accurate location of two prospects, but it appears possible that this mineralization exists along a line of strike near to that of the Copper Creek quartz veins. It is recommended that this possibility be explored.

A hand sample taken from this outcrop produced the following assay values:

- Cu - Trace
- Au - Trace
- Ag - 0.2 oz/ton
- Ni - less than 0.05%

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Lack of outcrops in the vicinity of the mineralized zone precludes estimates of the extent of mineralization.

Other Minerals - A small alluvial gold bearing flat has been worked in the vicinity of the Copper Creek prospect. No information is available on the results of mining.

Wolfram mineralization has been reported in the area.

6. RECOMMENDATIONS

As indicated in the preceding sections, the mineralization occurring in the various areas would appear to warrant further investigation. The following is a recommended list of activities given in order of priority:-

- 6.1. Detailed inspection of the three licence areas by a geologist (2 - 3 weeks)
- 6.2 Ground magnetic survey of possible extensions of the various magnetite lenses making up Kara Iron - to be supervised by a geophysicist.
- 6.3 Diamond drilling of Kara Iron Magnetic anomalies and areas in between the anomalies for grade and tonnage information on magnetite, hematite and limonite.
- 6.4 Study of Bureau of Mineral Resources aeromagnetic surveys with a view to recommending further ground magnetic surveys.
- 6.5 Investigation into the benefit to be gained from further aeromagnetic surveys South of Kara Iron.
- 6.6 Geological mapping of areas covered by ground magnetic surveys.
- 6.7 Diamond drilling of Cuprona and Natone iron deposits.
- 6.8 Drilling of auger holes and test pits in the alluvial tin flats after a thorough examination of the flats.
- 6.9 Bulldozing and costeaning of the Arthur River and Laurel Creek copper shows to be followed by mapping, sampling and Induced Polarisation surveys and drilling if warranted.
- 6.10 Diamond drilling of Barytes lodes.