Carpentaria Exploration Company Pty. Ltd.

Technical Report

No. 1324

Title
Exploration Licence No. 4554 "Douglas Springs"
Northern Territory
Report for Year Ended July 25, 1985

Issuing Department
Exploration

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Date

Open File

Northern Territory Geological Survey

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1. INTRODUCTION

This Exploration Licence, located 120 km north-north-east from Katherine, Northern Territory, was acquired to search for large base metal/gold/silver deposits under the cover rock sequence. Carpentaria Exploration Company Pty. Ltd. (C.E.C.) is operator on behalf of its associated Company, Mount Isa Mines Limited, who hold title to the Exploration Licence.

C.E.C.'s work in the first year of tenure has consisted of computer modelling of theoretical target magnetic responses, and computer treatments of the 1975 B.M.R. aeromagnetic survey data over the area. This latter work is still in progress.

2. LOCATION AND ACCESS

The Licence area is located 250 km south-east from Darwin, Northern Territory, centred about 13°54'S, 132°31'E, on the Mount Evelyn 1:250 000 scale Sheet area.

The Exploration Licence covers the north-western block of the "Eva Valley" Pastoral Lease. Access within the area would be by 4-wheel drive vehicle, but the state of the tracks there, if any, is not known.

3. TENURE

The Exploration Licence, covering 792 km², was applied for on March 9, 1984, and granted on July 26, 1984, for six years. The annual expenditure commitment is $20 000.
Shortly after C.E.C.'s application, the Eva Valley Pastoral Lease was purchased at auction by Kronus Pty. Ltd., a company representing Aboriginal interests. An Aboriginal land claim was lodged over the Pastoral Lease on February 25, 1985, for conversion to Aboriginal Freehold Land.

Some Aboriginal sacred sites are known to exist within the Exploration Licence, and others may be found if a full anthropological survey were to be carried out. A letter from the Northern Territory Aboriginal Sacred Sites Authority on this matter is appended to this report.

4. SERVICES

No roads, airstrips or other facilities are known within the Exploration Licence boundaries.

5. HISTORY

Very little previous mineral exploration has been done here in the past.

In 1975, the B.M.R. flew a radiometric and magnetics survey over the southern half of the Mount Evelyn 1:250 000 Sheet area and the northern half of the adjacent Katherine Sheet.

Much of what is now Exploration Licence No.4554 was held by Australian and New Zealand Exploration Company (ANZECO) from 1979 to 1982 under Exploration Licence No.1917, to explore for uranium deposits. ANZECO's work included alphameter surveying, ground magnetics, resistivity surveys and five percussion drill holes.
6. WORK BY CARPENTARIA EXPLORATION COMPANY PTY. LTD.

6.1. Basis for Exploration

C.E.C. took up the area to explore for multimetallic volcanogenic massive sulphide deposits. The target concept envisages that any such deposits would be magnetically detectable by virtue of high pyrrhotite contents as is the case, for instance, in the primary zones of the small Mount Bonney and Iron Blow sulphide deposits to the north-west. Large deposits of this nature would also be expected to show a positive response to electromagnetic surveying techniques.

Geologically, the area is mostly covered by flat-lying Cretaceous sediments and the Proterozoic Kombolgie Sandstone. The total depth of these cover rocks is thought likely to be less than 100 m in most places, and the area therefore should be amenable to magnetic and electromagnetic search methods.

Beneath the cover sequence, units of the Finnis River Group and the South Alligator Group can be predicted by extrapolation of the exposed Pine Creek Geosyncline rocks in the region. These include the Burrell Creek, Mount Bonney and Gerowie Tuff Formations which are all strongly folded about north-west - trending axes. Major regional faults with the same trend are also present.

6.2. Work Carried Out

Work by C.E.C. during the first year of tenure has largely been confined to in-house computer modelling of hypothetical targets, and computer enhancement of existing B.M.R. geophysical data.

The target modelling, using various orebody sizes, shapes, depths, attitudes and pyrrhotite contents with varying magnetic susceptibilities, was carried out to determine what parameters were needed for an aeromagnetic survey to detect sizeable orebodies, and also to find out how much use could be made of the 1975 B.M.R. regional aeromagnetic data.
The computer enhancement involved purchasing copies of the B.M.R. survey tapes, gridding the data, and producing a set of magnetic profiles and contours at 1 nT intervals. These may be compared with the published information which is contoured at 10 nT intervals.

As previously stated, this work is not yet fully completed, and thus the results unfortunately are not available for submission with this first annual report on Exploration Licence No.4554.

7. **FUTURE WORK**

Depending on the outcome of the reassessment of the B.M.R. airborne geophysical data, consideration will be given to flying a more detailed aeromagnetic and radiometric survey, to be followed if warranted by ground magnetics, electromagnetic surveys and, if then justified, by drilling.
APPENDIX 1

LETTER FROM ABORIGINAL SACRED SITES AUTHORITY
80.103

Carpentaria Mining

20th March 1985.

Mr. P. Simpson,
District Geologist,
Carpentaria Exploration Co. Pty. Ltd.,
P.O. Box 21,
BERRIMAH. N.T. 5788

Dear Mr. Simpson,

I acknowledge with thanks receipt of your letter of 25th February last concerning your intention to commence mining exploration within E.L. 4554 in the Eva Valley area.

The area you propose for exploration is known to contain sites of considerable significance to Aboriginal people particularly those sites known locally as "Bula". These sites are considered extremely dangerous by the Aboriginal custodians and entry into the area involving the disturbance of only small pebbles or the breakage of twigs could leave the community in fear of natural disaster.

The Authority has not carried out exhaustive surveys of this area although some Bula sites have been formally recorded and registered by the Authority. I provide as requested, details of those areas located within the Exploration Licence.

You will also be aware that the lease of Eva Valley Pastoral property has been acquired by Aboriginal interests and is the subject of an Aboriginal Land Claim. In the circumstances, your company may well be advised to ensure that detailed consultation is carried out with respect to any programmes involving modification of the earth's surface within the Exploration Licence with Aboriginal custodians prior to such work being undertaken.

If this Authority can be of any assistance to you in the conduct of these discussions, please do not hesitate to contact us.

Yours faithfully,

R.W. ELLIS,
Director.
Bob, ran a quick check - there are no sites on Harford 5370 in the area of the E20. There are sites on Stow 5470, they are shown on this map.