EXPLORATION LICENCE 1656.
NORTHERN TERRITORY

Progress report to June 1982.

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Exploration Manager.
1.0 INTRODUCTION

Exploration Licence 1656 is situated directly east of the township of Adelaide River, approximately 110 kilometres south of Darwin in the Northern Territory. It encompasses an area of some 200 square kilometres, and is considered to display 'grass roots' potential for gold and, possibly, uranium mineralisation in Lower Proterozoic metasediments. Original application for the Licence was prompted by the following:

a) The presence of high grade uranium ore in sheared Burrell Creek sediments just to the south west of Adelaide River (Adelaide River Mine).
b) The occurrence of a number of old gold mines, again in fracture-fill in the Burrell Creek Formation to the east and south of the Licence.

Mineralisation at these localities is indubitably structurally controlled – especially in the case of gold, where a concentration towards the axes of tight anticlines is recognised. Photogeologic studies over the area of interest suggest that repetitions of structural environment may occur.

Title is held by Pan d'Or Mining N.L. – originally on behalf of a joint venture with Jimberlana Minerals Ltd, but now on behalf of a three-sided partnership including Euralba Mining N.L.

The latter organisation entered the venture under the following general terms:

a) Expenditure, during 1982, of $40 000 on exploration.
b) Subsequent expenditure, prior to December 1983, of a further $40 000.
c) Budgets and work programmes to be the sole responsibility of Euralba as operators, including statutory reporting to the N.T. Mines Department.
The Licence was originally granted on the 18th June, 1981, for a twelve month period. Under the repealed Mining Act, however, it is presumably current for six years from the date of granting.

Work on the study area, prior to June 1982, was limited and primarily concentrated on research and photointerpretation prior to extensive fieldwork. It was intended that such fieldwork be commenced directly after the 1981/1982 wet season. However, work was curtailed on the company being approached in February of 1982 by Euralba Mining N.I. A request from that organisation to be allowed to join the venture was favourably received – primarily due to the extensive experience of that company's chief field operative in the search for gold in the region in question. Unfortunately negotiations were prolonged, delaying the commencement of full scale exploration by Euralba Mining on behalf of the joint venture.

2.0 GEOLoGY AND MINERAL POTENTIAL

Exploration Licence 1656 is wholly underlain by sediments of the Burrell Creek Formation. Outcrop is generally poor, and Quaternary cover extensive. The Lower Proterozoic succession is primarily comprised of a monotonous sequence of siltstone and greywacke, with subordinate mudstone and quartzite. Recent BMR mapping, based on photogeologic interpretation and field checking, confirms these lithologies and suggests that portions bear a calcareous component. The more competent Burrell Creek units form the occasional high relief evident.

In areas of relatively good outcrop, it is photogeologically evident that structure is complex. Tight folding is visible, generally along warped NS axes, at many localities - and is often reflected by relatively intense quartz veining. A 'doming' effect, probably
reflecting folding along two separate major stress directions, is
discernible at certain localities on the western margin of the
Licence area.

A photogeologic study carried out has allowed plotting of areas
of intense quartz float and, in places, of vein extent and
direction. Where the latter is possible, it was found that
plotting conforms to similar studies effected by the Bureau of
Mineral Resources – reproduced on Plate 1.

The eastern half of the Licence is transected by a major regional
tectonic element, the northern extension of the Mt. Shoebridge
fault, which is tentatively traced through obvious quartz filled
lineaments visible on aerial photography.

It is considered most probable that any mineralisation present will
be structurally controlled. Previously mined occurrences in
this vicinity would certainly indicate that this is so – mineralisation
appearing to concentrate towards areas of greater structural
complexity. Mineralisation at the old Adelaide River Mine, which
yielded 3,800 tons of ore at an average grade of 0.5% \( U_3O_8 \), is
associated with fine veining within a zone of intensely sheared
Burrell Creek sediments. Gold mineralisation exploited at the
Great Western, Great Northern and Star of the North mines, to the
east of E.L. 1656, is related to shearing in the apices of tight
anticlinal folds. Origin of both styles of mineralisation is
unclear, but is supposed for the sake of this study to be
hydrothermal.

No mineral occurrences have been reported within the bounds of the
study area in the past, but it is considered possible that structural
settings related to mineralisation elsewhere will be repeated.
The initial stages of exploration must, therefore, follow 'grass
roots' principles.
3.0 WORK CARRIED OUT/EXPENDITURE

As mentioned above, most of the preparatory work prior to conducting a wide based field programme has been effected. An aerial survey was commissioned by the company and total coverage obtained of false-colour infra-red photography. The resultant photographs were stereoscopically examined in an attempt to delineate areas of structural complexity and quartz veining. Plotting was not compiled in formal form as almost total agreement was obtained with published Bureau of Mineral Resources' work (Plate 1). Rough base plans, showing access and drainage patterns, were compiled from the photography to aid future fieldwork. Extensive literature research produced little data of aid to our exploration programmes. The following tasks were programmed for the 1982 dry season:

a) Geological mapping (Scale 1 : 25 000).
b) Stream sediment sampling.
c) Radiometric surveying.

As previously stated, however, the field programme was curtailed by approaches made by Emralba Mining N.L. early in 1982. Originally it was intended that fieldwork still be commenced prior to the anniversary date of the Licence in June of 1982. However negotiations between parties became protracted and prohibited activities until August 1982. Apart, therefore, from various reconnaissance visits to the study area little field exploration was conducted during the first term of tenure over E.L. 1656.

The following comprises a summary of costs incurred during the first term of tenure of E.L. 1656:

a) Salaries $ 4 200
b) Logistics $ 750
c) Infra-red photography
   (previously estimated) $ 1,500

d) Legal & statutory fees $ 1,200

e) Damages bond $ 10,000

f) Administration $ 1,500

TOTAL $ 19,150

Some of the above figures are estimated, due to the accounting procedures utilised – however a conservative basis of calculation has been used. A shortfall in expenditure in relation to covenants made has been due to circumstances outlined above. Further explanation of that shortfall has been given in correspondence with the Northern Territory Department of Mines.

4.0 CONCLUSIONS

Little data of economic significance was collected during the reported period. Little further can be stated concerning the potential of the study area – apart from noting that the precepts leading to its acquisition remain valid. Since expiry of the reported period, considerable exploration has been conducted under the operatorship of Euralba Mining N.L. Reporting of the results achieved is currently awaited, and will be forwarded to the Northern Territory Department of Mines at the appropriate time.

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