



W. E. CASEY, G. E. CASEY, C. E. CASEY
=====

and L. M. CASEY
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EXPLORATION LICENCE NO. 4744
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REPORT ON AREA RELINQUISHED
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CR89/542

OPEN FILE

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1. INTRODUCTION AND SUMMARY

Exploration Licence 4744 was granted for a period of six years commencing 22 April, 1986. The title comprised 10 blocks. It was actively explored under the terms of a joint venture agreement dated 18 July, 1985 between Casey Consolidated Holdings and CSR Ltd.

Exploration during the 85-86 year sought to assess the potential for gold deposits within the Zamu Dolerite. Field traverses, regional mapping and stream and soil geochemical surveys were undertaken. Ground follow-up of this work identified a number of geochemically anomalous locations which were re-examined by further detailed work including limited costeaning.

The Mine Grid area consequently became the focus of the 87-88 programme which resolved to examine the anomalous zone by a comprehensive programme of costeaning.

After the withdrawal of CSR from the mining industry their interest in EL4744 was transferred to W.E., C.E., G.E. and L.M. Casey on 23 February, 1989. The change of ownership resulted in a broadening of the target base in that it now included an interest in alluvials.

2. LOCATION, ACCESS & TOPOGRAPHY

Exploration Licence 4744 is located 150km south east of Darwin and 40km northeast of Pine Creek in the Northern Territory.

Access to the area may be gained by three separate routes. From the west via the Fountain Head Road and the Mount Wells Battery utilising the track to the Francis Creek gold mine.

From the south, via Pine Creek and the abandoned Frances Creek iron ore mines to Mount Wells as above or alternatively directly from the Mary River Station Road.

The topography of the EL comprises large flat valleys separated by 50 m high ridges of Mundogie Sandstone. Access along the valleys is easy while the sandstone ridges are inaccessible by vehicle. A series of old station and miner's tracks provide good access along the valleys although Frances Creek provides a major obstacle. Several bulldozed crossings are often subject to erosion, making them difficult to cross.

Permanent water is available in Frances Creek although this is often fouled by cattle and buffaloes.

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3. TENURE

Exploration Licence 4744 was granted for a period of six years commencing 22 April, 1986. to CSR Ltd. and was the subject of a joint venture between CSR Ltd. and Casey Consolidated Holdings. After the withdrawal of CSR Ltd. from the mining industry the title was transferred to W.E., C.E., G.E., and L.M. Casey on 3/2/89.

4. HISTORY

Prior to the creation of the existing exploration licence the only recorded activity in this area appears to have occurred in the ten years preceding WW2. There is no evidence of the presence of either Chinese or European fossicking during the "rush" of the late nineteenth century.

More recently Minatome Australia (now Total Australia) carried out uranium exploration utilising radiometric surveys and rock chip geochemistry. Mr. G. Eupene, a consultant to Casey Consolidated Holdings, also carried out a stream sediment heavy minerals survey. Neither of these programmes produced encouraging results.

5. GEOLOGY

The exploration title is located in the central part of an intercratonic basin, the Pine Creek Geosyncline, that was laid down on an Archean basement during the Lower Proterozoic. The geology of the Pine Creek Geosyncline is well described by Walpole et.al. 1968 and Needham et.al. 1980 and 1984.

Stratigraphy

Outcrop within the title area is limited to two of the many cyclic sedimentary groups present within the Pine Creek Geosyncline sequence, namely the Namoonaa and Mt. Partridge Groups, which are separated by a depositional hiatus. Prior to the main phase of deformation, granite intrusion and metamorphism at approximately 1800 m years and major sills of Zamu Dolerite were intruded at several levels into the sedimentary pile.

Within the title the Nanooma Group is present as a suite of fine-grained greywacke-siltstone units which are micaceous and slightly graphitic in character. They are commonly cleaved and sheared. The Mt. Partridge Group is represented as a set of quartzose conglomerate-sandstones. The former units occupy valley lows and the latter, bold interfluvial ridges.

Zamu Dolerite is locally restricted to the Masson Formation probably because of its inherently lower cohesive strength. The dolerite typically occurs in the valley floors where deep weathering gives rise to thick red regolithic soils. The more coherent dolerite weathers in a exfoliate manner giving rise to low to moderate hills sheeted by residual exfoliate cores which protect the underlying weakly consolidated weathering profile from erosion. In many cases pseudo-subcropping dolerite is inferred when relatively competent dolerite occurs at depths of up to 4m or more below surface. In red soil areas the weathering depth may exceed 6m.

Under Section 3 E (i) of the joint venture agreement between Casey Consolidated Holdings and CSR Ltd. it stated that "Any proposed assignment or disposal of a party's interest to a third party ...
.....will be subject to a first right of refusal by the other party to the joint venture to whom the interest shall first be offered on the intended terms".

Unfortunately, due to prolonged procrastination by CSR Ltd. as to what their "intended terms" might be, it was February, 1989 before an agreement could be signed. No constructive exploration programme could be undertaken during the hiatus between April, 1988 and February, 1989 due to the uncertainty of ownership. When an agreement was eventually presented for our signature it was well into a heavy wet season when access to the entire area was curtailed by the McKinlay River, various other creeks and large areas of waterlogged black-soil flats. Access by air was ineffective due to the heavy seasonal growth of spear-grass and other natural vegetation.

In the short time available exploration was concentrated on the southern section of the Licence area. A thorough reappraisal was made of all the data generated by CSR Ltd. with a view to assessing the potential for alluvial gold. This had previously

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been given no consideration by CSR Ltd. as their sole interest lay in the hardrock area.

A re-assessment of the work completed on the Francis Creek Mine grid indicated alluvial/elluvial material existing to a depth of 4 metres. This material appears to follow the line of dip of the underlaying dolerite formation. Although the full depth of this material is unknown samples taken of the spoil beside the costean showed an average gold content (estimated by hand washing with a dish) of approx. .4gms per c.yard. As the costeans were still full of water from the wet season it was not possible to obtain fresh samples. Dish sampling by hand was carried out on a south-easterly line from the Francis Creek Gold Mine to Frances Creek. This followed the general trend of the drainage system in the area. Holes were dug, using a hand held motorised auger, to a depth of approximately 800mm and the sample material washed by hand. Results varied from a mere trace to an estimated 1.5gms near Frances Creek. (See map attached). As frequently occurs with alluvial deposits significant variation was encountered in the grades obtained but, more importantly, gold was present in all but a few of the samples washed. The overall view of the area indicated an excellent potential for a large low grade alluvial gold mining operation along the floor of the valley. For this reason it was decided to apply for MLN 1082 which

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covers the southern section of this Licence area.

The granting of this title will enable the applicants to complete a final feasibility study and to commence design and construction of a suitable treatment plant.

It is anticipated that, as was the case at the Cosmo-Howley Mine, the removal of the overlaying alluvials will reveal more of the hardrock potential and facilitate the siting of drill holes for further exploration.

7. EXPENDITURE (For whole of EL4744)

Operating labour	\$12,300
Support vehicle	4,600
Fuel	500
Camp Costs	1,500
Administration & research	2,050
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	\$20,950