EL 23111 ROPER 13

PARTIAL RELINQUISHMENT REPORT FOR PERIOD ENDING 01-12-2004

Submitted to: NT Dept of Business, Industry & Resource Development

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1. SUMMARY

Exploration Licence 23111 was granted to Exploration & Resource Development Pty Ltd (ERD) on the 2nd December 2002. ERD Pty Ltd, a Darwin based resource sector company, is the designated Project Manager. The tenement covers approximately 186 sq km on the extreme western margin of Urapunga 1:250,000 Mapsheet SD53-10 abutting Beswick Aboriginal Freehold Land to the west. A statutory 50% tenement reduction of 29 sub-blocks was made on 2nd November 2004.

The relinquished portion of EL 23111 overlies largely mud-rich sediments concealing Roper Group stratigraphy in the Arnhem Shelf tectonic element of the western McArthur Basin. Tenement acquisition was based on perceived prospectivity for detrital heavy minerals (HM) shedding from eroded dolerite sills occurring in large catchment areas to the north and west.

Exploration activities incorporated office studies followed by an E-W line of 100 metre spaced reconnaissance auger drilling along an existing track cumulating in 53 holes for 292.8 metres. The drilling assessed potential for concealed palaeodrainage development beneath the black soil floodplains. Samples were collected on one metre down-hole intervals and submitted to Tristate Research Laboratory in Mildura Victoria for disaggregation, desliming, sieving and tabling.

Laboratory results were of low tenor, averaging 0.48% HM (range 0.02%-2.7%). Clay dominant transported sediments were encountered overlying mudstones and fine-grained sandstones of the Kyalla Formation (Roper Group). No evidence of significantly mineralised palaeodrainages was encountered and this portion of the EL was recommended for relinquishment.

1.1 Environment

All field activities adhered to the environmental and safety principles and practices outlined in detail in the Small Mining Management Plan which was forwarded to the Department prior to commencement of exploration activities.

Among the initiatives completed during Year 1 activities are the following:

- Station tracks were upgraded and employed for access.
- Auger holes were infilled or capped with termite mounds immediately following completion.
- No camp sites were established within the EL.

2. CONCLUSIONS AND RECOMMENDATIONS

Reconnaissance auger drilling investigations in the eastern part of EL 23111 report black soil overlying clay dominant alluvial sediments with very low tenor heavy minerals reporting from one metre samples. The mineralisation prospectivity is considered to be poor and tenement rationalisation led to the partial relinquishment of this EL portion.

3. INTRODUCTION

Exploration Licence 23111 covers an area of 58 sub-blocks (185.9m^2) on the extreme western margin of Urapunga 1:250,000 Mapsheet SD 53-10 centred approximately 140km due east of Katherine on Goondooloo Pastoral Lease PPL 1068. The tenement application was lodged on 28th March 2001 by Exploration & Resource Development Pty Ltd (ERD); a Darwin based mineral resource sector company. The tenement was granted on 2nd December 2002 for a period of 6 years. A statutory 50% reduction was made on 2nd November 2004.

The tenement targets possibly transported heavy minerals shedding from variably eroded dolerite sills intruding into Proterozoic Roper Group stratigraphy to the north and west of the EL.

Reasonable dry season access to the EL is provided by station tracks south from the Central Arnhem Highway and north from the Roper Highway. Due to the monsoonal nature of the area the station tracks are well graded every year but are virtually impassable at the height of the monsoon.

The EL lies within the physiographic province of the Gulf Fall, a dissected terrane from which almost all of the old Tertiary land surfaces have been eroded. Topography is characterised by broad alluvial valleys between low rubbly hills and prominent strike ridges of resistant Roper Group strata, locally still capped by remnant Tertiary laterite. The majority of the relinquished portion of EL 23111 comprises Quaternary to modern day floodplain clay-rich sediments associated with Morok Creek and Bukalorkmi Creek.

The principal vegetation regime is open Eucalyptus woodland consisting of sparsely wooded open grassland alluvial and blacksoil plains. The major watercourses are lined with paperbarks and larger Eucalypts. Spinifex grows predominantly on the sandy soils close to outcrop.

This report outlines exploration activities conducted within the relinquished portion of EL 23111 during the period of tenure ending 2nd November 2004.

4. REGIONAL GEOLOGY

The EL lies within a portion of the central-western shelf (Bauhinia Shelf) of the Palaeo-Mesoproterozoic McArthur Basin. The basin can be viewed as several northerly trending rifts separated by northwest-trending faults and transverse ridges and was subject to repeated cycles of clastic and marine carbonate sedimentation interspersed with volcanic extrusion and sill emplacement (*Tawallah, McArthur and Nathan Groups*) in response to reactivation of older basement structures.

A later, more passive series of sedimentation cycles in response to western basin subsidence occurred with the deposition of suites of blanket quartz sandstones, micaceous siltstones, black shales and glauconitic sandstones (*Roper Group*). Ironstones are prominent on a local stratigraphic level (Roper and Hodgson Iron Deposits). 'A variety of marginal, shallow and deeper marine shelf environments reflect alternating basin-wide sea level rises and falls. Tholeiitic dolerite and gabbro sills were emplaced throughout the Roper group soon after deposition ceased and before regional deformation.' (NTGS).

4.1 Tenement Geology

The tenement encompasses interbedded siltstone, mudstone and fine-grained quartz sandstone of the Kyalla Formation (Maiwok Subgroup of the upper Roper Group) in the far north of the EL.

Extensive deposits of Quaternary to Recent sediments comprising alluvium, colluvium, unconsolidated gravel and sand overlain by mud-rich soils occur extensively in the central and southern portion of the relinquished area concealing the underlying Kyalla Formation. These clayey sediments reflect material derived from prolonged weathering and erosion during the Tertiary through to modern day floodplain regimes.

5. PREVIOUS EXPLORATION

Exploration within the EL environs has largely been confined to drainage gravel sampling campaigns by Stockdale Prospecting in the 1990's targeting diamonds. 33 drainage samples were collected within the relinquished portion of EL 23111 with no positive diamond indicator results reporting.

A comprehensive summary of all past exploration is published in the 2nd edition of 1:250 000 Geological Map Series Explanatory Notes for the Roper Region Urapunga and Roper River Special.

6. EXPLORATION ACTIVITIES

The tenement targets possibly transported heavy minerals shedding from variably eroded dolerite sills intruding into Proterozoic Roper Group stratigraphy to the north and west of the EL.

Exploration activities conducted within the relinquished portion of EL 23111 comprise the following: office studies and helicopter supported field reconnaissance; reconnaissance shallow auger drilling cumulating at 53 holes for 292.8 metres testing for concealed palaeodrainages.

Auger Drilling

In view of the large veneer of Quaternary to recent alluvial and colluvial sediments concealing stratigraphy in the eastern EL sector, a program of reconnaissance auger drilling on 100m spaced centres along an existing east-west track dissecting the tenement was undertaken. The drilling was designed to test for presence of concealed palaeochannels with potential for transported heavy minerals shedding from variably eroded dolerite sills in the catchment areas of drainages to the north and west of the EL.

The drilling contract was awarded to AG Drilling of Palmerston NT using a Toyota Landcruiser-mounted "Jetstream" Reverse Circulation drilling rig. The rig was adapted to enable auger drilling using a 3.5" bit and solid auger flights.

The drilling comprised 53 holes for 292.8 metres averaging 5.52 metres depth. 308 bulk auger samples of approximately 10 kgs were collected on 1m intervals and submitted to Tristate Research Laboratories in Mildura Victoria for the following treatment: sample drying and weighing; repeated slurrying, agitation and decanting for slime removal; -2mm screening and tabling for concentrate extraction (the residual tails and >2mm material are dried, weighed and stored); the concentrate is magnetically (IRM) separated for removal of highly magnetic minerals (titanomagnetite and magnetite) at 0.1A and non-magnetic minerals (silica, rutile, zircon, gold, etc) at 9A; a final screening at 75 microns removes ultrafines.

Drilling and laboratory results provide the following salient observations and statistics:

- Black soils were encountered to 3 metres depth overlying clay-rich sediments with a small increase in sand component and minor gravels with depth;
- Average grade of 0.48% HM (range 0.02-2.7% (at 6-7m)) with an average slimes (clay) content of 61% (range 14%-97%);

- Subtle increase in HM% down hole coincident with increase in grain size of sediments (0.33%HM 0-1m; 0.4% 1-3m; 0.46% 3-4m; 0.57% 4-5m; 0.63% 5-6m; 0.83% 6-7m);
- Deeply oxidised siltstone bedrock at >5m.
- No ubiquitous gravels or HM-mineralised palaeochannels encountered.

The drillhole location plan is presented in Figure 2 and the auger sample ledgers and assay results are tabulated in Appendix 1.

In consideration of the low tenor of results coupled with the lack of diamond indicator minerals from earlier explorers, the mineralisation potential of the eastern sector of EL 23111 is considered low. This eastern portion was subsequently relinquished on 2nd November 2004.

7.0 REHABILITATION

All field activities adhered to the environmental and safety principles and practices outlined in detail in the Small Mining Management Plan which was forwarded to the Department prior to commencement of exploration activities.

Existing station tracks were upgraded and employed for access and all auger holes were infilled or capped with termite mounds immediately following completion. No camp sites were established within the EL.

As in previous years in the Project Area, a single wet season promotes rapid regrowth with barely discernable sites of ground disturbance evidenced in the following year

8. REFERENCES

Abbott ST, Sweet IP, Plumb KA, Young DN, Cutovinos A, Ferenzi PA, Brakel A & Pietsch BA, 2001. Roper Region: Urapunga and Roper River Special, Northern Territory (Second Edition), 1:250 000 Geological Map Series Explanatory Notes, SD 53-10 & SD 53-11. Northern Territory Geological Survey.

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