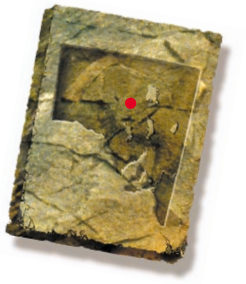

Prominent Hill discovery —
URN 1: The best Cu–Au intersection in 25 years

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Introduction

On 14 November 2001, Minotaur Resources Ltd, operator of the Mt Woods Joint Venture, announced results from diamond-drillhole URN 1 at the Prominent Hill prospect (Fig. 1, Table 1). Prominent Hill (known earlier as the Uranus prospect) was the fourth of six prospects generated by the Minotaur team to the southeast of Coober Pedy.

The hole was the first to be drilled to test a discrete gravity anomaly measuring ~1500x500 m. The anomaly is partly coincident with a well-defined magnetic anomaly of approximately the same dimensions, and lies on the southern margin of the Mt Woods Inlier. The combined gravity and magnetic signature is a common targeting criteria for Olympic Dam style mineralisation.

As a result of this announcement and later details, Minotaur's share price shot up from $0.258 to $2.93/share. It has also set off a pegging rush in the Gawler Craton with 80 new EL applications received to the end of January.

The vertical hole passed through 108 m of barren sediments before intersecting a massive haematite-supported breccia. Original rock textures are almost totally destroyed, with siliceous, sericitic rock fragments varying from a rock-flour to clasts several centimetres in diameter.

Copper mineralisation (chalcocite) occurs as disseminations and thin veins within the haematite matrix. The chalcocite is concentrated at about the -300 m level, although lesser amounts occur below this depth. Traces of bornite, chalcopyrite and some gold are visible in polished section.

On 6 December, Minotaur announced that URN 1 had been completed, and provided a summary table of this very significant diamond-drillhole (Table 2).

Drilling stopped at 708 m and casing was installed to allow down-hole geophysical testing. An extensive program of surface and down-hole geophysical surveys was undertaken during December along the 1.5 km gravity anomaly interpreted to represent an iron oxide body. This allowed a step-out drill program to be defined in January 2002.

Exploration history

The exploration history provides an interesting backdrop to this outstanding intersection.

Kennecott was the first to explore the area in 1977, followed by Aquitaine in 1980 and Stockdale (for diamonds) in 1982. Metals Exploration continued in 1987, and later joint ventured with Burmine, with Derek Carter playing a lead role. Normandy Exploration became operator of the joint venture in 1993 with Burmine (Son's of Gwalia) and Metals Ex, now Sabatica Pty Ltd.

In 1994, Normandy increased the land holding by taking up the area to the west of Prominent Hill where RTZ had done considerable work on the Joe's Dam and Manxman prospects, both highly iron enriched but with modest Cu–Au values.

In 1995, MESA (now PIRSA) drilled diamond holes in the Peculiar Knob prospect to the north of Manxman to test the anomaly for iron ore potential as possible feedstock for the proposed SASE Project.

In September 2000, Derek Carter's Minotaur Resources Ltd continued exploration in the region on EL 2483 as operator (earning 19%) in a joint venture with BHP Billiton (earning 51%) and Normandy Exploration Pty Ltd (diluting to 23.94%), with Sons of Gwalia Ltd (diluting to 3.78%) and Sabatica Pty Ltd (diluting to 2.28%). The project covers 3800 km^2 of highly prospective ground between Olympic Dam and Coober Pedy (EL 2483, 2492, 2563, 2597; Fig. 1).

In a presentation during 2001, Minotaur Exploration Manager Dr Tony Belperio outlined the use of proprietary inversion modelling data to assess government and previous explorers geophysical data as a key factor in drillhole selection.

Regional geology

The Mt Woods Inlier is composed of Palaeoproterozoic metasediments deposited in a shallow marine shelf environment overlying late Archaean crystalline basement. Sediments include aluminous clastics, banded iron formation (BIF), quartzite–chert, carbonate and calcsilicates. The mineralogy of fine-grained, finely banded quartz, feldspar, cordierite, sillimanite and garnet, as well as quartz, plagioclase, magnetite,

Table 1 *Initial analyses from URN 1, Prominent Hill.*

From (m)	To (m)	Interval (m)	Copper (%)	Gold (g/t)
107.8	128.0	20.2	0.03	2.3
200.0	307.0	107.0	1.94	0.66
including				
272.0	307.0	35.0	3.86	0.63
429.0	450.0	21.0	0.90	0.46

Table 2 *Summary of URN 1, Prominent Hill.*

From (m)	To (m)	Interval (m)	Copper (%)	Gold (g/t)
107	128	20.2	–	3.03
200	307	107	1.94	0.65
429	581	152	1.10	0.61

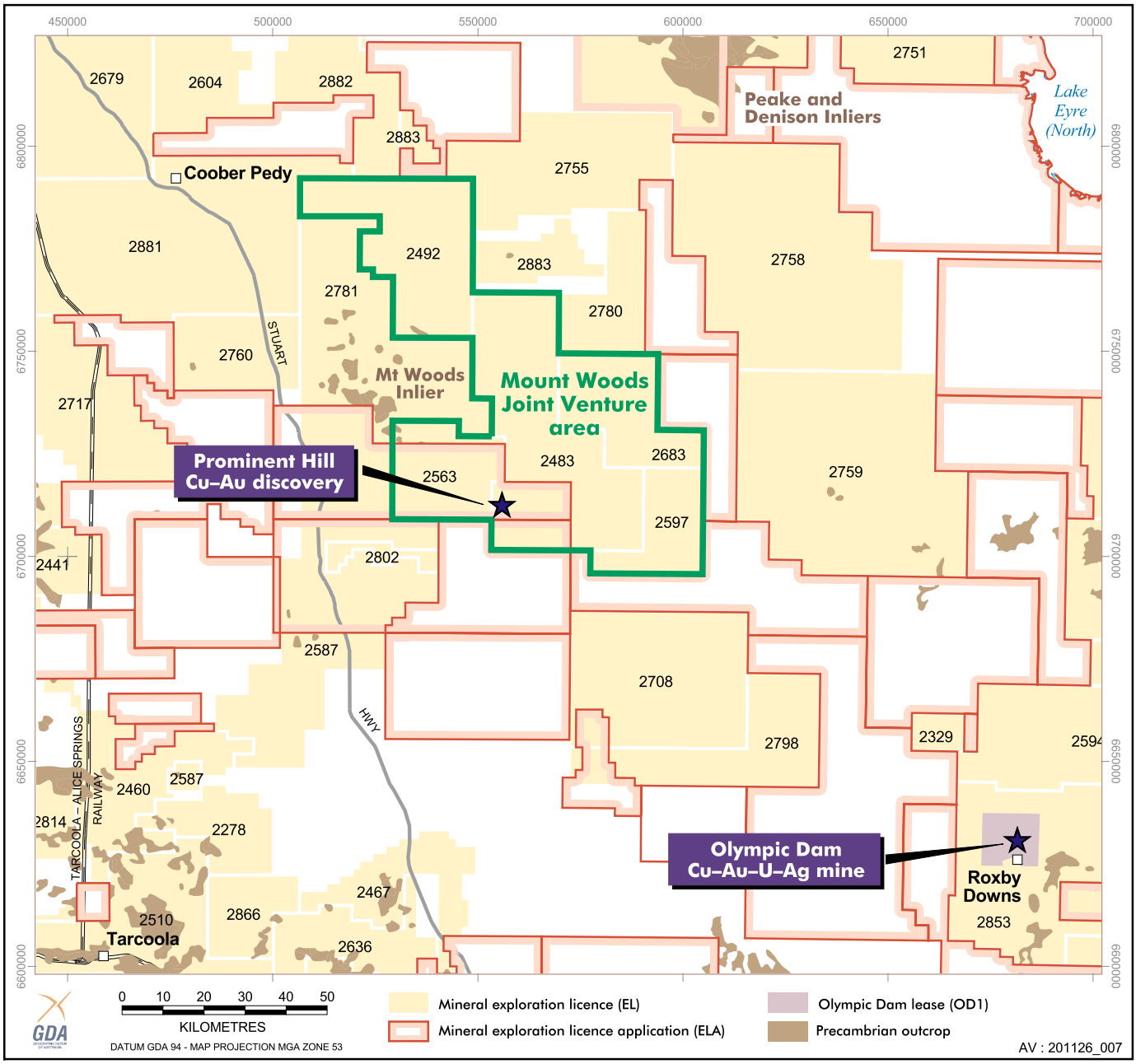

Fig. 1 *Location of Prominent Hill prospect and Mt Woods Joint Venture tenements.*

hypersthene, clinopyroxene and apatite, indicates brief burial under granulite-facies conditions. U–Pb geochronology gives an age of 1736±14 Ma for this event. Weakly deformed granite has an age of 1691±25 Ma. Plutons of Hiltaba Suite granite have an age of 1584±18 Ma.

The complexly folded inlier is pervasively altered by iron-rich fluids sourced from the Mesoproterozoic Hiltaba Suite. Significant ingestion and recrystallisation of BIF indicate considerable heat flow in the region at ~1600 Ma. Regional aeromagnetic and gravity data reflect the distribution of the haematite–magnetite alteration.

PIRSA contribution

Infill airborne geophysics (TEISA region D2) was flown during May–June 1999 at 400 m line spacing, and replaced 1.6 km spaced data flown by AGSO (BMR) in the 1960s. This survey was the last to replace the oldest data in the Mt Woods area and significantly improved the clarity of structures.

Minotaur Resources Ltd has stated that PIRSA GIS data sets (in particular geophysics as well as drillhole locations and stratigraphy) produced for the northern and western Gawler Craton assisted exploration site selection.

Implications for mineral exploration in SA

The Minotaur intersection at Prominent Hill lays to rest the argument that ore-grade Cu–Au was only ever to be found at Olympic Dam, and is the best Cu–Au greenfields intersection seen in SA since the discovery holes 25 years ago. It is far too early to say that Minotaur has revealed another Olympic Dam, but the probability of a major new discovery in the Gawler Craton is now high. The result has sparked a surge in exploration activity in SA.

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