

# ASX RELEASE



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MINOTAUR EXPLORATION LIMITED ACN 108 483 601 **ASX: MEP**

247 GREENHILL ROAD, DULWICH, SOUTH AUSTRALIA 5065 T (61 8) 8366 6000 F (61 8) 8366 6001 E admin@minotaurexploration.com.au  
[www.minotaurexploration.com.au](http://www.minotaurexploration.com.au)

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## EXPLORATION TARGET UPGRADED FOR THE MUTOOROO MAGNETITE PROJECT

### HIGHLIGHTS

- A new Exploration Target of 2.2 – 4.2 billion tonnes at a Davis Tube mass recovery of 15% – 18% has been estimated for the Mutooroo Magnetite Project in South Australia.
- Concentrate with 70% Fe content produced from DTR samples.
- This material is in addition to the Muster Dam Inferred Resource (reported November 2011) of 1.5 billion tonnes of magnetite at 15.2% DTR.

Minotaur Exploration Limited ("Minotaur", ASX Code: MEP) announces an upgraded Exploration Target for magnetite-bearing strata at the Mutooroo Magnetite project. The estimate was undertaken by consultants Hellman and Schofield Pty Ltd (H&S).

### PROJECT BACKGROUND

The Mutooroo magnetite project on tenement EL 3745 in South Australia, 75 km southwest of Broken Hill, is part of the Border Joint Venture between Sumitomo Metal Mining Oceania Pty Ltd (59.1%) and Minotaur Exploration (40.9%) (Figure 1).



Figure 1: Mutooroo Project Location Map.

## METHODOLOGY

H&S estimated an Exploration Target<sup>1</sup> for the Mutooroo area of 2.2 – 4.2 billion tonnes at a Davis Tube Recovery (DTR<sup>2</sup>) of 15% – 18% (at nominal 10% DTR magnetite cut off) (Table 1). The estimate excludes material in the oxidized zone, extends to a vertical depth of 375 m below surface and incorporates true thickness widths of up to 450 m (refer Table 1). Other assumptions include a total strike extent of 16.2 km – 21.3 km for the most magnetic portions of the Duffields, Surrender, Peaked Hill, Red Dam and Pegline Dam magnetic anomalies (Figure 2). Refer to Hellman & Schofield's report in Appendix A for additional information.

**This represents a significant increase in the magnetite potential at Mutooroo as the Exploration Target now excludes the Muster Dam prospect (which was previously included in the initial Exploration Target, refer MEP ASX release 23rd May 2011). Minotaur recently reported an Inferred magnetite Resource of 1.5 billion tonnes at 15.2% DTR at Muster Dam (refer MEP ASX release 24th November, 2011). In effect, the magnetite endowment at Mutooroo has been increased by over 1.5 billion tonnes from the initial Exploration Target published on 23 May 2011.**

Target Area	Bands	Strike (km)	Thickness (m)	Volume (billion m <sup>3</sup> )	SG <sup>3</sup>	Tonnage (Bt)
Muster Catch	2	1.7 to 2.3	80 to 150	0.05 to 0.12	2.96	0.15 to 0.3
Muster South	1	1.7 to 2.3	80 to 120	0.05 to 0.1	2.96	0.15 to 0.3
<b>Duffields 1</b>	<b>1</b>	<b>4.5 to 5.0</b>	<b>150 to 450</b>	<b>0.3 to 0.65</b>	<b>3.05</b>	<b>1.0 to 1.9</b>
Duffields 2	2	1.5 to 2.5	80 to 100	0.05 to 0.08	3.05	0.15 to 0.2
Surrender Dam	4	3.0 to 3.5	80 to 150	0.1 to 0.17	2.96	0.3 to 0.5
Peaked Hill	1	1.0 to 1.2	40 to 60	0.015 to 0.025	3.05	0.05 to 0.08
Peaked Hill West	1	1.0 to 2.0	50 to 100	0.03 to 0.06	3.05	0.09 to 0.18
Pegline Dam	1	1.0 to 1.5	120 to 230	0.07 to 0.1	3.05	0.2 to 0.3
Red Dam	1	0.8 to 1.0	120 to 230	0.055 to 0.07	3.05	0.15 to 0.2
<b>Total</b>		<b>16.2 to 21.3</b>	<b>80 to 450</b>	<b>0.7 to 1.4</b>		<b>2.2 to 4.2</b>

Table 1: Exploration Target parameters for Mutooroo Magnetite deposits within EL3745.

**It is also noteworthy that the Exploration Target for the Duffields 1 prospect now exceeds the upper range of that previously estimated as an Exploration Target for Muster Dam in May 2011. Further, the Muster Dam material subsequently converted to an Inferred resource at the top end of its' Exploration Target range.**

Laterally consistent, well bedded, magnetite-bearing strata in the Mutooroo area occur over a strike extent of ~40 km. Principal magnetic anomalies occur near Muster, Duffields and Surrender Dam. Recent drilling has confirmed the presence of magnetite mineralisation along strike from previous drilling at Duffields and at Peaked Hill and Peaked Hill West. This has provided confidence in the geophysical models of the magnetic anomalies in these areas and justified inclusion of the Pegline Dam and Red Dam areas in this Exploration Target. Pegline Dam, Red Dam, Peaked Hill West and Muster South were not included in the May 2011 Exploration Target.

<sup>1</sup> The term "Exploration Target" should not be misconstrued as an estimate of Mineral Resources and Reserves as defined in the JORC Code (2004), and the term has not been used in that context. The term is conceptual in nature and it is uncertain if further exploration will result in the determination of a Mineral Resource. Refer Clause 18 of the JORC Code (2004).

<sup>2</sup> Davis Tube Recovery (DTR) is laboratory magnetic separation process using a Davis Tube. Separation gives the percent mass recovery of magnetic material and the recovered magnetic and non-magnetic portions can be analysed for chemical composition.

<sup>3</sup> The May 2011 Exploration Target was based on a density assumption of 3.05 t/m<sup>3</sup>.

### METHODOLOGY continued

About 45% of the Exploration Target tonnage occurs at Duffields 1 where the units are laterally extensive, with strike extent of 4.5 to 5 km and with thicknesses ranging up to 450 m (Figure 2). The depth of oxidation to the prospective horizon is variable, ranging from 0m up to 85 m for part of Duffields. An average depth of oxidation of 50m was assumed for the estimate.

Magnetite recovery test work from the four exploratory holes at the Duffields 1 magnetic anomaly revealed DTR mass recoveries averaging 17.3% (Table 2). These holes are approximately 1 km along strike from previous drillholes 08RCMUT01 and 02 (Figure 3) which intersected 129m @ 24% and 144m @ 20% DTR mass recovery respectively. **This significantly improves confidence in the continuity of mineralisation at Duffields 1, at potentially higher grades than at Muster Dam.**

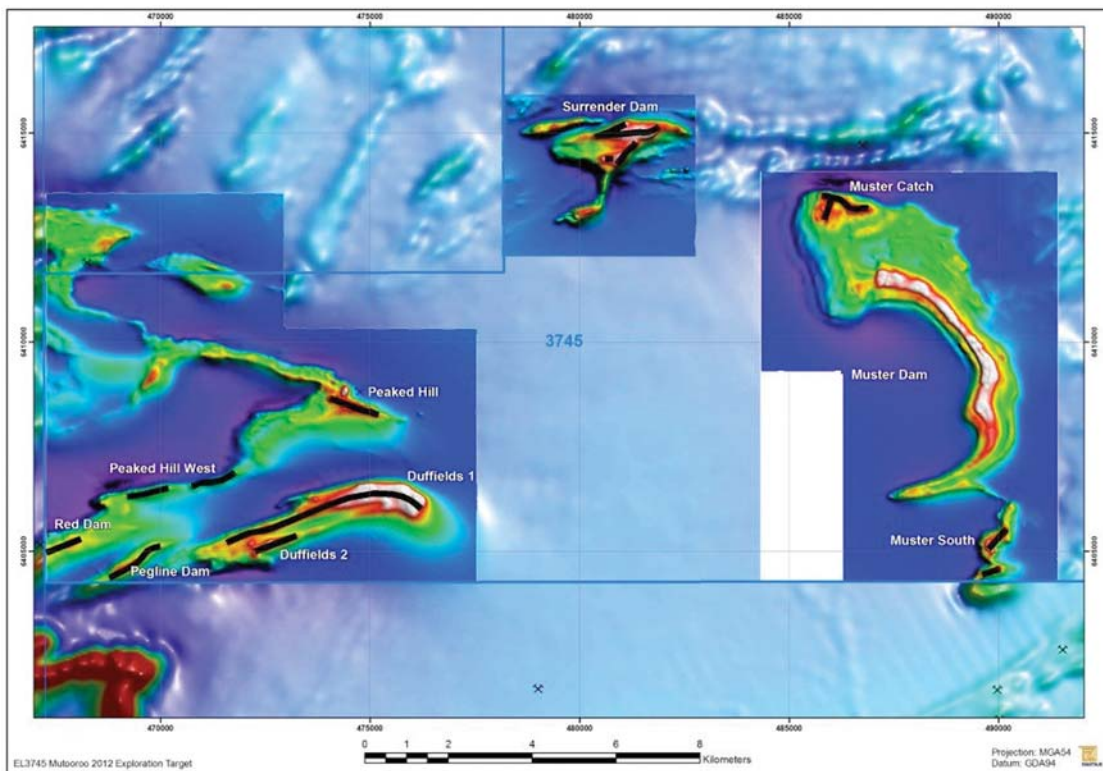


Figure 2: Airborne magnetic image for the Mutooroo area delineating strike extent of magnetic strata (in black bars) used for the Exploration Target. Muster Dam is now defined by a JORC Resource statement (refer MEP ASX release dated 24 November 2011).

**Duffields 1 DTR samples produced concentrate grades averaging over 70% Fe (refer Table 2).**

Nearby, holes MUT11 and 12 returned mass recoveries of 16.8% and 20.2% DTR magnetite respectively and provide higher confidence in the potential of the Peaked Hill and Peaked Hill West anomalies.

## METHODOLOGY continued

The Exploration Target is considered conservative given that it does not include the extensive strike length of potentially magnetite bearing stratigraphy to the northwest and southwest of the Peaked Hill anomaly (*Figure 3*). 3D magnetic modeling (refer *Figure 10*, Appendix 1 of attached H&S report) in these areas does not show the same depth continuity as the areas modeled in this Exploration Target. Depth extent would need to be demonstrated through additional drilling.

Duffields 1			Concentrate Grades					
Drillhole	Interval (m)	DTR %	Fe %	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	P %	S %	LOI %
DFDD001	280	17.61	70.27	2.28	0.28	0.003	0.005	-3.24
DFDD002	235	16.64	69.69	2.97	0.25	0.002	0.005	-3.09
DF011	195	18.24	70.56	2.09	0.20	0.003	0.005	-3.33
DF014	100	16.55	69.92	2.68	0.30	0.002	0.006	-3.15
	<b>Averages</b>	<b>17.26</b>	<b>70.11</b>	<b>2.50</b>	<b>0.26</b>	<b>0.002</b>	<b>0.005</b>	<b>-3.20</b>
MUT15	125	14.51	70.58	2.11	0.20	0.002	0.002	-3.37
<b>Peaked Hill</b>								
MUT11	75	16.85	69.48	2.97	0.52	0.002	0.020	-3.19
<b>Peaked Hill West</b>								
MUT12	100	20.19	69.60	3.34	0.28	0.003	0.004	-3.35

Table 2: Mutooroo drillhole DTR analyses.

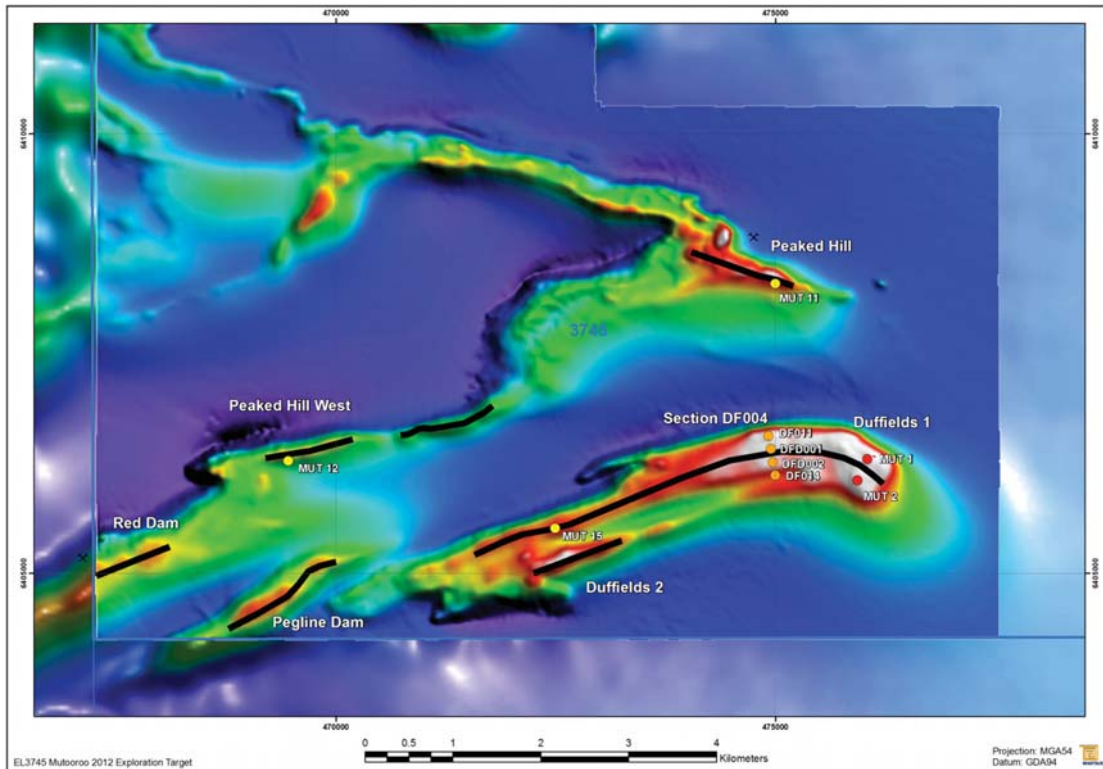


Figure 3: Magnetic image over the Duffields, Peaked Hill, Pegline Dam and Red Dam areas showing drillhole locations.

## CONCLUSIONS

Recent drilling on regional targets by Minotaur has confirmed the presence of wide zones of magnetite mineralisation at potentially economic grades and raised confidence in the use of magnetic modelling methods to identify target areas.

The Exploration Target of 2.2 to 4.2 billion tonnes represents a significant increase in the magnetite potential at Mutooroo as it is now additional to the 1.5 billion tonne Inferred resource reported at Muster Dam. Further potential remains along strike in areas not included in this Exploration Target.

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Information in the foregoing report that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Dr A. P. Belperio, who is a Director and full-time employee of the Company and a Fellow of the Australasian Institute of Mining and Metallurgy. Dr A. P. Belperio has a minimum of 5 years experience, which is relevant to the style of mineralization and type of deposit under consideration and to the activity that he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Dr A. P. Belperio consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

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For further information contact:

**Andrew Woskett** (Managing Director) or

**Tony Belperio** (Exploration Director)

Minotaur Exploration Ltd

**T** +61 8 8366-6000