



247 Greenhill Road, Dulwich 5065, South Australia
A.C.N. 108 483 601

Tel: +61 8 8366 6000 Fax: +61 8 8366 6001

Website: www.minotaurexploration.com.au

Email: admin@minotaurexploration.com.au

ASX Code: MEP

24 November 2011

The Company Announcements Office
Australian Securities Exchange Limited

MAIDEN JORC RESOURCE OF 1.5 BILLION TONNES FOR MUSTER DAM DEPOSIT AT THE MUTOOROO MAGNETITE PROJECT

Minotaur Exploration Limited announces the inaugural JORC Inferred resource for the Muster Dam deposit, one of several magnetite prospects within the Mutooroo Magnetite project in South Australia (for location, refer Figure 1).

Independent consultants Hellman and Schofield Pty Ltd estimated an Inferred Resource for Muster Dam of 1.5 billion tonnes at a Davis Tube Recovery (DTR) of 15.2% magnetite.

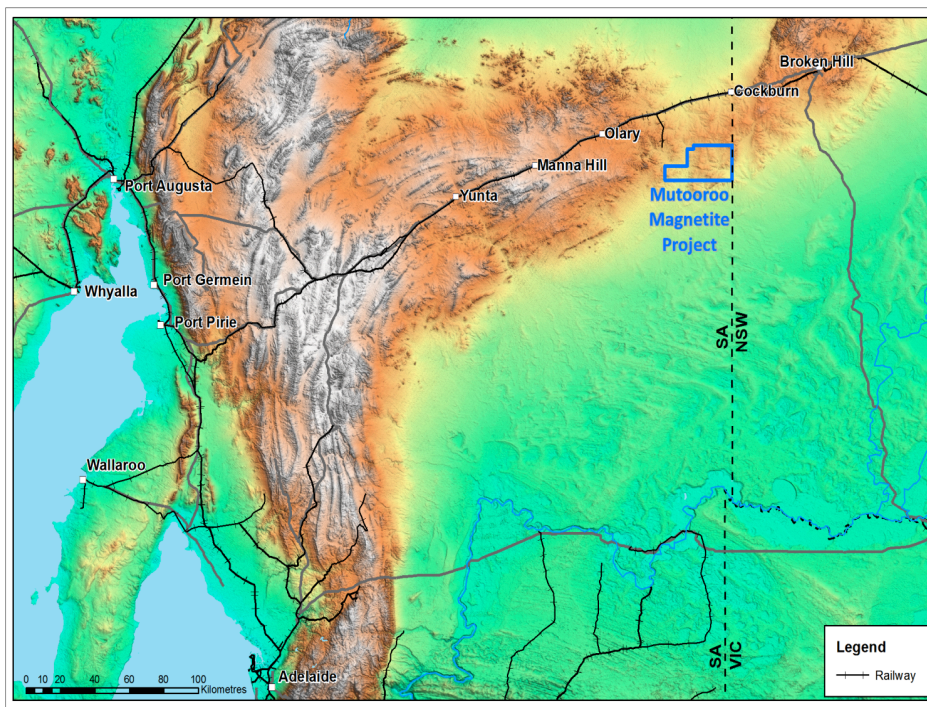


Figure 1: location of the Mutooroo Magnetite deposits in South Australia



Mutooroo Magnetite Project

Mutooroo Magnetite is a Joint Venture between Sumitomo Metal Mining Oceania Pty Ltd (59.1%) and Minotaur Exploration (40.9%). The Mutooroo Magnetite project on tenement EL3745 is located 100 km southwest of Broken Hill (Figure 1). Laterally consistent, well bedded, magnetite-bearing strata in the Mutooroo area occur over a strike extent of ~40 km. The Muster Dam drilling covers just 6 km of strike length of the magnetite-bearing Braemar Iron Formation.

Magnetite mineralisation at the Muster Dam Fe deposit occurs within two main lithologies; diamictite and siltstone. Outcrop and drill core reveal steeply dipping, massive to poorly bedded, magnetite-bearing diamictite with gravel to boulder sized clasts and laminated to poorly layered magnetite-bearing siltstone.

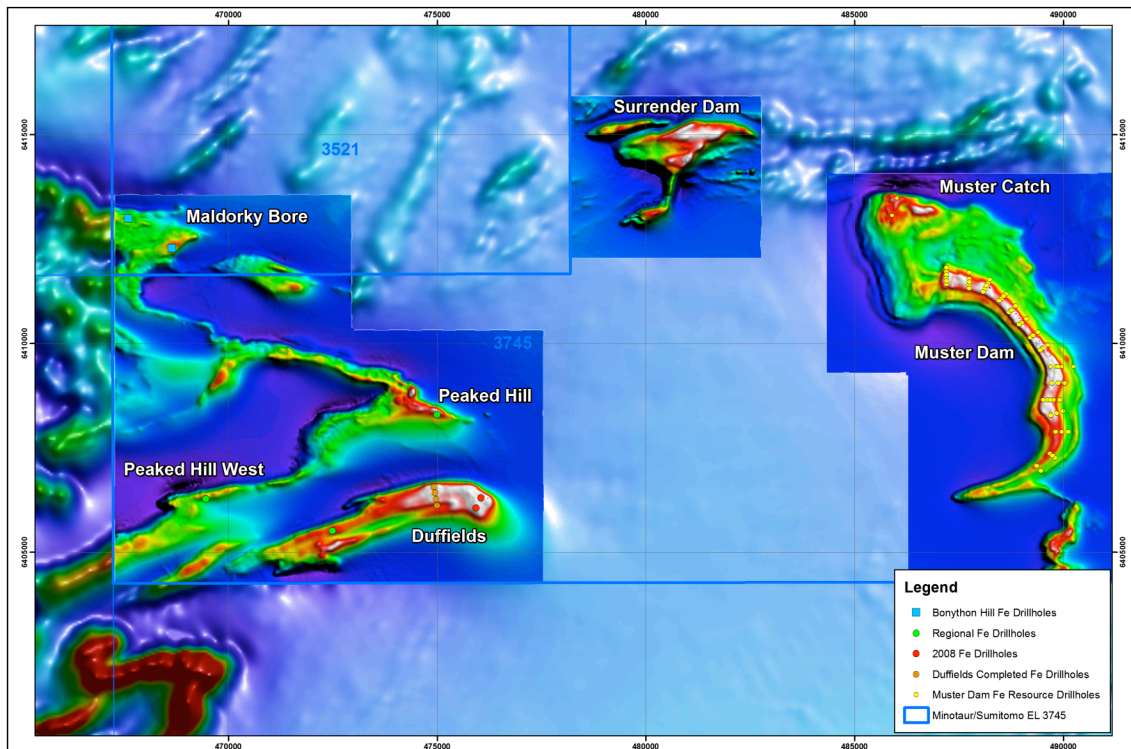


Figure 2: Airborne magnetic image for the Mutooroo area showing regional prospects and drillhole locations.



The issue of a JORC reported Inferred Resource represents a major milestone for the Mutooroo Magnetite project. It confirms the Muster Dam deposit has the scale and grade to produce the required throughput of a high-quality magnetite concentrate. In particular, the extremely low level of deleterious elements measured in the concentrate suggests that the product will be attractive to blast furnace consumers. It also confirms the continuity of grade in the formation and provides significant confidence in the ability of the other prospect areas to add significantly to the tonnage of magnetite mineralisation at similar grades.

Muster Dam Inferred Resource Estimate

Resource estimation was carried out by external consultants Hellman and Schofield Pty Ltd (H&S) from data supplied by Minotaur Exploration. The assessment was based on nearly 3,000 DTR^① analyses carried out at 45 micron grind size. A total of 49 Reverse Circulation (RC) and 10 diamond holes were completed on a section spacing of approximately 400m. Samples were composited over 4m or 5m intervals and analysed for DTR% magnetite. XRF analyses for total Fe and other elements were also carried out on the samples prior to DTR work ("head" samples) and on the DTR concentrate. Details of the consultant's resource estimation methodology and Minotaur's drilling and sampling techniques are given in Appendix 1.

Table 1. Muster Dam Inferred Resource summary, at 10% DTR magnetite cut-off

Muster Dam			Concentrate Grades					
JORC Category	Billion Tonnes	Magnetite DTR %	Fe%	Al₂O₃ %	P₂O₅ %	S %	SiO₂ %	LOI %
Inferred	1.5	15.2	69.8	0.4	0.002	0.002	2.8	-3.3

(Note: average density 2.96t/m³; minor rounding errors)

The resource estimate was calculated to a depth of approximately 360m below surface and the mineralisation is open at depth. At the 10% DTR cut-off the magnetite body varies in width between 200m and 400m.

Metallurgical test work on diamond drill samples continues for a project Scoping Study, with completion due in the first quarter of 2012.

For personal use only



Table 2. Grade-tonnage figures for the Muster Dam
Inferred Resource at varying DTR% cut-off grades

DTR Mag Cut Off %	Billion Tonnes	Mag Grade %	Fe Grade %
6	1.60	14.84	17.96
8	1.58	14.93	18.02
10	1.51	15.18	18.20
12	1.36	15.64	18.57
14	1.02	16.47	19.17
16	0.54	17.74	20.01
18	0.18	19.38	20.77

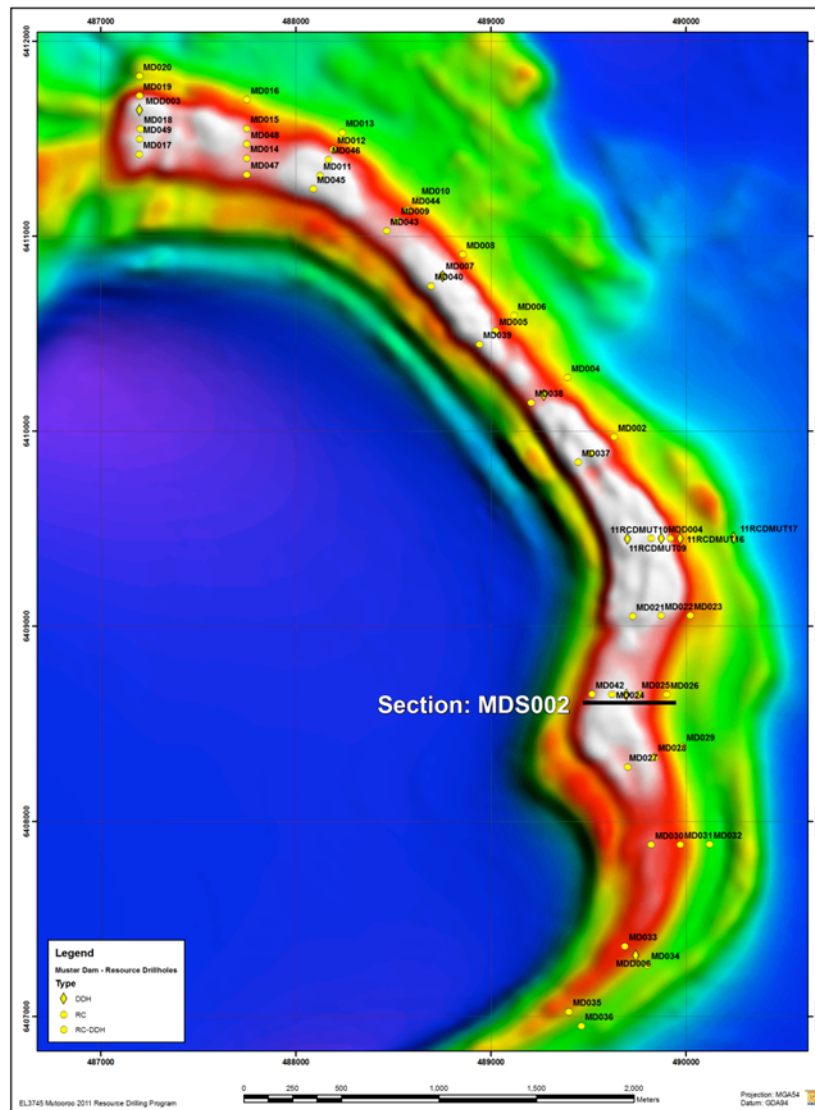


Figure 3. Drill hole locations overlain on the TMI aeromagnetic image.

For personal use only

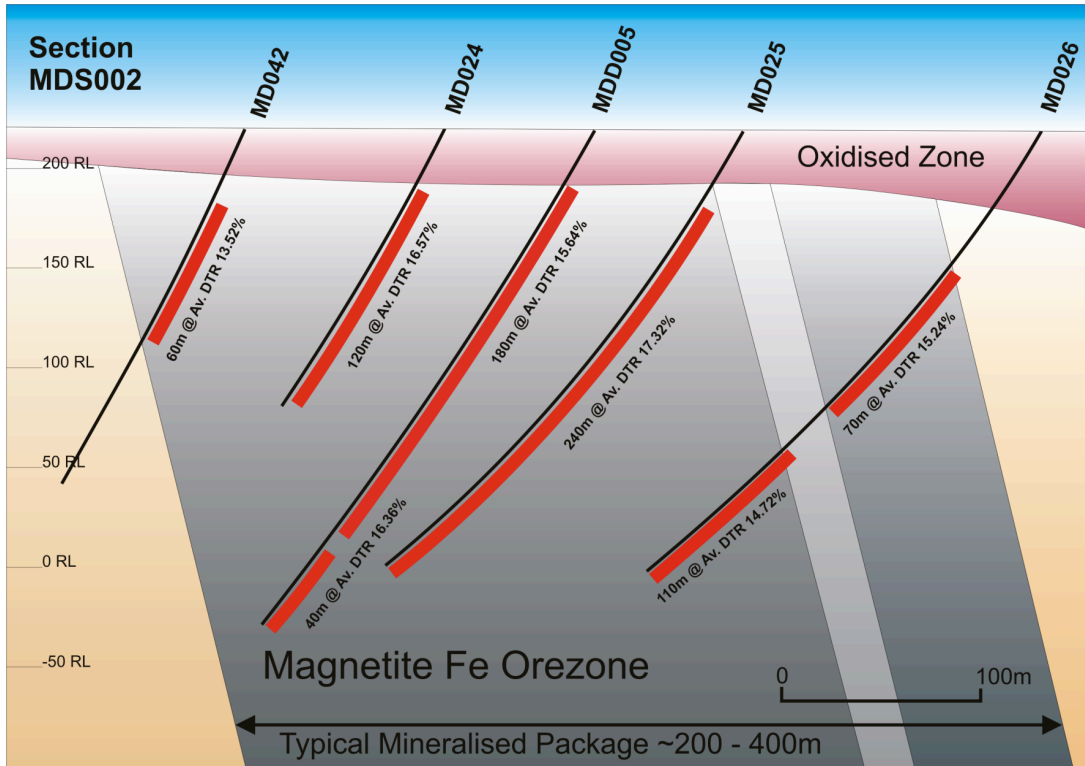


Figure 4. Drill section MDS002 showing averaged drill intercepts.

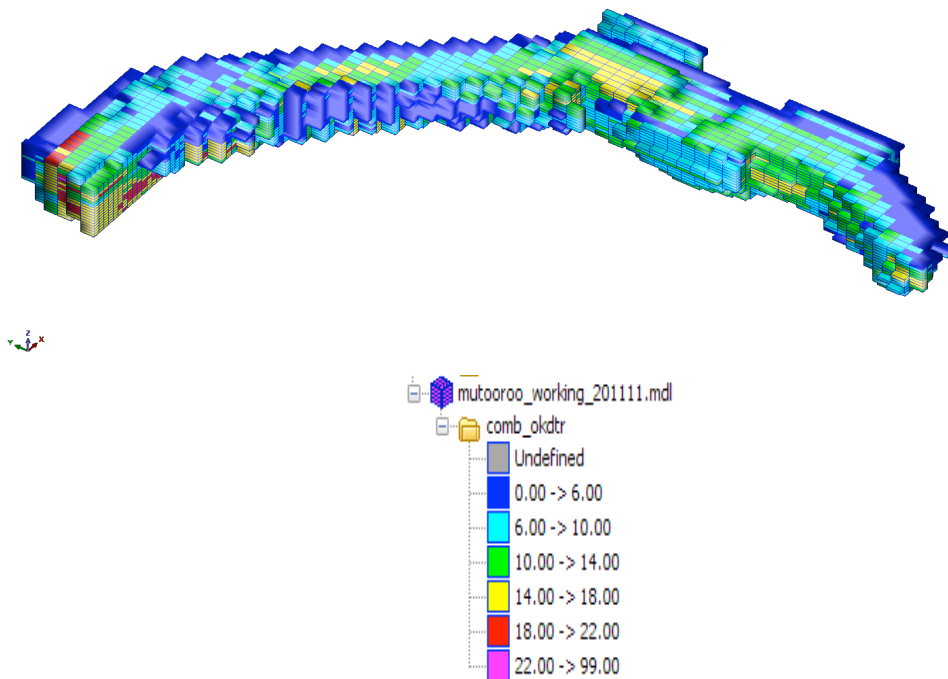


Figure 5. Resource block-model looking down towards the northeast.



Regional Exploration

In addition to Muster Dam, magnetite deposits occur at the Duffields, Surrender Dam, Peaked Hill, Peaked Hill West and Muster Catch prospects. A section of two RC holes and 2 diamond holes was drilled at Duffields to test along strike from higher grade intersections reported from previous drilling. A single hole also tested each of the Peaked Hill, Peaked Hill West and western end of the Duffields prospects. Two holes were also completed at the Maldorky Bore prospect, located on EL3521 Bonython Hill, immediately adjacent to and north of the JV area. Details of these drillholes were presented in the Minotaur September 2011 Quarterly Report. DTR results from these holes are currently being assessed and will be reported separately with a revision to the previously reported¹ Exploration Target[⌘].

For further information contact:
Andrew Woskett (Managing Director) or
Tony Belperio (Exploration Director)
Minotaur Exploration Ltd
tel: +61 8 8366 6000

Advisory Statements:

- ① Davis Tube Recovery (DTR) is a laboratory technique which uses a Davis Tube to recover magnetic particles from an ore sample. The per cent mass recovery of magnetic material is determined from the mass of sample recovered compared to the sample mass. The recovered magnetic and non-magnetic portions can be analysed for chemical composition.
- ⌘ 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).

Competent Persons Statement:

Information in the foregoing report that relates to Exploration Results and Mineral Resources is based on information compiled by Dr A.P. Belperio who is a Fellow of the Australasian Institute of Mining and Metallurgy. Dr Belperio is a full-time employee of Minotaur Exploration Ltd and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he (or she) 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 Belperio consents to inclusion in the report of the matters based on their information in the form and context in which it appears".

¹ Exploration Target of 2.4-4.0 billion tonnes established for the Mutooroo Magnetite Project, MEP ASX release dated 23 May 2011

For personal use only

Appendix 1

H & S Hellman & Schofield Pty Ltd

Technical specialists to the minerals

mineral resource and ore reserve studies
geostatistical software
technical audits and reviews
MP^e grade control systems

geostatistical applications and research
JORC compliance assessment
geological databases and modelling
geochemical exploration

Resource Estimation for the Muster Dam Prospect, Mutooroo Iron Ore Project, SA

Hellman & Schofield has completed new Mineral Resource Estimates for the Muster Dam prospect as part of the Mutooroo Iron Ore Project in Eastern South Australia. The project lies within exploration licence EL3745 which is granted to Minotaur Exploration Limited (“MEP”) but under joint venture with Sumitomo Metal Mining Oceania Pty Ltd (who have 59.1%). MEP manages exploration of the project and commissioned this report. The target commodity is iron ore as fresh rock magnetite. The prospect area is located 90km south west of Broken Hill, close to Carpentaria Exploration’s Hawsons Iron Ore Project. The maiden resource estimates incorporate all the available drillhole data from the recent 2011 drilling programme and a new geological interpretation. The estimates have been reported using the JORC Code and Guidelines and the author has the requisite experience to act as a Competent Person under the code.

The Mutooroo Iron Ore Project is situated within folded, upper greenschist facies Neoproterozoic rocks of the Adelaide Geosyncline. The Braemar Ironstone Facies is the host stratigraphy and comprises a series of relatively narrow, strike extensive magnetite-bearing siltstones with a steep dip (circa 70° to 80°). Parts of the Mutooroo prospective stratigraphy are exposed but there are large tracts that are concealed by transported ferricrete and other younger cover. The base of oxidation due to weathering over the prospective horizons is variable ranging from 0m to up to 50m. The airborne magnetic data clearly indicates the continuity of the magnetite siltstones as a series of parallel, narrow, high amplitude magnetic anomalies with considerable strike length.

Exploration work completed by MEP in 2010-11 includes 2D and 3D geophysical modelling of airborne magnetic data with follow up diamond and RC drilling. At Muster Dam a total of 59 RC and diamond holes (for 15,914m) have been completed as a series of fence holes on 400m spaced sections. Analysis of the drillhole samples has utilised the Davis Tube Recovery (“DTR”) method to provide a measure of the recoverable magnetic fraction. In addition XRF analysis was completed on head and concentrate grade material. Sampling of the drilling consisted of 2,913 samples, some of which was under geological control. A nominal 10% DTR value defines the limits of the magnetite siltstone and may include some internal dilution.

MINOTAUR EXPLORATION LTD

Modelling used 3,193 5m composites with the Ordinary Kriging method. Conditional Expectation of the downhole geophysical data was used to supplement the composite DTR data where the latter was unavailable. Elements modelled include the magnetic fraction (magnetite), the iron head grade and concentrate grades for iron, alumina, phosphorous, silica, sulphur and LOI. Unconstrained modelling was undertaken with a maximum search of 450m by 225 and 75m oriented parallel to the bedding with a minimum number of 8 data points. A block size of 100m by 50 by 20m was used.

The resource estimates are reported for a 10% DTR magnetite cut off grade constrained by the top of fresh rock surface, within the defined mineral shape and to a depth limit of 360m below surface. The Mineral Resource estimates are classified as Inferred.

Muster Dam			Concentrate Grades					
Category	Billion Tonnes	Magnetite DTR %	Fe%	Al ₂ O ₃ %	P ₂ O ₅ %	S %	SiO ₂ %	LOI %
Inferred	1.5	15.2	69.8	0.4	0.002	0.002	2.8	-3.3

(average density 2.96t/m³; minor rounding errors)

The mineralisation at Muster Dam remains open at depth but is believed to be closed off at the northern and southern margins. However Muster Dam is one of a series of similar exploration targets within MEP's exploration licence.

Data Validation

MEP has supplied the drill hole database for the deposit, which H&S has accepted in good faith as an accurate, reliable and complete representation of the available data. H&S performed only very limited validation of the data and did not detect any obvious problems likely to impact significantly on the resource estimates. The drillhole database for Muster Dam is satisfactory for resource estimation purposes. The quality control procedures for assay and sampling used by MEP were reviewed by H&S and are to industry standard. However responsibility for quality control of the drillhole data resides solely with MEP.

Resource Estimation

A total of 2,860 5m composites were generated from the drillhole database for DTR magnetite recovery and iron head grade. Missing DTR data was estimated using the Conditional Expectation statistical technique to generate regression equations for DTR from the downhole magnetic susceptibility data and if that was unavailable then from hand held magnetic susceptibility readings. A total of 3,193 5m composites were used for resource estimation (see Table 1 below).

Table 1 Muster Dam Drillhole Composite Details

Item	Number	Comment	
DTR Analyses	2,913	Original samples from drillhole database	
DTR 5m Composites & Concentrate Composites	3,193	2,860 from database 283 from downhole mag sus 50 from hand held mag sus	2,653 in fresh rock 540 in partial oxidised, complete oxidation and overburden zones

The variation in strike of the deposit meant that the area was sub-divided into four domains for subsequent variogram modelling and modelling searches.

MINOTAUR EXPLORATION LTD

A 3 pass search strategy was employed with unconstrained Ordinary Kriging (OK) for the fresh zone composites and the combined oxide and fresh zone composites (see Table 2 below). Modelling used H&S's in-house GS3M modelling software.

Table 2 Muster Dam Search Strategies

Domain 1	Steep	Search 1		
Search	Pass 1	Pass 2	Pass 3	Rotations
X	300	450	450	0
Y	50	75	75	0
Z	150	225	225	0
Min Data	16	16	8	
Max Data	32	32	32	
Min Octants	4	4	2	
Domain 2	Steep	Search 1		
Search	Pass 1	Pass 2	Pass 3	Rotations
X	50	75	75	0
Y	400	600	600	-5
Z	150	225	225	45
Min Data	16	16	8	
Max Data	32	32	32	
Min Octants	4	4	2	
Domain 3	Steep	Search 1		
Search	Pass 1	Pass 2	Pass 3	Rotations
X	50	75	75	0
Y	300	450	450	-15
Z	150	225	225	0
Min Data	16	16	8	
Max Data	32	32	32	
Min Octants	4	4	2	
Domain 4	Steep	Search 1		
Search	Pass 1	Pass 2	Pass 3	Rotations
X	50	75	75	0
Y	400	600	600	-15
Z	150	225	600	-30
Min Data	16	16	8	
Max Data	32	32	32	
Min Octants	4	4	2	

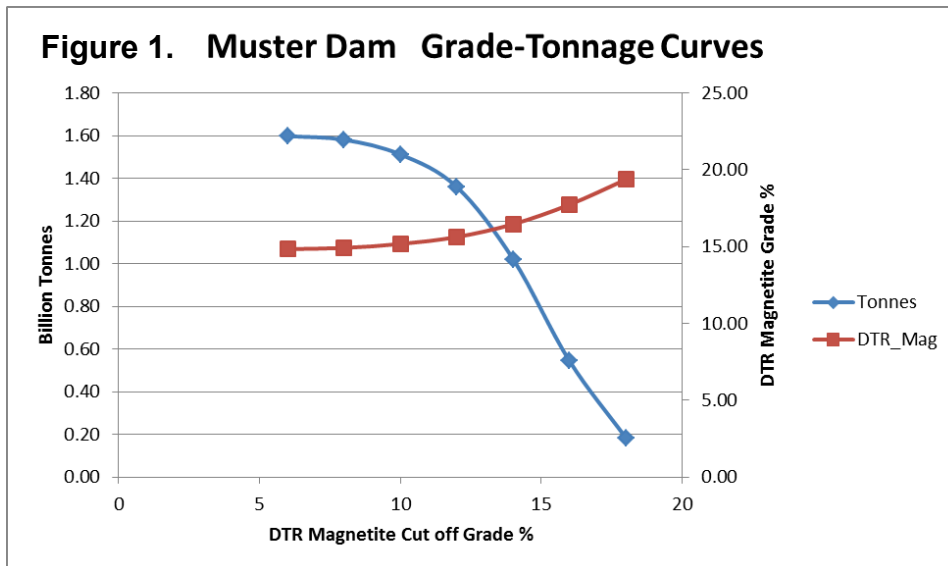
(trigonometrical orientation)

MINOTAUR EXPLORATION LTD

All the estimated blocks were loaded into a Surpac block model with the top of fresh rock surface used to restrict the fresh rock mineralisation. Details of the block model are included as Table 3.

Table 3 Muster Dam Block Model Details

mutooroo_working_201111.mdl	Y	X	Z
Minimum Coordinates	4075	20100	-350
Maximum Coordinates	6375	24000	250
User Block Size	50	100	20
Min. Block Size	50	100	20
Rotation	0	0	0



Model Validation

On screen visual comparison in GS3M and Surpac for plan and section of the drillhole assay data, drillhole composite data and the H&S block grades demonstrated that the block model honours the drill hole composite grades. Examples of the block grade distribution in relation to the composite data are included below in plan and section (Figures 2 and 3).

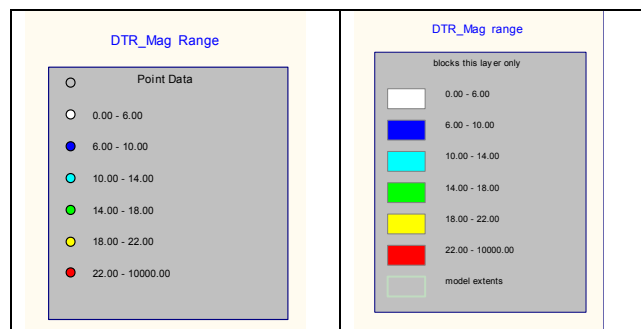
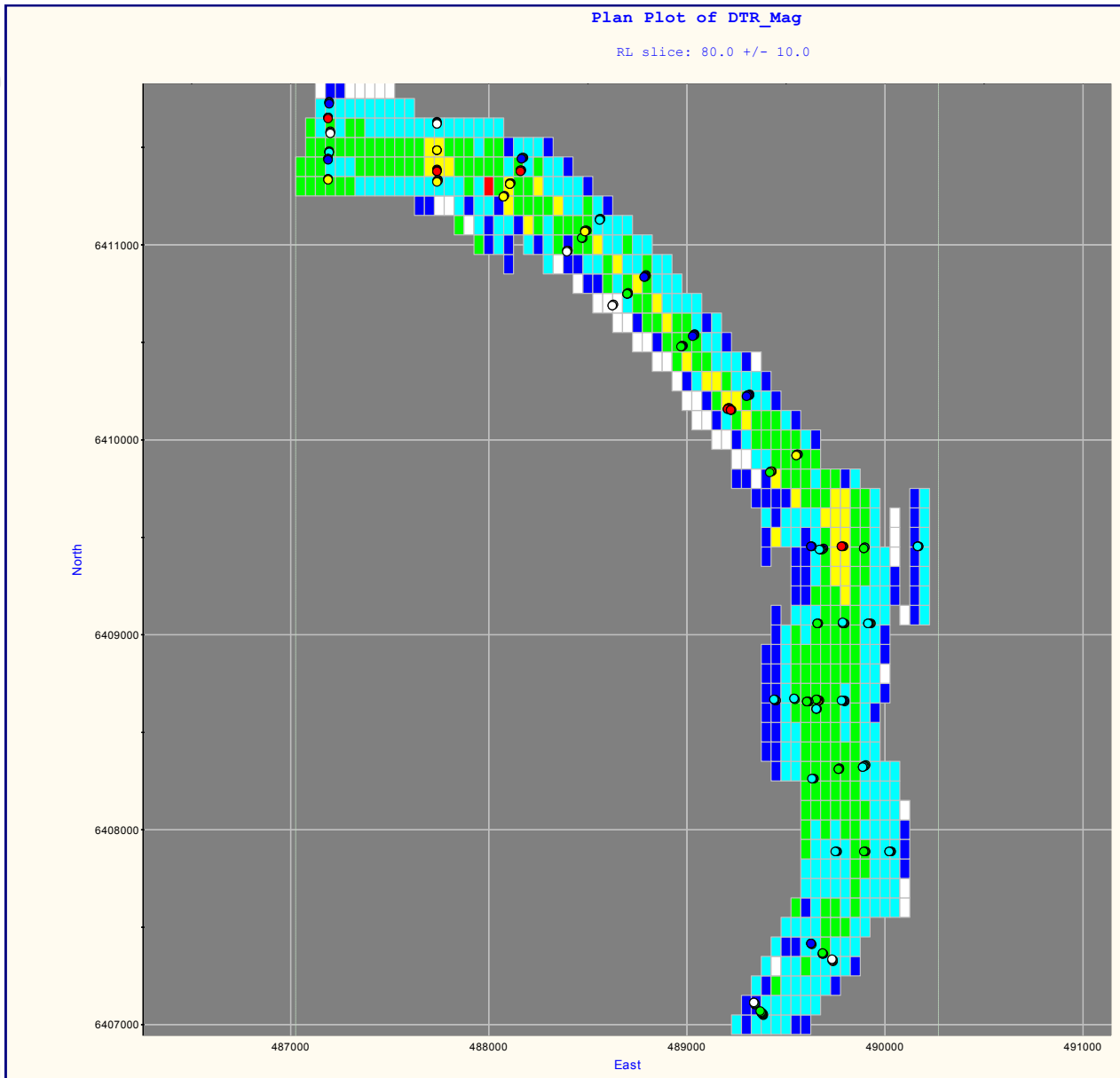
Figure 2 Muster Dam Prospect Composite & Block Grade Comparison Plan 80mRL



MINOTAUR
EXPLORATION

MINOTAUR EXPLORATION LTD

For personal use only

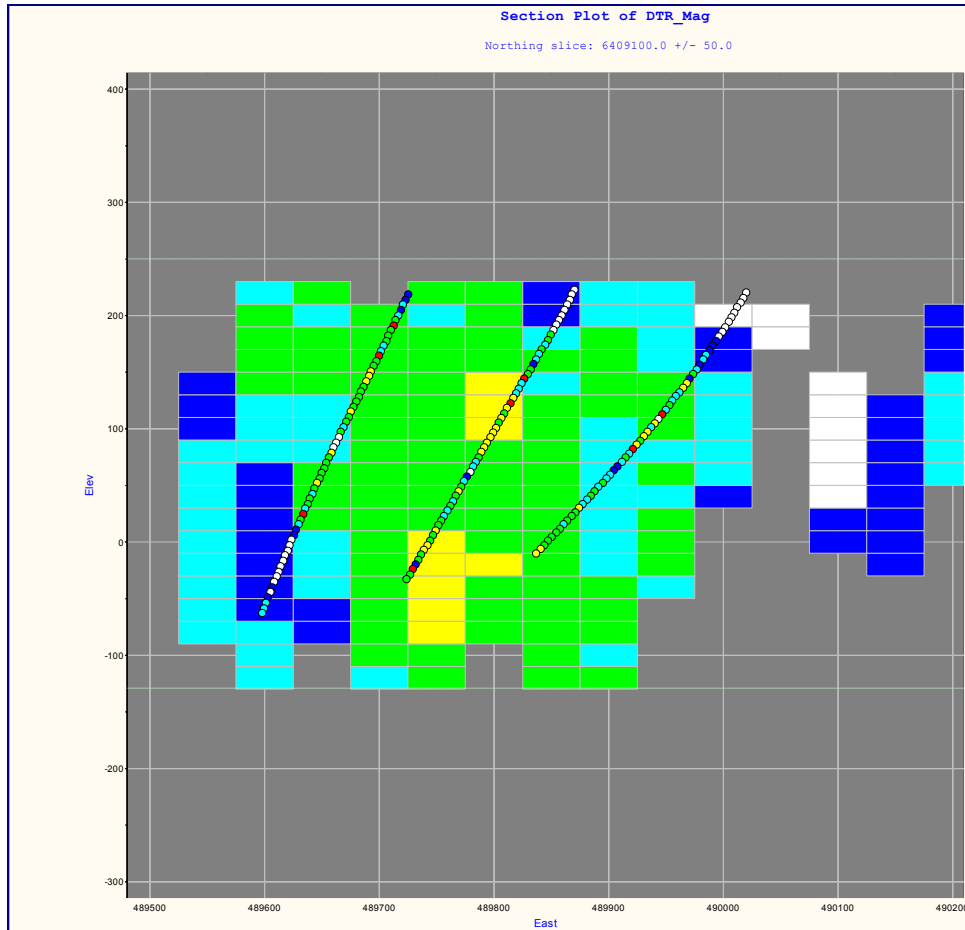




MINOTAUR
EXPLORATION

MINOTAUR EXPLORATION LTD

Figure 3 Muster Dam Domain 3 Composite & Block Grade Comparison 6409100mN



For personal use only