



SheffieldResources  
LIMITED

Sheffield Resources Ltd  
ACN 125 811 083  
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28 October 2014

## QUARTERLY REPORT FOR PERIOD ENDING 30 SEPTEMBER 2014

### HIGHLIGHTS

#### *Thunderbird HMS project*

- Discovery of high grade extensions to mineralisation in up-dip and down-dip regions of world-class Thunderbird deposit
- Discovery has potential to enhance already outstanding project economics
- Drilling program completed subsequent to end of quarter – further assay results expected during Q4 2014
- Resource update scheduled for Q4 2014
- Pre-feasibility Study on schedule for completion Q1 2015
- Thunderbird Mining Lease application lodged on 16 July 2014

#### *Fraser Range Nickel project*

- Three new tenements granted
- Generative work commenced on Big Bullocks project in northeast Fraser Range

#### *Pilbara Iron project*

- Initial RC drilling program at Mt Vettel returns higher grade iron intervals with low levels of alumina and phosphorous from shallow depths, within broader lower grade intervals

#### *McCalls HMS project*

- Exploration Target<sup>1</sup> of 1.7-2.2Bt at 1.4-1.6% HM for Mindarra Springs, located 20km south of large McCalls deposit (Inferred Resource of 4.4Bt @ 1.2% HM)

As at 30/09/14:

Issued Shares	<b>134.2M</b>	ASX Code	<b>SFX</b>	Closing Price	<b>\$0.75</b>
Market Cap	<b>\$100.7M</b>	Cash Reserves	<b>\$8.7M</b>		

<sup>1</sup>Sheffield Resources has not yet reported any Mineral Resources for Mindarra Springs and any discussion in relation to the potential quantity of the targets is conceptual in nature. There has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource. Figures have been rounded to reflect the implied level of accuracy.

## SUMMARY

Sheffield was very active during the quarter as the Company sought to maximize field work on the Thunderbird HMS project during the northern field season. Subsequent to the end of the quarter, all drilling and field-based pre-feasibility activities were successfully concluded. In total, 119 aircore drill holes for 7,644m were completed at Thunderbird and 61 aircore drill holes for 3,081m on regional exploration targets.

Other field activities included the drilling of 20 sonic drill core holes (total 781m) for geotechnical information, and the drilling and pump testing of three full-sized production water bores (total 294m) for hydrological studies.

The first assay results from the 2014 Thunderbird resource drilling program were reported and further results are expected ahead of a resource update scheduled for Q4 2014.

At the Red Bull nickel project, a single diamond drill hole targeting a strong, deep conductor was completed at 771m depth. A 5m wide zone of graphitic schist was determined to be the source of the conductor.

Work was also undertaken on the McCalls and Eneabba HMS projects, the Pilbara iron project and the Big Bullocks project within the Fraser Range nickel play.

Exploration expenditure for the quarter is \$2,300,000.



Figure 1: Location of Sheffield's Projects

## THUNDERBIRD MINERAL SANDS

Sheffield's flagship Thunderbird mineral sands project is located near Derby in Western Australia (Figures 1 & 2).

Thunderbird has total mineral resources of **2.62Bt @ 6.5% HM** (Measured, Indicated and Inferred) for 170Mt of contained HM, including a high grade component of **740Mt @ 12.1% HM** (see full resources tabulation in Appendix 1 and ASX release dated 19 March 2014).

The Thunderbird Scoping Study, released on 14 April 2014, showed the project has the potential to generate consistently strong cash margins from globally significant levels of production over an initial 32-year mine life.

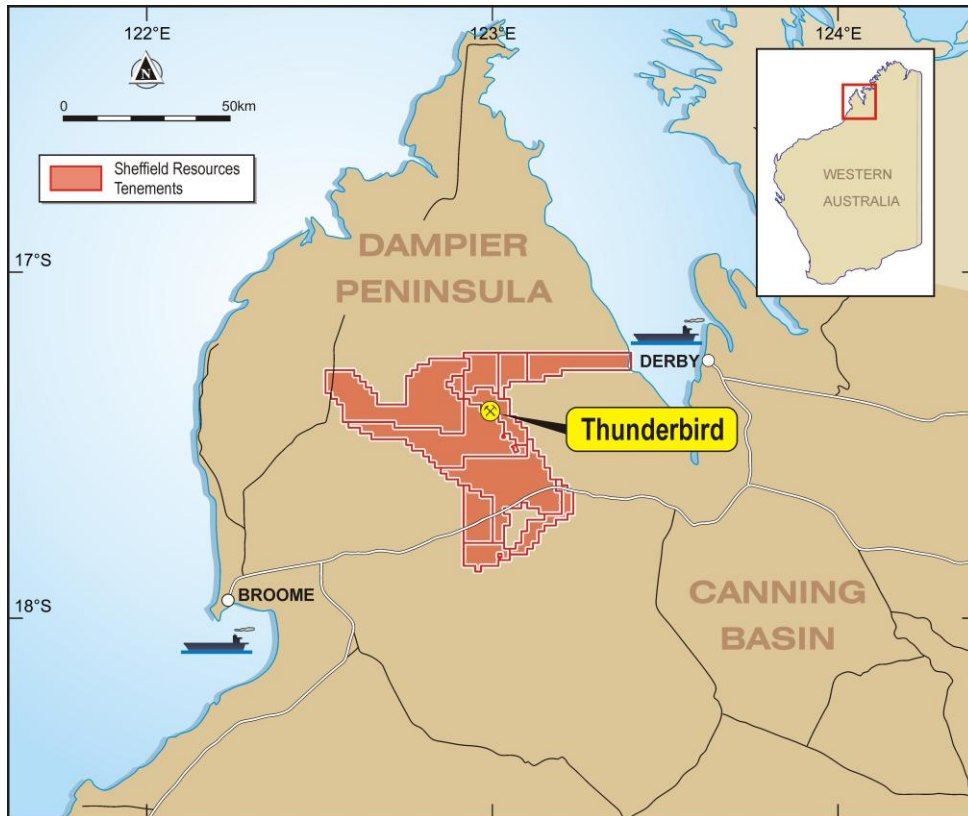


Figure 2: Location of Thunderbird HMS project

Sheffield's 2014 aircore drilling campaign at Thunderbird concluded subsequent to the end of the quarter. The program comprised 119 holes for 7,644m at Thunderbird and 61 holes for 3,081m on regional exploration targets.

Drilling at Thunderbird targeted extensions to shallow high-grade mineralisation open up-dip, with the aim of expanding the current resource. Down-dip extensions to mineralisation and areas classified as Inferred Resource were also targeted.

Initial results from the 2014 aircore drilling program were reported on 17 September, and relate to 37 extension, infill and groundwater monitoring drill holes. Significant results include:

### Up-dip Extension

**30m @ 8.56% HM** from 0m (THAC469), including **21m @ 10.9% HM** from 0m

**33m @ 7.74% HM** from 0m (THAC468), including **10.5m @ 16.0% HM** from 1.5m

**30m @ 7.77% HM** from 0m (THAC465), including **10.5m @ 14.3% HM** from 0m

### Down-dip Infill & Extension

**58.5m @ 8.33% HM** from 58.5m (THAC448), including **34.5m @ 10.5% HM** from 60m

**52.5m @ 8.90% HM** from 36m (THAC442), including **39m @ 10.5% HM** from 39m

**49.5m @ 9.71% HM** from 63m (THAC445), including **42m @ 10.9% HM** from 69m

(Refer to Figures 3 & 4 and ASX release of 17 September 2014 for further details.)

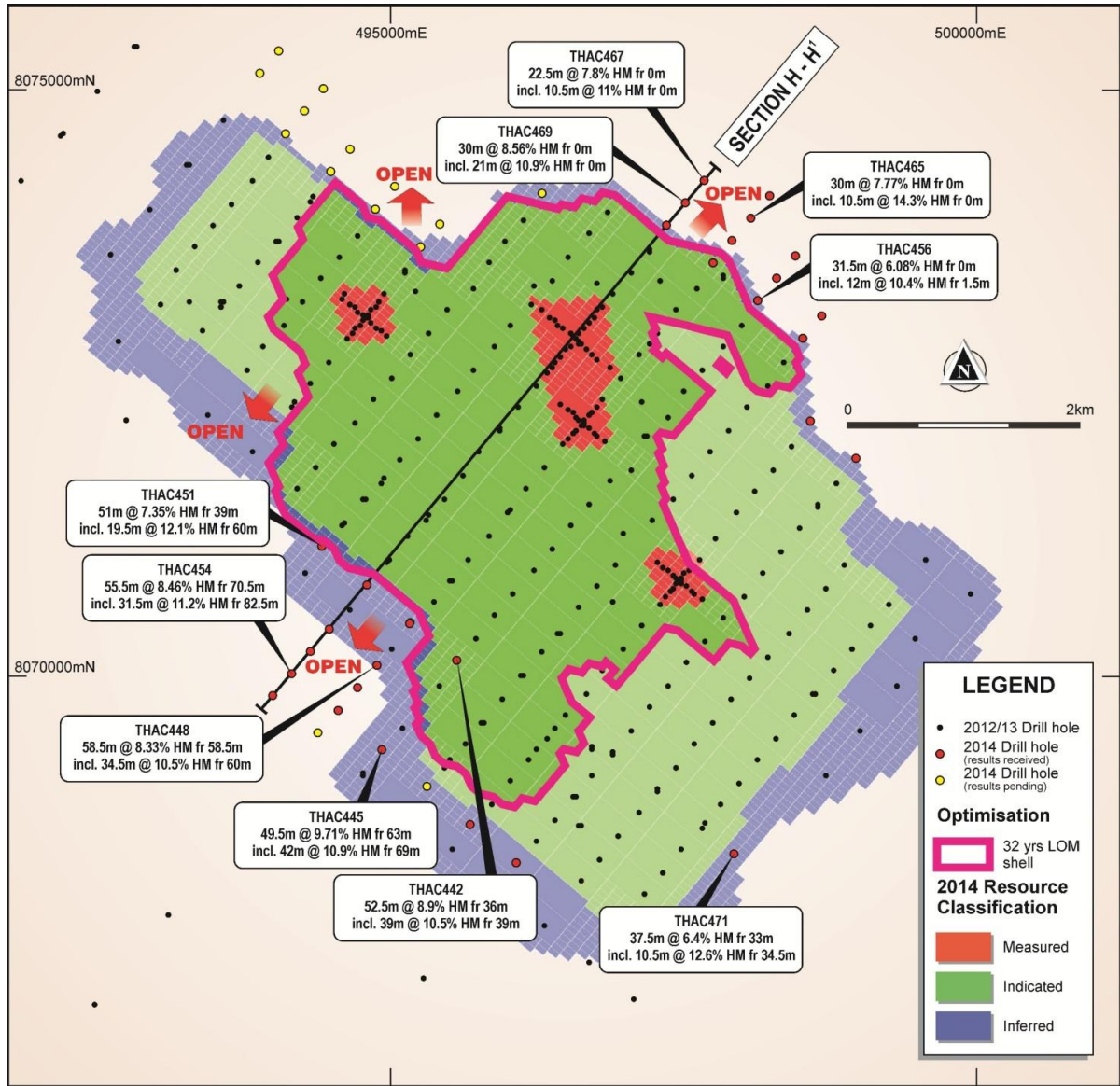


Figure 3: Plan view of Thunderbird Deposit 32-year pit shell outline on Mineral Resource Classifications showing recent drilling results

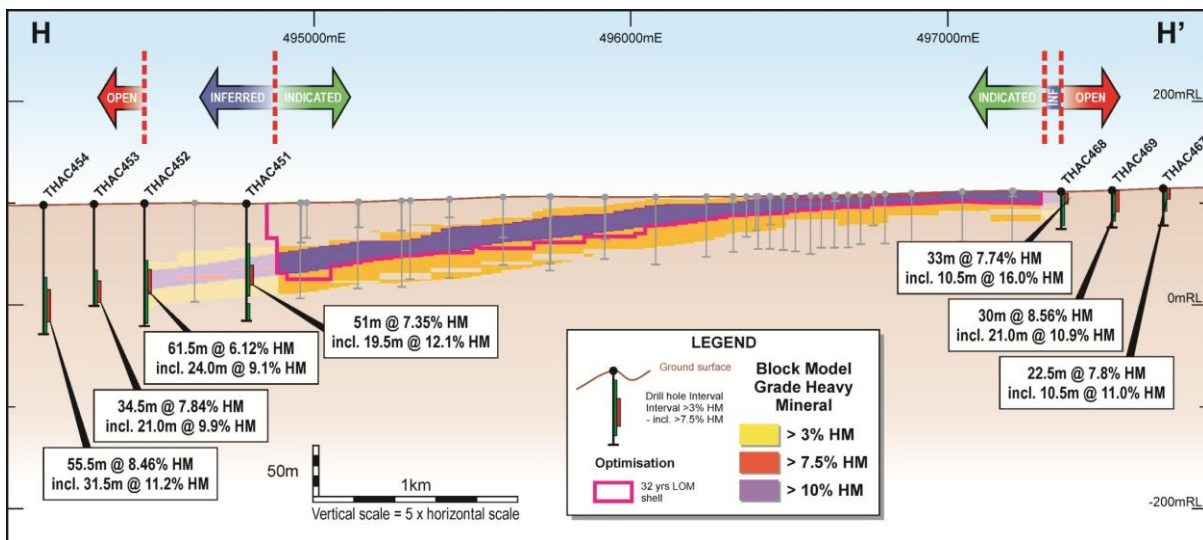


Figure 4: Cross-section H-H' through the Thunderbird resource block model showing the 32 Year pit shell outline, resource classifications and recent drilling results



The results from up-dip drilling demonstrate the continuity of thick, shallow, high grade mineralisation beyond the current resource envelope. Similarly, the results of down-dip drilling have extended the mineralisation to the southwest and demonstrate the strong continuity of mineralisation within part of the resource currently classified as Inferred (Figures 3 & 4, ASX release dated 14 April, 2014).

Significantly, these drilling results are outside the 32-year life-of-mine (LOM) optimised pit shell used in the April 2014 Scoping Study, and therefore have potential to improve the project's already outstanding economics.

Results from six groundwater monitoring drill holes were also received. These holes were drilled to the southeast of the resource and were routinely sampled and assayed. The best result was **37.5m @ 6.4% HM** from 33m depth, including **10.5m @ 12.6% HM** from 34.5m depth from drill hole THAC471, located on the margin of the current resource envelope (Figure 3).

Further results from extension and infill drilling are expected in Q4 2014, ahead of a resource update also scheduled for Q4 2014.

Infill drilling in the up-dip portion of the deposit is being undertaken to assist with the optimisation of mining schedules in early production years. Sample material from both infill and extension drilling will be collected for the next phase of metallurgical testwork and process enhancement.

Regional exploration aircore drilling commenced, with 36 holes for 1,968.5m completed during the quarter. This drilling is focused on interpreted palaeoshoreline positions to the north and south of Thunderbird. The assay results from this drilling will be made available as they are received.

### **Thunderbird Pre-feasibility**

Pre-feasibility work is well advanced and is on schedule to be finalised in Q1 2015. Details of the work currently being undertaken are provided below.

#### Metallurgical Testwork and Process Engineering

Metallurgical testwork on a 15-tonne bulk sample is well advanced. Robbins Metallurgical is undertaking this work with full-scale or scalable equipment to confirm process design. Feed preparation, primary wet concentration, slimes settling and co-disposal tests, and concentrate upgrade stages have been completed, and mineral separation stages are underway. All physical test work from this program and an updated engineering design is expected to be completed during Q4 2014.

#### Geotechnical Investigations

A geotechnical drilling program of 20 holes for 781m holes using sonic coring was completed subsequent to the end of the quarter. The test drilling program was designed to evaluate ground conditions largely within an optimised initial four year pit shell. The aim of this program is to obtain sufficient geotechnical information for:

- Pit slope stability analyses and pit design;
- Assessment of the excavatability of mineralisation and waste; and
- Mining and overburden equipment selection.

Results of the drilling will be evaluated during Q4 2014.

#### Infrastructure and Power Studies

Stage 1 of an infrastructure study was completed. The study examined possible transport and product export options. Stage 2 is underway and will focus on site infrastructure. An initial investigation of power (site maximum demand), and annual energy consumption has been undertaken based on Scoping Study engineering and process flow diagrams. Power supply options and potential service providers are also currently being investigated.

#### Hydrogeological Investigations

Hydrological investigations are being undertaken to provide information on the aquifer underlying the Thunderbird deposit and allow the effects of potential processing water abstraction to be modelled. Three test production bores were drilled for a total of 294m within, and adjacent to, the Thunderbird deposit. Pump testing of these bores was completed subsequent to the end of the

quarter. An airborne EM survey at Thunderbird was completed to assist with aquifer modelling. The investigations are expected to be finalised during Q4 2014.

### Permitting

Sheffield continued to progress the permitting of the Thunderbird project. A mining lease application of 4,525Ha was lodged over the Thunderbird deposit on 16 July 2014.

## FRASER RANGE NICKEL

Sheffield increased its footprint on the Fraser Range, with the granting of three tenements (E28/2448-50) during the quarter. The Company now has 8 granted tenements and 7 tenement applications in the Fraser Range region, with a combined area of over 2,000km<sup>2</sup>. Three more tenement applications lie in the adjacent Tropicana Belt (Figure 5).

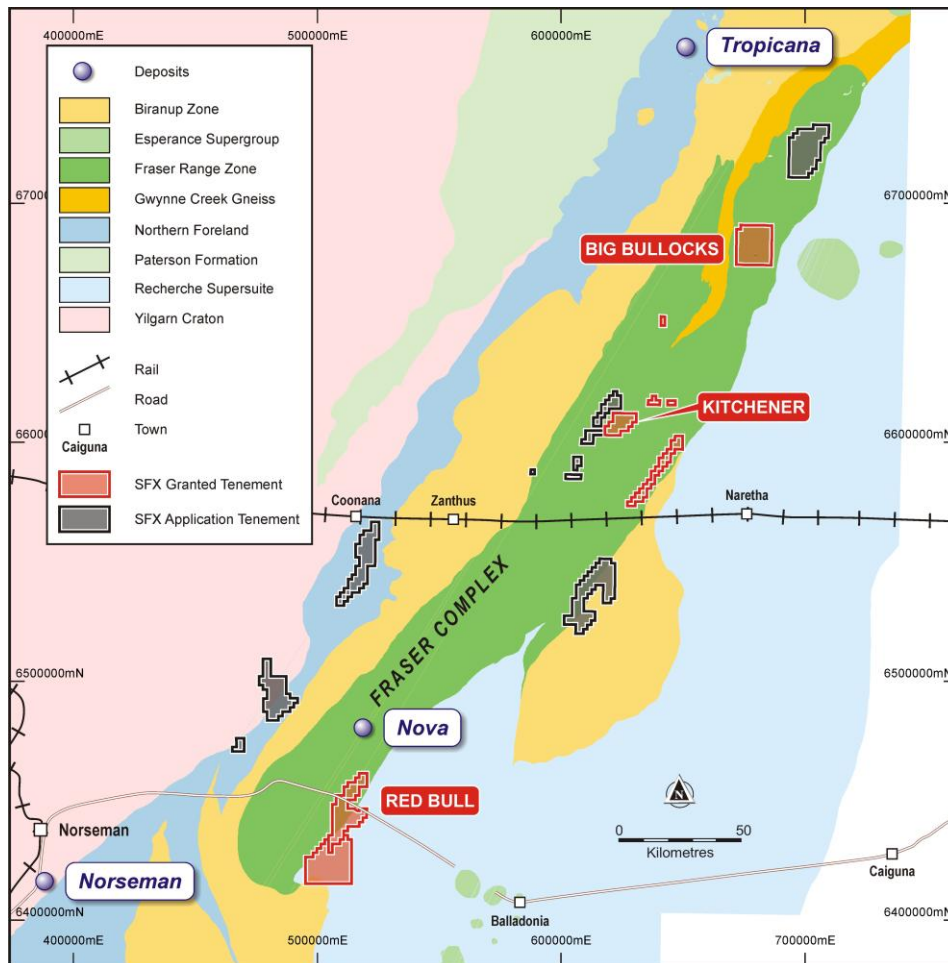


Figure 5: Location of Sheffield's tenements in the Fraser Range region

### Red Bull Nickel

The Red Bull project comprises two tenements with a total area of 525km<sup>2</sup> located 120km east of Norseman. The northern tenement E69/3052 lies within 20km of Sirius Resources NL's (ASX:SIR) Nova and Bollinger Ni-Cu deposits and covers mafic and ultramafic rocks of the Fraser Complex which are prospective for magmatic Ni-Cu deposits.

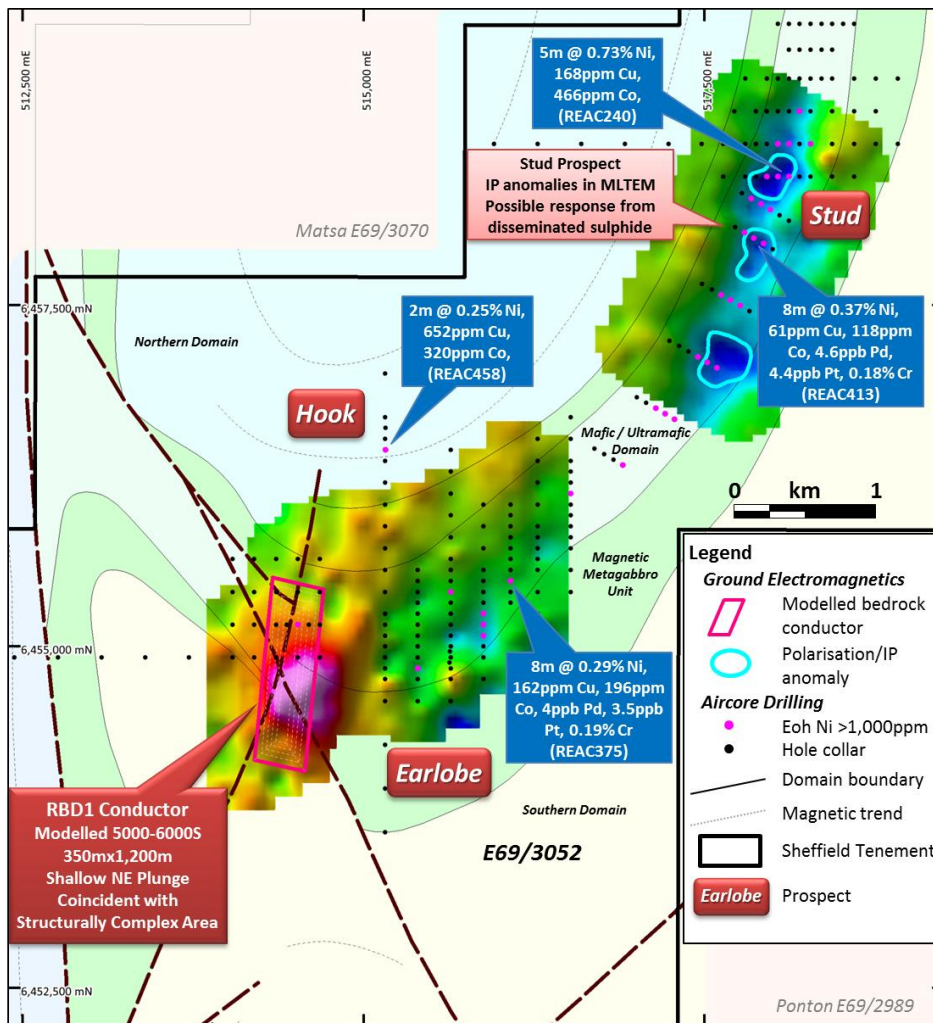
Sheffield is focusing its exploration at Red Bull on an 8km long Ni-Cu-Co anomalous trend in a layered mafic-ultramafic sequence in the northern project area. Three substantial nickel targets have been outlined from aircore drilling, including intervals of up to 5m @ 0.73% Ni with anomalous Cu, Co and PGEs (see Figure 6 and ASX release of 11 February 2014). Collectively, these are referred to as the "Northern Targets".

During the quarter a diamond drill hole RBDD004 was drilled to test a large, strong bedrock conductor "RBD1" located to the southwest of the targeted mafic-ultramafic unit. The RBD1

conductor was identified from Moving and Fixed Loop Transient Electromagnetic (MLTEM & FLTEM) ground geophysical surveys (see ASX release dated 7 July 2014).

Drill hole RBDD004 was designed to intersect the modelled conductor plate at around 680m down-hole depth. A 5m thick interval of graphitic and sulphidic schist was intersected from 728m depth. A down-hole EM survey confirmed the graphitic schist as the conductor source and determined that there were no additional off-hole conductors. No assay results of significance were obtained from limited sampling of the core.

Despite the negative drill result, the 8km anomalous mafic/ultramafic domain and the adjacent Hook prospect trend are yet to be drill tested. Further Moving loop EM surveys have been designed for the Northern targets region and are scheduled for completion during Q1 2015.



**Figure 6: Northern Targets region of Red Bull project with selected drill intersections from previously reported aircore drilling overlain on Ch35 B-field Z component conductivity images from MLTEM surveys and summary geology**

### Big Bullocks Nickel

The Big Bullocks project (E39/1733) is located in the northeast sector of the Fraser Range and straddles the major regional gravity ridge associated with the Fraser Complex. A low-level 100m spacing detailed aeromagnetic survey was completed over the project during the quarter. Final data was received, processed and images generated. The magnetics show several possible intrusive complexes, including a number of discrete magnetic lows. During Q4 2014, the magnetics will be interpreted and targets prioritised for first pass aircore drilling.

## PILBARA IRON

Results were received from the Company's maiden RC drilling programme of 34 holes for 2,146m at Mt Vettel (E45/4029). Mt Vettel is located 150km from Port Hedland in the Pilbara region of Western Australia and lies approximately 20km to the west of Atlas Iron Ltd's (ASX:AGO) Mt Webber iron ore mine and 5km from a sealed haulage road.

The drilling tested an outcropping zone of bedded and detrital iron mineralisation up to 1km long and between 15m and 150m wide, previously outlined by mapping and rock chip sampling (see ASX release dated 23 October, 2013).

The drill results include higher grade iron intervals from shallow depths, within broader lower grade intervals, for example:

- **8m @ 58.3% Fe** from surface (MVRC006)
- **8m @ 58.0% Fe** from surface within 20m @ **Fe 52.9%** from surface (MVRC025)
- **14m @ 57.5% Fe** from 4m depth (MVRC028)
- **6m @ 57.2% Fe** from 2m depth and **4m @ 56.9% Fe** from 16m (MVRC016) within 38m @ 53.9% Fe from surface
- **18m @ 55.7% Fe** from surface within 28m @ **Fe 54.8%** from surface (MVRC032)
- **8m @ 55.8% Fe** from surface within 22m @ 53.4% Fe from surface (MVRC013)

The mineralisation is characterised by low alumina and phosphorous levels. At 55% Fe cut-off the weighted average of the intervals is 1.99% Al<sub>2</sub>O<sub>3</sub> and 0.057% P (refer to ASX release of 19 August 2014 for full details).

At 50% Fe cut-off, the iron mineralisation occurs as a relatively flat dipping zone between 9m and 150m wide and extends from surface to depths of up to 20m. Within this zone are higher grade (+55% Fe) intervals. Further drilling is required to establish their continuity.

The drill results show the potential for Mt Vettel to contain a small-scale iron deposit with low contaminant levels. The scale of Mt Vettel does not currently meet Sheffield's threshold for stand-alone development. The Company is assessing its options for extracting value from the project.

## MCCALLS HEAVY MINERAL SANDS

The McCalls project, located 110km north of Perth, has an Inferred Resource of 4.4Bt @ 1.2% HM containing 53Mt of HM (Appendix 1). Of this, 43 million tonnes is chloride grade ilmenite (66% TiO<sub>2</sub>) ranking McCalls as one of the largest undeveloped chloride ilmenite deposits in the world. The deposit also contains approximately 3.5 million tonnes of zircon and 1 million tonnes of rutile.

A mineral resource update for the project commenced during the quarter but the work has been postponed to Q1 2015 in order to expedite the Thunderbird mineral resource.

### Mindarra Springs Exploration Target

The Mindarra Springs HMS prospect is located 20km to the south of McCalls, on tenement E70/4584. BHP explored Mindarra Springs for mineral sands in the mid-1990's and drilled approximately 150 aircore drill holes in the area now under E70/4584.

During the quarter, historic drill hole data was collated and an Exploration Target outlined. The Mindarra Springs Exploration Target<sup>1</sup> comprises approximately **1.7-2.2Bt at 1.4%-1.6% HM**, within tenement E70/4584. The Exploration Target is derived from a block model using inverse-distance weighted interpolation of historic drilling data. The model is reported above a 0.9% HM cut-off, using a bulk-density of 2.2 g/cc. Historic mineral assemblage data reported by BHP from 55 drillholes, based on magnetic separation and grain counts, indicate a heavy mineral assemblage of 77% ilmenite, 4.4% zircon, 0.7% rutile and 4% leucoxene.

<sup>1</sup>Sheffield Resources has not yet reported any Mineral Resources for Mindarra Springs and any discussion in relation to the potential quantity of the targets is conceptual in nature. There has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource. Figures have been rounded to reflect the implied level of accuracy. <sup>2</sup>The Mineral Assemblage is represented as the percentage of the Heavy Mineral (HM) component of the deposit.



The lower limit of the Exploration Target is based on modelling of the main body of mineralisation only, with the upper limit including two “satellite” areas of mineralisation (Figure 7). There is potential for mineralisation to link up between these areas.

Mineralisation (above 0.9% HM) occurs over an area totalling 50km<sup>2</sup>, ranging from 4.5 to 54m thick beneath non-mineralised cover of 0 to 40m thickness.

Further work is planned, including drilling to confirm the grade and mineral assemblage reported by BHP, and to obtain material for mineral characterisation studies, as well as test areas where the mineralisation remains open. This further work will take place once appropriate approvals and freehold land access have been obtained, expected to be within the next 6 to 12 months.

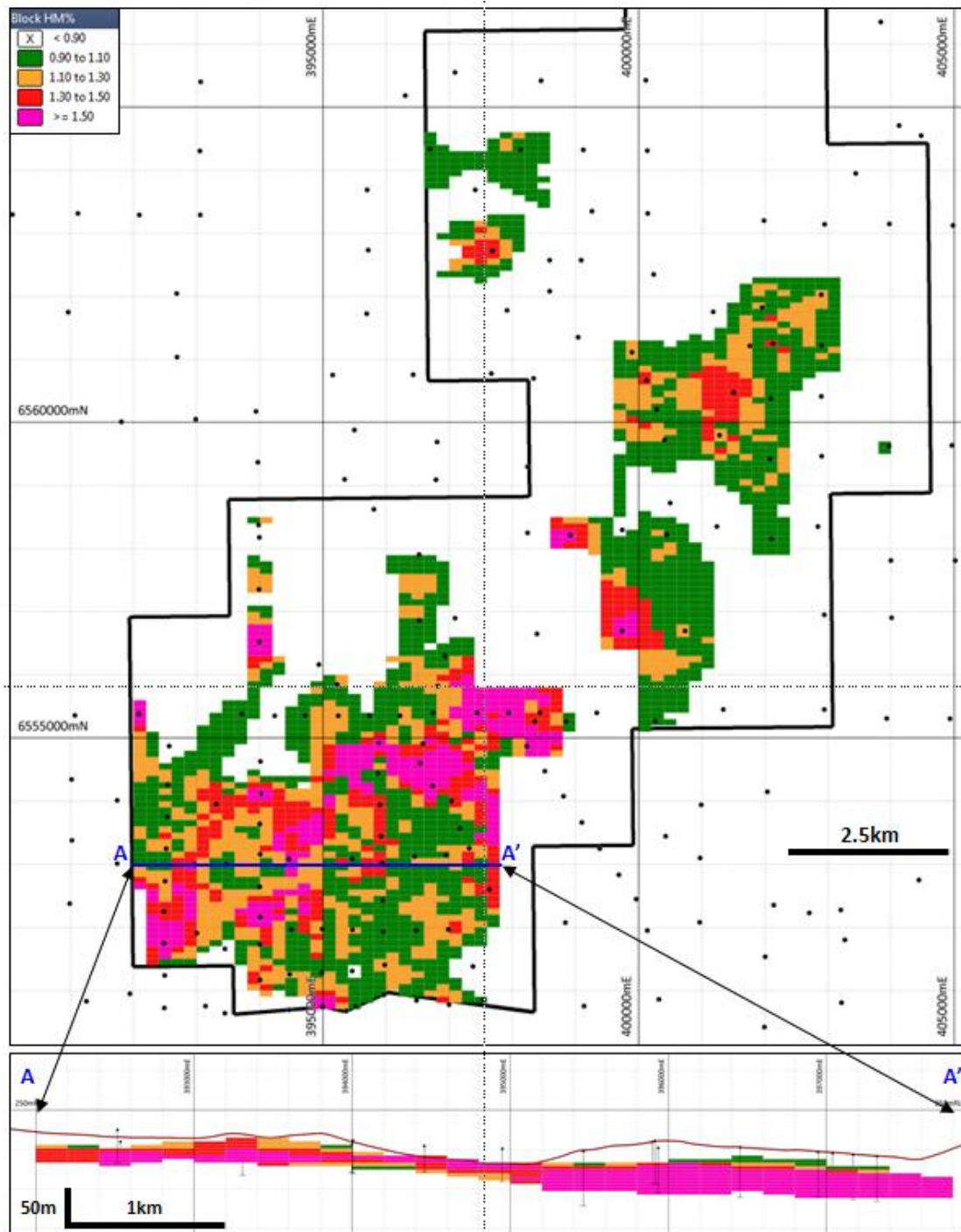


Figure 7: Mindarra Springs Exploration Target model coloured by block HM grade

## **ENEABBA HEAVY MINERAL SANDS**

The Eneabba project comprises five mineral sands deposits: West Mine North, Ellengail, Yandanooka, Durack and Drummond Crossing with combined resources of 6.76Mt of HM (Appendix 1). Sheffield's strategy is to evaluate these deposits with a view to developing a sequential mining operation, whilst actively exploring the region for further deposits.

During the quarter, Robbins Metallurgical undertook mineral characterization studies on heavy mineral concentrates prepared from composite drill samples from the West Mine North, Drummond Crossing and Durack deposits. Although indicative only, all samples behaved as expected, with likely saleable product specifications for primary and secondary ilmenite, rutile and zircon, with the exception of the Durack sample which was hampered by small sample size.

## **OXLEY POTASH**

The Oxley potash project is located near Morawa in Western Australia's Mid-west region. Oxley has an unconventional, hard rock style of potash mineralisation, hosted by a series of ultrapotassic microsyenite lavas, which typically contain over 90% sanidine (potash) feldspar. Sheffield controls the entire 32km strike extent of the prospective units within the northern Moora Basin.

Sheffield's maiden drilling programme at Oxley returned thick, high grade potash intervals averaging 8.4% K<sub>2</sub>O over 36m width with higher grade intervals averaging 9.9% K<sub>2</sub>O over 15m width. (Refer to ASX release of 19 July 2013 for full details).

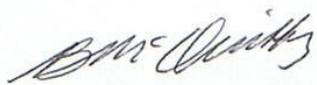
Following positive results from initial scoping metallurgical testwork announced in the Company's June quarterly report, Sheffield plans to commence the second phase of metallurgical testwork and marketing studies during Q4 2014.

## **MOORA TALC**

No work was undertaken on the Moora Talc project during the quarter.

## **CASH POSITION**

As at 30 September 2014, the Company had cash reserves of approximately \$8.7 million. During the quarter \$170,000 was raised from the exercise of options.



**Bruce McQuitty**  
Managing Director  
28 October 2014

**Schedule 1: Interests in Mining Tenements at the end of the quarter as required under ASX Listing Rule 5.3.3**

Project	Tenement	Holder	Interest	Location <sup>3</sup>	Status
Mineral Sands	E04/2081	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2083	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2084	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2159	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2171	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2192	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2193	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2194	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2348	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	E04/2349	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	E04/2350	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	M04/459	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	E70/3762	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3812	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3813	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3814	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3846	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3901	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3929	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3931	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3967	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3970	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4190	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4292	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4313	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4314	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4434	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4484	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4584	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	M70/872 <sup>1</sup>	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	M70/965 <sup>1</sup>	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	M70/1153 <sup>1</sup>	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	R70/35 <sup>1</sup>	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3859	Sheffield Resources Ltd	100%	Perth Basin	Pending
Mineral Sands	L70/150	Sheffield Resources Ltd	100%	Perth Basin	Pending
Nickel	E69/3033	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E69/3052	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E28/2270	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E39/1733	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E28/2374-I	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E28/2448	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E28/2449	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E28/2450	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E69/3181	Sheffield Resources Ltd	100%	Fraser Range	Pending
Nickel	E28/2323	Sheffield Resources Ltd	100%	Fraser Range	Pending
Nickel	E28/2426	Sheffield Resources Ltd	100%	Fraser Range	Pending
Nickel	E28/2428	Sheffield Resources Ltd	100%	Fraser Range	Pending
Nickel	E28/2430	Sheffield Resources Ltd	100%	Fraser Range	Pending
Nickel	E28/2431	Sheffield Resources Ltd	100%	Fraser Range	Pending
Nickel/Gold	E28/2481	Sheffield Resources Ltd	100%	Tropicana Belt	Pending
Nickel	E80/4866	Sheffield Resources Ltd	100%	East Kimberley	Pending
Nickel	E80/4867	Sheffield Resources Ltd	100%	East Kimberley	Pending
Nickel	E80/4868	Sheffield Resources Ltd	100%	East Kimberley	Pending
Nickel	E80/4884	Sheffield Resources Ltd	100%	East Kimberley	Pending
Gold	E28/2453	Sheffield Resources Ltd	100%	Tropicana Belt	Pending
Gold	E63/1696	Sheffield Resources Ltd	100%	Tropicana Belt	Pending
Iron	E45/3662-I	Ironbridge Resources Pty Ltd <sup>2</sup>	100%	Pilbara	Granted
Iron	E45/3822-I	Sheffield Resources Ltd	100%	Pilbara	Granted
Iron	E45/4029	Sheffield Resources Ltd	100%	Pilbara	Granted
Iron	E47/3031-I	Sheffield Resources Ltd	100%	Pilbara	Pending
Iron	E47/3032-I	Sheffield Resources Ltd	100%	Pilbara	Pending
Iron	E47/3033-I	Sheffield Resources Ltd	100%	Pilbara	Pending

Project	Tenement	Holder	Interest	Location	Status
Iron	E47/3083	Sheffield Resources Ltd	100%	Pilbara	Pending
Talc	E70/3776	Moora Talc Pty Ltd <sup>2</sup>	100%	Moora	Granted
Talc	E70/4004	Moora Talc Pty Ltd <sup>2</sup>	100%	Moora	Granted
Potash	E70/3777	Moora Talc Pty Ltd <sup>2</sup>	100%	Morawa	Granted
Potash	E70/4318	Sheffield Resources Ltd	100%	Morawa	Granted
Potash	E70/4319	Sheffield Resources Ltd	100%	Morawa	Granted
Potash	E70/4320	Sheffield Resources Ltd	100%	Morawa	Granted
Potash	E70/4378	Sheffield Resources Ltd	100%	Morawa	Granted

Notes:

<sup>1</sup>Iluka Resources Ltd (ASX:ILU) retains a gross sales royalty of 1.5% in respect to tenements R70/35, M70/872, M70/965 & M70/1153.

<sup>2</sup>Moora Talc Pty Ltd and Ironbridge Resources Pty Ltd are 100% owned subsidiaries of Sheffield Resources Ltd.

<sup>3</sup>All tenements are located in the state of Western Australia.

Details of tenements and/or beneficial interests acquired/disposed of during the September 2014 Quarter are provided in Section 6 of the Company's Appendix 5B notice for the September 2014 Quarter.

## COMPLIANCE STATEMENTS

The information in this report that relates to the Mindarra Springs Exploration Target is based on information compiled by Mr David Boyd, a Competent Person who is a Member of Australian Institute of Geoscientists (AIG). Mr Boyd is a full-time employee of Sheffield Resources Ltd and has sufficient experience that is relevant to the styles of mineralisation and types of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Boyd consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

## PREVIOUSLY REPORTED INFORMATION

This report includes information that relates to Exploration Results, Mineral Resources and a Scoping Study which were prepared and first disclosed under the JORC Code 2012. The information was extracted from the Company's previous ASX announcements as follows:

- Thunderbird Resource Update: "*SHEFFIELD DOUBLES TOTAL MINERAL RESOURCES AT WORLD CLASS THUNDERBIRD HMS DEPOSIT*", 19 March 2014
- Thunderbird Scoping Study: "*SCOPING STUDY HIGHLIGHTS THUNDERBIRD'S EXCEPTIONAL FINANCIAL RETURNS*", 14 April, 2014
- Red Bull Results: "*LARGE Ni-Cu-Co ANOMALIES IDENTIFIED IN THE FRASER RANGE*", 11 February, 2014
- Red Bull EM Conductor: "*LARGE BEDROCK CONDUCTOR IDENTIFIED AT RED BULL Ni-Cu PROJECT, FRASER RANGE*", 7 July 2014
- Mt Vettel Drilling Results: "*MT VETTEL IRON PROJECT DRILLING RESULTS*", 19 August 2014
- Red Bull Drilling Results: "*RED BULL DRILLING UPDATE*", 9 September 2014
- Thunderbird Drilling Results: "*THUNDERBIRD MINERAL SANDS PROJECT UPDATE*", 17 September 2014

This report also includes information that relates to Exploration Targets, Exploration Results and Mineral Resources which were prepared and first disclosed under the JORC Code 2004. The information has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported. The information was extracted from the Company's previous ASX announcements as follows:

- Ellengail Mineral Resource: "*1MT CONTAINED HM INFERRED RESOURCE AT ELLENGAIL*", 25 October 2011.
- West Mine North Mineral Resource: "*WEST MINE NORTH MINERAL RESOURCE ESTIMATE EXCEEDS EXPECTATIONS*", 7 November 2011.
- McCalls Mineral Resource: "*4.4 BILLION TONNE MAIDEN RESOURCE AT MCCALLS HMS PROJECT*", 20 February 2012.
- Durack Mineral Resource: "*ENEABBA PROJECT RESOURCE INVENTORY EXCEEDS 5MT HEAVY MINERAL*", 28 August 2012.
- Yandanooka Mineral Resource: "*YANDANOOKA RESOURCE UPGRADE AND METALLURGICAL RESULTS*", 30 January 2013.
- Oxley Potash Drilling Results: "*MAJOR NEW POTASH DISCOVERY IN WA'S MID-WEST*", 19 July 2013.
- Oxley Potash Drilling Results: "*QUARTERLY REPORT FOR PERIOD ENDING SEPTEMBER 2013*", 31 October 2013.
- Drummond Crossing Mineral Resource and Sampling Results from Dunal-Style HM Targets, Eneabba Project: "*1Mt HEAVY MINERAL RESOURCE ADDED TO ENEABBA PROJECT*", 30 October 2013.

These announcements are available to view on Sheffield Resources Ltd's web site [www.sheffieldresources.com.au](http://www.sheffieldresources.com.au)



The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and, in the case of estimates of Mineral Resources and Scoping Study results, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

**FORWARD LOOKING AND EXPLORATION TARGET STATEMENTS**

Some statements in this report regarding estimates or future events are forward-looking statements. They involve risk and uncertainties that could cause actual results to differ from estimated results. Forward-looking statements include, but are not limited to, statements concerning the Company's exploration programme, outlook, target sizes and mineralised material estimates. They include statements preceded by words such as "anticipated", "expected", "target", "scheduled", "intends", "potential", "prospective" and similar expressions.

The terms "Target" and "Exploration Target", where used in this report, should not be misunderstood or misconstrued as an estimate of Mineral Resources and Reserves as defined by the JORC Code 2012, and therefore the terms have not been used in this context. Exploration Targets are conceptual in nature and it is uncertain if further exploration or feasibility study will result in the determination of a Mineral Resource or Reserve.

## APPENDIX 1: MINERAL RESOURCES

**Table 1: Sheffield's contained Valuable HM (VHM) Resource inventory at 19 March 2014**

Deposit	Resource Category	Zircon (kt)*	Rutile (kt)*	HiTi Leuc. (kt)*	Leuc. (kt)*	Ilmenite (kt)*	Total VHM (kt)*
Thunderbird	Measured	510	-	150	140	1,660	<b>2,450</b>
Thunderbird	Indicated	10,170	-	3,350	3,550	34,110	<b>51,170</b>
Thunderbird	Inferred	4,270	-	1,230	1,470	12,110	<b>18,420</b>
Yandanooka	Measured	13	2		3	87	<b>105</b>
Yandanooka	Indicated	240	81		83	1,440	<b>1,840</b>
Yandanooka	Inferred	4	1		2	23	<b>29</b>
Durack	Indicated	144	29		52	703	<b>928</b>
Durack	Inferred	26	5		13	121	<b>164</b>
Drummond Crossing	Indicated	143	101		37	542	<b>823</b>
Drummond Crossing	Inferred	7	5		1	28	<b>41</b>
Ellengail	Inferred	92	90		19	658	<b>859</b>
West Mine North	Measured	18	33		42	200	<b>293</b>
West Mine North	Indicated	71	87		46	506	<b>709</b>
McCalls	Inferred	3,490	1,060		2,580	42,910	<b>50,040</b>
Total	Measured	540	35	150	180	1,950	<b>2,850</b>
Total	Indicated	10,770	300	3,350	3,760	37,300	<b>55,470</b>
Total	Inferred	7,220	1,160	1,230	4,080	55,850	<b>69,550</b>
<b>Total</b>	<b>All</b>	<b>18,530</b>	<b>1,500</b>	<b>4,730</b>	<b>8,020</b>	<b>95,100</b>	<b>127,870</b>

All tonnages have been rounded to reflect the relative uncertainty of the estimate, thus sum of columns may not equal. The contained VHM tonnages in the above table are derived from Mineral Resource Estimates for the Yandanooka, Ellengail, West Mine North, McCalls, Durack deposits (estimated using a 0.9% HM cut-off), the Drummond Crossing deposit (estimated using a 1.1% HM cut-off) and the Thunderbird deposit (estimated using a 3% HM cut-off) as detailed in Table 2.

\* Valuable Heavy Minerals are classified as zircon, rutile, HiTi leucoxene, leucoxene and ilmenite.

**Table 2: Sheffield's HMS Mineral Resource<sup>2</sup> Inventory at 19 March 2014**

Project	Deposit	Resource Category	Cut-off (% HM) <sup>3</sup>	Material (Mt)*	Bulk Density	HM %	Slimes % <sup>3</sup>	Osize %	Insitu HM (Mt)*	Zircon <sup>2</sup> %	Rutile <sup>2</sup> %	HiTi <sup>2</sup> Leuc. %	Leuc. <sup>2</sup> %	Ilm. <sup>2</sup> %
Dampier	Thunderbird	Measured	3.0	75	2.1	7.5	19	11	6	9.1	-	2.7	2.4	30
	Thunderbird	Indicated	3.0	1,805	2.1	6.8	17	9	122	8.3	-	2.7	2.9	28
	Thunderbird	Inferred	3.0	740	2.0	5.7	15	9	42	8.5	-	2.9	3.5	29
	<b>Total Dampier</b>	<b>All</b>	<b>3.0</b>	<b>2,620</b>	<b>2.1</b>	<b>6.5</b>	<b>17</b>	<b>9</b>	<b>170</b>	<b>8.4</b>	<b>-</b>	<b>2.8</b>	<b>3.0</b>	<b>29</b>
Eneabba	Yandanooka	Measured	0.9	3	2.0	4.1	15	14	0.1	11	1.9	-	2.2	72
	Yandanooka	Indicated	0.9	90	2.0	2.3	16	15	2.1	11	3.9	-	3.9	69
	Yandanooka	Inferred	0.9	3	2.0	1.2	18	21	0.03	11	3.9	-	4.6	68
	Yandanooka	All	0.9	96	2.0	2.3	16	15	2.2	11	3.8	-	3.9	69
	Durack	Indicated	0.9	50	2.0	2.0	15	21	1.0	14	2.8	-	5.1	69
	Durack	Inferred	0.9	15	1.9	1.2	14	17	0.2	14	2.5	-	7.2	66
	Durack	All	0.9	65	2.0	1.8	15	20	1.2	14	2.8	-	5.6	68
	Drummond Crossing	Indicated	1.1	49	2.0	2.1	16	9	1.0	14	10	-	3.6	53
	Drummond Crossing	Inferred	1.1	3	2.0	1.5	16	8	0.05	13	10	-	2.8	55
	Drummond Crossing	All	1.1	52	2.0	2.1	16	9	1.1	14	10	-	3.5	53
	Ellengail	Inferred	0.9	46.	2.0	2.2	16	2	1.0	8.9	8.7	-	1.9	64
	Ellengail	All	0.9	46	2.0	2.2	16	2	1.0	8.9	8.7	-	1.9	64
	West Mine North	Measured	0.9	6	2.0	5.6	15	1	0.4	4.9	9.1	-	12	55
	West Mine North	Indicated	0.9	36	1.9	2.3	13	3	0.8	8.4	10	-	5.4	60
	West Mine North	All	0.9	43	1.9	2.8	13	3	1.2	7.9	10	-	6.4	59
	Total Eneabba	Measured	var.	9	2.0	5.2	15	5	0.5	6.7	6.8	-	8.7	60
	Total Eneabba	Indicated	var.	225	2.0	2.2	15	13	5.0	12	6.0	-	4.4	64
Total Eneabba	Inferred	var.	68	2.0	1.9	15	6	1.3	10	7.2	-	3.2	64	
<b>Total Eneabba</b>	<b>All</b>	<b>var.</b>	<b>302</b>	<b>2.0</b>	<b>2.2</b>	<b>15</b>	<b>11</b>	<b>6.8</b>	<b>12</b>	<b>6.3</b>	<b>-</b>	<b>4.2</b>	<b>64</b>	
McCalls	McCalls	Inferred	0.9	4,431	2.3	1.2	27	1.4	53	6.6	2.0	-	4.9	81
	<b>Total McCalls</b>	<b>All</b>	<b>0.9</b>	<b>4,431</b>	<b>2.3</b>	<b>1.2</b>	<b>27</b>	<b>1.4</b>	<b>53</b>	<b>6.6</b>	<b>2.0</b>	<b>-</b>	<b>4.9</b>	<b>81</b>

\* All tonnages and grades have been rounded to reflect the relative uncertainty of the estimate and maintain consistency throughout the table, thus sum of columns may not equal.

<sup>1</sup> See the compliance statements in this report for important information relating to the reporting of these Mineral Resources. <sup>2</sup> The Mineral Assemblage is represented as the percentage of the Heavy Mineral (HM) component of the deposit, determined by QEMSCAN for Eneabba & McCalls, with TiO<sub>2</sub> minerals defined according to the following ranges: Rutile >95% TiO<sub>2</sub>; Leucoxene 85-95% TiO<sub>2</sub>; Ilmenite <55-85% TiO<sub>2</sub>; for Dampier the mineral assemblage was determined by screening and magnetic separation. Magnetic fractions were analysed by QEMSCAN for mineral determination as follows: Ilmenite: 40-70% TiO<sub>2</sub> >90% Liberation; Leucoxene: 70-94% TiO<sub>2</sub> >90% Liberation; High Titanium Leucoxene (HiTi Leucoxene): >94% TiO<sub>2</sub> >90% Liberation; and Zircon: 66.7% ZrO<sub>2</sub>+HfO<sub>2</sub> >90% Liberation. Non-magnetic fractions were submitted for XRF analysis and minerals determined as follows: Zircon: ZrO<sub>2</sub>+HfO<sub>2</sub>/0.667 and High Titanium Leucoxene (HiTi Leucoxene): TiO<sub>2</sub>/0.94. <sup>3</sup> West Mine North, Drummond Crossing, Durack and McCalls deposits are reported below 35% slimes cut-off.

## Appendix 2: JORC (2012) Table 1 Report, Mindarra Springs Exploration Target

### Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>Historic data reported in mineral Exploration reports by BHP-Utah Minerals circa 1990's captured digitally by Sheffield.</li> <li>NQ diameter aircore drilling used to collect 1kg samples at 1.5m intervals down-hole.</li> <li>Rotary splitter used.</li> <li>Mineral sands industry-standard drilling &amp; sampling techniques employed.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</li> </ul>	<ul style="list-style-type: none"> <li>Historic data reported in mineral Exploration reports by BHP-Utah Minerals circa 1990's.</li> <li>NQ diameter aircore.</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul style="list-style-type: none"> <li>Historic data reported in mineral Exploration reports by BHP-Utah Minerals circa 1990's.</li> <li>No record of drill sample recovery.</li> <li>Use of rotary splitter was reported, given drilling method and Sheffield's own experience in the region, it can be reasonably assumed that sample recovery and quality was sufficient.</li> </ul>
Logging	<ul style="list-style-type: none"> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>Historic data reported in mineral Exploration reports by BHP-Utah Minerals circa 1990's.</li> <li>Each drill sample was washed and panned, then geologically logged recording colour, grainsize, rounding, hardness and sorting and visual estimates of HM% and SL%.</li> <li>The entire length of the drillhole was logged; minimum (nominal) interval length is 1.5m.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample</li> </ul>	<ul style="list-style-type: none"> <li>Historic data reported in mineral Exploration reports by BHP-Utah Minerals circa 1990's.</li> <li><b>HM%, SL% OS% Determination</b></li> <li>A 1kg sample was collected at 1.5m intervals at the drill site via a rotary splitter.</li> <li>Samples were analysed at BHP's laboratory in Perth for heavy liquid separation (HLS)</li> </ul>



Criteria	JORC Code explanation	Commentary
	<p><i>preparation technique.</i></p> <ul style="list-style-type: none"> <li>• <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li>• <i>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</i></li> <li>• <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<p>determination of weight per cent heavy mineral (HM%), Slimes (SL%) and Oversize (OS%).</p> <ul style="list-style-type: none"> <li>• The 1kg drill sample is sub-sampled via a (unspecified) splitter to approx. 500g for analysis.</li> <li>• The 500g sub-sample was then screened and deslimed at +1mm (OS) and -45µm (SL) and fractions weighed.</li> <li>• The sand material (-1mm / +45 µm) was then split to approx. 200g and centrifuged in TBE (SG 2.9g/cc) for HM determination.</li> </ul> <p><b><u>HM Assemblage Determination</u></b></p> <ul style="list-style-type: none"> <li>• Selected Heavy Mineral Concentrate (HMC) from individual samples was composited on 3m intervals for HM assemblage determination.</li> <li>• HM assemblage determination was by magnetic separation and observation (grain-counting).</li> </ul>
<p><i>Quality of assay data and laboratory tests</i></p>	<ul style="list-style-type: none"> <li>• <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li>• <i>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i></li> <li>• <i>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Historic data reported in mineral Exploration reports by BHP-Utah Minerals circa 1990's.</li> <li>• Assay and laboratory procedures used are industry standard.</li> <li>• SL% was determined using a 45µm screen.</li> <li>• OS% was determined using a +1mm screen.</li> <li>• HM% was determined using heavy liquid TBE (2.9g/ml).</li> <li>• The method produces a total grade as weight per cent of the primary sample.</li> <li>• HM assemblage determination was by magnetic separation and observation (grain-counting).</li> <li>• No record of assay QAQC is reported.</li> </ul>
<p><i>Verification of sampling and assaying</i></p>	<ul style="list-style-type: none"> <li>• <i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li>• <i>The use of twinned holes.</i></li> <li>• <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li>• <i>Discuss any adjustment to assay data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Historic data reported in mineral Exploration reports by BHP-Utah Minerals circa 1990's captured digitally by Sheffield.</li> <li>• Accuracy of data entry was confirmed via several validation protocols both manual and electronic.</li> <li>• The data used and documentation related to the Exploration Target estimation has been recorded.</li> </ul>
<p><i>Location of data points</i></p>	<ul style="list-style-type: none"> <li>• <i>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i></li> <li>• <i>Specification of the grid system used.</i></li> <li>• <i>Quality and adequacy of topographic control.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Historic data reported in mineral Exploration reports by BHP-Utah Minerals circa 1990's captured digitally by Sheffield.</li> <li>• Drill hole collar locations were digitised from maps supplied with historic exploration reports.</li> <li>• Coordinates were referenced to the Map Grid of Australia (MGA) zone 50 on the Geographic Datum of Australia (GDA94).</li> <li>• Vertical datum geoid model is AUSGEOID09 (Australia).</li> <li>• Drillhole RL for Resource estimation is determined by projection of hole collars to a regional (Landgate) DTM model.</li> <li>• Hole locations are reported as being "unsurveyed" and are therefore considered approximate.</li> <li>• Given the wide drill spacing, and large size of the deposit on which the Exploration Target is based, it is considered that any difference between actual and approximate drillhole location will not have a material effect on the results of the reported Exploration Target.</li> </ul>
<p><i>Data spacing and distribution</i></p>	<ul style="list-style-type: none"> <li>• <i>Data spacing for reporting of Exploration Results.</i></li> <li>• <i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Drilling was restricted to public access roads and farm tracks. The majority of holes are spaced at between 2km and 500m.</li> <li>• Drillhole samples spaced at 1.5m intervals downhole.</li> <li>• The data spacing and distribution is considered sufficient for the reporting of an Exploration Target.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>Whether sample compositing has been applied.</li> </ul>	
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul style="list-style-type: none"> <li>Mineralisation is flat-lying and holes were drilled vertically.</li> <li>It is considered that no sampling bias was introduced through the methodologies used.</li> </ul>
Sample security	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>No methods relating to sample security were reported, however it is considered unlikely that this poses a material risk to the reporting of the Exploration Target.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>The Exploration Target has been reviewed internally by the Company.</li> <li>No external audit or review of sample techniques or data has been conducted. This is not considered necessary at this stage of the Project's development.</li> </ul>

## Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	Statement	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul style="list-style-type: none"> <li>The Exploration Target reported is entirely within Exploration Licence E70/4584, located about 5km west of Mogumber in the mid-west region of Western Australia.</li> <li>E70/4584 was granted on 01/04/2014 and is due to expire on 31/03/2019; it is held 100% by Sheffield Resources Ltd.</li> <li>The Exploration Target is under Freehold land, Sheffield is yet to apply for access to this Freehold land for exploration purposes.</li> </ul>
Exploration done by other parties	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>The Mindarra Springs HMS deposit was discovered by BHP Minerals Ltd in the early 1990's following reconnaissance drilling programs.</li> <li>The Exploration Target is estimated from drilling information reported by BHP.</li> </ul>
Geology	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The Mindarra Springs HM deposit is hosted by unconsolidated Cainozoic-aged littoral sands, gravel and clays which cover Cretaceous-aged sediments of the Dandaragan trough.</li> <li>The size of the HM deposit, and character of the heavy mineral, are indicative of deposition in a low-energy, estuarine environment.</li> </ul>
Drill hole Information	<ul style="list-style-type: none"> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should</li> </ul>	<ul style="list-style-type: none"> <li>The Exploration Target is based on results from 277 historically reported drillholes within and outside the current boundary of E70/4584 (143 holes are within E70/4584).</li> <li>Mineral Assemblage data is from 54 historically reported drillholes within and outside the current boundary of E70/4584 (29 holes are within E70/4584).</li> <li>Only that portion of the mineralisation within E70/4584 has been reported in the Exploration Target.</li> <li>Details of the data source and assay methods etc. are included elsewhere in this table, and in the body of the announcement.</li> <li>Diagrams in the body of the announcement show the location of and distribution of drillholes in relation to the Exploration Target.</li> </ul>

Criteria	Statement	Commentary
Data aggregation methods	<p><i>clearly explain why this is the case.</i></p> <ul style="list-style-type: none"> <li><i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</i></li> <li><i>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i></li> <li><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li><i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li><i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></li> <li><i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</i></li> </ul>	<ul style="list-style-type: none"> <li>Refer to diagrams in the body of the announcement for visual representation of drillhole orientation vs. deposit orientation.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <li><i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i></li> </ul>	<ul style="list-style-type: none"> <li>See body of announcement for plan and cross section views.</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <li><i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i></li> </ul>	<ul style="list-style-type: none"> <li>All information considered material to the reader's understanding of the database and the Exploration Target has been reported.</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <li><i>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i></li> </ul>	<ul style="list-style-type: none"> <li>Sheffield has previously announced a Mineral Resource for its McCalls deposit, about 20km north of Mindarra Springs, of 4,431Mt @ 1.2% HM, 27% SL, 1.4% OS (Inferred, 0.9% HM cutoff) containing 53Mt HM with a mineral assemblage comprising 6.6% zircon, 2.0% rutile, 4.9% leucoxene and 81% ilmenite (refer to ASX release entitled "4.4 BILLION TONNE MAIDEN RESOURCE AT MCCALLS HMS PROJECT", dated 20 February 2012). McCalls is considered to be of similar style and depositional setting to Mindarra Springs.</li> </ul>
Further work	<ul style="list-style-type: none"> <li><i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<ul style="list-style-type: none"> <li>The Exploration Target for Mindarra Springs reported here is based entirely on historic data. Additional drilling is required to collect samples to confirm both the grade and assemblage of the deposit.</li> <li>There are also a number of gaps between historically drilled areas where additional drilling may show continuity between areas. Refer to the diagrams in the body of the report.</li> </ul>