

# Sheffield Resources Ltd

LARGE PROJECTS, NEW PROVINCES



SheffieldResources  
LIMITED



Investor Presentation  
September 2012

## COMPETENT PERSONS' STATEMENT – EXPLORATION RESULTS

The information in this announcement that relates to exploration results is based on information compiled by David Boyd. Mr Boyd is a full time employee of the Company. Mr Boyd is a Member of the Australasian Institute of Geoscientists and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and the activity to which they are undertaking to qualify as Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves ("JORC Code")'. Mr Boyd consents to the inclusion in the report of the matters based on their information in the form and context in which it appears.

## COMPETENT PERSONS' STATEMENT – RESOURCE ESTIMATES

The information in this presentation that relates to resource estimation is based on information compiled by Mr Trent Strickland. Mr Strickland is a full time employee of Quantitative Group (QG) and a Member of the Australasian Institute of Mining and Metallurgy (AusIMM). Mr Strickland has sufficient experience in the minerals industry to satisfy the requirements to act as the competent person for this estimate as defined in the 2004 Edition of the Australasian Code for Reporting of Mineral Resources and Ore Reserves. Mr Strickland consents to the inclusion in this presentation of the matters based on their information in the form and context in which it appears.

The information in this presentation that relates to reporting of resource and exploration results is based on information compiled under the guidance of Mark Teakle. Mr Teakle is a full time employee of the Company. Mr Teakle is a Member of the Australasian Institute of Geoscientists and the Australasian Institute of Mining and Metallurgy and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and the activity to which they are undertaking to qualify as Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves ("JORC Code")'. Mr Teakle consents to the inclusion in this presentation of the matters based on their information in the form and context in which it appears.

## FORWARD LOOKING AND EXPLORATION TARGET STATEMENTS

Some statements in this announcement 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 "expected", "planned", "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 (2004), 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.

# Company Snapshot

## Capital Structure

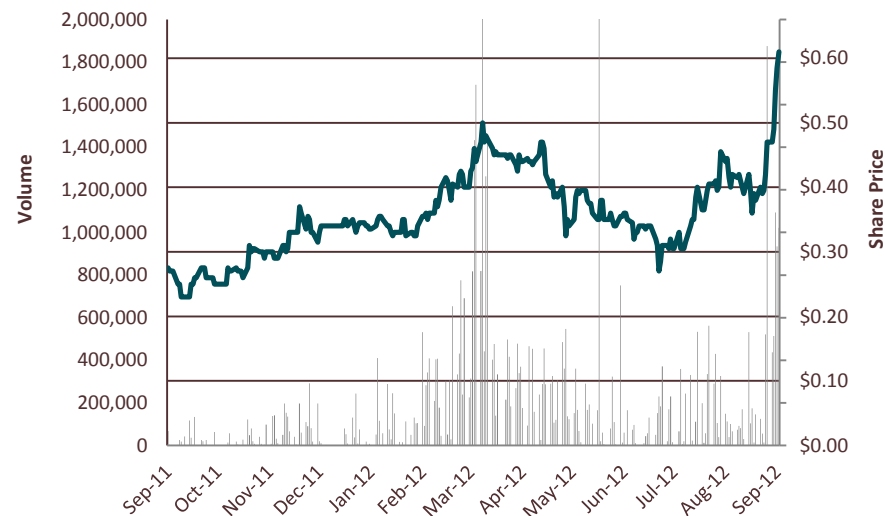
Share price	\$0.64
Shares on issue	95.7m
Options (Ave. Ex Price ~24.7c)	31.1m
Market Cap (Undiluted)	\$61m
Cash at 30 June 2012	\$9.3m
Debt	Nil
Enterprise Value	\$51.7m

## Shareholder Split

Top 20 Shareholders	41%
Directors	16%
Institutions	12%

## Board & Management

Will Burbury	Exec Chairman
Bruce McQuitty	Managing Director
David Archer	Technical Director
David Boyd	Exploration Manager
Mark Teakle	Project Development Manager



# Investment Summary

## Experienced management team

### Dampier – Zircon

- Flagship Project
- First major HMS discovery in the Canning Basin
- Thick, high grade mineralisation from surface
- Globally significant project
- Drilling continues with deposit open in all directions
- Nearby Argo target provides further exploration upside
- Large tenure position in new minerals sands province

### Red Bull – Nickel Copper

- Located in an exciting new nickel-copper province
- 17km from Sirius Resources' Nova discovery

### Eneabba - Mineral Sands

- Building a significant resource inventory in a proven mining province

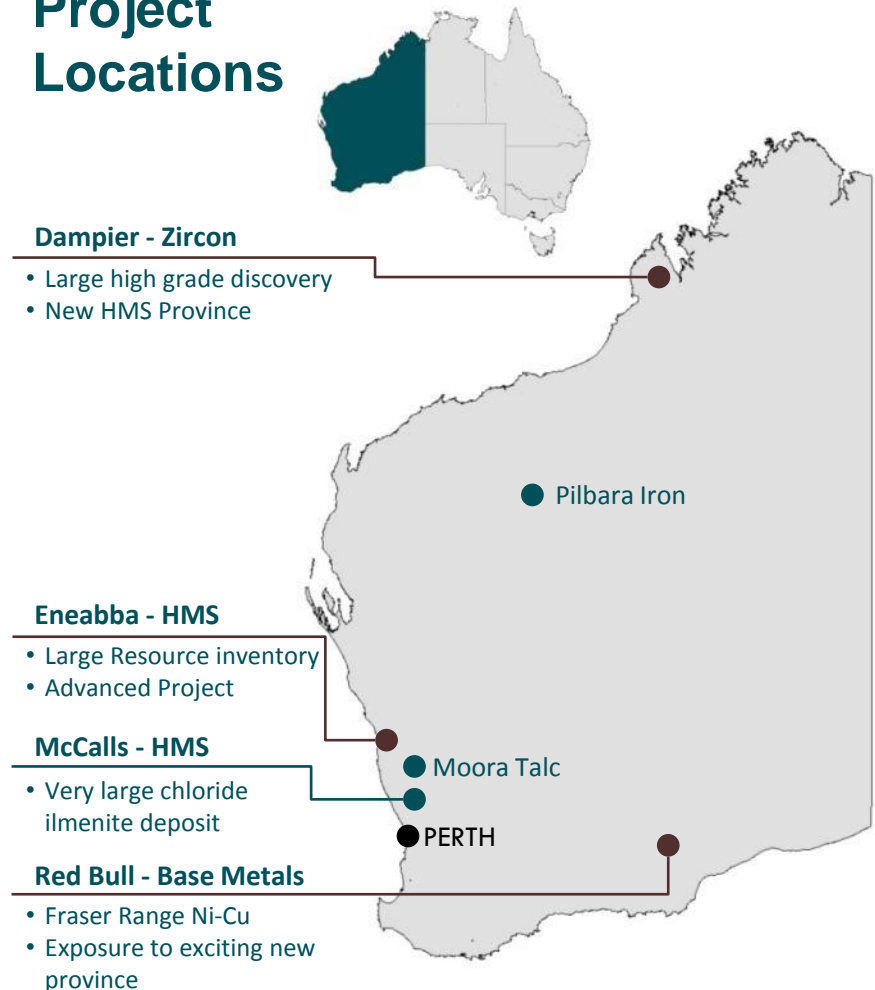
### McCalls - Mineral Sands

- Very large chloride ilmenite deposit

### Pipeline of other Projects

- Pilbara iron, Moora talc

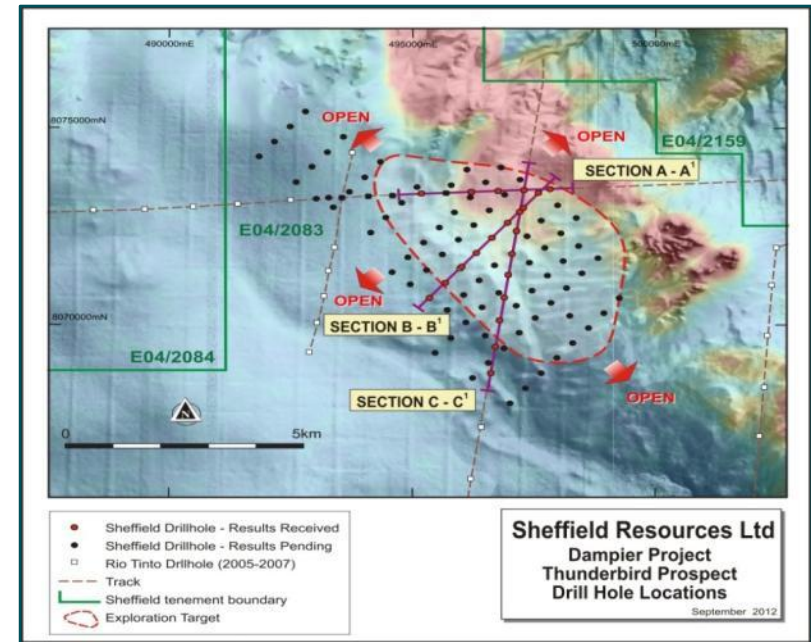
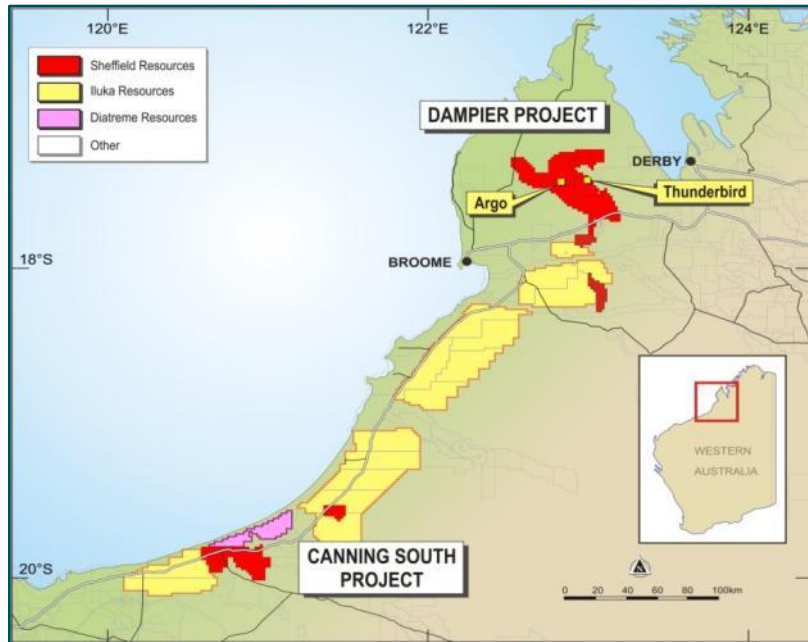
## Project Locations



# Dampier



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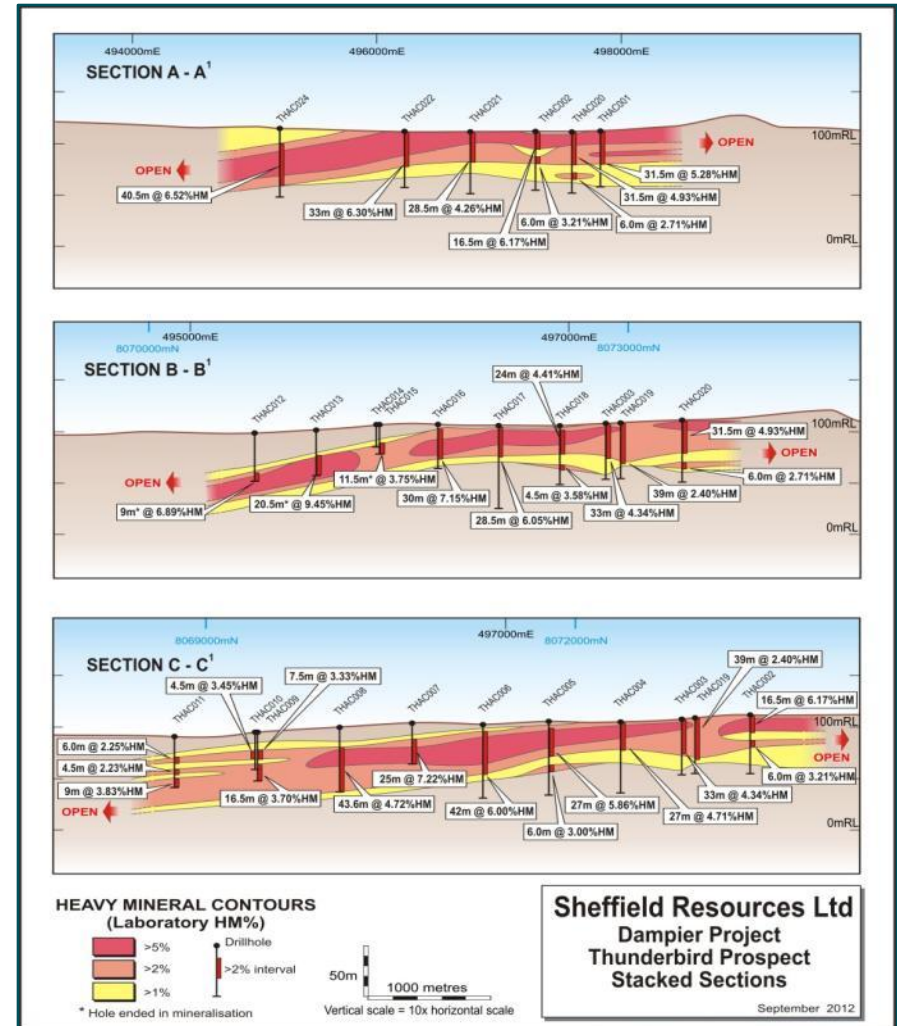
- Previously under-explored region
- Sheffield first mover in region with ~ 3,000 km<sup>2</sup> landholding
- The Dampier Project contains two significant heavy mineral sands prospects: Thunderbird and Argo
- Thunderbird is a large shallow deposit on the eastern zone and is the first major discovery in the Canning Basin
- Argo is located on the western zone
- The Canning Basin is an emerging HMS province

# Thunderbird Discovery



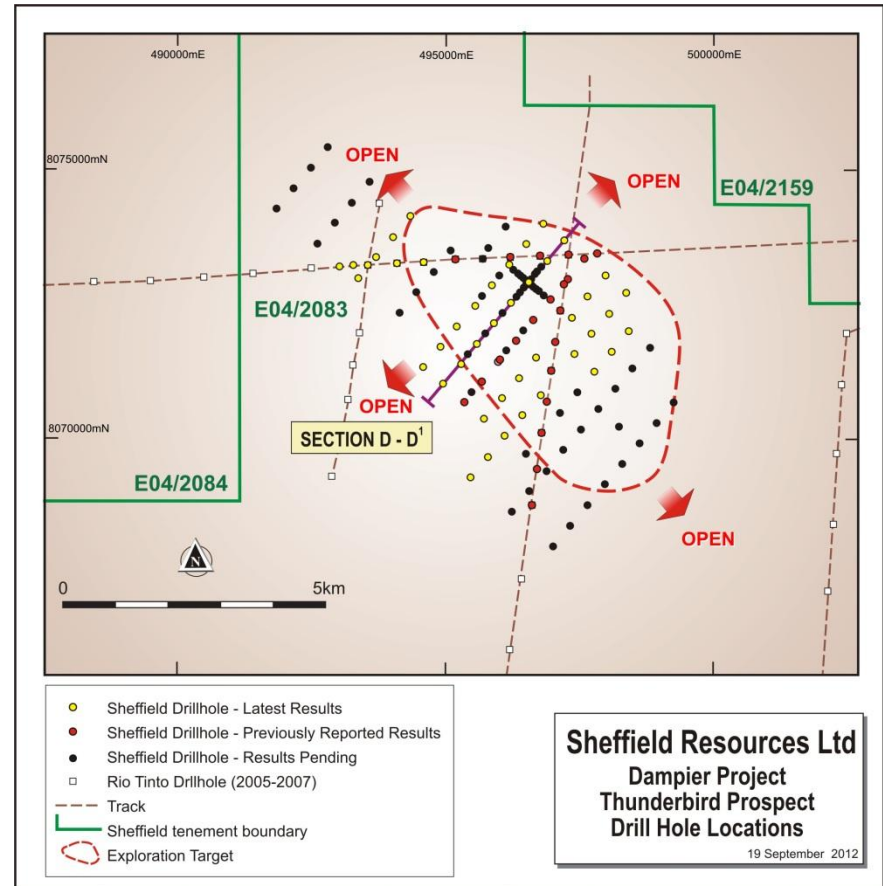
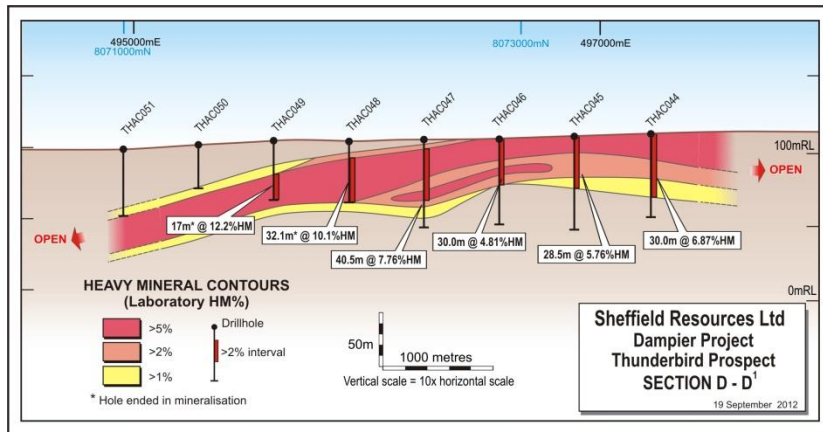
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- Globally significant zircon exploration project
- Thunderbird has scale
  - Strike potential of 15 km
  - Mineralisation outcrops, dipping shallowly at < 1 degree
- Broad, high grade intersections from maiden drill programme:
  - **20.5m @ 9.5% HM** from 24m (THAC013)
  - **40.5m @ 6.5% HM** from 13.5m (THAC024)
  - **42m @ 6.0% HM** from 6m (THAC006)
  - **30m @ 7.2% HM** from 3m (THAC016)
  - **28.5m @ 6.1% HM** from 1.5m (THAC017)
  - **33m @ 6.3% HM** from surface (THAC022)
- The mineralisation shows excellent continuity and remains open in all directions



# Thunderbird Discovery

- Exceptional results from second batch of samples released 19 September 2012, including:
  - **32.1m @ 10.1% HM** from 9m (THAC048)
  - **40.5m @ 7.8% HM** from 3m (THAC047)
  - **41.5m @ 7.3% HM** from 6m (THAC006)
  - **42m @ 6.3% HM** from 21m (THAC025)
  - **27m @ 8.6% HM** from surface (THAC040)
  - **26m @ 9.6% HM** from 15m (THAC064)
  - **17m @ 12.2% HM** from 22.5 (THAC049)

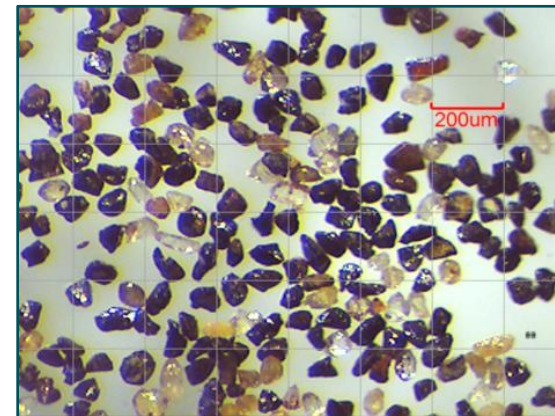


# Thunderbird Discovery

- The drilling results received to date define an internal high grade zone (at 5% HM cut-off) up to 32.5m thick, with an area of 12km<sup>2</sup>, averaging 9.0% HM
- Half of the deposit has less than 3 metres of overburden
- Potential for large tonnage and long life mine
- **Drilling Programme - Thunderbird**
  - Current programme is ongoing
  - Targeting 8 km of strike length
  - Drilling pattern ranges from 500m x 500m at the centre of the target area to 500m x 1,000m at the strike extremities
- **Immediate next steps – Thunderbird**
  - Complete drilling programme Sept 2012
  - Drilling results and mineral assemblage Q4 2012
  - Resource estimation Q4 2012
  - Metallurgical testwork Q1 2013



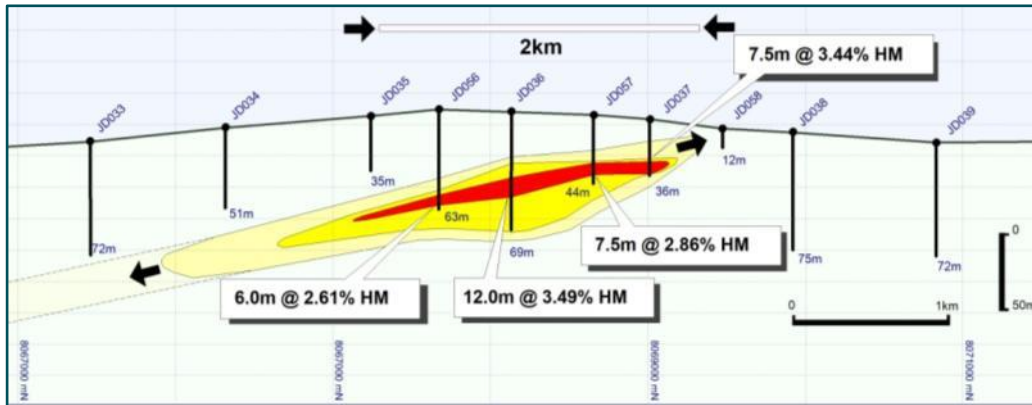
Panning of heavy mineral from drill sample



Valuable Heavy Mineral grains (THAC018 7.5-9m)



# Dampier – Exploration upside



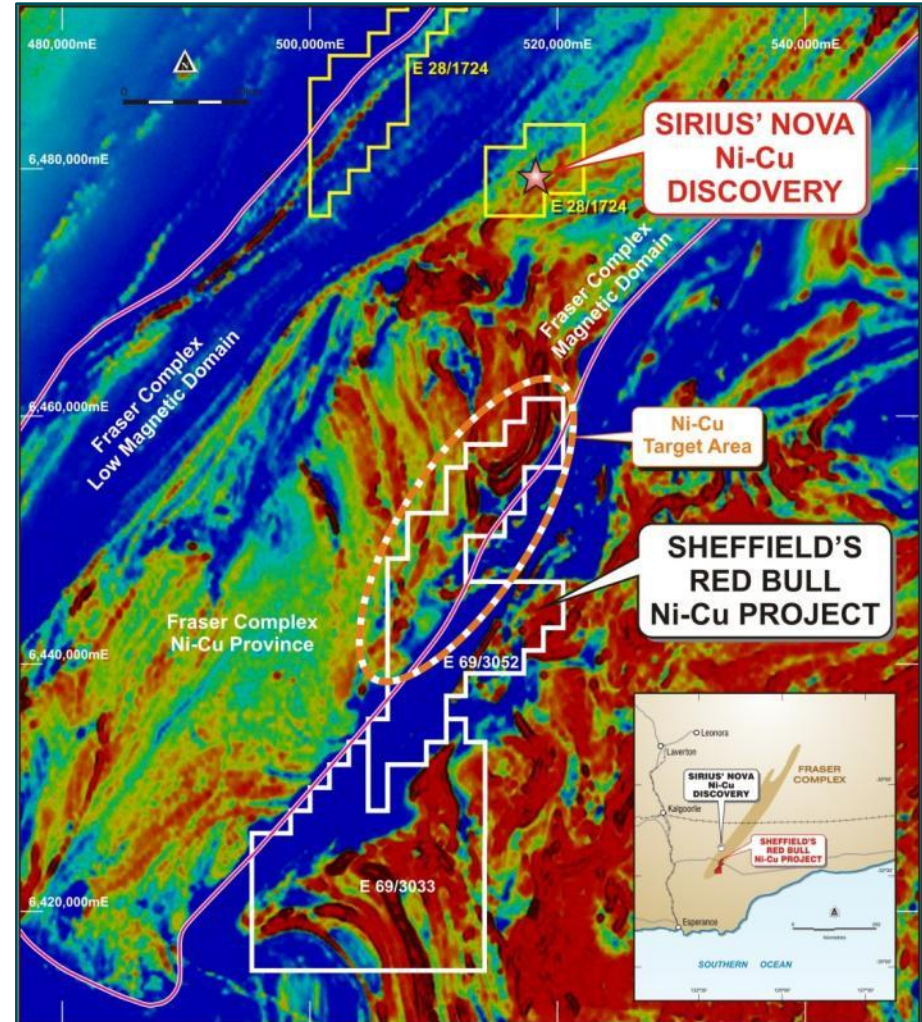
- **Argo Prospect**
  - 12km west of Thunderbird
  - High priority drilling target with established mineralisation (based on a single scout drill traverse)
  - 17% zircon from historical metallurgical testwork (see photo of gravity separation above)
  - Confirmed zircon which was found to be within the acceptable 500 U+Th range
  - Provides significant exploration upside
  - Scheduled for drilling in the 2013 field season

# Red Bull

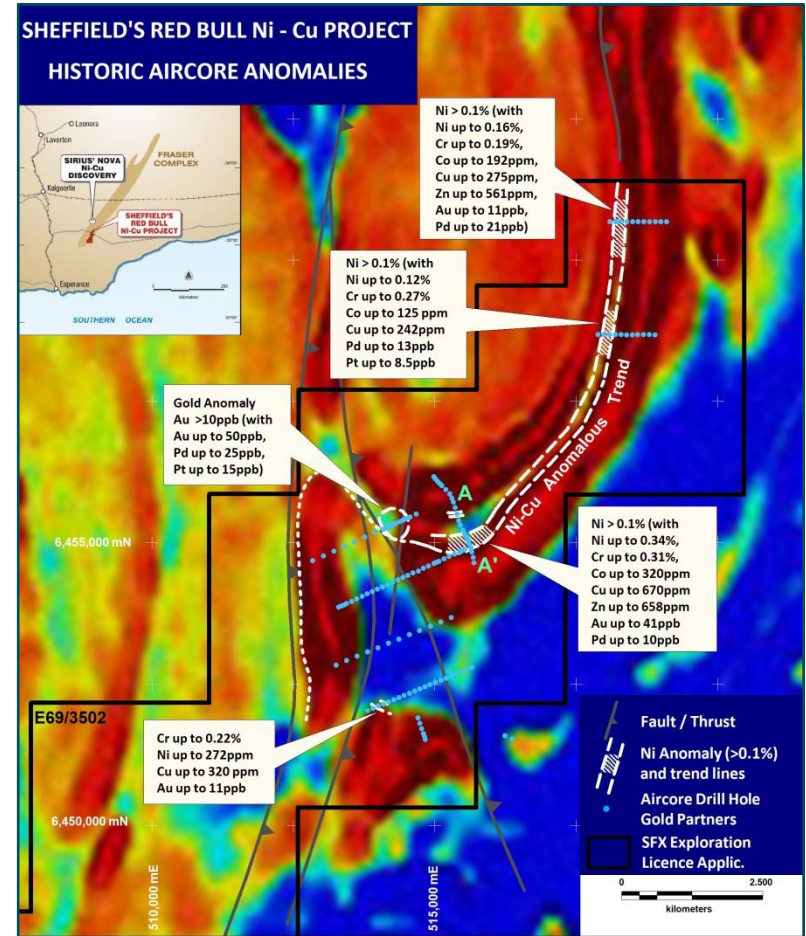
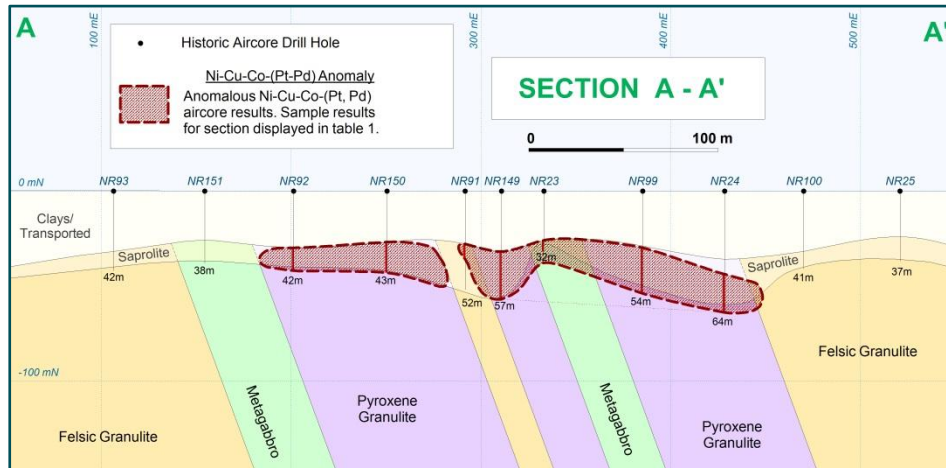


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- Red Bull Project comprises of two exploration licences (one remains in application)
- Combined project area of 525km<sup>2</sup>
- A significant new nickel-copper discovery (Nova) has recently been made by Sirius Resources NL (ASX:SIR)
- Red Bull is within 20km of the Nova discovery
- Covers the same prospective Fraser Complex rocks which host Nova
- New Nickel-Copper Province



- **Targets from historic data review**
  - 8km long anomalous Ni-Cu trend identified from historical aircore drilling results
  - Favourable mafic and ultramafic host rocks and large structures
  - Disseminated sulphides noted by previous explorers

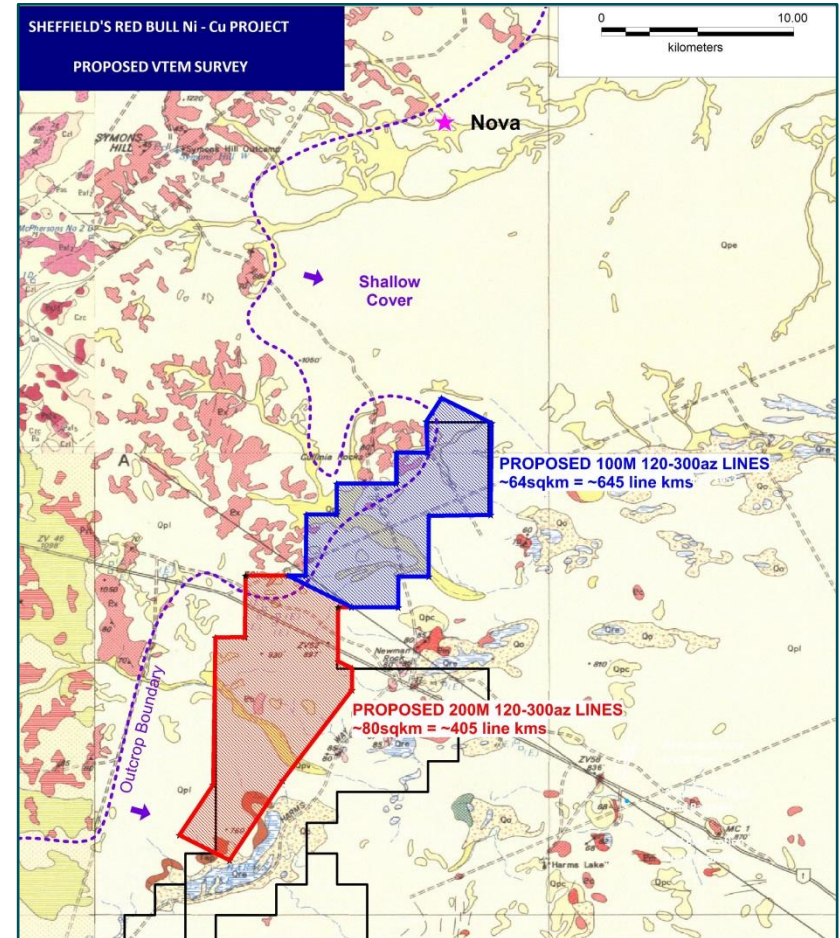


- **Concealed potential**

- At Red Bull, the prospective Fraser Complex rocks are concealed beneath a thin layer of transported cover
- Sirius' Nova discovery was made in a similarly concealed setting
- Due to the extent of cover, the Red Bull project area has received limited previous exploration

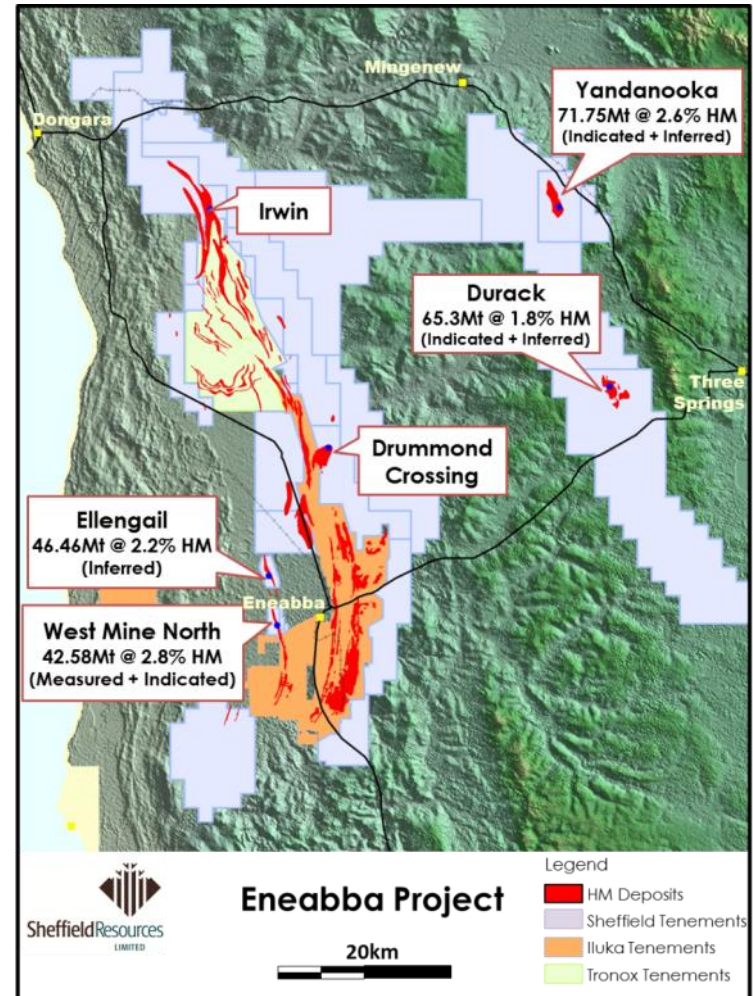
- **Next steps**

- Undertake 144km<sup>2</sup> VTEM airborne survey late October 2012
- Identify potential conductors
- Soil sampling
- Drilling of targets on grant of tenement



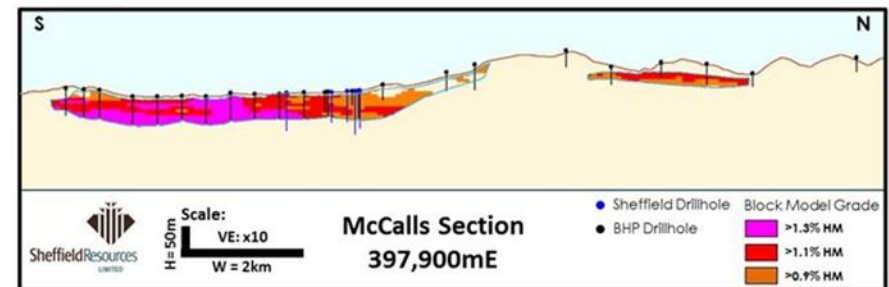
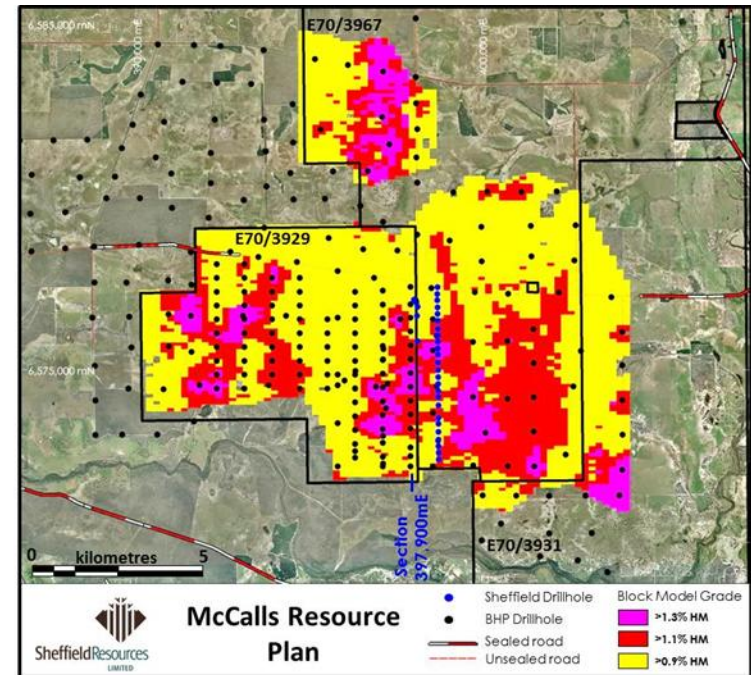
# Eneabba

- Strategy: to build a substantial resource base to underpin a 20-30 year mine life
- Project located ~ 140km south of Geraldton
- Established mining province dominated initially by Iluka Resources Ltd and Tronox Ltd
- Significant tenure position secured in 2010 followed by drilling campaigns in 2011/12
- Mineral Resource of 226Mt @ 2.3% HM, containing 5.3Mt in HM<sup>1</sup>
- Assay results from drilling at Irwin and Drummond Crossing prospects due Q3 2012



<sup>1</sup>See Appendices 1 & 2 for resource tabulation

- Globally significant asset receiving considerable industry attention
- Large high  $TiO_2$  ilmenite deposit, located 110km north of Perth
- Mineral Resource of 4.4Bt @ 1.2% HM, containing 53Mt in HM<sup>1</sup>
- Lower grade but has scale:
  - contains over 40Mt of chloride grade ilmenite
  - one of the largest chloride grade ilmenite deposits in the world
- High  $TiO_2$  content of ilmenite confirmed by metallurgical testwork
- Higher value ilmenite, potentially suitable for chloride route / synthetic rutile processing



<sup>1</sup>See Appendices 1 & 2 for resource tabulation

# Summary

- Exploring for large deposits in new provinces
- Dampier - the flagship project
- Canning Basin is a new province with more discoveries to be made – immediate focus
- Evaluating highly prospective Red Bull project for Ni-Cu-PGEs
- Established Mineral Resources at Eneabba and McCalls carry significant value
- Strong pipeline of other projects
- Strong cash position to underpin exploration
- Experienced and successful management team





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# Appendix 1

## Resource Inventory

### Sheffield's contained Valuable HM (VHM)\* Resource inventory (0.9% HM cut-off)

Deposit	Resource Category	Zircon ('000t)	Rutile ('000t)	Leuc. ('000t)	Ilmenite ('000t)	Total VHM ('000t)
Yandanooka	Indicated	201	117	168	1,072	1,558
Yandanooka	Inferred	12	8.5	15	73	108
Durack	Indicated	144	29	52	703	928
Durack	Inferred	26	4.6	13	121	164
Ellengail	Inferred	92	90	20	658	860
West Mine North	Measured	18	33	42	200	293
West Mine North	Indicated	71	87	46	506	709
McCalls	Inferred	3,491	1,063	2,576	42,911	50,041
<b>Total</b>	Measured	18	33	42	200	293
<b>Total</b>	Indicated	416	233	266	2,281	3,195
<b>Total</b>	Inferred	3,621	1,166	2,624	43,762	51,173
<b>Total</b>	<b>All</b>	<b>4,055</b>	<b>1,432</b>	<b>2,932</b>	<b>46,242</b>	<b>54,662</b>

The contained HM tonnages in the above table are derived from Mineral Resource Estimates for the Yandanooka, Ellengail, West Mine North, McCalls and Durack deposits, previously fully reported in ASX releases by Sheffield on 16 August 2011, 25 October 2011, 7 November 2011, 20 February 2012 and 28 August 2012. Appendix 2 summarises the estimated tonnes and grades for these deposits.

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

# Appendix 2

## HMS Mineral Resource1 Inventory at 0.9% HM Cut-off 28 AUG 2012

### ENEABBA PROJECT

Deposit	Resource Category	Material (Mt)*	Bulk Density	HM %	Slimes %	Osize %	In-situ HM (Mt)*	Zircon %	Rutile %	Leuc. %	Ilmenite %
Yandanooka	Indicated	61.00	2.0	2.8	14.7	9.4	1.72	11.7	6.8	9.8	62.3
Yandanooka	Inferred	10.75	1.9	1.1	12.9	9.0	0.12	10.1	7.0	12.5	59.8
Yandanooka	Total	71.75	2.0	2.6	14.4	9.3	1.84	11.5	6.9	10.2	61.9
Durack	Indicated	50.3	2.0	2.0	15	21	1.02	14	2.8	5.1	69
Durack	Inferred	15	1.9	1.2	14	17	0.18	14	2.5	7.2	66
Durack	Total	65.3	2.0	1.8	15	20	1.20	14	2.8	5.6	68
Ellengail	Inferred	46.45	2.0	2.2	15.6	2.1	1.04	8.9	8.7	1.9	63.5
Ellengail	Total	46.45	2.0	2.2	15.6	2.1	1.04	8.9	8.7	1.9	63.5
West Mine North	Measured	6.47	2.0	5.6	14.8	1.2	0.36	4.9	9.1	11.6	54.9
West Mine North	Indicated	36.11	1.9	2.3	13.1	2.8	0.84	8.4	10.3	5.4	60.0
West Mine North	Total	42.58	1.9	2.8	13.4	2.5	1.21	7.9	10.1	6.4	59.2
Total	Measured	6.47	2.0	5.6	14.8	1.2	0.36	4.9	9.1	11.6	54.9
Total	Indicated	147	2.0	2.4	14.3	11.6	3.58	11.7	6.3	7.1	64.0
Total	Inferred	72.2	2.0	1.8	14.9	6.2	1.34	10.1	7.2	4.6	63.4
Total Eneabba	All	226	2.0	2.3	14.5	9.5	5.29	11.0	6.7	6.4	63.5

### McCALLS PROJECT

Deposit	Resource Category	Material (Mt)*	Bulk Density	HM %	Slimes %	Osize %	In-situ HM (Mt)*	Zircon %	Rutile %	Leuc. %	Ilmenite %
McCalls	Inferred	4,431	2.3	1.2	26.5	1.4	53	6.6	2.0	4.9	80.8

\*Tonnes have been rounded to reflect the relative uncertainty of the estimate. <sup>1</sup> This estimate is classified and reported in a manner compliant with the JORC code and guidelines (JORC, 2004). <sup>2</sup> The Mineral Assemblage is represented as the percentage of the Heavy Mineral (HM) component of the deposit, as determined by QEMSCAN. TiO<sub>2</sub> minerals defined according to the following ranges: Rutile >95% TiO<sub>2</sub>; Leucocoxene 85-95% TiO<sub>2</sub>; Ilmenite <55-85% TiO<sub>2</sub>.