



## ASX and Media Release

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# SHEFFIELD TO ACCELERATE EXPLORATION AT RED BULL

## KEY POINTS

- 8km long Ni-Cu-Co anomalous trend outlined from review of historic aircore drilling
- Sheffield to accelerate exploration with a VTEM survey scheduled to commence late October 2012
- VTEM survey to provide a first pass test for sulphide mineralisation within the 144km<sup>2</sup> target area

Sheffield Resources (“Sheffield”, “the Company”) (ASX:SFX) is pleased to provide an update on the status of its Red Bull Project, located within 20km of Sirius Resources NL’s (ASX:SIR) recent Nova nickel-copper discovery in the newly identified Fraser Range Nickel Province in Western Australia (Figure 1).

The Red Bull project tenements comprise two exploration licences: E69/3033 which was granted on 27 July 2012 and E69/3052 which is still under application. The tenements have a combined area of 525km<sup>2</sup>.

A review of historic exploration undertaken at the Red Bull Project has been completed.

Reconnaissance aircore drilling by Gold Partners NL between 1995 and 1997 outlined an 8km long Ni-Cu-Co-(Pt-Pd) anomalous trend associated with pyroxene granulites and metagabbros (Figures 2 and 3).

Sheffield’s Managing Director Bruce McQuitty commented: “The review of historic data confirms an extensive nickel-copper-cobalt anomaly, overlying a sequence of mafic and ultramafic rocks similar to those which host the Nova nickel-copper discovery.”

“This has given us the confidence to accelerate exploration of the Red Bull Project by commissioning a VTEM survey which will target an area of over 140 square kilometres for potential sulphide conductors. This survey is scheduled to commence late October 2012.”

“The Fraser Complex is shaping up as an exciting new nickel-copper province and Sheffield intends to expedite evaluation of its tenement holding within this emerging region.”

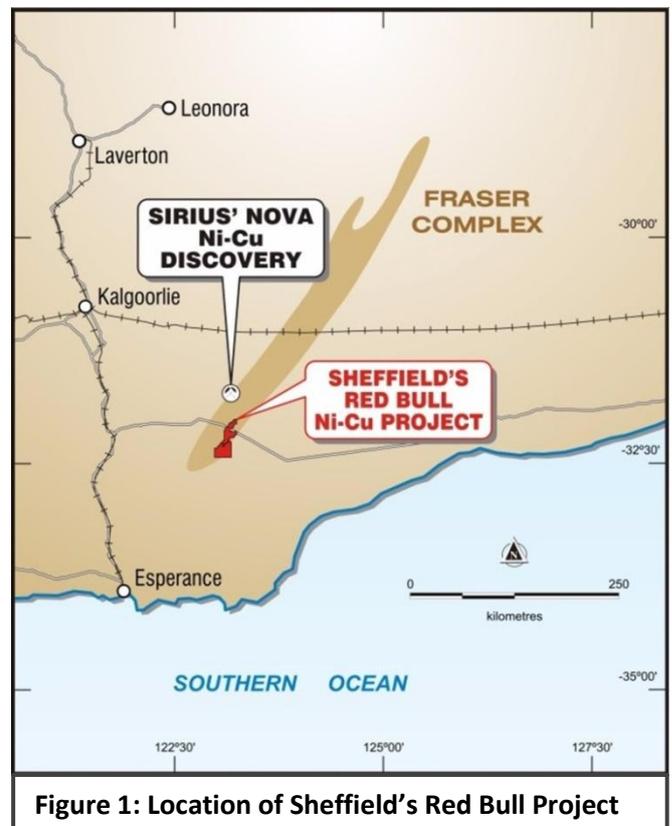


Figure 1: Location of Sheffield's Red Bull Project

## Historic Data Review

A review of past exploration of the Red Bull project has identified a significant Ni-Cu-Co-(Pt-Pd) anomalous trend which extends over an 8km strike length. This anomalous trend has been delineated by four broadly spaced reconnaissance aircore drill traverses. Several additional gold-platinum-palladium and nickel anomalies were identified from the historic drilling (Figures 2 and 3).

Gold Partners NL completed initial reconnaissance aircore drill traverses in 1995, minor infill drilling during 1996, and additional drill traverses in 1997. The work was of good standard however sampling and assaying was limited to irregular intervals often at the base of the holes.

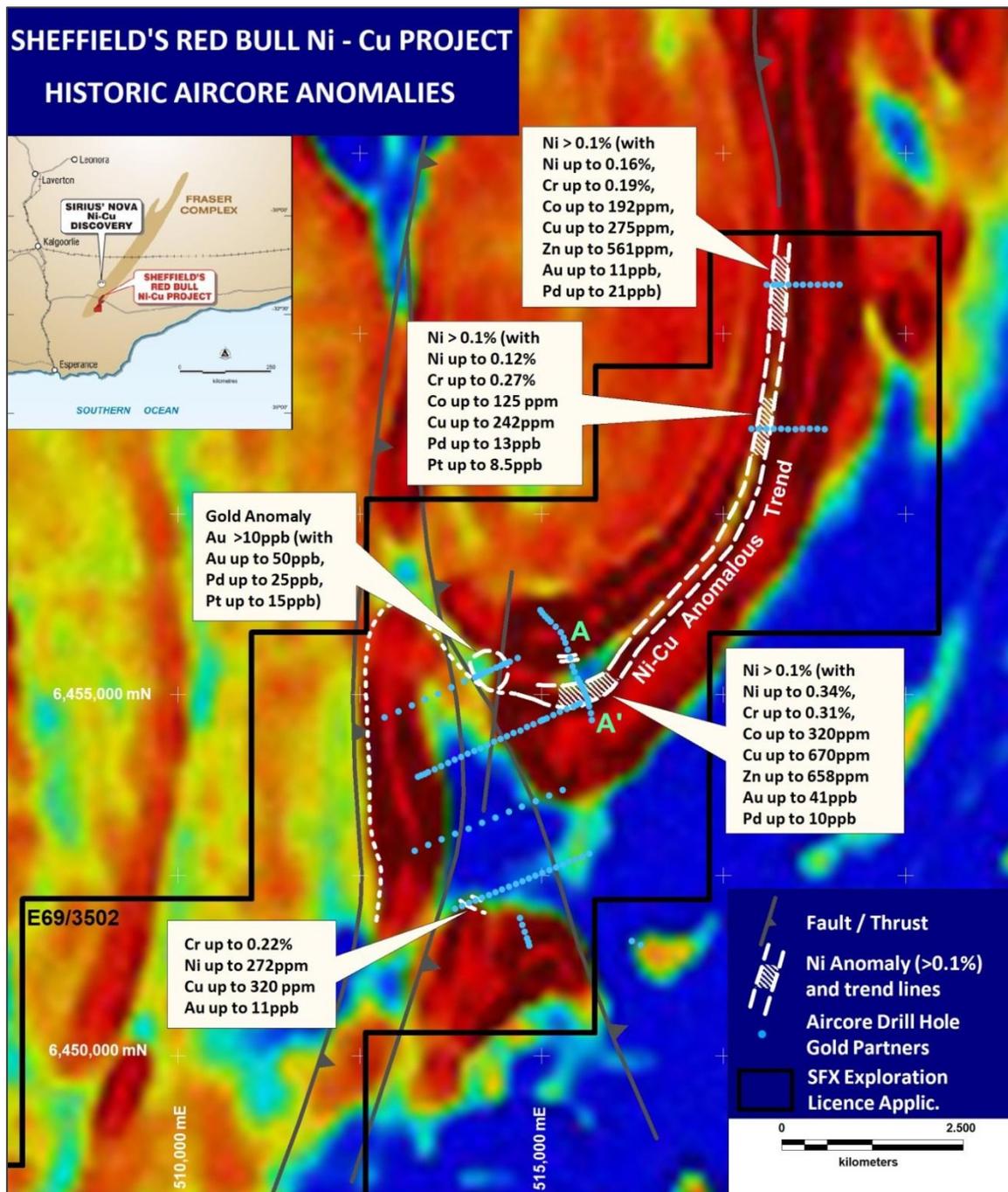
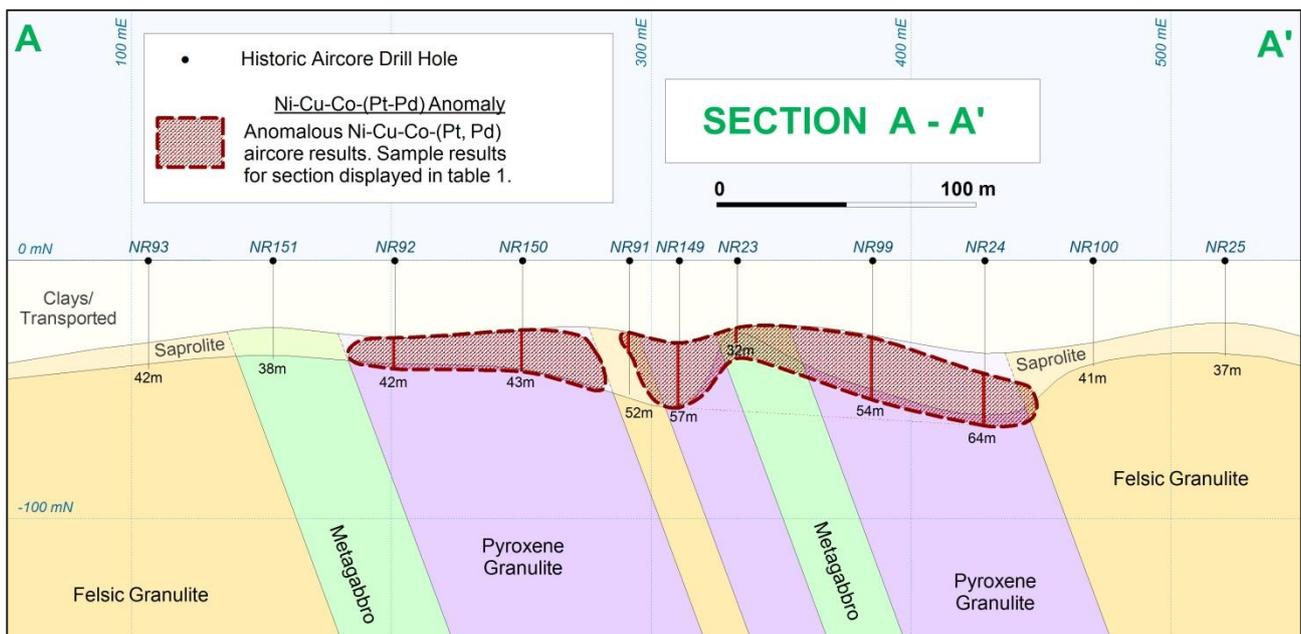


Figure 2: Anomalous aircore drilling results (Gold Partners NL 1995-1997) over TMI magnetic image

Results from the aircore drilling showed that Ni-Cu-Co-(Pt-Pd) anomalism is associated with pyroxene granulites and metagabbros. Nickel values in the weathered bedrock commonly exceed 0.1% Ni (maximum 0.34% Ni), with supporting values of up to 670ppm Cu, 320ppm Co, 15ppb Pt, 21ppb Pd and 41ppb Au. Elevated chromium values (commonly above 0.1% and up to 0.31% Cr) confirm the predominance of ultramafic lithologies within the anomalous zone.

The width of the anomalism detected on the four drill sections varied between 190 and 280m, with between 2 and 7 consecutive holes returning anomalous results on those sections. Drill holes penetrated the fresh granulite facies bedrock by only one or two metres providing a very limited test of the potential host sequence. The presence of internal felsic granulite units is interpreted as a structural repetition of the target lithologies (Figure 3). These structures may present a secondary exploration target.



**Figure 3: Schematic section A – A'. Nickel anomaly (sample assay results displayed in Table 1).**

Gold Partners NL undertook detailed petrography on a limited selection of fresh bedrock drill samples in 1997. This work indicated that sulphides were present in small volumes as recrystallised pyrite after pyrrhotite, with traces of chalcopyrite and covellite also noted.

Gold Partners NL concluded:

*"Petrographic descriptions of Fraser Range drill chip samples suggested similarities between these rocks and those of other Mesoproterozoic anorthosite bodies such as the Nain Complex in Labrador (Canada) where the Voisey's Bay nickel deposit is hosted."*

*"The presence of widespread disseminated sulphide (possibly originating as primary magmatic pyrrhotite and chalcopyrite) throughout the area also provides encouragement in the search for magmatic nickel-copper-cobalt deposits, as sulphur saturation of the parent magma is of prime importance in the formation of such deposits."* (Gold Partners NL Fraser Range Project Newman Rock Annual Report for the Period 5 October 1996 to 4 October 1997 – Wamex Report A52522).

## VTEM Survey

The planned VTEM survey has been designed to cover an area of 144km<sup>2</sup> of prospective rocks of the Fraser Complex. The survey will be flown at 100m spacing in the northeast and at 200m

spacing in the southwest (Figure 4). The survey will target the Ni-Cu-Co-(Pt-Pd) anomaly as defined by the historic data at 100m line spacing. If conductivity anomalies indicating potential sulphide bodies are encountered, additional infill lines will be flown. The VTEM survey will provide an efficient and effective first pass exploration test for near surface Ni-Cu sulphide mineralisation. The survey area is focused on mafic and ultramafic sequences located under shallow transported cover. This regolith environment is very similar to shallow cover concealing mineralisation at the Nova prospect (Figure 3). The survey is scheduled to commence in late October 2012, with processing expected to be completed in Q1 2013.

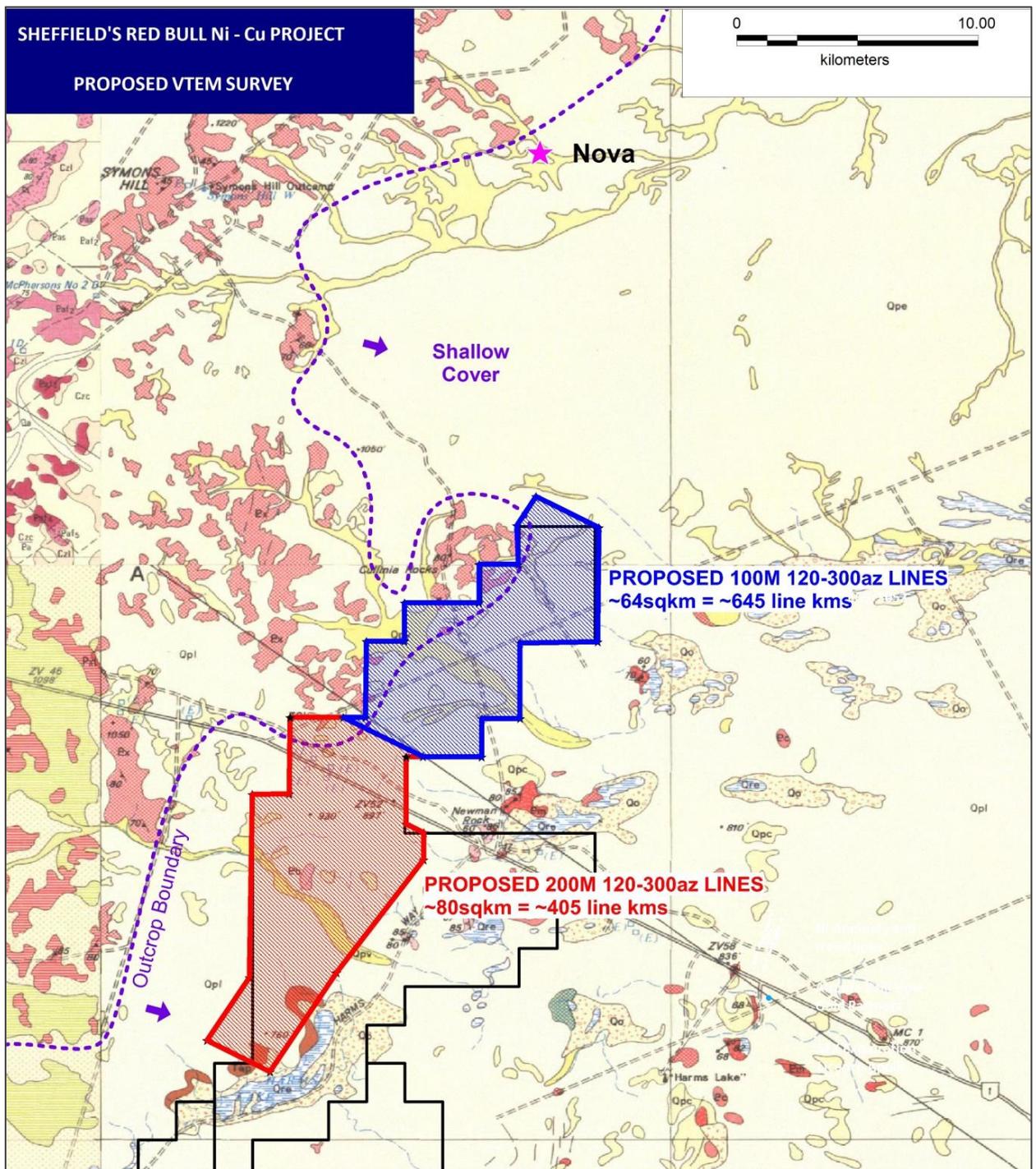


Figure 4: Proposed VTEM survey over GSWA geology relative to Sirius' Nova discovery. GSWA geology map showing the extent of cover (yellow-pale yellow) over Proterozoic basement (pink-red).

**Table 1: Historical aircore drilling results for anomalous holes on Section A-A' in Figure 3**

Hole ID	Easting	Northing	Sample ID	Depth From (m)	Depth To (m)	Interval Width (m)	Ni (ppm)	Cu (ppm)	Co (ppm)	Cr (ppm)	Zn (ppm)	Au (ppb)	Pt (ppb)	Pd (ppb)
NR92	515399	6454975	2025	30	34	4	1600	420	240	2400	450	<1	<5	5
NR92			2026	34	38	4	2200	360	320	3100	400	<1	5	10
NR92			2027	38	42*	4	1100	90	150	2100	250	41	<5	<5
NR91	515443	6454897	2019	28	32	4	2800	280	170	2100	500	<1	<5	5
NR91			2020	32	36	4	3400	250	270	1900	670	<1	<5	5
NR99	515480	6454811	2046	30	34	4	730	140	75	910	250	<1	<5	<5
NR99			2047	34	38	4	1500	160	170	1300	540	1	<5	5
NR99			2048	38	42	4	320	80	55	360	240	<1	<5	<5
NR99			2049	42	46	4	250	50	30	740	110	5	<5	<5
NR99			2050	46	50	4	390	65	55	390	160	2	<5	<5
NR99			2051	50	54*	4	270	80	65	440	230	3	<5	<5
NR23	515461	6454859	6791	26	30	4	715	333	193	277	562	<1	<1	<1
NR23			6792	30	32*	2	519	206	178	241	401	<1	<1	<1
NR24	515496	6454771	6793	44	48	4	92	34	17	792	47	<1	<1	<1
NR24			6794	48	52	4	237	73	27	1039	103	3	1	<1
NR24			6795	52	56	4	258	76	25	1395	108	3	1	<1
NR24			6796	56	60	4	1030	86	64	1024	633	1	<1	<1
NR24			6797	60	64*	4	268	167	51	594	135	<1	1	<1
NR149	515453	6454880	594	32	36	4	2000	115	158	1860	353	3	<0.5	1
NR149			595	36	40	4	2580	87	226	1430	379	5	<0.5	1
NR149			596	40	44	4	2140	97	174	1400	294	2	<0.5	<0.5
NR149			597	44	48	4	2620	88	229	1490	381	1	4	2
NR149			598	48	52	4	2260	135	132	2020	276	2	4	4.5
NR149			599	52	56	4	1410	134	141	1330	166	1	<0.5	<0.5
NR149			600	56	57*	1	1150	134	208	1160	182	1	3	3
NR150	515425	6454934	601	27	34	7	2670	227	158	1530	554	3	6	5.5
NR150			602	34	38	4	2480	248	249	1170	658	2	6	6
NR150			603	38	42	4	1730	156	211	1480	238	1	6	6
NR150			604	42	43*	1	1190	57	145	1240	194	3	2.5	4.5

\*Denotes end of hole. Holes were drilled by Gold Partners NL between 1995 and 1997, coordinate system is MGA Zone 51 (GDA94), all holes drilled vertically. Samples were analysed by either Australian Assay Laboratories Group (1995), Ultratrace (1996) or Analabs (1997). Au, Pt, and Pd were analysed by fire assay. Cr, Ni, Co, Cu, Zr were analysed after total acid digest with an ICP-OES finish.

ENDS

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## **COMPETENT PERSONS' STATEMENT**

The information in this announcement that relates to exploration results is based on information compiled by David Archer. Mr Archer is a full time employee of the Company. Mr Archer 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 Archer consents to the inclusion in the report 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", "strategy" 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.

## ABOUT SHEFFIELD RESOURCES

Sheffield Resources Limited (**Sheffield**) is a rapidly emerging heavy mineral sands (HMS) company.

ASX Code – SFX

Market Cap @ 61cps - \$58.4m

Issued shares – 95.7m

Cash - \$9.3m (at 30/6/2012)

The Company has over 6,000km<sup>2</sup> of highly prospective tenure, all situated within the state of Western Australia.

### HEAVY MINERAL SANDS

The Dampier project, located near Derby in WA's Kimberley region, contains the large, high grade zircon-rich Thunderbird HMS deposit which is currently being drilled.

The Eneabba project comprises multiple HMS deposits and is located near Eneabba approximately 140km south of the port of Geraldton in WA's Mid-West region.

Sheffield is also evaluating the large McCalls chloride ilmenite project, located 110km to the north of Perth.

### NICKEL-COPPER

Sheffield's 525km<sup>2</sup> Red Bull project is located in the highly prospective Fraser Complex within 20km of Sirius Resources NL's (ASX:SIR) Nova Ni-Cu discovery.

### IRON

Sheffield has identified iron mineralisation on three of its tenements in the Pilbara iron ore province. Thick hematite mineralisation was intersected in first pass RC drilling at the Three Pools project, 20km north of Newman.

### TALC

Sheffield's large Moora Talc Belt project contains numerous talc occurrences and is located near Imerys' long-life Three Springs talc mine in WA's Mid-West region. The Company is targeting high purity talc, similar to that produced from the simple quarrying operation at Three Springs.