



SheffieldResources  
LIMITED

ASX and Media Release

1 May 2013

## DRILLING COMMENCES AT RED BULL Ni-Cu PROJECT

### KEY POINTS

- **15,000m aircore drilling programme to further evaluate and advance 7 high priority target areas including:**
  - **3 strong bedrock conductors**
  - **4 nickel and copper soil/historic aircore anomalies**
- **Aircore is final phase of target generation prior to deeper diamond drilling of targets**
- **Diamond drilling programme to commence later in the June 2013 Quarter**
- **Large soil sampling programme completed, highlights include:**
  - **nickel and copper soil anomalies associated with 2 high priority bedrock conductors**
  - **several coincident nickel & copper anomalies associated with an 8km long prospective mafic/ultramafic unit**

**Sheffield Resources ("Sheffield", "the Company") (ASX:SFX)** today announced it has commenced aircore drilling at its Red Bull Nickel-Copper Project. The Red Bull Project is within 20km of Sirius Resources NL's (ASX:SIR) Nova Nickel-Copper deposit, in the Fraser Range Nickel Province in Western Australia (Figure 1).

### Current Aircore Drilling Programme

The aircore drilling programme of approximately 300 holes for 15,000m will further evaluate and advance seven nickel-copper targets, including the;

1. Three high order bedrock conductors (RB VA1 to 3) recently identified from Fixed Loop EM surveys (see ASX release 11 February, 2013); and
2. Four nickel and copper soil/historic aircore anomalies (see Figure 2, 6 and 7).

Aircore drilling is expected to take 4-6 weeks to complete and is expected to provide further information for the refinement of targets for the upcoming diamond drilling programme, expected to commence in June 2013.

Managing Director, Bruce McQuitty said Sheffield was entering an exciting phase of its evaluation of the Red Bull Project.

*"The aircore drilling programme is the final phase of target generation and will be immediately followed by deeper drilling of nickel-copper sulphide targets later this quarter."*

### Recent Soil Sampling Programme Completed

Results from a recently completed soil sampling programme (1,211 samples) have enhanced existing targets and generated further targets to be tested by the current aircore drilling programme. Highlights include:

- Anomalous values up to 65ppm Ni and 42ppm Cu at conductor RB VA2 (Figure 3), and
- Anomalous values up to 46ppm Ni and 24ppm Cu at conductor RB VA1 (Figure 4).

These results provide further evidence that bedrock conductors RB VA1&2 may be associated with Ni-Cu mineralisation.

Several Ni-Cu soil anomalies were identified in the northern project area. These coincide with interpreted prospective contacts in a folded layered intrusive complex (Figures 6 & 7). Areas targeted by the soil sampling program are covered by varying thicknesses of transported overburden.

### About the Red Bull Ni-Cu Project

The Red Bull project comprises two tenements with a total area of 525km<sup>2</sup> located 120km east of Norseman in WA. The northern tenement E69/3052 covers prospective mafic and ultramafic rocks of the Fraser Complex (Figure 1).

Sheffield is targeting Ni-Cu mineralisation of the Nova-style, with initial targets comprising three strong bedrock conductors (RB VA1-3) and an 8km long Ni-Cu-Co-(Pt-Pd) anomalous trend in a layered mafic-ultramafic sequence in the northern project area (Figure 2).

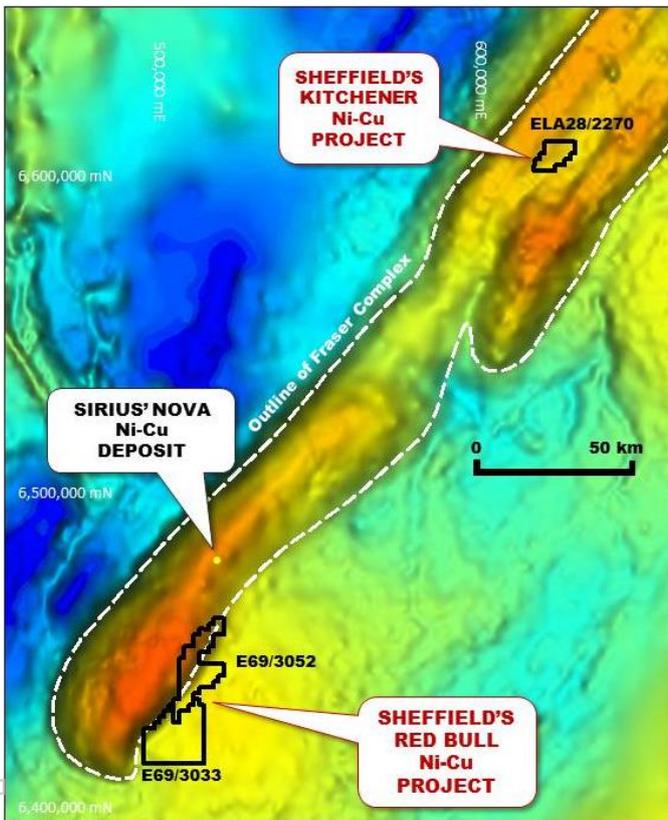


Figure 1: Location of Red Bull Project on a gravity image outlining the Fraser Complex

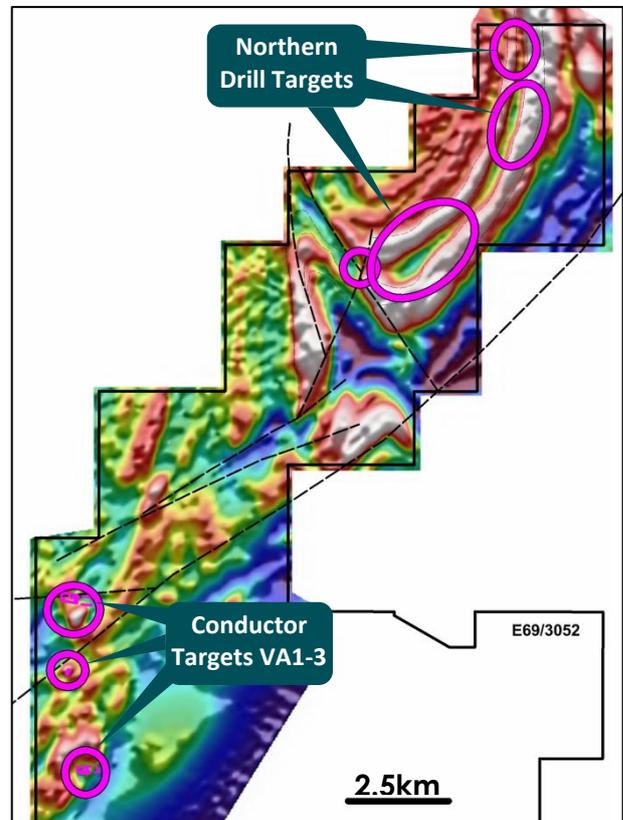


Figure 2: Drill target areas within Sheffield's tenement E69/3052, RTP aeromagnetic image

### Target Details

Anomaly RB VA1 is modelled by Southern Geoscience Consultants (SGC) as having a high conductance at >9,000S, indicating the source may be related to massive sulphide (by comparison the reported conductance from the initial moving loop EM survey at Nova was 5,144S). It is 120m x 50m in area, flat lying, with a depth to top of 70-90m, and is coincident with a localised aeromagnetic high and anomalous Ni (36-46ppm) and Cu (20-24ppm) soil values (Figure 3).

Anomaly RB VA2 is modelled as having a high conductance at >6000S, indicating the source may be strongly sulphidic. It is at least 400m x 125m in area, has a moderate westerly dip, and a depth to top of 200m. The conductor is adjacent to an aeromagnetic high and its projected surface position is coincident with anomalous Ni (30-65ppm) and Cu (20-42ppm) soil values (Figure 4).

Modelling of anomaly RB VA3 characterises the source as having high conductance >4000S, indicating the source may be strongly sulphidic. It is 300m x 150m in area, has a moderate south-westerly dip, and a depth to top of 250m. The conductor is also within a broad, ring-shaped aeromagnetic feature (Figure 5). Transported soils above the anomaly show no strong Ni or Cu anomalism. This may be due to the depth of the conductor and/or a greater thickness of transported cover, and does not reduce the prospectivity of the target.

Figure 3: RB VA1

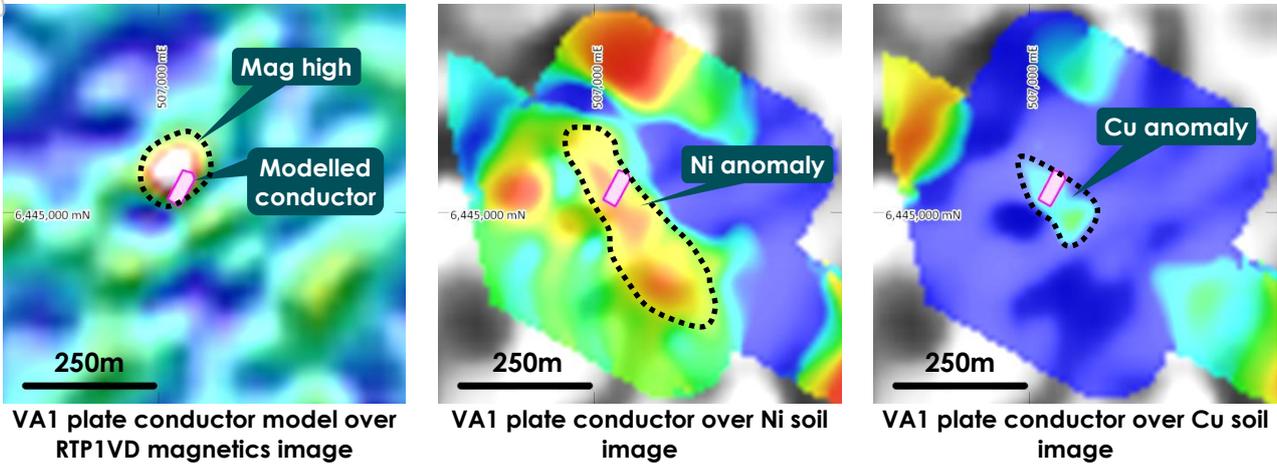


Figure 4: RB VA2

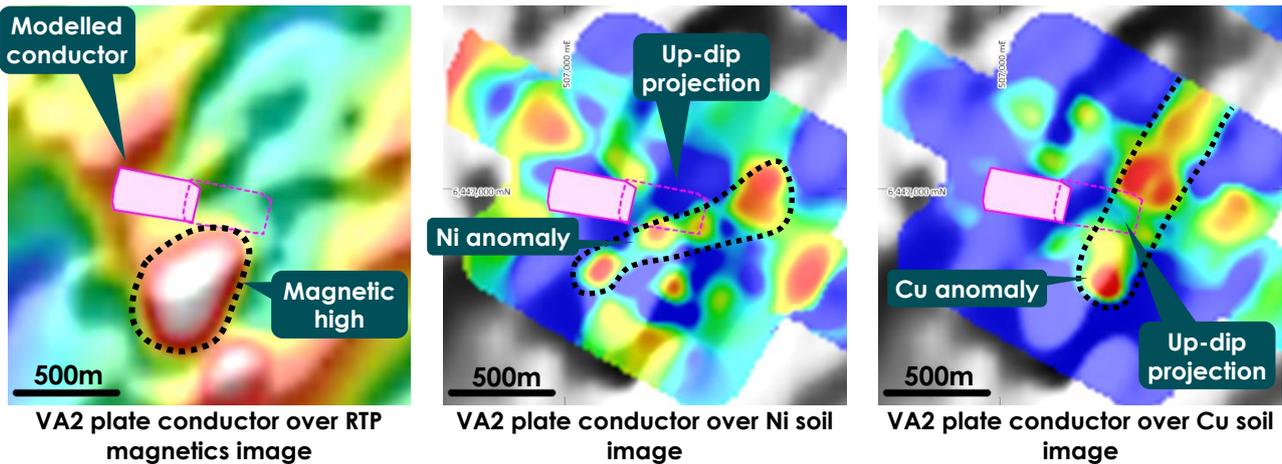
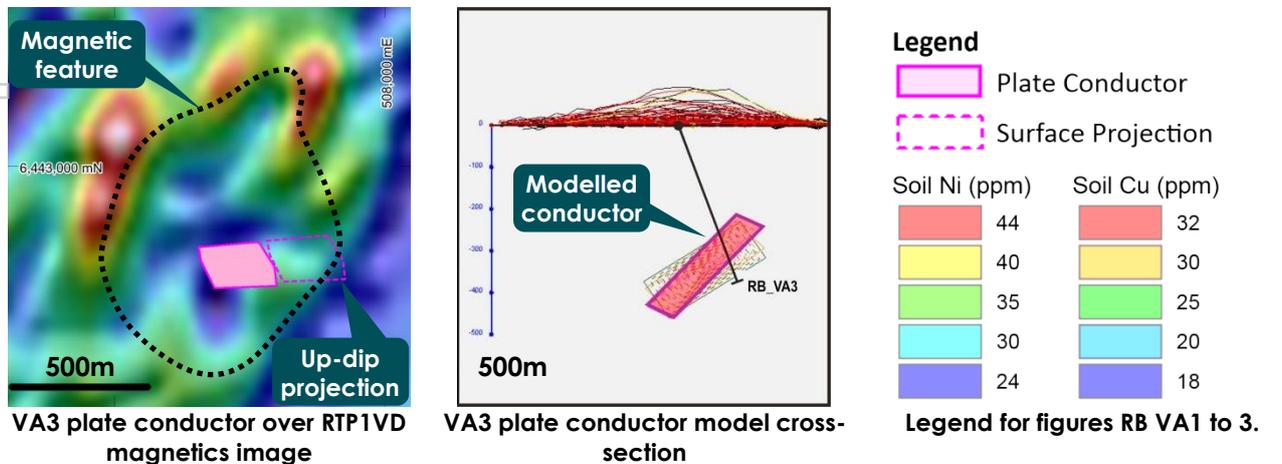


Figure 5: RB VA3



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### Northern Drill Targets

Drill targets in the northern half of tenement E69/3052 comprise Ni-Cu soil anomalism coincident with contacts between metasediment/gabbro, gabbro/leucogabbro and ultramafic/leucogabbro units in a folded and faulted layered intrusive complex (Figures 6 & 7). Historic aircore drilling by Gold Partners (see Sheffield ASX release dated 24 September, 2012) highlights anomalous Ni, Cu and Co regolith geochemistry associated with these contacts. EM geophysical techniques are less effective in this area due to the presence of conductive overburden, and for this reason aircore drilling is preferred for the next phase of target generation.

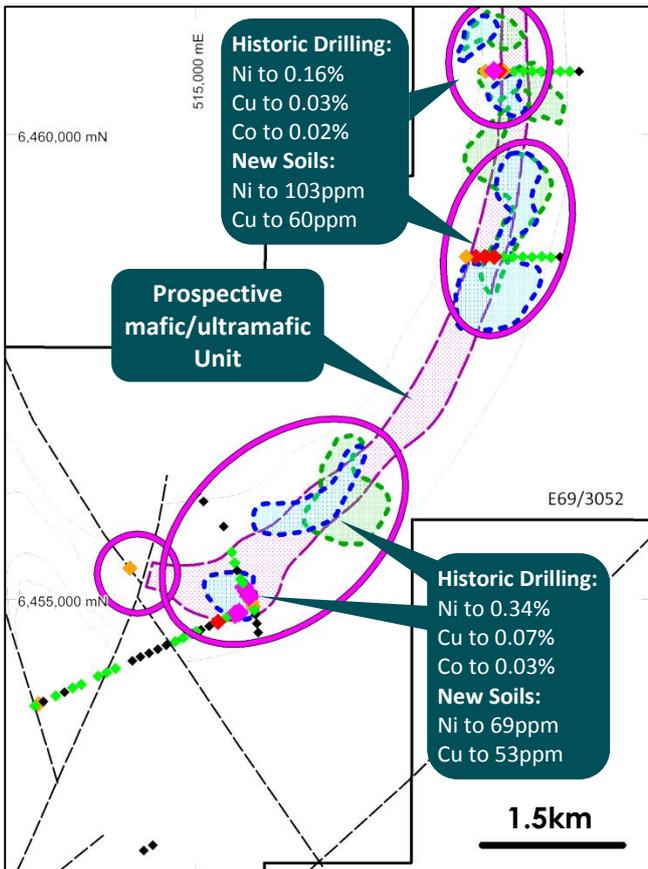


Figure 6: Ni-Cu soil anomaly outlines, historic drill collars coloured by eoh Ni, and drill target areas

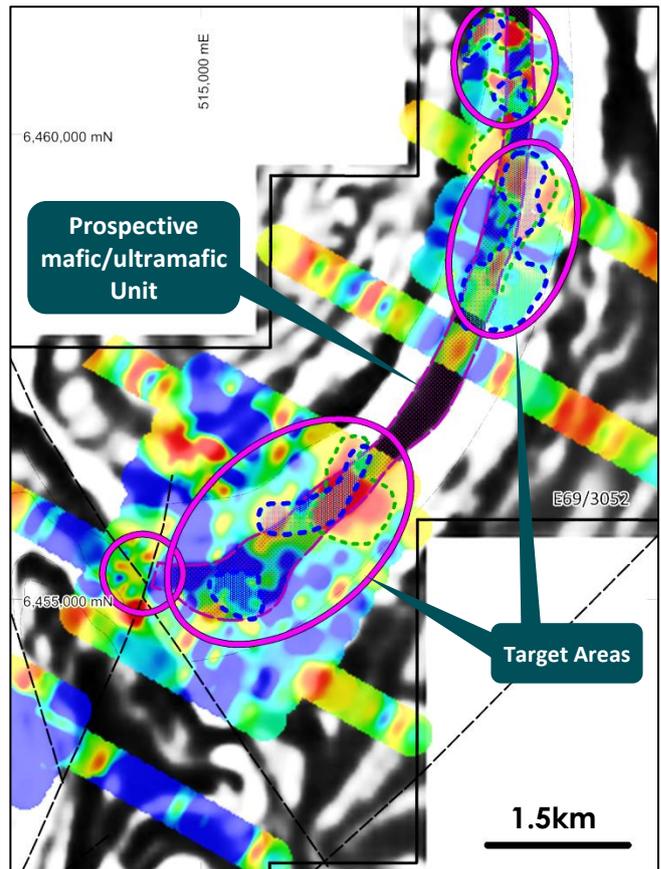
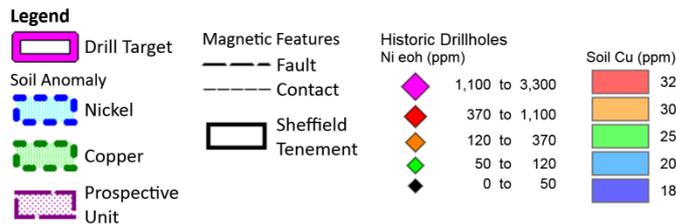


Figure 7: Greyscale RTP1VD aeromagnetic image with gridded Cu soil results and drill target areas



### Red Bull Exploration Update

SGC have completed final processing of the second phase of fixed-loop TEM (FLTEM) surveys which followed up moderate priority VTEM targets (RB-VA4, RB-VA5, RB-VA6A, RB-VA6B, RB-VA7 and RB-VA8). No significant bedrock conductors were identified from these anomalies, further highlighting the unique characteristics of the three high-priority anomalies RB VA1-3.

A 1,500-sample regional auger soil sampling program designed to provide extensive first pass geochemical coverage across both Red Bull tenements is nearing completion, with final results expected during Q2 2013. This dataset will be used in conjunction with existing geochemical, geological and geophysical datasets to generate new drill targets.

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## Upcoming Diamond Drilling Programme

The upcoming diamond drilling programme will test the three bedrock conductor anomalies (VA1-3). In addition, should the current aircore drilling programme targeting the 4 nickel and copper soil/historic aircore anomalies prove to be encouraging, Sheffield intends to also target these anomalies with diamond/RC drilling as soon as practicable.

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 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.

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## ABOUT SHEFFIELD RESOURCES

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

ASX Code – SFX

Market Cap @ 55cps - \$56.6m

Issued shares – 102.9m

Cash - \$6.2m (at 31/3/2013)

The Company has over 5,000km<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.

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 holds four exploration licences prospective for iron in the North Pilbara region, all near existing iron ore mine sites or major development projects and within potential trucking distance of Port Hedland. Following its recent sale of the South Pilbara Iron tenements, Sheffield continues to seek to unlock value on its remaining Pilbara iron tenements through consolidation and/or further exploration.

### POTASH

The Oxley potash project is located in the northern part of the Proterozoic Moora Basin, approximately 38km northeast of Three Springs. Sheffield is exploring the Oxley Potash project for unconventional hard rock potash mineralisation suitable for open pit mining.

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