

SANDFIRE RESOURCES NL

ABN 55 105 154 185 **ACTIVITY REPORT**

QUARTERLY REPORT FOR THE PERIOD ENDED 31 DECEMBER 2006

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OVERVIEW

During the quarter exploration programs continued at Yannarie, Urandy and Mt Boggola in WA and Gordons Prospect at Borrooloola in the NT (fig.1).

Doolgunna

(Gold, Copper; Sandfire 100%)

The Doolgunna project is located approximately 150km north of Meekatharra, Western Australia.

In April 2006 the Company announced that shallow gold mineralisation had been intersected at three locations within the project area (fig.2). These locations had been identified with soil geochemistry.

Since the initial RAB drilling programs, follow up drilling programs have been completed in May and August. These programs have confirmed the presence of gold mineralisation at the three prospects. Indications of mineralisation elsewhere within the project area have also been established by soil geochemistry and drilling.

Since the completion of the August drilling program, the Company has documented and lodged for approval the following drilling programs:

- (a) Reverse circulation drilling at Old Highway, East Shed Well and Cow Hole Bore;
- (b) RAB drilling to investigate extensions to the known prospects;
- (c) Bedrock drilling to complete the first pass geochemical sampling over the prospective zone.

These approvals are pending and therefore the timing for the commencement of this work is uncertain. However, based on discussions with the various State Government Departments involved, approvals are expected within the next three months.

In addition to the bedrock drilling program, first pass soil sampling will be completed on those areas suitable for this technique.

Yannarie

(Lead, Zinc, Copper and Gold; Sandfire 100%)

Nine RC/DD drillholes totalling 1,773.30m were completed at the Yannarie project testing magnetic and geochemical targets (fig. 3 & 4). A brief description of each is summarised in Table 1. Assay results of the RC chip composite samples and diamond core intervals for Cu, Zn and U are expected in mid February.

The holes drilled to test the magnetic features at Coria and Two Peaks intersected zones of pyrrhotite associated with pyrite below 150m vertical depth. The zones of pyrrhotite generally have magnetic susceptibilities below $1,000 \times 10^{-5}$ SI units, well below the values obtained from modelling. However, rock property investigations showed the pyrrhotite



zones to be strongly remanently magnetised which would increase the effective magnetisation to the levels modelled.

Table 1 Yannarie Drilling 2006 Summary

Prospect	Drillhole Number	Depth m	Lithology	Comment
Coria Drillhole F	YNRC001	142.0	black pyritic shale between dolerite sills	elevated radioactivity in weathered black shale
Coria Drillhole G	YNRC002	124.0	0-71m: quartz-arenite; 71-124m: black shale	qtz veining at contact
Coria Drillhole C	YNRCD001	405.1	0-152.0m: dolerite; 152.0-405.1m: black sulphidic shale	Pyrrhotite from 233m
Copper Prospect Drillhole E	YNRC003	130.0	0-130m: black pyritic shale	
2 Peaks North Drillhole D	YNRC004	118.0	0-118m: black pyritic shale	Silica iron oxide veinlets above BOX
2 Peaks North Drillhole H	YNRC005	82.0	0-82m: black pyritic shale with some qtz veining	20-21m Malachite (copper carbonate)
2 Peaks North Drillhole B	YNRCD002	300.0	0-300m: black pyritic shale	Pyrrhotite from 176m
2 Peaks North Drillhole A	YNRCD003	312.2	0-312.2m: black pyritic shale	Pyrrhotite from 212m Abandoned at 312.2
2 Peaks North Drillhole A	YNRCD003 A	160.0	0-160m: black pyritic shale	Abandoned at 160m – deviation excessive
Total		1773.3		

BOX - base of oxidation

Minor malachite within quartz veining was observed within YNRC005 between 20 and 21m. Otherwise, no visible mineralisation other than pyrite and pyrrhotite was intersected.

In general, the prospect areas are characterised by increased radioactivity within silica – iron oxide veinlets. A weathering profile up to 65m thick is developed over the black shales in these areas and supergene enrichment has overprinted an intense folding event affecting the sedimentary sequence. The source of the radioactivity and anomalous geochemistry is likely to be the shales and/or the sulphide minerals.

Previous analysis of oxidised pyrite from the Two Peaks North area returned anomalous geochemical values including (from the same sample) 545ppm cobalt, 4050ppm copper, 335ppm molybdenum, 2912 ppm nickel, 60ppm uranium and 4536ppm zinc. Samples of fresh sulphides have been submitted for analysis to establish whether the unweathered sulphides carry high levels of metals.



The results of new surface prospecting around various radiometric anomalies have been received. A total of 31 samples were submitted for analysis. These samples in general returned anomalous base and precious metals and uranium (fig.5) with peak values (not the same sample) of gold 50ppb, silver 12.7ppm, copper 3932ppm, lead 6446ppm, uranium 363ppm and zinc 4445ppm.

The lead results are from an area of Irregularly Dolomite and are consistent with previous results. The remaining results are from areas of shale and the results from the current drilling program may assist in understanding the significance of these results.

Borrooloola

(Copper; Sandfire 100%)

The Company has completed four of the five holes planned to test the zone defined by the existing drilling and the induced polarisation survey (fig.6). Hole E was not drilled due to prior commitments by the drilling contractor.

All four holes penetrated the target zone with the best results coming from Hole BRCD008. A brief summary of the results from the program is included as Table 2. Hole BRCD010 intersected the zone approximately 150m below and 150m east of the planned intersection position due to the hole dropping and turning east.

The drilling results are being integrated with the geophysical data as part of the review of the 2006 program.

Additional induced polarisation work is planned to test the eastern extension to the Coppermine Creek fault (fig.7).

Table 2 Borrooloola Drilling 2006 Summary

Drillhole Number	Depth m	Anomalous Copper Interval	Best Intersection
BRCD008 Hole A	373.2m	36.0 – 88.0m (52m) 104.0 – 138.0m (34m) 164.8 – 172.0 (7.2m) 189.7 – 206.0m (16.3m) 214.9 – 258.4m (43.5m) 264.3 – 270.3m (6.0m)	4m @ 427ppm Cu 4m @ 311ppm Cu 1m @ 666ppm Cu 1m @ 816ppm Cu 0.4m @ 1430ppm Cu 4m @ 2700ppm Cu 1m @ 653ppm Cu
BRCD009 Hole B	337.8m	104.0 – 120.0m (16.0m) 161.0 – 163.3m (2.3m) 179.7 – 166.1m (13.6m) 300.8 – 182.9m (117.9m)	4m @ 795ppm Cu 1.4m @ 3300ppm Cu 2.7m @ 2700ppm Cu 0.6m @ 1060ppm Cu 1.35m @ 1280 ppm Cu 0.7 @ 974ppm Cu 1m @ 836ppm Cu



Drillhole Number	Depth m	Anomalous Copper Interval	Best Intersection
BRCD010 Hole D	621.3m	499.0 – 508.0m (19m) 571.8 – 580.8m (9.0m)	1m @ 369ppm Cu 1m @ 1390ppm Cu 1m @ 21400ppm Cu 1m @ 1230ppm Cu
BRCD011 Hole C	430.8m	302.3 – 305.91m (3.61m) 309.54 – 311.82m (2.28m) 377.0 – 384.0m (7m)	1.28m @ 5400ppm Cu 1m @ 344ppm Cu
Total	1763.1m		

The Company has entered into an agreement with a private company, Finching Pty Ltd, for the purchase of seven exploration licences in the Borroloola area (fig.8). At settlement, Sandfire will allot Finching 600,000 fully paid Sandfire shares and grant Finching a \$0.50/tonne royalty of manganese ore mined from EL24700.

The Finching tenements cover extensions to the geological structures covered by the Company's existing tenement holdings.

Mt Boggola

(Gold, Copper; Sandfire 100%)

Three exploration targets remain to be tested at Mt Boggola; Stadlers copper/gold prospect, the airborne electromagnetic anomaly south-west of Stadlers, and the gold geochemistry reporting from drainage samples north of Stadlers. Exploration programs to assess these targets are planned for 2007.

Urandy

(Gold, Copper; Sandfire 100%)

Follow up soil sampling completed in the north-west of the project area confirmed earlier anomalous copper, gold and uranium results. A program of bedrock geochemistry is being planned for 2007.

Sandfire Project

(Lead-Zinc; Sandfire 100%)

No work was undertaken.

Greg Steemson
Managing Director
24th January 2007

The information in this report that relates to Exploration Results is based on information compiled by Greg Steemson who is a Fellow of the Australian Institute of Geoscientists. Greg Steemson has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Greg Steemson consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.



Corporate Information

Directors and Executive Management

B R Coppin: *Non-Exec Chairman*
G H Steemson: *Managing Director*
G Hutton: *Executive Director*
R M Lewis: *Company Secretary*

Issued Capital

As at the date of this report the issued capital of the Company is comprised of:

- 63,971,626 fp shares
- 11,060,652 contributing shares with \$0.15 to pay, no call before 3/3/07
- 2.392m 31/12/08 \$0.25 opts
- 0.625m 30/9/08 \$0.20 opts
- 6.9m 30/6/07 \$0.60 opts
- 3.0m 30/9/11 \$050 opts

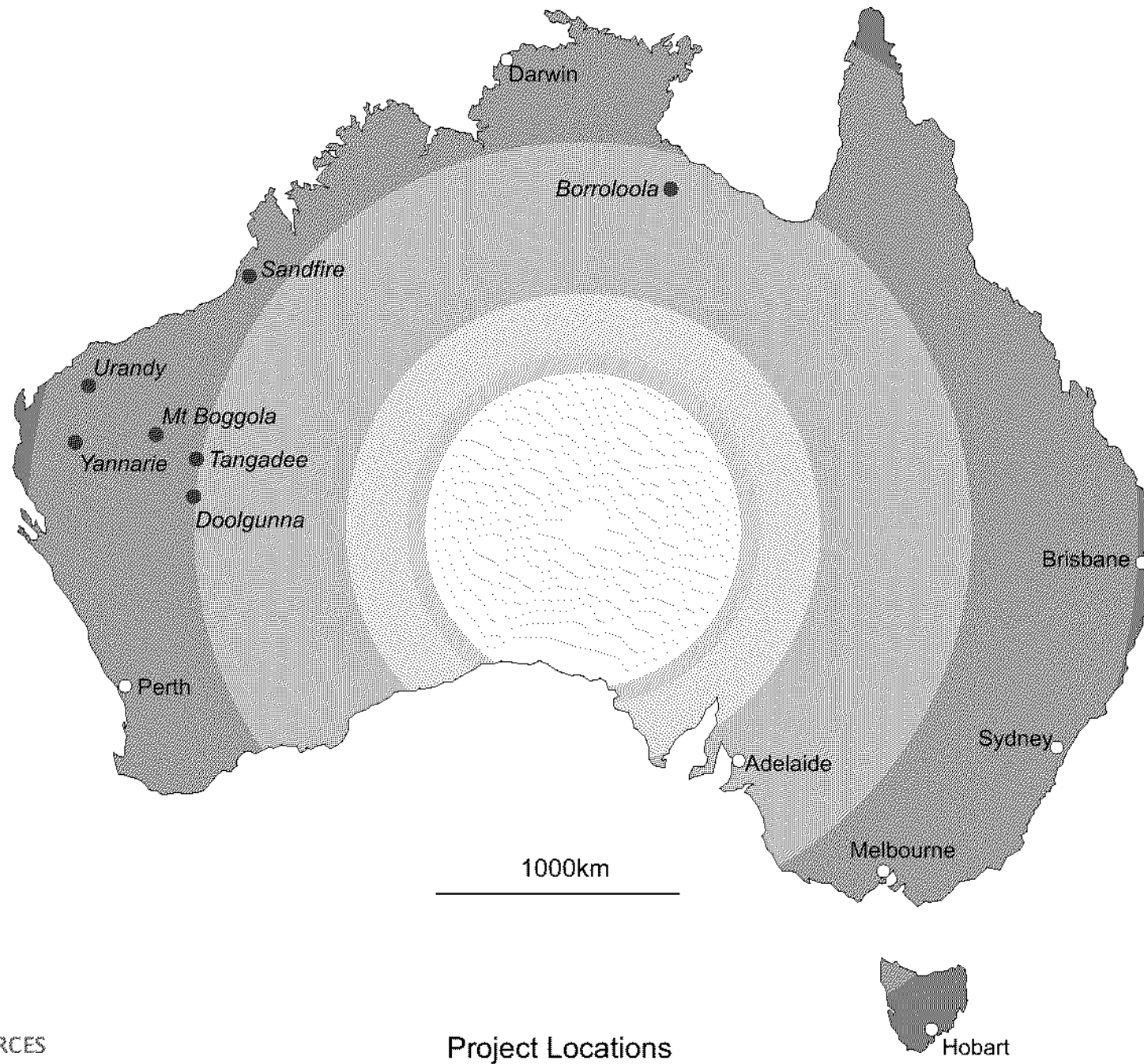
Substantial Shareholders

Faustus Nominees Pty Ltd 8.89%
Evolution Master Fund 6.52%
Resource Development Company 4.40%

Shareholder Enquiries

Matters related to shares held, change of address, tax file numbers and the like should be directed to the Company's Registry: Security Transfer Registrars Pty Ltd
Phone – 08 9315 2333

Investors interested in receiving copies of ASX announcements can register such interest on the Company's website www.sandfire.com.au.



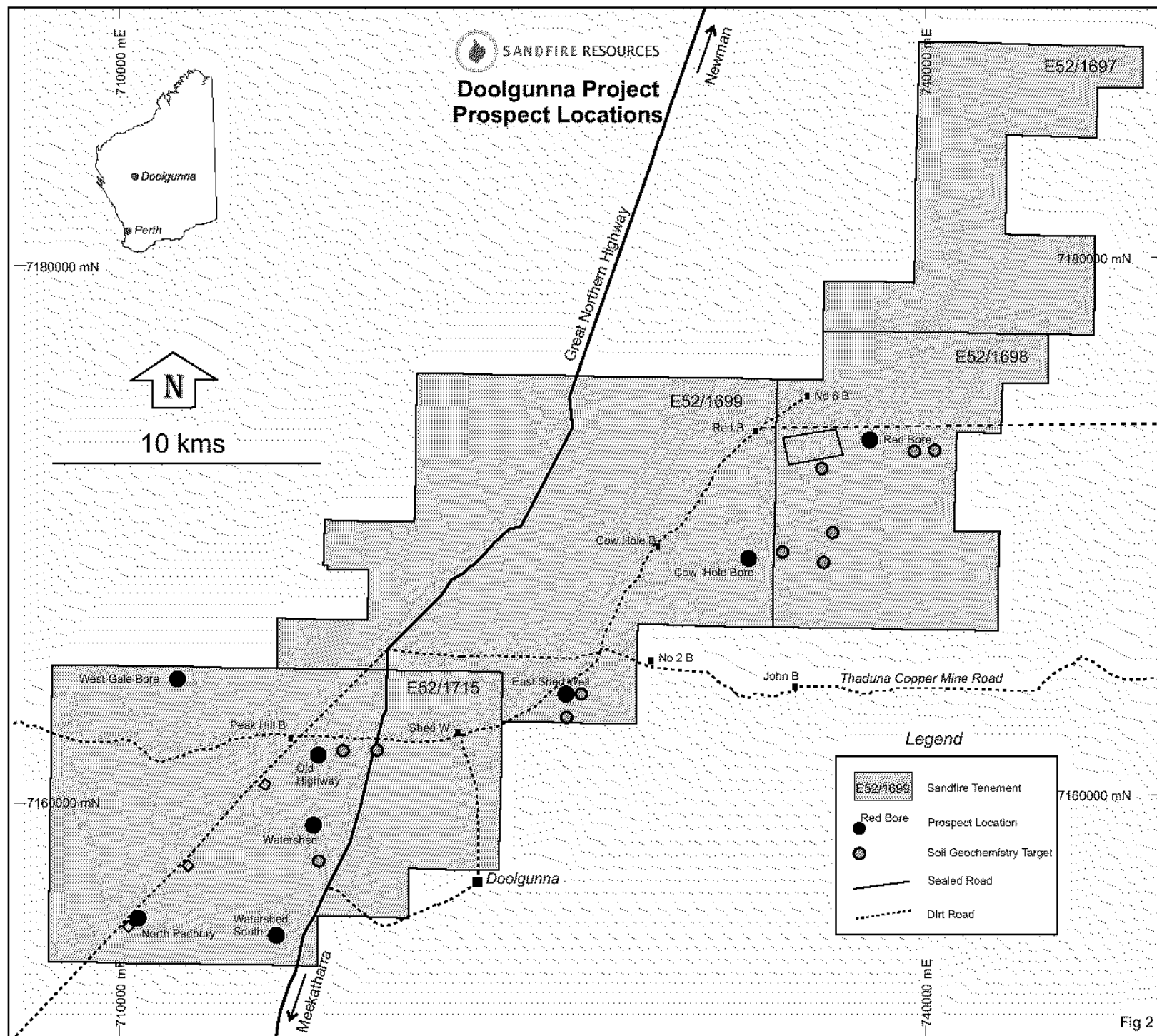
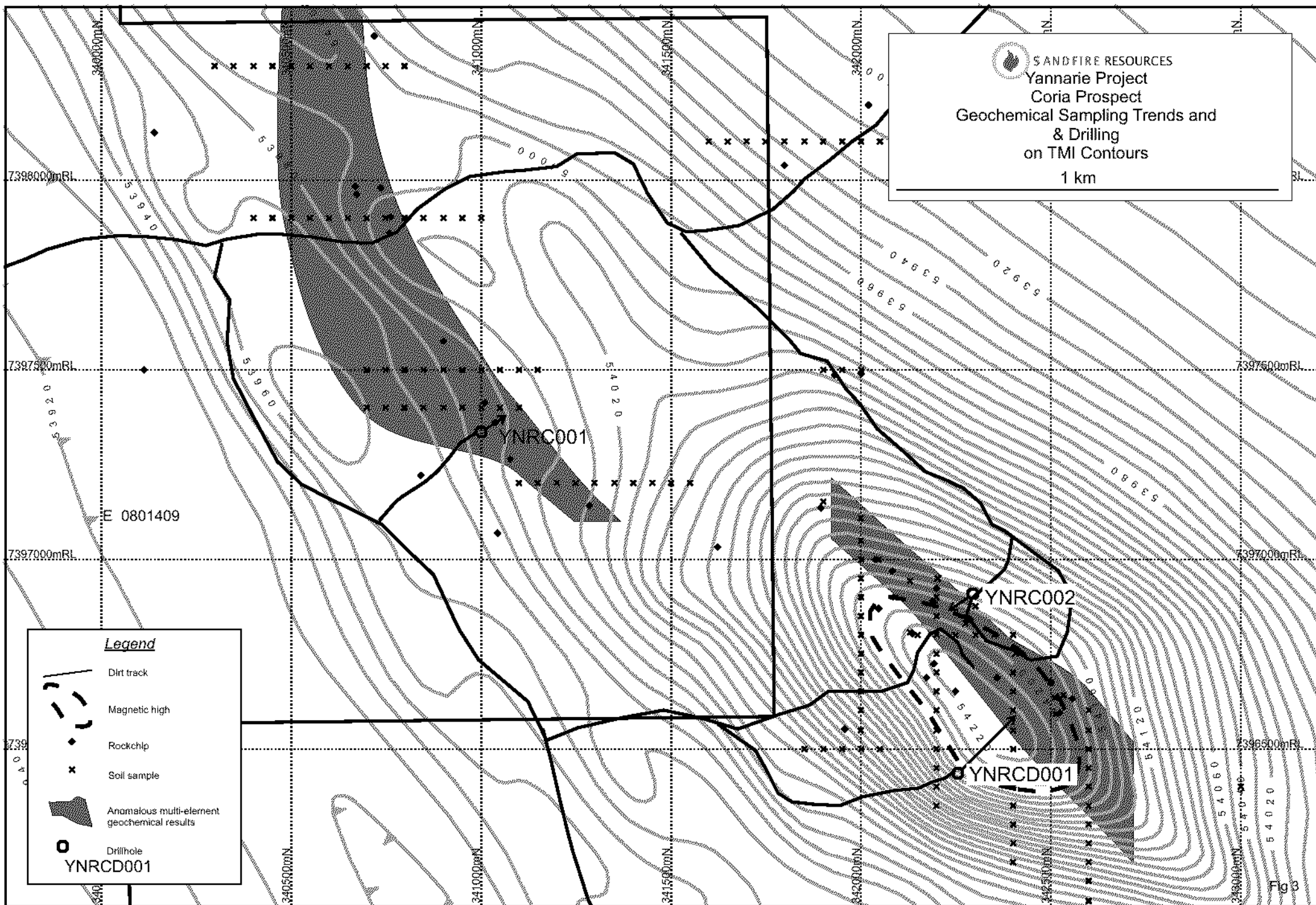
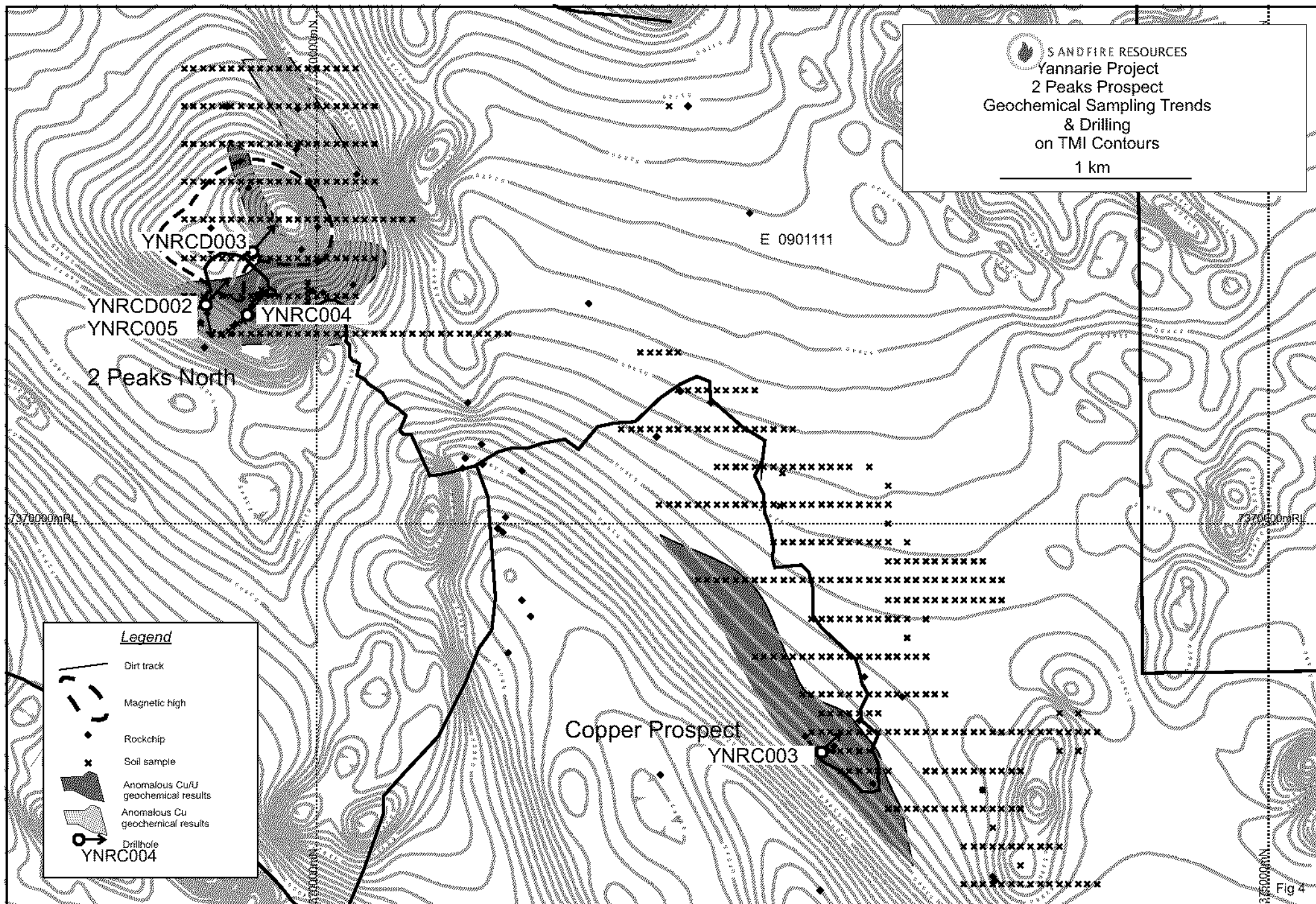


Fig 2





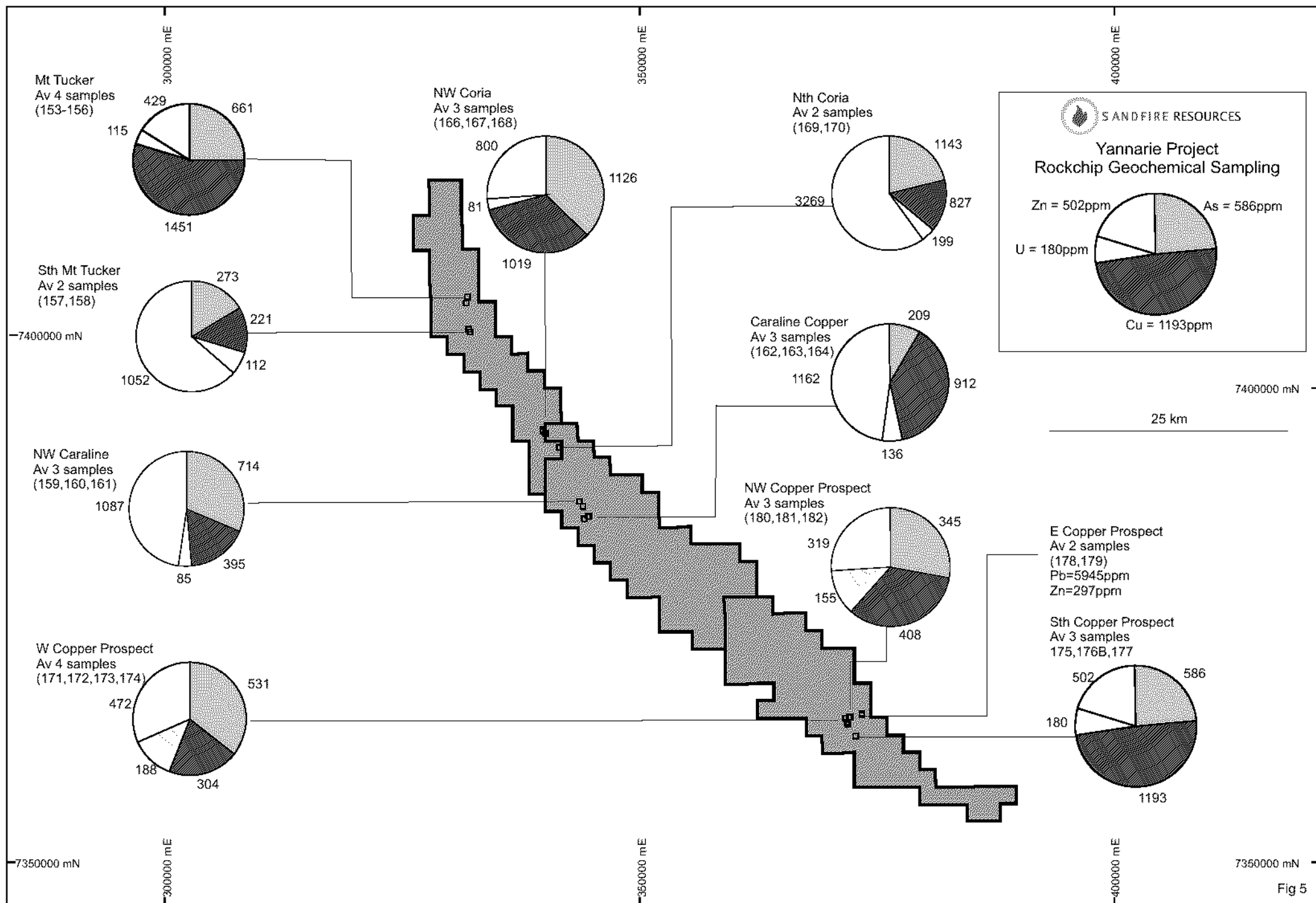


Fig 5

