

COPPER RANGE (SA) PTY LTD



ANNUAL TECHNICAL REPORT 4th November 2007 to 3rd November 2008

EL 3972 – Apoinga

TITLE: ANNUAL TECHNICAL REPORT FOR
EL 3972 – Apoinga for the Period
Ending 04/11/2008

HOLDER: COPPER RANGE (SA) Pty Ltd

OPERATOR: COPPER RANGE (SA) Pty Ltd

1:250,000 SHEET: Burra SI 54-5, Adelaide SI 54-9

1:100,000 SHEET: Apoinga 6730, Clare 6630
Kapunda 6629, Eudunda 6729,

AUTHOR: Charlie Seabrook

SUBMITTED BY: Mike Ware

DATE: 23/12/2008

KEYWORDS: Tarnma Anticline, unbreached anticline, salt diapirs,
Skillogalee Dolomite

DISTRIBUTION: 1. Copper Range (SA) Pty Ltd, Adelaide Office
2. Department of Primary Industries and Resources,
South Australia

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SUMMARY

EL 3972 – Apoinga occurs within the northern Mt Lofty Ranges comprising Proterozoic rocks of the Adelaide Fold Belt. The main prospect area within EL 3972 is the Tarnma Anticline which is a N-S trending fold, cored by Skillogalee Dolomite. This structure represents an unbreached anticline in a favourable regional structural setting, occurring between the historic mining centres of Burra to the north and Kapunda to the south.

Copper Range has developed a new model for sediment-hosted copper mineralisation within the Adelaide Fold Belt which targets areas where a reductant-bearing fluid has ponded against a suitable structural or stratigraphic trap. An influx of copper-bearing fluid precipitates copper sulphides in a porous sandstone horizon. An unbreached anticline, such as at Tarnma, provides a suitable target as fluid flow-through of saline brines would have been significantly retarded and fluid escaping from compacting sediments may have been focused into the core of these structures, with only slow leakage along minor fracture zones. Such a scenario would allow fluids to pond within structural and stratigraphic traps, and the collection of several pulses of fluid expulsion, increasing the availability of reductant and subsequent copper-bearing fluid as it is prevented from flowing out of the system.

In this reporting period Copper Range has undertaken reconnaissance visits to the Tarnma Anticline area, also investigating known copper and gold occurrences within the tenement area. An initial rock chip sampling programme was completed focussing on the core of the anticline where evidence of slow leakage of siliceous fluids is apparent.

The results of this sampling programme show anomalous copper values (up to 411ppm Cu) associated with ferruginisation, alteration and fluid flow. These results are encouraging and warrant further investigation.

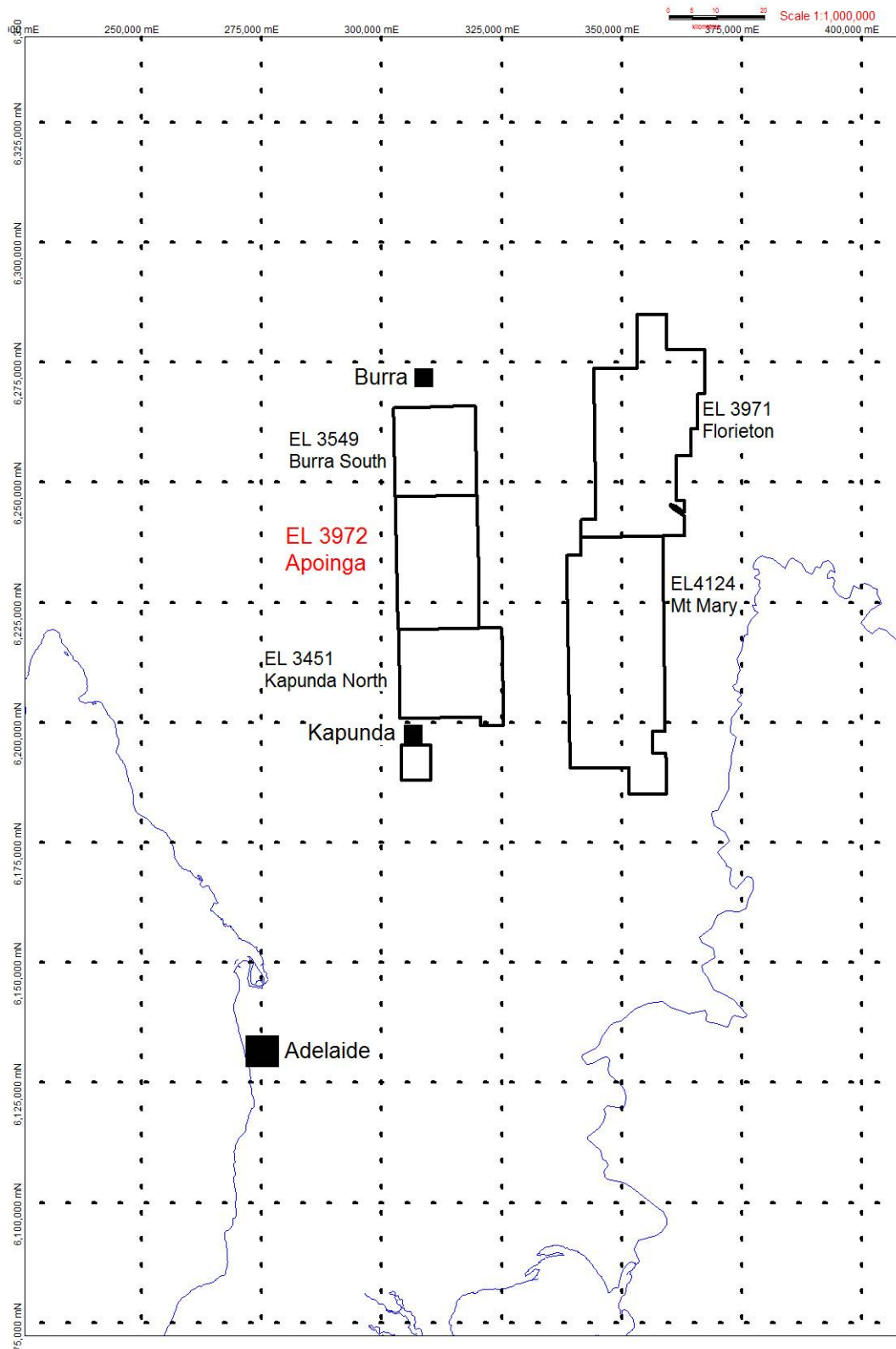


Figure 1. Location of EL 3972 within the current Copper Range (SA) Pty Ltd Burra project areas

1. INTRODUCTION

The Tarnma Anticline Project is the main exploration focus within EL 3972. The Tarnma Anticline is an unbreached anticline (salt diapirism has not penetrated through to the surface) which has the potential to have trapped copper-bearing fluids beneath a reducing cap horizon, with only minor leakage of fluids to the surface.

Tarnma lies within a favourable regional structural zone which includes the Kapunda copper mine to the south and the Burra copper Mine to the north (figure 2). Copper Range has undertaken reconnaissance rock chip sampling which produced some elevated copper values that provides encouragement for further investigation.

2. LOCATION AND ACCESS

The Apoinga tenement (EL 3972) is situated in the Northern Mt Lofty Ranges, approximately 150km north of Adelaide. It has good access off the main Barrier Highway to the east of the tenement with a dense network of dirt roads that cross the tenement.

3. TENURE DETAILS

The Apoinga tenement EL 3972 was taken out by Copper Range (SA) Pty Ltd, a wholly-owned South Australian subsidiary of International Base Metals Ltd that was floated on the ASX as an independent company in December 2006. Tenement details are summarised in table 2.

Tenement number	Date granted	Expiry date	Renewal date	Project name	Licensee and operator	Locality	Area km ²
EL 3972	05/11/07	04/11/08	04/10/09	Apoinga	Copper Range (SA) Pty Ltd	Approximately 25km N of Kapunda	470

Table 1. Summary of tenement details

4. MINING HISTORY AND PREVIOUS EXPLORATION

4.1 Mining

The area has numerous old workings, the larger of which are shown in figure 2. Several smaller workings occur in the immediate vicinity of the Apoinga EL, but only two mineral occurrences are located within the current tenement boundaries.

Apoinga Gold Claim is an iron-quartz lode that was worked in 1930. No gold was officially recorded.

The *Brady Creek workings* consisted of several shafts and a 60ft cross cut. Gold was not found in sufficient quantities to make the mine payable and no copper was produced.

4.2 Past Exploration

Little work has been undertaken within the current licence area, although numerous other EL's have covered the area, with most of the previous work being focussed in the Burra area to the north, and the Kapunda area to the south.

1978 – 1979 CRA Exploration Pty Ltd

CRA's EL 381 covered part of the current exploration licence. They were conducting a regional exploration programme for sediment-hosted base metals and undertook follow up geochemical sampling in a location to the east of the current EL where SADME had previously identified anomalous base metal horizons within Kanmantoo Group metasediments. No further work was undertaken.

1988 – 1989 BP Australia Gold Pty Ltd

BP Australia Gold explored for sediment-hosted gold deposits in the Apoinga area. They undertook a BLEG stream sediment sampling programme and indentified 3 anomalous results within the Mt Rufus area, to the west of the current EL. They recommended follow-up work but none was undertaken.

1972 – 1973 Australian Aquitane Petroleum Pty Ltd

Australian Aquitane undertook a regional stream sediment sampling programme targeting silicified shales and dolomites within the core of N-S trending anticlines in the Burra District. Detrital heavy mineral panning yielded pyrite, malachite and chrysocolla but did not lead to the discovery of a new mineral discovery. The current EL was not targeted.

Lease	Holder	Start date	End date	Activities
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EL 223	Utah Development Co. Ltd	1975	1976	No data
EL 381	CRA Exploration Pty Ltd	1978	1979	Soil sampling, rock chip sampling
EL1548	BP Australia Gold Pty Ltd	1988	1989	BLEG stream sed sampling
SML 685	Australian Aquitane Petroleum Pty Ltd	1972	1973	Regional stream sediment sampling

Table 2. Summary of previous work carried out in the Apoinga tenement area

5. EXPLORATION RATIONALE

Copper Range is targeting sediment-hosted copper deposits associated with fluid flow related to diapirism within the Adelaidean basin.

Prospectivity for sediment-hosted copper mineralisation is also considered to be high in situations where salt diapirs have not breached the surface, but have disrupted topography sufficiently to form domes or anticlines. A diapir crops out adjacent to the Burra Mine but not at Princess Royal, Kapunda or Tarnma where strongly disrupted sediments in anticlines suggest diapirs or salt ridges may be present at depth.

These situations are appealing as fluid flow-through of saline brines would have been significantly retarded and fluid escaping from compacting sediments may have been focused into the core of these structures, with only slow leakage along minor fracture zones. Such a scenario would allow fluids to pond within structural and stratigraphic traps, and the collection of several pulses of fluid expulsion, increasing the availability of reductant and subsequent copper-bearing fluid as it is prevented from flowing out of the system.

Unbreached anticlines may also represent roll-over anticlines where downthrown blocks have rotated on a listric fault surface during extension and basin development. These features occur parallel to basin margins and are known to be a focus of copper mineralisation in the Zambian Copperbelt, where cross cutting transfer faults have provided fluid pathways to channel mineralising fluids into structural or stratigraphic traps (El Desouky et al 2008).

Rocks exposed in the Tarnma Anticline consist largely of pelites and carbonates and as such would make ideal cap rocks to prospective hosts below. Rhynie Sandstone lies stratigraphically below Skillogalee Dolomite which is the oldest unit exposed in the Tarnma Anticline.

An adequate supply of reductant-containing sediments is also present with Bethel Shale, a black carbonaceous shale within the Saddleworth Formation and locally pyritic Tapley Hill Formation along the western arm of the anticline. Base metal mineralisation which could represent leakage from a larger underlying system was exploited in small mines within a synclinal structure to the west of the Tarnma Anticline – e.g. New Hope and Belvidere Mines to the east of the current tenement area (figure 3).

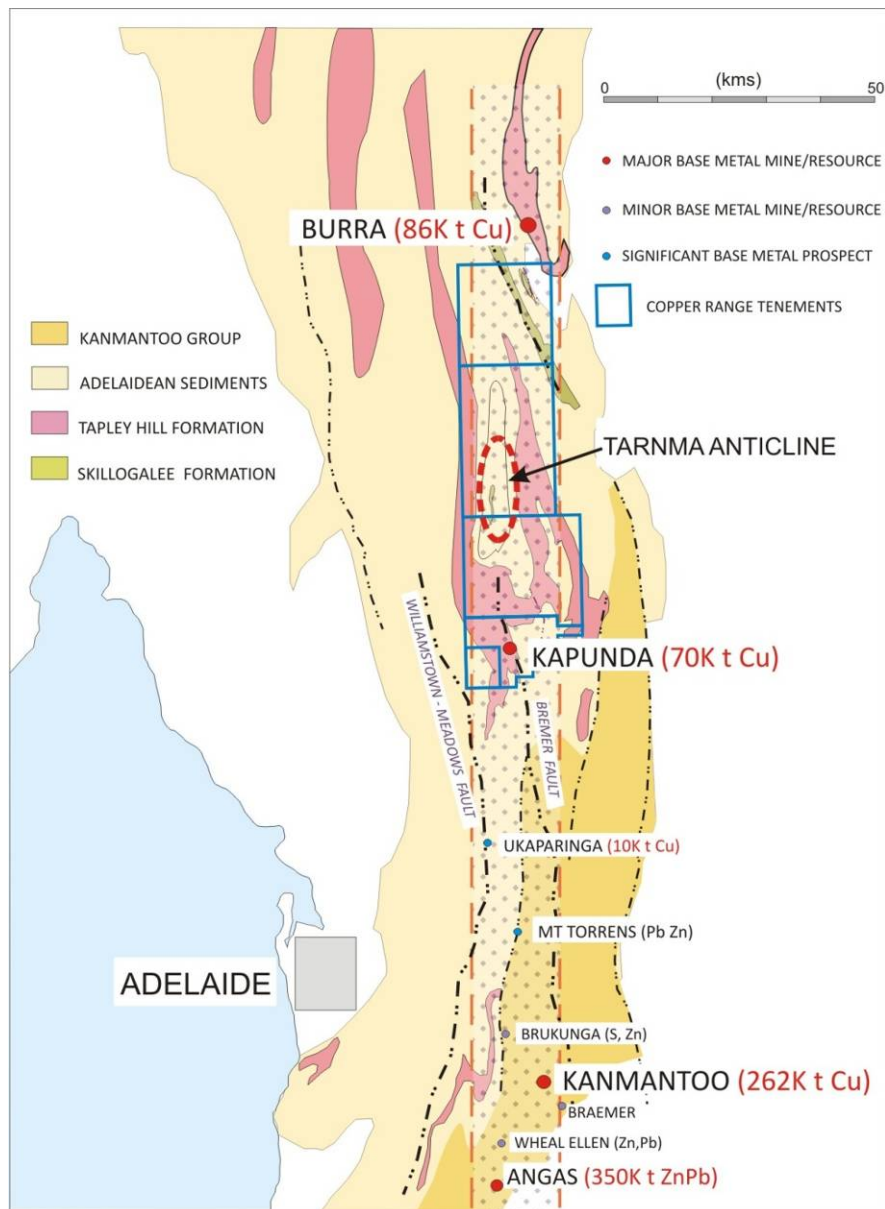


Figure 2. Geological map of EL 3972, showing Tarnma Anticline prospect area

6. REGIONAL GEOLOGY

Regionally, the area lies within the Adelaide Fold and Thrust Belt, which contains Neoproterozoic to late Cambrian sequences. Rock types recognised within this Precambrian, fault-bounded intracratonic trough are Neoproterozoic in age (1400 to 570 Ma) with terrestrial and marine clastic, chemical and glaciogenic sediments (Preiss 1987). These formations have been deformed and metamorphosed (generally to greenschist facies) by at least two major orogenic episodes: the Proterozoic Adelaide Fold Belt orogenic event and a later Early Palaeozoic Delamerian Orogeny (Preiss 1987). Following uplift caused by these deformations, erosion of the exposed older formations has taken place and younger Palaeozoic and Cainozoic sediments unconformably overly the Adelaidean sequences in places.

The Apoinga tenement covers Adelaidean sediments predominantly of the Burra and Umberatana Groups of the Adelaide Fold Belt. These rocks have been folded into a series of N-S trending anticlines and synclines that traverse the tenement.

The central part of the tenement contains the Tarnma Anticline, which is a long, narrow N-S trending fold, lying between the Burra and Kapunda Mines (figure 2). The centre of the fold exposes Burra Group siltstones, shales and carbonates with Stuartian-age tillites (Appila Tillite) along both limbs (figure 3). Dyson (1996) interpreted a diapir within the core of the fold which he termed the Tarnma Diapir, however, preliminary inspection of the area by Wolfgang Preiss of PIRSA (pers comm.) suggests that although strongly disrupted carbonates of the Skillogalee Dolomite are present, there is no diapir in the classic sense. The fold represents an unbreached anticline with respect to diapirs.

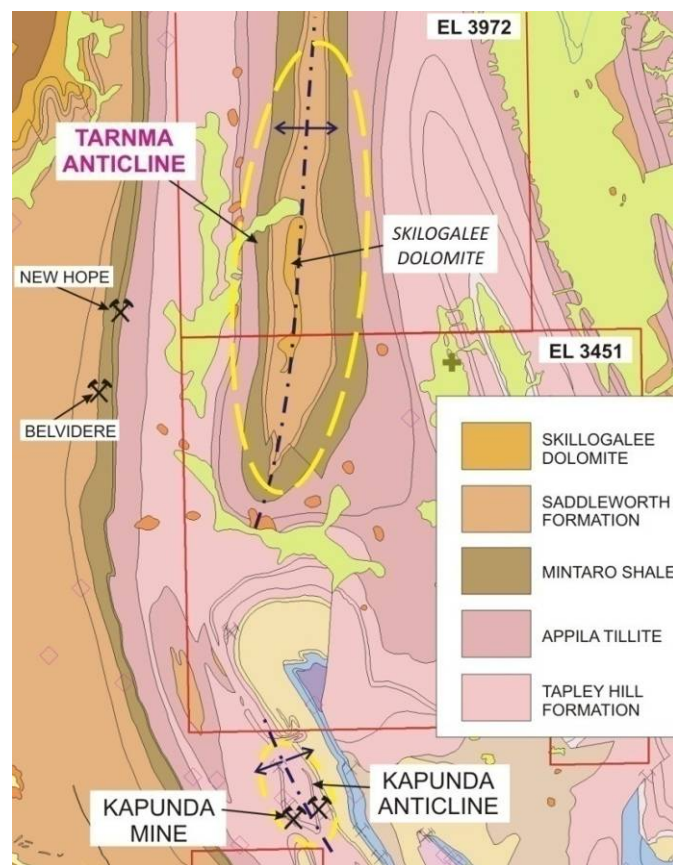


Figure 3. Geology of the Tarnma Anticline, with locations of historic copper workings

7. WORK COMPLETED BY COPPER RANGE (SA) PTY LTD

Copper Range has undertaken a review of previous exploration in the region and paid several reconnaissance visits to the Tarnma Anticline area. These visits have included a visit by US-based geological consultant Dr Jon Thorson. Dr Thorson has assisted Copper Range in developing a new conceptual model for sandstone-hosted copper mineralisation within the Adelaide Fold Belt. His model has been derived from experience with major sedimentary copper deposits in Africa, USA, China and elsewhere. This reconnaissance work identified the Tarnma Anticline as a prospective location for sandstone-hosted copper mineralisation below a dolomite seal.

7.1 Geochemistry

Copper Range has undertaken an initial rock chip sampling programme which aimed to locate copper anomalism within the core of the Tarnma Anticline that may represent slow leakage from a larger copper concentration locked beneath the outcropping Skillogalee Dolomite. The sample locations are given in figure 4.

Samples were submitted to ALS Chemex for their ME-ICP61 analysis, a multi-acid digest with HF and an ICPAES finish. Detection limits for these analyses are given in Appendix 1.

Assay results (Appendix 2) indicate the presence of anomalous copper within the sampled dolomite. Several values in excess of 100ppm Cu are present, with a maximum of 411ppm Cu. Although several of the samples that display elevated copper are also ferruginous, which is often associated with regolith development and frequently displays elevated base metal concentrations, these samples do not have high zinc values and there is not a 1:1 correlation between iron and copper. There are some samples which are high in iron and low in copper so it is not a case of iron oxide simply accumulating copper. Thus it can be concluded that the copper is anomalous over the axis of the Tarnma Anticline and may represent mineralisation at depth.

At this stage a program of intensive surface and subsurface geochemical sampling of the Skillogalee Dolomite and accompanying mapping is recommended particularly within where the dolomite is cut by NE-trending structures. Sampling will provide vectors towards the sighting of drillholes to test the prospective underlying Rhynie Sandstone.

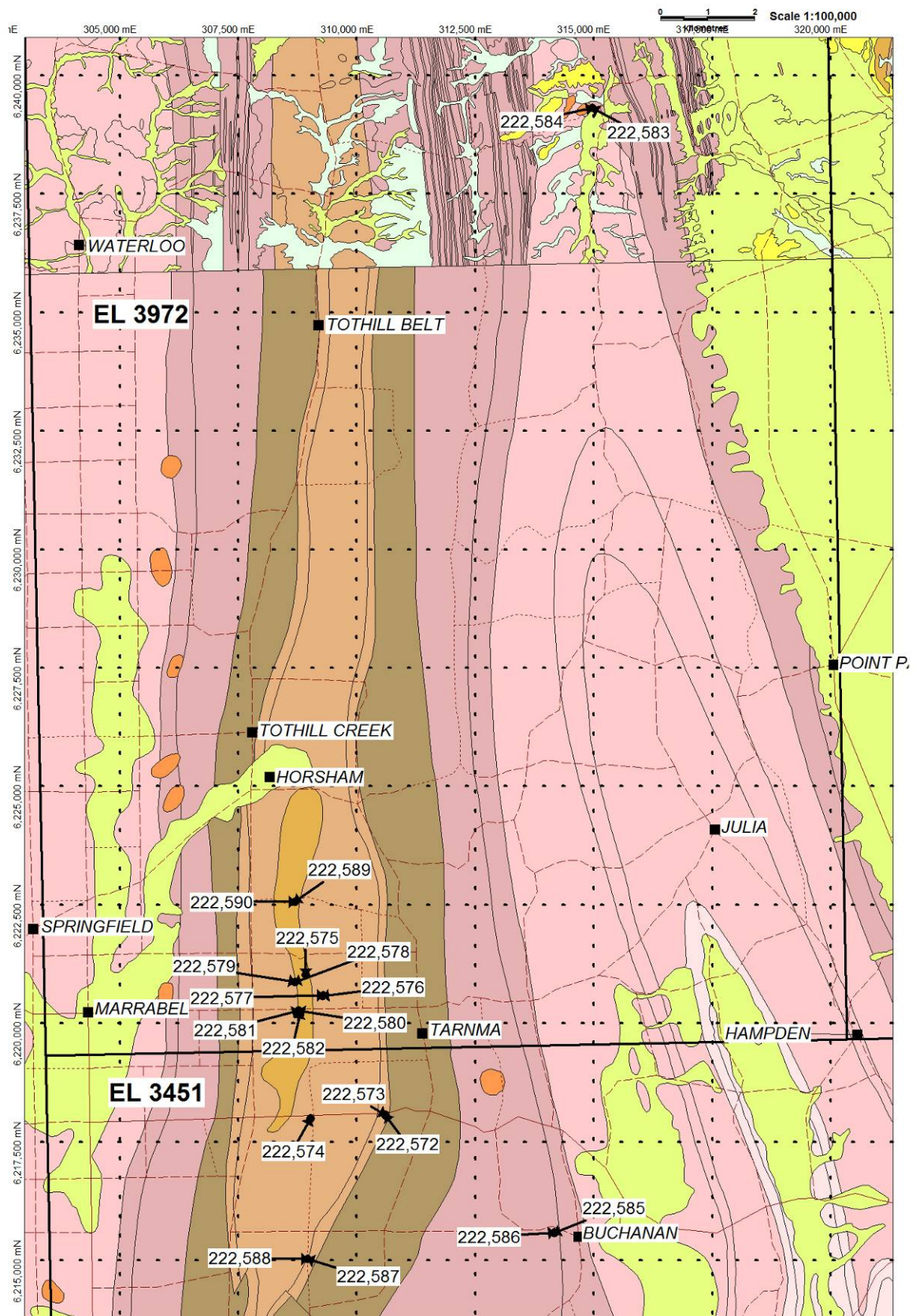


Figure 4. Rock chip sample locations

8. CONCLUSIONS & FUTURE WORK

The following outcomes were achieved from the first year's work in EL 3972:

- Identification of Tarnma as an unbreached anticline that may have trapped circulating fluids within underlying Rhynie Sandstone
- Initial rock chip sampling gives anomalous results up to 411ppm Cu within core of anticline
- Follow-up rock chip and auger soil sampling is recommended to delineate anomalies prior to drilling

9. EXPENDITURE STATEMENT

Copper Range (SA) Pty Ltd <i>34 Stepney Street, Stepney, SA 5069</i> <i>Apoinga EL 3972 (5028)</i>	
Expenditure Statement 5/11/2007 To 4/11/2008	
Job Name	Debit
Consultant - Geophysics	\$11,715.00
Wages/Salaries- Geo/Technical	\$29,455.34
Phone - Fax	\$81.82
MV - Hire	\$1,947.73
T'mnt - Landholder	\$146.25
Conf., Seminar, Meeting, Train	\$600.00
Travel - Accommodation, Meals	\$745.53
Travel - Field Taxi, bus	\$174.39
Computer - Software	\$622.90
Over heads at 10%	\$4,548.90
Grand Total	\$50,037.86

10. REFERENCES

Dyson, I.A., 1996. A new model for diapirism in the Adelaide Geosyncline. *MESA Journal*, 3:41-48.

El Desouky, H.A., Muchez, P., Dewaele, S., Boutwood, A. & Tyler, R., 2008. Postorogenic origin of the stratiform Cu mineralization at Lufukwe, Lufilian Foreland, Democratic Republic of Congo. *Economic Geology*, v. 103, pp. 555-582.

Mason, D.O. and Mayer, T.E. **1979**. Eudunda. Progress, partial relinquishment and final reports to licence expiry for the period 26/1/1978 to 25/1/1979. CRA Exploration Pty Ltd. Open File Envelope 3233.

Ognar, S., D'Auvergne, P. **1973**. Burra. Progress and final reports to licence expiry for the period 26/3/1972 to 25/3/1973. Australian Aquitane Petroleum Pty Ltd. Burra Ridge Pty Ltd. Open File Envelope 1995.

Tedder, I.J. **1976**. Progress report Flat Hill area, EL 223, SA. Utah Development Co. Ltd. Open file envelope 2730

Walker, M.D., **1989**. Robertstown. Progress, partial relinquishment and final reports to licence expiry/surrender for the period 30/11/1988 to 29/11/1989. BP Australia Gold Pty Ltd. Open File Envelope 8108.

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1:250,000 SHEET: Burra SI 54-5, Adelaide SI 54-9

1:100,000 SHEET: Apoinga 6730, Clare 6630
Kapunda 6629, Eudunda 6729,

AUTHOR: Adrian Brewer

SUBMITTED BY: Mark Arundell

DATE: 08/03/2010

KEYWORDS: Tarnma Anticline, unbreached anticline, salt diapirs,
Skillogalee Dolomite

DISTRIBUTION: 1. Copper Range (SA) Pty Ltd, Perth Office
2. Department of Primary Industries and Resources,
South Australia

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- 6.0 REGIONAL GEOLOGY**
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SUMMARY

EL 3972 – Apoinga occurs within the northern Mt Lofty Ranges comprising Proterozoic rocks of the Adelaide Fold Belt. The main prospect area within EL 3972 is the Tarnma Anticline which is a N-S trending fold, cored by Skillogalee Dolomite. This structure represents an unbreached anticline in a favourable regional structural setting, occurring between the historic mining centres of Burra to the north and Kapunda to the south.

Copper Range has developed a new model for sediment-hosted copper mineralisation within the Adelaide Fold Belt which targets areas where a reductant-bearing fluid has ponded against a suitable structural or stratigraphic trap. An influx of copper-bearing fluid precipitates copper sulphides in a porous sandstone horizon. An unbreached anticline, such as at Tarnma, provides a suitable target as fluid flow-through of saline brines would have been significantly retarded and fluid escaping from compacting sediments may have been focused into the core of these structures, with only slow leakage along minor fracture zones. Such a scenario would allow fluids to pond within structural and stratigraphic traps, and the collection of several pulses of fluid expulsion, increasing the availability of reductant and subsequent copper-bearing fluid as it is prevented from flowing out of the system.

In this reporting period Copper Range has undertaken further reconnaissance visits to the Tarnma Anticline area, also investigating known copper and gold occurrences within the tenement area. A detailed appraisal of the Tarnma Anticline has been completed.

Expenditure for the period totalled \$55,608.

1. INTRODUCTION

The Tarnma Anticline Project is the main exploration focus within EL 3972. The Tarnma Anticline is an unbreached anticline (salt diapirism has not penetrated through to the surface) which has the potential to have trapped copper-bearing fluids beneath a reducing cap horizon, with only minor leakage of fluids to the surface.

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Table 1. Summary of tenement details

4. MINING HISTORY AND PREVIOUS EXPLORATION

4.1 Mining

The area has numerous old workings. Several smaller workings occur in the immediate vicinity of the Apoinga EL, but only two mineral occurrences are located within the current tenement boundaries.

Apoinga Gold Claim is an iron-quartz lode that was worked in 1930. No gold was officially recorded.

The *Brady Creek workings* consisted of several shafts and a 60ft cross cut. Gold was not found in sufficient quantities to make the mine payable and no copper was produced.

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Copper Range is targeting sediment-hosted copper deposits associated with fluid flow related to diapirism within the Adelaidean basin.

Prospectivity for sediment-hosted copper mineralisation is also considered to be high in situations where salt diapirs have not breached the surface, but have disrupted topography sufficiently to form domes or anticlines. A diapir crops out adjacent to the Burra Mine but not at Princess Royal, Kapunda or Tarnma where strongly disrupted sediments in anticlines suggest diapirs or salt ridges may be present at depth.

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An adequate supply of reductant-containing sediments is also present with Bethel Shale, a black carbonaceous shale within the Saddleworth Formation and locally pyritic Tapley Hill Formation along the western arm of the anticline. Base metal mineralisation which could represent leakage from a larger underlying system was exploited in small mines within a synclinal structure to the west of the Tarnma Anticline – e.g. New Hope and Belvidere Mines to the east of the current tenement area.

6. REGIONAL GEOLOGY

Regionally, the area lies within the Adelaide Fold and Thrust Belt, which contains Neoproterozoic to late Cambrian sequences. Rock types recognised within this Precambrian, fault-bounded intracratonic trough are Neoproterozoic in age (1400 to 570 Ma) with terrestrial and marine clastic, chemical and glaciogenic sediments (Preiss 1987). These formations have been deformed and metamorphosed (generally to greenschist facies) by at least two major orogenic episodes: the Proterozoic Adelaide Fold Belt orogenic event and a later Early Palaeozoic Delamerian Orogeny (Preiss 1987). Following uplift caused by these deformations, erosion of the exposed older formations has taken place and younger Palaeozoic and Cainozoic sediments unconformably overly the Adelaidean sequences in places.

The Apoinga tenement covers Adelaidean sediments predominantly of the Burra and Umberatana Groups of the Adelaide Fold Belt. These rocks have been folded into a series of N-S trending anticlines and synclines that traverse the tenement.

The central part of the tenement contains the Tarnma Anticline, which is a long, narrow N-S trending fold, lying between the Burra and Kapunda Mines. The centre of the fold exposes Burra Group siltstones, shales and carbonates with Sturtian-age tillites (Appila Tillite) along both limbs. Dyson (1996) interpreted a diapir within the core of the fold which he termed the Tarnma Diapir, however, preliminary inspection of the area by Wolfgang Preiss of PIRSA (pers comm.) suggests that although strongly disrupted carbonates of the Skillogalee Dolomite are present, there is no diapir in the classic sense. The fold represents an unbreached anticline with respect to diapirs.

7. WORK COMPLETED BY COPPER RANGE (SA) PTY LTD

Copper Range has undertaken a review of previous exploration in the region and paid several reconnaissance visits to the Tarnma Anticline area. These visits have included a visit by US-based geological consultant Dr Jon Thorson. Dr Thorson has assisted Copper Range in developing a new conceptual model for sandstone-hosted copper mineralisation within the Adelaide Fold Belt. His model has been derived from experience with major sedimentary copper deposits in Africa, USA, China and elsewhere. This reconnaissance work identified the Tarnma Anticline as a prospective location for sandstone-hosted copper mineralisation below a dolomite seal.

7.1 Geochemistry

Copper Range has previously undertaken a rock chip sampling programme which aimed to locate copper anomalism within the core of the Tarnma Anticline that may represent slow leakage from a larger copper concentration locked beneath the outcropping Skillogalee Dolomite. Sample data was reported in the previous period.

A separate report on the Tarnma Anticline was prepared and is attached as Appendix 1.

At this stage a program of intensive surface and subsurface geochemical sampling of the Skillogalee Dolomite and accompanying mapping is recommended particularly within where the dolomite is cut by NE-trending structures. Sampling will provide vectors towards the sighting of drill holes to test the prospective underlying Rhynie Sandstone.

8. CONCLUSIONS AND RECOMMENDATIONS

The following outcomes were achieved from this years work in EL 3972:

- Identification of Tarnma as an unbreached anticline that may have trapped circulating fluids within underlying Rhynie Sandstone
- Completed a detailed appraisal of the Tarnma Anticline area.
- Discussions with potential Joint Venture partners and associated field visits.

Exploration in the next period will involve continued Joint Venture negotiations and further evaluation of the Tarnma Anticline area.

9. EXPENDITURE STATEMENT

Copper Range (SA) Pty Ltd <i>Level 1, 33 Richardson Street, West Perth, WA, 6005</i> <i>EL 3972</i> Job Activity [Detail] 5/11/2008 To 4/11/2009		
Job #	Job Name	Debit
5-1013	Consultant - Geology	\$3,409.19
5-1091	Consultant - Administration	\$500.00
5-1092	Wages/Salaries- Geo/Technical	\$39,138.59
5-2228	T'mnt - Gov Fees, Rates, Rent	\$3,338.18
5-3070	Phone - Fax	\$197.26
5-3086	Map,Photo,Copy,Plan,Sat Image	\$28.64
5-3095	Stationery	\$49.43
5-4030	MV - Fuel & Maint/Parking/Toll	\$862.67
5-4048	Travel - Accommodation, Meals	\$513.88
5-4052	Travel - Field Taxi, bus	\$32.30
5-5010	Assaying - Rocks/Soil	\$247.20
5-5012	Sample Prep - Equip & process	\$123.33
6-0017	Consultant - Corporate	\$2,000.00
6-6010	Telephone	\$112.27
	Sub Total	\$50,552.94
	Overheads @ 10%	\$5,055.29
	TOTAL	\$55,608.23

10. REFERENCES

Dyson, I.A., 1996. A new model for diapirism in the Adelaide Geosyncline. *MESA Journal*, 3:41-48.

El Desouky, H.A., Muchez, P., Dewaele, S., Boutwood, A. & Tyler, R., 2008. Postorogenic origin of the stratiform Cu mineralization at Lufukwe, Lufilian Foreland, Democratic Republic of Congo. *Economic Geology*, v. 103, pp. 555-582.

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APPENDIX 1

TARNMA ANTICLINE REPORT

SAMPLING RESULTS FROM THE TARNMA ANTICLINE

The Tarnma Anticline, a long, narrow N-S trending fold, lies between the Burra and Kapunda Mines in the northern Mt Lofty Ranges. The centre of the fold exposes Burra Group siltstones, shales and carbonates with Sturtian-age tillites (Appila Tillite) along both limbs (figure 1). Dyson (1996) interpreted a diapir within the core of the fold which he termed the Tarnma Diapir, however, preliminary inspection of the area by Wolfgang Preiss of PIRSA (pers comm.) suggests that although strongly disrupted carbonates of the Skillogalee Dolomite are present, there is no diapir in the classic sense. The fold represents an unbreached anticline with respect to diapirs.

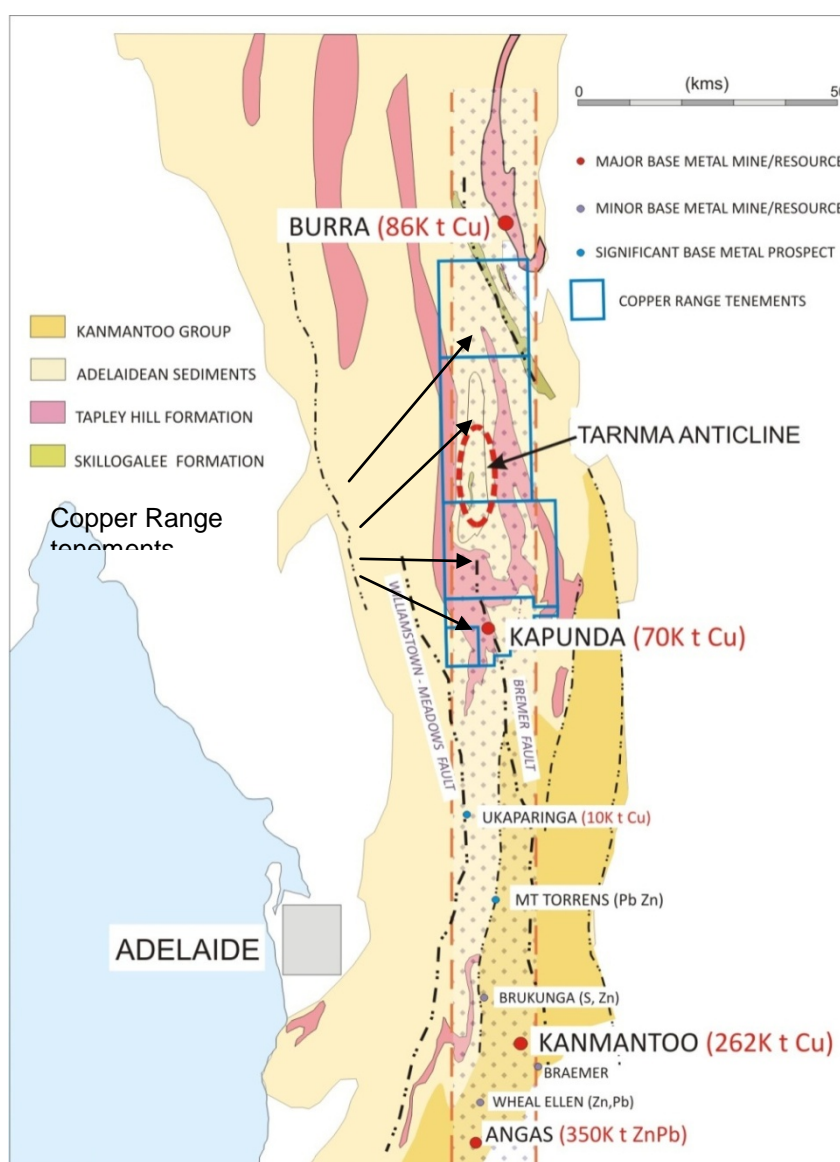


Figure 1. Location and geology of the Tarnma Anticline and base metal mineralisation

Prospectivity for sediment-hosted copper mineralisation is also considered to be high in situations where salt diapirs have not breached the surface, but have disrupted topography sufficiently to form domes or anticlines. The evaporate sequence remains covered by folded and faulted younger rocks that reflect the

anticlinal structure created by the buoyant salt (Rowan & Vendeville 2006). A diapir crops out adjacent to the Burra Mine but not at Princess Royal, Kapunda or even Tarnma where strongly disrupted sediments in anticlines suggest diapirs or salt ridges may be present at depth.

Preliminary rock chip sampling of the core of the anticline is encouraging. Geochemical results are given in the following tables, as well as sample coordinates and descriptions and sample locations are shown in figure 3. Anomalous copper values were recorded in samples 222574, 222578, 222579, 222583, 222584 and 222587.

Significantly elevated copper values ($>100\text{ppm Cu}$) are recorded from iron-enriched samples of dolomite and siltstone. In total, 10 of the 19 samples taken show evidence of copper enrichment. Notably, elevated copper values ($>50\text{ppm Cu}$) are also present in non-ferruginous material, which confirms that the high copper values are not simply related to late-stage iron-enrichment as a result of the weathering process.

These results indicate that copper may be leaking up through the axis of the anticline from a source below, including silica leakage (quartz veins and silicification of the Skillogalee Dolomite). A sandstone or dolomitic siltstone in the subsurface may have been partially dissolved which liberated silica. Combined with elevated Cu, lots of Fe and some anomalous Co, As, Cr and V as well as possible potassium alteration (elevated K in rock chip samples) it provides an interesting target than in more favourable economic times would be worthy of follow-up sampling and drilling.

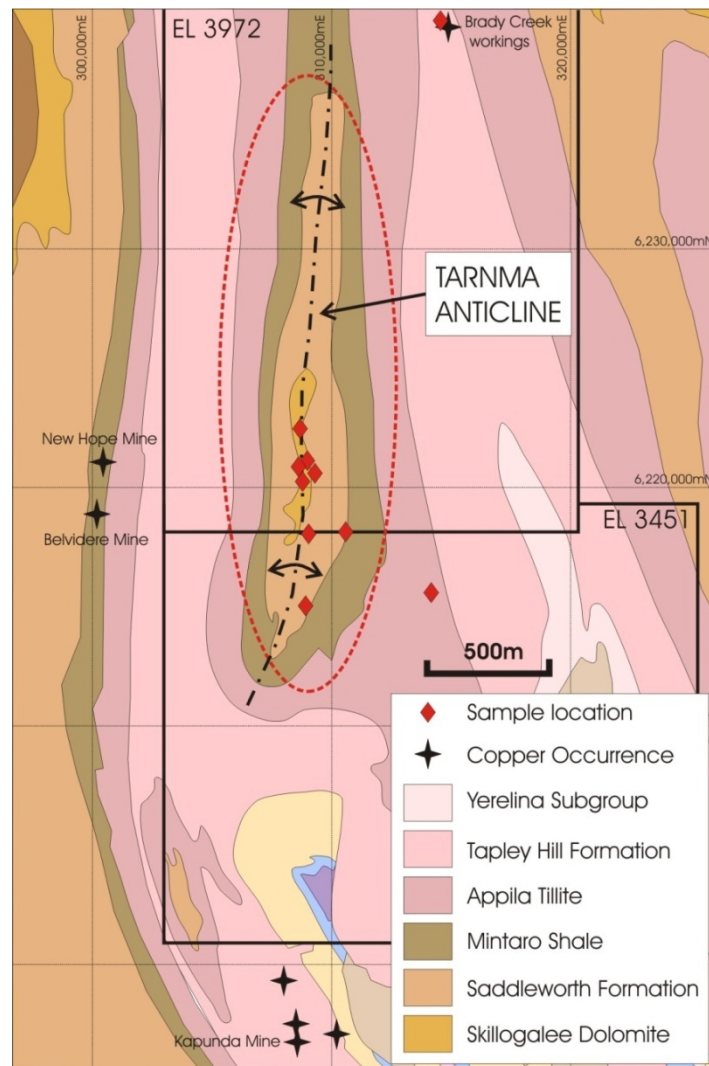


Figure 2. Geological map of the Tarnma Anticline, showing sample locations

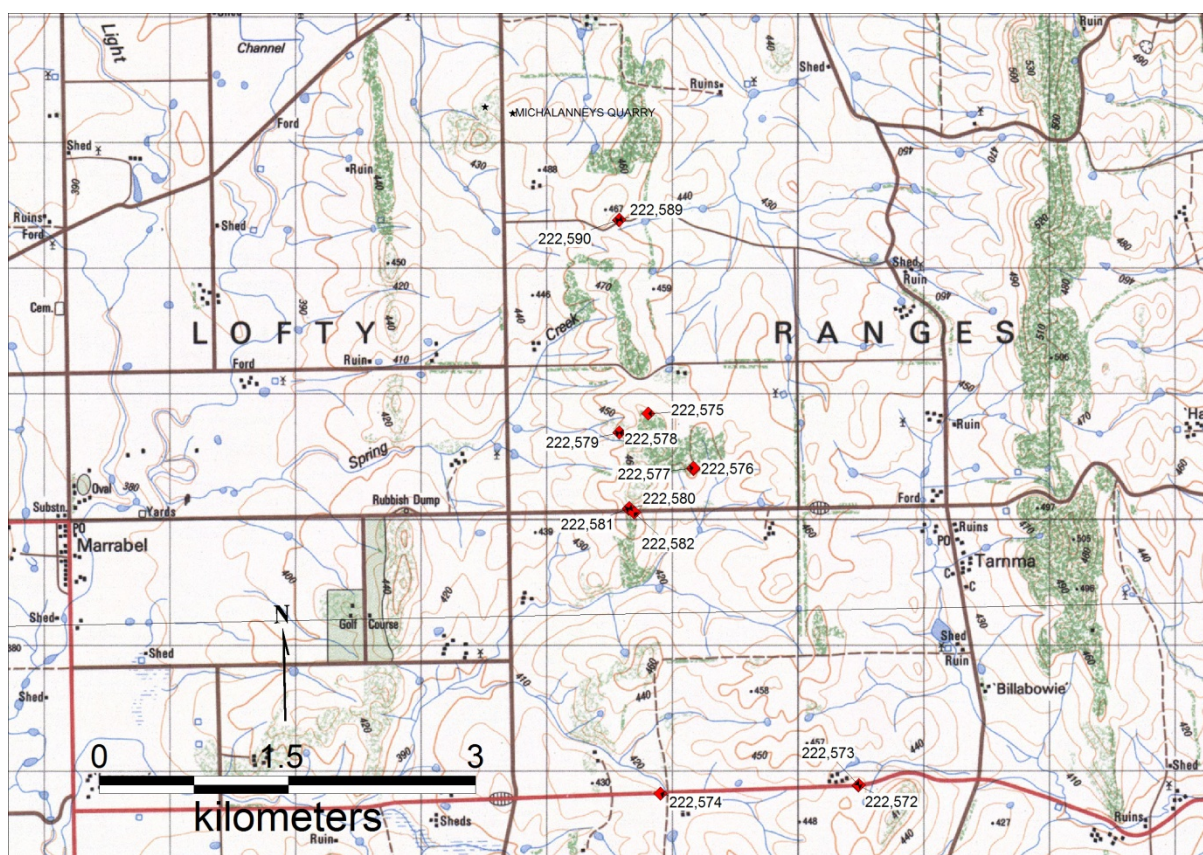


Figure 3. Location of samples from the core of the Tarnma Anticline (sample numbers shown)

SAMPLE RESULTS

Sample No.	Tenement No.	Tenement Name	WGS84 E	WGS84 N	Field description
222575	EL3972	Apoinga	308930	6221023	Siliceous dolomite with vugs filled with drusy qtz - botryoidal limonite
222576	EL3972	Apoinga	309288	6220582	Highly leached silty sandstone with limonite spots
222577	EL3972	Apoinga	309289	6220593	Sulphide-bearing quartz vein
222578	EL3972	Apoinga	308699	6220872	Brecciated, ferruginous sandy dolomite
222579	EL3972	Apoinga	308698	6220873	Sandy, brecciated dolomite with v. Ferruginous matrix
222580	EL3972	Apoinga	308775	6220266	Pale, dark grey siliceous, brecciated dolomite
					Clay-rich friable breccia, some clasts of siliceous dolomite
222581	EL3972	Apoinga	308776	6220272	Banded dark/pale grey siliceous dolomite
222582	EL3972	Apoinga	308816	6220236	Old workings adjacent to stone cottage, reported to have been for Cu
222583	EL3972	Apoinga	314968	6239314	Old workings adjacent to stone cottage, reported to have been for Cu
222584	EL3972	Apoinga	314965	6239316	Brecciated, siliceous Skillogalee with boxwork
222589	EL3972	Apoinga	308694	6222566	Pink, sandy dolomite with boxwork
222590	EL3972	Apoinga	308698	6222568	

Sample No.	Au ppm	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %
222575	0.01	<0.5	0.41	17	190	4.2	<2	0.12	<0.5	12	38	94	15.5
222576	<0.01	<0.5	6.6	<5	70	<0.5	<2	0.11	<0.5	1	35	9	2.02
222577	0.01	<0.5	1.54	15	40	<0.5	<2	0.05	<0.5	<1	28	34	13.25
222578	<0.01	<0.5	0.76	28	50	1.1	<2	0.05	<0.5	6	72	186	24.4
222579	0.01	<0.5	1.99	20	50	1.7	<2	0.05	0.5	7	119	214	21
222580	<0.01	<0.5	0.48	<5	10	<0.5	<2	0.02	<0.5	1	6	6	0.67
222581	0.05	<0.5	1.3	<5	10	<0.5	<2	0.02	<0.5	<1	12	23	0.96
222582	0.02	<0.5	0.67	<5	30	<0.5	<2	0.6	<0.5	1	12	16	0.72
222583	0.02	<0.5	6.88	39	470	3.3	<2	0.07	<0.5	14	107	411	19
222584	0.01	<0.5	8.35	<5	650	2.9	3	0.03	<0.5	4	91	105	3.45
222589	0.01	<0.5	0.68	<5	440	<0.5	3	0.03	<0.5	1	12	13	0.83
222590	<0.01	<0.5	0.21	<5	70	<0.5	<2	0.05	<0.5	1	4	12	1.04

Sample No.	Ga ppm	K ppm	La ppm	Mg %	Mn ppm	Mo ppm	Na ppm	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm
222575	10	0.05	<10	0.1	403	1	0.02	15	120	6	0.02	40	4
222576	20	0.05	30	0.07	31	<1	0.06	17	170	4	0.01	<5	6
222577	10	0.02	<10	0.04	84	1	0.03	5	370	<2	0.06	<5	8
222578	<10	0.08	10	0.06	360	1	0.01	6	2730	4	0.05	7	78
222579	<10	0.1	50	0.05	143	10	0.01	13	480	18	0.04	75	14
222580	<10	0.01	<10	0.04	36	1	0.02	1	30	2	0.01	<5	1
222581	<10	0.01	<10	0.06	63	1	0.1	6	60	3	0.01	<5	3
222582	<10	0.03	<10	0.09	47	2	0.02	2	30	4	0.01	<5	1
222583	20	1.89	20	0.45	94	4	0.08	47	340	63	0.06	9	19
222584	20	2.83	30	0.64	36	4	0.07	14	280	14	0.02	8	23
222589	<10	0.06	20	0.02	154	1	0.01	5	130	43	0.02	<5	1
222590	<10	0.02	10	0.02	140	<1	0.01	2	100	5	0.01	<5	1

Sample No.	Sr ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
222575	8	<20	0.01	<10	<10	63	140	17
222576	17	<20	0.16	<10	<10	25	10	4
222577	4	<20	0.01	<10	<10	15	10	4
222578	10	<20	0.01	<10	10	136	20	18
222579	24	40	0.02	<10	<10	956	50	18
222580	5	<20	0.02	<10	<10	10	<10	<2
222581	3	<20	0.06	<10	<10	13	<10	2
222582	23	<20	0.02	<10	<10	17	<10	2
222583	55	<20	0.4	<10	<10	227	<10	24
222584	37	<20	0.66	<10	<10	236	<10	18
222589	18	<20	0.08	<10	<10	13	10	5
222590	9	<20	0.05	<10	<10	6	<10	3

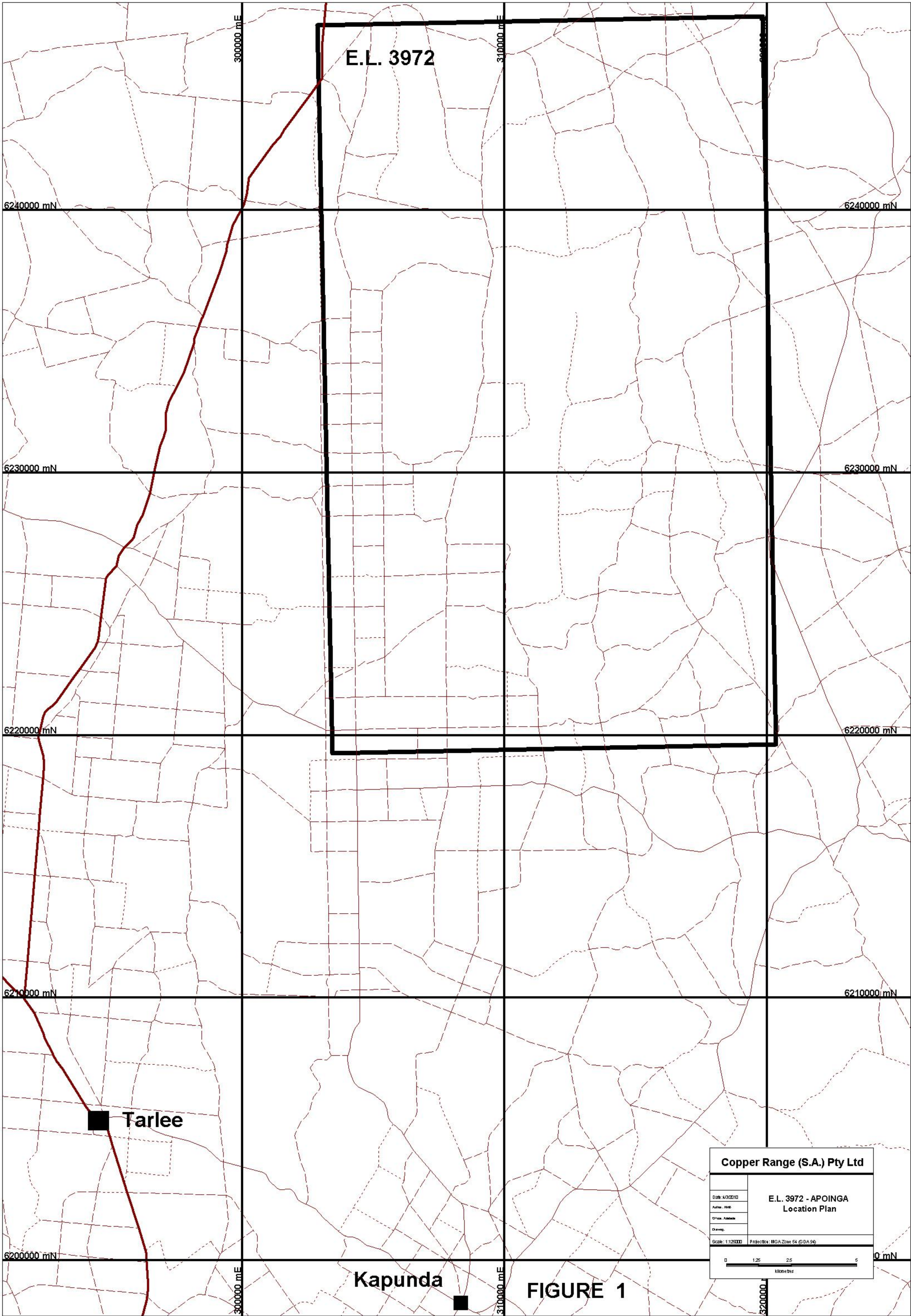


FIGURE 1

20th July 2017

EL Reporting Officer
Mineral Resources Division
Department of the Premier and Cabinet
GPO Box 320
ADELAIDE SA 5001

Dear Nella,

EL 5169 – Final No Work Letter for the Licence Period 5 August 2011 - 15 June 2017

During this period, no field work has been undertaken and no new technical data acquired, as such a formal report will not be submitted.

Expenditures have been provided in individual summary reports.

Please do not hesitate to contact me should you require any additional information.

Kind Regards,

Elke Hodge
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