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**EL 3336 AND EL 3436** 

ROBIN RISE AND LAKE WOORONG

PACE INITIATIVE: THEME 2, YEAR 3

# DRILLING PARTNERSHIP # 46 – COOBER PEDY RIDGE SOUTHERN MARGIN IOCG MINERAL PROSPECTS

# PROJECT FINAL REPORT

Submitted by Red Metal Ltd 2007

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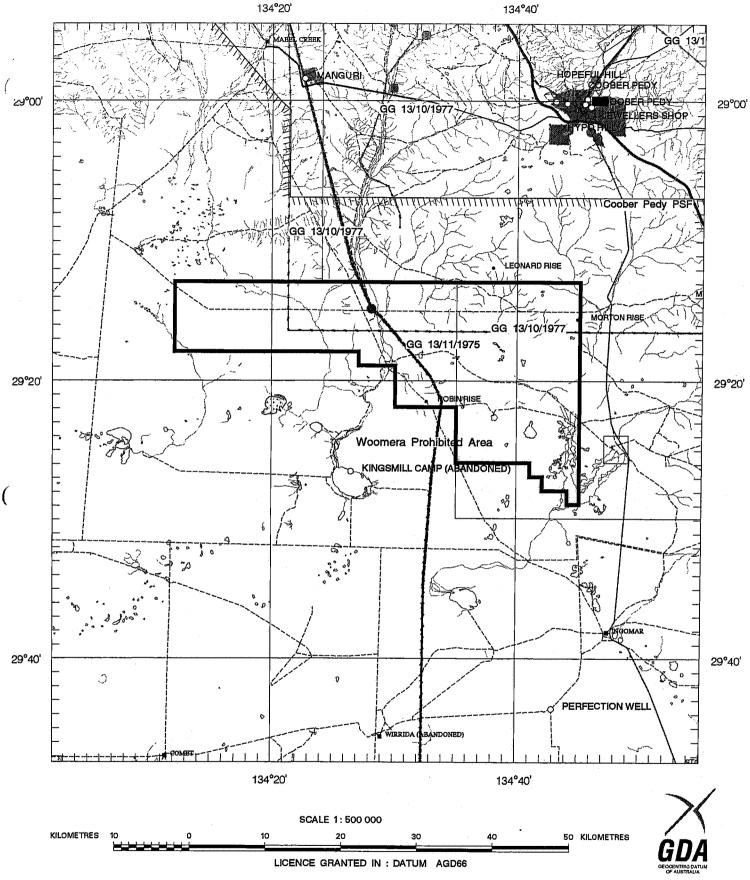
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# SCHEDULE A



APPLICANT: HILTABA GOLD PTY LTD

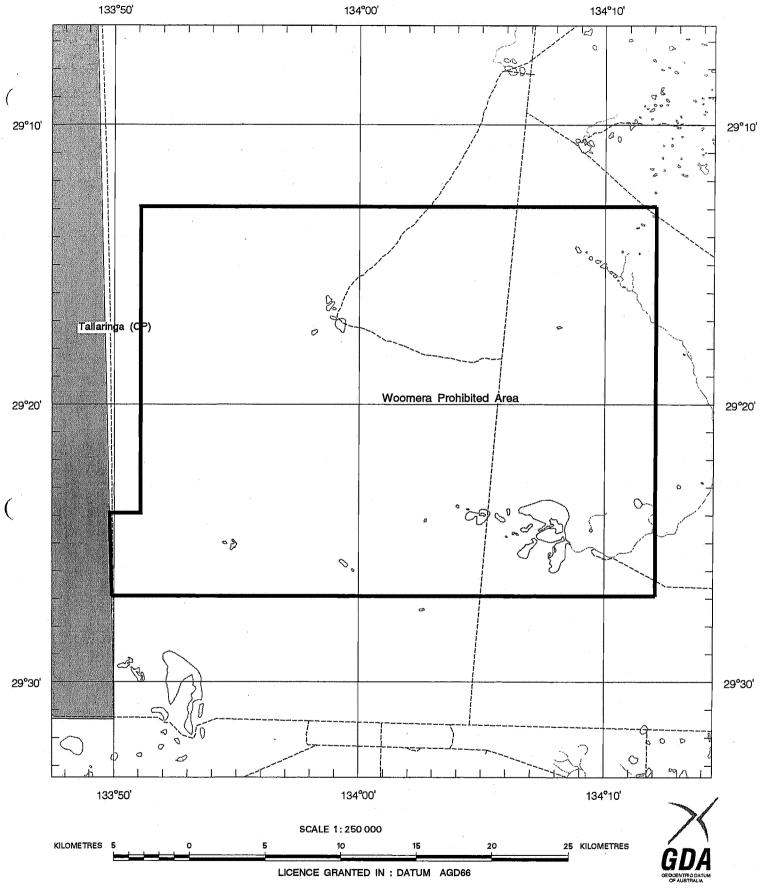
FILE REF: 721/04 TYPE: MINERAL ONLY AREA: 818 km² (approx.)

1:250000 MAPSHEETS: COOBER PEDY

LOCALITY: ROBIN RISE AREA - Approximately 40 km southwest of Coober Pedy

DATE GRANTED: 09-May-2005 DATE EXPIRED: 08-May-2006 EL NO: 3336

# SCHEDULE A



APPLICANT: HILTABA GOLD PTY LTD

FILE REF : 212/05

TYPE: MINERAL ONLY

AREA: 889 km² (approx.)

1:250000 MAPSHEETS: COOBER PEDY

LOCALITY: LAKE WOORONG AREA - Approximately 80 km southwest of Coober Pedy

DATE GRANTED: 20-Oct-2005 DATE EXPIRED: 19-Oct-2006 EL NO: 3436



# Robins Rise EL's 3336, 3436

# PROJECT DPY3-46 FINAL REPORT

for

# **PACE**

(Plan For Accelerated Exploration)

PIRSA Funded Project

By: G. McKay, Red Metal Limited

For: Stellar Resources Ltd

May 7, 2007

# TENEMENT REPORT INDEX

TENEMENT: EL 3336, 3436

TENEMENT HOLDER: Hiltaba Gold Pty Ltd

OPERATOR: Red Metal Limited

AUTHOR: G. McKay

REPORTING PERIOD: PACE Year 3 Program

1:250,000 SHEET: Coober Pedy SH53-06

1:100,000 SHEET: Phillipson 5739 / Coober Pedy 5839

MINERAL PROVINCE: Gawler Craton

COMMODITIES: Cu Au Pb Zn Ag Mo Ni

KEYWORDS: Diamond drilling, PACE

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# **Report Digital File List**

DPY3-46\_2007\_01 Final Report.pdf (this report) DPY3-46\_2007\_02 Collar Data.txt DPY3-46\_2007\_03 Lithology Logs.txt DPY3-46\_2007\_04 Logging Codes.txt

### **SUMMARY**

The PACE drilling proposal DPY3-46 was designed to specifically test for hematite dominant Iron Oxide Copper Gold style mineralisation in an area of the Northern Gawler Craton where little exploration activity has been directed towards this model. Incorporation of the geophysical responses at Prominent Hill and Carrapateena has defined areas for detailed gravity coverage which has subsequently defined valid drilling targets for hematite dominant mineralised systems. Success from the proposed drilling program in identifying any IOCG style system will significantly add to the prospectivity of the Northern Gawler region for this style of deposit.

The Carrapateena discovery (67 metres grading 3.03% copper and 0.4 grams per tonne gold), was located by drilling a small (2 milligal) gravity anomaly in a district where many of the historic drill holes had intersected pervasive sericite alteration typical of that seen in the alteration halo around the Olympic Dam deposit.

At Robins Rise project, five rotary-mud precollar and diamond core drill holes targeting gravity features were completed by United Drilling Services in November-December 2006. The holes intersected metamorphosed felsic intrusive and metasediment rock types overprinted by calcislicate dominant alteration typical of IOCG terrain and gabbro intrusive amphibolite with retrograde chlorite-pyrite alteration. Only low order sulphide mineralisation was intersected. A planned sixth hole was not completed because of rig access issues.

Processing of the regional gravity dataset has highlighted several other anomalies which will be considered for follow-up drilling in 2007.

# 1.0 INTRODUCTION

The Robins Rise Project covers two exploration licenses centred approximately 50 kilometres South-west of Coober Pedy township, in the northern portion of the Gawler Craton. The licenses cover a total area of approximately 1700 square kilometres.

The project area was selected to pursue conceptual targets for IOCG style mineralisation, in relatively low magnetic terrain, as a consequence of the emerging recognition that hematite dominant systems of this style may have very low association with magnetic anomalism.

Regional magnetic interpretation indicates that the majority of exploration drilling carried out within the tenement areas historically has been within the "Coober Pedy Ridge" terrain of high temperature metamorphic rocks. Limited drilling to basement in the region to the south of this terrain has intersected metasomatic magnetite and intrusives indicative of an IOCG environment, associated with the "Balta" granite suite outcropping in the Mt Woods area.

Targets were selected in areas where low order aeromagnetic anomalies exist in proximity to interpreted major structural breaks. The selected areas have been covered with detailed gravity surveying, and discrete gravity targets consistent with the IOCG model for hematite dominant "systems" have been defined in four of these survey areas.

The licenses both occur within the Antakirinja Native Title Claim area SC95/007. Stellar Resources Ltd has entered into an ILUA agreement with the ALMAC which includes both Exploration Licenses, and the areas of detailed gravity surveying were cleared for Aboriginal Heritage purposes.

Red Metal Limited signed a joint venture agreement with licensees Hiltaba Gold Pty Ltd in October 2006 and has taken over operatorship from Stellar Resources Ltd.

Work carried out during the current PACE reporting period has included gravity surveys, geophysical modelling and completion of five rotary-mud /diamond drill holes. Work covered by this report is restricted to results of the drilling carried out under PACE funding DPY3-46.

A summary of work completed during the PACE funding is shown in Table 1.

### 2.0 LOCATION and TENEMENT STATUS

The tenements are located 40-80km south-west of Coober Pedy. Access is via the Stuart Highway and a network of unsealed roads.

The area is subject to a Native Title claim by the Antakirinja People (SC95/007). Land access arrangements were finalised and field inspections conducted to clear the work areas.

Details of the tenement are listed in Table 2 and shown on Figure 1.

**Table 1 – Tenement Details** 

Name	EL No.	Licensee	Grant Date	Area (km²)
Robins Rise	3336	Hiltaba Gold P/L	9/5/2005	818
Lake Woorong	3436	Hiltaba Gold P/L	20/10/2005	889

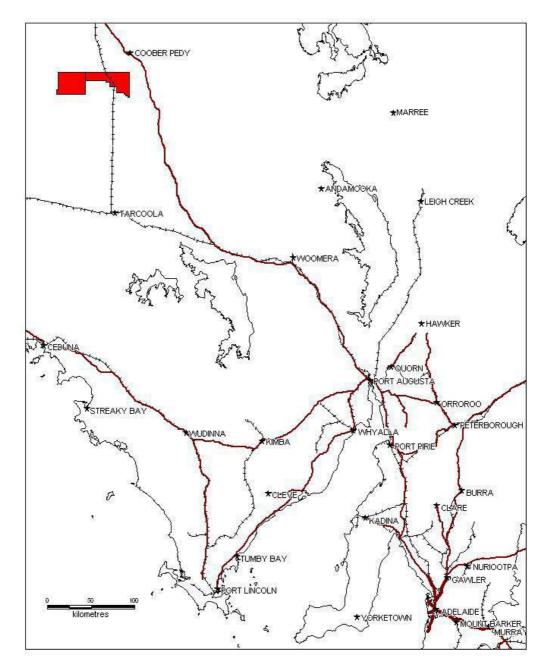


Figure 1 - Location EL's 3336, 3436

### 3.0 TENEMENT GEOLOGY

The "Coober Pedy Ridge" is a well defined geophysical province on the northern margin of the Gawler Craton, defined by anomalously elevated gravity and magnetic signatures along a major east west trending structure/suture. The Robins Rise project area incorporates the southern margin of the Coober Pedy Ridge, with a focus on the north-western limit of the "Olympic Cu-Au" province as defined by Geoscience Australia. Granite intrusions of Hiltaba Suite age are known or inferred along this margin, immediately west of the Mt Woods Inlier.

# 4.0 PREVIOUS EXPLORATION

Historical "basement" exploration drilling within the project area has been predominantly focused on geophysical targets within the Coober Pedy Ridge domain. South of the interpreted terrain boundary between the Ridge and the Gawler Craton, drilling has been predominantly targeting coal in the Phillipson Trough, and very few holes to basement are recorded in this region.

# 5.0 DRILL TARGETS

Regional aeromagnetic relief within the license areas is clearly dominated by the strongly magnetic Coober Pedy Ridge terrain, but a number of possible IOCG target areas are evident in the lower relief zone of the northern Gawler Craton. In this region, areas of low order aeromagnetic relief consistent with either weakly magnetic intrusives or discrete "bulls-eye" magnetic features, but with no consideration of anomaly amplitudes, were selected for gravity coverage.

Based on an assessment of previous drilling, structural features and local aeromagnetic relief, and detailed gravity coverage (200m and 400m centres), drill targets were selected as indicated in Figures 2 and 3.

A more complete set of geophysical images and modelling of the targets are included in the PACE proposal document for this project (included as Appendix 2 to this report).

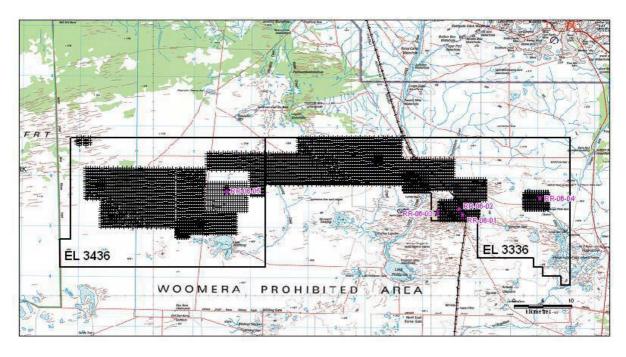


Figure 2: Robins Rise Project : PACE drill hole locations with gravity survey locations

# 6.0 CURRENT EXPLORATION PROGRAM

# 6.1 Drilling

A large capacity multi-purpose rotary-mud and diamond drill rig operated by United Drilling Services was commissioned to complete the drilling program. Rotary-mud drilling was completed to maximum possible depths with diamond tails used to complete holes to target depths.

Drilling was conducted from late October to early December 2006. Five holes were completed for a total of 765.6 metres. A planned sixth hole was not completed because of rig access issues. Details of holes are included in Table 2.

Locations of the holes are shown on Figures 2 and 3.

**Table 2 – Drilling Summary** 

Hole	Easting	Northing	RL	Az	Dip	Precollar	Core	Depth	Completed
	MGA53	MGA53	(approx)						
RR-06-01	456993	6752788	164	0	-90	63	29.3	92.3	1/11/2006
RR-06-02	456364	6753998	165	0	-90	111	39.6	150.6	11/11/2006
RR-06-03	452588	6753190	170	0	-90	107.5	54.9	162.4	15/11/2006
RR-06-04	470549	6756166	156	0	-90	59.3	75.7	135.0	24/11/2006
RR-06-05	415708	6757326	165	0	-90	155.6	69.7	225.3	3/12/2006
						Total		765.6	

# 6.2 Geology

All five drill holes intersected geology that is interpreted to explain the gravity anomalies tested by this program. Target of the drilling was an iron oxide copper gold system similar to the Carrapateena deposit. Although some encouraging alteration was observed, no rock types consistent with Carrapateena/Olympic Dam style mineralisation was intersected by the drilling. Detailed logs are included as Appendix 1.

The holes intersected metamorphosed felsic intrusive and metasediment rock types overprinted by calculate dominant alteration typical of IOCG terrain and gabbro intrusive amphibolite with retrograde chlorite-pyrite alteration. Only low order sulphide mineralisation was intersected.

### 6.0 CONCLUSIONS

Gravity surveys on Robin's Rise project identified several gravity targets considered to be prospective for Carrapateena style Cu-Au mineralisation. The five targets drill tested all produced rock types that explain the density contrast targeted.

Weak copper sulphide mineralisation associated with magnetite was intersected on one target (RR-06-04) however the gravity anomalies were explained by dense calcillicate rock types.

Processing of the regional gravity dataset has highlighted several other anomalies which will be considered for follow-up drilling in 2007.

### 7.0 REHABILITATION

As part of standard operating practice, all work was carried out in an environmentally sensitive manner. Access to the sites was obtained via existing tracks with short sections of open navigating to the drill site. Minimal disturbance of vegetation was required.

Drill sumps were dug at each site for use as settling ponds for drill cuttings. The sumps were lined with plastic and at the completion of the program the sump was left to dry out. Mud sample material will be poured down the drill holes and excess sample placed into the sumps during final rehabilitation. Collar removal, back fill of the sumps and track rehabilitation was due for completion in early May 2007. Photos of the areas after completion of rehabilitation will be forwarded to PIRSA when available.

# 8.0 CORE LIBRARY SAMPLES

Red Metal Limited is holding core from the program which will be lodged with the PIRSA core library.

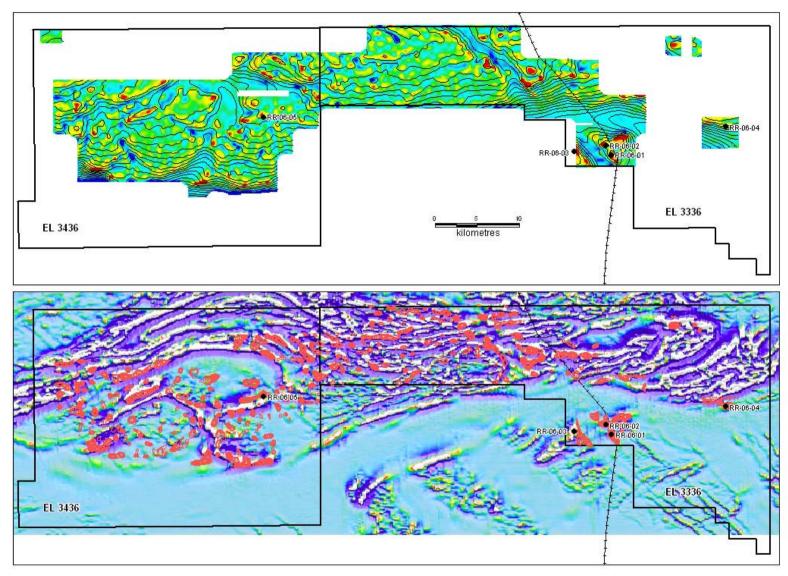


Figure 3: Drill hole locations on residual gravity image (top) and vertical gradient magnetic image with red gravity highs

# Appendix 1

**Geological Logs** 

# **SIMPLIFIED LOGGING CODES**

	LIFIED LOGGING CODES				INC A THERMS					
LITHOL		$\vdash$	TEXTURE		-	WEATHER				
FSZ	Shear Zone	-	ABR	autobrecciated	_	FRS	Fresh			
	Dolerite	+	AM	amorphous	_	SW	Slightly Weathered			
	Gabbroid (unclassified)	$\vdash$	AMY	amygdaloidal	-	MW	Moderately Weathered			
	Hornblende gabbro	$\vdash$	APH	aphanitic	-	HW	Highly Weathered			
	Gabbro	$\vdash$	APHY	aphyric	_	VHW	Very Highly Weathered			
MGQ	Quartz gabbro	Ц	BA	banded	_					
	Basalt (unclassified)	-	BDD	bedded	_					
	No Code (see written Description)	-	BK	broken		COLOUR				
PF	Feldspar porphyry		BR	brecciated	_	BK	black			
PI	Felsic Intrusive (unclassified)		HBX	hydrothermal brecciated		BL	blue			
PIA	Andesite porphyry	(	CEM	cemented		BR	brown			
RCY	Clay only	(	CGN	coarse-grained		BU	buff			
RGV	Gravel (>2mm)	(	CX	cryptocrystalline		CH	chocolate			
RSA	Sand (0.02 - 2mm)	I	EQ	equigranular		CR	cream			
RSIL	Silcrete	I	FGN	fine-grained		FA	fawn			
RSL	Silt (.00202mm)	ı	FMG	fine-medium grained		GR	green			
RSO	Soil (particle sizes variable)	F	FA	fractures		GRD	dark green			
SCG	Conglomerate (undivided)	F	FRAG	fragmental		GRL	light green			
SCI	Chert		FLT	fault		GY	grey			
SCL	Claystone (mudstone)	F	FD	folded		GYL	light grey			
SDOL	Dolomite		FO	foliated		GYD	dark grey			
SDSL	Dolomitic siltstone	F	FOB	foliation parallel bedding		GGD	dark grey-green			
SLMF	Fossiliferous Limestone	F	FOI	intensely foliated		IR	iridescent			
SLST	Limestone	ı	FOM	moderately foliated		KH	khaki			
SS	Sediment (unclassified)	ı	FOS	strongly foliated		MA	maroon			
SSH	Shale	ı	FOW	weakly foliated		OL	olive			
SSL	Siltstone	(	GN	gneissic		OR	orange			
	Sandstone and grit horizon	(	GRP	granophyric		PI	pink			
	Calc silicate	ı	ND	indurated		PU	purple			
XSL	metasediment	ı	_AM	laminated bedded		RE	red			
XSMA	meta calc-sediment or marble	ı	MAS	massive		TA	tan			
		ı	MCG	medium-coarse grained		VC	varicoloured			
		ı	MGN	medium grained		VI	violet			
TECTO	NIC	ı	MIG	migmatitic		WH	white			
BK	broken	ı	MX	microcrystalline	_	YE	yellow			
	boudinaged		POB	porphyroblastic			,			
	brecciated	_	POR	porphyritic	1					
	cataclastic		PS	pseudomorph						
	cleaved	$\vdash$	RX	recrystallised	1					
	crenulated		SCHS	schistose	1					
	crushed		SH	shear fabrics	7					
CT	contorted		SIL	siliceous	7					
	deformed		SOF	soft	1					
	faulted		SPH	spherulitic	7					
	folded		SPT	spotted	1					
	foliated	_	STWK	stockwork veined	1					
	foliation parallel bedding		TBD	thick bedded	1					
	intensely foliated	_	VE	vesicular	7					
	moderately foliated		v⊑ √EIN	veined	1					
	strongly foliated		VU	vuggy	1					
	weakly foliated	_	XC	xenocrystic	+					
	fractured	_	XEC	xenociystic	$\dashv$					
	schistose	H	NEO .	VEHOUITHE	┪					
		${\sf H}$			$\dashv$					
	sheared stockwork veined	${\mathbb H}$			$\dashv$					
		H			$\dashv$					
VEIN	vein	H			1					
		Ш					l			

hole_ID	from	to	lith1	and_ or	lith2	lithcomments	tot_sulf%	Py%	Ср%	sulp_comments	Alt
RR-06-01	0	4	RDWS	+	RLAG	Abundant silcrete lag					
RR-06-01	4	6	RSIL	&	SSH	Silcreted shale					
RR-06-01	6	21	SSH			Weathered massive shale, vy pale (almost palid)					
RR-06-01	21	30	SST			Crse sand slightly ferrug. Possible grit component					
RR-06-01	30	36	SST	&	SSL	Crser qtz snd variationof above with minor clay frags					
RR-06-01	36	48	SST			fine qtz silt and sand					
RR-06-01	48	57	SST			crse qtz sand with minor shale					
RR-06-01	57	60	RSAP			weathered basement					
RR-06-01	60	63	MGO			amphibole dominant basement					
RR-06-01	63	73.6	MGO			Med to crse crystalline gabbro. Crse feldspar with mafic needles and biotite. Mnr magnetite with mafics.	0.01	99	1		WE
RR-06-01	73.6	76	MGO	&	FSZ	As above overprinted by shear zone					
RR-06-01	76	92.3	MGO			Med to finely crystalline gabbro. Only minor crse feldspar. Mnr magnetite with mafics. Increased magnetite towards EOH	0.01	99	1	No sig sulphide content	WE
RR-06-02	0	3	RSO	&	RSIL	Soil and silcrete					
RR-06-02	3	9	RSIL	&	RSO						
RR-06-02	9	15	RCY	&	RSIL	Sharp grey silcrete chips and grey clay. No recognizable rock/shale					
RR-06-02	15	21	RCZ			Purple and pale green clay chips. Clay but probably after shale					
RR-06-02	21	26	SSH	&	RCZ	Grey and purple clay. Hint of shale chips. Qtz sand starts approx 26m					
RR-06-02	26	36	SST			Qtz dominant sand					
RR-06-02	36	45	SST	&	SSL	Fine qtz sand and silt mnr shale chips					
RR-06-02	45	63	SST	&	SSH	Similar to above with abundant purple shale frags. Contamination?					
RR-06-02	63	93	SSL	&	SST	Fine qtz silt and sand					
RR-06-02	93	111	SST	&	SSH	Increased green colour. Thought possible basement					
RR-06-02	111	113	SSH	&	SCL	Fine khaki green shale/mudstone. Minor mica flakes and black carbonaceous specks. Permian cover					
RR-06-02	113	114.2	SST	&	SCP	Sand stone with cobble size granite and sandstone fragments					
RR-06-02	114.2	150.6	GRT	or	GRQ	Qtz Feld granitic composition with some magnetite. Locally foliated. Probable increase in feldspar alteration with depth	0.01	10	90	Zone from 129.4 to 138 has strongest alteration and associated sulphides	WE
RR-06-03	0	2	RSO	&	RSIL	Mixed soil and silcrete with some SST					
RR-06-03	2	6	RSIL	&	SST	Hard silcrete layer 2 to 3m					
RR-06-03	6	18	SSH			Very soft clay and mud. Some chips					
RR-06-03	18	24	SSH			As above just change in colour/oxidation state					
RR-06-03	24	28	SSH			More shale/clay chips					
RR-06-03	28	30	SST			Qtz dom sand grains					
RR-06-03	30	42	SST			As above limonitic					

hole_ID	from	to	lith1	and_ or	lith2	lithcomments	tot_sulf%	Py%	Ср%	sulp_comments	Alt
RR-06-03	42	51	SST			Qtz sand less limonitic					
RR-06-03	51	87	SST			As above more qtz less clay. Crse sand/grit at start of interval					
RR-06-03	87	96	SST	&	SSH	Qtz sand with black mud. Shale or coal?? causing black.					
RR-06-03	96	107.5	SSH			Reduced qtz sand component. Minor pink shale/mud					
RR-06-03	107.5	107.9	SST	&	SSH	Either cave from running casing in or boulders in base of coverd					
RR-06-03	107.9	110	XGN	or	GRT	Hard weakly foliated feld porphyroblastic gneiss with green pyrox or amph and probable garnet (calc- silicate overprint).	0.1	40	60	Py and Cpy as stingers and disseminations with calc-silicates and magnetite	MOD
RR-06-03	110	162.4	XGN	or	GRT	Fresher version of above. Variable sulphide	0.1	60	40	Py and Cpy as stingers and disseminations with calc-silicates and magnetite	MOD
RR-06-04	0	3	RSO	&	RSIL	Mixed soil and silcrete					
RR-06-04	3	6	RSIL	&	SSH	Muddy foliated shale + silcrete/saprolite					
RR-06-04	6	12	SSH			Muddy foliated shale					
RR-06-04	12	15	SST	&	SSH	Contact shale and clayey sandstone					
RR-06-04	15	24	SST	&	RCY	Clayey quartzite/sandstone					
RR-06-04	24	45	SST	&	RCY	Clayey quartzite/sandstone					
RR-06-04	45	51	SST	&	RCY	Clayey quartzite/sandstone					
RR-06-04	51	54	RCY			Black clay/mudstone					
RR-06-04	54	57	RCY	&	XSQChB	Contact with basement metaseds					
RR-06-04	57	59.2	XSQChB			Basement metased. No visible sulphide.					
RR-06-04	59.2	84.5			GRT	Feld? megaxst in feld-act-bio-gnt grmass	0.1	100			WE
RR-06-04	84.5	90.2	XSQFGP			also biotite	5	80	20	Cpy? not clear contrast	MOD
RR-06-04	90.2	135	GRT	&	XSQFGPB	Megaxst granite? with interclasts of metased?	0.5	100	20	Сру?	WE
RR-06-05	0	6	RGT			Sand and grit and clay					
RR-06-05	6	21	RGT			Grit and clay and sand					
RR-06-05	21	60	SST			Sand and lesser clay					
RR-06-05	60	155.6	SCL			Muddy siltstone with sand dropstones					
RR-06-05	155.6	185.4	HRChFA			Med grained amph feld calc-silicate rock with common chlorite veins/shears. Contains GRV frags and pyrite cemented SST	0.5	95	5	Pyrite dominant commonly associated with magnetite. Chalcopyrite patchy	STG
RR-06-05	185.4	189.1	PEG			Possible foliated pegmatitic dyke	0.01	100			MOD
RR-06-05	189.1	194.1	HRChFA	or	XGN	Very similar to start of hole but shows foliation and moderate levels of red garnet	0.5	99	1		MOD
RR-06-05	194.1	225.3	XGN	or	XSBAF	Becoming more foliated and harder. Increased qtz content. Possible early qtz feld rock overprinted by amphibole magnetite	0.1	100		No chalcopyrite observed	MOD

# Appendix 2

**Application for PACE Grant** 

# Stellar Resources Ltd

# PACE Drilling Collaboration PIRSA and Industry 2005-2006

# "ROBINS RISE" IOCG PROJECT

**Exploration Licences 3336;3436** 

**Northern Gawler Craton** 

# INTRODUCTION

The Robins Rise Project covers two exploration licenses centred approximately 30 kilometres southwest of Coober Pedy township, in the northern portion of the Gawler Craton. The licenses cover a total area of approximately 1800 square kilometres.

The project area has been selected to pursue conceptual targets for IOCG style mineralisation, in relatively low magnetic terrain, as a consequence of the emerging recognition that hematite dominant systems of this style may have very low association with magnetic anomalism. Regional magnetic interpretation indicates that the majority of exploration drilling carried out within the tenement areas historically has been within the "Coober Pedy Ridge" terrain of high temperature metamorphic rocks. Limited drilling to basement in the region to the south of this terrain has intersected metasomatic magnetite and intrusives indicative of an IOCG environment, associated with the "Balta" granite suite outcropping in the Mt Woods area.

Target areas have been selected in areas where low order aeromagnetic anomalies exist in proximity to interpreted major structural breaks. Currently six of these selected areas have been covered with detailed gravity surveying, and discrete gravity targets consistent with the IOCG model for hematite dominant "systems" have been defined in four of these survey areas.

The licenses both occur within the Antakirinja Native Title Claim area SC95/7. Stellar has entered into an ILUA agreement with the ALMAC which includes both Exploration Licenses, and the areas of detailed gravity surveying have been cleared for Aboriginal Heritage purposes.

# **AIM**

To establish presence of IOCG style Cu-Au-U mineralisation as cause of permissive gravity anomalies in favourable structural and regional settings.

# **GEOLOGY SETTING**

The "Coober Pedy Ridge" is a well defined geophysical province on the northern margin of the Gawler Craton, defined by anomalously elevated gravity and magnetic signatures along a major east west trending structure/suture. The Robins Rise project area incorporates the southern margin of the Coober Pedy Ridge, with a focus on the north-western limit of the "Olympic Cu-Au" province, as defined by Geoscience Australia. Granite intrusions of Hiltaba Suite age are known or inferred along this margin, immediately west of the Mt. Woods Inlier.

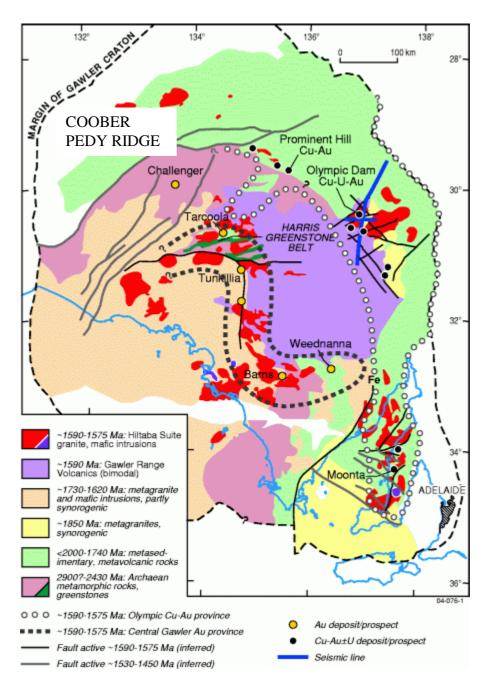


Figure 1 GA Geology Summary – "Olympic Cu-Au" Province

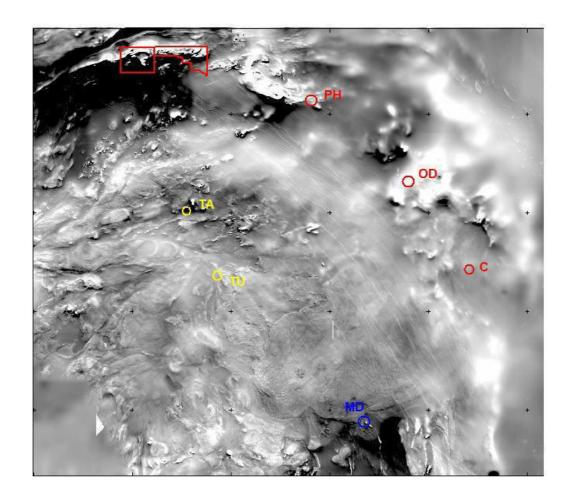
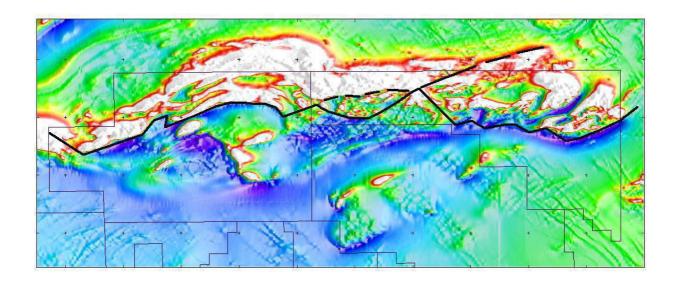


FIGURE 2 – Robins Rise Project Location on PIRSA TMI image. C- Carrapateena; OD- Olympic Dam; PH- Prominent Hill; TA Tarcoola; TU- Tunkillia: MD- Menninnee Dam

# PREVIOUS EXPLORATION

Historical "basement" exploration drilling within the project area has been predominantly focused on geophysical targets within the Coober Pedy Ridge domain. South of the interpreted terrain boundary between the CPR and Gawler Craton drilling has been predominantly targeting coal in the Phillipson Trough, and very few holes to basement are recorded in this region.



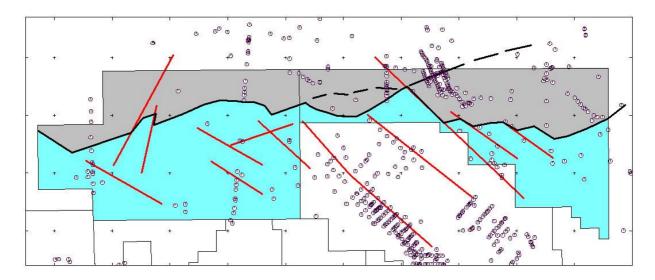


FIGURE 3A – Regional aeromagnetic image showing interpreted terrain boundary. FIGURE 3B – Structural and Terrain Summary And Historical Drill-hole Locations

# **AREA SELECTION – AEROMAGNETICS**

Regional aeromagnetic relief within the license areas is clearly dominated by the strongly magnetic CPR terrain, but a number of possible IOCG target areas are evident in the lower relief zone of the northern Gawler Craton. In this region, areas of low order aeromagnetic relief consistent with either weakly magnetic intrusives or discrete "bulls-eye" magnetic features, but with no consideration of anomaly amplitudes, were selected for gravity coverage.

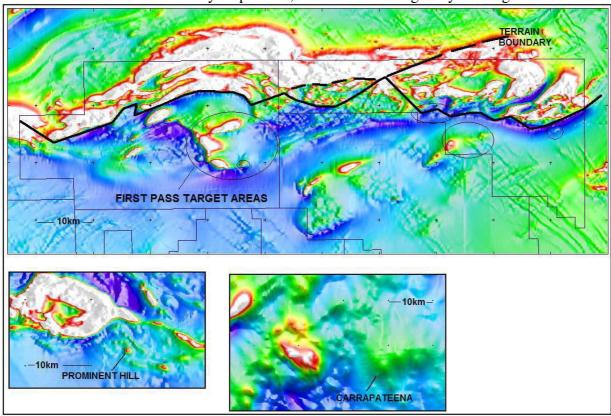


FIGURE 4 Comparison of Aeromagnetic Expression – Robins Rise, Prominent Hill and Carrapaeteena.

# PROSPECT SUMMARIES

Based on an assessment of previous drilling, structural features and local aeromagnetic relief, drilling targets have been identified in four of the six areas of detailed gravity coverage (200m and 400m centres), as indicated in Figure 5. Data summaries and drilling proposals for targets are presented for the "Woorong", "Lonesome", "Robins" and "Georges" prospects – no significant gravity features where outlined in the "Banjo" and "Mickeys" areas.

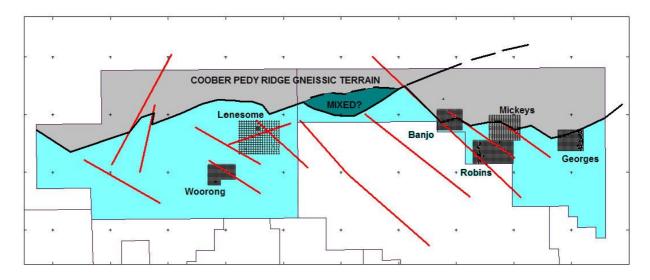


FIGURE 5 Locations for Detailed Gravity Coverage

# "WOORONG" PROSPECT

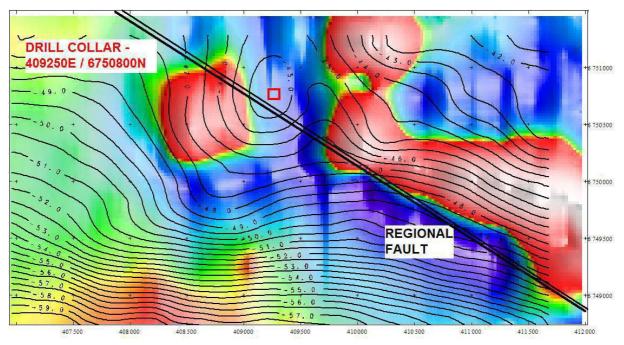


FIGURE 6 Woorong Prospect - Gravity Contours (0.5mGal) on Aeromagnetic (Vertical Gradient) Image.

At "Woorong" 200 metre centred gravity points have defined a 3 to 4 mGal gravity high, over an area of approximately 300m by 500m, possibly open to the north. The gravity target lies on an interpreted regional NW trending fault, immediately east of an isolated low order magnetic anomaly. Existing drilling in the area has not intersected basement rocks – a depth of 150metres to basement is interpreted for the gravity target feature.

# "LONESOME" PROSPECT

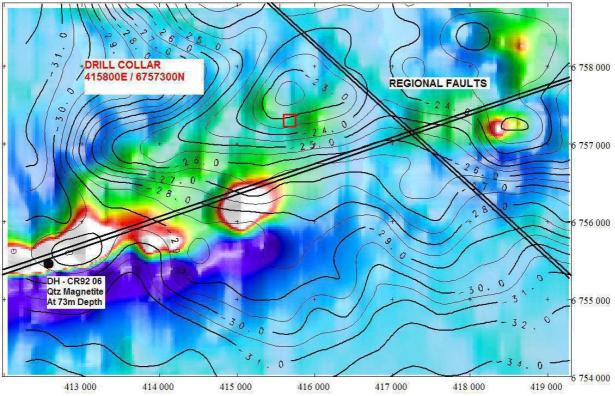


FIGURE 7 Lonesome Prospect - Gravity Contours (0.5mGal) on Aeromagnetic (Vertical Gradient) Image.

The "Lonesome" prospect area is defined by an extensive ENE trending zone of magnetic relief. A single drillhole (CR92 06 – BHP Ltd) intersected magnetite within a gneissic host, at 73 metres depth, at the western end of the zone. Gravity data have defined an off-set gravity anomaly of approximately 5 mGals, parallel to and approximately 800metres north of the magnetic trend. This association between magnetic and gravity response is very similar to that observed at Prominent Hill. Depth to basement in the vicinity of the gravity anomaly is interpreted at 100metres.

# **ROBINS PROSPECT**

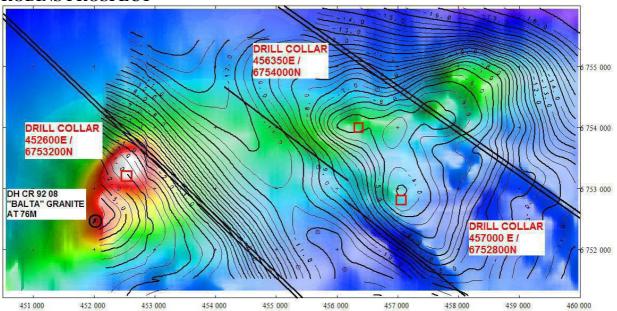


FIGURE 8 Robins Prospect - Gravity Contours (0.5mGal) on Aeromagnetic Image.

The Robins Prospect area is regarded as a high priority target area, recognising the large area of elevated aeromagnetic response and the existing drill hole intersection of Hiltaba equivalent "Balta" Granite. Two holes are proposed on closures within the eastern gravity high zone, and a third hole is proposed to test the local magnetic high, approximately 1 kilometre NE of hole CR92 08. Depth to basement is interpreted at 100 metres.

# **GEORGES PROSPECT**

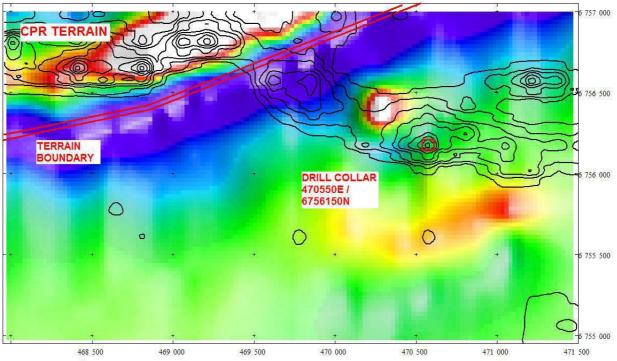


FIGURE 6 Georges Prospect -Residual Gravity Contours (0.5mGal) on Aeromagnetic (Vertical Gradient) Image.

The Georges prospect area is centred on a local, low amplitude aeromagnetic anomaly, immediately south of the inferred terrain boundary with the Coober Pedy Ridge. A residual gravity anomaly of approximately 2 mGals amplitude is defined over an area of possibly 500 by 200 metres, in a "demagnetised" zone immediately SE of the initial target magnetic anomaly. Depth to basement is interpreted at 100 metres.

# **EXPLORATION POTENTIAL**

The drilling proposal is designed to specifically test for hematite dominant Iron Oxide Copper Gold style mineralisation in an area of the Northern Gawler Craton where little exploration activity has been directed towards this model. Incorporation of the geophysical responses at Prominent Hill and Carrapateena, has defined areas for detailed gravity coverage which has subsequently defined valid drilling targets for hematite dominant mineralised systems. Success from the proposed drilling program in identifying any IOCG style system will significantly add to the prospectivity of the Northern Gawler region for this style of deposit.

# PROPOSED EXPLORATION

Drill testing of the gravity targets will be conducted as marked on the composite images.

The programme will consist of six drill holes, totalling 600m of basement RC drilling and approximately 650m of open-hole rotary pre-collar drilling.

# **BUGDET**

The budget is based on a programme of six drill holes using rotary pre-collars to drill through the Mesozoic sediments, that are interpreted to vary in depth from 100 to 150m, followed by Reverse Circulation drilling of at least 100m into pre-Cambrian basement.

Programme based on one 12 hr shift/day for 24 days

Direct drilling costs are estimated at PACE Funding	\$177,000 \$ 88,500
Total	\$218,500
* Vehicle hire	\$ 4,000
* Assays –300 samples by \$25	\$ 7,500
* Geological management	\$30,000
* Water, cartage and/or pumping to drill site	\$15,000
* Consumables, Active work, Casing	\$25,000
* Drill RC 600m @ \$100/m	\$60,000
* Drill Pre-Collars 650m \$80/m	\$52,000
* Drill Rig and support – mobilisation / demob	\$15,000
* Drill site assistance, sumps excavation	\$10,000

hole_ID	east_GDA94	north_GDA94	RL	Azim	Dip	Precollar	Core	Hole_depth	completed
RR-06-01	456993	6752788	164	0	-90	63	29.3	92.3	01/11/2006
RR-06-02	456364	6753998	165	0	-90	111	39.6	150.6	11/11/2006
RR-06-03	452588	6753190	170	0	-90	107.5	54.9	162.4	15/11/2006
RR-06-04	470549	6756166	156	0	-90	59.3	75.7	135	24/11/2006
RR-06-05	415708	6757326	165	0	-90	155.6	69.7	225.3	03/12/2006

col_	and_	Peth a array	gsize_	tot_ Py_	Cp_	O=9/
hole_ID from to col1 join col2 weath texture1 texture2 gsize tectonic lith1 RR-06-01 0 4 BRL VHW RDV		lithcomm Abundant silcrete lag	sulp FeO	X sulf% M	Py% M	Cp%
RR-06-01 4 6 CR VHW RSIL		Silcreted shale				
RR-06-01 6 21 BR - WH VHW SSH		Weathered massive shale, vy pale (almost palid)				
RR-06-01 21 30 BR - OR VHW SST		Crse sand slightly ferrug. Possible grit component				
RR-06-01 30 36 BRL VHW SST		Crser qtz snd variationof above with minor clay frags				
RR-06-01 36 48 CR - WH VHW SST		fine qtz silt and sand				
RR-06-01 48 57 GY + WH VHW SST		crse qtz sand with minor shale				
RR-06-01 57 60 GR - KH HW RSA	AP	weathered basemennt		4		
RR-06-01 60 63 GR SW MGC	iO .	amphibole dominant basement		1		
		Med to crse crystalline gabbro. Crse feldspar with mafic needles and biotite.				
RR-06-01 63 73.6 GRD - GYD FRS EQ mgr MG0		Mnr magnetite with mafics. Some blue minerals, almost labradorite	F	0 0.01 D	99 D	1
RR-06-01 73.6 76 GRD - GYD FRS SH fgr SH MGC	O and FSZ	As above overprinted by shear zone				
DD 00 04 70 00 0 DD CVD EDC EO FOW MCC		Med to finely crystalline gabbro. Only minor crse feldspar. Mnr magnetite with mafics.	Г	0 001 D	00 D	4
RR-06-01 76 92.3 GRD - GYD FRS EQ mgr FOW MGC RR-06-02 0 3 BR CW fgr RSC		Occasional soapy veins. Similar to 63-73.6 but locally less crystalline. Increased magnetite towards EOH Soil and silcrete	Г	0 0.01 D	99 D	1
RR-06-02 0 3 BR CW fgr RSC RR-06-02 3 9 BR + GYL CW fgr RSIL		Soil and sliciete		5		
RR-06-02 9 15 GYL + BRL CW fgr RCY		Sharp grey silcrete chips and grey clay. No recognizable rock/shale		4		
RR-06-02 15 21 PU + GRL VHW fgr RCZ		Purple and pale green clay chips. Clay but probably after shale		•		
RR-06-02 21 26 GY + PU VHW fgr SSH		Grey and purple clay. Hint of shale chips. Qtz sand starts approx 26m				
RR-06-02 26 36 GY VHW mgr SST		Qtz dominant sand				
RR-06-02 36 45 WH - GY VHW fgr SST	T and SSL	Fine qtz sand and silt mnr shale chips				
RR-06-02 45 63 GRL - GY VHW fgr SST		Similar to above with abundant purple shale frags. Contamination?				
RR-06-02 63 93 GYD - GY VHW fgr SSL		Fine qtz silt and sand				
RR-06-02 93 111 GR - GY VHW fgr SST		Increased green colour. Thought possible basement				
RR-06-02 111 113 GR - KH SW fgr SSH		Fine khaki green shale/mudstone. Minor mica flakes and black carbonaceous specks. Permian cover				
RR-06-02 113 114.2 GY - GRL SW mgr SST	T and SCP	Sand stone with cobble size granite and sandstone fragments				
		Qtz Feld granitic composition with some magnetite.  Locally foliated. Slightly weathered at contact then fresh. Local cross cutting qtz/feld veining with pink alteration.				
RR-06-02 114.2 150.6 PI + GYD FRS mgr FOW GRT	T or GRQ Basement	Probable increase in feldspar alteration with depth		0 0.01 VD	10 VD	90
RR-06-03 0 2 BR CW fgr RSC		Mixed soil and silcrete with some SST		0 0.01 VD	10 10	30
RR-06-03 2 6 GYL HW fgr RSIL		Hard silcrete layer 2 to 3m				
RR-06-03 6 18 BR - RE CW fgr SSH		·				
RR-06-03 18 24 GR - YE CW fgr SSH		As above just change in colour/oxidation state				
RR-06-03 24 28 PU - GY VHW fgr SSH		More shale/clay chips				
RR-06-03		Qtz dom sand grains				
RR-06-03 30 42 YE - OR VHW mgr SST		As above limonitic				
RR-06-03 42 51 GRL - GYL VHW mgr SST RR-06-03 51 87 GYL VHW mgr SST		Qtz sand less limonitic				
· · · · · · · · · · · · · · · · · · ·		As above more qtz less clay. Crse sand/grit at start of interval  Qtz sand with black mud. Shale or coal?? causing black. Certainly harder sequence. Thought basement but no chips				
RR-06-03 87 96 GYD - BK VHW mgr SST RR-06-03 96 107.5 GYD - BK VHW fgr SSH		Reduced qtz sand component. Minor pink shale/mud				
RR-06-03 107.5 107.9 WH + GY SW fgr SST		Either cave from running casing in or boulders in base of coverd				
ig.		Hard weakly foliated feld porphyroblastic qtz unit with mod green pyrox or amph and probable garnet.				
RR-06-03 107.9 110 GY + PI SW FOM MCG mgr SH XGN	N or GRT	Possible gneiss with calc-silicate overprint	F	3 0.1 VD	40 VD	60
RR-06-03 110 162.4 GY + PI FRS FOM MCG mgr SH XGN		Fresher version of above. Variable sulphide	F	0 0.1 VD	60 VD	40
RR-06-04 0 3 BR - WH VHW SOF fgr RSC		Mixed soil and silcrete				
RR-06-04 3 6 GRD MW FGN fgr FO RSIL		Muddy foliated shale + silcrete/saprolite				
RR-06-04 6 12 GRD + GY SW FO fgr FO SSH	•	Muddy foliated shale				
RR-06-04 12 15 GY + BR SW fgr FO SST RR-06-04 15 24 GY - WH SW fgr FO SST		Contact shale and clayey sandstone Clayey quartzite/sandstone				
RR-06-04 15 24 GY - WH SW fgr FO SST RR-06-04 24 45 TA - WH SW fgr FO SST		Clayey quartzite/sandstone Clayey quartzite/sandstone				
RR-06-04 45 51 GY - WH SW fgr FO SST		Clayey quartzite/sandstone				
RR-06-04 51 54 BK FRS SOF fgr RCY		Black clay/mudstone				
RR-06-04 54 57 BK + GY FRS SOF FGN fgr RCY		Contact with basement metaseds				
•	QChB	Basement metased. No visible sulphide.				
RR-06-04 59.2 84.5 GRD + WH FRS MEG FO vcgr BR	GRT	Feld? megaxst in feld-act-bio-gnt grmass	F	0.1 D	100	
· · · · · · · · · · · · · · · · · · ·	QFGP	also biotite	M	5 DFV	80 DFV	20
RR-06-04 90.2 135 GRD + WH FRS MEG vcgr FA GRT		Megaxst granite? with interclasts of metased?	F	0.5 D	100 D	20
RR-06-05 0 6 RE HW FMG fgr RGT		Sand and grit and clay				
RR-06-05 6 21 WH SW FMG RGT RR-06-05 21 60 GYL + WH FRS FMG SST		Grit and clay and sand				
RR-06-05 21 60 GYL + WH FRS FMG SST RR-06-05 60 155.6 GY - GR FRS FGN fgr SCL		Sand and lesser clay Muddy siltstone with sand dropstones				
MN-00-00 00 100.0 GT - GN FNO FGIN IGI SCL	<b>L</b>	Med grained amph feld calc-silicate rock with common chlorite veins/shears. Retrograde common.				
RR-06-05 155.6 185.4 GR + GY FRS VEIN SH mgr SL HRC	ChFA	Contains GRV frags and pyrite cemented SST	М	0 0.5 D	95 D	5
RR-06-05 185.4 189.1 PI + GR FRS FOM cgr FO PEG		Possible foliated pegmatitic dyke	C	0 0.01 D	100	-
· ·	ChFA or XGN	Very similar to start of hole but shows foliation and moderate levels of red garnet	M	0 0.5 D	99 D	1
RR-06-05 194.1 225.3 GR + GY FRS FOW XGN	N or XSBAF	Becoming more foliated and harder. Increased qtz content. Possible early qtz feld rock overprinted by amphibole magnetite	M	0 0.1 D	100	

sulp_comm	alt_ Mgt_ int M	Fld_ Mgt% M	Qtz_ Fld% M	Cal_ Qtz% M	Act_ Cal% M	Bio_ Act% M	ChI_ Bio% M	Ser_ Chl% M	Amp_ Ser% M	Amp_ Gar_ % M	_ alt_ Gar% oth%	alt_comm	VnCARB_% Vn_comment
No sig sulphide content	WE WE											Mnr green clay along fractures  Soapy clay along some veins. Magnetite mostly in cores of hornblende?	68m qtz feld vn
Zone from 129.4 to 138 has strongest alteration and associated sulphides	WE	W	1			W	3					garnet looking mineral inqtz veins but it is bladed?. Probable biotite haloe to qtz veins changing to chlorite/sericite from 129 to 138 with assoc trace sulphide	qtz veins generally 1 to 2 cm wide but biotite alteration several cm? Only one side though?
py and cp as stringers and disseminations generally associated with calc-silicates and magnetite py and cp as stringers and disseminations generally associated with calc-silicates and magnetite	MOD VS MOD DVS	1 P 2 P	10 P 20 P	5 5	VS VS	2 5	FVS	5		D D	0.5	Not sure about what logged as garnet  Garnet altered soft mineral mostly	
Cpy? not clear contrast Cpy?	WE D MOD D WE	0.5 0.5		V V	5 5 V	MN D 1	10 MVW 5 MVW MVW	5 V 5	2	E D E	5 gypsur 5 5	n bio primary?	
Pyrite dominant commonly associated with magnetite. Chalcopyrite patchy  No chalcopyrite observed	STG VD MOD MOD VD MOD VD	2 5 3				D D	1 VP	10 0.5	DP DP	5 DP 5	1	Shear and veining common  Possible early qtz feld rock overprinted by amphibole magnetite	0.1 qtz feld vn 222.1 to 222.3

```
##DICTIONARY_START
                                                         3
Agso_alt_int
##DICTIONARY_END
##DATA_START
##RECORD_COUNT = 7
                         intense
MOD
                         moderate
PEV
                         pervasive
STG
                         strong
WE
                         weak
UL
                         unaltered
##DATA_END
##DICTIONARY_START
                                                         2
Agso_colour
##DICTIONARY_END
##DATA_START
##RECORD_COUNT = 28
BK
                         black
BL
                         blue
BR
                         brown
BU
                         buff
CH
                         chocolate
CR
                         cream
FΑ
                         fawn
GR
                         green
GRD
                         dark green
GRL
                         light green
GΥ
                         grey
GYL
                         light grey
GYD
                         dark grey
GGD
                         dark grey-green
IR
                         iridescent
KΗ
                         khaki
MA
                         maroon
OL
                         olive
OR
                         orange
Ы
                         pink
ΡU
                         purple
RE
                         red
TΑ
                         tan
VC
                         varicoloured
VΙ
                         violet
WH
                         white
YΕ
                         yellow
##DATA END
##DICTIONARY_START
                                                         6
Lith2
##DICTIONARY_END
##DATA_START
##RECORD_COUNT = 203
XSMA
                         meta calc-sediment or marble
XSL
                         metasediment pelite - siltstone/shale
XSCS
                         Calc silicate
```

SST Sandstone and grit horizon

SSL Siltstone SSH Shale

SS Sediment (unclassified)

SLST Limestone

SLMF Fossiliferous Limestone SDSL Dolomitic siltstone

SDOL dolomite

SCP Conglomerate, polymictic
SCO Conglomerate, oligomictic
SCM Conglomerate monomict
SCL Claystone (mudstone)

SCI Chert

SCG Conglomerate (undivided)
SCAL Calcareous sediment
RU Unclassified residual soils

RSZ Silicifed saprolite

RSO Soil (partical sizes variable)

RSL Silt (.002 - .02mm)

RSIL Silcrete

RSA Sand (0.02 - 2mm) RGV Gravel (>2mm)

RGT Grit
RCY Clay only
RCAL Calcrete

PRY Porphyry (unclassified)
PQF Quartz feldspar porphyry

PQ Quartz porphyry
PIA Andesite porphyry

PI Felsic Intrusive (unclassified)

PF Feldspar porphyry

NC No Code (see written Description)

MV Basalt (unclassified) MGQ Quartz gabbro

MGO Gabbro

MGH Hornblend gabbro MG Gabbroid (unclassified)

MDO Dolerite

FSZCh Shear Zone chloritic

FSZ Shear Zone

##DATA END

##DICTIONARY\_START

Agso\_min\_alt ##DICTIONARY\_END

##DATA\_START

##RECORD COUNT = 87

AB albite
ACT actinolite
ADS andesine
ALM almandine
ALSI aluminosilicate

ALU alunite
AMPH amphibole
AND andalusite

4

ΑP apatite AUG augite BRL beryl BT biotite CAL calcite **CARB** carbonate CL chlorite **CLAY** clay mineral CLC chalcedony COR corundum CPX clinopyroxene DI diopside DOL dolomite ΕP epidote **FELD** feldspar

FEMG ferromagnesian mineral

**FEOX** iron oxide FL fluorite **FSPD** feldspathoid **GNT** garnet GP gypsum GR graphite **GRS** grossular GT goethite **HBL** hornblende HEM hematite ILL illite ILM ilmenite **JAR** jarosite **KFS** k-feldspar KLN kaolinite LCT leucite **LMN** limonite MGS magnesite **MGT** magnetite

MNOX manganese oxides
MNT montmorillonite
MS muscovite
OGC oligoclase
OL olivine
OPL opal

mica

MICA

**OPQ** opaque mineral OPX orthopyroxene OR orthoclase **PHOS** phosphate PLplagioclase PRH prehnite **PRL** pyrophyllite PRP pyrope **PYRX** pyroxene QΖ quartz SD siderite SERI sericite **SERP** serpentine

SIL sillimanite **SMEC** smectite SPL spinel SRL schorl SUL sulphur **TLC** talc **TOUR** tourmaline TOZ topaz TR tremolite **ZEOL** zeolite

AA undefined alteration

zircon

AR argillic **CLT** chloritic **GRSN** greisen POT potassic PR propylitic PΥ pyritic RR red rock SI silicified SK skarn

SRP serpentinised UL unaltered

##DATA END

ZRN

##DICTIONARY\_START

Agso\_minzn

##DICTIONARY\_END ##DATA\_START

##RECORD\_COUNT = 51

APY arsenopyrite

ASOX oxidised arsenopyrite

ΑU gold ΑZ azurite BN bornite **BRT** barite chalcocite CC CCP chalcopyrite CER cerussite CHR chromite CIN cinnabar **CST** cassiterite CU copper

CUOX oxidised Cu minerals

CUP cuprite covellite CVDG digenite **FEOX** iron oxide GN galena HEM hematite MAL malachite MCS marcasite MGH maghemite MGT magnetite millerite MLL

4

MNOX manganese oxides
MOL molybdenite
OPQ opaque mineral
PBOX oxidised lead minerals

PN pentlandite
PO pyrrhotite
PY pyrite

PYOX oxidised pyrite

RT rutile SB antimony SCH scheelite SERI sericite SP sphalerite STB stibnite SUL sulphur **SULP** sulphide **TELL** tellurides **TNR** tenorite **TNT** tennantite TTH tetrahedrite TTL tantalite VIO violarite WFM wolframite

ZNOX oxidised Zn minerals

ZRN zircon

##DATA\_END

##DICTIONARY\_START

Agso\_tectonics ##DICTIONARY\_END

##DATA\_START

##RECORD\_COUNT = 33

ΒK broken BOU boudinaged BR brecciated CAT cataclastic CLV cleaved CR crenulated **CRH** crushed CT contorted DEF deformed **FLT** faulted FD folded FO foliated

FOB foliation paraellel bedding

FOI intensely foliated
FOM moderately foliated
FOS strongly foliated
FOW weakly foliated
FA fractured

JO joint
KI kink
LI lineated
MU mullions
MY mylonitic

4

SCHS schistose
SH sheared
SL slickensided
STWK stockwork veined
STYD stylolitised
TEN tension gashes

VEIN vein VER vergence

##DATA\_END

**FGN** 

##DICTIONARY\_START

Agso\_texture 4

##DICTIONARY\_END ##DATA START

##RECORD\_COUNT = 70

autobrecciated **ABR** AM amorphous **AMY** amygdaloidal APH aphanitic **APHY** aphyric BA banded **BDD** bedded BK broken **BLD** bleached BR brecciated

HBX hydrothermal brecciated

CEM cemented **CEMP** pooly cemented **CEMS** strongly cemented **CGN** coarse-grained CON conchoidal CX cryptocrystalline DV devitrified EQ equigranular EU eutaxitic FΒ flow banded

FMG fine-medium grained

fine-grained

FA fractures
FRAG fragmental
FLT fault
FD folded
FO foliated

FOB foliation paraellel bedding

FOI intensely foliated
FOM moderately foliated
FOS strongly foliated
FOW weakly foliated

GLSY glassy
GN gneissic
GRP granophyric
IND indurated
KN knotted

LAM laminated bedded

MAS massive

**MCG** medium-coarse grained MGN medium grained MEG megacrystic MIA miarolitic MIG migmatitic MX microcrystalline Ы pillows POB porphyroblastic **POR** porphyritic pseudomorph PS RLrythmically layered RXrecrystallised SAC saccharoidal SCHS schistose SER seriate SH shear fabrics SIL siliceous SOF soft SPH spherulitic SPT spotted SPX spinifex STWK stockwork veined TBD thick bedded VΕ vesicular VEIN veined VΙ vitric VU vuggy xenocrystic XC **XEC** xenolithic ##DATA\_END ##DICTIONARY\_START Agso\_weath 3 ##DICTIONARY END ##DATA\_START ##RECORD\_COUNT = 6 **FRS** Fresh SW Slightly Weathered MWModerately Weathered HW Highly Weathered VHW Very Highly Weathered ##DATA\_END ##DICTIONARY\_START 1 And\_Or ##DICTIONARY\_END ##DATA\_START ##RECORD COUNT = 2 and **AND** OR ##DATA\_END ##DICTIONARY\_START Col\_Intens 3 ##DICTIONARY\_END

##DATA\_START

```
brt
                         bright
drk
                         dark
lt
                         light
med
                         medium
pΙ
                         pale
##DATA_END
##DICTIONARY_START
drilltypes
                                                          3
##DICTIONARY END
##DATA START
##RECORD_COUNT = 7
DDH
                         Diamond Drilling
RCP
                         Reverse Circulation
RTM
                         Rotary Mud
ACR
                         Aircore
RAB
                         Rotary Air Blast
                         Conventional percussion
OHP
##DATA END
##DICTIONARY_START
                                                          1
FeOX
##DICTIONARY_END
##DATA START
##RECORD_COUNT = 7
                       0 not oxidised
                       1 trace oxidation
                       2 weakly oxidised
                       3 moderately oxidised
                       4 strongly oxidised
                       5 completely oxidised
##DATA END
##DICTIONARY_START
                                                          4
Grainsize
##DICTIONARY_END
##DATA_START
##RECORD COUNT = 6
                         coarse grained (>5mm)
cgr
                         fine grained (<1mm)
fgr
                         medium grained (1-5mm)
mgr
vcgr
                         very coarse grained
vfgr
                         very fine grained (not vis)
##DATA_END
##DICTIONARY_START
GS Sulf
                                                          1
##DICTIONARY_END
##DATA START
##RECORD_COUNT = 4
С
                         Coarse >2mm
Μ
                         Medium 0.5 - 2mm
F
                         Fine < 0.5mm
```

##RECORD\_COUNT = 6

```
##DATA_END
##DICTIONARY_START
                                                        1
##DICTIONARY_END
##DATA START
##RECORD_COUNT = 2
                        mix of 2 distinct colours
                        homogenous mix of 2 colours
##DATA_END
##DICTIONARY_START
                                                        4
quality_ctrl
##DICTIONARY_END
##DATA START
##RECORD_COUNT = 4
orig
                        original assay
                        repeat assay
rep
std
                        standard
##DATA_END
##DICTIONARY_START
                                                        4
Samp_type
##DICTIONARY_END
##DATA_START
##RECORD COUNT = 8
1/2 HQ
                         1/2 HQ
1/2 NQ
                         1/2 NQ
RM
                        Rotary Mud
RCP
                        Reverse Circulation Percussion
RP
                         Rotary Percussion
OP
                        Open Hole Percussion
AC
                         Air Core
##DATA END
##DICTIONARY_START
                                                        1
samp_wetness
##DICTIONARY_END
##DATA_START
##RECORD COUNT = 4
W
                        wet
D
                        dry
Μ
                        mud contaminated
##DATA_END
##DICTIONARY_START
struct_type
                                                        3
##DICTIONARY_END
##DATA START
##RECORD_COUNT = 7
                        banding
ba
                        bedding
bed
                        contact
con
fol
                        foliation
fra
                        fracture
                        shear
sh
```

vn vein

##DATA\_END

##DICTIONARY\_START

Vein\_type ##DICTIONARY\_END

##DATA\_START

##RECORD\_COUNT = 15

VBT biotite

VCA calcite vein fill **HBCA** calcite breccia **VCB** carbonate VCP chalcopyrite VCL chlorite **VEP** epidote VQP quartz-pyrite **VQCA** quartz-calcite **VQSE** quartz-sericite quartz breccia HBQ VSE sericite vein **VQK** quartz-kfeldspar **VCS** calcsilicate

VQS quartz-calcsilicate
VQB quartz-biotite
VPA aplite veins
VPEG pegmatite veins

VGA galena

##DATA\_END

##DICTIONARY\_START

Survey\_type

##DICTIONARY\_END ##DATA\_START

##RECORD\_COUNT = 4

East Eastman Kodak
Gyro Gyroscope
Max Maxibor survey

##DATA END

4

4