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## No. 10,807

**EL 2761 AND EL 3094**

**NUCKULLA HILL AND GLYDE HILL**

**PACE INITIATIVE : THEME 2, YEAR 1**

**DRILLING PARTNERSHIP –WESTERN GAWLER  
RANGE VOLCANIC PROVINCE MINERAL PROSPECTS**

**PROJECT INTERIM AND FINAL REPORTS**

Submitted by  
Minotaur Exploration Ltd  
2005

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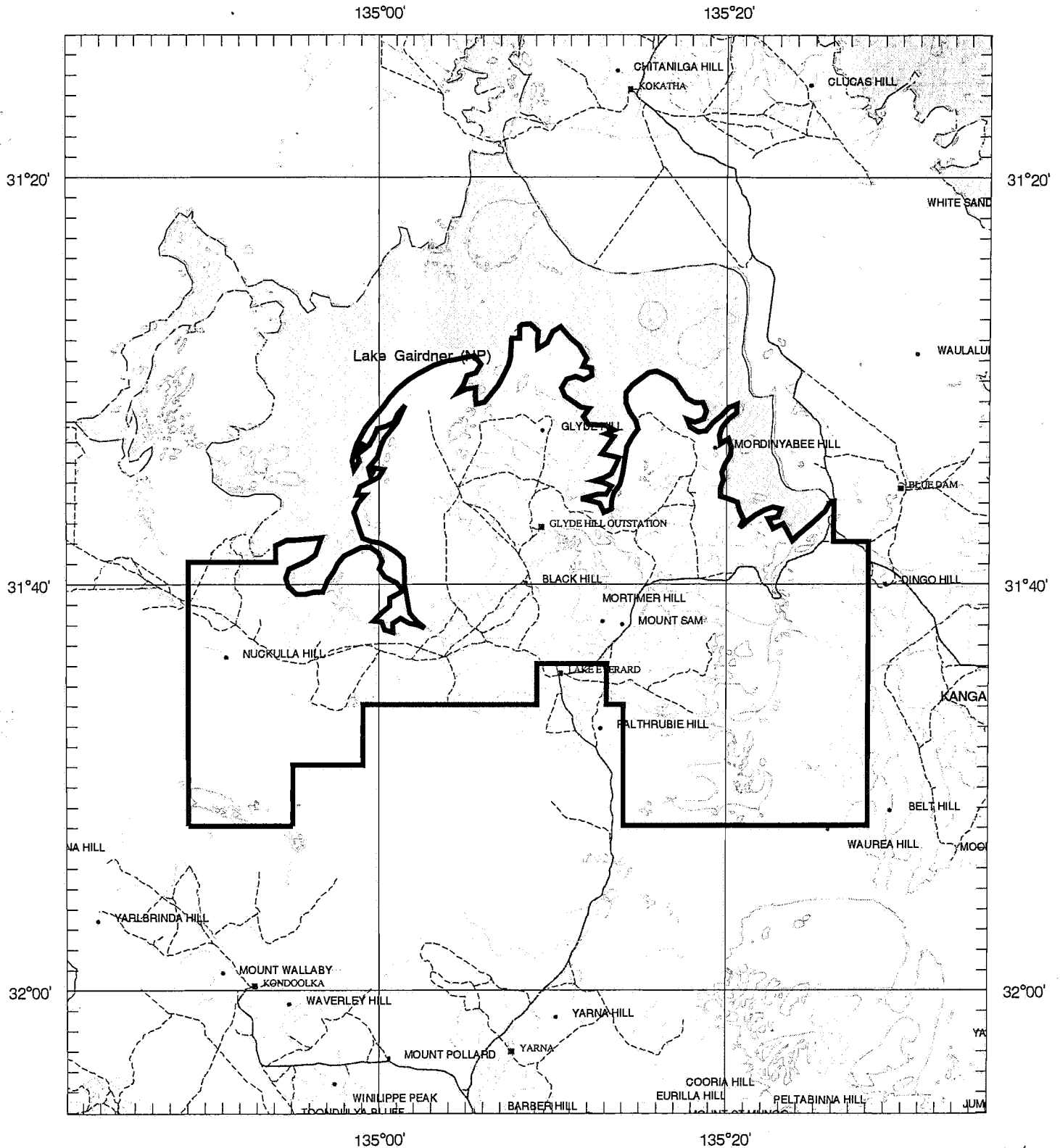
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**Government of South Australia**  
**Primary Industries and Resources SA**

# SCHEDULE A



APPLICANT : **MINEX (SA) PTY LTD**

FILE REF : **158/02**

TYPE : **MINERAL ONLY**

AREA : **1710 km<sup>2</sup> (approx.)**

1:250000 MAPSHEETS : **CHILDARA GAIRDNER**

LOCALITY : **GLYDE HILL AREA - Approximately 130 km northeast of Ceduna**

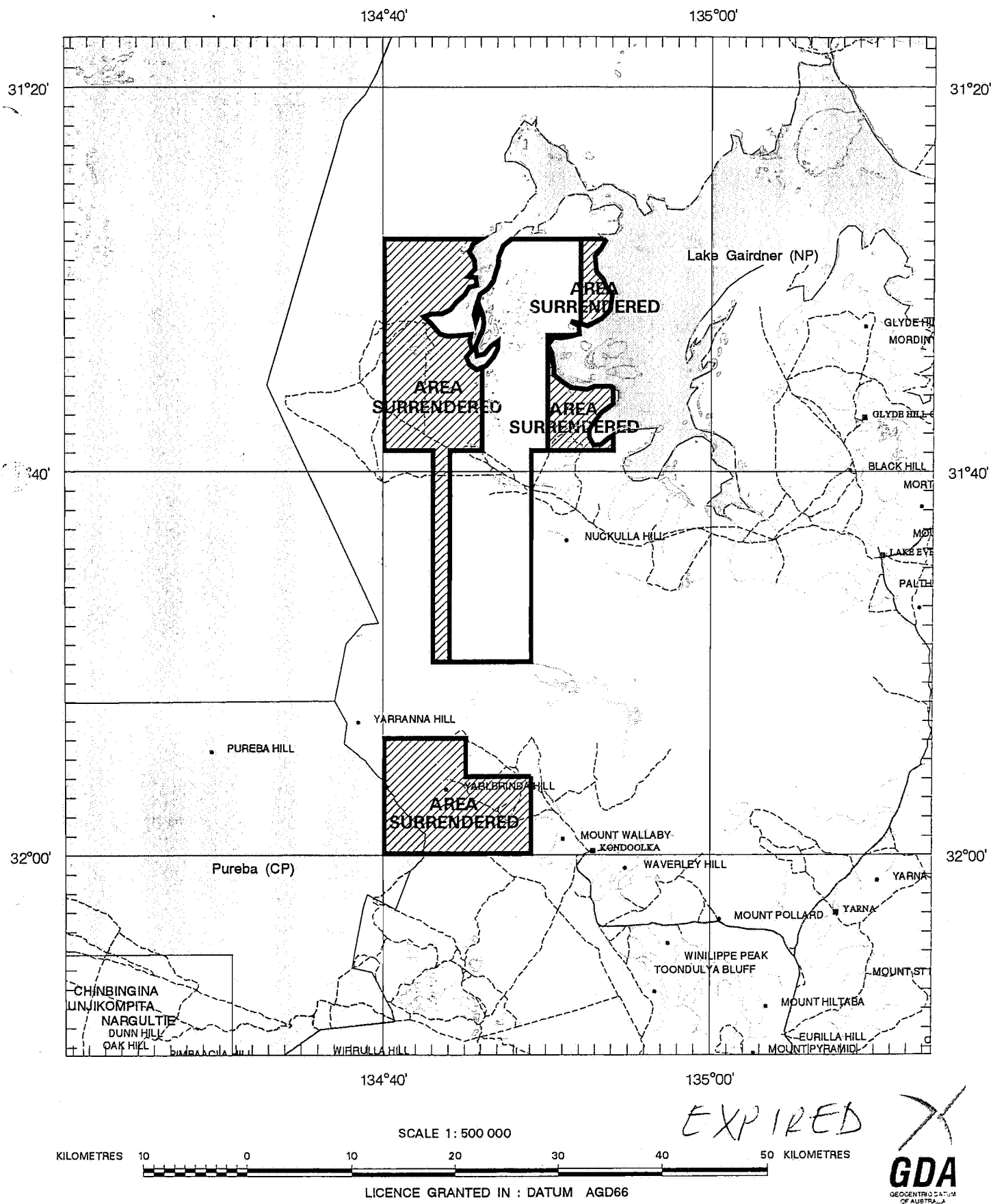
DATE GRANTED : **10 June 2003**

DATE EXPIRED : **09 June 2004**

**EL No : 3094**

*2005*

# SCHEDULE A



APPLICANT : EQUINOX RESOURCES LTD

FILE REF : 161/99

TYPE : MINERAL ONLY

AREA : 311 km<sup>2</sup> (approx.)

1:250000 MAPSHEETS : CHILDARA

LOCALITY : NUCKULLA HILL AREA - Approximately 120 km northeast of Ceduna

DATE GRANTED : 19-Oct-2000

DATE EXPIRED : 18-Oct-2004

EL NO : 2761

2005

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**PACE DRILLING PROJECT DPY - 46****Interim Report, West Gawler Ranges IOCG Dilling, May–June 2005****Richard Flint (Senior Geologist)****14/06/05****Introduction**

Nuckulla Hill (EL 2761) and Glyde Hill (EL 3094) are adjoining tenements in the central Gawler Craton. The tenements are located approximately 80 km south of Kingoonya. Glyde Hill was granted to Minotaur on the 10th June 2003 whereas Equinox Resources is the Licensee for the Nuckulla Hill tenement over which Minotaur Resources has entered in to a joint venture agreement.

The tenements are situated along the western margin of the Gawler Range Volcanic Province and within an area defined by Minotaur as prospective for iron oxide copper-gold (IOCG) exploration. The region is characterised by exposed lower Gawler Range Volcanics, Hiltaba Suite granites, Palaeoproterozoic granitoids and a major regional N–S shear zone, the Yarlbirinda Shear Zone, reactivated ~1590 Ma as a focus for hydrothermal fluid flow and alteration.

Geophysically, the Yarlbirinda Shear Zone is characterized by intense demagnetization. Regional and infill gravity surveys by Minotaur reveal a number of gravity anomalies coincident with the edge of the shear zone. These are interpreted as areas of more intense iron oxide alteration adjacent to a main shear zone characterized by mylonitisation, demagnetization and intense fluid flow.

**Targets**

From initial regional surveys, four possible targets were outlined (Figure 1). However, following infill gravity surveys, only two anomalies adjacent to the Yarlbirinda Shear Zone and the Myall gold prospect were selected for drill testing as other targets further east coincided with exposed Gawler Range Volcanics and the lack of alteration and veining downgraded their potential. A total of three RC holes were drilled for total drilling of 767 m — one hole (NK05R001) on Target 1 and two holes (NK05R002 & NK05R003) 220 m apart on Target 2 with all holes being angled 60° to 270° (True) (Figure 2). RC drilling by Frank Walsh Drilling commenced in late May 2005 and was completed in mid June 2005.

Hole ID	mE	mN	T.D.	Incl <sup>n</sup>	Decl <sup>n</sup>
NK05R001	480900	6496400	279	-60	270
NK05R002	480380	6495600	258	-60	270
NK05R003	480600	6495600	230	-60	270

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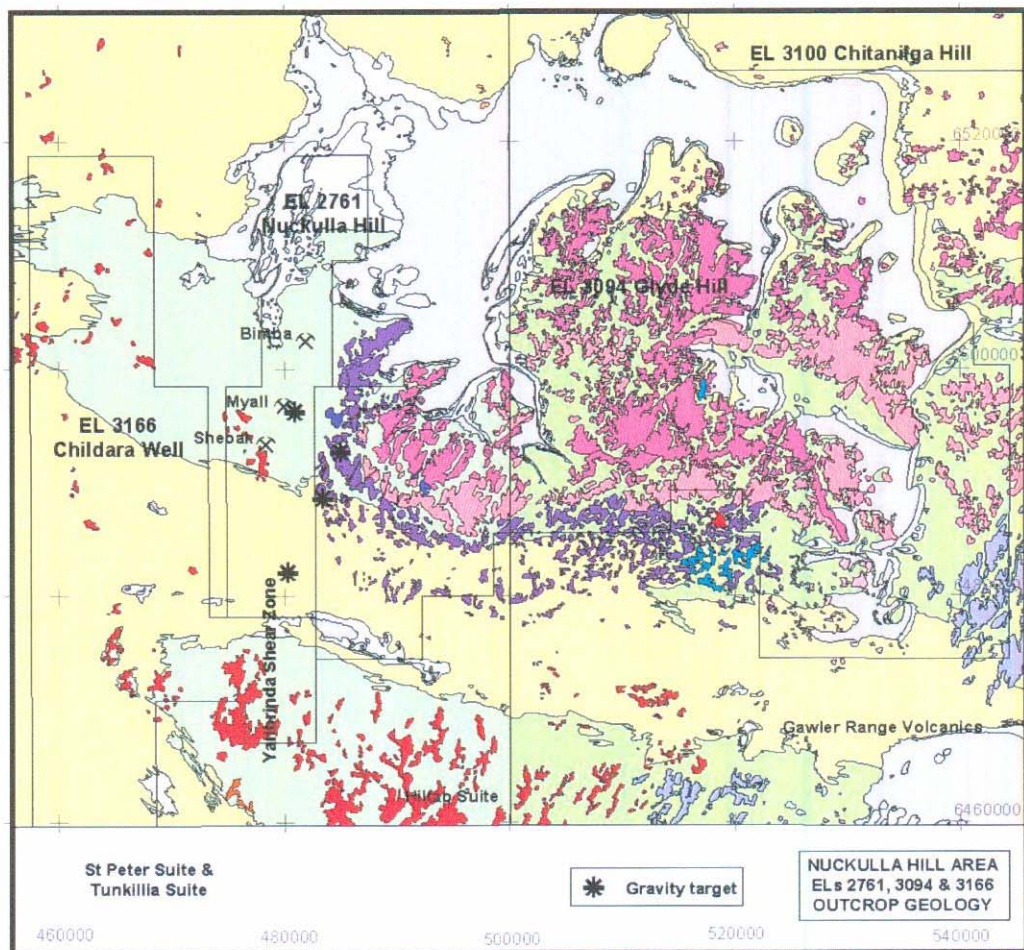
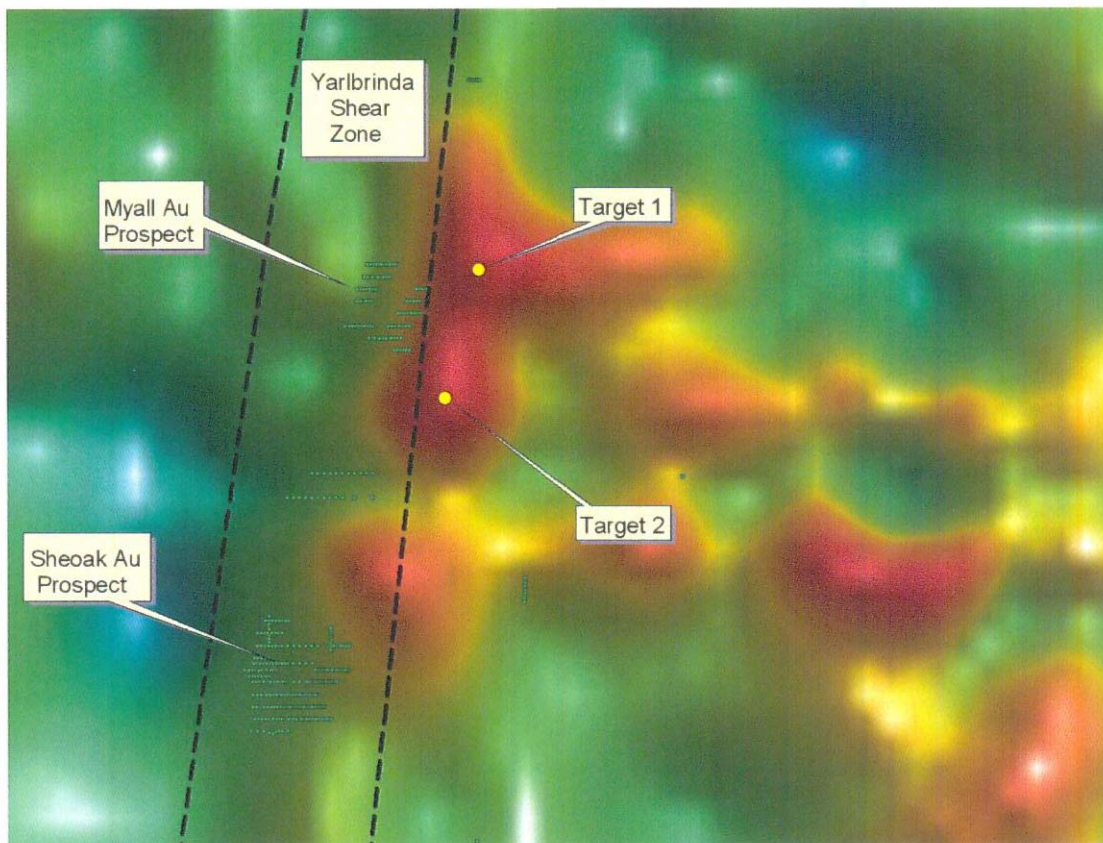


Figure 1. Basement exposure in the Nuckulla – Glyde Hill area depicting initial targets based upon regional gravity data.



**Figure 2. Revised target anomalies adjacent to Myall gold prospect defined by infill gravity surveys.**



## Preliminary Results

Two holes (NK05R001 & NK05R003) were sited east of the Yarlbrinda Shear Zone whereas the other drillhole (NK05R002) was also sited just east, but then drilled across the eastern margin of the Yarlbrinda Shear Zone.

Broad lithologies encountered are consistent with predominantly felsic intrusives and range from pink, coarse-grained, quartz+feldspar rich granite to pinkish grey, fine-grained, quartz+biotite rich granite/adamellite to leucogranite. Most (but not all) exhibit varying degrees of deformation and mylonitisation with development of ultramylonite in narrow shear zones — the degree of deformation and rapid variations in lithologies are consistent with Palaeoproterozoic Tunkillia Suite granitoids.

Bright green, sericite alteration, present as both alteration of individual feldspar crystals and concentrated within narrow bands, is widespread. Sericite may locally constitute up to 35% of some lithologies. Sericite alteration is late stage and clearly post dates the mylonitisation event.

Also intersected in two drillholes (NK05R001 and NK05R003) is a non-deformed, magnetite-bearing granite of different character. It is typically grey to pinkish grey, predominantly fine-grained, porphyritic with small pink-brown K-feldspar phenocrysts (5-25%) in a matrix of quartz, biotite, magnetite and feldspar. Sericite alteration, associated with silica, pyrite and minor calcite, is common. This granite is tentatively assigned to the Mesoproterozoic Hiltaba Suite.

Geological logs for the three drillholes are tabulated below.

NK05R001		
Depth_from	Depth_to	Lithology
0	2	Quaternary clay and calcrete
2	48	Very weathered basement comprising yellow-brown saprolitic clay
48	71	Dark green, grey, pink, coarse-grained granite to adamellite
71	98	Pinkish, coarse-grained, quartz+feldspar+biotite granite with weak mylonitic foliation and widespread green sericitisation
98	100	Leucocratic pegmatoid
100	111	Pinkish grey, mylonitised, coarse-grained granite with widespread sericitisation
111	112	Ultramylonite
112	114	Pinkish grey, mylonitised, coarse-grained granite with widespread sericitisation
114	115	Ultramylonite
115	118	Pinkish grey, mylonitised, coarse-grained granite with widespread sericitisation
118	123	Leucogranite rich in quartz and feldspar and containing minor sericite bands
123	124	Pinkish grey, medium-grained, mylonitised granite
124	126	Pink leucogranite containing sericite-rich bands
126	127	Pinkish, coarse-grained, quartz+feldspar+biotite granite
127	133	Pink leucogranite containing minor sericite
133	139	Pinkish, coarse-grained, quartz+feldspar+biotite granite with widespread sericite alteration

139	142	Pink leucogranite
142	143	Pinkish grey, coarse-grained, quartz+feldspar+biotite granite
143	145	Pink leucogranite
145	150	Greenish grey, fine-grained, granite (quartz+feldspar+biotite) with widespread sericite alteration
150	152	Predominantly pink leucogranite
152	160	Pinkish grey, medium- to coarse-grained, mylonitised granite ranging from quartz+feldspar rich phases to matrix rich (quartz+biotite+ feldspar) phases with moderate sericite alteration
160	165	Pink, medium-grained leucogranite with sericite bands
165	167	Pinkish grey, coarse-grained, mylonitised, quartz+feldspar+biotite granite with some sericite alteration
167	168	Pink, coarse-grained, leucogranite to pegmatoid
168	178	Pinkish grey, coarse-grained, mylonitised, quartz+feldspar+biotite granite with moderate sericite alteration
178	186	Grey, fine-grained, magnetite-bearing granite with small K-feldspar phenocrysts and widespread sericite alteration. ?Hiltaba Suite granite
186	187	Pinkish grey, medium-grained, mylonitised granite
187	188	Pale grey, fine-grained, mica-rich shear zone
188	189	Pinkish grey, coarse-grained granite
189	190	Pale grey, fine-grained, mica-rich mylonite
190	197	Pinkish grey, coarse-grained, mylonitised, quartz+feldspar+biotite granite with moderate sericite alteration
197	203	Pale grey, fine-grained, mica-rich mylonite with minor calcite veins
203	205	Pinkish grey, medium- to coarse-grained, mylonitised, quartz+feldspar+biotite granite with moderate sericite alteration
205	212	Grey, mylonitised granite grading to mica-rich mylonite
212	279	Grey to pinkish grey, magnetite-bearing granite characterised by low K-feldspar content (5-25%), biotite, primary magnetite and absence of coarse-grained quartz. Strong pervasive late alteration of sericite, silica, calcite and minor pyrite. ?Hiltaba Suite granite
	279	EOH
		Petrology samples at 227-228m, 248-249m and 275-276m

NK05R002		
Depth from	Depth to	Lithology
0	4	Quaternary clay and calcrete
4	46	Very weathered basement comprising yellow-brown saprolitic clay
46	81	Greenish grey to pinkish grey, mylonitised, granite to granodiorite
81	135	Mylonite to ultramylonite (early phase) containing widespread (>50%) sericite alteration (with minor silica, calcite and pyrite) as distinct later phase event
135	147	Grey ?diorite with trace disseminated pyrite and widespread sericite alteration and rare yellow ?barite
147	155	Mylonite to ultramylonite (early phase) containing widespread (>50%) sericite alteration (with minor silica, calcite and pyrite) as distinct later phase event
155	156	Quartz vein with widespread trace pyrite
156	164	Magnetite-bearing granite characterised by brick-red K-feldspar (<2mm) (60%) in matrix of quartz, biotite and magnetite with moderate sericite alteration and trace pyrite. ?Hiltaba Suite granite



164	199	Greenish grey ?diorite and locally felsic pegmatoid veins with pervasive sericite and silica alteration with trace pyrite and yellow ?barite
199	208	Greenish pink, medium- to coarse-grained, quartz+feldspar +biotite granite with high sericite alteration (30-35%) containing trace pyrite and rare trace?bornite ?Hiltaba Suite granite
208	210	Quartz-rich zone with minor feldspar, sericite and ?dolomite
210	227	Granite to gneissic granite; pinkish green-grey, coarse-grained, quartz-rich, coarse-grained biotite
227	233	Fine-grained, dark greenish grey, quartz-veined ?diorite with moderate mylonitic fabric and trace pyrite and rare veins of calcite+fluorite
233	237	Ultramylonite; siliceous with strong mylonitic fabric
237	258	Pale greenish grey, mylonitised granite to quartz-rich gneiss with patchy sericite alteration
	258	EOH Petrology samples at 112-113m, 136-137m, 158-159m, 186-187m and 201-202m

NK05R003		
Depth from	Depth to	Lithology
0	2	Quaternary clay and calcrete
2	44	Very weathered basement comprising yellow-brown saprolitic clay
44	96	Granite grading from fine-grained to coarse-grained, pinkish green grey to red, comprising quartz+feldspar+biotite and locally mylonitised. Low (~5%) sericite alteration
96	113	Dark grey to red-grey, magnetite-bearing granite with tabular red K-feldspar crystals (<1mm) (<30%) in fine-grained matrix rich in quartz and biotite and trace disseminated pyrite. Minor sericite + pyrite veins. ?Hiltaba Suite granite
113	153	Medium- to coarse-grained, red to dark greenish grey mylonitised granite with <60% K-feldspar, graphic feldspar+quartz and biotite with sericite + trace pyrite alteration (5%)
153	155	Dark grey, fine-grained ?diorite (plagioclase+?hornblende) with common veins of dolomite
155	159	Dark greenish grey, fine- to medium-grained, mylonitised granite with <30% K-feldspar, mafic-rich and with moderate sericite alteration
159	161	Greenish red, coarse-grained, weakly mylonitised granite
161	177	Dark greenish grey, fine- to medium-grained, mylonitised granite with moderate sericite alteration (locally 10-20%)
177	182	Coarse-grained, greenish pink granite with moderate sericite alteration both patchy and concentrated within discrete bands (5-15%)
182	188	Pink-green-grey, medium-grained, weakly mylonitised granite with quartz+biotite rich matrix and moderate sericite alteration (5-7%)
188	190	Coarse-grained, greenish pink granite with moderate sericite alteration both patchy and concentrated within discrete bands
190	197	Dark greenish grey, fine- to medium-grained, mylonitised granite with patchy sericite alteration (5-12%)
197	200	Pink, coarse-grained leucogranite
200	230	Dark greenish grey, fine- to medium-grained, mafic-rich,

230

mylonitised granite with low-moderate sericite alteration (3-15%)  
and rare calcite veins  
EOH  
Petrology sample at 110-111m

### **Final results**

Cover sediments and highly weathered crystalline basement were sampled geochemically over 6 m intervals whereas fresh crystalline basement were sampled over 5 m intervals. Elements being analysed are Ag, As, Au, Ba, Bi, Ca, Ce, Co, Cr, Cs, Cu, Fe, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sr, Ti, U, Y and Zn. Assay results have not yet been received.

Representative lithologies (as documented in above tables) have been sampled for petrological examination, but report from Pontifex and Associates has not yet been received.

A full technical report will be completed once assay and petrology results are available.

### **Drilling Expenditure**

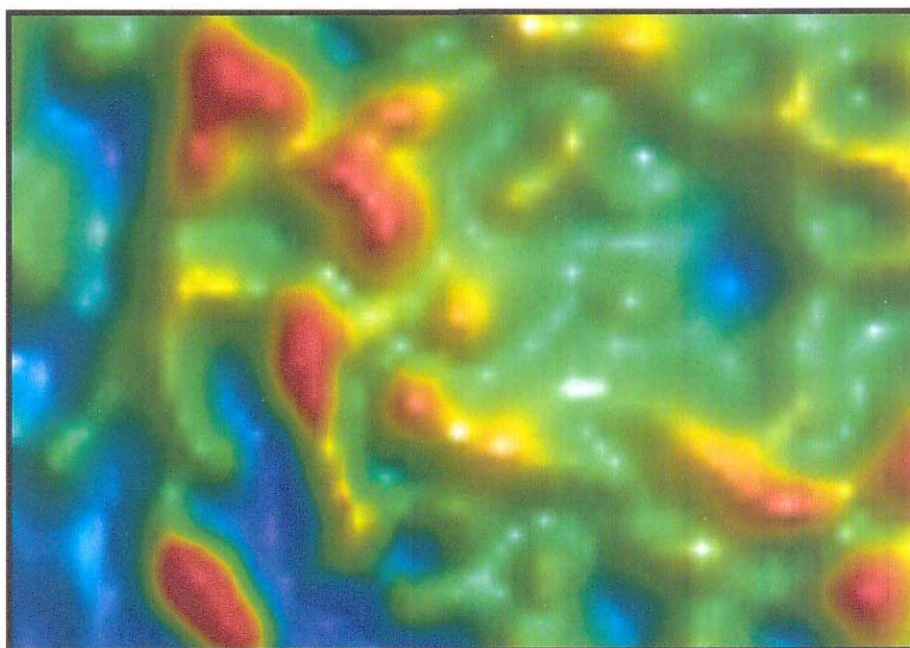
Drilling contractor expenditure totalled \$54,710. Up to \$48,000 is available from PACE funding for 50% of drilling costs. An invoice for \$27,355 plus GST has been submitted separately.

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**FINAL REPORT**  
**PACE PROJECT DPY-46**  
**WEST GAWLER RANGES**



**R.B. Flint**  
**Senior Geologist**

**August 2005**

MERFF  
R2005/00478



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**FINAL REPORT**

**PACE PROJECT DPY-46**

**WEST GAWLER RANGES**

**R.B. Flint**  
**Senior Geologist**

**August 2005**

**SUMMARY**

- The southern portion of the Yarlbrinda Shear Zone was the target for three exploratory RC drillholes by Minotaur Exploration with funding assistance from PIRSA through a Plan for Accelerated Exploration (PACE project DPY-46).
- Exploration strategy was to assess if IOCG-style mineralisation, similar in character to Olympic Dam and Prominent Hill deposits, might also be present proximal to the Yarlbrinda Shear Zone.
- Gravity anomalies with amplitudes of 2–5 mGals are present adjacent to the Myall and Sheoak gold prospects within the Yarlbrinda Shear Zone.
- Drilling intersected coarse-grained granite, leucogranite, pegmatite, silica-rich mylonite, diorite and gabbro, all variably deformed, and all represent Palaeoproterozoic Tunkillia or St Peter Suite lithologies.
- The presence of gabbro adequately accounts for the modest gravity anomalies.
- No anomalous assay values were recorded and potential for hematite-rich IOCG-style mineralisation adjacent to the Myall and Sheoak gold prospects has been downgraded.

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## INTRODUCTION

EL 2761 (Nuckulla Hill) is situated near the western margin of the Gawler Ranges on the central portion of the Gawler Craton, central South Australia (Figure 1). Licensee for the tenement is Equinox Resources Ltd and the tenement is subject to a joint venture with Minotaur Exploration Ltd as operator.

Rock exposures of Mesoproterozoic Gawler Range Volcanics and Hiltaba Granite occur extensively within the Gawler Ranges, but to the west and encompassing a significant portion of EL 2761, exposures are limited (Blissett, 1980; Blissett, 1985; Blissett et al, 1993). However, concealed beneath a thin veneer of Cainozoic sediments is the N–S Yarlbirinda Shear Zone along which are several prospects containing quartz-vein hosted gold mineralisation (Tunkillia, Myall and Sheoak) (Figures 2–3). Further north along the shear zone is the Tunkillia Prospect where Helix Resources have defined a total JORC resource for the Tunkillia Prospect of 10.5 Mt at 2.2 g/t Au for 730 000 oz of contained gold (Ferris and Wilson, 2004). At all these localities, gold is believed to be associated with hydrothermal fluids emanating from a Hiltaba Suite pluton or batholith.

These gold occurrences are located within the Central Gawler Gold Province, a term applied to a significant number of Mesoproterozoic gold-only prospects in the central Gawler Craton in comparison to the eastern Gawler Craton where mineralised systems are hematite-rich and polymetallic (gold, copper, uranium and rare earths) or abbreviated to IOCG-style deposits (Fe oxide copper–gold). Examples of these deposits include Olympic Dam and Prominent Hill.

The difference in mineralisation styles may be real and reflect regional fundamental variations in source fluids and hydrothermal solutions or alternatively the difference may only be apparent and reflect the lack of mineral exploration in the Central Gawler Gold Province for IOCG-style deposits.

During late 2004, Minotaur Resources Ltd successfully applied for a grant from Primary Industries and Resources of South Australia (PIRSA) through its Plan for Accelerated Exploration (PACE) to drill test two gravity anomalies in close proximity to the Yarlbirinda



Shear Zone in order to investigate whether hematite-rich breccia pipes and subvolcanic complexes similar in style to typical Mesoproterozoic IOCG deposits of the eastern Gawler Craton occur. This report summarises the geological and geophysical results arising from the drilling program.

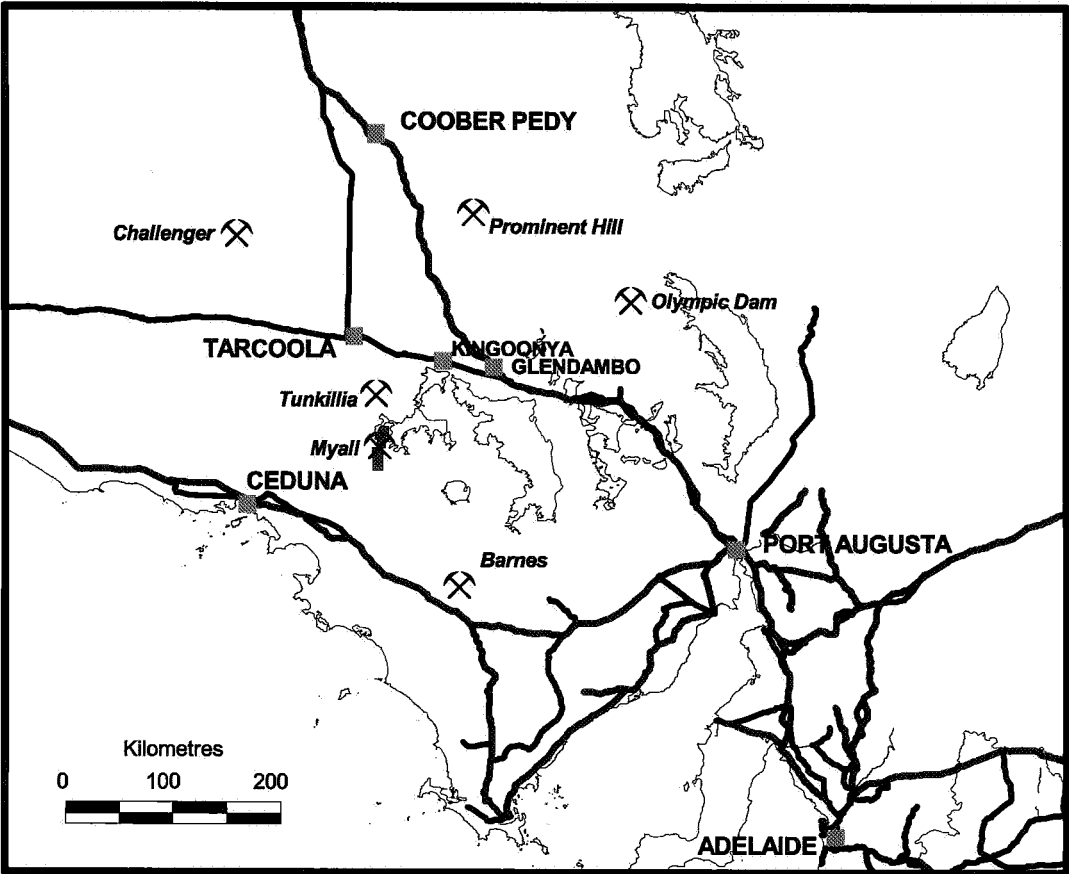


Figure 1: Location plan for EL 2761 (Nuckulla Hill) and PACE project DPY-46

REGIONAL GEOLOGY AND TECTONICS

The central portion of the Gawler Craton consists of a great variety of geological units and is structurally complex. Archaean metamorphic rocks and greenstone-belt units are distributed along WSW–ENE trends, including within the Harris Greenstone Belt. During the Palaeoproterozoic, granitoids emplaced include the Tunkillia Suite (~1690 Ma) and St Peter

Suite (~1620 Ma), and were probably synorogenic with associated deformation during late stages of the Kimban and Kararan Orogenies. During these deformational episodes, major shear zones developed, including the E-trending Yerda and Oolabinnia Shear Zones and N-trending Yarlbirinda Shear Zone. The Yarlbirinda Shear Zone (west of the Gawler Ranges) and Yerda Shear Zone are up to several kilometres wide with ductile shearing and deformation probably occurring before ~1600 Ma and before Mesoproterozoic anorogenic magmatism (Daly et al., 1998) (Figures 2–4).

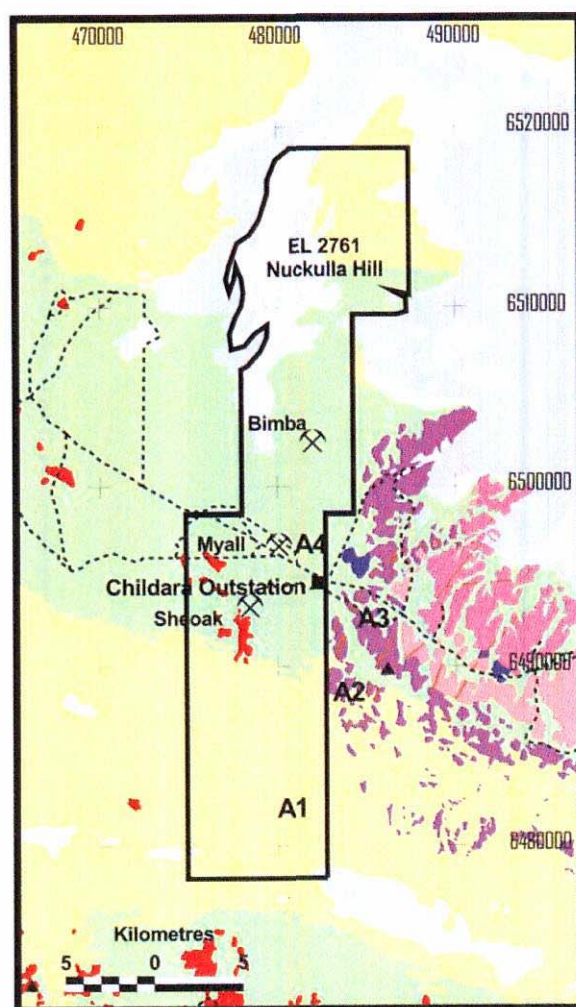


Figure 2: Outcrop geology of the Nuckulla Hill area, after Blissett (1980), and location of gravity anomalies (A1–A4)

During the Mesoproterozoic, widespread anorogenic magmatism across the central portion of the craton resulted in voluminous outpourings of the Gawler Range Volcanics, intrusion of

Hiltaba Suite granite, emplacement of minor gabbroic plugs and development of Cu-Au +/- U mineralisation at Olympic Dam and Prominent Hill and Au-only mineralisation at Tunkillia and Tarcoola (Blissett et al, 1993; Flint, 1993). Displacements along NE- and NW-trending faults and the N-trending Yarlbirinda Shear Zone (local reactivation) were predominantly vertical.

## **REGIONAL MINERALISATION**

Quartz-vein hosted gold mineralisation is known from several prospects along the Yarlbirinda Shear Zone (Tunkillia, Myall and Sheoak) and also further north at the historical Glenloth and Tarcoola Goldfields. At all these localities, gold is believed to be associated with hydrothermal fluids emanating from a Hiltaba Suite pluton or batholith.

Helix Resources have defined a total JORC resource for the Tunkillia Prospect of 10.5 Mt at 2.2 g/t Au for 730 000 oz of contained gold (Ferris and Wilson, 2004). Host rocks within the Yarlbirinda Shear Zone are sheared Palaeoproterozoic Tunkillia Suite lithologies with gold and associated pyrite occurring in steeply-dipping quartz veins within an alteration zone comprising sericite and chlorite, with mineralisation most likely related to fluids emanating from a Hiltaba Suite granite and preferentially focused along the Yarlbirinda Shear Zone.

Other prospects further south along the Yarlbirinda Shear Zone include Myall, Sheoak and Bimba Prospects discovered by Equinox Resources during 1995–1997. Initial calcrete sampling was successful and subsequent exploration included RAB, RC and diamond drilling programs, encountering significant anomalous gold. Intercepts included 7 m at 3.1 g/t Au (52-59 m in NHAC26) and 22 m at 1.1 g/t Au (113-135 m in NHRC-1) at the Sheoak Prospect (Parker, 2003).

Near the southwest Gawler Ranges (SE of the Yarlbirinda Shear Zone), gold mineralisation at the Barnes and White Tank prospects discovered by Adelaide Resources Ltd is spatially near Hiltaba Suite granitoids though hosted within Tunkillia Suite granodiorite. Significant gold intersections include 12 m at 3.38 g/t (RCBN123), 6 m at 4.40 g/t (RCBN51), 8 m at 2.97 g/t (RHBN50) and 2 m at 67.6 g/t (RCBN129) (Barnes Prospect) and 17 m at 3.47 g/t Au (White Tank) (Drown, 2003).



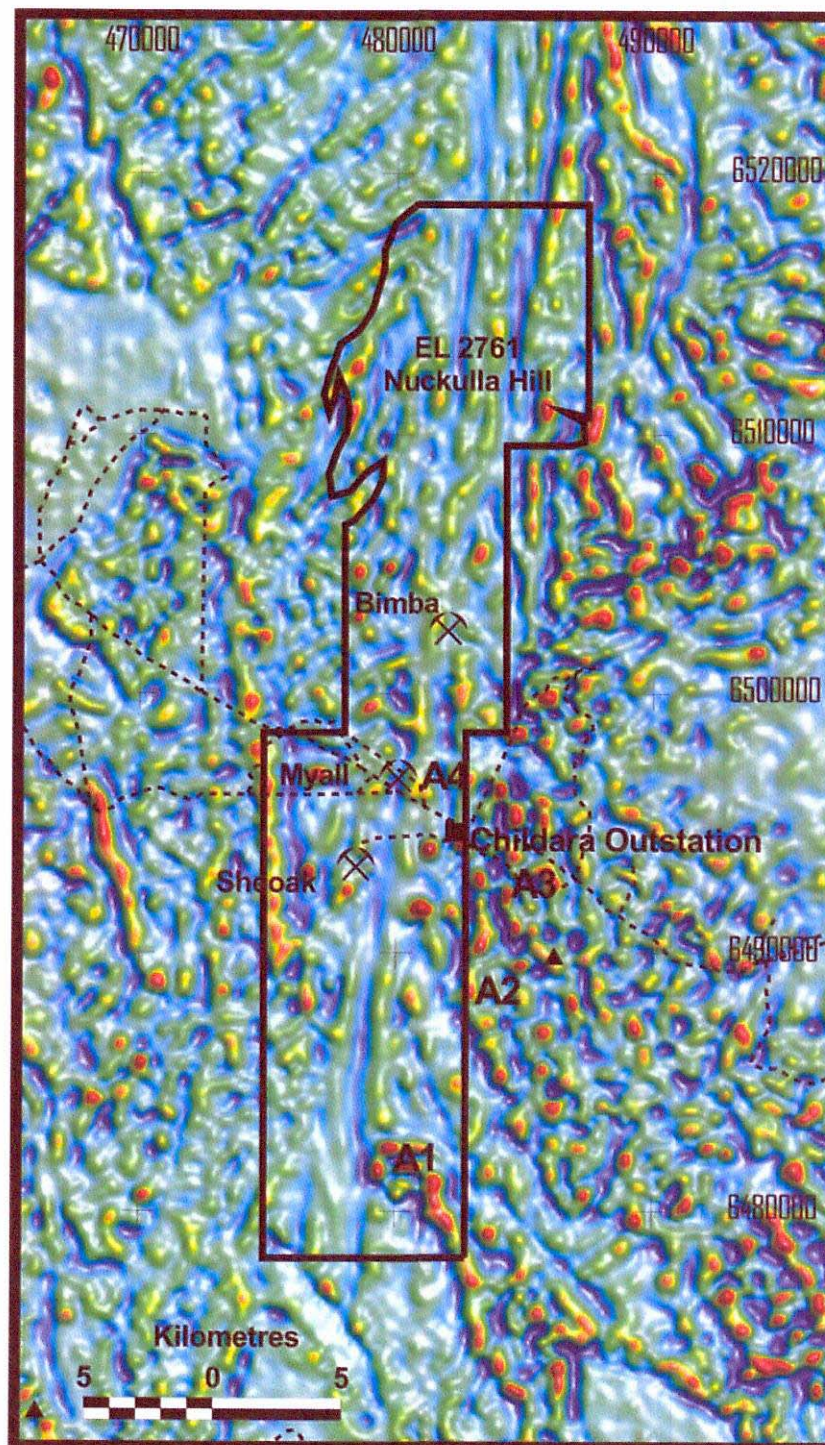


Figure 3: Enhanced TMI image for the Nuckulla Hill area



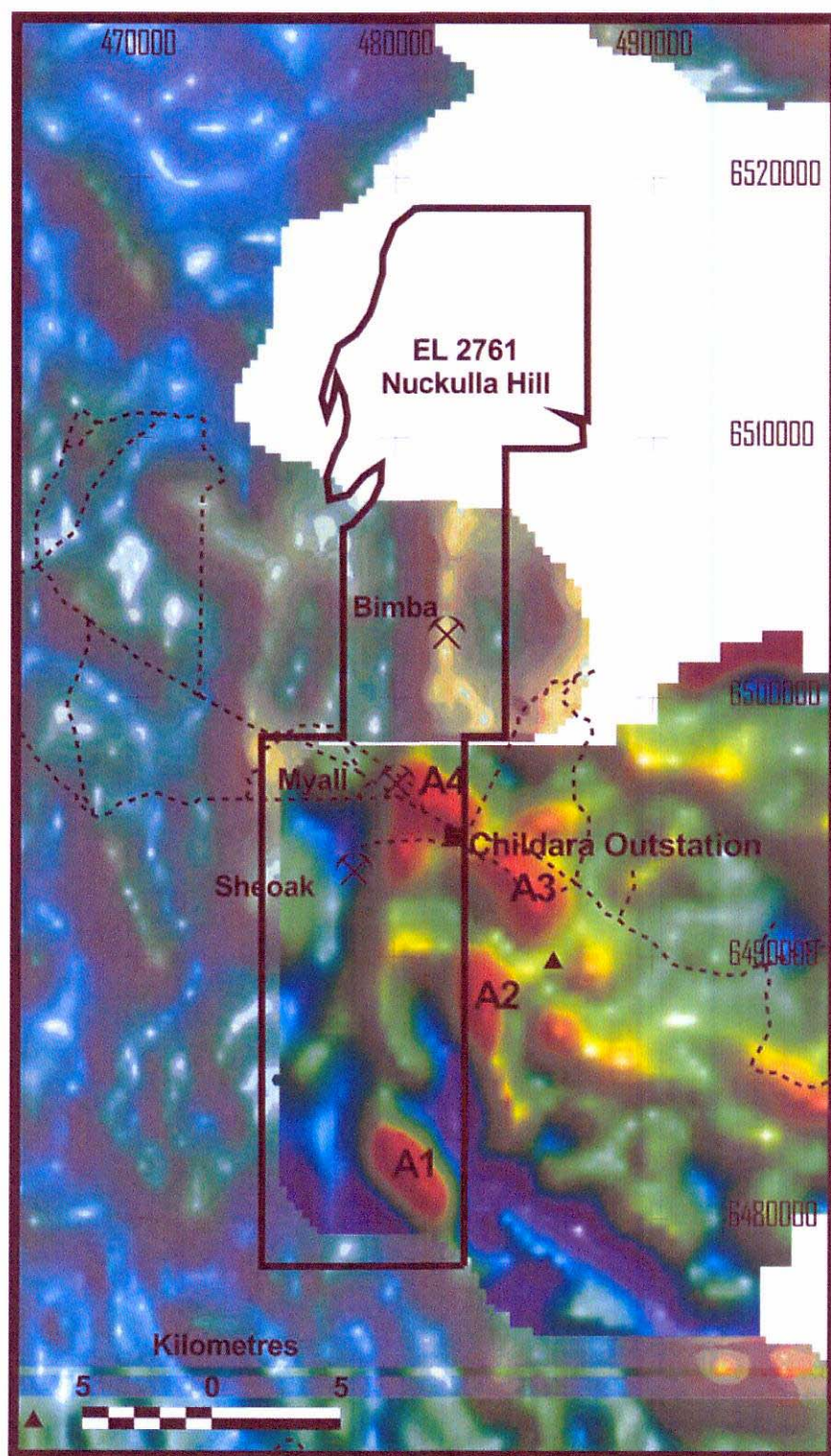


Figure 4: First vertical derivative gravity image for the Nuckulla Hill area

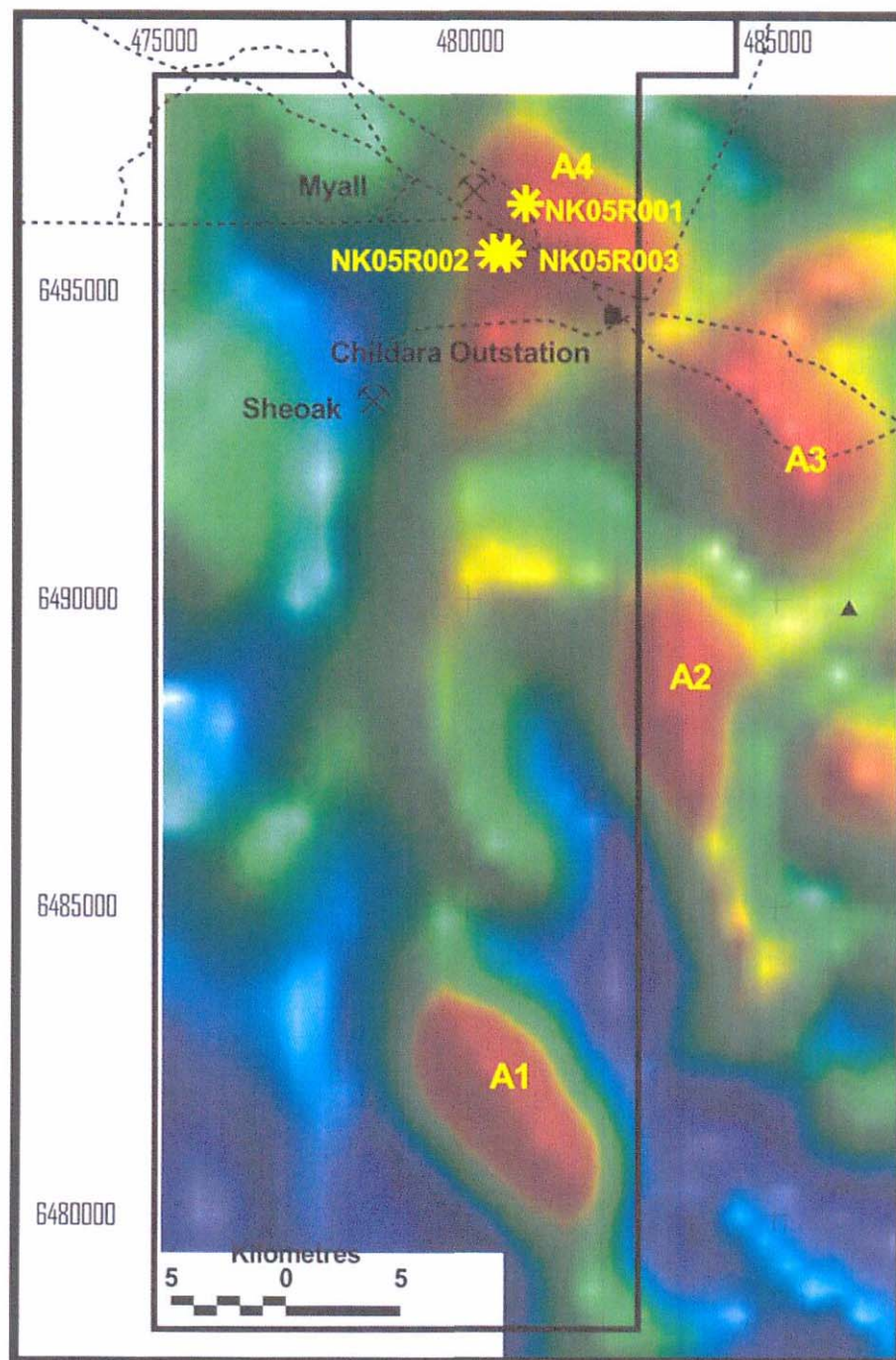


Figure 5: Location of RC drillholes and target gravity anomaly (A4)



## GRAVITY DATA AND INTERPRETATION

To complement previous reconnaissance gravity surveys, Haines Surveys Pty Ltd conducted during 2003 for Minotaur Resources a regional gravity survey over a large area of the exposed western Gawler Ranges (EL 3094). Station spacing was 800 m along N–S lines 1 600 m apart. Areas of interest close to the Yarlbinda Shear Zone were then surveyed in greater detail with station spacing of 200 m along lines 400 m apart.

Located east of the Yarlbinda Shear Zone are four positive residual gravity anomalies (Figures 4–5). The southernmost anomaly (A1) has the greatest amplitude of ~5 mGals, and is coincident with a significant aeromagnetic anomaly. It was previously drill tested by Equinox Resources with mafic–ultramafic lithologies intersected and a 3 m interval of gabbro within NHAC 234 assayed 700 ppm Ni and 550 ppm Cr. Emplacement age for the gabbro is not known.

Anomalies A2 and A3 are coincident with lower Gawler Range Volcanic strata exposed near Nuckulla Hill and also weak aeromagnetic anomalies. Both anomalies have approximate dimensions of 4 x 2 km and amplitudes of 2 mGals (Figures 5–7). Field checking of exposures near Anomaly A2 revealed only fresh porphyritic dacite whereas spoil from a well near Anomaly A3 was of weathered andesite though exposed lithologies are porphyritic rhyodacite–dacite of the Mangaroongah Dacite. The possible presence of an andesite-rich underlying unit could account for the weak positive geophysical anomalies.

The northernmost anomaly (A4) is immediately adjacent to both the eastern margin of the Yarlbinda Shear Zone and the Myall Au prospect and in a zone of no basement exposure. The anomaly is ~2.5 km in diameter with an amplitude of 3 mGals, and had not previously been drill tested (Figure 8).

The 3D inversion of the gravity data indicated modest density variations of 0.117 g/cc<sup>3</sup> in comparison with gravity models over known IOCG deposits, however it is consistent with the low-amplitude anomaly represented in the Bouguer gravity data (Figure 9).

Two 2D gravity models over the gravity anomaly obtained depths to interpreted modelled target bodies ranging from 130 to 150 m. Densities of 2.85 g/cc<sup>3</sup> were used for all modelled bodies.

Considering the proximity of the gravity anomaly to the Myall Prospect, it was considered possible that gold-only mineralisation within the Yarlbrinda Shear Zone might represent peripheral mineralisation to a nearby hematite-dominated Cu+Au IOCG-style ore body.

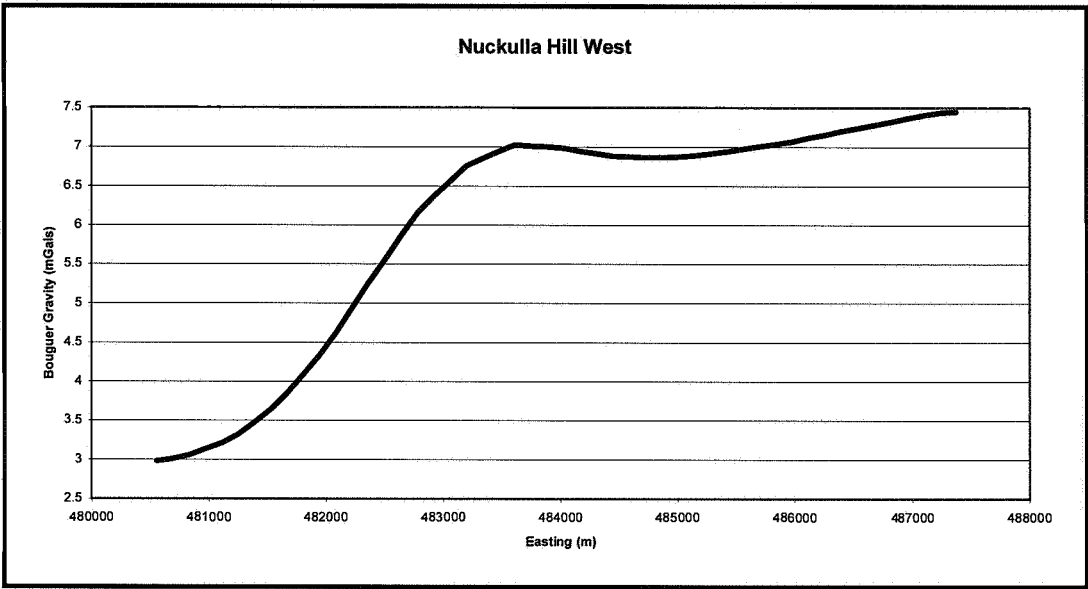


Figure 6: E–W profile across gravity anomaly A2

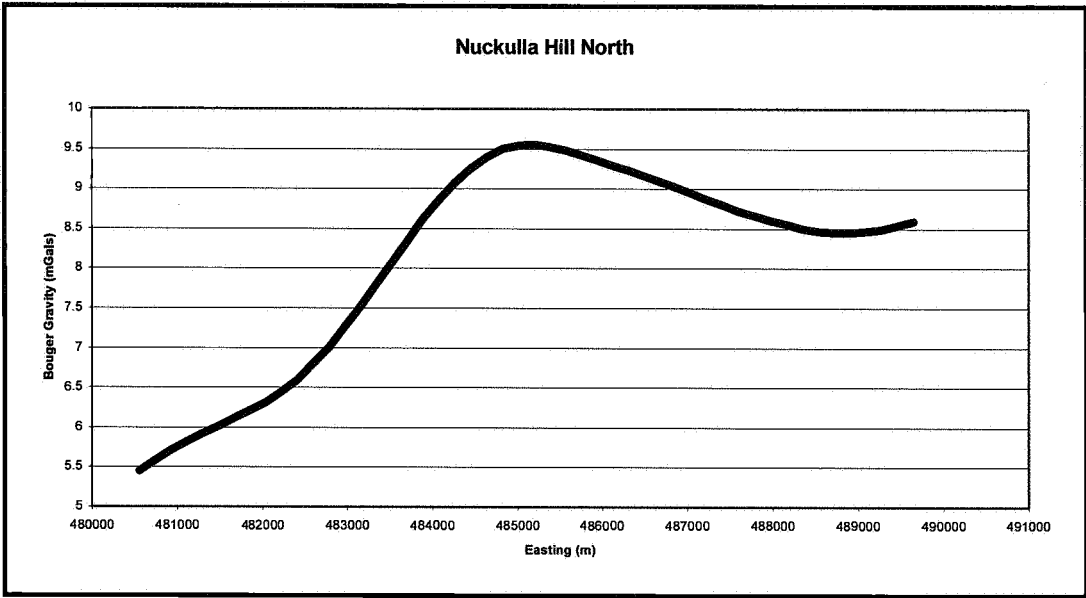


Figure 7: E–W profile across gravity anomaly A3

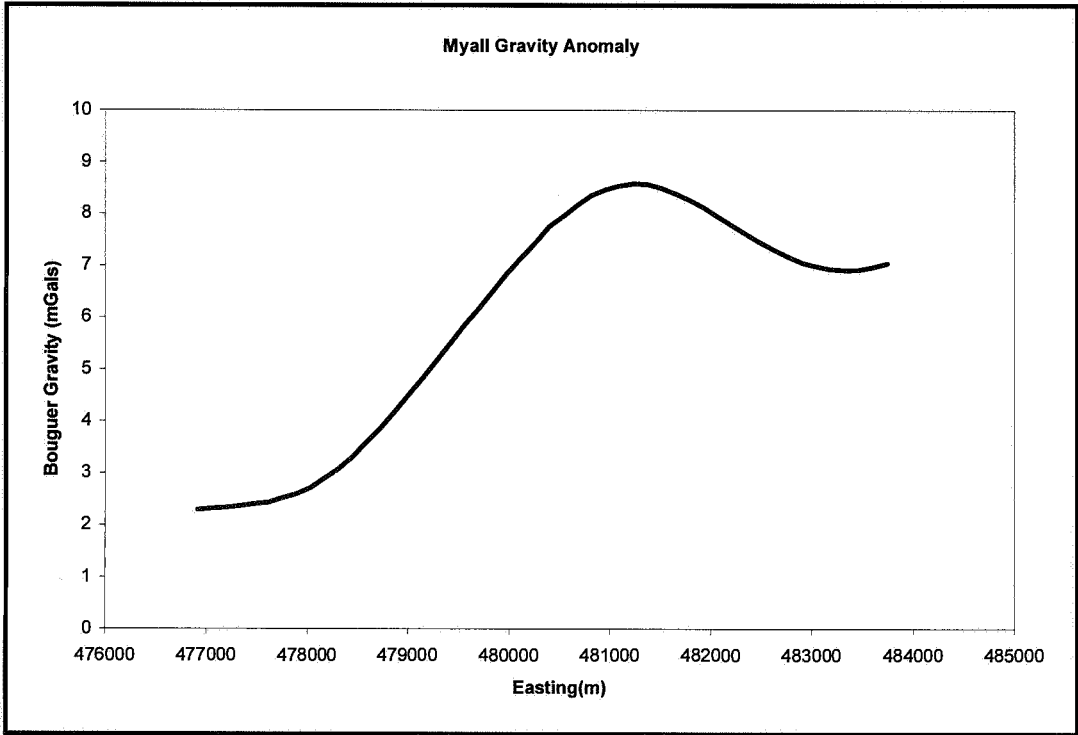


Figure 8: E–W profile across gravity anomaly A4

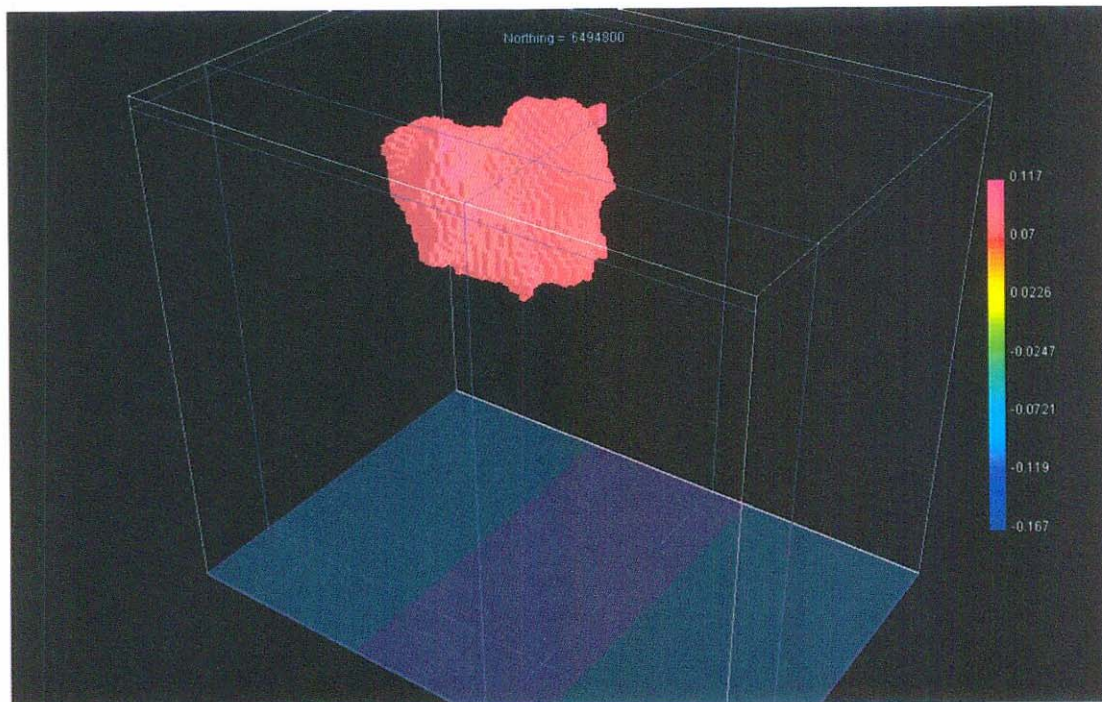


Figure 9: 3D Inversion model of gravity anomaly A4

## DRILLHOLE SITE INFORMATION

Considering the proximity of gravity anomaly A4 to the Myall Prospect, it was considered possible that the anomaly might indicate the presence of a hematite-dominated Cu+Au IOCG-style ore body with peripheral gold-only mineralisation within the Yarlbirinda Shear Zone at the Myall Prospect. Three inclined RC drillholes targeted this gravity anomaly in order to precisely ascertain the lithological nature and alteration styles present within basement lithologies.

HOLE_ID	TYPE	DEPTH (m)	mE	mN	ORIENTATION
NK05R001	RC	279	480900	6496400	60° to 270°
NK05R002	RC	258	480380	6495600	60° to 270°
NK05R003	RC	230	480600	6495600	60° to 270°

Table 1: Drillhole coordinate data, orientation and depth data for drillholes

Field locations for the drillholes were determined using a hand-held GPS unit in the GDA94 (Zone 53) coordinate system (Table 1). Drilling was undertaken by Frank Walsh Drilling in June 2005. Representative chip samples for all basement lithologies are in the process of being transferred to PIRSA's Core Library in Adelaide for permanent storage.

## **DRILLHOLE GEOLOGY**

Cover sediments in vicinity of the drill holes are very thin, less than 4 m thick, and comprises Quaternary clay impregnated with calcrete.

Basement lithologies intersected in the drillholes are all assigned stratigraphically to either the Palaeoproterozoic Tunkillia Suite or St Peter Suite. All lithologies commonly display a variable development of a ductile tectonic fabric from very weak (massive to foliated) through moderate (gneiss and mylonite) to intense (ultramylonite) and indicate that lithologies and associated deformation predate the Mesoproterozoic Gawler Range Volcanics and Hiltaba Suite granitoids.

The dominant lithologies are coarse-grained granite (consisting of quartz, feldspar and biotite), leucogranite (quartz and feldspar), pegmatite (quartz and feldspar), silica-rich mylonite, diorite and gabbro (Tables 2–4) (Appendix A). Granitoids exhibit moderate to high alteration with coarse epidote being particularly common and with lesser sericite. Diorite is strongly altered to a mixture of actinolite, chlorite, albite, epidote and iron oxide. Gabbro is also highly altered, as exemplified by primary coarse plagioclase that is now albitic and unusually red in drill chips. Mafic minerals are now predominantly actinolite, chlorite and epidote with rare apatite. Coarser, less altered varieties contain titanomagnetite resulting in elevated magnetic susceptibilities of  $5\text{--}40 \times 10^{-4}$  CGS units.

The dominant alteration phase for both mafic and felsic lithologies is epidote which is coarse grained and a bright apple-green colour. Veins present also contain epidote along with calcite, chlorite, adularia and quartz. Sericitic alteration also occurs but is not as common as epidote alteration. Minor pyrite is present and rare trace chalcopyrite was observed in thin sections.

NK05R001		
Depth from	Depth to	Lithology
0	2	Quaternary clay and calcrete
2	48	Very weathered basement comprising yellow-brown saprolitic clay
48	71	Dark green, grey, pink, coarse-grained granite to adamellite
71	98	Pinkish, coarse-grained, quartz+feldspar+biotite granite with weak mylonitic foliation and widespread epidote
98	100	Leucocratic pegmatoid
100	111	Pinkish grey, mylonitised, coarse-grained granite with widespread epidote
111	112	Ultramylonite
112	114	Pinkish grey, mylonitised, coarse-grained granite with widespread epidote
114	115	Ultramylonite
115	118	Pinkish grey, mylonitised coarse-grained granite
118	123	Leucogranite rich in quartz and feldspar and containing minor sericite bands
123	124	Pinkish grey, medium-grained, mylonitised granite
124	126	Pink leucogranite containing sericite-rich bands
126	127	Pinkish, coarse-grained, quartz+feldspar+biotite granite
127	133	Pink leucogranite containing minor sericite
133	139	Pinkish, coarse-grained, quartz+feldspar+biotite granite with widespread epidote alteration
139	142	Pink leucogranite
142	143	Pinkish grey, coarse-grained, quartz+feldspar+biotite granite
143	145	Pink leucogranite
145	150	Greenish grey, fine-grained, granite (quartz+feldspar+biotite) with widespread epidote alteration
150	152	Predominantly pink leucogranite
152	160	Pinkish grey, medium- to coarse-grained, mylonitised granite ranging from quartz+feldspar rich phases to matrix rich (quartz+biotite+ feldspar) phases with moderate epidote alteration
160	165	Pink, medium-grained leucogranite with sericite bands
165	167	Pinkish grey, coarse-grained, mylonitised, quartz+feldspar+biotite granite with some sericite alteration
167	168	Pink, coarse-grained, leucogranite to pegmatoid
168	178	Pinkish grey, coarse-grained, mylonitised, quartz+feldspar+biotite granite with moderate sericite and epidote alteration
178	186	Grey, fine-grained, magnetite-bearing gabbro with small feldspar phenocrysts and widespread epidote alteration
186	187	Pinkish grey, medium-grained, mylonitised granite
187	188	Pale grey, fine-grained, mica-rich shear zone
188	189	Pinkish grey, coarse-grained granite
189	190	Pale grey, fine-grained, mica-rich mylonite
190	197	Pinkish grey, coarse-grained, mylonitised, quartz+feldspar+biotite granite with moderate sericite and epidote alteration
197	203	Pale grey, fine-grained, mica-rich mylonite with minor calcite veins
203	205	Pinkish grey, medium- to coarse-grained, mylonitised, quartz+feldspar+biotite granite with moderate epidote alteration
205	212	Grey, mylonitised granite grading to mica-rich mylonite
212	279	Grey to pinkish grey, magnetite-bearing gabbro characterised by low feldspar content (5-25%), actinolite/chlorite, magnetite. Strong pervasive late alteration of epidote, silica, calcite and minor pyrite
Petrology samples at 227-228m, 248-249m and 275-276m		

Table 2: Lithologies in drill hole NK05R001



<b>NK05R002</b>		
Depth from	Depth to	Lithology
0	4	Quaternary clay and calcrete
4	46	Very weathered basement comprising yellow-brown saprolitic clay
46	81	Greenish grey to pinkish grey, mylonitised, granite to granodiorite
81	135	Mylonite to ultramylonite (early phase) containing widespread (>50%) epidote alteration (with minor silica, calcite and pyrite) as distinct later phase event
135	147	Grey ?diorite with trace disseminated pyrite and widespread chlorite alteration and rare yellow ?apatite
147	155	Mylonite to ultramylonite (early phase) containing widespread (>50%) sericite and epidote alteration (with minor silica, calcite and pyrite) as distinct later phase event
155	156	Quartz vein with widespread trace pyrite
156	164	Magnetite-bearing gabbro characterised by brick-red feldspar (<2mm) (60%) in matrix of quartz, actinolite/chlorite and magnetite with moderate epidote alteration and trace pyrite
164	199	Greenish grey ?diorite and locally felsic pegmatoid veins with pervasive epidote and silica alteration with trace pyrite and yellow ?apatite
199	208	Greenish pink, medium- to coarse-grained gabbro with high epidote alteration (30-35%) containing trace pyrite
208	210	Quartz-rich zone with minor feldspar, sericite and chlorite
210	227	Granite to gneissic granite; pinkish green-grey, coarse-grained, quartz-rich, coarse-grained biotite
227	233	Fine-grained, dark greenish grey, quartz-veined ?diorite with moderate mylonitic fabric and trace pyrite and rare veins of calcite+fluorite
233	237	Ultramylonite; siliceous with strong mylonitic fabric
237	258	Pale greenish grey, mylonitised granite to quartz-rich gneiss with patchy epidote alteration
		Petrology samples at 112-113m, 136-137m, 158-159m, 186-187m and 201-202m

Table 3: Lithologies in drill hole NK05R002

NK05R003		
Depth_from	Depth_to	Lithology
0	2	Quaternary clay and calcrete
2	44	Very weathered basement comprising yellow-brown saprolitic clay
44	96	Granite grading from fine-grained to coarse-grained, pinkish green grey to red, comprising quartz+feldspar+biotite and locally mylonitised
96	113	Dark grey to red-grey, magnetite-bearing gabbro with tabular red feldspar crystals (<1mm) (<30%) in fine-grained matrix rich in quartz and chlorite and trace disseminated pyrite. Minor epidote + pyrite veins
113	153	Medium- to coarse-grained, red to dark greenish grey mylonitised granite with <60% K-feldspar, graphic feldspar+quartz and biotite with sericite + trace pyrite alteration (5%)
153	155	Dark grey, fine-grained ?diorite (plagioclase+?hornblende) with common veins of dolomite
155	159	Dark greenish grey, fine- to medium-grained, mylonitised granite with <30% K-feldspar, mafic-rich and with moderate epidote alteration
159	161	Greenish red, coarse-grained, weakly mylonitised granite
161	177	Dark greenish grey, fine- to medium-grained, mylonitised granite with moderate sericite and epidote alteration (locally 10-20%)
177	182	Coarse-grained, greenish pink granite with moderate sericite/epidote alteration both patchy and concentrated within discrete bands (5-15%)
182	188	Pink-green-grey, medium-grained, weakly mylonitised granite with quartz+biotite rich matrix
188	190	Coarse-grained, greenish pink granite with moderate sericite/epidote alteration both patchy and concentrated within discrete bands
190	197	Dark greenish grey, fine- to medium-grained, mylonitised granite with patchy sericite/epidote alteration (5-12%)
197	200	Pink, coarse-grained leucogranite
200	230	Dark greenish grey, fine- to medium-grained, mafic-rich, mylonitised granite with low-moderate epidote alteration (3-15%) and rare calcite veins
Petrology sample at 110-111m		

Table 4: Lithologies in drill hole NK05R003

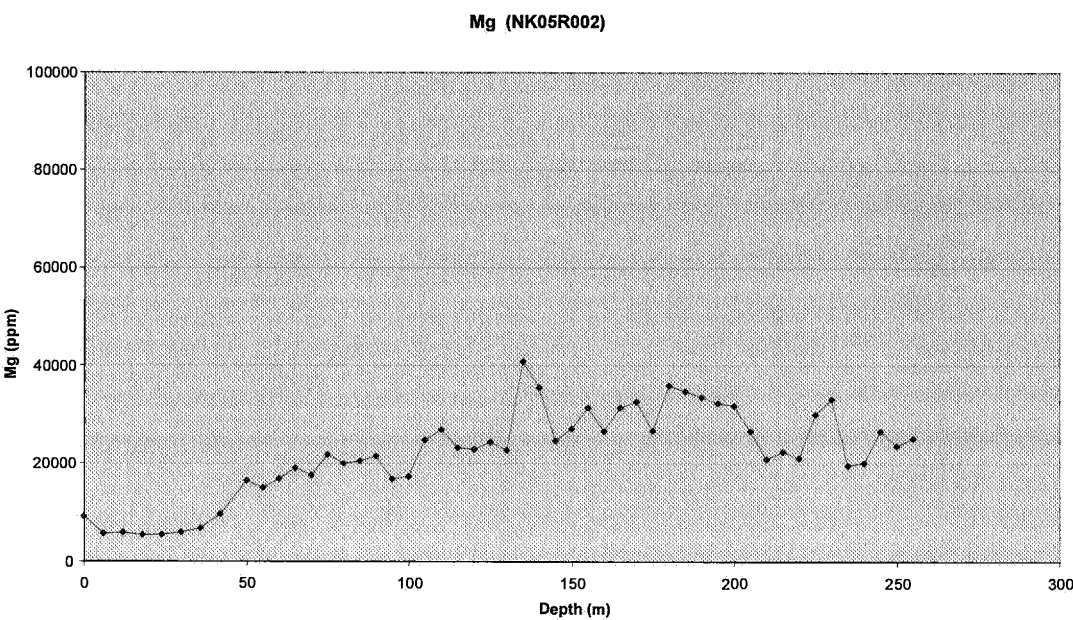
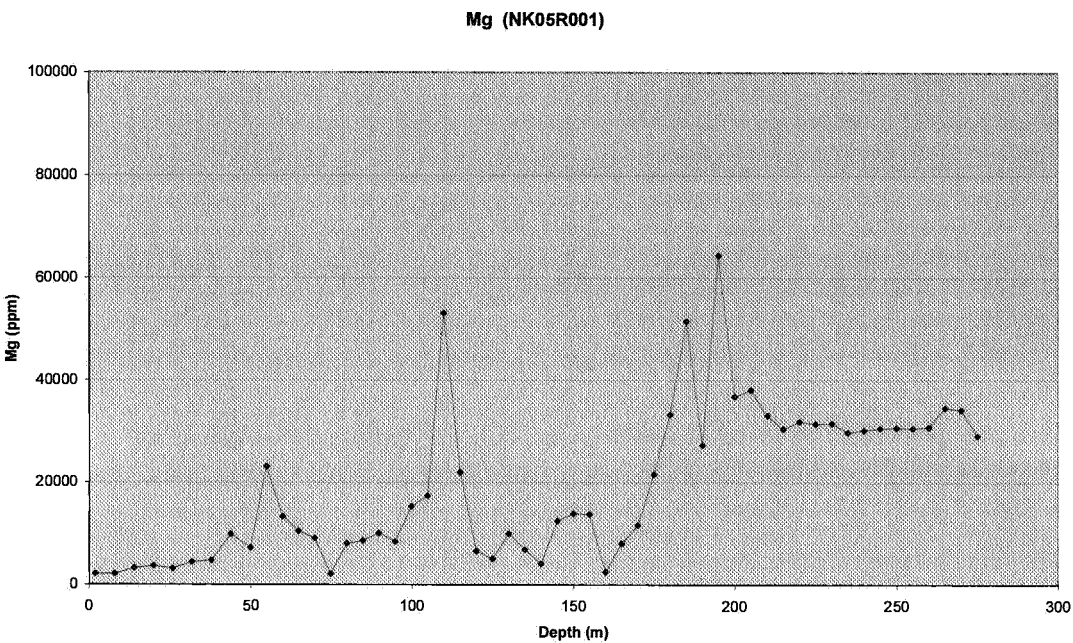
## GEOCHEMISTRY

Geochemical analyses have been undertaken on all units within the three drillholes. Cover sediments and highly weathered crystalline basement were sampled over 6 m intervals whereas fresh crystalline basement was sampled over 5 m intervals. Elements analysed were Ag, As, Au, Ba, Bi, Ca, Ce, Co, Cr, Cs, Cu, Fe, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sr, Ti, U, Y and Zn, and a complete tabulation of all analytical data is presented in Appendix B.

No significant Au or base metal assay values were obtained. Gold values are consistently low and only one value exceeded 0.01 ppm — maximum value was 0.03 ppm Au at 215–

220 m in NK05R001. Silver values are all low and none exceeded 1 ppm. Highest Cu assay was a low 210 ppm at 255–260 m in NK05R001.

Plots of Fe and Mg values versus depth reveal significant variations that are broadly consistent with lithological variations between felsic granitoids–leucogranite and mafic intrusives of diorite–gabbro (Figures 10–11).



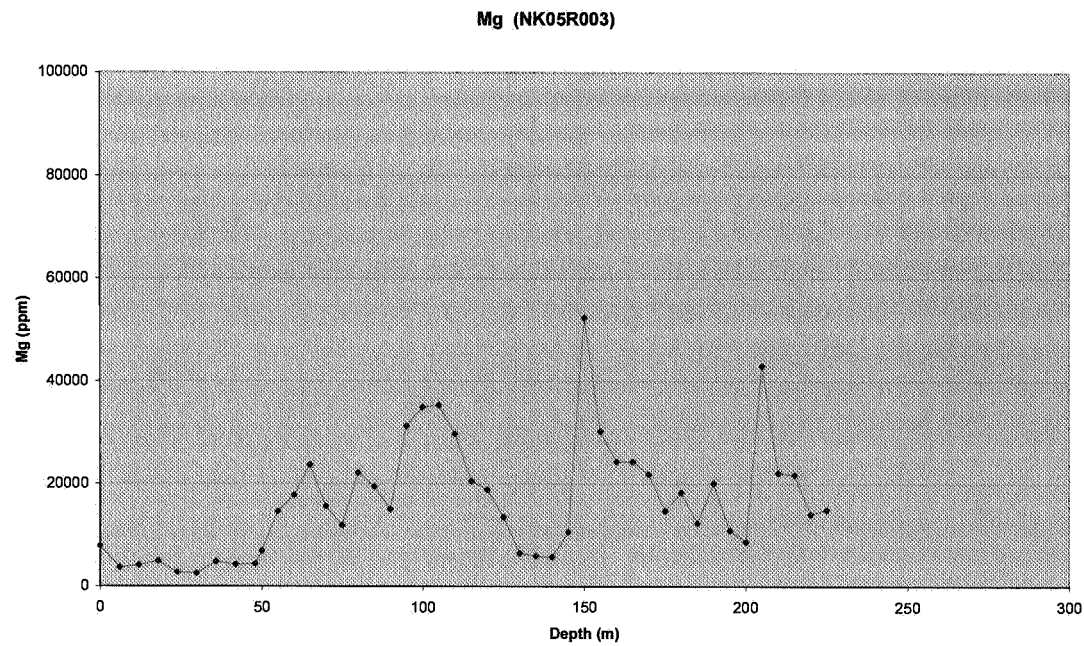
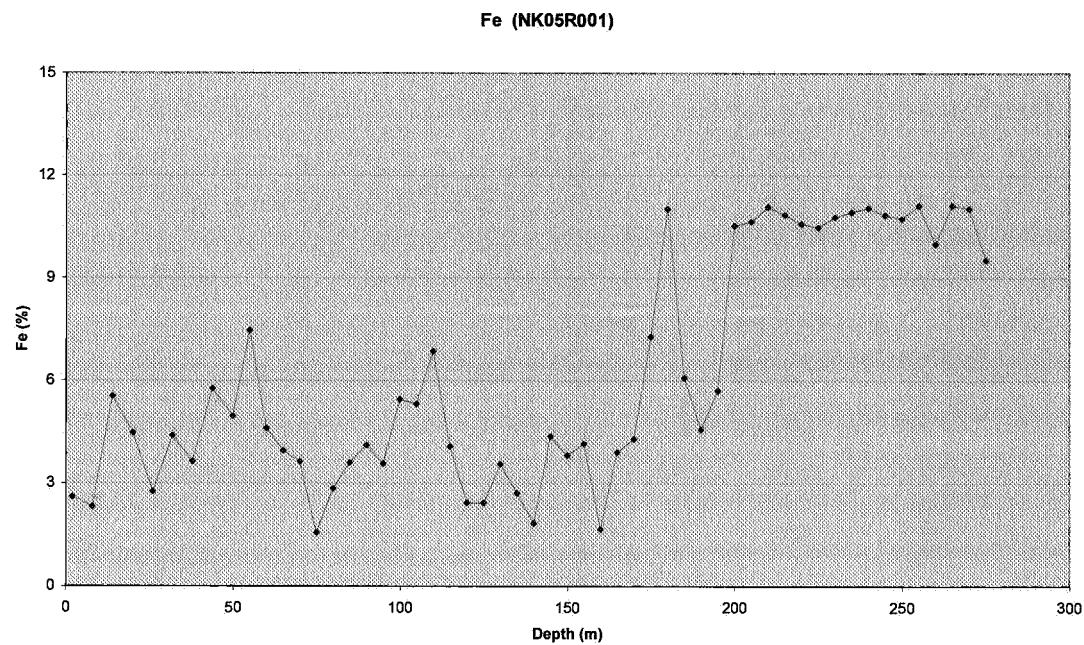


Figure 10: Magnesium values for drillholes NK05R001–NK05R003



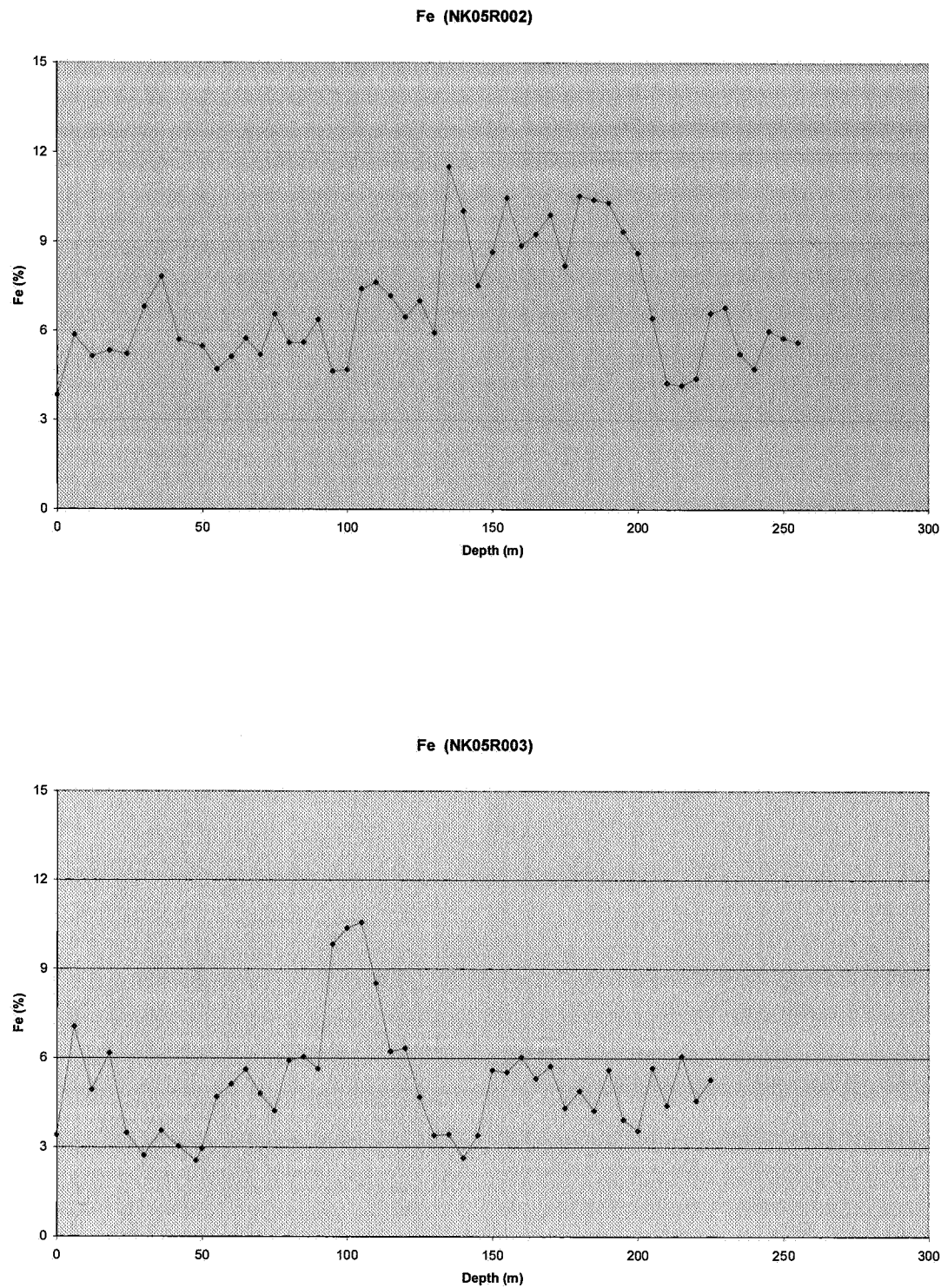
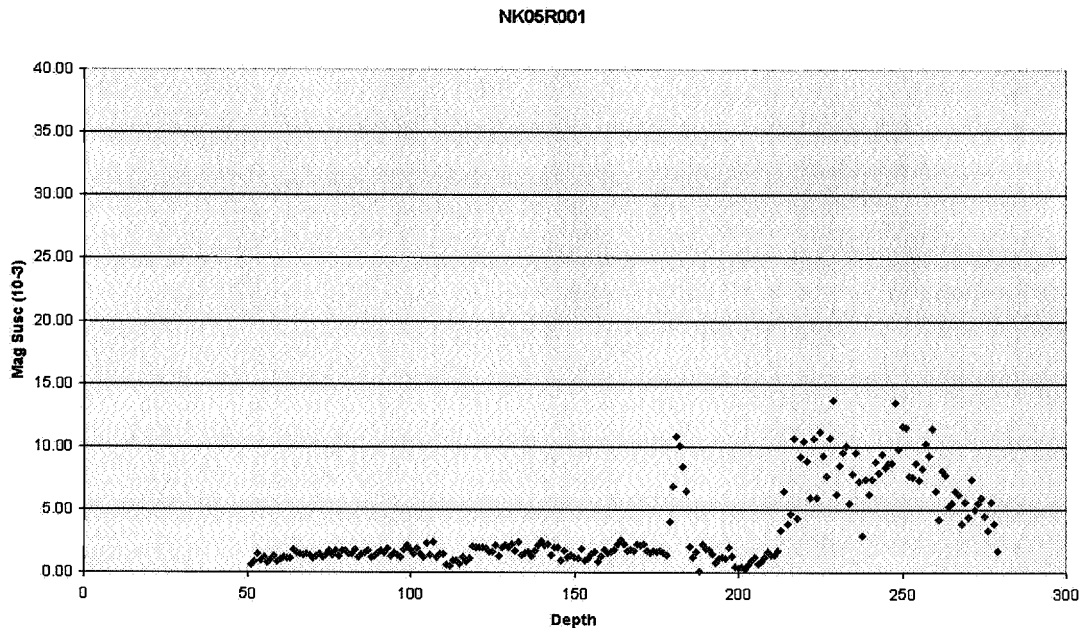


Figure 11: Iron values for drillholes NK05R001–NK05R003

## PETROPHYSICAL RESULTS

Magnetic susceptibilities were determined on every 1 m interval. Values are uniformly low except for diorite-gabbro where less altered, coarse-grained varieties containing titanomagnetite have elevated magnetic susceptibilities of  $5\text{--}40 \times 10^{-4}$  CGS units (Figure 12).

Measurements of specific gravity on the RC drill chips have not been determined. However, the mafic lithologies intersected in the drillholes are consistent with modelled densities of 2.85 and are believed to adequately account for the modest amplitudes (2–3 mGals) for the various positive gravity anomalies.





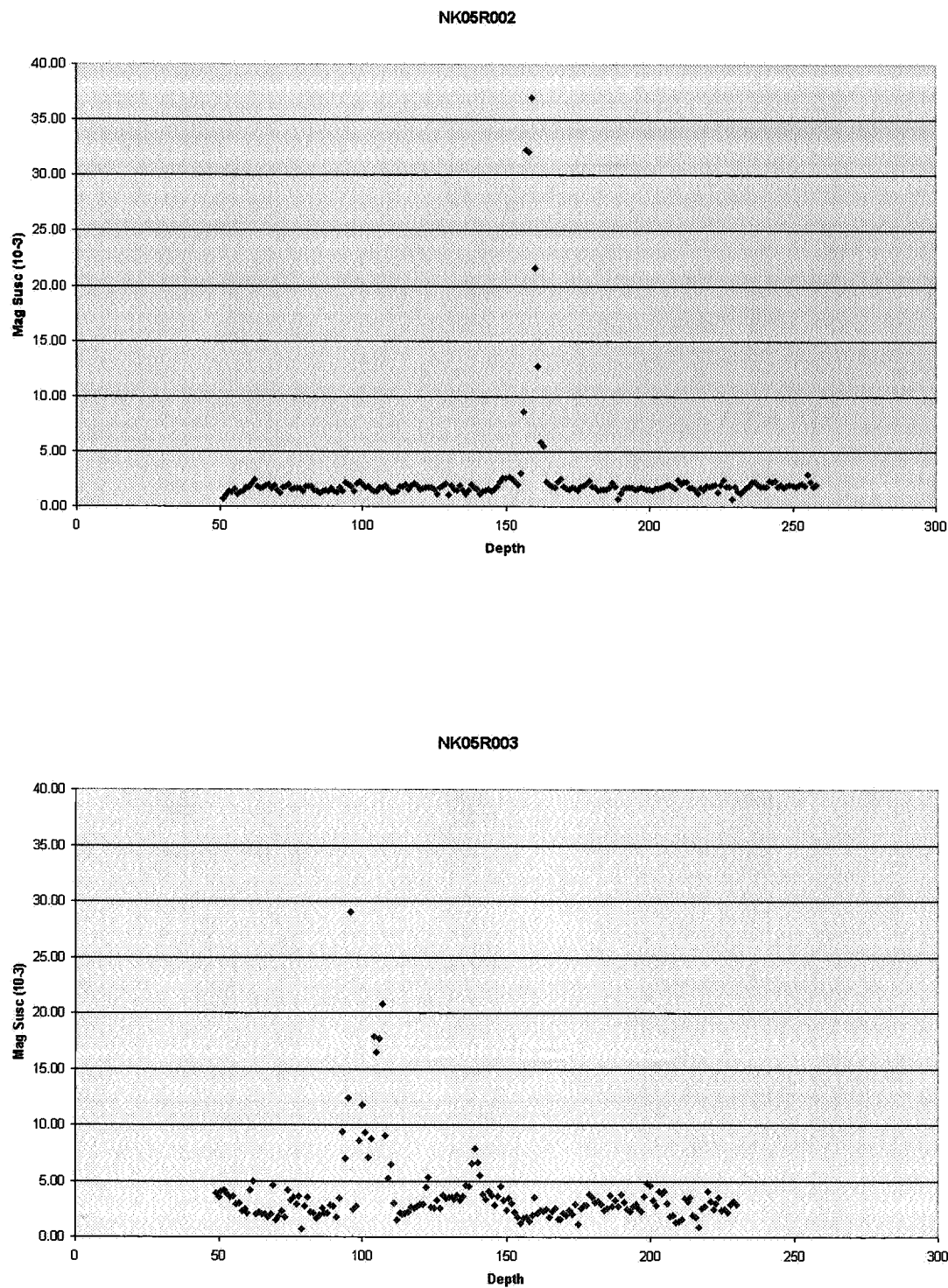


Figure 12: Magnetic susceptibility values within drillholes NK05R001–NK05R003

## CONCLUSIONS

Gravity surveys by Minotaur Resources (now Minotaur Exploration) in the Nuckulla Hill area of the western Gawler Ranges and the southern portion of the Yarlbrinda Shear Zone had defined four gravity anomalies of modest amplitudes of 2–5 mGals. These anomalies occur within the Central Gawler Gold Province, a region containing a significant number of Mesoproterozoic gold-only prospects. In contrast, the eastern Gawler Craton contains mineralised systems that are hematite-rich and polymetallic (gold, copper, uranium and rare earths). These differences in mineralisation styles may be real and reflect regional fundamental variations in source fluids and hydrothermal solutions or alternatively the difference may only be apparent and reflect the lack of mineral exploration in the Central Gawler Gold Province for IOCG-style deposits.

During late 2004, Minotaur Resources Ltd successfully applied for a grant from PIRSA through the PACE programme to drill test two gravity anomalies in close proximity to the Yarlbrinda Shear Zone and the Myall Prospect in order to ascertain if any are related to hematite-rich breccia pipes and subvolcanic complexes similar in style to typical Mesoproterozoic IOCG deposits of the eastern Gawler Craton.

Lithologies intersected in the three drillholes are all assigned stratigraphically to either the Palaeoproterozoic Tunkillia Suite or St Peter Suite. Dominant lithologies are coarse-grained granite, leucogranite, pegmatite, silica-rich mylonite, diorite and gabbro. Granitoids exhibit moderate to high alteration with coarse epidote being particularly common and with lesser sericite. Diorite is strongly altered to a mixture of actinolite, chlorite, albite, epidote and iron oxide. Gabbro is also highly altered, and primary coarse plagioclase is now albitic and unusually red in drill chips. Mafic minerals are now predominantly actinolite, chlorite and epidote with rare apatite.

No anomalous gold or base metal mineralisation was intersected and Au and Cu values are consistently very low.

Mafic lithologies intersected in the drillholes are consistent with modelled densities of 2.85 and are believed to adequately account for the modest amplitudes (2–3 mGals) for the various positive gravity anomalies.

All lithologies commonly display a variable development of a ductile tectonic fabric from very weak (massive to foliated) through moderate (gneiss and mylonite) to intense (ultramylonite) and indicate that lithologies and associated deformation predate the Mesoproterozoic Gawler Range Volcanics and Hiltaba Suite granitoids.

This drilling program has revealed that positive gravity anomalies proximal to the Au-only Myall and Sheoak Prospects of the southern Yorlbrinda Shear Zone are caused by Palaeoproterozoic mafic gabbros and not Mesoproterozoic, hematite-dominated, IOCG-style deposits. Due to financial assistance from PIRSA, exploration and drill testing of these anomalies were accelerated and this assistance was greatly appreciated.

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**APPENDIX A  
PETROLOGICAL DESCRIPTIONS**

**MINERALOGICAL REPORT No. 8703**  
*by Alan C. Purvis, PhD.*

July 28th, 2005

<b>TO :</b>	Mr Richard Flint Minotaur Exploration 247 Greenhill Road DULWICH SA 5065
<b>YOUR REFERENCE :</b>	Letter from Richard Flint dated 15/6/05
<b>MATERIAL :</b>	NUCKULLA HILL drill chip samples
<b>IDENTIFICATION :</b>	NK05R001, 02 and 03, various depths. Nine samples in all.
<b>WORK REQUESTED :</b>	Thin section preparation, description and report with comments and interpretations as specified
<b>SAMPLES &amp; SECTIONS :</b>	Returned to you with this report
<b>DIGITAL COPY :</b>	Enclosed with hard copy of this report

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## SUMMARY COMMENTS

The nine samples described in this report are from three drillholes in the Nuckulla Hill area in the southwest Gawler Ranges, in and adjacent to the Yarlbirinda Shear Zone in the vicinity of Childara outstation of Lake Everard station. These chips were mounted in epoxy before being made into polished thin sections.

The letter accompanying the samples suggests that they range from diorite to granite with significant sericite alteration as well as some shearing and mylonitic deformation. The thin sections indicate gabbro to dolerite, possible anorthosite and possible mafic diorite with sericite as a very minor component in one sample (metamorphosed fractionated gabbro or mafic diorite). Some of the chips are foliated or fractured and fragmented, but no mylonite was seen. The main minerals are albite (partly reddish), actinolite, epidote, chlorite, fresh or altered opaque oxide and apatite, with veins containing epidote, carbonate, chlorite, adularia and quartz in various proportions, rarely with fibrous amphibole.

In drillhole NK05R001 there is some fresh opaque oxide, partly reduced to skeletons of ilmenite in iron-rich chlorite, partly with residual titanomagnetite and partly altered to anatase. In the other drillholes (NK05R002 and 003) the oxides are mostly leucoxene and anatase, rarely with microcrystalline pyrite, but magnetite is present in NK05R002, 158-159 m as fractured and fragmented grains in addition to leucoxene-anatase aggregates. This sample may have been a mafic diorite and could have had a primary magnetite-sphene assemblage as well as abundant apatite.

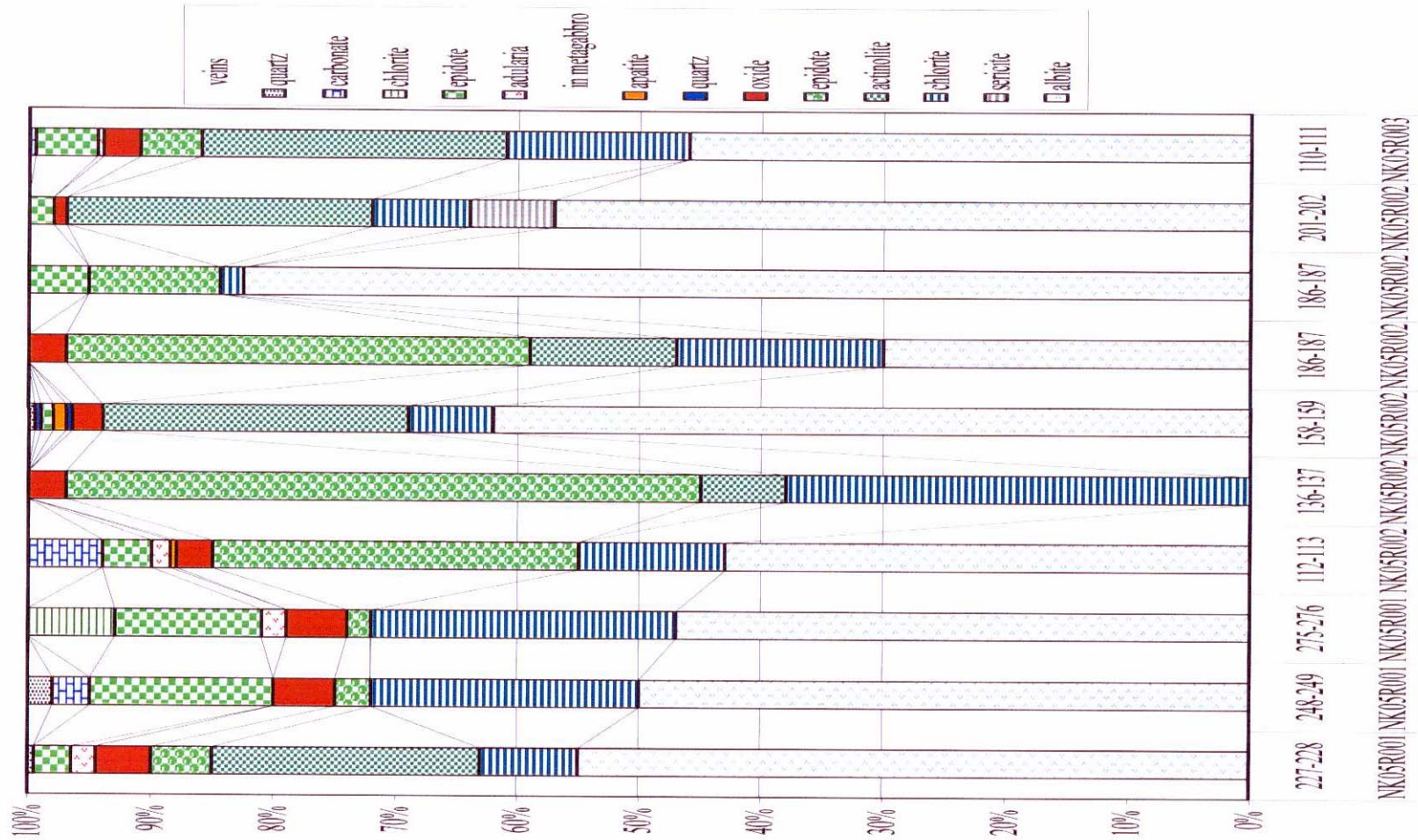
Sulphides are rare, but there is trace chalcopyrite to 0.1mm grain size in NK05R001 at 248-249 and 275-276 m and in NK05R003 at 110-111 m. Very rare chalcopyrite also occurs in NK05R002 at 186-187 m in plagioclase-rich chips. Several other samples contain trace pyrite, but this is always rare and fine-grained.

The mineral abundances in each sample are listed in Table 1 and illustrated in Fig 1.

**Table 1:Mineral abundances in samples described in Report No 8703**

Drillhole	NK05R001	NK05R001	NK05R001	NK05R002	NK05R002	NK05R002	NK05R002	NK05R002	NK05R002	NK05R003
Depth	227-228	248-249	275-276	112-113	136-137	158-159	186-187	186-187	201-202	110-111
Lithology	Gabbro	Gabbro	Gabbro	Gabbro	Mafic schist	Gabbro/diorite	Gabbro	Anorthosite?	Gabbro	Dolerite
Minerals										
Rock forming										
Albite	55	50	47	43		62	30	85	57	46
Sericite									7	
Chlorite	8	22	25	12	38	7	17	2	8	15
Actinolite	22				7	25	12		25	25
Epidote	5	3	2	30	52		38	8		5
Oxide	4.5	5	5	3	3	3	3		1	3
Quartz						0.5				
Apatite				0.5		1				
Veins										
Adularia	2		2	1.5		0.5				
Epidote	3	15	12	4		1		5	2	5
Chlorite			7							
Carbonate		3		6						1
Quartz	0.5	2								
	100	100	100	100	100	100	100	100	100	100
Notes	red albite	red albite			red albite	rare hornblende			red albite	
Sulphide		chalcopyrite	chalcopyrite				chalcopyrite			chalcopyrite

Fig 1: Mineral abundances in samples described in Report No 8703.





## **INDIVIDUAL DESCRIPTIONS**

**NK05R001, 227-228m      Albite-actinolite-chlorite-epidote metagabbro with veins  
filled with adularia and later epidote veins**

There is abundant reddish albite in this sample, replacing plagioclase laths to 3 or 4mm long with actinolite and/or chlorite replacing ophitic pyroxene to 5mm in grain size. One chip has a zone of shearing and brecciation, with abundant actinolite and chlorite. Minor epidote is present as well as abundant partly skeletal opaque oxide, as seen in gabbros and dolerites. Early veins contain adularia accompanied by epidote and/or chlorite, with later veins mostly filled with epidote  $\pm$  chlorite. The chips represent metamorphosed gabbro with low-temperature veins.

**NK05R001, 248-249m      Albite-chlorite metagabbro with epidote-rich veins  
containing quartz and/or carbonate: rare chalcopyrite**

The chips interstitial are again composed of metagabbro with abundant reddish albitised plagioclase to 3mm in grain size, partly fractured and fragmented, with interstitial chlorite and disseminated opaque oxide. Some areas seem to have been flooded by epidote  $\pm$  quartz or epidote + carbonate, and epidote veins are common, as well as quartz-rich veins and separate carbonate veins. There is rare chalcopyrite to 0.1mm.

**NK05R001, 275-276m      Partly foliated albite-chlorite metagabbro with areas  
flooded and veined by epidote  $\pm$  chlorite as well as adularia  
veins  $\pm$  epidote: rare chalcopyrite is present**

These chips are again metagabbros with clouded albitised plagioclase to 3mm in grain size as well as abundant chlorite and opaque oxide. Some of the chlorite is foliated and some of the plagioclase has been fractured and fragmented, but shearing is more obvious in areas flooded and veined by epidote  $\pm$  chlorite. There are also lenses and veins of adularia, accompanied by microcrystalline epidote. There is rare chalcopyrite to 0.1mm.

**NK05R002, 112-113m      Metagabbro, partly fractured and fragmented and partly foliated, partly flooded by epidote and/or carbonate, with epidote to carbonate-rich veins and adularia-epidote veins**

Chips of metagabbro are abundant in this sample as well as abundant veined and flooded chips. Some chips have foliated chlorite but no mylonitic textures are evident. The metagabbro has albitised plagioclase to 3mm in grain size, some of which is bent, fractured and fragmented or recrystallised and cut by veins of epidote. Chlorite and opaque oxide are also abundant as well as granular to prismatic apatite. Some chips have been flooded by material ranging from epidote-rich to carbonate-rich. There are also veins of adularia, usually with minor epidote.

**NK05R002, 136-137m      Epidote-chlorite-actinolite schists (mafic) with opaque oxide and granular apatite**

The chips in this thin section lack feldspar and are largely composed of epidote and chlorite with minor pale tremolite-actinolite as foliated aggregates of fibrous to prismatic material. The epidote is granular but the chlorite is partly foliated. Opaque oxide is disseminated as well as sparse grains of apatite to 2mm long. These chips may be classified as epidote-chlorite-actinolite schist of mafic origin with opaque oxide and apatite. The apatite may be of hydrothermal origin.

**NK05R002, 158-159m      Metamorphosed fractionated gabbro or mafic diorite with albite, actinolite, epidote, chlorite, quartz, oxides, sericite and apatite**

These chips represent relatively plagioclase-rich gabbros with actinolite after mostly granular pyroxene as well as rare hornblende. Plagioclase to 3mm in grain size has been largely altered to pale albite with very minor sericite, but reddish albite is seen in some chips. The chips with reddish albite also tend to have interstitial chlorite, some of which is foliated, as well as or instead of actinolite, but some chips with pale albite contain granular epidote. Granular, rather than skeletal opaque oxide is disseminated, as well as very minor possibly late magmatic quartz and abundant granular to prismatic apatite, suggesting a fractionated gabbro or a mafic diorite. Leucoxene in this sample may have replaced sphene. Some of the opaque oxide has been fractured and fragmented and veined by chlorite. Veins include epidote ± chlorite and quartz-carbonate veins.

**NK05R002, 186-187m**

- 1. Variously albite, epidote, chlorite and oxide-rich mafic chips with rare quartz-carbonate veins**
- 2. Plagioclase-rich chips with granular and microcrystalline plagioclase as well as epidote, carbonate and adularia (partly in veins)**

About eight of the chips in this thin section are composed largely of plagioclase, partly granular and partly microcrystalline and recrystallised. These may have been identified as being pegmatoidal, but may have been plagioclase-rich layers or veins in metagabbro. Some of these chips contain minor to abundant granular to prismatic epidote, and veins contain carbonate and/or adularia. The mafic chips are variously rich in partly reddish albite (to 3mm in grainsize), with various proportions of epidote, chlorite, actinolite and opaque oxide. Some of these more mafic chips are foliated. Unfortunately, there are no composite chips in this thin section, so that the relationship between the two lithologies is uncertain (e.g. whether the plagioclase-rich chips represent layers or veins).

**NK05R002, 201-202m**

**Metagabbro with mostly granular red albite and various combinations of epidote, amphibole, chlorite and opaque oxide. Veins contain adularia, quartz, amphibole and epidote**

Reddish albite has replaced granular or bladed plagioclase in this sample, usually with patches and veins of epidote and/or chlorite. Amphibole has replaced granular or coarse-grained ophitic pyroxene to 10mm or more in grain size, with amphibole apparently replaced by foliated chlorite in one chip. Opaque oxide is uncommon compared to the previous samples. Some chips have been flooded by epidote and/or chlorite and there are veins variously containing adularia, quartz, fibrous amphibole and epidote. This sample is altered metagabbro.

**NK05R003, 110-111m**

**Metadolerite with reddish albite, actinolite, chlorite, epidote and leucosene**

These chips have a doleritic texture with reddish albitised plagioclase less than 1.5mm in grainsize, always bladed and subhedral. Interstitial areas are mostly actinolite and/or chlorite but epidote is disseminated and also occurs in veins. Oxide is disseminated. Some chips seem to have been flooded by epidote or chlorite. Narrow adularia veins occur as well as veins with epidote and/or carbonate.

## APPENDIX B ASSAY DATA

	Element	Au	Ba	Ca	Ce	Cr	Fe	K	La	Mg	Mn	Mo	Na	P	Sr	Ti	U	Y	
	Units	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
	Method	FA1	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	
	Detection	0.01	1	50	1	5	0.01	50	1	50	20	2	50	100	5	50	0.5	5	
NK05R001	m	m																	
NK50001	2	8	<0.01	450	4410	30	89	2.6	5870	24	2130	355	9	5470	270	65	6360	3.5	6
NK50002	8	14	<0.01	1260	4730	58	68	2.32	19200	51	2150	250	4	14300	180	190	7010	1.5	5
NK50003	14	20	<0.01	1720	4290	156	97	5.54	22400	95	3270	125	4	13800	240	215	4580	1.5	15
NK50004	20	26	<0.01	1520	10600	220	37	4.47	23500	157	3720	235	<2	17900	580	455	4170	1.5	34
NK50005	26	32	--	1950	3860	175	20	2.76	30900	87	3170	235	2	27900	570	780	2510	2	38
NK50006	32	38	<0.01	1620	3660	118	14	4.39	30800	56	4460	720	3	30300	1570	620	4300	6	43
NK50007	38	44	<0.01	1800	9200	112	19	3.64	32000	62	4720	1070	<2	30000	1450	650	3480	4	56
NK50008	44	50	<0.01	1430	22300	91	25	5.76	25500	50	9870	1540	3	28800	1850	540	5510	2.5	38
NK50009	50	55	<0.01	1330	20200	78	60	4.96	27000	44	7240	1090	3	28600	760	430	2970	1.5	17
NK50010	55	60	<0.01	1060	48600	77	20	7.46	17500	37	23100	1830	2	20400	1940	650	6960	1	24
NK50011	60	65	<0.01	1320	33600	68	30	4.6	22200	37	13300	1220	<2	25000	1030	570	3780	1.5	18
NK50012	65	70	<0.01	1620	29300	114	19	3.95	27200	63	10500	1020	<2	26800	1060	510	3880	1.5	19
NK50013	70	75	<0.01	1830	26600	90	16	3.63	33200	50	9120	860	12	23200	870	530	3580	1.5	17
NK50014	75	80	<0.01	2310	11500	76	13	1.56	47000	51	2170	290	<2	17700	230	325	1320	1	<5
NK50015	80	85	<0.01	1860	22700	68	17	2.85	35200	43	8070	640	2	20200	530	440	2490	1	7
NK50016	85	90	<0.01	1810	27700	108	13	3.6	34100	64	8610	840	2	25100	940	425	3520	1.5	15
NK50017	90	95	<0.01	1800	28900	89	20	4.11	29200	49	10100	990	2	25800	1000	580	3890	1	22
NK50018	95	100	<0.01	1330	26900	97	15	3.57	29300	52	8440	880	<2	26200	890	490	3200	1.5	20
NK50019	100	105	<0.01	1500	39000	75	20	5.45	23000	43	15300	1410	2	25600	1680	590	5190	1	22
NK50020	105	110	<0.01	1550	39100	53	20	5.31	17900	30	17400	1290	<2	25500	1470	720	4800	1	16
NK50021	110	115	<0.01	790	58500	59	750	6.85	8950	34	53100	1670	<2	15500	1160	580	4550	1	16
NK50022	115	120	<0.01	1410	30300	68	230	4.07	20800	39	22000	1020	2	24400	840	455	3160	1	13

NK50023	120	125	<0.01	2110	22100	72	20	2.43	28600	42	6610	650	2	28600	500	420	1940	1	10
NK50024	125	130	<0.01	2160	18000	84	15	2.43	30600	52	5090	670	2	31200	460	460	1990	1	13
NK50025	130	135	<0.01	1720	26300	72	22	3.56	29200	40	10000	990	<2	28100	880	410	3220	1.5	15
NK50026	135	140	<0.01	1960	20900	79	16	2.71	26500	47	6880	690	3	34200	670	450	2250	1	10
NK50027	140	145	<0.01	980	13500	34	20	1.83	32600	22	4130	465	<2	30600	350	310	1260	1	9
NK50028	145	150	<0.01	1830	31400	88	15	4.37	23700	50	12500	1140	<2	26900	1160	540	4190	1	16
NK50029	150	155	<0.01	1780	31200	79	49	3.81	23900	46	13900	900	<2	30700	920	570	3320	1	13
NK50030	155	160	<0.01	1730	32800	77	26	4.15	28700	45	13800	970	3	25100	1010	590	3780	1	13
NK50031	160	165	<0.01	1180	12900	44	18	1.66	35700	27	2550	400	5	27000	200	335	1140	1.5	9
NK50032	165	170	<0.01	1320	26200	83	17	3.9	34100	47	8080	800	<2	25400	950	470	3570	2	18
NK50033	170	175	<0.01	1330	33100	94	56	4.29	29000	52	11700	870	2	24200	1050	530	4320	1	21
NK50034	175	180	<0.01	1140	43700	82	71	7.28	17200	43	21600	1410	2	28000	1630	570	7450	1	29
NK50035	180	185	<0.01	650	53100	57	73	11.02	10000	27	33300	2260	3	21500	1950	610	12100	0.5	32
NK50036	185	190	<0.01	1090	47700	53	670	6.08	13800	31	51500	1390	2	21000	900	510	3760	0.5	15
NK50037	190	195	<0.01	1210	31800	63	255	4.57	16200	36	27300	1020	2	28600	1020	455	3580	2	17
NK50038	195	200	<0.01	530	54400	52	950	7.65	8280	29	67100	1920	<2	14600	840	385	4570	11	18
NK50039	200	205	<0.01	800	55700	48	54	10.53	12400	25	36800	2060	<2	19900	1620	550	10800	0.5	31
NK50040	205	210	<0.01	600	47400	49	44	10.65	10200	25	38100	2140	<2	22100	1680	455	10700	1	32
NK50041	210	215	<0.01	900	55800	51	44	11.08	11700	25	33000	2140	<2	17500	1840	560	11700	1	35
NK50042	215	220	<0.01	960	52200	52	42	10.85	14600	27	30500	2160	<2	21100	1760	510	11700	1	34
NK50043	220	225	<0.01	940	46700	49	39	10.58	15200	24	31900	2010	<2	24400	1600	435	10900	1	31
NK50044	225	230	<0.01	900	49000	46	44	10.48	15200	24	31500	1910	<2	25100	1680	440	10500	0.5	31
NK50045	230	235	<0.01	860	52400	50	39	10.78	13300	26	31600	1920	<2	24400	1770	445	10900	1	33
NK50046	235	240	<0.01	820	56300	54	41	10.93	13100	27	29800	1940	4	23200	1810	470	11500	1	35
NK50047	240	245	<0.01	760	57600	55	42	11.05	11800	28	30200	1990	<2	21600	1790	475	11800	1	35
NK50048	245	250	<0.01	830	53400	50	42	10.84	12500	25	30600	1840	<2	23500	1790	460	11200	0.5	32
NK50049	250	255	<0.01	860	55100	49	41	10.73	13400	25	30700	1770	<2	22700	1620	520	11100	1	32
NK50050	255	260	<0.01	395	67900	54	42	11.12	5010	27	30600	1870	<2	20600	1940	590	12100	1	37
NK50051	260	265	<0.01	740	58700	40	45	9.99	10900	20	30800	1630	5	23800	1050	570	9830	0.5	25
NK50052	265	270	<0.01	750	63600	54	44	11.12	11200	27	34600	1960	4	20300	1620	560	11400	1	34
NK50053	270	275	<0.01	760	63300	52	43	11.03	11100	25	34200	1920	7	21000	1530	560	11300	1	32
NK50054	275	279	<0.01	880	64600	58	69	9.52	9610	31	29100	1760	4	21700	1490	620	10200	1.5	30

	Element	Au	Ba	Ca	Ce	Cr	Fe	K	La	Mg	Mn	Mo	Na	P	Sr	Ti	U	Y	
	Units	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
	Method	FA1	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	
	Detection	0.01	1	50	1	5	0.01	50	1	50	20	2	50	100	5	50	0.5	5	
NK05R002																			
NK50055	0	6	<0.01	450	90000	26	45	3.84	9430	16	9200	155	8	5260	170	250	2370	4.5	12
NK50056	6	12	<0.01	580	5000	13	60	5.86	41300	11	5670	110	5	10600	120	185	2950	2	<5
NK50057	12	18	<0.01	580	10900	84	47	5.14	45700	66	5880	155	4	14400	340	450	2930	1.5	<5
NK50058	18	24	<0.01	560	6350	90	39	5.33	39300	51	5400	200	9	13500	450	400	2810	1.5	5
NK50059	24	30	<0.01	570	7840	85	32	5.22	40200	41	5490	690	8	13700	310	455	3080	3.5	24
NK50060	30	36	<0.01	510	12500	60	36	6.81	41000	28	5950	900	8	15100	680	385	3030	3.5	21
NK50061	36	42	<0.01	510	33900	27	49	7.82	37600	13	6770	550	4	19400	760	425	3390	2.5	23
NK50062	42	48	<0.01	580	48100	20	43	5.7	40700	11	9670	510	3	18400	620	485	3130	3	15
NK50064	50	55	<0.01	465	62700	18	30	5.48	33700	10	16500	720	<2	18700	290	580	3600	3	10
NK50065	55	60	<0.01	570	64100	16	32	4.71	38600	9	15000	700	<2	16400	300	500	3130	1	7
NK50066	60	65	<0.01	550	63600	16	31	5.13	36900	9	16900	760	<2	16900	480	610	3510	1	7
NK50067	65	70	<0.01	550	62100	17	29	5.74	39700	9	19100	810	<2	13800	350	550	4020	0.5	7
NK50068	70	75	<0.01	485	67900	13	31	5.2	45100	8	17600	790	<2	11500	510	500	3620	0.5	7
NK50069	75	80	<0.01	385	73100	12	28	6.56	34400	7	21800	920	<2	11400	410	490	4890	<0.5	6
NK50070	80	85	<0.01	580	71500	14	32	5.6	42500	8	20000	1020	<2	15600	240	540	3840	<0.5	7
NK50071	85	90	<0.01	530	78000	13	23	5.61	31000	7	20500	1100	<2	16700	300	530	4090	<0.5	7
NK50072	90	95	<0.01	490	82200	13	21	6.38	28500	6	21500	930	9	15300	200	630	4970	1	6
NK50073	95	100	<0.01	385	78300	15	35	4.64	37400	7	16800	730	3	13300	290	590	3370	<0.5	<5
NK50074	100	105	<0.01	475	77400	13	37	4.69	41400	6	17300	750	3	12400	480	530	3370	<0.5	<5
NK50075	105	110	<0.01	325	87500	14	29	7.41	19700	7	24800	960	3	14600	330	660	5380	0.5	6
NK50076	110	115	<0.01	500	86900	12	27	7.63	26700	6	26900	1080	<2	14000	490	600	5800	<0.5	5
NK50077	115	120	<0.01	540	81500	12	17	7.18	30600	6	23200	1070	<2	13000	360	570	6010	0.5	6
NK50078	120	125	<0.01	590	73300	15	27	6.47	34700	7	22900	960	<2	15100	320	540	5140	1	6
NK50079	125	130	<0.01	640	80700	13	27	7.01	29800	6	24400	1080	<2	13300	420	640	5200	0.5	6
NK50080	130	135	<0.01	640	75100	17	37	5.93	29600	8	22700	970	2	20000	420	590	4630	1	6
NK50081	135	140	<0.01	186	87300	18	68	11.51	7100	9	40800	1630	<2	9400	750	990	10100	<0.5	11

NK50082	140	145	<0.01	435	66200	49	52	10.03	10400	22	35500	1700	3	18900	1510	560	10700	1.5	26
NK50083	145	150	<0.01	540	67800	53	31	7.52	15500	27	24600	1400	5	24800	2160	680	7200	1	18
NK50084	150	155	<0.01	440	66200	61	9	8.65	13700	26	27100	1460	<2	25900	4720	700	9730	0.5	20
NK50085	155	160	<0.01	570	64300	54	<5	10.47	16400	23	31400	1800	<2	15500	3120	860	10600	0.5	22
NK50086	160	165	<0.01	465	69700	66	13	8.87	12200	31	26600	1590	<2	25900	4200	800	8010	1	23
NK50087	165	170	<0.01	490	94000	18	49	9.25	18000	8	31400	1410	<2	11000	3040	750	7690	0.5	10
NK50088	170	175	<0.01	500	97100	15	59	9.9	15700	7	32600	1320	<2	7120	170	910	7920	1	6
NK50089	175	180	<0.01	580	86000	15	47	8.19	24500	7	26700	1040	<2	11300	420	700	6130	0.5	6
NK50090	180	185	0.04	425	92300	10	64	10.54	16400	5	35900	1250	<2	5210	180	760	8050	<0.5	<5
NK50091	185	190	<0.01	485	88200	14	64	10.41	16400	7	34700	1260	3	5070	230	650	8030	0.5	5
NK50092	190	195	<0.01	570	73700	12	58	10.31	27400	6	33500	1250	3	5830	400	540	8790	1	6
NK50093	195	200	<0.01	460	90900	15	48	9.34	17500	8	32300	1280	3	10500	350	650	7320	1	7
NK50094	200	205	<0.01	540	85500	18	67	8.62	18400	8	31800	1170	<2	12200	440	770	6460	0.5	7
NK50095	205	210	<0.01	630	79800	15	64	6.44	31900	7	26600	990	<2	11500	410	710	5080	0.5	6
NK50096	210	215	<0.01	640	72400	19	69	4.25	45100	9	20900	800	2	11700	790	540	2890	0.5	6
NK50097	215	220	0.03	540	76400	17	83	4.17	38000	9	22400	800	<2	13400	630	610	2740	0.5	5
NK50098	220	225	<0.01	690	77500	17	84	4.41	39700	8	21100	840	<2	13600	790	490	2700	<0.5	5
NK50099	225	230	<0.01	560	76500	18	106	6.6	24600	9	30000	1020	6	17900	580	570	4320	1	7
NK50100	230	235	<0.01	465	82000	15	106	6.8	28100	7	33100	1040	<2	11300	640	520	3920	0.5	<5
NK50101	235	240	<0.01	620	82000	16	52	5.24	40500	8	19600	870	<2	9860	460	435	3510	1	5
NK50102	240	245	<0.01	660	77600	13	59	4.74	43200	7	20100	810	<2	10000	230	475	3100	0.5	<5
NK50103	245	250	<0.01	600	87600	16	71	6.01	31900	8	26600	990	<2	10200	510	500	4180	0.5	6
NK50104	250	255	<0.01	570	90100	12	55	5.77	29500	6	23600	970	<2	10200	300	520	4070	<0.5	<5
NK50105	255	258	<0.01	405	86600	11	65	5.63	27500	6	25100	940	<2	13200	180	770	3670	<0.5	<5
NK50106	155	156	<0.01	475	54200	53	8	9.04	10000	22	27200	1280	12	10500	5210	490	9030	0.5	21

Element	Au	Ba	Ca	Ce	Cr	Fe	K	La	Mg	Mn	Mo	Na	P	Sr	Ti	U	Y
Units	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Method	FA1	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4	IC4
Detection	0.01	1	50	1	5	0.01	50	1	50	20	2	50	100	5	50	0.5	5



**NK05R003**

NK50107	0	6	<0.01	630	102000	21	47	3.41	9510	13	7820	85	3	6980	<100	270	3410	2	9
NK50108	6	12	<0.01	1600	2330	67	59	7.05	23700	36	3650	160	5	21400	580	370	5230	1.5	7
NK50109	12	18	<0.01	1400	3720	139	54	4.93	30300	76	4110	170	4	12200	950	880	4680	1.5	7
NK50110	18	24	<0.01	1010	3390	168	50	6.16	17600	83	4900	280	3	23200	1560	1060	5460	2	16
NK50111	24	30	<0.01	1360	2560	116	19	3.48	30200	63	2730	200	<2	29400	690	465	3040	1.5	14
NK50112	30	36	<0.01	1580	3840	118	18	2.72	37300	60	2500	170	<2	25400	860	510	2490	2	22
NK50113	36	42	<0.01	1240	6070	96	21	3.56	28700	49	4810	270	2	23800	1290	440	3440	2	37
NK50114	42	48	<0.01	1320	9000	97	19	3.03	36300	51	4230	370	<2	26000	680	335	2710	2	36
NK50115	48	50	<0.01	1610	11900	116	14	2.55	40300	61	4350	520	3	28000	500	265	2450	1.5	25
NK50116	50	55	<0.01	1350	16400	95	23	2.96	37100	49	6840	590	2	23700	720	315	2860	1.5	20
NK50117	55	60	<0.01	1390	31000	84	39	4.69	24500	45	14600	1110	<2	26500	1160	460	4310	1.5	21
NK50118	60	65	0.01	1420	38200	104	49	5.12	18800	57	17800	1090	<2	29600	920	610	4550	2.5	20
NK50119	65	70	<0.01	860	43500	68	80	5.62	16000	38	23700	1140	<2	30200	940	580	4590	1.5	15
NK50120	70	75	<0.01	1200	35100	90	43	4.8	19300	46	15600	1070	3	29800	1060	520	4390	1.5	22
NK50121	75	80	<0.01	1500	30800	90	28	4.22	25200	45	11900	990	<2	28800	1010	465	4230	1.5	23
NK50122	80	85	<0.01	990	47100	60	57	5.92	16700	32	22100	1290	2	28500	1340	630	5350	1.5	17
NK50123	85	90	<0.01	990	43900	70	41	6.04	15100	33	19400	1370	<2	26400	1880	560	6040	2	24
NK50124	90	95	<0.01	980	36300	86	29	5.64	18100	43	15000	1200	2	29200	1640	520	5370	1.5	26
NK50125	95	100	<0.01	700	55400	63	54	9.84	12500	29	31200	1860	<2	22600	1810	520	10000	1	29
NK50126	100	105	<0.01	740	52600	47	55	10.38	12600	21	34900	1620	<2	23100	1420	510	10600	1	28
NK50127	105	110	<0.01	810	49900	44	55	10.57	13800	21	35300	1880	9	22000	1590	450	11200	0.5	29
NK50128	110	115	<0.01	880	53700	68	51	8.52	13600	33	29700	1660	<2	26000	2080	590	8890	1	28
NK50129	115	120	<0.01	1380	45000	91	45	6.22	18200	42	20500	1360	<2	26200	1770	650	6340	1	27
NK50130	120	125	<0.01	1520	42900	105	38	6.34	18900	51	18800	1410	<2	26300	1920	690	6490	1.5	29
NK50131	125	130	<0.01	1540	35400	108	29	4.69	23200	57	13500	1070	<2	30300	1030	580	4590	1.5	23
NK50132	130	135	<0.01	1910	20700	132	11	3.4	29600	71	6420	770	<2	31200	790	405	3560	2	24
NK50133	135	140	<0.01	1920	19500	120	12	3.43	32800	64	5880	700	<2	30600	670	415	3380	2	30
NK50134	140	145	<0.01	1920	17300	89	15	2.64	31600	49	5720	590	<2	29500	560	365	2550	1.5	20
NK50135	145	150	<0.01	1790	23100	82	38	3.4	29700	44	10600	710	3	27800	730	405	3090	2	16
NK50136	150	155	<0.01	1170	47700	55	420	5.59	12800	28	52400	1330	<2	20300	1040	570	3790	2	16
NK50137	155	160	<0.01	1330	45400	57	187	5.52	18300	31	30200	1270	<2	26600	1290	680	3940	1	14

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NK50138	160	165	<0.01	980	48900	56	76	6.03	17800	27	24300	1300	3	22200	900	750	4840	1.5	19
NK50139	165	170	<0.01	1180	42700	66	126	5.31	16700	35	24300	1180	2	29400	1320	660	3990	1.5	15
NK50140	170	175	<0.01	1030	42200	84	78	5.73	17400	41	21800	1280	3	24400	1120	650	4520	1.5	26
NK50141	175	180	<0.01	980	37600	67	48	4.32	18200	36	14700	940	<2	24100	880	440	3790	1.5	16
NK50142	180	185	<0.01	1560	38300	75	52	4.89	22700	42	18300	1060	<2	25700	970	630	4220	1.5	16
NK50143	185	190	<0.01	1360	32400	85	28	4.23	18400	44	12300	940	3	31400	1070	540	4020	1	17
NK50144	190	195	<0.01	1130	43500	67	43	5.6	19200	36	20100	1250	4	25800	1290	630	5030	1.5	21
NK50145	195	200	<0.01	1150	28700	86	26	3.93	22400	51	10900	850	<2	28000	840	475	3270	1.5	21
NK50146	200	205	<0.01	1500	27500	80	17	3.56	29400	49	8660	800	<2	29300	930	360	3620	1.5	21
NK50147	205	210	<0.01	1060	48000	61	640	5.67	18600	37	43000	1330	<2	21500	1080	620	3610	10	14
NK50148	210	215	<0.01	1460	36900	87	192	4.41	21000	55	22100	950	<2	28600	930	550	3630	1.5	16
NK50149	215	220	<0.01	1260	39200	66	147	6.06	19600	39	21700	1220	<2	25700	1260	480	4520	1.5	21
NK50150	220	225	<0.01	1620	34500	87	49	4.57	25500	51	14000	1000	<2	28400	1150	465	4330	1.5	21
NK50151	225	230	<0.01	1550	37900	98	26	5.28	23300	58	14900	1100	<2	29600	1500	510	5190	1	23

	Element	Ag	As	Bi	Co	Cu	Ni	Pb	S	Sb	Zn	
	Units	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	
	Method	MET1	MET1	MET1	MET1	MET1	MET1	MET1	MET1	MET1	MET1	
	Detection	1	10	25	10	0.001	10	10	50	20	10	
NK05R001												
NK50001	2	8	1	15	<25	<10	0.006	20	95	650	<20	500
NK50002	8	14	<1	10	<25	<10	0.004	15	60	450	<20	240
NK50003	14	20	<1	20	<25	<10	0.004	20	25	650	<20	65
NK50004	20	26	<1	15	<25	10	0.003	25	15	500	<20	90
NK50005	26	32	<1	10	<25	<10	0.002	10	20	300	<20	50
NK50006	32	38	<1	<10	<25	15	0.004	20	20	400	<20	85
NK50007	38	44	<1	<10	<25	20	0.003	20	20	450	<20	80
NK50008	44	50	<1	10	<25	25	0.003	25	15	300	<20	125
NK50009	50	55	<1	15	<25	<10	0.008	30	120	200	<20	600
NK50010	55	60	<1	15	<25	30	0.003	<10	35	50	<20	180
NK50011	60	65	<1	15	<25	15	0.002	<10	20	<50	<20	100
NK50012	65	70	<1	15	<25	10	0.003	<10	20	100	<20	90
NK50013	70	75	<1	<10	<25	<10	0.003	<10	20	100	<20	80
NK50014	75	80	<1	<10	<25	<10	<0.001	<10	10	50	<20	25
NK50015	80	85	<1	<10	<25	10	0.002	<10	10	50	<20	55
NK50016	85	90	<1	10	<25	10	0.002	<10	15	100	<20	80
NK50017	90	95	<1	<10	<25	15	0.003	<10	10	100	<20	85
NK50018	95	100	<1	10	<25	15	<0.001	<10	15	<50	<20	75
NK50019	100	105	<1	10	<25	20	0.002	<10	15	<50	<20	110
NK50020	105	110	<1	<10	<25	15	0.002	<10	10	<50	<20	100
NK50021	110	115	<1	<10	<25	40	0.003	280	15	<50	<20	145
NK50022	115	120	<1	10	<25	20	0.002	85	<10	<50	<20	95
NK50023	120	125	<1	<10	<25	<10	0.003	<10	15	<50	<20	50
NK50024	125	130	<1	15	<25	<10	0.003	<10	10	50	<20	40
NK50025	130	135	<1	<10	<25	10	0.004	<10	15	50	<20	65
NK50026	135	140	<1	<10	<25	<10	0.002	<10	<10	<50	<20	50
NK50027	140	145	<1	<10	<25	<10	0.002	<10	10	<50	<20	30
NK50028	145	150	<1	<10	<25	15	0.003	<10	<10	100	<20	75
NK50029	150	155	<1	15	<25	15	0.002	15	20	50	<20	65
NK50030	155	160	<1	<10	<25	15	0.003	10	20	<50	<20	70
NK50031	160	165	<1	<10	<25	<10	0.004	<10	15	<50	<20	25
NK50032	165	170	<1	10	<25	<10	0.004	<10	20	50	<20	60
NK50033	170	175	<1	<10	<25	15	0.003	15	15	<50	<20	70
NK50034	175	180	<1	10	<25	35	0.007	35	20	100	<20	105
NK50035	180	185	<1	<10	<25	60	0.014	75	25	150	<20	130
NK50036	185	190	<1	<10	<25	35	0.004	230	30	<50	<20	90
NK50037	190	195	<1	10	<25	20	0.004	100	15	50	<20	75
NK50038	195	200	<1	<10	<25	50	<0.001	370	15	<50	<20	120
NK50039	200	205	<1	15	<25	60	0.011	105	15	50	<20	120
NK50040	205	210	<1	10	<25	65	0.013	100	50	50	<20	135
NK50041	210	215	<1	10	<25	55	0.013	70	20	100	<20	120
NK50042	215	220	<1	<10	<25	50	0.015	60	100	100	<20	125
NK50043	220	225	<1	<10	<25	60	0.013	70	145	100	<20	130
NK50044	225	230	<1	15	<25	60	0.013	75	90	100	<20	130

NK50045	230	235	<1	<10	<25	60	0.013	75	45	100	<20	135
NK50046	235	240	<1	<10	<25	65	0.013	65	35	100	<20	150
NK50047	240	245	<1	<10	<25	60	0.014	65	25	150	<20	150
NK50048	245	250	<1	<10	<25	65	0.013	70	35	100	<20	135
NK50049	250	255	<1	<10	<25	60	0.013	75	25	100	<20	140
NK50050	255	260	<1	<10	<25	60	0.021	70	25	100	<20	150
NK50051	260	265	<1	<10	<25	60	0.011	80	25	<50	<20	130
NK50052	265	270	<1	10	<25	65	0.011	90	50	100	<20	150
NK50053	270	275	<1	15	<25	65	0.012	90	60	100	<20	155
NK50054	275	279	<1	<10	<25	55	0.013	75	35	100	<20	130

Element	Ag	As	Bi	Co	Cu	Ni	Pb	S	Sb	Zn
Units	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Method	MET1	MET1	MET1	MET1	MET1	MET1	MET1	MET1	MET1	MET1
Detection	1	10	25	10	0.001	10	10	50	20	10

**NK05R002**

NK50055	0	6	<1	10	<25	<10	0.003	15	20	1100	<20	30
NK50056	6	12	<1	<10	<25	10	0.006	15	10	700	<20	30
NK50057	12	18	<1	15	<25	10	0.004	10	55	1000	<20	25
NK50058	18	24	<1	20	<25	20	0.004	15	15	1100	<20	40
NK50059	24	30	<1	10	<25	25	0.003	15	20	1050	<20	40
NK50060	30	36	<1	15	<25	25	0.004	15	15	1000	<20	50
NK50061	36	42	<1	15	<25	20	0.004	10	15	900	<20	55
NK50062	42	48	<1	<10	<25	20	0.003	10	10	1100	<20	50
NK50064	50	55	<1	15	<25	25	0.004	10	25	550	<20	70
NK50065	55	60	<1	15	<25	15	0.004	10	55	600	<20	80
NK50066	60	65	<1	10	<25	25	0.004	10	75	150	<20	80
NK50067	65	70	<1	10	<25	25	0.006	10	105	150	<20	90
NK50068	70	75	<1	<10	<25	25	0.007	10	50	150	<20	70
NK50069	75	80	<1	20	<25	30	0.009	<10	30	250	<20	80
NK50070	80	85	<1	10	<25	20	0.003	<10	20	600	<20	65
NK50071	85	90	<1	20	<25	20	0.002	<10	15	150	<20	75
NK50072	90	95	<1	<10	<25	25	0.006	<10	15	150	<20	70
NK50073	95	100	<1	15	<25	25	0.004	<10	30	<50	<20	65
NK50074	100	105	<1	15	<25	20	0.003	<10	15	50	<20	60
NK50075	105	110	<1	<10	<25	35	0.004	20	15	100	<20	95
NK50076	110	115	<1	15	<25	35	0.008	15	10	100	<20	85
NK50077	115	120	<1	10	<25	35	0.02	<10	240	350	<20	135
NK50078	120	125	<1	<10	<25	30	0.005	10	15	200	<20	85
NK50079	125	130	<1	<10	<25	30	0.007	10	75	200	<20	110
NK50080	130	135	1	<10	<25	25	0.009	15	100	100	<20	85
NK50081	135	140	<1	<10	<25	60	0.014	45	30	250	<20	105
NK50082	140	145	<1	10	<25	50	0.01	75	35	200	<20	105
NK50083	145	150	<1	15	<25	30	0.008	25	55	450	<20	80
NK50084	150	155	<1	<10	<25	30	0.007	<10	25	50	<20	90
NK50085	155	160	<1	10	<25	40	0.011	<10	15	150	<20	95
NK50086	160	165	<1	<10	<25	25	0.005	<10	25	50	<20	100
NK50087	165	170	<1	15	<25	35	0.004	<10	20	<50	<20	90
NK50088	170	175	<1	15	<25	45	0.005	25	15	<50	<20	80

NK50089	175	180	<1	<10	<25	35	0.004	20	30	<50	<20	75
NK50090	180	185	<1	<10	<25	55	0.008	20	15	100	<20	85
NK50091	185	190	<1	<10	<25	55	0.009	20	15	100	<20	70
NK50092	190	195	<1	<10	<25	55	0.017	35	<10	150	<20	95
NK50093	195	200	<1	15	<25	50	0.012	25	20	100	<20	95
NK50094	200	205	<1	<10	<25	45	0.008	25	15	50	<20	90
NK50095	205	210	<1	<10	<25	35	0.007	20	20	50	<20	85
NK50096	210	215	<1	<10	<25	20	0.002	15	15	<50	<20	65
NK50097	215	220	<1	<10	<25	20	0.002	15	15	<50	<20	70
NK50098	220	225	<1	<10	<25	25	<0.001	20	20	100	<20	80
NK50099	225	230	<1	10	<25	35	0.005	20	20	700	<20	100
NK50100	230	235	<1	<10	<25	40	0.003	30	15	<50	<20	100
NK50101	235	240	<1	<10	<25	25	0.003	15	20	<50	<20	75
NK50102	240	245	<1	<10	<25	25	0.004	15	<10	<50	<20	70
NK50103	245	250	<1	<10	<25	30	0.004	20	25	<50	<20	80
NK50104	250	255	<1	15	<25	30	0.002	15	15	<50	<20	90
NK50105	255	258	<1	<10	<25	30	0.002	15	10	<50	<20	90
NK50106	155	156	<1	20	<25	65	0.026	<10	25	400	<20	100

Element	Ag	As	Bi	Co	Cu	Ni	Pb	S	Sb	Zn
Units	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Method	MET1	MET1	MET1	MET1	MET1	MET1	MET1	MET1	MET1	MET1
Detection	1	10	25	10	0.001	10	10	50	20	10

# NK05R003

NK50107	0	6	<1	<10	<25	<10	0.003	10	15	750	<20	25
NK50108	6	12	<1	15	<25	<10	0.002	20	10	600	<20	45
NK50109	12	18	<1	15	<25	<10	0.003	15	<10	900	<20	40
NK50110	18	24	<1	10	<25	10	0.003	15	<10	1200	<20	60
NK50111	24	30	<1	10	<25	<10	0.003	<10	<10	800	<20	50
NK50112	30	36	<1	<10	<25	<10	0.001	<10	<10	700	<20	35
NK50113	36	42	<1	<10	<25	10	0.001	15	<10	750	<20	70
NK50114	42	48	<1	<10	<25	<10	0.002	10	10	350	<20	55
NK50115	48	50	<1	<10	<25	<10	0.001	<10	10	250	<20	40
NK50116	50	55	<1	10	<25	<10	0.001	10	15	50	<20	50
NK50117	55	60	<1	15	<25	15	0.002	20	20	150	<20	80
NK50118	60	65	<1	<10	<25	20	0.003	25	15	150	<20	75
NK50119	65	70	<1	15	<25	25	0.002	30	15	250	<20	85
NK50120	70	75	<1	10	<25	20	0.002	20	15	100	<20	80
NK50121	75	80	<1	<10	<25	15	0.002	15	10	100	<20	75
NK50122	80	85	<1	<10	<25	25	0.002	20	20	50	<20	90
NK50123	85	90	<1	<10	<25	25	0.001	20	15	50	<20	105
NK50124	90	95	<1	<10	<25	15	0.001	15	25	300	<20	100
NK50125	95	100	<1	<10	<25	50	0.011	75	45	200	<20	125
NK50126	100	105	<1	<10	<25	55	0.015	85	<10	250	<20	125
NK50127	105	110	<1	<10	<25	60	0.014	90	10	200	<20	130
NK50128	110	115	<1	<10	<25	45	0.007	65	10	100	<20	120
NK50129	115	120	<1	<10	<25	25	0.001	20	15	<50	<20	100
NK50130	120	125	<1	<10	<25	25	0.002	30	<10	150	<20	100
NK50131	125	130	<1	<10	<25	15	<0.001	15	15	50	<20	80

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NK50132	130	135	<1	<10	<25	<10	0.002	<10	15	150	<20	55
NK50133	135	140	<1	<10	<25	<10	<0.001	<10	15	100	<20	55
NK50134	140	145	<1	<10	<25	<10	0.001	<10	20	50	<20	50
NK50135	145	150	<1	15	<25	10	0.003	20	20	350	<20	55
NK50136	150	155	<1	10	<25	35	0.002	280	30	<50	<20	85
NK50137	155	160	<1	<10	<25	25	0.002	75	25	<50	<20	80
NK50138	160	165	<1	<10	<25	25	0.001	30	35	100	<20	100
NK50139	165	170	<1	<10	<25	25	0.002	50	25	<50	<20	100
NK50140	170	175	<1	<10	<25	20	0.003	30	20	<50	<20	90
NK50141	175	180	<1	<10	<25	15	0.007	15	20	250	<20	80
NK50142	180	185	<1	<10	<25	20	0.002	20	15	100	<20	75
NK50143	185	190	<1	10	<25	10	0.002	10	35	50	<20	70
NK50144	190	195	<1	<10	<25	25	0.001	25	15	<50	<20	95
NK50145	195	200	<1	<10	<25	15	0.003	10	10	50	<20	65
NK50146	200	205	<1	<10	<25	<10	0.002	<10	20	100	<20	50
NK50147	205	210	<1	<10	<25	30	<0.001	120	10	50	<20	90
NK50148	210	215	<1	<10	<25	15	0.004	45	15	100	<20	75
NK50149	215	220	<1	<10	<25	95	0.004	50	15	50	<20	100
NK50150	220	225	<1	15	<25	15	<0.001	15	10	<50	<20	75
NK50151	225	230	<1	<10	<25	15	0.002	<10	15	<50	<20	85