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EL 3295

KI KI

PACE INITIATIVE : THEME 2, YEAR 1

DRILLING PARTNERSHIP – KI KI INTRUSION MAFIC/ULTRAMAFIC – HOSTED MINERAL PROSPECTS

PROJECT FINAL REPORT

Submitted by
Vintage Exploration and Mining Ltd
2005

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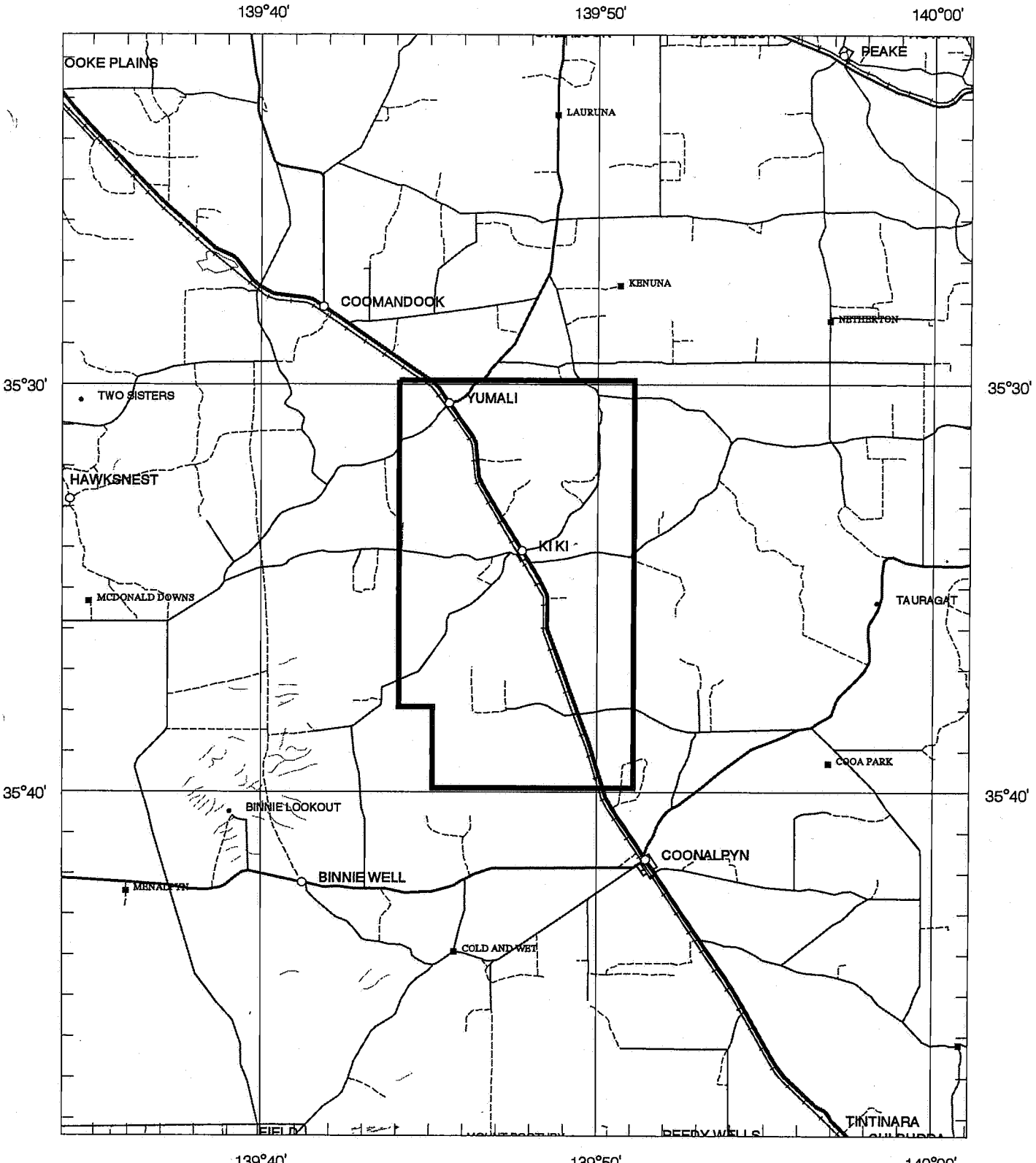
Government of South Australia
Primary Industries and Resources SA

SCHEDULE A



APPLICANT : **VINTAGE EXPLORATION AND MINING PTY LTD**

FILE REF : **680/04** TYPE : **MINERAL ONLY** AREA : **190** km² (approx.)

1:250000 MAPSHEETS : **PINNAROO**

LOCALITY : **KIKI AREA - Approximately 130 km southeast of Adelaide**

DATE GRANTED : **18-Jan-2005** DATE EXPIRED : **17-Jan-2006** EL NO : **3295**

PACE drilling KiKi, South Eastern South Australia.

Summary:

As part of the joint funded PACE exploration initiative, Vintage Exploration and Mining PL completed a diamond drilling programme comprising two holes at KiKi in the southeast of South Australia.
Drilling targeted two magnetic anomalies, interpreted as having potential for sulphide mineralisation associated with a layered ultramafic complex in the Cambro-Ordovician basement beneath the Tertiary cover.
The drilling contract was awarded to Underdale Drilling, based in St Marys, Adelaide, and drilling commenced on 14th June 2005. Two vertical holes were drilled for a total of 398m, comprising 315m of rotary mud and 83m of NQ2 core. The programme was completed on the 18th July.

Location:

Drill holes KK01 and KK02 were drilled near KiKi , approximately 150km southeast of Adelaide via the Dukes Highway. Holes were drilled on privately owned land and accessed via farm tracks and most direct route across farm paddocks. KK01 was drilled on “Sandiston”, owned by John and Helen McGorman and KK02 on “Ladara” owned and operated by Ivan Smith. See map below.

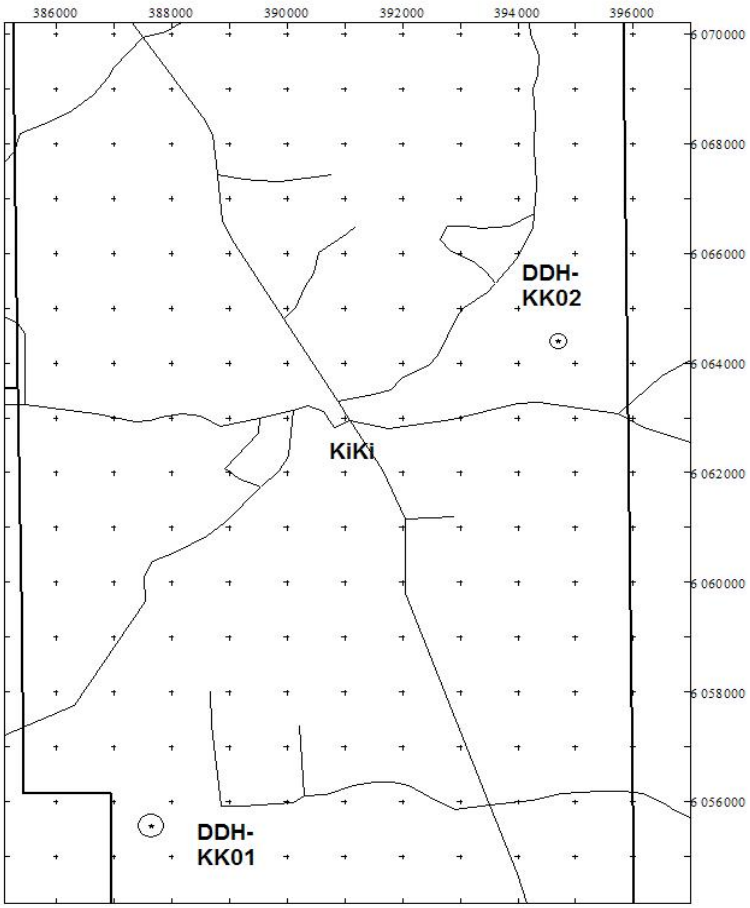
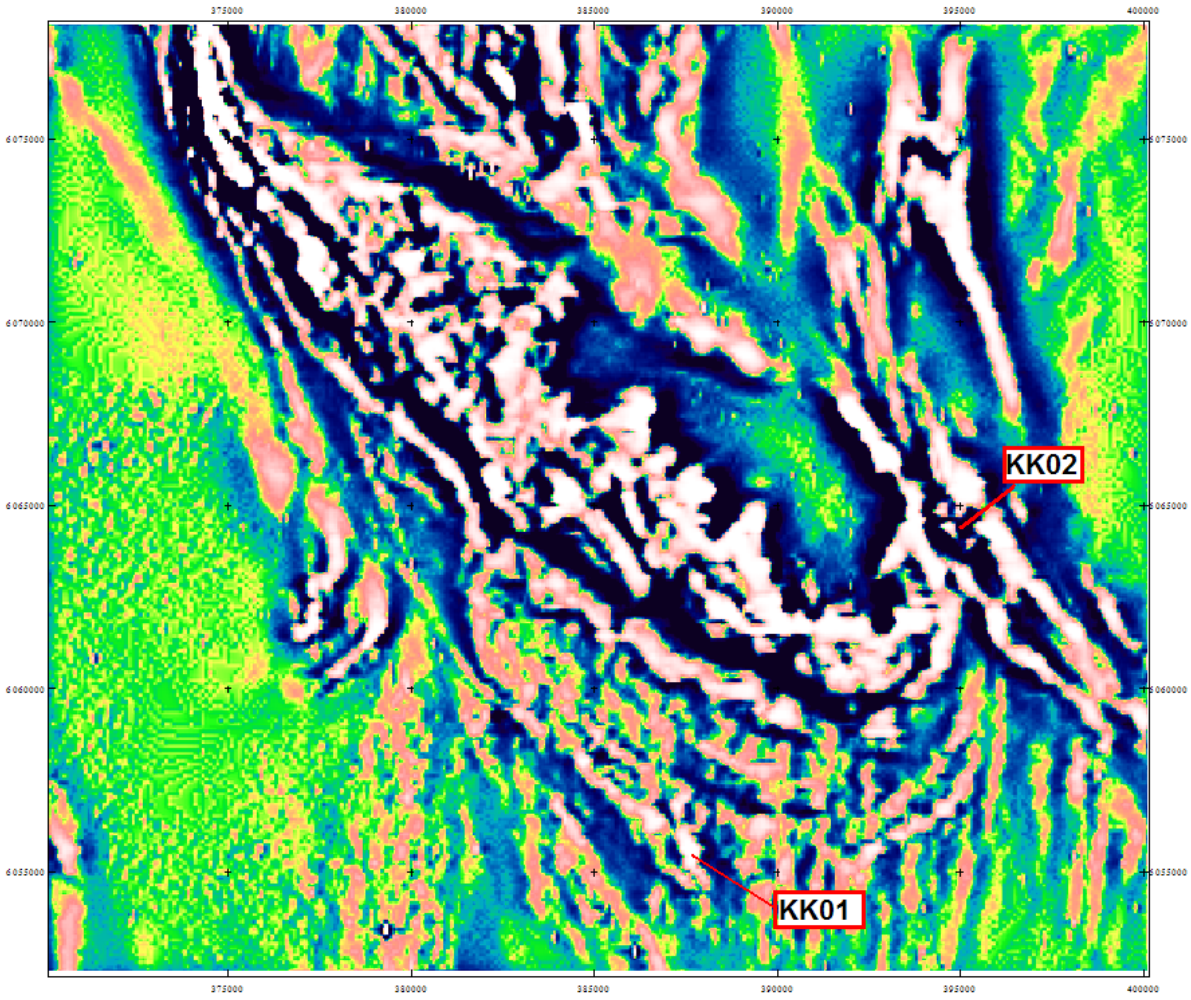


Figure 1. Drillhole locality plan showing collar position of KK01 and KK02

Geology:

The KiKi region is covered with approximately 150m of Tertiary, Murray Basin sediments comprising porous, gravely horizons in calcareous sandstone units. Interpretation of aeromagnetic data and existing drill records suggest a possible layered ultramafic complex in the Cambro-Ordovician basement beneath the Tertiary cover. Discrete magnetic anomalies have been interpreted as having potential to host nickel-copper-PGE mineralisation within the Kiki magnetic complex.



Drilling:

KK01 was collared at (MGA 387640E, 6055400N) on the 14th June 2005. The hole was mud drilled to basement at 144m, cased with HQ and then NQ^2 cored to a final depth of 190.5m. Basement lithologies comprised amygdaloidal basalt with minor pyrite ± trace of chalcopyrite. A narrow band of lapilli tuff was petrologically described as occurring at ~160m.

Hole KK02 (MGA 394730E, 6064200N) was mud drilled to 169.5m and cored (NQ^2) to a final depth of 207.25m. Drilling intersected ultramafic and amphibolite (after dolerite?) with minor magnetite, pentlandite and ?chromite.

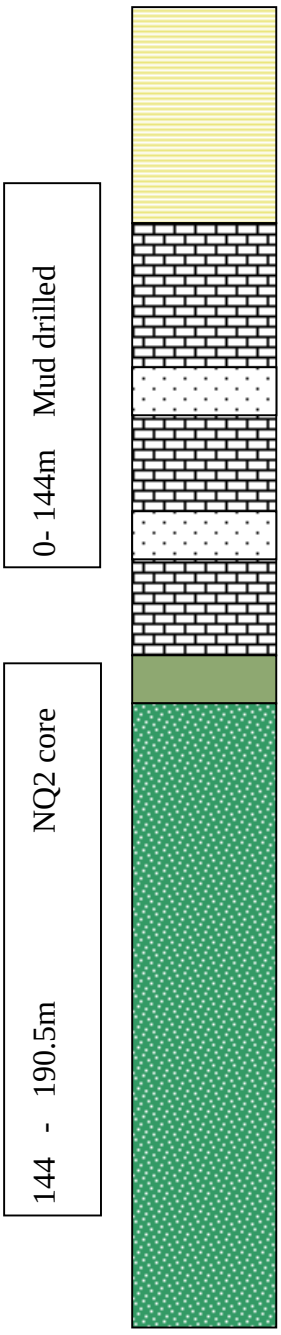
Difficult Drilling Conditions

Due to cavities and porous, gravely horizons in the calcareous sandstone units which dominate the cover sequence, mud drilling to basement was very slow. The drilling company was unable to develop a wall cake on these porous horizons, and consequently there was no return from approximately 35m in both holes drilled. Cover depths for the two holes, in excess of 145m, required endless water truck runs to reach basement.

In KK01, several HQ rods were successfully removed to allow for grouting, however only 40m of ~130m of HQ casing was recovered (via cutting at 12m intervals all the way up to 40m). The fact that the rods appeared to be stuck at approximately 40m, near where circulation was first lost, suggests that the porous ground at this level caused the problem.

Pictorial Log of Drillholes KK01 and KKO2

KK01:



0-30m: Sandy Carbonaceous clay

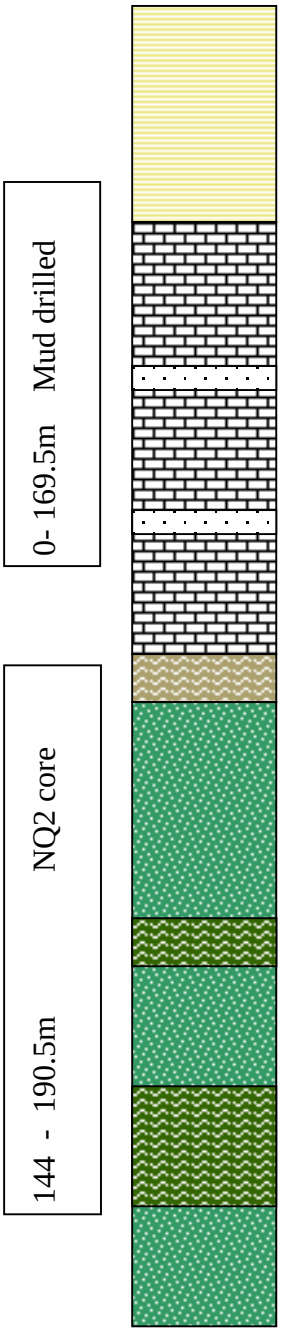
30-140m: Loss of sample
Assumed to be interbedded carbonates/gravels

140-144m: Green grey clay, weathered basement

144-180m: Amygdaloidal metabasalt,

180-190.5m: EOH: Basalt ± pyrite

KK02:



0-39m: Sandstone, limestone, clay

39-169.5m: No sample return
Assumed to be interbedded carbonates/gravels

169.5-172: Ultramafic(?), clays

172-180.25m: Metabasalt,

180.25-181.45m: Ultramafic

181.45-184m Basalt

184-196m Ultramafic, serpentine-tremolite & talc-carbonate

196-207.25m: Amphibolite

Petrology:

A total of fourteen samples were selected from the two holes and submitted to Pontifex and Associates Pty. Ltd. for thin section preparation and description. Offcuts from the thin sections were forwarded to Amdel Laboratories for assay. Representative samples were chosen from each logged lithology and across each unit to determine variation in composition and possible sulphide concentration during crystallization. The report and assay results are included as appendices with this report.

Assay results:

Following the petrological descriptions and geochemical assay of offcuts by Pontifex and Associates, it was decided to only cut and assay KK02 at this stage. Core cutting was undertaken by Challenger Geological Services and 1m samples were submitted to Genalysis Laboratories for assay. Results are pending and will be forwarded once they have been returned.

Assay results of the petrological sample offcuts are tabulated below

IDENT	Au (ppm)	Au1 (ppm)	As (ppm)	Co (ppm)	Cr (ppm)	Cu (ppm)	Ni (ppm)	Pb (ppm)	
27701	<0.02	--		7	62	1150	<1	1050	<3	
27702	<0.02	--		5	15	16	24	12		4
27703	<0.02	--		3	10	210	<1	98	<3	
27704	<0.02	--	<1		43	1300	7	900	<3	
27705	<0.02	--		4	49	950	10	1000	<3	
27706	<0.02	--		13	64	1350	<1	1250	<3	
27707	<0.02	--		3	14	24	46	12		8
27708	<0.02	--		4	13	20	58	5	<3	
27709	<0.02	--		5	27	33	115	30	<3	
27710	<0.02	<0.02		18	34	24	145	22	<3	
27711	<0.02	--		7	22	29	110	23	<3	
27712	<0.02	--		12	35	33	165	29	<3	
27713	<0.02	--		14	23	9	12	5	<3	
27714	<0.02	--		6	37	250	125	78		12

IDENT	Sb (ppm)	V (ppm)	Zn (ppm)	Al2O3 (%)	CaO (%)	Fe2O3 (%)	K2O (%)	MgO (%)
27701		16	35	39	1.4	17.5	7.02	0.02	18.1
27702	<5		120	36	13.1	9.49	15.2	0.52	5.53
27703	<5		22	15	3.94	22.1	6.61	0.29	11.8
27704		18	29	19	1.41	25.8	5.39	0.02	18.3
27705		12	18	17	0.65	29	6.58	0.01	16.2
27706		18	28	19	1.14	5.1	6.06	<0.01	34.3
27707	<5		130	58	12.9	6.81	14.5	0.37	3.37
27708	<5		130	45	12.9	6.95	14.8	0.41	3.2
27709	<5		240	49	13.8	11.6	11.3	0.98	5.1
27710	<5		145	43	14.2	10.3	11.8	1.55	6.28
27711	<5		160	64	13.2	11	11	1.67	5.68
27712	<5		145	30	15	7.86	10.4	1.87	7.5
27713	<5		135	31	15.4	5.68	11.7	0.31	4.44
27714	<5		165	30	13.2	11	11	1.03	10.1

IDENT	MnO (%)	Na2O (%)	P2O5 (%)	SiO2 (%)	TiO2 (%)	Ba ppm)	LOI (%)
27701	0.12	0.04	0.04	34.3	0.025	25	22.4
27702	0.25	3.28	0.26	48.7	2.57	50	1.61
27703	0.13	0.44	0.02	40.1	0.23	30	14.4
27704	0.1	0.03	<0.01	25	0.025	20	24
27705	0.12	0.02	0.04	18.7	0.015	15	28
27706	0.09	0.03	0.02	38.1	0.025	<10	14.7
27707	0.25	3.68	0.46	54.5	2.35	65	0.73
27708	0.26	3.65	0.46	53.8	2.4	85	0.58
27709	0.19	4.33	0.35	41.5	1.13	165	8.82
27710	0.18	2.76	0.38	46.2	1.17	650	3.73
27711	0.19	3.74	0.31	45.7	1.09	330	6.27
27712	0.16	3.27	0.28	46.7	1.22	1050	4.36
27713	0.14	5.99	1	48.6	1.98	110	4.25
27714	0.2	2.15	0.21	42.7	0.96	800	5.82

Rehabilitation:

The two landholders have agreed to carry out drillsite rehabilitation, however due to other commitments, it has not been completed at the time of writing this report. Recent phone discussion with both landholders has reconfirmed that they will carry out all necessary work when time permits. Photographs of the sites will be forwarded once this is done.

Pontifex & Associates Pty. Ltd.
MINERALOGY - PETROLOGY • SECTION PREPARATION

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MINERALOGICAL REPORT No. 8739

by Alan C. Purvis, PhD

September 29th, 2005

TO : Mr Chris Anderson
Euro Exploration Pty Ltd
63 King William St
KENT TOWN SA 5065

YOUR REFERENCE : Samples received from Phil Greenhill 7/9/05

MATERIAL : 14 Drill core samples, KK-01, KK-02 (from near KiKi, South Australia)

IDENTIFICATION : Samples Numbers 27709 to 27714 (KK-01)
27701 to 27707 (KK-02)

WORK REQUESTED : Thin and polished thin section preparation, description and report, to include comments as appropriate.

SAMPLES & SECTIONS : Returned to you with this report.

DIGITAL COPY : Enclosed with hard copy of this report.

PONTIFEX & ASSOCIATES PTY. LTD.

CONTENTS

SUMMARY:
PETROLOGY-MINERALOGY AND INTERPRETED LITHOLOGIES/ PROTOLITHS, SIX SAMPLES KK-01, EIGHT SAMPLE KK-02

Fourteen core samples discussed in this report are from two drillholes KK-01 and KK-02, reportedly about 7 km apart near Ki Ki in the Coonalpyn district in South Australia. These are described from 7 normal thin sections and 7 polished thin sections which facilitates the examination of the minor opaque minerals (sulphides, magnetite, ilmenite) as well as the host rock petrography. This area has basement of Kanmantoo age and the field notes provided by Euro indicate that the drill holes have intercepted mostly mafic lithologies, below a cover of Murray Basin sediments.

A summary of the petrology-mineralogy and interpreted lithologies/protoliths are tabulated below, followed by discussion on genesis and possible correlations.

KK-01

Identification	**Lithology/protolith**	**Main minerals**	**Notes, sulphides**
27709: 146.24m	Amygdaloidal basalt	Albite-chlorite-carbonate-epidote	Minor opaque oxide
27710: 160.92m	Lapilli tuff/ agglomerate	Albite-actinolite-epidote-chlorite	No opaque oxide; pyrite » chalcopyrite
27711: 174m	Amygdaloidal basalt	Albite-actinolite-chlorite-titanite-pyrite: carbonate-epidote veins	Carbonate-epidote-chlorite-pyrite ± chalcopyrite in amygdales
27712:177.81m	Amygdaloidal basalt	Albite-actinolite-K-spar-carbonate-epidote-titanite-pyrite	K-spar-carbonate-epidote-pyrite in amygdales
27713: 182.62m	Basalt	Albite-actinolite-chlorite-epidote with a bleached zone	Pyrite more abundant in bleached zone
27714: 187.98m	Basalt	Albite-actinolite-epidote-carbonate	Pyrite partly in carbonate veins

KK-02

Identification	Lithology/protolith	Main minerals/notes	Other notes
27701:171.1m	Ultramafic	Serpentine-tremolite **ε** talc-carbonate	Magnetite, pentlandite, violarite
27702: 178.25m	Amphibolite (dolerite?)	Passes into zones flooded and veined by prehnite	Not magnetic (no opaque oxide)
27703: 184.3m	Metabasalt or metadolerite + ultramafic?	Actinolite-epidote-titanite + tremolite schist	Carbonate veins, no opaque oxide
27704: 186.45m	Ultramafic	Serpentine-tremolite **ε** talc-carbonate	Magnetite, pentlandite, chromite?
27705: 194.06m	Ultramafic	Talc-carbonate	Magnetite, pentlandite, chromite
27706: 196.26m	Ultramafic	Serpentine schist breccia	Carbonate veins, no talc
27707: 200m	Amphibolite	Minor quartz: may represent dolerite?	Minor opaque oxide (ilmenite?)
27708: 203m	Amphibolite	Minor quartz (dolerite?)	Recrystallised opaque oxide (ilmenite?)

DISCUSSION: GENESIS AND POSSIBLE CORRELATIONS

The optical microscopy of the six samples from **drillhole KK-01** confirm that this hole has intercepted mafic volcanics, most of which are highly amygdaloidal but unoxidised, suggesting shallow water eruptions and including one possible pyroclastic unit. Most of these samples are low-grade metamorphosed to albite-actinolite-chlorite-epidote assemblages, and are at least partly schistose, with the schistosity parallel to the core axis (steeply dipping). Minor to abundant carbonate is scattered, commonly in amygdales, and in veins in several samples. Minor pyrite, generally <5%, occurs in several samples together with epidote, carbonate, chlorite or feldspar (albite or adularia), all variously scattered also in veins and in amygdales, locally with trace fine chalcopyrite. Chalcopyrite in one amygdale in 27711 at 160.92m is accompanied by pyrite and rare sphalerite.

Most metabasalts in this drillhole show greenschist-facies metamorphism, with rare green biotite suggesting temperatures of close to 400°C. K-spar occurs only in one sample (27712, 177.81m), however (potassic alteration). One metabasalt (27713, 172.62m) has a bleached, albite-carbonate-rich zone, with relatively abundant pyrite (5%). [Pyrite in this "bleached" association is known (in other areas) to contain anomalous gold.]

The eight sections from **drillhole KK-02** include several ultramafic lithologies, initially serpentine-tremolite-chlorite schists and schistose serpentinite, but with later superimposed variably talc-carbonate or carbonate alteration, and lenses of secondary magnetite. A zone of tremolite schist, in contact with metabasalt or metadolerite in 27703, 1843m, may also be part of the same ultramafic mass, but may represent a pyroxenite layer or lens, intruded by the mafic material. Three of these ultramafic samples examined in polished thin section i.e. 27701, 27704, 27705, contain trace (<<1%) disseminated pentlandite ± violarite ± chalcopyrite as well as secondary magnetite and rare chromite.

The origin of the ultramafic is unclear. It may be an ophiolite or layered sill, but it is possible that the mafic samples in this drillhole, which are free of amygdales and seem to be amphibolites, are doleritic intrusive into the ultramafic body. One metabasalt or metadolerite (27703) however, consists of actinolite-epidote aggregate, and may represent retrogressed material. The amphibolites appear to have been initially metamorphosed at about 500°C, rather than 400°C as indicated for the KK-01 metabasalt suite, and for the actinolite-epidote assemblage in 27703. The talc-carbonate alteration overprint suggests an increase in the mole fraction of CO_2 in the metamorphic fluid, and possibly some retrogression. One of the mafic samples (27702, 178.25m) is partly flooded by prehnite and cut by prehnite veins, indicating later, low-temperature alteration with CO_2-poor fluid, however. The ultramafic samples may be expected to be relatively magnetic and probably constitute a magnetic anomaly.

General Comment : Geological Setting

Mafic volcanics in the Kanmantoo zone include highly alkaline Truro Volcanics, and amygdaloidal metabasalts elsewhere in the Coonalpyn district (equated by PIRSA geologists with Truro Volcanics?). Also, there are amygdaloidal metabasalts on the western side of the Moyston Fault in western Victoria (Glenelg River subzone), where there are also serpentinites. The basalts, other than Truro Volcanics, seem to be tholeiitic, as are similar-

aged basalts in Tasmania (older than the Mount Read Volcanics), accompanied by ultramafic lithologies. Selected geochemistry may assist in relating these samples to possible correlatives of late Neoproterozoic to Cambrian age in South Australia, Victoria and Tasmania.

INDIVIDUAL DESCRIPTIONS

SAMPLE	27709: KK-01, 146.24 – 146.36m
ROCK NAME (from TS)	Amygdaloidal or scoriaceous metabasalt: albite-chlorite-carbonate-epidote rock and schist with disseminated opaque oxide.
HAND SPECIMEN	Green metabasalt with repeated amygdaloidal zones indicating flow-inflation.

Field Note: *Foliated/sheared mafic volcanic (unaltered patch)*

PETROGRAPHY:

A visual estimate of the modal mineral abundances:

Mineral	Vol %	Origin
Albite?	55	Ex-plagioclase
Chlorite	15	Metamorphic and in
Carbonate	16	amygdales of two different
Epidote	10	types
Oxide	4	Recrystallised

This thin section has two zones with a contact at about 30° to the core axis. One zone is paler and has a schistosity parallel to the core-axis, whereas the other is darker and essentially undeformed. Both zones have disseminated albitised plagioclase microlites to 0.3mm long and microcrystalline albite ± opaque oxide replacing the groundmass. In the paler zone there is more abundant chlorite, defining the schistosity, and less abundant oxide, and abundant amygdales are filled entirely with carbonate. Most of the amygdales are 0.1 to 0.7mm long and elongate parallel to the schistosity, but rare amygdales are between 6mm and 9mm long. In the darker zone there is less abundant chlorite in the groundmass, but more abundant microcrystalline opaque oxide. In this zone, about ½ of the amygdales are filled with carbonate, but the other ½ are filled with chlorite and epidote. The chlorite-epidote-filled amygdales are more circular and mostly less than 0.5mm in diameter, but the carbonate-filled amygdales are elongate and as much as 5mm long. This sample seems to represent metamorphosed scoriaceous basalt, with greenschist-facies metamorphism contrasting with that in KK-02.

SAMPLE	27710: KK-01, 160.92 – 161.08
ROCK NAME (from TS)	Basaltic lapilli tuff or agglomerate with scoriaceous basalt fragments: albite-actinolite-epidote-chlorite-carbonate-titanite-pyrite metamorphic assemblages and carbonate veins (± epidote, pyrite) indicate greenschist-facies metamorphism.
HAND SPECIMEN	Layered/heterogeneous greenschist with abundant pyrite and pale lenses containing carbonate

Field Note: *Mafic volcanic with K-alteration/pyrite?*

PETROGRAPHY:

A visual estimate of the modal mineral abundances:

Mineral	Vol %		Origin
Albite	52	57	Ex-feldspar, metamorphic, in amygdales
Actinolite	32	20	Schistose, metamorphic
Epidote	8	6	Secondary
Carbonate	<1	4	In veins and amygdales
Chlorite	2	6	Metamorphic
Titanite	3	2	Ex-opaque oxide
Pyrite	3	5	Metasomatic

This sample is heterogeneous and may be fragmental, with areas of scoriaceous metabasalt as well as interstitial areas that mostly lack well-defined basaltic of amygdaloidal textures and are richer in chlorite and carbonate. This suggests a basaltic lapilli tuff or agglomerate, as the size of the basalt fragments is uncertain. The basaltic areas have albitised plagioclase microlites in a heterogeneous, schistose matrix of albite, actinolite and microcrystalline titanite. Abundant amygdales are mostly less than 1mm long and are filled with granular albite, but also contain epidote and pyrite, with rare larger amygdales containing chlorite, carbonate, epidote and pyrite. The largest amygdales are 4-5mm in diameter and are partly elliptical and partly amoeboid. The margins of some of these basaltic masses are sheared and either rich in amphibole (+ microcrystalline titanite) or in chlorite and epidote, passing into albite-rich zones with mostly microcrystalline albite accompanied by schistose actinolite and heterogenous, inequigranular patches variously rich in epidote, carbonate and pyrite. Actinolite is less abundant in these areas than in the basalt zones or fragments, and rare lenses

of pinkish albite occur, possibly suggesting potassic alteration in hand specimen. The pyrite varies from microcrystalline to 1mm in grainsize as inclusion-rich crystals containing epidote, chlorite and carbonate. Trace chalcopyrite occurs mostly in and adjacent to pyrite with rare separate grains.

Veins of carbonate, locally with epidote and/or pyrite, occur at a high angle to the schistosity and the core axis.

SAMPLE	27711: KK-01, 160.92 - 161.08m
ROCK NAME (from TS)	Metabasalt with an albite-amphibole-chlorite-titanite assemblage, abundant large carbonate-epidote-chlorite-pyrite filled amygdales and carbonate-epidote veins, trace chalcopyrite > sphalerite.
HAND SPECIMEN	Amygdaloidal metabasalt with pale veins (carbonate/epidote) parallel to the core axis and minor pyrite

Field Note: *Spherulitic mafic volcanic*

PETROGRAPHY:

A visual estimate of the modal mineral abundances:

Mineral	Vol %	Origin
[Host metabasalt]		
Albite	55	Ex-plagioclase
Amphibole	30	Metamorphic ex-mafic
Chlorite	12	minerals
Titanite	3	Ex-opaque oxide
Epidote	<1	Sparse metamorphic
Pyrite	<1	minerals
[Amygdales]		
Carbonate	87	
Epidote	8	
Chlorite	3	
Pyrite and chalcopyrite accompanied by trace sphalerite	2	
[Veins]		
Carbonate	65	
Epidote	35	

Abundant albitised plagioclase laths, mostly less than 0.3mm long, characterise this metabasalt, in a heterogeneous metamorphosed groundmass with albite, dark green amphibole (actinolite or hornblende?), chlorite and microcrystalline titanite. Minor epidote and pyrite are disseminated but are fine-grained. Large amygdales are abundant and mostly filled with inequigranular carbonate, accompanied by epidote and/or chlorite as well as minor pyrite. Epidote is most abundant where the amygdales have been intersected by later

carbonate-rich veins with minor to abundant granular to prismatic or fibrous epidote. Most of the epidote is granular to prismatic and seems to be earlier than at least some of the carbonate, which occurs partly in fractures cutting the epidote. There is no pyrite in the veins, however.

Most of the pyrite is fine-grained (~0.1mm) with rare larger pyrite crystals and rare chalcopyrite in chlorite patches. However, one carbonate-rich amygdale has chalcopyrite to 0.7mm in diameter enclosing very minor pyrite and rare sphalerite.

SAMPLE	27712: KK-01, 177.81 – 178.03m
ROCK NAME (from TS)	Heterogeneous amygdaloidal metabasalt, mostly albite-actinolite schist with carbonate, K-spar, epidote, chlorite, sericite and pyrite in amygdales and some disseminated pyrite with pressure shadows. Rare chalcopyrite occurs in one amygdale.
HAND SPECIMEN	Pale, heterogeneous metabasalt with disseminated pyrite

Field Note: *Pyritic chlorite/K-altered mafic volcanic*

PETROGRAPHY:

A visual estimate of the modal mineral abundances:

Mineral	Vol %	Origin
Albite	38	Widespread metamorphic minerals in basalt
Actinolite	33	
K-spar (adularia)	12	In and adjacent to amygdales
Carbonate	4	In amygdales
Epidote	2	
Chlorite	2	
Sericite	3	
Titanite	3	Metamorphic
Pyrite	3	Mostly in amygdales
Green phlogopite (?)	trace	Adjacent to pyrite

This thin section is a metamorphosed and altered highly vesicular basalt with 20-25% by volume amygdales, mostly circular or elliptical and 0.2mm to 2mm long, but with larger amygdales to 8mm long. The basalt has sparse albitised plagioclase microlites to 0.3mm long in a very fine-grained matrix of albite, actinolite and titanite. The amygdales are heterogeneous, with various combinations of K-spar (adularia), carbonate, sericite, epidote, chlorite, green phlogopite, amphibole and pyrite. In some areas, small circular amygdales mostly contain K-spar, sericite and carbonate, and the largest amygdale has zones of K-spar as well as a large patch of carbonate. A network of amygdales, possibly connected by fractures, contains K-spar and carbonate, and on the stained offcut minor K-spar is seen in the host rock adjacent to K-spar-rich amygdales, but this is difficult to discern in thin section.

The pyrite varies from microcrystalline to more than 2mm in grainsize, and is mostly contained within amygdales. Rare chalcopyrite occurs as well as or instead of pyrite in some amygdales. Some pyrite, about 1mm in grainsize, has formed within the basalt and has pressure shadows of carbonate, chlorite and pale green phlogopite. Pyrite-bearing amygdales mostly contain carbonate, chlorite and epidote in various

proportions, rarely with green phlogopite. Some of the chlorite seems to be schistose and some is highly kinked, as is some of the phlogopite.

SAMPLE	27713: KK-01, 172.62 - 182.81m
ROCK NAME (from TS)	Albite-actinolite-chlorite-epidote-titanite metabasalt with an albite-carbonate-rich bleached zone and abundant disseminated pyrite.
HAND SPECIMEN	Pale metabasalt with a diffuse carbonate vein or bleached zone and abundant pyrite.

Field Note: *Carbonate vein in mafic rock with sulphide selvedge*

PETROGRAPHY:

A visual estimate of the modal mineral abundances:

Mineral	Vol % **[Host]**	**[Pale zone]**	Origin
Albite/plagioclase	54	65	Residual, ex-plagioclase and metamorphic
Chlorite	27	8	Interstitial, metamorphic
Actinolite	6	0	Partly ex-pyroxene
Epidote	5	2	Mostly adjacent to pyrite
Pyrite	3	5	Secondary
Titanite	5	5	Ex-oxide, in actinolite
Carbonate		15	Metasomatic, in pale zone

The darker parts of this thin section contain residual zoned plagioclase laths from 0.1 to 0.5mm long as well as patches of actinolite ± titanite derived from pyroxene and pyrite in aggregates with epidote ± chlorite. Interstitial chlorite and microcrystalline albite are abundant. The apparent vein in this sample is a bleached, albite-carbonate-rich zone with abundant pyrite and a central lens within which there are lenses of chlorite. The plagioclase laths in this zone have been altered to albite and there is abundant interstitial microcrystalline albite as well as titanite and minor epidote. Patches of carbonate to 1.5mm long are abundant and contain some of the pyrite in this area.

Pyrite is more abundant in the pale zone, as cubic crystals to 0.2mm in diameter with sparse inclusions, but smaller pyrite crystals are disseminated throughout the host, mostly enclosed in epidote.

SAMPLE	27714: KK-01, 197.98 – 188.12m
ROCK NAME (from TS)	Albite-actinolite-epidote-titanite-pyrite-carbonate metabasalt with rare chlorite and biotite, cut by carbonate veins, some of which contain pyrite, epidote and rare chalcopyrite.
HAND SPECIMEN	Pale metabasalt with carbonate veins and pyrite

Field Note: *Unaltered mafic volcanic*

PETROGRAPHY:

A visual estimate of the modal mineral abundances:

Mineral	Vol %	Origin
Albite	52	Metamorphic
Actinolite	23	
Epidote	7	
Titanite	4	
Carbonate	6	
Chlorite	<1	
Biotite	Trace	
Pyrite	<1	Secondary
Carbonate	7	In veins, two generations
Pyrite, trace chalcopyrite	1	In early veins
Epidote	<1	In early veins

The bulk of this sample is a schistose metabasalt with abundant schistose amphibole and granular albite to 0.5mm in grainsize, accompanied by minor epidote and titanite (derived from opaque oxide). Small patches of carbonate are disseminated and there is minor pyrite, partly in carbonate and partly rimmed by chlorite and pale green biotite or phlogopite. Early, irregular carbonate veins are present, to 2mm wide, with abundant disseminated pyrite and rare epidote. Later carbonate veins lack sulphide and have an en-echelon arrangement. Rare chalcopyrite occurs in and adjacent to pyrite in the carbonate veins.

SAMPLE	27701; KK-02, 171.1 – 171.25m
ROCK NAME (from TS)	Metaperidotite: Areas of serpentine-tremolite-actinolite rock, partly schistose, passing into talc-carbonate schist, with secondary opaque oxide, minor chromite and very minor pentlandite ± violarite: cut by carbonate veins and quartz veins.
HAND SPECIMEN	Possible mafic/ultramafic rock with pale veins and bleached zones

Field Note: *Highly altered/veined mafic volcanics*

PETROGRAPHY:

A visual estimate of the modal mineral abundances:

Mineral	Vol %	Origin
Serpentine	24	Early metamorphic in
Tremolite-actinolite	14	patches and shears
Talc	35	Later metamorphic
Carbonate	20	replacing serpentine + amphibole
Sulphide (pentlandite > violarite)	Trace	Residual
Opaque oxide, mostly magnetite	3	Secondary with serpentine and talc-carbonate
Quartz	5	In patches and veins

The hand specimen has a large residual patch of serpentine and poorly oriented tremolite-actinolite as well as irregular masses of secondary opaque oxide and lenses of clouded granular quartz. This patch is about 25mm in diameter and also contains a shear zone or vein about 4mm wide with abundant schistose tremolite-actinolite interlaminated with serpentine. This zone also contains lenses of clouded carbonate and passes into a zone with carbonate, talc and minor fine-grained quartz. A similar zone on the edge of the serpentine-rich patch is richer in carbonate, and patches of talc ± carbonate occur in marginal areas of the serpentine-rich patch. The adjacent material is largely schistose talc and carbonate with sparse lenses of serpentine, one of which contains fractured and fragmented chromite. Secondary opaque oxide is also disseminated in the talc-carbonate zone, which also has rosettes of tremolite-actinolite to 2mm in diameter. Small patches of pentlandite occur, rimmed by magnetite or, rarely, by violarite, with rare separate violarite.

Veins include early carbonate veins and later veins of cherty to microsparry quartz.

SAMPLE	27702; KK-02, 178.25 – 178.85
ROCK NAME (from TS)	Mafic amphibolite (metabasalt), partly sericitised, passing into a zone with prehnite ex-plagioclase, with albite-carbonate-clay veins and veins of prehnite ± clay
HAND SPECIMEN	Pale mafic rock (amphibolite?) with pale veins passing downwards into darker mafic material

Field Note: *Relatively unaltered mafic volcanic*

PETROGRAPHY:

A visual estimate of the modal mineral abundances:

Mineral	Vol %	Origin
Hornblende	45	Ex-pyroxene
Plagioclase	15	Residual + metamorphic
Sericite	20	Ex-plagioclase
Oxide	2	Recrystallised
Titanite	1	Ex-opaque oxide
Prehnite	15	Ex-plagioclase + in veins
Clay	1	In veins
Carbonate	1	In veins

The darker part of this sample is a weakly schistose amphibolite with fine-grained hornblende replacing granular to prismatic pyroxene and some platy plagioclase as well as recrystallised plagioclase and secondary sericite, mostly replacing the cores of plagioclase laths. Minor opaque oxide is disseminated and seems to have been recrystallised and, in some areas, partly to completely altered to titanite. A narrow shear zone is rich in very fine-grained amphibole and has lamellae of fine-grained opaque oxide. A vein of albite, carbonate and clay occurs at a high angle to the schistosity in the dark area. The schistosity becomes more intense towards the pale area, with most of the plagioclase replaced by sericite and more abundant titanite.

In the pale areas the plagioclase has been replaced by prehnite without significantly affecting the amphibole, and prehnite veins occur, mostly at 45-90° to the schistosity. The shear zone persists into the prehnite-flooded pale area and has been cut by the prehnite veins, which are 0.2mm to 2mm wide and locally contain minor clay.

SAMPLE	27703: KK-02, 184.3 – 184.38m
ROCK NAME (from TS)	Actinolite-epidote metabasalt in contact with schistose tremolite-actinolite cut by carbonate veins containing serpentine; contact between mafic and ultramafic lithologies
HAND SPECIMEN	Curved contact between possible amphibolite and sheared and veined ultramafic material

Field Note: *Sheared, highly serpentine altered mafic (?), upper contact*

PETROGRAPHY:

A visual estimate of the modal mineral abundances:

Mineral	Vol %	Origin
[Mafic zone]		
Actinolite	78	Metamorphic minerals in
Epidote	20	low-grade metabasalt
Titanite	2	Ex-opaque oxide
[Pale area, excluding vein]		
Tremolite-actinolite		Schistose interstitial material
[Vein]		
Carbonate ± serpentine		Vein material

Part of this sample seems to represent metabasalt and has abundant pale granular tremolite-actinolite accompanied by less abundant epidote and accessory titanite. Narrow clay-filled fractures occur in this zone. There is a sharp contact between this zone and a pale area of schistose tremolite-actinolite, varying in colour but mostly colourless with some pale yellowish-green patches. This may represent ultramafic material, possibly metapyroxenite, and has been cut by irregular carbonate veins containing small lenses of serpentine, stained by limonite, with narrow serpentine-rich offshoots. The carbonate veins are 1 to 6mm wide and contain fibrous, microcrystalline and granular carbonate.

SAMPLE	27704: KK-02, 186.45 – 186.55m
ROCK NAME (from TS)	Crenulated talc-carbonate schist with opaque oxide-rich lenses, minor residual serpentine and tremolite, rare pentlandite: ultramafic.
HAND SPECIMEN	Pale ultramafic rock, schistose parallel to the core axis, spotty

Field Note: *Highly altered mafic volcanic; magnetite/serpentine*

PETROGRAPHY:

A visual estimate of the modal mineral abundances:

Mineral	Vol %	Origin
Serpentine	8	Early metamorphic
Tremolite	7	minerals
Talc	40	Later metamorphic
Carbonate	42	minerals partly schistose
Oxide	3	Residual and secondary
Sulphide (pentlandite > chalcopyrite)	Trace	Modified primary?

The spots seen in hand specimen in this sample are millimetre to centimetre-scale aggregates rich in granular and microcrystalline opaque oxide, mostly enclosed in fine-grained carbonate. Very minor serpentine and tremolite are disseminated in small patches, but most of the thin section is talc-carbonate schist. There seems to be a crenulated schistosity (S_1) with an overall trend at a high angle to the core-axis and a second schistosity (S_2) roughly parallel to the core axis. Most of the oxide-rich lenses are elongate parallel to S_2, but some are closer to S_1, or have oxide lamellae parallel to S_1. Very minor sulphide is disseminated and is mostly pentlandite with rare lamellae of chalcopyrite. Carbonate veins to 2mm wide occur mostly at a high angle to S_2. This sample is of ultramafic origin.

SAMPLE	27705: KK-02, 194.06 – 194.2m
ROCK NAME (from TS)	Ultramafic talc-carbonate schist with crenulated oxide-rich lenses and patches of decussate tremolite. Very minor pentlandite is present.
HAND SPECIMEN	Pale greenish ultramafic with oxide-carbonate lenses and carbonate veins at a low angle to the core axis

Field Note: *Highly altered mafic volcanic: magnetite/serpentine*

PETROGRAPHY:

A visual estimate of the modal mineral abundances:

Mineral	Vol %	Origin
Talc	38	Metamorphic minerals,
Carbonate (1)	38	partly schistose
Tremolite	6	Patches of decussate prisms
Oxide	3	Microcrystalline magnetite and primary chromite
Sulphide (pentlandite > chalcopyrite)	Trace	Modified primary sulphide
Carbonate (2)	15	In large veins

There are crenulated lenses on a millimetre to centimetre-scale in this thin section, containing fine-grained magnetite in lamellae defining a folded foliation (S_1), set in fine-grained talc-carbonate schist that also contains a second schistosity (S_2) as in the previous sample. Patches, to 8mm long, composed largely of decussate tremolite occur, with prisms to 1mm long, and smaller aggregates, including single prisms, are also disseminated. Rare chromite, 0.2mm in diameter, is enclosed in magnetite and there is rare disseminated pentlandite. The largest sulphide aggregate is 0.5mm long and contains minor chalcopyrite as lamellae in pentlandite. Early carbonate veins to 8mm wide are granular and contain clouded and clear carbonate, with layer narrow carbonate veins at a high angle to the core-axis.

SAMPLE	27706: KK-02, 196.26 – 196.43m
ROCK NAME (from TS)	Serpentine breccia with primary and secondary opaque oxide and abundant carbonate in a web of small veins.
HAND SPECIMEN	Seems to have serpentine-rich blocks + talc-carbonate host?

Field Note: *Basal contact of sheared zone*

PETROGRAPHY:

A visual estimate of the modal mineral abundances:

Mineral	Vol %	Origin
Serpentine	85	Blocks of schistose material
Carbonate	11	In veins
Oxide	4	Primary and secondary opaque oxide

This sample is a serpentinite breccia with angular, mostly millimetre to centimetre-scale blocks of schistose serpentine containing primary granular opaque oxide and mostly fine-grained secondary opaque oxide. Some areas have smaller fragments, as little as 0.2mm in diameter. Abundant carbonate occurs in irregular tension-gash veins in and between the serpentine blocks, locally forming anastomosing webs. The schistosity varies in orientation between blocks, but is planar and strong within blocks.

SAMPLE	27707: KK-02, 200 – 200.1m
ROCK NAME (from TS)	Amphibolite with minor opaque oxide, quartz and apatite: derived from basalt or fine-grained dolerite, possibly in a dyke, with epidote-carbonate veins and clay veins.
HAND SPECIMEN	Probable amphibolite or metadolerite with pale green fractures

Field Note: *Medium-grained volcanic/diorite?*

PETROGRAPHY:

A visual estimate of the modal mineral abundances:

Mineral	Vol %	Origin
Hornblende	40	Ex-pyroxene
Plagioclase	50	Residual + metamorphic
Oxide	3	Recrystallised
Quartz	3	Residual + metamorphic
Clay	2	Ex-feldspar
Apatite	<1	Late magmatic
Epidote-carbonate	2	Veins (1)
Clay	<1	Veins (2)

This sample is a schistose amphibolite with hornblende and plagioclase less than 1mm in grainsize. Some of the plagioclase is lath-like and clay-clouded, suggesting residual igneous feldspar, but some is clear and granular and seems to have been recrystallised. Small lenses of fine-grained quartz may be of late magmatic origin but seem to have been recrystallised and enclose needles of apatite. However, some apatite also occurs in clear plagioclase. The opaque oxide seems to be recrystallised ilmenite. This represents metabasalt or fine-grained metadolerite but could be from a narrow dyke. The schistosity is roughly parallel to the core-axis.

Early veins are rich in epidote and/or carbonate, with later narrow clay veins (smectite?).

SAMPLE	27708: KK-02, 203m
ROCK NAME (from TS)	Metadolerite (amphibolite) with minor quartz, opaque oxide, apatite and carbonate.
HAND SPECIMEN	Fine-grained mafic amphibolite

Field Note: *Fine-grained volcanic/diorite*

PETROGRAPHY:

A visual estimate of the modal mineral abundances:

Mineral	Vol %	Origin
Plagioclase	58	Primary and recrystallised
Hornblende	33	Metamorphic, ex-pyroxene
Oxide	4	Recrystallised
Quartz	3	Residual and recrystallised
Apatite	<1	Late magmatic
Biotite	Trace	Metamorphic
Clay	2	In feldspar
Carbonate	Trace	Disseminated

This sample is richer in plagioclase, partly as lath-like crystals to more than 1mm long, with pale brown or clay-clouded cores, and partly as clear rims and recrystallised zones. Lenses of dark green hornblende define a schistosity roughly parallel to the core axis and rarely contain biotite. Minor opaque oxide seems to be recrystallised ilmenite, and lenses of largely recrystallised quartz occur, with apatite in and adjacent to the quartz. Trace carbonate is disseminated. Very rare fractures seem to contain albite. This may represent a metamorphosed quartz-bearing fine-grained dolerite.

KK01 387640mE, 6055400mN (MGA)															
From	To	Lithology	Drilling Me	Recove	Colour	Mag Sus (x10^{-3}) max(average)	Pyrite (	cb veining	Comments						
0	3	calc sst	mud		cm-yell				Calcareous sst, marine, Coomandook Fm						
3	6	calc sst	mud		cm-yell										
6	9	calc sst	mud		cm-yell										
9	12	calc sst	mud		cm-yell										
12	15	calc sst	mud		cm-yell										
15	18	calc sst	mud		cm-yell										
18	21	calc sst	mud		cm-yell										
21	24	calc sst	mud		cm-yell										
24	27	calc sst	mud		cm-yell										
27	30	calc sst	mud		cm-yell										
30	107		mud	nil					lost return, probably in porous limestone or gravelly sands						
107	108	marine cly	mud		dk bn/gy				brief return dk brown marine clay, probably due to breaching Renmark Bed aquifer						
108	140		mud	nil					no return						
140	144.64	basalt	mud	100%	dk gn	50(20)			unoxidised green clay (weathered basalt)						
144.64	145	basalt	diamond	100%	dk gn/gy	50(20)			Dk ol/gn basalt, with v. common dk gy vesicular clasts 2-10cm, vague clast boundaries to undefined 144.64-150m						
145	145.5	basalt	diamond	100%	dk gn/gy	50(20)			Clasts show distinct sus. contrast with non-magnetic host. Clasts 20-50% rock						
145.5	146	basalt	diamond	100%	dk gn/gy	50(20)			Weak elongation of clasts, weak fabric to basalt						
146	146.5	basalt	diamond	100%	dk gn/gy	50(20)									
146.5	147	basalt	diamond	100%	dk gn/gy	50(20)		tr							
147	147.5	basalt	diamond	100%	dk gn/gy	50(20)		tr							
147.5	148	basalt	diamond	100%	dk gn/gy	50(20)		tr							
148	148.5	basalt	diamond	100%	dk gn/gy	50(20)									
148.5	149	basalt	diamond	100%	dk gn/gy	50(20)									
149	149.5	basalt	diamond	100%	dk gn/gy	50(20)									
149.5	150	basalt	diamond	100%	dk gn/gy	50(20)									
150	150.5	basalt	diamond	100%	dk gn/gy	4			few vesic clasts, abund. dk gn, fg elongated clasts to 1cm in paler fg matrix						
150.5	151	basalt	diamond	100%	dk gn/gy	0.2			Devitrification textures common						
151	151.5	basalt	diamond	100%	dk gn/gy	0.2									
151.5	152	basalt	diamond	100%	dk gn/gy	0.2									
152	152.5	basalt	diamond	100%	dk gn/gy	0.2	0.5								
152.5	153	basalt	diamond	100%	dk gn/gy	0.2	0.5	tr							
153	153.5	basalt	diamond	100%	dk gn/gy	0.2	0.5								
153.5	154	basalt	diamond	100%	dk gn/gy	0.2	1								
154	154.5	basalt	diamond	100%	dk gn/gy	6	1		vesicular phase, vesicles to several mm, ser -qz alt?						
154.5	155	basalt	diamond	100%	dk gn/gy	6	0.5								
155	155.5	basalt	diamond	100%	dk gn/gy	0.2	0.5		10cm zone of coarse vesicular phase						
155.5	156	basalt	diamond	100%	dk gn/gy	0.2	0.5								
156	156.5	basalt	diamond	100%	dk gn/gy	0.2	0.5								
156.5	157	basalt	diamond	100%	dk gn/gy	0.2									
157	157.5	basalt	diamond	100%	dk gn/gy	0.2		tr							
157.5	158	basalt	diamond	100%	dk gn/gy	0.2									
158	158.5	basalt	diamond	100%	dk gn/gy	0.2	0.5								
158.5	159	basalt	diamond	100%	dk gn/gy	0.2	1								
159	159.5	basalt	diamond	100%	dk gn/gy	0.2	1		Extensive low intensity cb alt, minor hem-cb.						
159.5	160	basalt	diamond	100%	dk gn/gy	0.2	1	tr	Massive basalt, pyrite very common, fg blebs often after chloritic grains to sev. Mm.						
160	160.5	basalt	diamond	100%	dk gn/gy	0.2	1								
160.5	161	basalt	diamond	100%	dk gn/gy	0.2	1								
161	161.5	basalt	diamond	100%	dk gn/gy	0.2	1								
161.5	162	basalt	diamond	100%	dk gn/gy	0.2	1								
162	162.5	basalt	diamond	100%	dk gn/gy	0.2	1								
162.5	163	basalt	diamond	100%	dk gn/gy	0.2	1								
163	163.5	basalt	diamond	100%	dk gn/gy	0.2	1								
163.5	164	basalt	diamond	100%	dk gn/gy	0.2	1	tr							
164	164.5	basalt	diamond	100%	dk gn/gy	0.2	1	tr	thin sub-vert ser-cb veining 164-167m, later low angle cb veins						
164.5	165	basalt	diamond	100%	dk gn/gy	0.2	0.5	tr							
165	165.5	basalt	diamond	100%	dk gn/gy	0.2	0.5	tr							
165.5	166	basalt	diamond	100%	dk gn/gy	0.2	0.5	tr							
166	166.5	basalt	diamond	100%	dk gn/gy	0.2	0.5	tr							
166.5	167	basalt	diamond	100%	dk gn/gy	0.2	0.5								
167	167.5	basalt	diamond	100%	dk gn/gy	0.2									
167.5	168	basalt	diamond	100%	dk gn/gy	0.2									
168	168.5	basalt	diamond	100%	dk gn/gy	0.2									
168.5	169	basalt	diamond	100%	dk gn/gy	0.2									
169	169.5	basalt	diamond	100%	dk gn/gy	0.2									
169.5	170	basalt	diamond	100%	dk gn/gy	0.2									
170	170.5	basalt	diamond	100%	dk gn/gy	0.2									
170.5	171	basalt	diamond	100%	dk gn/gy	0.2									
171	171.5	basalt	diamond	100%	dk gn/gy	0.2									
171.5	172	basalt	diamond	100%	dk gn/gy	0.2			vesicular basalt						
172	172.5	basalt	diamond	100%	dk gn/gy	0.2		tr	vesicular basalt						
172.5	173	basalt	diamond	100%	dk gn/gy	0.2									
173	173.5	basalt	diamond	100%	dk gn/gy	0.2			173.15m thin (3cm) weathered zone, pyritic voids.						
173.5	174	basalt	diamond	100%	dk gn/gy	0.2	0.5	tr	vesicular basalt						
174	174.5	basalt	diamond	100%	dk gn/gy	0.2			vesicular basalt						
174.5	175	basalt	diamond	100%	dk gn/gy	0.2									
175	175.5	basalt	diamond	100%	dk gn/gy	0.2	0.5								
175.5	176	basalt	diamond	100%	dk gn/gy	0.2	1	tr							
176	176.5	basalt	diamond	100%	dk gn/gy	0.2	2								
176.5	177	basalt	diamond	100%	dk gn/gy	0.2	2		very broken core, weak foliation						
177	177.5	basalt	diamond	100%	dk gn/gy	0.2	2								
177.5	178	basalt	diamond	100%	dk gn/gy	0.2	2								
178	178.5	basalt	diamond	100%	dk gn/gy	0.2	2								
178.5	179	basalt	diamond	100%	dk gn/gy	0.2	2								
179	179.5	basalt	diamond	100%	dk gn/gy	0.2	2								
179.5	180	basalt	diamond	100%	dk gn/gy	0.2	2								
180	180.5	basalt	diamond	100%	dk gn/gy	0.2	1								
180.5	181	basalt	diamond	100%	dk gn/gy	60(10)	1								
181	181.5	basalt	diamond	100%	dk gn/gy	0.2	1								
181.5	182	basalt	diamond	100%	dk gn/gy	0.2	1								
182	182.5	basalt	diamond	100%	dk gn/gy	0.2	1								
182.5	183	basalt	diamond	100%	dk gn/gy	0.2	0.5	low							
183	183.5	basalt	diamond	100%	dk gn/gy	0.2	0.5	low							
183.5	184	basalt	diamond	100%	dk gn/gy	0.2		low							
184	184.5	basalt	diamond	100%	dk gn/gy	0.2		low							
184.5	185	basalt	diamond	100%	dk gn/gy	0.2									
185	185.5	basalt	diamond	100%	dk gn/gy	0.2									
185.5	186	basalt	diamond	100%	dk gn/gy	0.2									
186	186.5	basalt	diamond	100%	dk gn/gy	0.2		low							
186.5	187	basalt	diamond	100%	dk gn/gy	20		low							
187	187.5	basalt	diamond	100%	dk gn/gy	0.2		low							
187.5	188	basalt	diamond	100%	dk gn/gy	0.2		low							
188	188.5	basalt	diamond	100%	dk gn/gy	0.2			broken ground with clay to EOH						
188.5	189	basalt	diamond	100%	dk gn/gy	5									
189	189.5	basalt	diamond	100%	dk gn/gy	1									
189.5	190	basalt	diamond	100%	dk gn/gy	1									
190	190.5	basalt	diamond	100%	dk gn/gy	0.2			wk-mod foliation at EOH						

DDH KK02 394730mE, 6064200mN (MGA)									
From	To	Lithology	Drilling Me	Recovery	Colour	Mag Sus (x10^{-3})	Pyrite	cb vein	Comments
						max(average)	(%)		
0	3	calc sst	mud		cm-yell				Calcareous sst, marine, Coomandook Fm
3	6	calc sst	mud		cm-yell				
6	9	calc sst	mud		cm-yell				
9	12	calc sst	mud		cm-yell				
12	15	calc sst	mud		cm-yell				
15	18	calc sst	mud		cm-yell				
18	21	calc sst	mud		cm-yell				
21	24	calc sst	mud		cm-yell				
24	27	calc sst	mud		cm-yell				
27	30		mud	nil					no return, porous gravelly horizons?
30	33		mud	nil					no return, porous gravelly horizons?
33	36	calc sst	mud		cm-yell				medium-coarse gr calcareous sands, gravels?
36	39	calc sst	mud		cm-yell				medium-coarse gr calcareous sands, gravels?
39	169.5		mud	nil					no return
169.5	170	alt. mafic	diamond	30%	dk gy-gn	5	2?		dk gy-gn, fg mafic, devitrified, abund. Cb-ser alt (pl cm-gn), possibly ultra-mafic.
170	170.5	alt. mafic	diamond	100%	dk gy-gn	5			Clay zone with common py to 170.4m (sig. core loss in clay zones)
170.5	171	alt. mafic	diamond	100%	dk gy-gn	50			Progressive increase in shearing to 172m, ductile high angle contact with brittle footwall basalt, abundant fractures
171	171.5	alt. mafic	diamond	100%	dk gy-gn	50	2		Basalt undeformed, massive, irregular brittle fracture planes make drilling difficult
171.5	172	alt. mafic	diamond	100%	dk gy-gn	30	1	med	
172	172.5	basalt	diamond	100%	dk gn	0.2		med	
172.5	173	basalt	diamond	100%	dk gn	0.2		med	
173	173.5	basalt	diamond	100%	dk gn	0.2		low	
173.5	174	basalt	diamond	100%	dk gn	0.2		low	
174	174.5	basalt	diamond	100%	dk gn	0.2			
174.5	175	basalt	diamond	100%	dk gn	0.2			
175	175.5	basalt	diamond	100%	dk gn	0.2			
175.5	176	basalt	diamond	100%	dk gn	0.2			
176	176.5	basalt	diamond	100%	dk gn	0.2			
176.5	177	basalt	diamond	100%	dk gn	0.2			
177	177.5	basalt	diamond	100%	dk gn	0.2			very broken core
177.5	178	basalt	diamond	80%	dk gn	0.2			very broken core
178	178.5	basalt	diamond	80%	dk gn	0.2			very broken core
178.5	179	basalt	diamond	80%	dk gn	0.2			very broken core
179	179.5	basalt	diamond	80%	dk gn	0.2			very broken core
179.5	180	basalt	diamond	80%	dk gn	0.2			very broken core
180	180.5	alt. mafic	diamond	20%	pl wh-gy	0.2			180.25-181.45 sub-vert shear zone in highly altered mafic (talc, ser, cb), minor basalt
180.5	181	alt. mafic	diamond	20%	pl wh-gy	0.2			
181	181.5	alt. mafic	diamond	20%	pl wh-gy	50			
181.5	182	basalt	diamond	20%	dk gn				181.45 undeformed massive basalt, irregular fractures
182	182.5	basalt	diamond	100%	dk gn				
182.5	183	basalt	diamond	100%	dk gn				
183	183.5	basalt	diamond	100%	dk gn				
183.5	184	basalt	diamond	100%	dk gn				~184m sub-vert cb vn (5mm) contact to sheared alt. Mafic
184	184.5	alt. mafic	diamond	100%	pl gn-wh	60(30)			184-185m talc-cb-ser alt, friable, sub-vert shear fabric
184.5	185	alt. mafic	diamond	100%	pl gn-wh	60(30)			
185	185.5	alt. mafic	diamond	100%	pl gn-wh	60(30)			185-187 weak foliation decreasing away from shear zone
185.5	186	alt. mafic	diamond	100%	pl gn-wh	60(30)			Altered mafic, pale gn-wh, strongly altered (70-80% rock), isolated patches dk gn-gy (unaltered?) which contain magnetic mineralogy (magnetite?), possibly serpentinite
186	186.5	alt. mafic	diamond	100%	pl gn-wh	60(30)			Similar to mafic at ~170m, but more pervasive alteration (serpentinisation?)
186.5	187	alt. mafic	diamond	100%	pl gn-wh	60(30)			
187	187.5	alt. mafic	diamond	100%	pl gn-wh	60(30)			
187.5	188	alt. mafic	diamond	100%	pl gn-wh	60(30)			
188	188.5	alt. mafic	diamond	100%	pl gn-wh	60(30)			
188.5	189	alt. mafic	diamond	100%	pl gn-wh	60(30)			
189	189.5	alt. mafic	diamond	100%	pl gn-wh	60(30)			
189.5	190	alt. mafic	diamond	100%	pl gn-wh	80(40)			
190	190.5	alt. mafic	diamond	100%	pl gn-wh	80(40)			
190.5	191	alt. mafic	diamond	100%	pl gn-wh	80(40)			
191	191.5	alt. mafic	diamond	100%	pl gn-wh	80(40)			
191.5	192	alt. mafic	diamond	100%	pl gn-wh	80(40)			
192	192.5	alt. mafic	diamond	40%	pl gn-wh	80(40)			broken, high angle fractures, cb veins, minor clay alt.
192.5	193	alt. mafic	diamond	40%	pl gn-wh	80(40)			
193	193.5	alt. mafic	diamond	40%	pl gn-wh	80(40)			
193.5	194	alt. mafic	diamond	40%	pl gn-wh	80(40)			
194	194.5	basalt	diamond	60%	dk gn	80(40)			194.2-195.25 weathered basalt, ab. Fine cb. Veins, clay in parts
194.5	195	basalt	diamond	60%	dk gn	40			
195	195.5	basalt	diamond	100%	dk gn	40			195.25-196.35 Altered mafic/serpentinite
195.5	196	alt. mafic	diamond	100%	pl gn-wh	40			
196	196.5	alt. mafic	diamond	100%	pl gn-wh	40			196.35-197m clay zone in basalt, poor return
196.5	197	basalt	diamond	20%	dk gn-gy				
197	197.5	basalt	diamond	50%	dk gn-gy				197.3m Fresh, massive basalt, irregular fractures, minor py on fracture planes
197.5	198	basalt	diamond	80%	dk gn-gy				broken core, many core barrel blockages
198	198.5	basalt	diamond	80%	dk gn-gy	20			broken core, many core barrel blockages
198.5	199	basalt	diamond	80%	dk gn-gy	20			broken core, many core barrel blockages
199	199.5	basalt	diamond	80%	dk gn-gy	20			broken core, many core barrel blockages
199.5	200	basalt	diamond	80%	dk gn-gy	20			broken core, many core barrel blockages
200	200.5	basalt	diamond	80%	dk gn-gy	20			broken core, many core barrel blockages
200.5	201	basalt	diamond	80%	dk gn-gy	50(30)			broken core, many core barrel blockages
201	201.5	basalt	diamond	50%	dk gn-gy	50(30)			broken core, many core barrel blockages
201.5	202	basalt	diamond	50%	dk gn-gy	50(30)			broken core, many core barrel blockages
202	202.5	basalt	diamond	30%	dk gn-gy	60(40)			broken core, many core barrel blockages
202.5	203	basalt	diamond	30%	dk gn-gy	60(40)			broken core, many core barrel blockages
203	203.5	basalt	diamond	30%	dk gn-gy	60(40)			broken core, many core barrel blockages
203.5	204	basalt	diamond	30%	dk gn-gy	60(40)			broken core, many core barrel blockages
204	204.5	basalt	diamond	30%	dk gn-gy	60(40)			broken core, many core barrel blockages
204.5	205	basalt?	diamond	0%					204.25m Last retrieved core, piece core lodged sideways in barrel preventing innertube from retrieving core
205	205.5	basalt?	diamond	0%					Drilled to 207.25m, cuttings at top of hole suggested weathered clay zone. On return to hard drilling, no progress. Retrievied drill bit which was destroyed
205.5	206	basalt?	diamond	0%					Drilling terminated
206	206.5	basalt?	diamond	0%					
206.5	207	basalt?	diamond	0%					
207	207.25	basalt?	diamond	0%					