CONTENTS ENVELOPE 6411

TENEMENT: E.L. 1250 - Nackara.

TENEMENT HOLDER: Utah Development Co. Ltd.

CONTENTS ENVELOPE 6797

TENEMENT: E.L. 1372 - Black Rock.

TENEMENT HOLDER: The Shell Company Of Australia Ltd.

EXPLORATION LICENCE 1250

NACKARA - SOUTH AUSTRALIA

PARTIAL SURRENDER REPORT

JANUARY 1986

by: S.T. Mann
Adelaide

CONTENTS

FIGURES

APPENDICES

1. Stream Sediment and Loam Samples
   Job No. Com. 851599.

2. Geochemical Assay Results Sheets for
   Rock Samples. Job No. Com. 850521.

3. Geochemical Assay Results Sheets for
   Stream Sediment Samples. Job No. Com. 850573.

4. Stream Sediment and Rock Chip Sampling
   Geochemical Assays. Job No. Com. 851187.

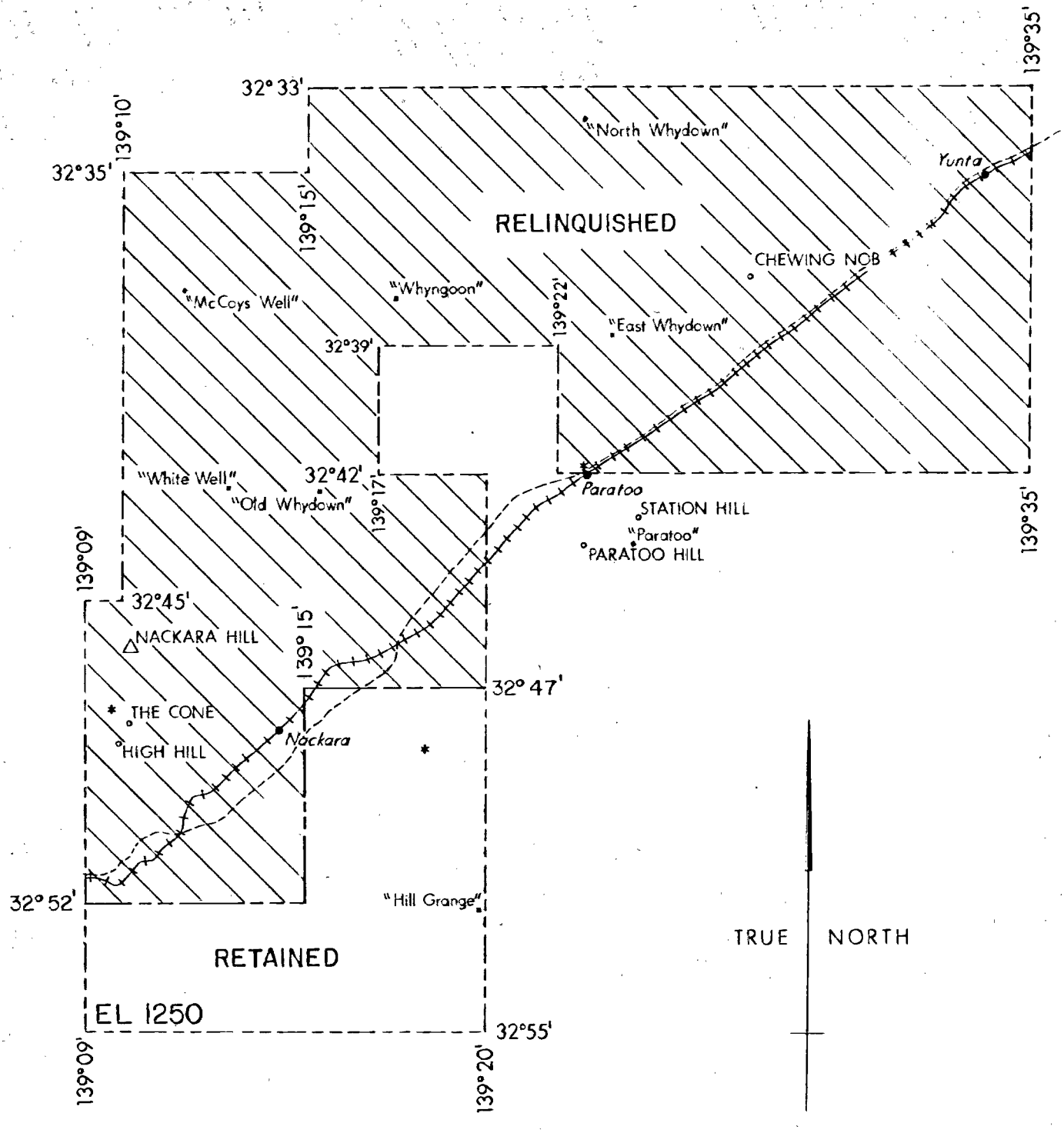

Fig. 1

Centre: Kent Town	THE BROKEN HILL PROPRIETARY CO LTD EL 1250 NACKARA SA. PARTIAL RELINQUISHMENT AREA	Project No: 6-A79-1
Date: 16-5-85		Drawing No: A4-414A

EXPLORATION LICENCE 1250

NACKARA - SOUTH AUSTRALIA

PARTIAL SURRENDER REPORT

JANUARY 1986

1. SUMMARY

Utah Development Company Limited was granted Exploration Licence 1250 Nackara on the 24th September, 1984. Subsequently this Company has been taken over by BHP Minerals Limited.

This report contains mineral exploration data pertaining to the surrendered area of E.L. 1250 - Nackara, the outline of which can be identified on Figure 1.

This partial surrender report discusses the work undertaken within the relinquished area, namely geological mapping, vertical profile traversing, rock chip, loam and stream sediment sampling. In addition, an extensive literature search and ownership search was performed over the licence area. Coloured aerial photographs at 1:40,000 scale were also obtained to enable adequate geological mapping and orientation within the licence area.

The exploration programme within that part of the Exploration Licence surrendered revolved around the search for either a stratabound gold deposit or a placer-type deposit of the same magnitude as other large recognised gold deposits (e.g. Telfer, Western Australia).

Based on the results of the work completed to date, it is concluded that the surrendered area of Exploration Licence 1250 - Nackara is unprospective for the above type of gold mineralization.

2. INTRODUCTION

Exploration Licence 1250, Nackara is located between the townships of Oodlawirra and Yunta in the northeast pastoral area of South Australia (Figure 1).

Utah Development Company Limited, who have subsequently been taken over by BHP Minerals Limited, was granted Exploration Licence 1250 - Nackara, on the 24th September, 1984. The original licence area was approximately 982 square kilometres. It has been decided to surrender part of that area; an area which is defined in Figure 1. The reduced area is 165 square kilometres.

3. RATIONALE

This licence was taken up as part of an ongoing Telfer-style stratabound gold search in South Australia. A number of the characteristics indicative of this type of model were exhibited in the Nackara licence area. The stratigraphic horizon believed to exhibit the most pertinent characteristics of this type of deposit is the contact zone between the Tapley Hill Formation and the overlying Tarcowie Siltstone.

Due to the presence of historical gold prospects in diamictites adjacent to the licence area (Mt. Grainger Goldfield), it was also intended to examine similar horizons within the surrendered area for a large scale placer-type gold deposit. To this end, the Lower Sturtian glacial sequences, namely the Appila Tillite and Wilyerpa Formation were also examined.

4. GEOLOGY

The geology within the Nackara Area is contained within two north easterly trending doubly plunging anticlines. The trend of the fold axis becomes more easterly in the north.

The northmost anticline is called the Paratoo Anticline, and the southernmost anticline is the Nackara Anticline.

Folding is usually symmetric about the axes with tight anticlines. These features characterise the Olary/Nackara arc.

Diapiric/Carbonate Breccia

The oldest rocks in the area are those with diapiric affinities of Willouran? age. The dominant rock type is a carbonate matrix breccia which intrudes upward into the core of the Paratoo Anticline, where the NW trending Paratoo fault intersects the fold axis. Diorite blocks within the diapir are contemporaneous, but of a younger intrusive event.

Torrensian (Burra Group)

Burra Group rocks form the core of the two anticlines. These rocks include siltstone of the Saddleworth Formation in addition to the Nackara and Auburn Dolomites.

Sturtian (Umberatana Group).

Unconformably overlying the Burra Group are sediments of the Umberatana Group.

The Appila Tillite rests unconformably on the Saddleworth Formation. This is a massive boulder tillite or diamictite with interbedded siltstones and sandstones.

The Tapley Hill Formation is conformable above the Appila Tillite with the Tindelpina Shale occasionally at its base. The Tindelpina Shale is carbonaceous and pyritic and well known for its copper anomalism and base metal potential.

The top of the Tapley Hill Formation is often arenaceous. The Tarcowie Siltstone rests conformably on the Tapley Hill Formation.

The former is a well-bedded, wavy laminated siltstone occasionally arenaceous at the base.

Overlying the Tarcowie Siltstone is the Enorama Shale, Pepuarta Tillite, Grampus Quartzite and Ulupa Siltstone.

5. MINERALIZATION

5.1 *Robertson's Mine*.

Robertson's Mine is located 6 km northeast from the Nackara Railway Siding. The workings are now represented by a 165^{o}M trending shallow trench with various 'filled in' shafts sunk at different intervals along the trench. The trench extends for a distance of about 150 metres. Records state that the main shaft (at the northern end? of the trench) had been sunk to a depth of 220 ft.

A grab sample (NK 010R) from ore at the surface of the main shaft assayed 1.30% Cu (malachite) and 0.88 ppm Au. The lode is visible in the old shafts and consists of a 20-30 cm thick concordant quartz-iron vein, dipping approx. 80^{o} to the west.

Country rock is a white, leached sandy schist probably belonging to the Tapley Hill Formation. The geological contact between the Tapley Hill Formation and Tarcowie Siltstone occurs approximately 10 metres stratigraphically above the lode horizon, to the west.

The extent of the lode horizon appears to be controlled by a NE trending foliation (shearing) which crosscuts the bedding.

5.2 *Nob Mines*

The Nob mine workings have been divided into the West Nob and East Nob workings, separated by a distance of about 1,200 metres.

West Nob:

This group consists of many small pits and shafts within a 150 m

radius of each other, situated on a small rocky outcrop.

Ore material on the surface consists of a malachite stained quartz-iron-carbonate 'breccia' with quartz fragments entrained within carbonate-silica. Host rock is a grey, laminated slaty siltstone of Burra Group. Several grab rock samples reported the following assay results:-

NK 001 R	1.50%	Cu
NK 002 R	1.00%	Cu
NK 003 R	11.80%	Cu + 1.15 ppm Au
NK 004 R	8.60%	Cu + 0.67 ppm Au

East Nob:

These workings consist of several deep shafts and various pits. Ore material is a brown iron-rich quartz 'breccia' with some haematite, and minor copper carbonates. The host rock is a grey laminated siltstone to fine grained sandstone which is quite siliceous. The East Nob workings also occur within the Burra Group.

5.3 *Whydown Prospect*

A rather extensive group of workings occur 3 km west of the Paratoo Railway Siding. The workings consist of many shafts and various trenches which extend for about 700 metres in a NE direction.

Various smaller scratchings to the NE and SW of the main workings extend the horizon over a distance of about 3.5 km.

The main workings occur on a 30-40 cm thick quartz lode, concordant within the Appila Tillite. The lode horizon occurs close to the Appila Tillite/Tapley Hill Formation contact. Dip is 55^{o} to SE.

Ore is iron-manganese-siderite-pyrite quartz vein material. Hanging wall alteration is evident in places as a dark brown siliceous rich rock with thin concordant quartz veins.

Six grab rock samples were taken from along the line of lode. The two best results are:-

NK 014 R	0.52 ppm Au
NK 041 R	3.00 ppm Au

These workings are contained within anomalous area D on Figure 3.

5.4 *Nackara Reward*

This prospect is situated 10 km east of the Nackara Railway Station immediately adjacent to the Exploration Licence boundary. It occurs on the Hog Back Range, where on the hilltop there is a strong quartzite outcrop (Ulupa Siltstone?) containing small veins, shears and leaders of quartz. These are irregular, have no general strike, and occasionally show coarse specks of gold. The outcrop has been broken in places, but no shafts have been sunk.

On the east side of the range a tunnel has been driven for 77 metres. The rock driven through is chiefly sandstone and quartzite. Small amounts of pyrite occur in the rock from the 52 metre mark.

From the historical records, 8 tons of material treated at the Peterborough Battery gave 5 dwts. per ton gold.

5.5 *Wheal Bassett*

This mine is located 5 kms south from the Nackara Railway Station. By 1892 four shafts had been sunk on a calcareous mullocky vein stained with malachite. No. 1 shaft was down to 50 metres, the others from 12 to 15 metres.

These workings occur in black Tindelpina Shale along a NE striking shear, which is parallel to and west of the apparently conformable

contact with the Appila Tillite which dips 60°W.

5.6 *Paratoo Mine*

The Paratoo Copper Mine is located about 6.5 km west of the Paratoo Railway Station. The mine and its environs lie in siltstones and dolomitic siltstones provisionally equated with the upper carbonate units of the Burra Group. A dolomite which "intrudes" the siltstones is thought to be mobilized older rock which occurs in a diapiric structure.

Basic igneous rocks classified as diorites and microdiorites intrude the dolomite in the diapir and Burra Group sediments. Acid igneous rock classified as granite has been identified as intruding black carbonaceous siltstone in sediment in the western part of the mine area.

Copper occurs mainly as malachite, but also as sulphide with rare silicate occurrences. Most of the malachite occurs as fracture fillings both across and along bedding planes. Some malachite occurs as detrital grains either rounded or angular and these appear to be allogenic. The copper sulphides are associated with quartz veins and are epigenetic.

Reserves estimated by SADME in 1965 for areas where widths and grades can be reasonably assumed, total 4050 tons per vertical foot of mineralized rock averaging 1% copper.

6. EXPLORATION ACTIVITIES

6.1 *Property Consultants*

Maloney Field Services were contracted by Utah Development Company Limited to perform an ownership search and make contact with all landowners affected by the Exploration Licence.

Approximately 30 separate ownerships occur over the area to be surrendered. The land tenure is dominantly Perpetual Leasehold or Freehold (as against Pastoral Leasehold).

Notices of Entry, Notices of Use of Declared Equipment and Waivers of Notice of Entry were served on the landholders.

6.2 *Previous Work*

Some seven companies have explored the Nackara area including work carried out by the S.A. Dept. of Mines and Energy. The Nackara area has also been subject to diamond exploration. SADME assessed the economic potential of the Paratoo Copper Deposit and mapped the old workings in mid-1965.

Kennecott Explorations (Aust.) Pty. Ltd. also carried out extensive exploration over the Paratoo Mine Area, between 1965 and 1967, as did Union Oil Development Corp. in 1969 and 1970.

Another copper deposit southwest of the Paratoo Mine, the Wheal Bassett, was the target for exploration by Ausminda Pty. Ltd. in 1966.

A very intensive stream sediment sampling programme was conducted by Rhodes Exploration Pty. Ltd. and Attorana Search Pty. Ltd. for Rhodes Exploration in 1970 and 1971. Base metals were the target elements.

Gold-Copper Exploration Ltd. also undertook intensive sampling in 1970 and 1971. Copper was the main target element, however gold was sought in the Mt. Grainger area to the west of E.L. 1250.

Diamond exploration has been carried out by Stockdale, Swan Resources, Gem Exploration and Dampier Mining.

6.3 *Aerial Photography*

Coloured aerial photographs at a scale of 1:40,000 were obtained from the Lands Department to cover the entire exploration licence. The 1:40,000 aerial photographs enabled broad regional geological mapping to be undertaken.

6.4 *Geological Mapping*

Approximately 4 square kilometres of geological mapping (including four vertical profile traverses, totalling 2,005 m) were completed at 1:50,000 scale. The traverses were pegged, logged and randomly sampled using rockchip geochemistry, over prospective lithologies.

Most of the mapping was carried out around Chewing Nob in the Paratoo Anticline, but minor mapping was also undertaken around the southern closure of this anticline.

6.5 *Diamond Sampling*

A total of 29 heavy mineral stream sediment samples and 8 loam samples were collected within Exploration Licence 1250 to test the kimberlite potential of the area (Figure 2). At each site a 20 kilogram sample of minus 4mm stream sediment or loam was collected. This sampling was supervised by an experienced geologist. Samples were collected where the heavy mineral content of the stream sediment was at a maximum for the drainage channel. The samples are prefixed RT and were sited where tracks crossed the active drainage of the area.

The samples were dispatched to our Belmont Laboratory in Western Australia where a heavy mineral concentrate was prepared. These were then observed for kimberlitic indicators.

At sample sites RT 1793 - RT 1798, RT 1822 and RT 1825 a geochemical silt sample was also collected. These were analysed by Comlabs Pty Ltd. in Adelaide for 13 elements. The 13 elements were copper, lead, zinc, nickel, cobalt, chromium, gold, arsenic, niobium, zirconium, cerium, lanthanum and barium and the results are shown in Appendix 1.

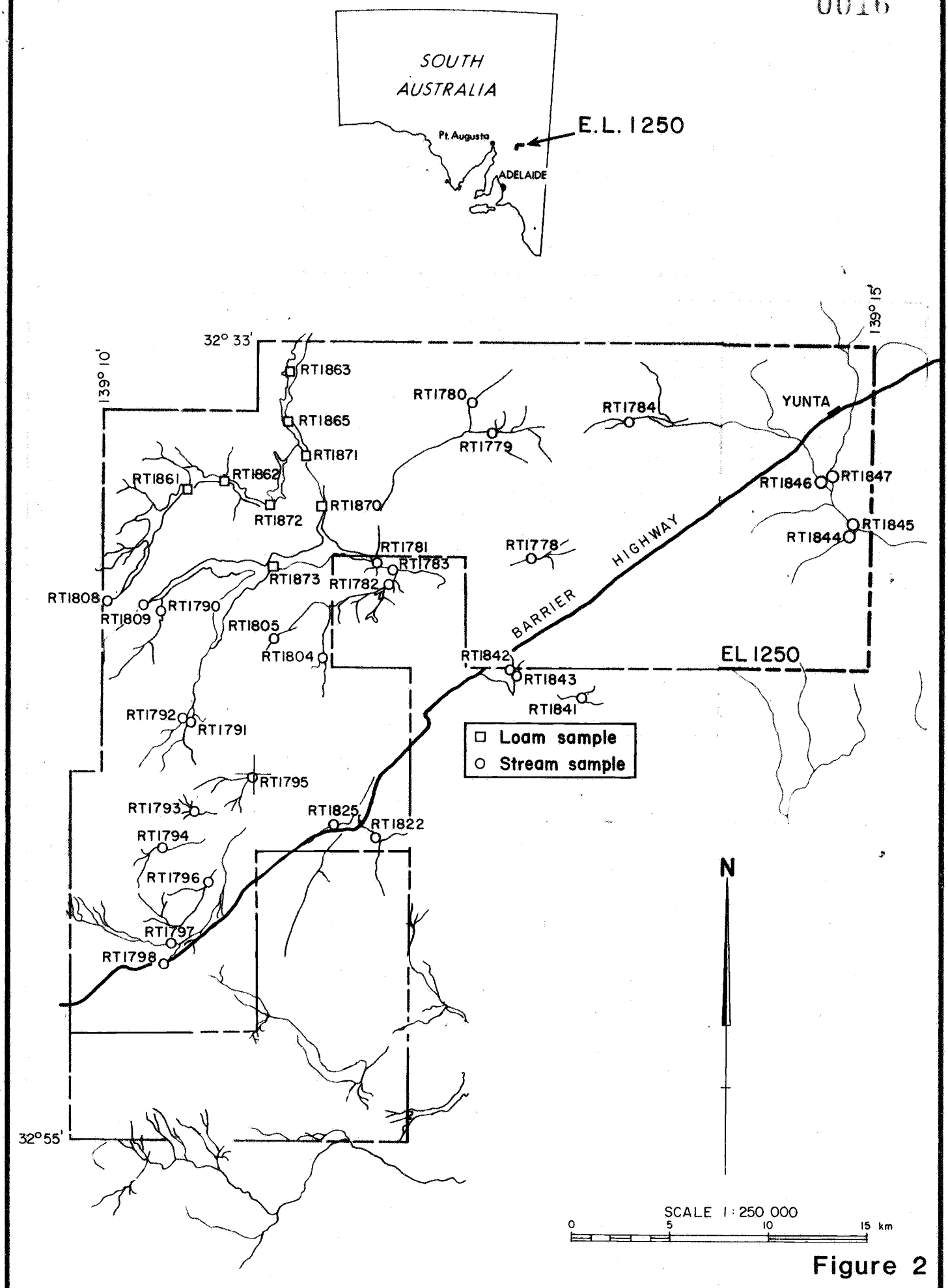

Figure 2

Centre: ADELAIDE	THE BROKEN HILL PROPRIETARY CO. LTD.	Project Nº: 6-A79-5
Date: 29·10·85	E.L. 1250 NACKARA, S.A.	Drawing Nº: A4-440A
	DIAMOND SAMPLING	

6.6. *Rock Chip and Stream Sediment Sampling Programme*

A detailed rock chip and stream sediment sampling programme covering both the northern and southern anticlines has been carried out. The location of the samples are identified on Figures 3, 4.

In all 94 stream sediment samples and 28 rock chip samples were collected. All samples were assayed for Cu, Pb, Zn, As, Ag and Au by Comlabs Pty. Ltd. in Adelaide.

The sampling programme was carried out in two stages. The first, over the northern Paratoo Anticline involved the collecting of 23 rock chip and grab samples and 74 stream sediment samples. Of the 23 rock chip and grab samples collected, 18 were collected from ore dumped at the surface of old mine pits. The most significant gold result was from the Whydown Prospect where one sample assayed 3 ppm Au. Other values of 1.43, 1.15, 0.88, 0.67 and 0.52 Au were also recorded. (Appendix 2) The regional stream sediment sampling programme was primarily aimed at the detection of gold mineralization and for that reason, care was taken to select suitable heavy mineral trapsites.

A minimum of about 2.5 kg, but on average 4 kg, constituted the sample which was sieved in the field using a 20# mesh screen. A total of 74 samples were taken, covering the northern half of the licence.

The assay results for all samples are presented in Appendix 3. Of the 74 sample results, 11 are considered to be anomalous in gold (10 ppb). Concentrations of anomalous gold are shown on Figure 3 as zones A to E.

Zone A:

This area contains 4 anomalous stream sediment samples in creeks draining a N-S trending line of hills, 1 km east of Old Whydown Homestead. The anomalous zone is about 2.5 km long.

Geology within the zone is essentially the geological contact between the Tapley Hill Formation and Tarcowie Siltstone of the Umberatana Group. The best stream sample result was 30 ppb Au, draining east from the hills. This same sample also reported high values for Cu, As and Mn (i.e NK 551C).

A grab rock sample from a small pit within the zone assayed 1.45 ppm Au (NK 008R).

Several samples occurring to the south of Zone A (Nos. 540, 541, 542) are all anomalous in As and have mild Cu anomalism. The one sample which is anomalous in Au also has the highest As and Cu values.

Zone B:

This is a small zone with two values of 20 ppb Au from creeks draining the Appila Tillite. A cross-cutting SE trending fault occurs just to the north.

Zone C:

Three anomalous gold values, all of 10 ppb, define a zone 1.5 km in length along a NE trending line of hills composed of Appila Tillite.

Two of the anomalous gold values are also anomalous in As, Cu and Mn. A rockchip value of 0.33 ppm Au was recorded in a small pit within the Appila Tillite (NK 011R).

Zone D:

This zone encircles an area in which extensive mining has previously taken place. This particular area is referred to as Whydown Prospect in Section 5.3 of this report above.

Only one anomalous stream sediment sample is located within Zone D; however, several grab rock samples, one assaying 3 ppm Au, have confirmed anomalous gold.

The stream sample anomalous in gold is also anomalous in As and Cu.

Zone D can probably be combined with Zone C to give an anomalous strike length of over 3 km.

Zone E:

This zone contains one anomalous gold value of 10 ppb which probably reflects the gold mineralization of West Nob Mine. Gold mineralization of the mine was confirmed by two grab rock samples assaying 1.15 ppm Au and 0.67 ppm Au.

Mild Cu and large Mn anomalism is reported in this stream sample also.

The second stage of rock chip and stream sediment sampling involved the collection of five rock chip and 20 stream sediment samples to the south of the Exploration Licence. (Appendix 4)

The majority of these stream sediment samples were collected from the top of the Appila Tillite, while the remainder were collected from areas draining the Ulupa Siltstone and Pepuarta Tillite.

The Wheal Basset mine was relocated, having been marked incorrectly on published topographic sheets. Highly anomalous copper assays were recorded from this locality, where malachite staining of the Tindelpina Shale occurs.

Two samples (NK 108, NK 109), collected from small pits in arenites near the Ulupa Siltstone/Pepuarta Tillite contact, returned gold assays below the limit of detection.

No significant gold was detected from stream sediment samples collected from the closure of the anticline.

APPENDIX 1

STREAM SEDIMENT AND LOAM SAMPLES

Comlabs Job No. 851599

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

0021

Head Office and Central Laboratory
305 South Road
Mile End South,
Sth. Aust. 6031.
Tel: (08) 43 5722
Telex: AA89323

NATA REGISTERED No. 1526

OUR REF.: COM851599

YOUR REF.: Sheet 008731

Mr. R.J. Taylor
BHP Exploration Co. Ltd.
125-129 Rundle Street
KENT TOWN

SA 5061

September 17, 1985

Dear Sir

RE: JOB COM851599

Enclosed are the assays for the samples delivered to our laboratory on September 3, 1985

Yours Sincerely,
COMLABS PTY LTD

per :

c.c.: Camberwell - BHP No. of copies : 1
c.c.: Adelaide - BHP No. of copies : 1

Report Length 4 pages

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM851599
O/N : Sheet 008731

SAMPLE	Cu	Pb	Zn	Ni	Co	Cr	Au
RT 1793	28	20	90	34	16	16	<5
RT 1794	22	18	75	20	10	12	(9
RT 1795	24	26	65	30	16	12	<5
RT 1796	14	22	48	16	10	16	(5
RT 1797	24	20	80	22	14	10	<5
RT 1798	32	20	85	30	16	14	<5
RT 1822	24	24	75	36	20	20	<5
RT 1825	20	26	95	30	12	20	(7)
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppb
SCHEME	AAS1	AAS1	AAS1	AAS1	AAS1	AAS2	AAS5C

SAMPLE	As	Nb	Zr	Ce	La	Ba
RT 1793	4	14	210	40	40	280
RT 1794	4	14	240	40	20	230
RT 1795	4	10	175	40	30	280
RT 1796	2	10	185	20	30	150
RT 1797	7	14	260	30	40	270
RT 1798	7	14	210	40	40	330
RT 1822	4	14	240	60	40	270
RT 1825	6	10	175	20	30	185
UNITS	ppm	ppm	ppm	ppm	ppm	ppm
SCHEME	XRF1	XRF1	XRF1	XRF1	XRF1	XRF1

APPENDIX 2

GEOCHEMICAL ASSAY RESULTS SHEETS FOR ROCK SAMPLES

Comlabs Job No. 850521

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

Head Office and Central Laboratory
305 South Road
Mile End South,
Sth. Aust. 5031.
Tel: (08) 43 5722
Telex: AA89323

0024

NATA REGISTERED No 1526

23 rockchips from known mineralization (old workings) in EL. 1250

OUR REF: COM850521

YOUR REF: 008701

Mr. M. Dugmore
BHP Exploration Co. Ltd.
125-129 Rundle Street
KENT TOWN

SA 5061

April 11, 1985

Dear Mark

RE: JOB COM850521

Enclosed are the assays for the samples delivered to our laboratory on April 1, 1985

Yours Sincerely,
COMLABS PTY LTD

per :

P R Howey

Report Length 1 pages

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM850521
O/N : 008701

SAMPLE	Cu	Pb	Zn	Ag	As	Au
NK001 R	1.50%	26	32	<1	65	0.43
NK002 R	1.00%	6	9	<1	12	0.13
NK003 R	1.8%	10	22	<1	55	1.15
NK004 R	0.60%	8	16	<1	50	0.67
NK005 R	550	8	18	<1	36	0.08
NK006 R	7100	4	10	<1	90	0.11
NK008 R	36	12	14	<1	85	1.45
NK010 R	1.30%	14	42	4	150	0.88
NK011 R	450	<4	18	<1	810	0.33
NK014 R	240	4	36	<1	260	0.52
NK015 R	330	26	75	<1	170	0.12
NK029 R	150	14	8	<1	22	0.07
NK031A R	320	8	18	<1	1750	0.10
NK031B R	55	6	18	<1	1200	0.07
NK033 R	28	8	44	<1	115	0.03
NK034 R	60	6	22	<1	85	0.02
NK035A R	7800	6	12	<1	32	0.01
NK035B R	2.50%	4	9	<1	12	0.32
NK039A R	1.35%	6	60	<1	280	0.09
NK039B R	9600	<4	26	<1	145	0.04
NK041 R	165	10	24	<1	100	3.0
NK042 R	36	4	6	<1	100	0.12
NK043 R	32	6	22	<1	170	<0.01
UNITS	ppm	ppm	ppm	ppm	ppm	ppm
SCHEME	AAS1 AAS1A	AAS1	AAS1	AAS3	XRF1	FAS1

APPENDIX 3

GEOCHEMICAL ASSAY RESULTS SHEETS FOR STREAM SEDIMENT SAMPLES

Comlabs Job No. 850573

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

0027

Head Office and
Central Laboratory
305 South Roa
Mile End South
Sth. Aust. 5031
Tel: (08) 43 572
Telex: AA8932

NATA REGISTERED No 1526

OUR REF COM850573

YOUR REF A79 008702

Mr. M. Dugmore
BHP Exploration Co. Ltd.
125-129 Rundle Street
KENT TOWN

SA 5061

April 12, 1985

Dear Mark

RE: JOB COM850573

Enclosed are the assays for the samples delivered to our laboratory on April 4, 1985

Yours Sincerely,
COMLABS PTY LTD

per :

c.c.: Mr. D. Jarvis No. of copies : 1

Report Length 3 pages

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM850573
O/N : A79 008702

SAMPLE	Au	Cu	Pb	Zn	Mn	As	Weight
NK500	8	34	14	34	410	22	2300.0
NK501	<5	32	28	80	620	14	3600.0
NK502	<5	24	18	55	710	10	2300.0
NK503	<5	24	14	44	560	14	3000.0
NK504	<5	30	10	36	450	30	4000.0
NK505	<5	55	14	42	490	80	3500.0
NK506	8	38	38	80	1600	28	2500.0
NK507	<5	20	16	46	650	20	5500.0
NK508	<5	24	12	42	560	22	3500.0
NK509	<5	34	24	46	700	48	3100.0
NK510	<5	36	30	60	1100	18	3700.0
NK511	<5	40	32	60	1050	16	2900.0
NK512	<5	40	16	55	840	20	3900.0
NK513	<5	26	18	44	430	16	2500.0
NK514	<5	55	36	60	580	40	2400.0
NK515	<5	36	32	75	690	12	2500.0
NK516	<5	60	12	34	1290	70	2400.0
NK517	<5	70	26	44	1450	185	3000.0
NK518	<5	46	16	34	1000	60	2500.0
NK519	<5	32	12	55	600	34	2600.0
NK520	<5	20	12	30	380	18	2900.0
NK521	<5	28	8	28	400	26	3300.0
NK522	<5	44	12	36	730	36	3100.0
NK523	<5	30	12	24	730	22	3800.0
NK524	<5	32	14	30	490	28	3200.0
UNITS	ppb	ppm	ppm	ppm	ppm	ppm	gram
SCHEME	AASSC	AAS1	AAS1	AAS1	AAS2	XRF1	WEIGHT

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM850573
O/N : A79 008702

SAMPLE	Au	Cu	Pb	Zn	Mn	As	Weight
NK525	<5	24	10	24	400	18	5400.0
NK526	<5	18	12	38	350	10	4600.0
NK527	<5	30	26	65	3100	14	4200.0
NK528	<5	24	16	55	620	14	4600.0
NK529	<5	36	24	40	570	22	4600.0
NK530	6	22	6	30	370	8	3000.0
NK531	10	55	46	60	1250	42	4300.0
NK532	8	50	24	36	1400	26	4300.0
NK533	7	55	38	46	1100	32	4100.0
NK534	<5	18	12	32	350	14	5600.0
NK535	<5	24	20	42	400	20	5600.0
NK536	<5	20	8	24	650	20	7200.0
NK537	<5	22	8	18	540	14	5400.0
NK538	<5	18	4	24	420	8	5300.0
NK539	<5	50	22	60	2850	80	2600.0
NK540	8	75	30	48	1350	90	4500.0
NK541	10	80	16	36	580	155	3200.0
NK542	7	55	26	36	550	90	3500.0
NK543	6	40	12	46	520	30	4500.0
NK544	10	32	10	46	480	22	2400.0
NK545	6	30	16	50	450	18	3100.0
NK546	20	50	20	42	830	48	2900.0
NK547	20	20	30	80	900	28	3800.0
NK548	<5	48	34	90	1600	38	4400.0
NK549	8	44	16	50	1500	40	3100.0
UNITS	ppb	ppm	ppm	ppm	ppm	ppm	gram
SCHEME	AAS5C	AAS1	AAS1	AAS1	AAS2	XRF1	WEIGHT

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM850573
O/N : A79 008702

SAMPLE	Au	Cu	Pb	Zn	Mn	As	Weight
NK550	20	32	40	165	550	34	4900.0
NK551	30	115	32	55	1500	105	4100.0
NK552	9	80	24	70	730	55	2900.0
NK553	9	50	10	32	600	36	4000.0
NK554	5	70	26	60	1550	38	4100.0
NK555	<5	65	28	65	1500	40	2700.0
NK556	<5	38	20	65	1350	30	3000.0
NK557	<5	65	32	60	1500	46	4500.0
NK558	10	55	12	34	1200	85	3100.0
NK559	9	75	14	34	1650	180	4200.0
NK560	<5	80	4	22	1300	65	3900.0
NK561	8	70	6	32	1200	65	4000.0
NK562	6	46	8	32	930	26	3200.0
NK563	10	60	6	30	1750	32	3900.0
NK564	10	60	12	46	1500	90	3700.0
NK565	<5	48	24	90	1100	26	2900.0
NK566	7	55	12	36	1050	46	4100.0
NK567	<5	50	16	65	820	24	4300.0
NK568	10	85	26	75	1550	125	7600.0
NK569	<5	46	20	55	1250	28	7300.0
NK570	<5	40	18	95	750	12	7200.0
NK571	<5	40	32	105	600	14	7800.0
NK572	<5	20	20	48	540	9	6700.0
NK573	8	32	34	100	460	10	7800.0
UNITS	ppb	ppm	ppm	ppm	ppm	ppm	gram
SCHEME	AASSC	AAS1	AAS1	AAS1	AAS2	XRF1	WEIGHT

APPENDIX 4

STREAM SEDIMENT AND ROCK CHIP SAMPLING GEOCHEMICAL ASSAYS

Comlabs Job No. 851187

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

Head Office and Central Laboratory
305 South Road,
Mile End South,
Sth. Aust. 5031.
Tel: (08) 43 5722
Telex: AA89323

0032

Received 22/7/85

NATA REGISTERED No 1526

EL1250 (Nackara)
Stream Sediment Samples
Nackara, Adelaide

OUR REF:

YOUR REF: COM851187

A79 Sheet 008719

Mr. S. Mann
BHP Exploration Co. Ltd.
125-129 Rundle Street
KENT TOWN

SA 5061

July 22, 1985

Dear Stephen

RE: JOB COM851187

Enclosed are the assays for the samples delivered to our laboratory on July 8, 1985

Yours Sincerely,
COMLABS PTY LTD

per :

c.c.: BHP ADELAIDE No. of copies : 1

Report Length 2 pages

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM851187
O/N : A79 Sheet 008719

SAMPLE	Cu	Pb	Zn	Ag	Au	As
NK125	20	12	55	<1	<5	16
NK126	22	16	75	<1	<5	20
NK127	20	20	75	<1	<5	22
NK128	28	26	105	<1	<5	44
NK129	24	26	115	<1	8	44
NK130	2.40%	<4	9	<1	7	260
NK131	1.60%	6	16	1	5	50
NK132	60	26	75	<1	6	34
NK133	36	8	30	<1	<5	10
NK134	24	12	65	<1	8	14
NK135	30	16	170	<1	10	16
NK136	22	16	90	1	6	14
NK137	16	16	40	<1	20	8
NK138	16	16	44	<1	7	7
NK139	9	4	18	<1	5	4
NK140	9	8	14	<1	20	5
NK141	12	8	32	<1	20	7
NK105	24	22	70	<1	20	18
NK106	24	28	80	<1	7	12
NK107	38	18	65	<1	<5	6
NK108	60	4	14	<1	<5	6
NK109	185	18	38	<1	<5	6
NK115	60	16	55	<1	<5	65
NK116	40	18	70	<1	10	38
NK124	16	14	50	<1	<5	16
UNITS	ppm	ppm	ppm	ppm	ppb	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS5C	XRF1

139°15' 139°20' 139°25' 139°30' 139°35'

32°33'

139°10'

32°35'

32°40'

32°45'

139°18' 32°39'

139°22' 32°39'

139°20' 32°42'

139°10' 32°45'

139°15'

Mc Coys Well

"Whyngoon"

"East Whydown"

"White Well"

"Old Whydown"

Paratoo Mine

Robertson Mine

Whydown Workings

West Nob Workings

East Nob Workings

NKT001

NKT002

NKT003

NKT004

Highway

Barrier

Yunta

LOCATION MAP

Sampled Area

ADELAIDE

0 200 400 KILOMETRES

LEGEND

- Highway, unsealed road
- Homestead
- Stream sediment sample with prefix NK530C
- Rock chip sample with prefix NK039R
- Mine or workings
- Areas of anomalous gold
- Quarry or pit
- Traverse

ROCK CHIP SAMPLE RESULTS

- ⩽ 0.01ppm
- ⩾ 0.01 - 0.5ppm
- ⩾ 0.5 - 1ppm
- ⩾ 1 - 3ppm

STREAM SEDIMENT SAMPLE RESULTS

- ⩽ 5
- ⩾ 5 - 9ppb
- ⩾ 10ppb
- ⩾ 20ppb
- ⩾ 30ppb

TN

1:50,000

0 1 2 3 4 5 kms

Taken from 1:50000 topographic plans – BUNDARA, PARATOO S.A.

E.L. 1250

Figure 3

THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPARTMENT

E.L. 1250 NACKARA S.A.
TRAVERSE STREAM SEDIMENT AND ROCK CHIP SAMPLE LOCATIONS AND RESULTS

Revisions:			
Drawn: M.Duigmore	Date: 21-5-85	Centre: Kent Town	
Traced: J.A.Mitris	Project No: 6-479-2	Drawing No: A1-768	
Checked:			

6411-1

139°10'
32°45'
139°20'
32°45'
32°47'
32°52'
32°55'
139°10'
139°15'
139°20'
32°55'

△NACKARA HILL

Duplicate 138 137
139
141
140
133
134
135
136
132
105
108 109 (R)
106 (S) 107 (R)
Nackara
Wheal Bassett 130 131 (R)
129
128
127 126 Duplicate
125
124
116 115
RELINQUISHED AREA
Hill Grange
E.L. 1250

"Wabricoale"
139°15'
32°33'
32°33'
Yunta
32°39'
32°42'
139°35'
Nackara Hill
Nackara
Sampled Area
32°55'
139°09'
139°20'
0 10 20 30 40 50kms
1:1000000
LOCALITY MAP

30°
Lake Frome
Lake Torrens
Lake Gairdner
Broken Hill
Pt. Augusta
EL 1250
ADELAIDE
35°
0 200 400km
LOCATION MAP

LEGEND

- Stream sediment sample (S), prefixed NK
- Rock chip sample (R), prefixed NK
- Petrological sample, prefixed NK
- Workings
- Major road, track
- Creek
- E.L. Boundary

TRUE NORTH

0 1 2 3 4 5km
1:50000

Figure 4

Taken from 1:50000 topographic plans - NACKARA, PITCAIRN.

THE BROKEN HILL PROPRIETARY CO. LTD. EXPLORATION DEPARTMENT		
EL. 1250 NACKARA S.A. STREAM, ROCK AND PETROLOGICAL SAMPLE SITES.		
Drawn: S.T. Mann	Date: 19-7-85	Centre: Adelaide
Traced: J.A. Mitris	Project No: 6-A79-3	Drawing No: A2-432
Checked:		

Revisions

6411-2