FINAL REPORT

EXPLORATION LICENCE 5155

MOUNT STOW

NORTHERN TERRITORY

OPEN FILE
ALSO PREVIOUS
Reports

CORONATION HILL GOLD MINES NL

FEBRUARY 1990

C O N T E N T S

L I S T O F FI G U R E S

A P P E N D I C E S

1. INTRODUCTION

Exploration Licence 5155 was granted on 13th August 1987 to Coronation Hill Gold Mines NL for a term of six years.

The tenement consisted of 29 one minute square blocks and covered approximately 100 square kilometres commencing 70 kilometres NNE of Katherine townsite (Fig 1). The area was located on Mt Stow 1:100,000 and Mt Evelyn 1:250,000 topographic maps and was also subject to Eva Valley Pastoral Lease and Land Claim.

Access to the area is poor with no track or road access. An old track from the headwaters of the Fergusson River to Keckwick Springs, some few kilometres from the licence area has become overgrown and is unusable.

On 6th April 1988, a Joint Venture Agreement was entered into between Coronation Hill Gold Mines NL and Stockdale Prospecting Limited. Stockdale withdrew from the Joint Venture effective from 12th March 1989.

Coronation Hill Gold Mines NL surrendered Exploration Licence 5155 on 14th November 1989.

2. PHYSIOGRAPHY, CLIMATE AND VEGETATION

The area covered by the exploration licence includes the physiographic divisions of the Granite Areas and Uplands in the west and the Arnhem Land Plateau in the east.

The Granite Areas consist of rock, rounded hills with expanses of bare rock and a typical drainage pattern of converging alluvial and eluvial flats. The Uplands are characterized by steep-sided hills and narrow valleys. The Arnhem Land Plateau is cut by deep gorges eroded along joint and fault planes.

The vegetation is densely wooded in the lower areas, becoming sparse with elevation.

The climate is monsoonal with a short, wet season from late November to late March, and a long dry season for the remainder of the year (adapted from Randal, 1963).

3. GEOLOGY

Exploration Licence 5155 lies at the southeastern end of the Early Proterozoic Pine Creek Geosyncline. The oldest rocks exposed are sediments of the Mount Bonnie and Burrell Creek Formations. This moderately highly folded sequence is unconformably overlain by gently dipping rhyolites and

ignimbrites of the Plum Tree Creek Volcanics (Edith River Groups). A further unconformity separates a flat lying sequence of Cretaceous sandstones, quartzites and conglomerates. Residual soils are developed on all lithologies and river valleys have a thin alluvial cover. The area has been geologically mapped by BMR/NTGS and falls within 1:500,000 Pine Creek Regional and 1:100,000 Stow map sheets. Field investigations used 1974 colour air photography at 1:25,000 scale for site location and preliminary photogeological interpretation.

The oldest lithologies within EL 5155, Mount Bonnie (South Alligator Group) and Burrell Creek Formation (Finniss River Group), host major gold deposits at other locations within the Pine Creek Geosyncline. These gold deposits are commonly associated with major anticlinal axes. The structure of the sequence within EL 5155 was examined to establish any referred target areas for detailed investigation. An additional structural feature of potential importance to mineralisation is the Lambell Fault. This major fault is parallel to the South Alligator Fault and probably represents the continuation of the Little Mary Fault shown on 1:500,000 Pine Creek Regional Geology.

4. WORK CARRIED OUT BY STOCKDALE PROSPECTING

As part of a regional exploration programme within this and the surrounding Stockdale Exploration Licence 5137 a number of reconnaissance stream samples were collected in Snake Creek and tributaries to the Katherine River.

A number of Aboriginal sites of significance occur in the area. Sample sites were identified and cleared for sampling with the Jawoyn Community in 1987. All sites of significance were avoided.

RECONNAISSANCE SAMPLING

A total of 8 samples were collected both in the Snake Creek catchment and a more northerly tributary of the Katherine River (see Fig. 2). One loam sample was collected from the undrained plateau country in the south-west corner of the licence. One loam sample, BC 0913 was collected downslope from a photo feature. (Available RC9 photos were studied for anomalous features typical of intrusive bodies).

Sample size (screened) varied from 174 kgs in BC 0509 down to 11 kgs in BC 0592. Samples were screened on site to -2.0mm/+0.3mm although on occasion 0.4mm was used as the lower cut-off. Full details are shown in Appendix 1.

Samples were lifted out by helicopter and transported to Darwin for processing. Concentrates were then consigned to

the SPL Melbourne Laboratory for bromoforming and sorting.

Only chromites were recovered, as detailed in Appendix 1. BC 0508 clearly stands out as being anomalous as does BC 0567. However, a sample, BC 0555 falling just to the east of EL 5155 within EL 5137 recorded abundant counts of chromite, so follow up was concentrated upstream of this site rather than around BC 0508.

FOLLOW-UP SAMPLING

The chromites in BC 0555 were so numerous that follow up commenced prior to Melbourne results being received, the chromites being readily visible in the Darwin Treatment Plant. Some 27 were collected upstream of BC 0555 and within EL 5155 (see Fig.3). These samples were of small size and were hand jigged in the field to quickly ascertain whether the abundant chromite counts could be rapidly traced back to source. This method proved inconclusive however, and so the samples were sent off to Darwin for further concentration prior to being consigned to the laboratory for examination.

The results when received showed why the field examination had been so inconclusive, with very disappointing counts being reported (see Appendix 1).

Upstream of BC 0508 two small samples were later collected, but again only trace quantities of chromite were recovered.

Close interval magnetometer readings were taken along the length of the positive drainage upstream of BC 0555 in a further attempt to rapidly home in onto a source for the chromites in BC 0555. No anomalies of any note were however recorded.

INTERPRETATION

The disappointing low chromite counts upstream of both BC 0555 and BC 0508, coupled with no obvious magnetic anomalies of note along the length of the BC 0555 drainage put to an effective stop any further work within EL 5155. Attention was focussed within the neighbouring EL 5137 where the chromite trails were easier to follow. It was our intention to trace one of these trails back to source and determine the nature of that source. If the source turned out to be of a type likely to host diamonds then further work would have been carried out within EL 5155. Unfortunately, this was not to be the case. Chromites were washed from a discrete but highly weathered body within EL 5137 which, based on limited petrographic examination due to the weathered nature of the body was determined to be of alkali basalt affinity with olivine phyric and aphyric vesicular basaltic lavas and tuffs which appear to have undergone greenschist metamorphism.

GEOCHEMICAL SAMPLING

Geochemical samples were collected at the following sample sites:

BC0507
BC0508
BC0509
BC0562
BC0564
BC0567
BC0592
BC0913
BC2198
BC2199

All geochemical samples were consigned to Melbourne for analysis. Insufficient material (<5gm) was available for BC 0564 so no analyses were carried out on this sample.

Results for the remaining nine samples are contained in Appendix 2.

No follow up to any of these geochemical samples are undertaken.

5. WORK CARRIED OUT BY CORONATION HILL GOLD MINES NL

Field traverses completed during helicopter supported stream sediment sampling, were designed to examine potentially prospective lithologies and structural settings. A total of nine traverses were made for a combined distance of 14km (Fig 5). Geological data collected are superimposed on BMR geological mapping (Stow 1:100,000) reproduced at 1:50,000 as Fig 4.

Geological settings examined include:

- anticlinal closures in Burrell Creek Formation at the west and centre of EL 5155
- Lambell Fault along Snake Creek
- anticlinal closure in Mount Bonnie Formation to the east of Lambell Fault
- anticlinal Mount Bonnie Formation in the north of EL 5155.

These traverses did not encounter mineralisation. Bedding and cleavage data confined the folded nature of the western Burrell Creek Formation. As may be expected, actual fold axes are not exactly as shown on BMR geological interpretation. Minor quartz veins encountered were sampled

and assayed for gold and arsenic. Gold values did not exceed 0.01 ppm Au and arsenic values did not exceed 60 ppm As. Samples of minor quartz veins in Mount Bonnie Formation returned similarly low values with maximum of 0.02 ppm Au and 75 ppm As. All rock chip data acquired is recorded in Appendix 1. The structure is broadly as shown on BMR mapping except for the anticlines at Mt. Stow itself which could not be demonstrated.

A total of 103 unscreened sediment samples (approximately one sample per square kilometre) were collected to evaluate gold distribution throughout EL 5155 (Fig 5). Samples were collected from active sediment across each stream and weighed approximately 5 kilograms each. Pebbles and cobbles were omitted when possible. All samples were submitted to Classic Comlabs in Darwin for determination of gold by BLEG cyanide leach techniques.

Each sample was statically leached using 0.05CN solution for a total of 48 hours after initial agitation for one hour and repeated one hour agitation at 24 hours. A 150 ml aliquot was then extracted into DIBK and analysed using graphite furnace. AAS techniques to 0.05 ppb Au detection limit. Results are given in Appendix 4.

Gold results are very low when considered in a regional context. Five samples returned values greater than 0.30 ppb Au as follows:-

Sample No.	Gold (ppb Au)
33097	1.69
33036	0.58
33081	0.39
33103	0.35
33002	0.34

Samples were collected from predetermined sites which had been allocated numbers from a random sequence to reduce the effect of batch bias (Fig 5). Samples 33036 and 33097, the two highest samples in this data set, were collected from adjacent drainages in Burrell Creek Formation at the west of the Licence. This is clearly the area of maximum gold background in EL 5155 but the values of 1.69 ppb Au and 0.58 ppb Au are low on a regional scale. A further two anomalous samples drain Mt. Bonnie Formation, 33081 in the central area and 33103 in the northern part of the area.

Geochemical drainage sampling has proven to be an effective exploration tool elsewhere in the Pine Creek region. Significant anomalies at this sample density are usually greater than 3 ppb Au and often greater than 5 ppb Au. The data set for EL 5155 shows the following distribution:

2 samples	above 0.5 ppb Au
3 samples	0.5 ppb Au - 0.3 ppb Au
32 samples	0.3 ppb Au - 0.1 ppb Au
66 samples	below 0.1 ppb Au

Detection limit for these determinations is 0.05 ppb Au.

Thirty four rock chip samples were collected during geological reconnaissance. Each sample comprised between 1kg and 2kg quartz and/or wallrock from outcrop or float. Samples were analysed by Classic Comlabs, Darwin, for gold (fire assay, AAS) and arsenic (AAS). Results are given in Appendix 3. No values greater than 0.02 ppm Au or 75 ppm As were recorded.

The low values from reconnaissance rock chip values lend support to the drainage data conclusion that significant gold mineralisation is unlikely to be found in EL 5155.

6. CONCLUSIONS AND RECOMMENDATIONS:

1. Low level BLEG drainage anomalies (1.69 ppm Au) are the most significant indication of gold mineralisation in EL 5155.

2. Geological reconnaissance traversing located minor quartz veins but did not result in assay values greater than 0.02 ppm Au and 75 ppm As.

3. No further work is warranted on Exploration Licence 5155.

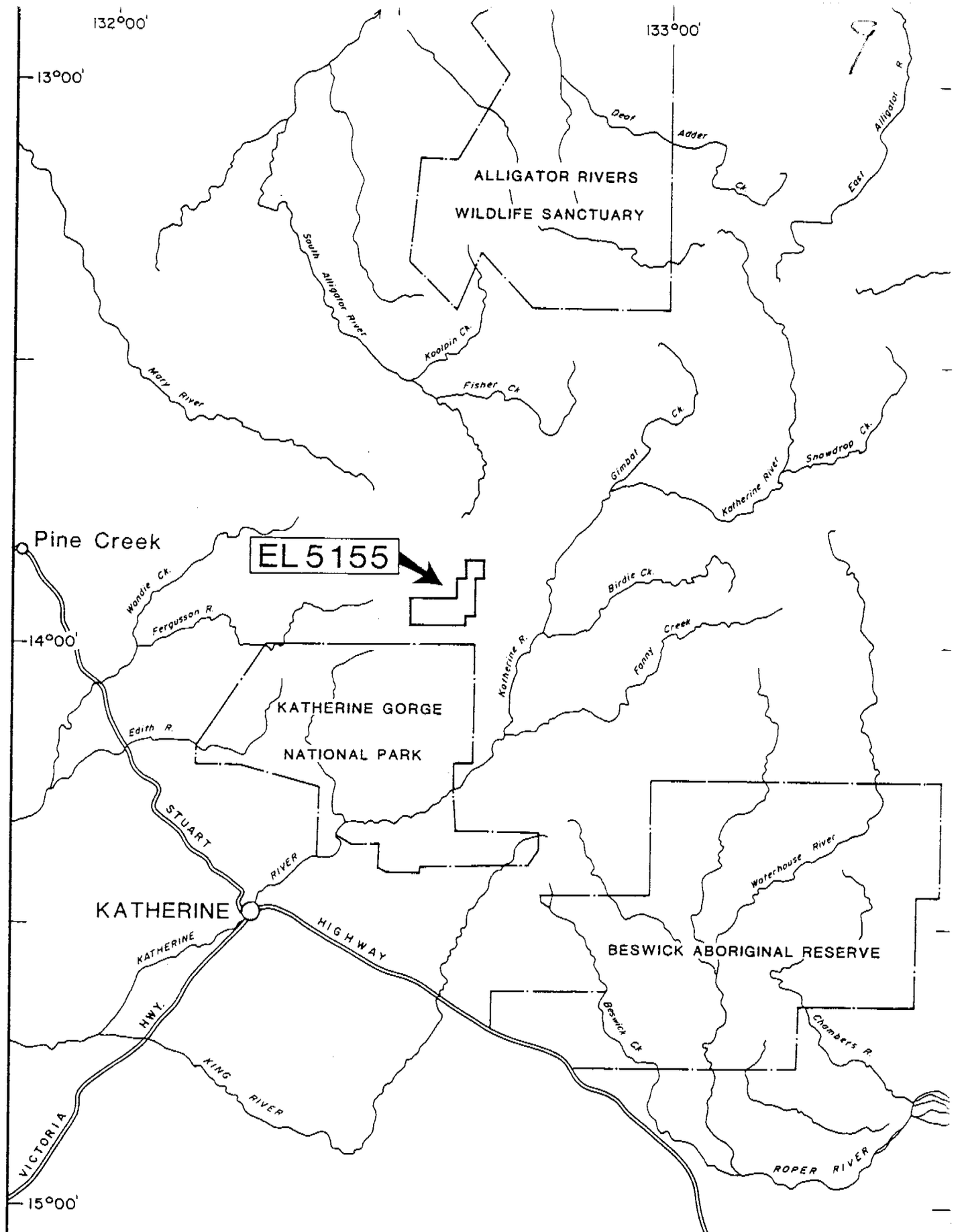


FIG. 1

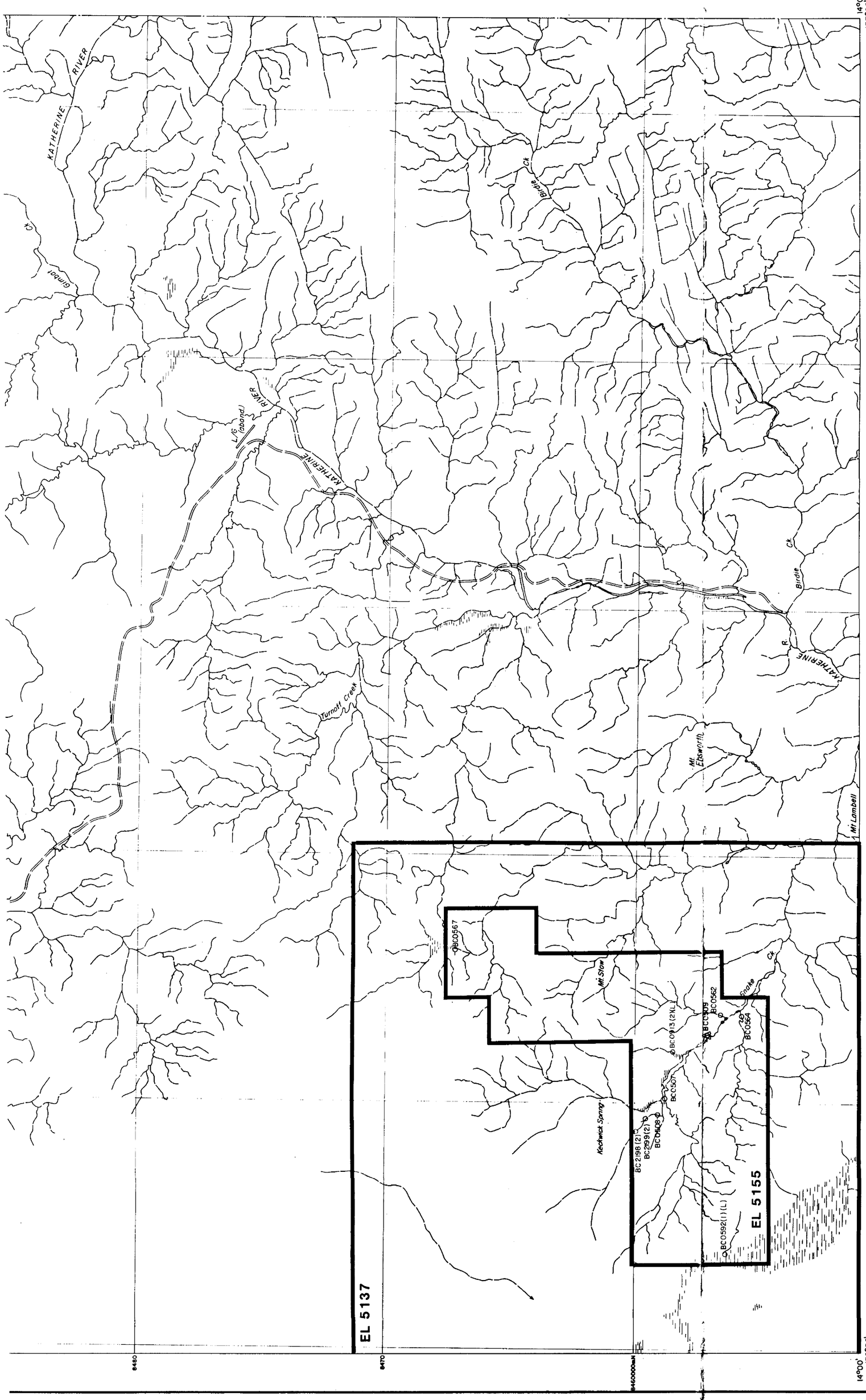
STOCKDALE PROSPECTING LIMITED

NORTHERN TERRITORY

CORONATION HILL GOLD MINES J.V

LOCATION MAP
EL 5155

Compiled	D. O.
Drawn	H. M. R.
Date	AUG '88
Scale	1:1,000,000
Revised	
SEL	3450



CR90/137

FIG 2

STOCKDALE PROSPECTING LIMITED

SOUTH AUSTRALIA
MOUNT EVELYN D53-5
STOW 1:100,000

RECONNAISSANCE SAMPLING

Compiled	D.O.
Drawn	D.O.
Date	APRIL '85
Scale	1:100,000
Revised	
	SEL

FIG. 3

STOCKDALE PROSPECTING LIMITED

NORTHERN TERRITORY
MT EVELYN D53-5
RANFORD HILL E.L. 5155
STOW 1:100,000

FOLLOW-UP SAMPLING

Compiled	Drawn	Date	Scale	Revised	
MSM	DO	APRIL '89	1:25,000		SEL 3200 b

132°40'

13°50'

E.L. 5137

E.L. 5155

BC 2116
(BC0567) / BC 2115
BC2125
BC2126
BC 2123/2133
BC2124
BC 2132
BC2122
BC2120
BC2128
BC2121
BC2131
BC2129
BC2130
BC2127
BC2119
BC2118
BC2117
BC 2113
BC2109
BC 2110
BC 2112
BC 2114
BC 2111
BC2108
BC 2107

13°52'

13° 54'

O Sample location

STREAM SAMPLES
BC 2107 - 2133

0 1 2 kms.
1: 25,000

N

Legend

Qa	Quaternary
Cz	Cainozoic
K	Mesozoic
Pep	Plum Tree Creek Volcanics
Pfb	Burrell Creek Formation
Pso	Mount Bonnie Formation

Bedding strike and dip, vertical bedding

Cleavage strike and dip, vertical cleavage

Quartz veining, quartz float

Rock chip sample locations (refer to note)

Geological boundary, tenement boundary

Stream

Photo centres 12/247

Keckwick Springs

MOUNT STOW

13° 51'

132° 40'

132° 32'

13° 58'

NOTE:

036 — Sample number

(0.02, 50)

— Arsenic assay in ppm, < denotes value less than 50 ppm

— Gold assay in ppm, < denotes value less than 0.01 ppm

Scale

0 1 2 Km

1 : 50,000

CORONATION HILL GOLD MINING N.L.

GEOLOGY AND ROCK CHIP SAMPLES

EL 5155 MOUNT STOW

FIGURE 4

Legend

N

0.04(0.13) — Gold assay, ppb

Stream sediment sample number, (prefixed by 33)

Stream

Tenement boundary

NS — No: sample

NR — Not reported

> 0.5 ppb Au (2 samples)

0.5 – 0.3 ppb Au (3 samples)

13° 51'

132° 40'

132° 32'

13° 58'

• Keckwick Springs

• MOUNT STOW

Scale

0 1 2Km

1 : 50,000

CORONATION HILL GOLD MINING N.L.

STREAM SEDIMENT SAMPLING

EL 5155 MOUNT STOW

FIGURE 5

APPENDIX 1

SAMPLE SUMMARY OF STOCKDALE SAMPLES

SAMPLE NO.	SCREENED WT (KG)	SCREENED TO	CHROMITE COUNTS -2.0/+1.0mm	-1.0/0.5mm	-0.5/0.3mm
RECONNAISSANCE					
BC 0507	73	-2.0/0.3	0	0	1
BC 0508	31	"	0	16	40
BC 0509	174	"	0	1	1
BC 0562	38	"	0	0	0
BC 0564	35	"	0	0	0
BC 0567	61	"	0	2	4
BC 0592	11	-2.0/0.4	0	0	0
BC 0913	38	"	0	0	0
FOLLOW UP					
BC 2107	10	-2.0/0.4	0	1	5
BC 2108	10	"	0	0	0
BC 2109	10	"	0	0	0
BC 2110	10	"	0	0	0
BC 2111	10	"	0	0	0
BC 2112	10	"	0	0	0
BC 2113	10	"	0	0	0
BC 2114	10	"	0	0	0
BC 2115	10	"	0	0	0
BC 2116	10	"	0	0	0
BC 2117	10	"	0	0	0
BC 2118	10	"	0	0	1
BC 2119	10	"	0	0	0
BC 2120	10	"	0	0	0
BC 2121	10	"	0	0	0
BC 2122	10	"	0	0	0
BC 2123	10	"	0	0	1
BC 2124	10	"	0	0	1
BC 2125	10	"	0	0	0
BC 2126	10	"	0	0	1
BC 2127	10	"	0	0	1
BC 2128	10	"	0	0	0
BC 2129	10	"	0	2	3
BC 2130	10	"	0	0	0
BC 2131	10	"	0	0	1
BC 2132	10	"	0	0	0
BC 2133	10	"	0	0	0
BC 2198	10	"	0	0	1
BC 2199	10	"	0	0	1

A P P E N D I X 2

ANALYTICAL REPORT OF STOCKDALE SAMPLES

SGS Australia Pty Ltd

ANALYTICAL REPORT

Our Reference: ES1989

15

Order:

SPL
11 NOV 1983
NT

ANALYTICAL REPORT ON SAMPLES SUBMITTED BY / ON BEHALF OF

STOCKDALE PROSPECTING LIMITED

60 WILSON STREET

SOUTH YARRA VIC 3141

Attn: P E BURTON

Date Received 15.Jun.1988

Date Completed 29.Jun.1988

Number of Samples 5

Number of Repeats

T. Montgomery

Issued at Sydney on 03.Jul.1988

SGS Australia Pty Ltd
74 McEvoy Street
Alexandria, N.S.W. 2015
Telephone: (02)-699-7625
Telex: SGSSYD AA122395
Fax: (02)-698-3596

Our Reference: ES1989 Order:

Analysis No/Sample Reference	Au ppb	Cu ppm	Pb ppm	Zn ppm	Mo ppm	As ppm
1 BC0567	12	8	10	16	<1	1.0
2 BC0592	8	5	3	5	1	<0.5
3 BC0913	3	12	5	5	<1	1.0
4 BC2198	3	2	<2	<1	<1	<0.5
5 BC2199	10	2	<2	<1	2	<0.5
LLD	1	1	2	1	1	0.5
Method Code	05/50	D2A	D2A	D2A	D2A	D2D
Preparation	SP 5	SP 5	SP 5	SP 5	SP 5	SP 5

Our Reference: ES1989 Order:

Analysis No/Sample Reference	Sb ppm	Bi ppm	Te ppm	Sn ppm
1 BC0567	180	<0.5	<0.5	<10
2 BC0592	<0.5	<0.5	<0.5	<10
3 BC0913	<0.5	<0.5	<0.5	<10
4 BC2198	<0.5	<0.5	<0.5	<10
5 BC2199	<0.5	<0.5	<0.5	<10
LLD	0.5	0.5	0.5	10
Method Code	D2D	D2D	D2D	XRF-1
Preparation	SP 5	SP 5	SP 5	SP 5

Our Reference: ES1989 Order:

METHOD OF PREPARATIONS AND ANALYSIS USED

SP 5	Sample dried, screened to -80 mesh, the -80 mesh fraction being split and pulverised in a Chromium Steel Mill.
D5/50	Aqua Regia digestion using a 50 g sample weight. AAS - Flame or HGA detection.
D2A	Samples are digested with nitric and perchloric acids prior to leaching with hydrochloric acid, then determined by flame AAS.
D20	Samples are taken to dryness with nitric and perchloric acids and dissolved in hydrochloric acid followed by hydride AAS measurement. As, Bi, Sb, Se, Te are determined by hydride generation, range to 50 ppm. This method is not suitable for ores or heavily mineralised samples.
XRF-1	XRF by pressed powder.

MQRESRPT

ANGLO AMERICAN CORPORATION OF SOUTH AFRICA LIMITED.
ANGLO AMERICAN RESEARCH LABORATORIES - CROWN MINES
EXPLORATION SAMPLE INFORMATION SYSTEM (EXSIS)

11:34 16/09/87 PAGE 1

ANALYTICAL RESULTS FOR GD870494

G NUMBER ********	: GD870494 ********		G NUMBER : GD870494 ********** ********
FIELD REFERENCE	: MBHRR/87/27		FIELD REFERENCE : MBHRR/87/27
LAB REFERENCE	: BB870513	SAMPLE TYPE : LOAM	LAB REFERENCE : BB870513
DATE REPORTED	: 28/08/87	NO SAMPLES : 30	
PREPROCESSING	: NOT APPLICABLE		
ANALYTICAL METHOD	: AAGEOPM	QUARTER :5309SD DEGREES :	
DIGESTION	: GTH/HBR/BR		
DETECTION LIMIT	: 02		
ELEMENTS ANALYSED	: AU PD		
LAB COMMENTS	: LAST V SAMPLE FKI SAYS 5599 NOT AS ON ARF. X = ANALYSED ON 5 GRAMS.		

STANDARD RESULT COMMENTS :

A - ADJUSTMENT FACTOR
B - CONVERTED BY CORRELATION COEFFICIENTS
C - CALIBRATION OVERFLOW
D - APPROXIMATE RESULT
E - ENHANCED RESULT
I - INSUFFICIENT SAMPLE FOR ANALYSIS
L - LOW SAMPLE MASS
M - MISSING SAMPLE
N - NOT DETERMINED
P - GRID COORDINATE/PERCUSSION HOLE
R - REDUCED MASS SAMPLE
S - RESULT BY DIFFERENT METHOD
T - BAD MAJOR ELEMENTS TOTAL
U - UNCONFIRMED RESULT
X - SPECTRAL INTERFERENCE

.QRESRPT

ANGLO AMERICAN CORPORATION OF SOUTH AFRICA LIMITED.
ANGLO AMERICAN RESEARCH LABORATORIES - CROWN MINES
EXPLORATION SAMPLE INFORMATION SYSTEM (EXSIS)

11:34 16/09/87 PAGE 2

G NUMBER : GD870494

ANALYTICAL RESULTS FOR GD870494

G NUMBER : GD870494

SAMPLE NO	AU FB	PD FB	SAMPLE NO	AU FB	PD FB
V *04815X	0	0	V 05592	0	18
V *04856	8	0	V 05595X	0	0
V 04889X	8	26	V 05597	2	39
V 04893	0	18	V 05599	0	0
V 04895	7	8	BC 00501X	10	36
V 04898	0	5	BC 00504	8	10
V *05507	0	0	* BC 00509	0	19
V *05511	5	19	BC *00510	8	25
V *05516	5	0	BC 00531X	14	38
V 05540X	0	82	BC *00545	0	29
V 05555X	0	48	BC 00550	7	5
V 05558	0	14	BC 00554	0	28
V 05560X	4	22	BC 00555	0	8
V 05562	0	5	BC 00557	0	5
V 05579	0	35	* BC 00562	16	20

*** END OF REPORT ***

G NUMBER : GD870493 ANALYTICAL RESULTS FOR GD870493 G NUMBER : GD870493

	SAMPLE NO	AU PB	PB PB
V	.04813	10	0 -
V	.04818	0	34 5
V	.04819	0	14 -
V	.04820	0	20 5
V	.04826	0	07
V	.04837	0	0 -
V	.04839	0	12 -
V	.04840	9	0 -
V	.04841	0	0 -
V	.04843	0	31 -
V	.04844	0	19 -
V	.04845	0	0 -
V	.04847	0	5 0
V	.04851	0	0 -
V	.04852	0	6 -
V	.04854	0	9 8
V	.04855	9	6 6
V	.04857	9	5 -
V	.04859	0	8 5
V	.04860	0	16 14
V	.04862	5	0 -
V	.04864	0	0 2
V	.04865	0	55 8
V	.04867	[redacted]	15 -
V	.04868	0	19 5
V	.04869	0	18 -
V	.05562	0	21 -
V	.05503	7	43 1
V	.05504	0	46 -
V	.05505	0	21 -
V	.05506	0	22 -
V	.05509	7	24 -
V	.05510	0	0 -
V	.05512	0	18 -
V	.05513	0	11 -
V	.05518	0	16 -
V	.05519	5	7 -
V	.05520	0	17 -
V	.05521	0	0 -
V	.05523	0	43 -
V	.05525	8	0 -
V	.05524	0	0 -
V	.05525	0	9 -
V	.05526	5	0 -
V	.05527	0	32 -
V	.05528	0	0 -
V	.05529	6	1 -
V	.05530	0	15 -
V	.05531	8	12 -
V	.05532	0	0 -

	SAMPLE NO	AU PB	PB PB
V	? 05533	0	0 -
V	.05534	10	5 -
V	.05535	13	11 -
V	.05536	0	0 -
V	.05538	0	0 -
V	.05539	5	07
V	.05541	5	03
V	05543	0	09
V	05545	0	36 11
V	05547	0	17 0
V	05548	0	13 3
V	05551	0	05
V	05554	11	06
V	05556	0	06
V	05557	5	11 11
V	05559	0	33 -
V	05563	0	33 6
V	05564	0	13 1
V	05565	5	9 -
V	05566	0	0 0
V	05567	0	6 -
V	05568	0	0 -
V	05569	0	31 -
V	05570	5	0 -
V	05571	0	16 -
V	05572	5	20 -
V	05573	0	0 4
V	05574	8	15 2
V	05575	5	38 -
V	05577	5	8 -
V	05578	13	1 -
V	05580	0	14 -
V	05581	0	5 -
V	05583	0	5 0
V	05587	0	15 4
V	05588	5	13 6
V	05589	0	0 -
V	05590	0	11 2
V	05591	6	12 4
V	05593	0	14 -
V	05594	0	5 9
V	05596	5	13 -
V	05598	0	34 -
V	05200	0	13 -
BL	00505	0	0 -
BC	00506	0	6 -
BL	00507	0	11 -
BC	00508	0	0 -
BC	00511	11	15 -
BC	00512	0	15 -

ANGLO AMERICAN RESEARCH LABORATORIES

X-RAY FLUORESCENCE GROUP

MULTI-ELEMENT ANALYSIS BY X-RAY FLUORESCENCE SPECTROMETRY

GEOLOGICAL DEPARTMENT REFERENCE NO. : GD/87/0492

LABORATORY REFERENCE NO. : X/87/0552

FIELD REFERENCE NO. : MBHRR/87/26

Attached are the results of the ARL 72000S X-ray fluorescence determination of 36 major, minor and trace elements in 138 LOAM samples submitted by the Consulting Geologist. The major and minor elements (marked %) were determined using pressed powder briquettes and, in part, by Energy Dispersive Spectrometry. In consequence, the results for these elements are relatively less accurate and less precise than those for the trace elements.

See attached page for an explanation of the comment codes.

All results will be kept for a minimum period of six months after the date on this report. Requests for such data should give the laboratory and Head Office reference numbers.

REMARKS:

René Vendel

F.C. Baumgartner
HEAD: X-RAY FLUORESCENCE GROUP
Date : 14-Sep-87

INVESTIGATORS : SP/BV/RV

GD/87/0492
MBHRR/87/26
X/87/0552

ANGLO AMERICAN RESEARCH LABORATORIES
X-RAY FLUORESCENCE GROUP

11-Sep-87 02:14 PM
FILE: 7I09C

ANALYSIS NO.		43/86	44/87	45/88	46/89	47/90	48/91	49/92	50/93	51/94	52/95	53/96	54/97 *	55/98 *	56/99	57/100	58/101	59/102	60/103	61/104	62/105
O.D.NO.		5309SD	5309SD	5309SD	5309SD	5309SD	5309SD	5309SD	5309SD	5309SD	5309SD	5309SD	5309SD	5309SD	5309SD	5309SD	5309SD	5309SD	5309SD	5309SD	5309SD
SAMPLE-NUMBER		V 5588	V 5589	V 5590	V 5591	V 5593	V 5594	V 5596	V 5598	V 5600	BC 505	BC 506	BC 507	BC 508	BC 511	BC 512	BC 513	BC 514	BC 515	BC 516	BC 517
Ni	G/T	12	-18	-10	-5	3	40	-15	-14	-10	-1	-5	-14	-14	-6	-8	0	-4	-8	-12	-14
Cu	G/T	8	13	6	3	4	35	1	5	10	16	5	6	7	7	12	6	10	5	3	6
Zn	G/T	79	22	17	40	12	38	5	3	5	15	5	5	15	13	14	18	18	16	13	9
Pb	G/T	15	15	15	14	10	6	9	5	10	2	7	12	14	13	11	16	14	21	15	11
Co	G/T	15	-4	-2	7	-1	25	-5	-5	-4	6	-3	-4	-2	3	-1	0	2	0	1	0
Mo	G/T	26	-43	3	2	-17	-2	9	5	3	-11	-5	2	-5	-4	-8	-1	-4	-6	-2	0
S	%	0.0	0.0T	0.0T	0.0	0.0T	0.0	0.0T	0.0T	0.0T	0.0T	0.0T	0.0T	0.0T	0.0	0.0	0.0	0.0	0.0	0.0T	0.0T
As	G/T	16	-33	2	4	-5	9	-3	-6	-6	-2	-9	-7	-3	-3	-1	7	-2	-4	-1	-3
Se	G/T	2	3	1	1	1	2	1	1	1	1	0	0	0	0	1	0	1	0	1	1
Sb	G/T	-4	-4	1	4	-9	-7	-7	-10	-20	-2	-5	-17	-26	-8	-6	1	-5	-10	-8	-4
Bi	G/T	9	-9	0	-1	0	6	-3	-3	-4	4	-3	-6	-8	-2	-1	-3	-5	-5	-3	0
Fe	%	5.7	1.8T	1.7T	2.7	1.6T	5.7	0.7T	0.8T	1.0T	2.2T	1.8T	1.0T	1.2T	2.0	2.3	6.9	2.8	2.2	2.2T	1.5T
Mn	%	0.2	0.1T	0.1T	0.1	0.1T	0.2	0.1T	0.1T	0.1T	0.2T	0.1T	0.1T	0.1T	0.1	0.1	0.1	0.1	0.1	0.1T	0.1T
Cr	%	0.1	0.1T	0.1T	0.1	0.1T	0.1	0.2T	0.2T	0.2T	0.1T	0.1T	0.1T	0.1T	0.1	0.1	0.1	0.1	0.2	0.1T	0.1T
TiO2	%	5.4	0.8T	0.8T	1.0	0.7T	1.1	0.3T	0.3T	0.5T	1.9T	0.6T	0.5T	0.6T	0.9	1.4	1.4	1.1	1.3	0.9T	0.7T
V2O5	%	0.3	0.2T	0.3T	0.3	0.3T	0.2	0.3T	0.3T	0.3T	0.3T	0.3T	0.3T	0.3T	0.2	0.3	0.2	0.3	0.3	0.2T	0.3T
Sr	G/T	21	17	13	17	14	57	2	1	3	1	3	4	35	17	14	19	19	15	14	15
Ba	G/T	292	147	249	290	291	406	171	158	165	148	184	171	365	405	435	517	633	514	300	341
U3O8	G/T	7	-16	2	3	1	4	0	1	-1	0	-4	-1	2	2	4	7	3	2	1	4
ThO2	G/T	-6	6	-7	0	5	-9	-13	-14	-11	-15	-15	-14	3	6	18	38	17	25	9	4
U/Th		-	-	-	-	0.3	-	-	-	-	-	-	-	0.7	0.3	0.3	0.2	0.2	0.1	0.2	1.2
Sn	G/T	-5	-140	-9	-11	12	4	-13	-12	-13	-13	-20	-17	-26	-13	1	-9	-18	-13	-16	-14
MO3	G/P	13	7	10	15	17	8	19	10	12	14	6	11	12	11	15	15	14	19	14	14
Ta2O5	G/T	3	-1	-8	-8	1	-10	-8	-7	-5	-5	-9	-5	1	-3	0	-6	-1	1	-5	-6
Nb2O5	G/T	82	8	17	22	23	10	1	2	7	30	9	8	16	28	55	52	38	46	31	25
Zr	G/T	806	554	441	782	2610	769	279	362	605	1755	439	361	306	768	1147	868	757	829	693	618
Rb	G/T	61	37	40	66	54	30	10	11	9	15	12	10	87	88	126	187	129	151	84	65
Y	G/T	29	24	16	28	52	25	12	14	19	30	14	20	23	36	46	53	44	49	35	33
P2O5	%	0.2	-0.2T	-0.3T	-0.1	0.3T	-0.1	-0.2T	-0.2T	0.1T	-0.8T	0.0T	-0.4T	-0.5T	0.1	-0.1	-0.2	-0.2	-0.5	-0.3T	-0.5T
K	%	0.9	1.1T	0.9T	1.3	1.1T	0.9	0.1T	0.2T	0.2T	0.2T	0.1T	0.2T	1.3T	1.4	1.8	2.0	1.8	2.0	1.2T	1.1T
Ca	%	0.4	0.3T	0.3T	0.3	0.2T	0.6	0.2T	0.2T	0.2T	0.2T	0.2T	0.2T	0.2T	0.2	0.3	0.2	0.2	0.2	0.2T	0.2T
Te	G/T	15	-103	12	17	4	28	-2	10	-9	-4	-6	-8	-13	3	2	1	5	-24	-1	4
F	%	0.0	-0.2T	-0.2T	-0.2	-0.1T	-0.1	-0.2T	-0.1T	-0.1T	-0.1T	-0.1T	-0.2T	-0.3T	-0.2	-0.2	0.0	-0.1	-0.2	-0.2T	-0.2T
SiO2	%	69.7	104.4T	108.9T	92.1	107.1T	76.3	123.3T	125.2T	119.1T	105.2T	113.2T	113.8T	99.4T	93.2	87.4	64.2	80.9	78.9	96.1T	106.6T
Al2O3	%	12.5	6.7T	5.7T	7.3	6.2T	9.5	3.9T	4.1T	4.3T	6.4T	5.1T	5.4T	7.6T	8.9	10.3	12.7	12.2	12.4	7.9T	6.1T
Mg	%	0.5	0.3T	0.2T	0.5	0.1T	1.0	0.1T	0.1T	0.1T	0.1T	0.1T	0.1T	0.2T	0.2	0.1	0.1	0.2	0.1	0.2T	0.1T
Na	%	0.1	0.0T	0.0T	0.0	0.0T	0.3	-0.1T	0.0T	-0.1T	0.0T	-0.1T	-0.1T	0.0T	0.0	0.0	0.0	0.0	0.0	0.0T	0.0T

NOTE :

CAUTION - Results are reported to a one standard deviation detection limit !

N.D. = Not Determined. Elements marked '?' MAY be inaccurate if an undetermined element is present.

C = Result exceeds calibration limit & MAY have enhanced elements marked E. Only serious if warning is printed above.

T = Bad major elements total (<90% >100%, as oxides). Refers to columns marked %. Only relevant if all majors determined.

L = May be inaccurate due to low sample mass.

A P P E N D I X 3

ROCK CHIP GEOCHEMICAL DATA

Analysis code FA1
AAS2

Report 8DN0909

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Order No. 678

Results in ppm

Sample	Au	As
32030	0.01,0.02	<50
32031	<0.01	50
32032	<0.01	65
32033	0.01	75
32034	<0.01	75
32035	<0.01	<50
32036	0.01	<50
32037	<0.01	50
32038	<0.01	<50
32039	<0.01	50
32040	<0.01,<0.01	<50
32041	0.01	<50
32042	0.01	<50
32043	<0.01	<50
32044	<0.01	<50
32045	<0.01	<50
32046	<0.01	<50
32047	<0.01	<50
32048	<0.01	60
32049	<0.01	<50
32050	<0.01,<0.01	50
32051	<0.01	60
32052	<0.01	60
32053	<0.01	50
32054	0.02	<50
32101	0.02,0.02	50
32102	0.01	60
32103	0.01	50
32104	0.01	<50
32105	0.01	50
32106	0.01	55
32107	0.01	65
32108	<0.01	50
32109	<0.01	60
Detn limit	(0.01)	(50)

A P P E N D I X 4

STREAM SEDIMENT GEOCHEMICAL DATA

BLEG DRAINAGE

ANALYSIS

SAMPLE MARK	Au ppb
33001	0.21
33002	0.34
33003	0.06
33004	0.13
33005	0.25
33006	0.10
33007	0.10
33008	<0.05
33009	<0.05
33010	<0.05
33011	<0.05
33012	<0.05
33013	0.09
33014	0.23
33015	0.18
33016	<0.05
33017	<0.05
33018	0.05
33019	<0.05
33020	0.10
33021	<0.05
33022	0.17
33023	<0.05
33024	0.07
33025	<0.05

METHOD : BLEG2

ANALYSIS

SAMPLE MARK	Au ppb
33026	0.05
33027	0.17
33028	0.08
33029	0.15
33030	<0.05
33031	0.10
33032	0.07
33033	<0.05
33034	0.16
33035	0.08
33036	0.58
33037	0.10
33038	0.07
33039	<0.05
33040	0.18
33041	0.09
33042	<0.05
33043	0.05
33044	0.05
33045	0.08
33046	0.07
33047	0.24
33048	0.21
33049	0.22
33050	<0.05

METHOD : BLEG2

ANALYSIS

SAMPLE MARK	Au ppb	Au(ppb) REPEATS
33051	0.11	
33052a	0.10	
33052b	0.06	
33053	0.13	
33054	0.05	
33055	0.11	
33056	<0.05	
33057	<0.05	
33058	0.09	
33059	0.07	
33060	0.14	
33061	0.13	
33062	<0.05	
33063	0.11	
33064	0.08	
33065	<0.05	
33066	<0.05	
33067	Listed not Received	
33069	0.06	
33070	0.07	
33071	0.21	
33072	0.14	
33073	<0.05	
33074	0.12	0.27

METHOD : BLEG2

NOTE: 2 Samples marked 33052 received.
Now marked a and b.

ANALYSIS

SAMPLE MARK	Au ppb
33075	0.08
33076	<0.05
33077	0.09
33078	0.13
33079	0.14
33080	0.19
33081	0.39
33082	0.10
33083	0.13
33084	0.15
33085	<0.05
33086	0.08
33087	<0.05
33088	0.19
33089	<0.05
33090	0.27
33091	0.07
33092	0.08
33093	<0.05
33094	<0.05
33095	0.12
33096	0.09
33097	1.69
33098	0.10
33099	0.16

METHOD : BLEG2

ANALYSIS

SAMPLE MARK	Au ppb
33100	0.10
33101	<0.05
33102	0.22
33103	0.35
33104	<0.05

METHOD : BLEG2