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EXPLORATION LICENCE 18/80

ARTHUR RIVER, TASMANIA

PROGRESS REPORT TO 31ST JULY, 1981

INCLUDING

REPORT FOR THE SIX MONTHS ENDED 31ST JULY, 1981.

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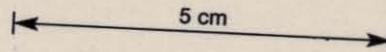
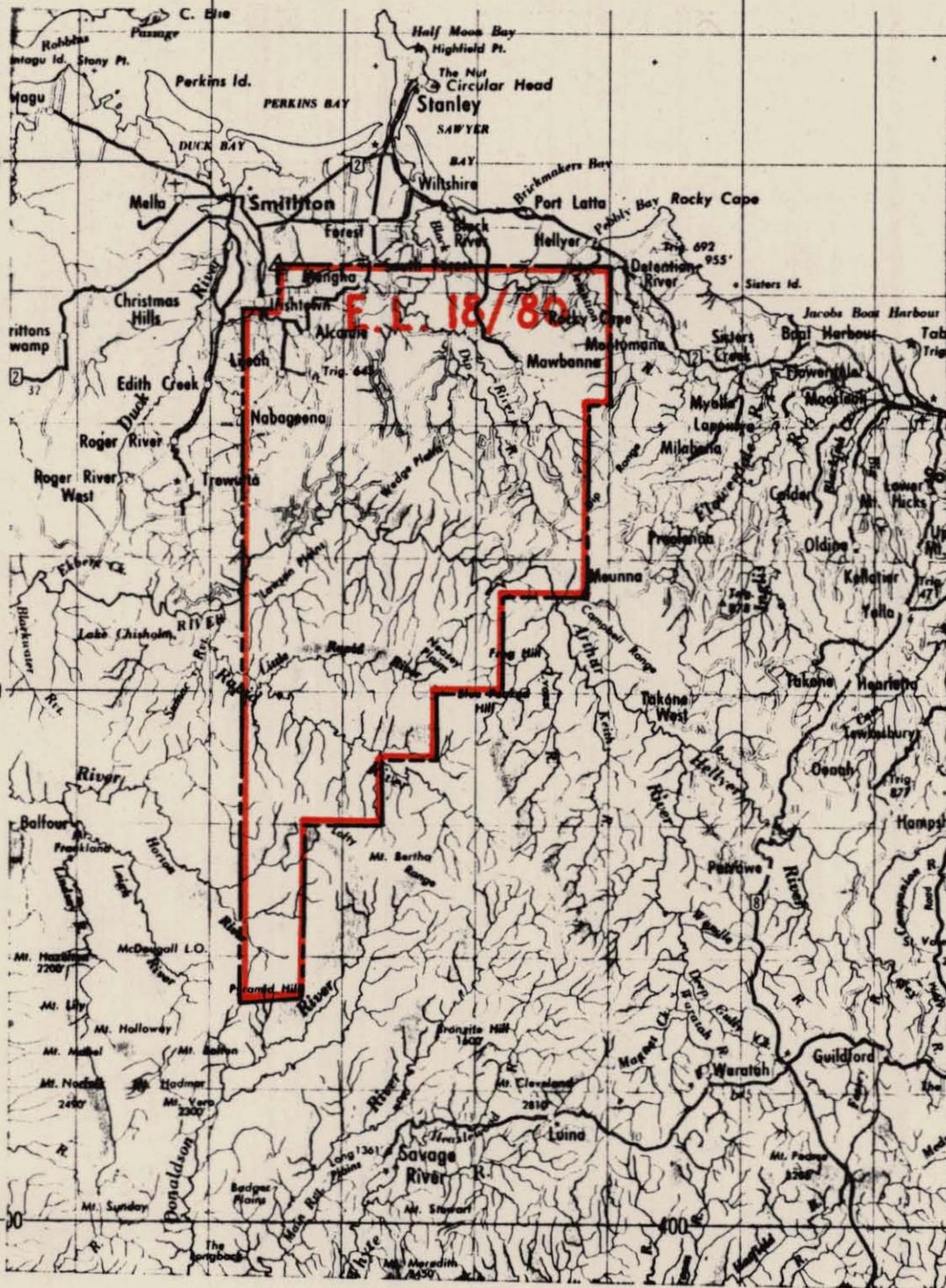
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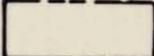
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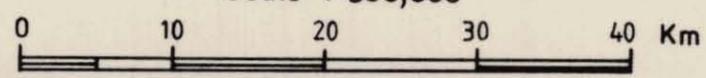
540000mN



This map accompanies an application dated by The B.H.P. Co. Ltd.

 Area applied for.

Scale 1:500,000



This map photo copied from Tas. Lands & Surveys Dept. 1:500 000 Sheet TASMANIA

Centre Melbourne	THE BROKEN HILL PROPRIETARY CO. LTD.	Project N ^o :
Date 18-4-80		APPLICATION FOR EXPLORATION LICENCE ARTHUR RIVER, TASMANIA

1. GENERAL

Exploration Licence 18/80 of 1010 square kilometres was granted to the Broken Hill Proprietary Company Limited on 4th August 1980. An application for renewal from 31st July has been submitted.

2. EXPLORATION PHILOSOPHY

Our principal target within the licence area is a skarn or massive sulphide hosted tin-tungsten deposit of the Renison/Cleveland style. The area was selected on the following basis:

- 1) its close proximity to a major tin-tungsten belt of mineralization;
- 2) stream geochemical anomalies for tin and tungsten had previously been recorded from the area;
- 3) dolomite and dolomitic sediments are present; and
- 4) felsic intrusives with associated tin-tungsten mineralization had been reported in adjacent licence areas.

The possibilities for Carlin style gold, diamonds, Mississippi Valley lead-zinc and sedimentary copper deposits were also taken into consideration.

3. SUMMARY OF WORK COMPLETED

Work completed to date comprised:

- 1) Preliminary literature review;
- 2) Stream sampling consisting of 235 minus 40 mesh samples and 150 pan concentrate samples;
- 3) Rock chip sampling and petrographic studies;
- 4) Orientation gravel sampling for heavy mineral analysis (16 x 20 kg samples).

4. SUMMARY OF WORK IN PROGRESS

Work in progress comprises:

- 1) Continuation of review of available data;
- 2) Photogeological study;

- 3) Heavy mineral examination of Arthur River pan concentrate samples;
- 4) 1:50,000 scale reconnaissance geological mapping.

5. RESULTS

5.1 GEOLOGY

To date an area of approximately 100 square kilometres in the north west corner of the licence area has been mapped at 1:50,000 scale. Insufficient work has been done at this stage to assign the various Precambrian and Cambrian sedimentary rock sequences present to individual stratigraphic units.

The Precambrian rocks include:

- a) finely laminated grey to yellow siltstone with interbedded laminated grey, pyritic quartzite;
- b) saccharoidal white quartzite with quartzose conglomerate horizons;
- c) blue grey to black cherty dolomite, dolomite and shale.

The Cambrian rocks include tuffaceous siltstones, greywackes, black shales and basic volcanics.

Tertiary alkali basalt covers a large proportion of the area mapped.

5.2 GEOCHEMISTRY

5.2.1. Stream Sampling:

A stream sediment sampling programme consisting of 235 minus 40 mesh samples and 150 pan concentrate samples was completed in the period December 1980 to February 1981. Samples were forwarded to Comlabs (Adelaide) for analysis for tin, arsenic, tungsten, barium, antimony, strontium, copper, lead, zinc, nickel, chromium, silver, molybdenum and gold. Tin, tungsten, arsenic, antimony, barium and strontium were analysed by method XRF1, silver and molybdenum by method AAS3, copper, nickel, lead and zinc by method AAS1; chromium by method AAS2; and gold by method AAS5.

15 sites were re-sampled to check anomalies detected on the first pass. Results for sample 180A initially anomalous with respect to copper (170 ppm), arsenic (14 ppm) and zinc (120 ppm), were not confirmed by resampling (viz: Cu 20 ppm, Zn 30 ppm and As 2 ppm). Similarly, an anomaly of 4200 ppm Pb in pan concentrate sample 120B was not confirmed by resampling (35 ppm in -40 mesh fraction).

Orientation sampling confirmed the result that the sediments of the Arthur River itself are highly anomalous with respect to tin, tungsten, arsenic, and base metals.

Tin in samples other than from the Arthur River ranged from less than 4 to 24 ppm with most values being less than or equal to 10 ppm.

Arsenic in samples other than from the Arthur River ranged from less than 2 to 50 ppm.

Tungsten results varied from less than 10 to 30 ppm; the bulk of the results being less than or equal to 15 ppm.

Copper varied from less than 2 to 170 ppm with streams draining Tertiary basalt being higher in background (15-60ppm) than those draining Precambrian sediments (2-15 ppm).

Overall sample density is still very low and more geological mapping needs to be done before a detailed interpretation of the stream sampling data can be attempted.

5.2.2. Rock Sampling

Grab samples of siltstone from the Tayatea road metal quarry, where showings of malachite and chalcocite have been noted, returned copper values between 145 and 10,500 ppm. Leached, oxidized samples ranged from 145-260 ppm Cu, 16-240 ppm Pb and 40-46 ppm Zn. Arsenic (10-85 ppm), antimony (<4 to 14 ppm) and molybdenum (8-50 ppm) were also anomalous.

A quartz-talc \pm siderite \pm pyrite rock which crops out in the Pine Corner Road area was also sampled. Samples were anomalous with respect to gold, arsenic, antimony, copper, zinc and barium (ARA6-9, AR3 A to E, ARA 39-41).

5.3 PETROLOGY

Petrographic descriptions of nine rocks from the area have been completed. The work has confirmed the presence of carbonate in siltstones from the Tayatea quarry. Some of these rocks have been classed as dolomitic pelites, which significantly increases the area of potential host rocks for skarn or replacement style mineralization. A possible felsic intrusive (float sample only) from a tributary of the Rapid River was also described.

6. WORK PROPOSED

It is proposed to:

- 1) Continue stream sampling and 1:50,000 geological mapping;

- 2) Block out anomalous/interesting areas for aeromagnetic surveying;
- 3) Diamond drill selected targets.

This report is submitted to the Mines Department as required by Schedule A of Exploration Licence 18/80.

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APPENDIX 1

GEOCHEMICAL RESULTS

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COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

OUR REF.: COM 810243
YOUR REF.: Project No. T670
Sheet No. 000639

305 SOUTH ROAD
MILE END SOUTH
STH. AUST. 5031
TEL.: (08) 43 5722
TELEX: AA 89323

Mr. R. Hine,
B.H.P. Exploration Co. Ltd.,
G.P.O. Box 1140L,
HOBART. TAS. 7001.

24.3.81

Dear Sir,

RE: JOB COM 810243

Enclosed are the results for samples delivered to our laboratory on the 11th March, 1981.

The stream sediments were sieved to 45# which is the closest metric equivalent of 40#.

Yours sincerely,

Harry Fishman
Managing Director

c.c: Mr. A. Goode
Mr. E. Bumstead

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A samples = -40# sediment
B samples = ppm concentrate

COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM 810243

Results in ppm

	<u>SAMPLE</u>	<u>Sn</u>	<u>As</u>	<u>W</u>	<u>Ba</u>	<u>Sb</u>	<u>Sr</u>
24064	T67090A	<4	<2	<10	15	<4	3
	065 91	<4	2	10	45	<4	32
	066 2	<4	2	<10	95	<4	28
	067 3	<4	4	<10	25	<4	6
	068 4	4	<2	15	120	<4	32
	069 5	10	<2	<10	100	<4	16
	070 6	<4	5	<10	140	<4	22
	071 7	6	10	<10	70	<4	34
	072 8	12	<2	<10	70	<4	10
	073 9	<4	16	<10	160	6	46
24074	T67100A	12	6	<10	170	<4	38
	075 1	<4	4	<10	240	<4	10
	076 2	<4	4	15	150	<4	18
	077 3	<4	3	15	130	<4	12
	078 4	6	<2	10	90	4	18
	079 5	<4	4	<10	70	<4	30
	080 6	10	<2	<10	95	<4	6
	081 7	4	2	<10	110	4	12
	082 8	<4	2	<10	75	<4	22
	083 9	8	<2	20	130	<4	16
	084 10	10	6	10	190	<4	42
	085 1	4	<2	<10	45	<4	14
	086 2	<4	2	<10	65	<4	12
	087 3	14	<2	<10	140	<4	14
	088 4	Insufficient Sample					
	089 115	<4	8	10	230	<4	18
	090 6	14	3	<10	400	<4	85
	091 7	6	3	<10	110	<4	14
24092	T67118A	6	<2	<10	120	<4	24

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COMPUTERISED ANALYTICAL LABORATORIES

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ANALYTICAL REPORTJOB COM 810243Results in ppm

<u>SAMPLE</u>	<u>Sn</u>	<u>As</u>	<u>W</u>	<u>Ba</u>	<u>Sb</u>	<u>Sr</u>
24093 T67119A	<4	2	<10	100	<4	70
094 120	<4	4	20	140	<4	18
095 1		Insufficient Sample				
96 2	8	<2	<10	190	<4	22
97 3	10	<2	<10	210	<4	22
98 4	14	4	10	55	<4	14
99 5	12	3	<10	110	<4	20
100 6	12	<2	<10	65	6	12
101 7	10	<2	<10	65	<4	8
102 8	<4	<2	<10	40	<4	6
103 9	12	<2	10	150	<4	20
104 130	8	3	<10	90	4	14
105 1	10	3	<10	130	<4	22
106 2	10	<2	10	130	<4	16
107 3	6	<2	<10	<10	6	18
108 4	6	2	<10	30	<4	6
109 5	8	2	<10	55	<4	14
110 6	10	5	10	230	<4	36
111 7		Insufficient Sample				
112 8	12	2	<10	110	<4	20
113 9	<4	4	<10	150	<4	30
114 140	4	<2	<10	100	<4	26
115 1	10	<2	<10	90	4	14
116 2	6	4	<10	170	<4	12
117 3x	6	3	10	180	<4	22
118 4	6	4	<10	200	<4	28
119 5	8	4	20	130	<4	24
120 6	<4	3	<10	65	<4	10
24 121 T67147A	6	3	<10	50	<4	8

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COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORTJOB COM 810243Results in ppm

<u>SAMPLE</u>	<u>Sn</u>	<u>As</u>	<u>W</u>	<u>Ba</u>	<u>Sb</u>	<u>Sr</u>
24122 T67148A	<4	2	15	70	<4	22
123 9	<4	4	20	100	<4	14
124 150	<4	<2	<10	130	<4	20
125 1	10	<2	<10	160	<4	12
126 2	14	3	<10	250	<4	20
127 3	<4	<2	15	55	<4	6
128 4	<4	<2	<10	160	<4	18
129 155	8	<2	<10	260	<4	26
130 6	6	2	<10	190	10	16
131 7	6	2	<10	130	<4	6
132 8	<4	<2	<10	110	<4	14
133 9	6	4	<10	240	4	34
134 160	<4	<2	<10	170	<4	18
135 1	4	3	15	70	<4	42
136 2	8	6	15	460	<4	24
137 3	<4	6	<10	90	<4	26
138 4	<4	2	<10	160	<4	20
139 165	6	<2	15	20	10	3
140 6	<4	2	<10	100	<4	12
141 7	4	<2	<10	65	<4	18
142 8	4	3	<10	55	<4	10
143 9	<4	3	<10	65	<4	12
144 170	4	<2	<10	65	8	14
145 1	6	3	<10	240	<4	28
146 2	<4	10	10	140	<4	14
147 3	12	2	<10	60	<4	12
148 4	6	5	<10	65	6	10
149 5	8	5	15	140	<4	8
24 150 T67176A	6	<2	<10	340	<4	26

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COMPUTERISED ANALYTICAL LABORATORIES

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ANALYTICAL REPORT

JOB COM 810243

Results in ppm

	<u>SAMPLE</u>	<u>Sn</u>	<u>As</u>	<u>W</u>	<u>Ba</u>	<u>Sb</u>	<u>Sr</u>
24152	T67177A	<4	4	<10	460	<4	20
	153 8	8	3	<10	120	<4	14
	154 9	<4	4	<10	80	<4	16
	155 180	12	6	15	120	6	14
	156 1	<4	14	<10	120	<4	12
	157 2	12	6	<10	180	<4	26
	158 3	<4	4	<10	25	<4	6
	159 4	10	12	<10	130	<4	10
	160 5	<4	3	15	65	<4	5
	161 6	<4	3	<10	210	<4	14
	162 7	10	<2	<10	30	<4	8
	163 8	<4	<2	<10	40	<4	10
	164 9	8	<2	<10	85	<4	12
	165 190	<4	<2	<10	25	<4	12
	166 1	12	<2	<10	130	<4	15
	167 2	<4	<2	<10	25	<4	4
	168 3			Insufficient Sample			
	169 4	8	3	<10	20	<4	14
	170 5	<4	3	<10	110	<4	18
	171 6	8	3	10	90	6	14
	172 7	6	2	15	75	<4	14
	173 8	8	<2	<10	80	<4	12
	174 199	4	3	10	90	<4	16
	175 T67200A	12	<2	<10	100	<4	14
	176 1	4	<2	20	110	<4	34
	177 2	12	<2	<10	230	<4	30
	178 3	8	3	<10	85	<4	15
	179 4	10	4	10	250	<4	22
180	T67205A +	24	5	30	100	<4	22

COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM 810243

Results in ppm

SAMPLE	Sn	As	W	Ba	Sb	Sr
24181 T67206A	4	2	10	100	<4	24
182 7	<4	2	20	230	<4	30
183 8	6	<2	<10	230	<4	34
184 9	8	3	15	150	<4	26
185 210	8	3	15	240	<4	18
186 1	8	<2	10	110	<4	18
187 2	10	4	10	100	<4	12
188 3	10	12	<10	210	12	24
189 4	Insufficient Sample					
190 5	8	2	<10	200	<4	22
191 6	8	6	20	90	<4	18
192 7	6	6	<10	130	<4	75
193 8	8	6	<10	120	<4	20
194 9	<4	2	<10	130	<4	10
195 220	6	<2	<10	120	8	14
196 1	6	<2	<10	140	<4	6
197 2	6	4	<10	70	<4	38
198 3	16	10	20	420	<4	28
199 4	10	4	<10	150	<4	14
200 225	8	<2	<10	130	<4	12
201 6	6	4	<10	160	<4	18
202 7	<4	<2	10	85	<4	14
203 8	10	5	<10	80	<4	8
204 9	4	2	<10	170	<4	18
205 230	10	4	<10	240	<4	26
206 1	16	<2	<10	200	<4	20
208 2	6	<2	<10	130	<4	12
209 3	8	5	<10	35	6	6
24 210 T67234A	10	4	15	85	<4	36

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OMLABS Pty Ltd
ANALYTICAL LABORATORIES

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ANALYTICAL REPORTJOB COM 810243Results in ppm

<u>SAMPLE</u>	<u>Sn</u>	<u>As</u>	<u>W</u>	<u>Ba</u>	<u>Sb</u>	<u>Sr</u>
24211 T67235A	<4	<2	15	90	<4	<2
24320 T67090B	10	<2	<10	<10	<4	3
91	<4	5	<10	80	<4	38
2	<4	3	<10	85	<4	22
3	8	2	20	35	<4	5
4	6	<2	<10	110	4	32
95	<4	<2	<10	60	<4	12
97	6	6	<10	70	<4	70
98	6	3	15	80	<4	12
100	6	5	<10	90	<4	28
1	6	8	15	180	<4	8
2	6	5	10	100	<4	16
3	8	<2	<10	55	<4	6
104	6	<2	<10	60	<4	14
108	16	<2	<10	85	<4	16
9	4	<2	<10	85	<4	14
112	<4	4	<10	65	<4	14
3	<4	<2	<10	230	<4	12
4	4	3	<10	75	<4	16
15	<4	26	<10	200	<4	14
17	6	2	<10	110	<4	10
18	<4	<2	<10	85	<4	24
20	<4	<2	<10	200	6	12
21	12	<2	<10	95	4	18
128	6	2	<10	45	<4	6
134	6	<2	10	8	<4	6
139	10	6	<10	110	<4	26
40	4	4	<10	80	4	24
T67141	8	<2	10	120	<4	12

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ANALYTICAL LABORATORIES

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ANALYTICAL REPORT

JOB COM 810243

Results in ppm

<u>SAMPLE</u>	<u>Sn</u>	<u>As</u>	<u>W</u>	<u>Ba</u>	<u>Sb</u>	<u>Sr</u>
T67143B	<4	<2	<10	150	<4	18
4	<4	<2	<10	100	<4	16
5	8	<2	<10	140	<4	20
6	8	5	<10	48	<4	6
7	6	2	<10	25	<4	5
8	<4	2	<10	35	<4	12
9	6	14	<10	75	<4	14
150	8	<2	<10	140	<4	18
1	6	<2	<10	170	<4	10
2	10	<2	<10	180	<4	10
3	<4	<2	<10	25	<4	3
4	<4	<2	<10	60	<4	10
5	<4	3	<10	170	<4	16
6	10	<2	<10	85	<4	8
7	10	4	<10	95	<4	5
8	8	<2	15	75	<4	12
9	14	<2	<10	130	4	24
60	<4	<2	<10	95	<4	10
61	<4	<2	10	60	<4	40
63	<4	<2	<10	40	<4	16
4	8	<2	<10	140	10	18
165	<4	<2	<10	10	<4	3
168	<4	<2	10	50	6	8
9	<4	<2	<10	40	<4	8
70	6	<2	<10	65	8	14
1	<4	3	<10	130	18	20
2	<4	10	<10	85	<4	10
3	14	4	20	60	<4	10
T67174B	<4	4	<10	45	10	8

JMLABS Pty Ltd

ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM 810243

Results in ppm

<u>SAMPLE</u>	<u>Sn</u>	<u>As</u>	<u>W</u>	<u>Ba</u>	<u>Sb</u>	<u>Sr</u>
T67176B	18	2	<10	210	8	34
78	4	5	<10	85	8	14
9	6	5	<10	30	14	14
80	<4	14	<10	85	<4	14
81	6	16	<10	190	10	14
83	<4	3	<10	50	<4	12
4	10	24	10	100	24	12
5	4	<2	<10	50	12	8
6	<4	3	<10	10	<4	6
87	4	<2	<10	<10	8	26
189	4	<2	<10	75	4	10
190	10	<2	<10	20	<4	4
1	6	2	10	90	6	10
192	8	<2	<10	35	4	3
195	10	2	<10	35	4	12
6	8	3	10	55	8	14
7	6	<2	<10	80	8	10
8	8	2	<10	70	6	10
199	6	4	<10	48	14	12
T67200B	10	<2	<10	90	<4	14
201	10	3	<10	85	6	60
203	6	2	<10	35	14	14
4	<4	3	20	100	<4	10
5	8	4	<10	55	12	8
6	6	<2	<10	60	4	18
7	<4	3	10	150	4	28
8	<4	3	<10	85	8	16
09	8	3	<10	100	<4	22
T67211B	8	4	15	75	4	14

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UMLABS Pty Ltd
SPECIALISED ANALYTICAL LABORATORIES

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ANALYTICAL REPORT

JOB COM 810243

Results in ppm

<u>SAMPLE</u>	<u>Sn</u>	<u>As</u>	<u>W</u>	<u>Ba</u>	<u>Sb</u> <i>Au</i>	<u>Sr</u>
T67212B	20	3	15	10	20	6
3	10	8	15	170	6	22
4	<4	<2	15	75	<4	22
5	<4	4	15	100	4	14
6	4	4	10	60	12	18
7	8	<2	10	120	10	12
218	<4	3	<10	45	4	12
220	<4	2	<10	40	12	8
1	<4	<2	10	100	4	4
2	<4	<2	<10	50	12	34
3	10	8	10	400	<4 <i>0.8</i>	18
4	6	3	<10	85	8	6
5	8	3	<10	15	12	3
227	6	4	<10	75	6	10
8	<4	10	<10	60	6	5
229	14	8	15	130	8	12
233	<4	<2	<10	20	6	4
T67234B	10	3	<10	28	<4	85

MLABS Pty Ltd

ANALYTICAL LABORATORIES

ANALYTICAL REPORTJOB COM 810243Results in ppm

<u>SAMPLE</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Ni</u>	<u>Cr</u>	<u>Ag</u>	<u>Mo</u>	<u>Au</u>
T67090A	6	<4	4	<4	4	<1	<4	<0.05
1	30	8	65	150	190	<1	<4	<0.05
2	12	4	55	125	40	<1	<4	<0.05
3	4	<4	8	8	8	<1	<4	<0.05
4	12	<4	60	175	50	<1	<4	<0.05
5	16	<4	20	16	20	<1	<4	<0.05
6	4	<4	22	8	24	<1	<4	<0.05
7	26	4	60	140	170	<1	<4	<0.05
8	4	<4	18	16	18	<1	<4	<0.05
9	18	20	28	24	34	<1	<4	<0.05
100 A	18	<4	44	20	26	<1	<4	<0.05
1	12	<4	20	8	14	<1	<4	<0.05
2	8	<4	12	<4	8	<1	<4	<0.05
3	6	8	12	<4	4	<1	<4	<0.05
4	4	4	16	4	8	<1	<4	<0.05
105 A	16	4	40	60	70	<1	<4	<0.05
6	2	<4	6	<4	8	<1	<4	<0.05
7	4	<4	6	<4	8	<1	<4	<0.05
8	8	<4	16	4	10	<1	<4	<0.05
9	6	<4	14	<4	8	<1	<4	<0.05
110	18	12	44	28	36	<1	<4	<0.05
1	10	<4	18	8	14	<1	<4	<0.05
2	2	<4	12	8	26	<1	<4	<0.05
3	8	<4	18	8	34	<1	<4	<0.05
4	12	<4	16	8	20	<1	<4	<0.05
115	16	4	20	4	14	<1	<4	<0.05
6	12	8	46	12	10	<1	<4	<0.05
7	16	8	14	4	8	<1	<4	<0.05
T67118A	8	<4	20	4	16	<1	<4	<0.05

019

LABS Pty Ltd
ANALYTICAL LABORATORIES

ANALYTICAL REPORTJOB COM 810243Results in ppm

<u>SAMPLE</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Ni</u>	<u>Cr</u>	<u>Ag</u>	<u>Mo</u>	<u>Au</u>
T67119A	32	4	120	180	160	<1	<4	<0.05
120	18	8	28	24	48	<1	<4	<0.05
1	20	8	16	4	38	<1	<4	<0.05
2	10	12	14	<4	4	<1	<4	<0.05
3	8	8	14	<4	8	<1	<4	<0.05
4	14	8	14	<4	10	<1	<4	<0.05
5	6	<4	14	8	8	<1	<4	<0.05
6	10	<4	16	<4	6	<1	<4	<0.05
7	2	<4	4	<4	4	<1	<4	<0.05
8	<2	<4	4	<4	4	<1	<4	<0.05
9	4	<4	6	<4	6	<1	<4	<0.05
130A	4	<4	6	<4	20	<1	<4	<0.05
1	6	4	10	<4	10	<1	<4	<0.05
2	4	<4	6	<4	4	<1	<4	<0.05
3	4	<4	4	<4	14	<1	<4	<0.05
4	4	<4	4	<4	4	<1	<4	<0.05
5	<2	<4	4	<4	6	<1	<4	<0.05
6	12	8	34	16	12	<1	<4	<0.05
7	22	16	55	24	28	<1	<4	<0.05
8	10	<4	16	8	14	<1	<4	<0.05
9	10	8	32	8	18	<1	<4	<0.05
140 A	10	<4	18	16	14	<1	<4	<0.05
1	6	4	10	<4	6	<1	<4	<0.05
2	12	<4	8	<4	20	<1	<4	<0.05
3	10	4	12	<4	10	<1	<4	<0.05
4	8	8	16	<4	8	<1	<4	<0.05
5	8	8	10	<4	8	<1	<4	<0.05
6	6	<4	4	<4	8	<1	<4	<0.05
T67147A	6	<4	6	<4	6	<1	<4	<0.05

020

MLABS Pty Ltd

ANALYTICAL REPORT

JOB COM 810243

Results in ppm

<u>SAMPLE</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Ni</u>	<u>Cr</u>	<u>Ag</u>	<u>Mo</u>	<u>Au</u>
T67148A	6	4	6	<4	8	<1	<4	<0.05
9	6	4	10	<4	10	<1	<4	<0.05
150	4	<4	16	<4	10	<1	<4	<0.05
1	145	<4	4	<4	10	<1	<4	<0.05
2	2	<4	6	<4	8	<1	<4	<0.05
3	4	<4	2	<4	10	<1	<4	<0.05
4	6	<4	2	<4	<4	<1	<4	<0.05
5	4	<4	4	<4	<4	<1	<4	<0.05
6	4	<4	4	<4	<4	<1	<4	<0.05
7	4	<4	2	<4	<4	<1	<4	<0.05
8	2	<4	4	<4	<4	<1	<4	<0.05
9	4	<4	20	<4	4	<1	<4	<0.05
160	4	<4	6	<4	<4	<1	<4	<0.05
1	12	16	6	<4	8	<1	<4	<0.05
2	14	12	24	4	6	<1	<4	<0.05
3	14	16	14	<4	8	<1	<4	<0.05
4	2	<4	2	<4	<4	<1	<4	<0.05
5	2	<4	2	<4	<4	<1	<4	<0.05
6	6	<4	6	<4	<4	<1	<4	<0.05
7	2	4	2	<4	6	<1	<4	<0.05
8	<2	<4	2	<4	4	<1	<4	<0.05
9	4	<4	4	<4	6	<1	<4	<0.05
170	4	<4	2	<4	<4	<1	<4	<0.05
1	8	12	22	4	10	<1	<4	<0.05
2	42	4	14	4	<4	<1	<4	<0.05
3	4	<4	4	<4	24	<1	4	<0.05
4	18	<4	12	<4	12	<1	4	<0.05
5	22	<4	8	<4	<4	<1	<4	<0.05
T67176A	2	<4	22	8	4	<1	<4	<0.05

LABS Pty Ltd

ANALYTICAL REPORT

JOB COM 810243

Results in ppm

<u>SAMPLE</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Ni</u>	<u>Cr</u>	<u>Ag</u>	<u>Mo</u>	<u>Au</u>
T67177A	2	<4	14	4	6	<1	<4	<0.05
8	4	<4	36	12	240	<1	4	<0.05
9	6	<4	40	16	65	<1	<4	<0.05
180A	16	4	36	12	80	<1	<4	<0.05
1	170	12	120	140	100	<1	<4	<0.05
2	28	12	46	55	65	<1	<4	<0.05
3	4	4	16	4	80	<1	4	<0.05
4	22	20	18	4	4	<1	8	<0.05
5	12	12	8	<4	24	<1	4	<0.05
6	6	12	14	<4	12	<1	<4	<0.05
7	4	8	10	12	22	<1	<4	<0.05
8	8	8	16	28	14	<1	<4	<0.05
9	8	4	20	48	20	<1	<4	<0.05
190 A	32	<4	46	100	65	<1	<4	<0.05
1	4	4	12	<4	4	<1	<4	<0.05
2	2	<4	8	4	6	<1	<4	<0.05
3	26	16	55	44	110	<1	<4	<0.05
4	8	8	18	16	30	<1	<4	<0.05
5	6	8	10	<4	6	<1	<4	<0.05
6	8	8	10	<4	18	<1	<4	<0.05
7	6	4	6	<4	28	<1	4	<0.05
8	6	12	6	<4	16	<1	<4	<0.05
9	6	4	6	<4	14	<1	<4	<0.05
200 A	6	8	18	<4	6	<1	<4	<0.05
1	4	12	16	<4	<4	<1	<4	<0.05
2	6	8	12	<4	4	<1	<4	<0.05
3	6	8	8	<4	16	<1	<4	<0.05
4	6	8	12	<4	6	<1	<4	<0.05
T67205A	6	8	10	<4	28	<1	<4	<0.05

022

944023

OMLABS Pty Ltd

ANALYTICAL REPORT

JOB COM 810243

Results in ppm

<u>SAMPLE</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Ni</u>	<u>Cr</u>	<u>Ag</u>	<u>Mo</u>	<u>Au</u>
T67206A	4	8	10	<4	6	<1	<4	<0.05
7	12	8	16	<4	<4	<1	<4	<0.05
8	6	8	20	<4	4	<1	<4	<0.05
9	6	8	14	<4	10	<1	<4	<0.05
210	10	12	18	8	10	<1	<4	<0.05
1	12	16	20	4	6	<1	<4	<0.05
2	4	8	8	<4	20	<1	<4	<0.05
3	12	12	14	8	8	<1	8	<0.05
4	10	4	10	<4	8	<1	<4	<0.05
215	6	8	10	<4	4	<1	<4	<0.05
6	4	<4	6	<4	4	<1	<4	<0.05
7	28	4	42	32	12	<1	<4	<0.05
8	12	8	16	8	4	<1	<4	<0.05
9	6	<4	4	4	<4	<1	<4	<0.05
220 A	6	<4	2	<4	4	<1	<4	<0.05
1	4	<4	4	<4	<4	<1	<4	<0.05
2	4	28	<2	<4	<4	<1	<4	<0.05
3	6	12	42	4	8	<1	<4	<0.05
4	10	8	6	<4	<4	<1	<4	<0.05
225	4	<4	<2	<4	<4	<1	<4	<0.05
6	4	<4	2	<4	4	<1	<4	<0.05
7	20	8	4	<4	8	<1	<4	<0.05
8	20	8	4	<4	4	<1	<4	<0.05
9	4	4	2	<4	30	<1	<4	<0.05
230	6	4	8	<4	26	<1	<4	<0.05
1	6	4	<2	<4	50	<1	4	<0.05
2	2	4	<2	<4	4	<1	<4	<0.05
3	6	<4	2	<4	20	<1	<4	<0.05
T67234A	4	8	6	<4	6	<1	<4	<0.05

023
ANALABS Pty Ltd

ANALYTICAL REPORT

JOB COM 810243

Results in ppm

<u>SAMPLE</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Ni</u>	<u>Cr</u>	<u>Ag</u>	<u>Mo</u>	<u>Au</u>
T67235A	4	4	<2	<4	34	<1	<4	<0.05
T67090B	2	<4	<2	<4	10	<1	<4	<0.05
1	28	8	65	145	210	<1	<4	<0.05
2	8	4	40	70	50	<1	<4	<0.05
3	4	<4	4	4	18	<1	<4	<0.05
4	6	<4	32	70	50	<1	<4	<0.05
095	2	<4	4	4	20	<1	<4	<0.05
097	28	4	50	125	140	<1	<4	<0.05
098	4	4	10	8	20	<1	<4	<0.05
100B	12	8	26	12	16	<1	<4	<0.05
1	12	4	14	4	14	<1	<4	<0.05
2	6	<4	8	<4	10	<1	<4	<0.05
3	4	<4	6	<4	16	<1	<4	<0.05
104	2	<4	6	<4	8	<1	<4	<0.05
108	6	85	10	<4	24	<1	<4	<0.05
9	4	<4	6	<4	14	<1	<4	<0.05
112	2	<4	8	<4	26	<1	<4	<0.05
3	6	<4	10	<4	26	<1	<4	<0.05
4	4	<4	4	<4	12	<1	<4	<0.05
115	24	8	14	4	14	<1	4	<0.05
117	6	8	6	<4	12	<1	<4	<0.05
118	4	8	12	<4	26	<1	<4	<0.05
120B	10	4200 ^a	26	20	30	<1	<4	<0.05
121	2	8	4	<4	24	<1	<4	<0.05
128	2	4	4	<4	10	<1	<4	<0.05
134	2	<4	<2	<4	14	<1	<4	<0.05
139	8	8	22	4	20	<1	<4	<0.05
140	8	8	8	4	16	<1	<4	<0.05
T67141B	4	<4	6	<4	20	<1	<4	<0.05

024

-16-

944025

OMLABS Pty Ltd

ANALYTICAL REPORTJOB COM 810243Results in ppm

<u>SAMPLE</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Ni</u>	<u>Cr</u>	<u>Ag</u>	<u>Mo</u>	<u>Au</u>
T67143B	6	<4	8	<4	8	<1	<4	<0.05
4	6	<4	8	<4	12	<1	<4	<0.05
5	6	<4	8	<4	10	<1	<4	<0.05
6	8	<4	8	<4	12	<1	<4	<0.05
7	<2	<4	20	<4	<4	<1	<4	<0.05
8	10	<4	8	<4	16	<1	<4	<0.05
9	10	<4	18	<4	10	<1	<4	<0.05
150	8	<4	14	<4	6	<1	<4	<0.05
1	6	<4	8	<4	8	<1	<4	<0.05
2	8	<4	8	<4	12	<1	<4	<0.05
3	8	<4	4	<4	12	<1	<4	<0.05
4	8	<4	8	<4	14	<1	<4	<0.05
5	6	4	6	<4	10	<1	<4	<0.05
6	12	4	12	<4	10	<1	<4	<0.05
7	8	<4	6	<4	12	<1	<4	<0.05
8	8	4	6	<4	10	<1	<4	<0.05
9	6	<4	8	<4	8	<1	<4	<0.05
160	8	4	8	<4	12	<1	<4	<0.05
1	16	16	8	<4	12	<1	<4	<0.05
163	30	12	16	<4	10	<1	<4	<0.05
4	8	<4	4	<4	4	<1	<4	<0.05
165	8	<4	2	<4	8	<1	<4	<0.05
168	6	<4	4	<4	12	<1	<4	<0.05
9	6	<4	4	<4	8	<1	<4	<0.05
170	8	<4	4	<4	14	<1	<4	<0.05
1	10	16	14	<4	12	<1	<4	<0.05
2	32	4	8	4	12	<1	<4	<0.05
3	8	4	2	<4	12	<1	<4	<0.05
T67174B	16	4	8	<4	10	<1	<4	<0.05

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025

COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM 810243

Results in ppm

<u>SAMPLE</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Ni</u>	<u>Cr</u>	<u>Ag</u>	<u>Mo</u>	<u>Au</u>
T67176B	<2	<4	10	4	12	<1	<4	<0.05
178	24	<4	50	16	65	<1	<4	<0.05
9	6	4	60	16	110	<1	<4	<0.05
180	14	8	46	16	80	<1	<4	<0.05
181	170	12	135	170	100	<1	<4	<0.05
183	6	8	18	4	90	<1	<4	<0.05
4	24	20	16	4	8	<1	12	<0.05
5	10	8	6	<4	10	<1	<4	<0.05
6	4	<4	4	8	18	<1	<4	<0.05
187	6	4	18	20	34	<1	<4	<0.05
189	4	<4	12	36	20	<1	<4	<0.05
190	10	<4	14	36	40	<1	<4	<0.05
1	4	4	4	<4	10	<1	<4	<0.05
192	<2	<4	<2	<4	10	<1	<4	<0.05
195	2	<4	<2	<4	14	<1	<4	<0.05
6	4	4	4	<4	10	<1	<4	<0.05
7	2	4	2	<4	8	<1	<4	<0.05
8	6	12	6	4	22	<1	<4	<0.05
9	4	4	4	<4	12	<1	<4	<0.05
200B	4	8	20	<4	12	<1	<4	<0.05
201	6	16	16	<4	10	<1	<4	<0.05
203	8	4	8	<4	10	<1	<4	<0.05
4	4	4	2	<4	12	<1	<4	<0.05
5	4	<4	8	<4	20	<1	<4	<0.05
6	4	<4	4	<4	22	<1	<4	<0.05
7	10	<4	10	<4	12	<1	<4	<0.05
8	4	<4	8	<4	14	<1	<4	<0.05
209	4	<4	6	<4	10	<1	<4	<0.05
T67211B	8	<4	8	<4	10	<1	<4	<0.05

026

944027

COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM 810243

Results in ppm

<u>SAMPLE</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Ni</u>	<u>Cr</u>	<u>Ag</u>	<u>Mo</u>	<u>Au</u>
T67212B	6	<4	4	<4	8	<1	<4	<0.05
3	8	<4	14	4	14	<1	4	<0.05
4	6	<4	8	<4	14	<1	<4	<0.05
5	14	<4	10	<4	22	<1	<4	<0.05
6	6	<4	8	<4	14	<1	<4	<0.05
7	4	<4	8	<4	18	<1	<4	<0.05
218	20	<4	20	8	12	<1	<4	<0.05
220	6	<4	2	<4	16	<1	<4	<0.05
1	4	<4	6	<4	20	<1	<4	<0.05
2	4	24	2	<4	20	<1	<4	<0.05
3	6	4	46	8	16	<1	<4	0.8
4	8	<4	4	<4	10	<1	<4	<0.05
225	4	<4	<2	<4	14	<1	<4	<0.05
227	14	<4	6	<4	24	<1	<4	<0.05
8	16	<4	6	<4	6	<1	8	<0.05
229	12	<4	8	4	14	<1	<4	<0.05
233	10	<4	6	<4	30	<1	<4	<0.05
T67234B	2	24	6	<4	20	<1	<4	<0.05

Method of Analysis - Sn, As, W, Ba, Sb, Sr : XRF 1
Cu, Pb, Zn, Ni : AAS 1
Cr : AAS 2
Ag, Mo : AAS 3
Au : AAS 5

027

944028



COMLABS Pty Ltd

COMPUTERISED ANALYTICAL LABORATORIES

OUR REF.: COM 800666
YOUR REF.: Order No. T670/500
Sheet No. 000631

305 SOUTH ROAD
MILE END SOUTH
STH. AUST. 5031
TEL.: (08) 43 5722
TELEX: AA 89323

Mr. R. Hine,
B.H.P. Exploration Co. Ltd.,
G.P.O. Box 1140L,
HOBART. TAS. 7000.

5.2.81

Dear Sir,

RE: JOB COM 800666

Enclosed are the assays for the samples delivered to our Laboratory on the 19th December, 1980.

Yours sincerely,

Harry Fishman
Managing Director

c.c: Mr. A. Goode
Mr. E. Bumstead

028

944029



COMLABS Pty Ltd

COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM 800666

Results in ppm

<u>SAMPLE</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Ni</u>	<u>Cr</u>	<u>Ag</u>	<u>Mo</u>	<u>Au</u>
24212 ARA 20	210	95	46	40	65	<1	<4	<0.05
213 1	250	70	40	40	85	<1	<4	<0.05
214 2	145	240*	40	32	65	<1	<4	<0.05
215 3	260	16	46	30	60	<1	<4	<0.05
216 4	4900	130*	55	70	85	<1	18	<0.05
217 5	270	60	140	75	85	<1	8	<0.05
218 6	1.05%	70	90	28	70	<1	50	<0.05
219 7	150	50	380*	260	105	<1	4	<0.05
220 8	1.50%	<4	44	34	180	3	<4	<0.05
221 9	710	<4	185	140	370	<1	<4	<0.05
222 30	310	6	210	160	360	<1	<4	<0.05
223 1	8000	6	70	55	210	2	<4	<0.05
224 2	1000	<4	240	165	220	<1	<4	<0.05
225 3	510	8	230	140	210	<1	<4	<0.05
226 4	380	22	590	340	280	<1	<4	0.15
227 5	125	20	220	230	290	<1	<4	<0.05
228 6	105	20	75	60	280	<1	<4	<0.05
24, 229 ARA 37	80	10	60	50	210	<1	<4	<0.05
24230 T67001A	46	14	210	110	290	<1	<4	<0.05
231 2	60	16	85	120	290	<1	<4	<0.05
232 3	60	18	110	195	310	<1	<4	<0.05
233 4	60	14	110	200	350	<1	<4	<0.05
234 5	22	6	60	80	200	<1	<4	<0.05
235 6	48	10	140	170	810	<1	<4	<0.05
236 7	46	8	155	185	320	<1	<4	<0.05
237 8	65	10	195	260	800	<1	<4	<0.05
238 9	18	6	50	40	320	<1	<4	<0.05
239 010	55	16	110	105	270	<1	<4	<0.05
240 T67011A	32	34	60	150	220	<1	<4	<0.05

not located

029

944030

COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM 800666

Results in ppm

<u>SAMPLE</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Ni</u>	<u>Cr</u>	<u>Ag</u>	<u>Mo</u>	<u>Au</u>
24241 T67012A	22	4	85	100	140	<1	<4	<0.05
242 3	16	4	24	14	180	<1	<4	<0.05
243 4	14	4	38	20	890	<1	<4	<0.05
244 5	20	<4	48	50	380	<1	<4	<0.05
245 6	12	<4	22	20	730	<1	<4	<0.05
246 7	10	<4	18	14	220	<1	<4	<0.05
247 8	40	10	46	85	370	<1	<4	<0.05
248 9	14	<4	44	46	175	<1	<4	<0.05
249 020	12	<4	16	14	240	<1	<4	<0.05
250 1	16	<4	16	18	180	<1	<4	<0.05
251 2	12	<4	16	14	170	<1	<4	<0.05
252 3	18	<4	16	14	260	<1	<4	<0.05
253 4	14	<4	14	10	170	<1	<4	<0.05
254 5	38	<4	115	100	610	<1	<4	<0.05
255 6	28	6	105	140	440	<1	<4	<0.05
256 7	40	14	70	100	470	<1	<4	<0.05
257 8	16	<4	16	20	190	<1	<4	<0.05
258 T67029A	16	<4	18	12	180	<1	<4	<0.05
T67001B	32	<4	185	60	290	<1	<4	<0.05
2	46	10	80	120	330	<1	<4	<0.05
3	55	4	115	195	320	<1	<4	<0.05
4	34	8	90	100	1050	<1	<4	<0.05
5	22	4	44	32	330	<1	<4	<0.05
6	50	10	150	180	970	<1	<4	<0.05
8	50	110	180	200	1300	<1	<4	<0.05
9	20	<4	44	34	480	<1	<4	<0.05
10	80	480	115	130	260	<1	<4	<0.05
12	22	<4	90	70	220	<1	<4	<0.05
T67013B	18	540	22	100	140	<1	<4	<0.05

030

-3-

944031

COMLABS Pty Ltd

COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORTJOB COM 800666Results in ppm

<u>SAMPLE</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Ni</u>	<u>Cr</u>	<u>Ag</u>	<u>Mo</u>	<u>Au</u>
T67014B	12	<4	24	34	610	<1	<4	<0.05
5	14	<4	42	38	540	<1	<4	<0.05
6	12	4	38	36	1300	<1	<4	<0.05
7	12	6	20	16	220	<1	<4	<0.05
8	34	12	55	65	440	<1	<4	<0.05
9	16	<4	50	60	260	<1	<4	<0.05
020	14	<4	12	16	195	<1	<4	<0.05
1	12	<4	10	14	175	<1	<4	<0.05
2	10	<4	12	14	175	<1	<4	<0.05
3	12	<4	12	14	175	<1	<4	<0.05
4	12	<4	24	14	115	<1	<4	<0.05
5	30	6	130	100	540	<1	4	<0.05
6	18	<4	60	90	230	<1	<4	<0.05
7	42	16	70	90	690	<1	6	<0.05
8	16	12	16	18	165	<1	<4	<0.05
T67029B	14	<4	12	14	140	<1	<4	<0.05

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COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORTJOB COM 800666Results in ppm

<u>SAMPLE</u>	<u>Sn</u>	<u>W</u>	<u>As</u>	<u>Sb</u>	<u>Ba</u>	<u>Sr</u>
ARA 20	6	10	18	4	480	14
1	8	<10	16	10	420	18
2	<4	10	10	4	460	16
3	<4	<10	16	6	350	16
4	<4	<10	85	14	260	90
5	6	20	60	<4	340	30
6	6	<10	60	10	360	8
7	4	<10	28	20	3300	38
8	<4	<10	<2	6	<10	2450
9	<4	20	40	10	160	60
30	8	<10	26	8	70	40
1	<4	<10	<2	<4	30	2200
2	<4	10	18	<4	80	44
3	6	<10	20	4	50	20
4	6	<10	36	4	20	12
5	6	<10	12	4	310	10
6	<4	<10	46	6	320	6
ARA 37	<4	<10	28	4	300	4
T67001A	12	<10	16	14	90	34
2	6	<10	10	14	90	55
3	8	<10	12	12	115	85
4	6	<10	10	4	95	105
5	4	15	8	8	35	30
6	4	10	14	6	120	95
7	<4	<10	8	<4	220	75
8	<4	<10	6	<4	95	125
9	<4	10	8	<4	110	22
- 010	14	<10	10	12	230	210
T67011A	<4	15	6	6	95	48

032

944033

COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM 800666

Results in ppm

<u>SAMPLE</u>	<u>Sn</u>	<u>W</u>	<u>As</u>	<u>Sb</u>	<u>Ba</u>	<u>Sr</u>
T67012A	14	10	6	6	85	30
3	<4	<10	2	8	65	16
4	6	15	4	4	40	2
5	<4	<10	3	8	85	24
6	<4	<10	2	16	50	8
7	<4	<10	<2	<4	125	12
8	<4	20	22	<4	70	34
9	14	10	4	6	105	34
020	<4	10	4	12	90	10
1	6	<10	<2	10	105	18
2	<4	<10	2	<4	110	14
3	8	10	2	12	75	12
4	8	<10	2	6	55	6
5	4	<10	10	6	65	150
6	<4	<10	6	6	45	110
7	<4	20	16	6	70	105
8	<4	15	<2	6	40	24
T67029A	4	10	<2	18	50	10
T67001B	8	<10	14	8	50	16
2	6	15	8	<4	95	48
3	<4	<10	8	6	55	70
4	<4	<10	10	4	60	80
5	<4	<10	2	8	15	16
6	8	<10	16	<4	85	105
8	12	<10	8	4	60	135
9	6	15	4	8	90	30
10	14	<10	8	16	330	195
12	10	<10	4	4	45	16
T67013B	12	<10	<2	10	60	18

033

COMLABS Pty Ltd

COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORTJOB COM 800666Results in ppm

<u>SAMPLE</u>	<u>Sr</u>	<u>W</u>	<u>As</u>	<u>Sb</u>	<u>Ba</u>	<u>Sr</u>
T67014B	4	<10	2	<4	50	4
5	<4	<10	<2	10	75	18
6	18	<10	2	4	15	4
7	4	<10	2	8	80	10
8	<4	<10	24	8	150	36
9	<4	<10	5	12	125	34
020	6	<10	<2	10	70	10
1	6	<10	2	10	115	26
2	<4	15	<2	10	105	18
3	8	10	2	16	50	10
4	<4	<10	<2	16	60	4
5	12	<10	8	<4	45	145
6	<4	10	<2	6	30	85
7	<4	<10	20	16	40	110
8	<4	10	<2	8	40	38
T67029B	6	10	3	10	55	14

Method of Analysis - Cu, Pb, Zn, Ni : AAS 1/1A
 Cr : AAS 2
 Ag, Mo : AAS 3
 Au : AAS 5
 Sn, W, As, Sb, Ba, Sr : XRF 1

944035



COMLABS Pty Ltd

COMPUTERISED ANALYTICAL LABORATORIES

OUR REF.: COM 810068
YOUR REF.: Project No. T670/500
Sheet No. 000632

305 SOUTH ROAD
MILE END SOUTH
STH. AUST. 5031
TEL.: (08) 43 5722
TELEX: AA 89323

Mr. R. Hine,
B.H.P. Exploration Pty Ltd.,
G.P.O. Box 1140L,
HOBART. TAS. 7001.

20.2.81

Dear Sir,

RE: JOB COM 810068

Enclosed are the assays for the samples delivered to our laboratory on the 28th January, 1981.

Yours sincerely,


Phillip Harvey
Laboratory Manager

c.c: Mr. A. Goode
Mr. E. Bumstead

035

944036



COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM 810068

Results in ppm

<u>SAMPLE</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Ni</u>	<u>Cr</u>	<u>Ag</u>	<u>Mo</u>	<u>Au</u>
T67030A 2425912	12	4	12	6	38	<1	4	<0.05
260 1	10	4	14	10	24	1	4	<0.05
261 2	30	8	90	125	290	1	<4	<0.05
262 3	16	4	40	80	70	<1	<4	<0.05
263 4	34	8	85	150	175	<1	<4	<0.05
264 5	18	<4	28	40	80	<1	<4	<0.05
265 6	50	8	110	175	260	<1	<4	<0.05
266 7	38	4	110	140	115	1	<4	<0.05
267 8	46	16	70	125	165	1	<4	<0.05
268 9	34	4	80	160	180	<1	<4	<0.05
269 040A	28	4	95	120	136	<1	<4	<0.05
270 1	34	8	100	150	120	<1	<4	<0.05
271 2	20	4	32	50	95	<1	<4	<0.05
272 3	32	12	42	65	160	1	<4	<0.05
273 4	24	8	70	125	230	1	<4	<0.05
274 5	55	12	90	180	210	1	<4	<0.05
275 6	18	<4	18	48	145	1	<4	<0.05
276 7	24	<4	80	90	65	1	<4	<0.05
277 8	16	<4	20	40	185	<1	<4	<0.05
278 9	18	<4	18	40	70	<1	<4	<0.05
279 050A	16	<4	26	38	75	<1	<4	<0.05
280 1	34	4	80	70	120	<1	<4	0.35
281 2	60	12	80	140	150	1	<4	<0.05
282 3	14	12	6	22	30	1	<4	<0.05
283 4	12	4	8	6	30	1	<4	<0.05
284 5	10	<4	8	6	38	<1	<4	<0.05
285 6	14	4	10	10	38	1	<4	<0.05
286 7	8	<4	8	6	18	<1	<4	<0.05
T67058A 2428718	16	16	36	20	18	<1	4	<0.05

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036

944037

 **COMLABS Pty Ltd**
COMPUTERIZED ANALYTICAL LABORATORIES

ANALYTICAL REPORTJOB COM 810068Results in ppm

<u>SAMPLE</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Ni</u>	<u>Cr</u>	<u>Ag</u>	<u>Mo</u>	<u>Au</u>
T67059A 24288	10	<4	4	6	12	<1	<4	<0.05
289 060A	8	<4	4	<4	38	<1	<4	<0.05
290 1	8	<4	6	<4	10	<1	<4	<0.05
291 2	10	<4	6	4	75	<1	4	<0.05
292 3	20	4	20	14	55	<1	4	<0.05
293 4	12	<4	8	4	8	1	<4	<0.05
294 5	20	4	140	175	150	1	<4	<0.05
295 6	26	16	75	50	36	<1	4	<0.05
296 7	8	<4	8	14	18	<1	<4	<0.05
297 8	6	<4	4	4	14	<1	<4	<0.05
298 9	6	<4	2	<4	16	<1	<4	<0.05
299 070A	4	<4	4	4	16	<1	<4	<0.05
300 1	8	<4	4	4	16	<1	<4	<0.05
301 2	10	<4	16	26	46	<1	<4	<0.05
302 3	6	<4	4	4	16	<1	<4	<0.05
303 4	12	4	30	32	48	<1	<4	<0.05
304 5	30	8	120	120	250	<1	<4	<0.05
305 6	8	<4	6	16	28	<1	<4	<0.05
306 7	6	<4	4	4	22	<1	<4	<0.05
307 8	14	4	24	6	20	<1	<4	<0.05
308 9	6	<4	6	<4	24	<1	<4	<0.05
309 080A	4	<4	4	<4	12	<1	<4	<0.05
310 1	6	<4	4	<4	50	<1	<4	<0.05
311 2	4	<4	4	<4	85	<1	4	<0.05
312 3	4	<4	4	<4	14	<1	<4	<0.05
313 4	8	4	10	4	115	<1	4	<0.05
314 5	4	<4	2	<4	14	<1	<4	<0.05
315 6	6	<4	6	4	70	<1	4	<0.05
T67087A 316	8	4	8	<4	70	<1	4	<0.05

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COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM 810068

Results in ppm

<u>SAMPLE</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Ni</u>	<u>Cr</u>	<u>Ag</u>	<u>Mo</u>	<u>Au</u>
T67088A 24317	8	<4	6	4	50	<1	<4	<0.05
T67089A 24318	22	24	30	16	22	<1	<4	<0.05
T67030B	8	4	6	<4	14	<1	<4	<0.05
1	4	4	12	8	16	<1	<4	<0.05
2	30	4	130	125	400	<1	<4	<0.05
3	12	<4	50	44	105	<1	<4	<0.05
4	32	8	80	115	240	<1	<4	<0.05
5	18	4	32	12	145	<1	4	<0.05
6	36	4	130	140	320	1	<4	<0.05
7	30	4	125	105	130	<1	4	<0.05
9	30	8	125	140	130	<1	<4	<0.05
040B	26	4	120	100	210	<1	<4	<0.05
1	34	4	170	170	220	<1	<4	<0.05
2	18	8	28	28	120	<1	<4	<0.05
4	24	<4	80	95	250	<1	<4	<0.05
6	16	<4	16	16	340	<1	<4	<0.05
7	34	<4	155	160	210	<1	<4	<0.05
8	14	<4	34	24	810	1	<4	<0.05
9	18	<4	20	30	210	1	<4	<0.05
050B	20	<4	48	40	220	<1	<4	<0.05
1	48	8	115	80	250	<1	<4	<0.05
3	14	40	<2	<4	85	<1	4	<0.05
4	12	8	<2	4	10	<1	<4	<0.05
5	8	4	<2	<4	12	<1	4	<0.05
9	6	<4	<2	<4	8	<1	4	<0.05
062B	6	<4	<2	<4	10	<1	<4	<0.05
3	12	4	4	8	18	<1	4	<0.05
4	8	4	<2	<4	10	<1	<4	<0.05
T67065B	26	8	170	150	135	<1	4	<0.05

038

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944039



COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORTJOB COM 810068Results in ppm

<u>SAMPLE</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Ni</u>	<u>Cr</u>	<u>Ag</u>	<u>Mo</u>	<u>Au</u>
T67066B	44	20	100	32	36	<1	6	<0.05
7	8	<4	<2	8	26	<1	<4	<0.05
8	6	<4	<2	<4	44	<1	<4	<0.05
9	8	<4	<2	<4	28	<1	<4	<0.05
070B	8	<4	<2	<4	28	<1	<4	<0.05
1	6	4	<2	4	18	<1	<4	<0.05
2	14	<4	6	28	36	1	<4	<0.05
3	6	<4	<2	<4	10	<1	<4	<0.05
6	6	<4	<2	<4	16	<1	<4	<0.05
7	2	4	2	<4	12	<1	<4	<0.05
9	4	4	2	<4	6	<1	<4	<0.05
080B	6	<4	2	<4	28	<1	<4	<0.05
1	4	4	4	<4	30	<1	<4	<0.05
2	4	<4	2	<4	32	<1	<4	<0.05
3	2	4	2	<4	12	<1	<4	<0.05
5	2	<4	2	<4	22	<1	<4	<0.05
6	4	4	4	<4	36	<1	<4	<0.05
T67089B	20	120	24	8	22	<1	4	<0.05

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039

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944040



COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM 810068

Results in ppm

<u>SAMPLE</u>	<u>As</u>	<u>Sb</u>	<u>Av</u>	<u>Ba</u>	<u>Sr</u>	<u>Sn</u>	<u>W</u>
T67030A	<2	4		100	16	<4	<10
1	4	6		200	24	<4	<10
2	6	<4		110	60	<4	<10
3	4	<4		120	24	<4	<10
4	6	8		80	75	<4	<10
5	12	<4		75	16	4	10
6	6	<4		120	75	<4	<10
7	2	<4		110	75	<4	<10
8	5	8		60	95	<4	<10
9	6	<4		50	70	<4	15
040A	2	<4		40	36	8	<10
1	8	<4		65	45	8	<10
2	3	<4		35	30	<4	<10
3	10	<4		30	25	<4	<10
4	4	<4		25	36	<4	<10
5	6	6		65	100	<4	<10
6	5	<4		<10	6	<4	<10
7	3	<4		50	30	<4	<10
8	<2	<4		<10	4	<4	10
9	<2	<4		35	10	<4	<10
050A	4	<4		10	10	6	<10
1	26	<4	0.35	85	26	<4	<10
2	12	<4		80	40	<4	<10
3	4	8		75	42	<4	<10
4	<2	14		100	12	<4	<10
5	2	4		85	10	<4	<10
6	4	<4		150	14	<4	<10
7	3	<4		160	16	<4	10
T67058A	10	<4		200	22	<4	10

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COMLABS Pty Ltd

COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

944041

JOB COM 810068

Results in ppm

<u>SAMPLE</u>	<u>As</u>	<u>Sb</u>	<u>Ba</u>	<u>Sr</u>	<u>Sn</u>	<u>W</u>
T67059A	2	<4	140	10	<4	<10
060A	<2	10	100	6	<4	15
1	<2	6	170	16	<4	<10
2	<2	<4	45	8	10	15
3	3	<4	80	34	4	20
4	<2	10	100	18	8	<10
5	4	6	85	55	<4	<10
6	20	<4	360	28	<4	<10
7	<2	<4	<10	10	6	<10
8	<2	<4	<10	<4	<4	<10
9	<2	<4	<10	<4	<4	<10
070A	<2	<4	<10	<4	<4	<10
1	2	<4	25	6	<4	<10
2	<2	6	<10	<4	<4	<10
3	<2	10	<10	<4	8	<10
4	<2	<4	180	14	<4	20
5	8	4	80	24	<4	15
6	<2	6	10	<4	<4	<10
7	<2	6	<10	<4	8	<10
8	<2	8	110	14	6	<10
9	2	<4	10	4	<4	<10
080A	<2	<4	<10	<4	<4	<10
1	<2	<4	<10	<4	<4	<10
2	<2	<4	<10	<4	<4	<10
3	<2	<4	<10	<4	<4	<10
4	3	<4	110	26	<4	15
5	<2	<4	<10	<4	<4	<10
6	2	10	30	4	<4	<10
T67087A	3	<4	100	26	<4	<10

041

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944042


COMLABS Pty Ltd
 COMPUTERISED ANALYTICAL LABORATORIES
ANALYTICAL REPORTJOB COM 810068Results in ppm

<u>SAMPLE</u>	<u>As</u>	<u>Sb</u>	<u>Ba</u>	<u>Sr</u>	<u>Sn</u>	<u>W</u>
T67088A	5	<4	95	10	<4	25
T67089A	18	4	230	20	<4	15
T67030B	4	10	70	18	<4	10
1	4	<4	150	18	<4	<10
2	14	<4	100	70	<4	<10
3	10	8	130	24	<4	<10
4	10	6	40	65	<4	<10
5	26	<4	60	10	<4	<10
6	5	<4	80	65	<4	<10
7	6	4	65	75	<4	15
9	8	<4	65	85	8	15
040B	6	4	25	40	<4	10
1	16	<4	85	75	10	<10
2	4	<4	35	28	<4	<10
4	8	<4	20	36	<4	25
6	6	4	<10	6	<4	<10
7	8	<4	40	32	<4	<10
8	4	<4	<10	6	<4	<10
9	8	<4	55	10	<4	<10
050B	6	<4	15	10	<4	<10
1	48	4	150	24	<4	<10
3	16	<4	<10	100	8	15
4	6	<4	110	14	<4	<10
5	3	4	70	10	6	<10
9	3	<4	100	10	6	<10
062B	<2	<4	35	4	<4	10
3	3	<4	80	28	<4	<10
4	3	<4	100	14	<4	<10
T67065B	14	<4	100	90	<4	<10

.../8

042



COMLABS Pty Ltd

COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM 810068

Results in ppm

<u>SAMPLE</u>	<u>As</u>	<u>Sb</u>	<u>Ba</u>	<u>Sr</u>	<u>Sn</u>	<u>W</u>
T67066B	50	<4	400	26	<4	<10
7	<2	<4	15	18	<4	<10
8	<2	<4	25	<4	8	<10
9	<2	<4	20	<4	<4	<10
070B	<2	4	<10	<4	12	10
1	2	<4	20	4	10	<10
2	3	<4	10	4	4	10
3	<2	6	25	<4	<4	<10
6	<2	<4	15	<4	4	<10
7	<2	<4	<10	<4	<4	<10
9	<2	<4	<10	<4	<4	15
080B	<2	<4	30	<4	6	<10
1	<2	<4	20	4	<4	<10
2	<2	<4	25	<4	4	10
3	<2	12	<10	<4	4	<10
5	<2	<4	<10	<4	<4	<10
6	<2	10	40	4	10	<10
T67089B	8	<4	340	18	<4	<10

Method of Analysis - Cu, Pb, Zn, Ni : AAS 1
 Cr : AAS 2
 Ag, Mo : AAS 3
 Au : AAS 5
 As, Sb, Ba, Sr, Sn, W : XRF 1

REGION.....

PROJECT No.....

THE BROKEN HILL PROPRIETARY CO. LTD.

2	3	5	6	9	11	12
8	4	2				0

PUNCH IN EVERY CARD

044

ANALYSIS

SAMPLE NUMBER			Sn			Method of Analysis			W			Method of Analysis			As			Method of Analysis			Rb			Method of Analysis			Ba			Method of Analysis			Sb			Method of Analysis			Pb			Method of Analysis			Bi			Method of Analysis		
ALPHA PREFIX	NUMERICAL VALUE	Suf.	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS											
ARA	1		85			<10			<5			15			70			8			8			<1																										
	2		15,000			..			750			85			130			75			265			48																										
	3		95			..			8			80			180			<5			11			<1																										
	4		7600			..			680			90			240			55			280			20																										
	5		340			..			20			90			240			5			21			<1																										
ARA	1A																																																	
	2A																																																	
	3A																																																	
	4A																																																	
	5A																																																	

944045

DATE ANALYSED
 Day Month Year
 15 16 17 18 19 20

PLACE ANALYSED
 21 22 23 24 25 26 27 28 29
 ANALAB5

PPM - M
 WT % - W

SAMPLING METHOD
 30 31 32 33

SAMPLE PREPARATION
 1 2 34 35

ANALYSIS SCHEME
 36 37

FRACTION SCHEME
 38 39

ION

THE OPEN PROTECTA D. L.

8 4 2 0
PUNCH IN EVERY CARD

JECT No.

ANALYSIS

SAMPLE NUMBER		Sn			Au			Ba			Rb			Bi			Bo			As			Sb																										
ALPHA REFIX	NUMERICAL VALUE	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
		XRF			IA			120-A			XRF-IA			XRF-IA			XRF-IA						S-6																										
		ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS																							
ARA	6	<5			2.8			190			5			25			<20			550																													
ARA	7	<5			175			270			10			5			<20			70																													
ARA	8	<5			800			270			<5			5			<20			155																													
ARA	9	<5			10			1900			190			<5			<20			10																													
* W-attaches 410 ppm ;		Mo - values all < 5 ppm																																															

DATE ANALYSED
 Day Month Year
 15 5 80

PLACE ANALYSED
 21 22 23 24 25 26 27 28 29
 ALS

PPM - M
 WT % - W
 30 M

SAMPLING METHOD

1 2 3
 31 32 33

SAMPLE PREPARATION

1 2
 34 35

ANALYSIS SCHEME

36 37

FRACTION SCHEME
 38 39

Form No. 473

SHEET NO. 42676

944051

050

REC NW 1A2
 PROJECT No. T670

THE IRONHILL PROPRIETARY CO. LTD.

2	3	4	5	6	7	8	9	10	11	12	13
8	4	2									0

PUNCH IN EVERY CARD

053

ANALYSIS

1	SAMPLE NUMBER		Sn			W			Au																																																	
			25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72								
0	ALPHA PREFIX	NUMERICAL VALUE	XRF			XRF			650																																																	
4	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
2	ARA	10	290			130			0.005																																																	
2		11	44700			240			0.517																																																	
2		12	72200			450			0.137																																																	
2		13	140			<50			I.S.																																																	
2		14	20			<50			I.S.																																																	

944054

DATE ANALYSED
 Day Month Year
 15 16 17 18 19 20
 6 80

PLACE ANALYSED
 21 22 23 24 25 26 27 28 29
 ANAL AB

PPM - M 30
 WT % - W

SAMPLING METHOD
 1 2 3
 31 32 33

SAMPLE PREPARATION
 1 2
 34 35

ANALYSIS SCHEME
 36 37

FRACTION SCHEME
 38 39

PROJECT No. **T670**
 LINE/ZONE

THE BROKEN HILL PROPRIETARY CO. LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
8	3	5									1	0	2

PUNCH IN EVERY CARD

050

GENERAL SAMPLE DESCRIPTION

944057

SAMPLE NUMBER				EASTING				NORTHING				REDUCED LEVEL OF SAMPLE	FOR CHANNEL SAMPLES Etc.				Information Available	Duplicate samples	ROCK TYPE	Sample Type	SAMPLE DESCRIPTION																																	
ALPHA PREFIX	NUMERICAL VALUE			Surf.	LONGITUDE				LATITUDE				ORIENTATION		SAMPLE LENGTH																																							
	MIN	SEC.	•		MIN	SEC.	•	BEARING	DEP.																																													
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61								
ARA	20																																																Cream, leached slate with red linings, v. fine banding As above					
	21																																																					
	22																																																					
	23																																																					
ARA	24																																																			Stained black slate from clear zone, no sulphide visible Pyritic black slate trace malachite Pyritic black slate & Chalcopyrite on pyrite cubes		
	25																																																					
	26																																																					

REMARKS - **ARA 20-26 Tayaka Quarry**

Date **13/3/81** Logged or sampled by **R.H.**

1	2	3	4	5	6	7	8	9	10	11	12	13
8	4	2										0

PUNCH IN EVERY CARD

057

PROJECT No. 7670

ANALYSIS

SAMPLE NUMBER			Sn			W			As			Cu			Pb			Zn			Ag			Au																																	
ALPHA PREFIX	NUMERICAL VALUE		Method of Analysis																																																						
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
ARA	20		6			10			18			210			95			46			<1			<0.05																																	
	21		8			<10			16			250			70			40			<1			<0.05																																	
	22		<4			10			10			145			240			40			<1			<0.05																																	
	23		<4			<10			16			260			16			46			<1			<0.05																																	
ARA	24		<4			<10			85			4900			130			55			<1			<0.05																																	
	25		6			20			60			270			60			140			<1			<0.05																																	
	26		6			10			60			10,500			70			90			<1			<0.05																																	
Element			Sb			Ba			Sr			Ni			Cr			Mo																																							
ARA	20		4			480			14			40			65			<4																																							
	21		10			420			18			40			85			..																																							
	22		4			460			16			32			65			..																																							
	23		6			350			16			30			60			..																																							
	24		14			260			90			70			85			18																																							
	25		<4			340			30			75			85			8																																							
	26		10			360			8			28			70			50																																							

944058

DATE ANALYSED
Day Month Year
15 10 17

PLACE ANALYSED
21 22 23 24 25 26 27 28
COMLABS

PPM M
WT % W

SAMPLING METHOD

1	2	3
31	32	33

SAMPLE PREPARATION

1	2
34	35

ANALYSIS SCHEME

36	37
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FRACTION SCHEME

REGION N.W. TAS
 PROJECT No. T670
 LINE/ZONE

THE BROKEN HILL PROPRIETARY CO. LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
8	3	5									1	0	2

PUNCH IN EVERY CARD

058

944059

GENERAL SAMPLE DESCRIPTION

SAMPLE NUMBER										EASTING					NORTHING					REDUCED LEVEL OF SAMPLE					FOR CHANNEL SAMPLES Etc.										ROCK TYPE	SAMPLE TYPE	SAMPLE DESCRIPTION													
ALPHA PREFIX		NUMERICAL VALUE			Surf	LONGITUDE					LATITUDE					LEVEL					ORIENTATION					SAMPLE LENGTH					Information Available	Duplicate samples																		
15	16	17	18	19		20	21	22	23	24	25	26	27	28	29						30	31	32	33	34	35	36	37	38	39			40	41				42	43	44	45	46	47	48	49	50	51	52	53	54
ARA		38																																																(111) vein quartz and fault breccia with Fe oxides, siliceous
ARA		39																																									(112) Gossan, dk brown-red with minor pyrite; sample from within of vein							
ARA		40																																									(112) vein of quartz with minor pyrite and possible As staining							
ARA		41																																									(113) Schist; calc-muscovite, with minor pyrite, dk brown Fe oxides; brecciated locally.							

REMARKS: _____ Date: 10/3/81 Logged or sampled by: R.H.

PROJECT No. **N.W. T15**
7670

THE BROKEN HILL PROPRIETARY CO. LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13
8	4	2										0

PUNCH IN EVERY CARD

059

ANALYSIS

SAMPLE NUMBER		Sn			W			Mo			Cu			Pb			Zn			Ag			Au					
ALPHA PREFIX	NUMERICAL VALUE	Method of Analysis																										
Sub.		YRFM			YRFM			2			1			1			1			1			196			1207		
ANALYSIS		ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS					
ARA	38	LS			L10			L2			160			35			30			1			5					
ARA	39	LS			L10			L2			1400			40			160			5			50					
ARA	40	LS			L10			5			40			15			10			105			105					
ARA	41	LS			L10			L2			35			45			40			3			30					
Element		As			Sb			Ni			Co			Cr			Ba			Se								
ARA 38		35			30			10			10			145			60			10								
39		160°			430°			25			35			55			20			10								
40		30			L10			15			10			275°			260			10								
41		160°			40			55			40			145			1300°			10								

944060

DATE ANALYSED
Day Month Year

PLACE ANALYSED

1	2	3
31	32	33

SAMPLE PREPARATION

1	2
34	35

ANALYSIS SCHEME

36	37
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FRACTION SCHEME

38	39
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62

THE BROKEN HILL PROPRIETARY CO. LTD.

EXPLORATION DEPARTMENT

Petrology Section

Melbourne Research Laboratories
 245-273 Wellington Road
 Clayton, Victoria 3168
 P.O. Box 274, Clayton
 Telephone 560-7066

544063

Memo to: A.D. Goode - Camberwell.

Date 12th March, 1981.

Our Ref: WHR/KM

Your Ref: M570

Subject: E1/15. Mineragraphy of H.M. Concentrates from Arthur River, Tasmania (MRL 12781).

File: PM9

Date:

Heavy Mineral concentrate from Arthur River was examined optically and zinc block tests carried out. The sample proved positive for cassiterite and the possible tin associates, topaz, apatite and rutile. The mineralogy is summarised in the table below.

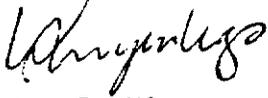
MINERAL	QUANTITY	SIZE mm	ANGULARITY	COMMENTS
Monite	Dominant	< 200	Well rounded to subangular.	Brown masses, often polished.
Topaz +	Subdominant	< 100	Angular	Transparent well formed colourless to orange crystals. Finely crystalline rounded white masses, same RI as good crystals of Topaz.
Topaz (?) Masses		< 200	Rounded	
Chromite	Minor	< 60	Angular	Usually well formed black octahedra.
Apatite	Minor	< 160	Angular individuals and subrounded masses.	Blue hexagonal crystals and blue masses of small hexagonal crystals. Pleochroic blue-violet cores*
Almandine	Rare	< 160	Angular to subrounded	Pink to reddish pink grains.
Amphibole	Rare	< 160	Subangular	Green translucent, 120° cleavage.
Pyroxene	Rare	< 160	Subangular	Olive green glassy, ribbed.
Rutile	Rare	< 160	Angular	Red to black, subhedral, striated.
Sphene	Rare	< 160	Subangular	Brown lozenge shaped.
Cassiterite	Minor	< 30 (rare individuals. Usually in composite grains (<200) or monominerallic aggregate (<60)).	Angular individuals and subrounded masses.	Grey to brown, rarely as subhedral individual crystals, often as composite grains with massive topaz or apatite. Also as monominerallic aggregates. Give positive zinc block reaction.

063

944064

* Heinrich, E.Wm. (1965) Microscopic Identification of Minerals,
McGraw-Hill 1965.

W.H. RINGENBERGS.



cc: Mr. R. Hine
Mr. J. Harms
Mrs. D. Jenkinson

Memo to: DR. A.D. GOODE - CAMBERWELL

Date 27th April, 1981

Our Ref: WHR:KM:DK

Your Ref: M574

Subject: MINERAGRAPY OF H.M. CONCENTRATES FROM ARTHUR RIVER,
TASMANIA (MRL 12781). FURTHER WORK

File: PM9

Date:

Further work on certain minerals of interest from the sample MRL 12781 (described in Memo M570, dated 12.3.1981), has necessitated a revision of that memo.

The mineral identified as Apatite failed to respond positively to the Ammonium Nitro-molybdate test for phosphates and following XRD and SEM work, is now positively identified as ferrian dravite. This mineral, when pale blue in colour and affected by weathering resembles apatite in form and colour, has similar optical properties and has a hardness well below 7, the usual hardness of tourmaline.

The identity of the white finely crystalline topaz masses has been confirmed by XRD.

This memo contains all the information in M570 in a revised form and may be used to replace the original.

W.H. Ringenberg.
Petrologist.



cc: Mr. R. Hine,
Mr. J. Harms,
Mrs. D. Jenkinson

Memo to: Dr. A.D. Goode - Camberwell.

Date 27th April, 1981.

Our Ref: WHR:DK

Your Ref: M570/M574

Subject: E1/15. Mineragraphy of H.M. Concentrates from Arthur River, Tasmania (MRL 12781). Further Work.

File: PM9

Date:

A heavy mineral concentrate from Arthur River was examined optically and zinc block tests were carried out. The sample proved positive for cassiterite and for the possible tin associates, topaz, and rutile. Blue hexagonal prisms which closely resemble apatite in appearance and optical behaviour, did not give a positive response to the Ammonium nitro-molybdate test for phosphates.

The X-ray Diffraction pattern of this mineral most closely fits that of the tourmaline group member, ferrian dravite $(Na, Ca)(Mg, Fe)_3(Al, Fe, Ti)_6B_3(Si_2O_9)_3(OH, F)_4$. SEM elemental analysis indicates this mineral contains major aluminium, silicon and iron, minor magnesium and sodium, and traces of calcium and potassium. This analysis agrees with the result expected from a ferrian dravite.

The XRD pattern obtained from the white finely crystalline rounded masses confirms their identity as topaz.

The mineralogy is summarised in the table below.

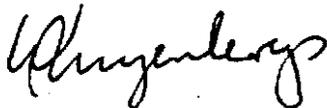
MINERAL	QUANTITY	SIZE μm	ANGULARITY	COMMENTS
Limonite	Dominant	< 200	Well rounded to subangular.	Brown masses, often polished.
Topaz +	Subdominant	< 100	Angular.	Transparent well formed colourless to orange crystals.
Topaz masses		< 200	Rounded	Finely crystalline rounded white masses, same RI as good crystals of Topaz.
Chromite	Minor	< 60	Angular	Usually well formed black octahedra.
Ferrian Dravite (Tourmaline)	Minor	< 160	Angular individuals and subrounded masses.	Blue hexagonal crystals and blue masses of small hexagonal crystals. Pleochroic blue-violet cores.
Almandine	Rare	< 160	Angular to subrounded	Pink to reddish pink grains.
Amphibole	Rare	< 160	Subangular	Green translucent, 120° cleavage.
Pyroxene	Rare	< 160	Subangular	Olive green glassy, ribbed.
Rutile	Rare	< 160	Angular	Red to black, subhedral, striated.
Sphene	Rare	< 160	Subangular	Brown lozenge shaped.

067

944067

MINERAL	QUANTITY	SIZE μ m	ANGULARITY	COMMENTS
Cassit- erite	Minor	< 30 (rare individuals. Usually in composite grains (<200) or monomin- erallic aggregate (<60).	Angular individuals and subrounded masses.	Grey to brown, rarely as subhedral individual crystals, often as composite grains with massive topaz or dravite. Also as monominerallic aggregates. Give positive zinc block reaction.

W.H. Ringenbergs.
Petrologist.



cc: Mr. R. Hine,
Mr. J. Harms,
Mrs. D. Jenkinson.

068

944068

APPENDIX 2

PETROLOGICAL REPORTS

Our Ref: CJA:IS
Your Ref:

2nd June 1981

Mr. R. Hine,
Senior Geologist,
The Broken Hill Proprietary Co. Ltd.,
GPO Box 1140C,
Hobart,
Tasmania 7001

Dear Rick,

In reference to your letter 11/3/81 and W. Fander's report CMS 81/3/52.

The fibrous radiating mineral in TAY 4 has been identified by X-Ray
Diffraction as Wavellite.

I apologise for the delay in forwarding you the results.

Regards,

Chris Alenson

Chris Alenson

070

REPORT CMS 81/3/52

Sixteen specimens were received for petrological examination and are briefly described in the accompanying tables. Descriptions incorporate data from K-staining and limited carbonate-staining tests together with observations from stereobinocular and petrological microscopic examination of representative thin-sections and offcuts.

The bulk of this suite can be readily lithologically categorised. A few specimens, however, and particularly TAY 2, are somewhat problematical due to marked alteration and weathering. These may warrant further examination, preferably on fresher material, if critical to interpretation of field observations.

Of the TAY 1, 2, 3 group, only TAY 1 carries evidence of a primary carbonate component. Minor traces of degraded alteration carbonate are evident in TAY 2; TAY 3 is devoid of carbonate.

D. Cowan, B. Sc.

070 81/3/52 CMS REPORT

Central Mineralogical Services

Sample No.	Classification - Composition	Fabric	Accessories	Comments
WYM 1/MRL12870 (T.S. 36509)	Quartz-Pyrite Rock. Fine to microgranular, incipiently sericite-stained quartz (60 %), evenly disseminated fine sub- to euhedral pyrite. Sparse irregular quartz veinlets; sericite clots.	Fractured/quartz-healed massive quartz-pyrite rock. Incipiently re-crystallized quartz.	Semi-pervasive, ultra-fine, cloudy rutile.	Sinter-like facies (mildly recrystallized "pyritic chert").
CP 1/MRL 12871	Lithic Arkose. Framework of angular to sub-angular quartz, subordinate oligoclase-albite, orthoclase, microcline; greenschist metapelite, chert-met quartzite clasts. Sericitic, quartzo-feldspathic matrix.	Pyrite mean 100 μ. Poorly sorted, essentially unbedded, silty fine to medium psammite.	Conspicuous detrital biotite, garnet (almandine). Minor graphite, muscovite, feldspar.	Polymictic sand with granitic and metasedimentary source, apparently weakly volcanomict, but ?felsite clasts sericitic, poorly resolved.
CP 2/MRL 12872	Arkose. Framework of splintery to angular quartz, alkali feldspar, subordinate metapelite, metagranite, ?metarhyolite clasts, biotite flakes. Sericitic, chloritic quartzofeldspathic matrix.	Similar to CP 1, but relatively well-bedded with silty partings, partly slumped.	Detrital almandine, minor muscovite, graphite flakes, rare cloudy rutile.	Similar and closely related to CP 1. Slightly finer-grained, relatively feldspathic. Similarly essentially unmetamorphosed. Weakly volcanomict.
CP 3/MRL 12873	Devitrified Obsidian. Frequent K-feldspathic spherulites in silicified, felsitic matrix with patchy microcrystalline albite, minor sericite.	Spherulites mean 500 μ. Weakly flow-structured with faint relict ?eutaxitic microtextures.	Sparse degraded/Felsite-stained chlorite. Rare, very fine oxidised pyrite.	Conceivably a devitrified, thoroughly welded vitric tuff, but dependant on field relationships. Mildly altered (quartz-sericite-chlorite), unstressed.
VIC 1/MRL12874	Dolomite Breccia. Microcrystalline dolomite with patchy, semi-porcellanous dolomite breccia healings, frequent sparry, optically clear dolomite veinlets.	Featureless apart from diagenetic breccia and discontinuous veins.	Sparse oxidised, fine-grained pyrite.	Essentially a pure, unmetamorphosed dolomite with typical diagenetic brecciation, later diagenetic veins.
HST29/MRL12875	Serpentinite. Near-massive antigorite aggregates stained with ultrafine exsolved magnetite, patchy, closely intergrown Mg-chlorite.	Mesh-textured with semi-pervasive pyroxene-olivine-derived structures.	Disseminated relict primary chromite.	Incipiently sheared. Thoroughly serpentinised "olivine-pyroxenite" (strictly peridotite). Colour-banding reflects distribution of chlorite.
HST42/MRL12876	Reworked Tuff. Framework of angular to sub-angular sericite-chlorite-stained alkali feldspar, similarly altered microcrystalline lava clasts, shard fragments. Sericitic chlorite matrix.	Weakly bedded, poorly to moderately sorted, silty fine sand/sandy silt. Incipiently sheared.	Clastic quartz, conspicuous leucoxenised clastic opaques. Carbonaceous matter, traces pyrrhotite.	Distinct, mildly reworked, felsic intermediate-acid, tuffaceous characteristics. ?Syngenetic Fe-sulphide. Sparse quartz veinlets.
RR 1/MRL 12877	Degraded "Picrite". Frequent iddingsite-montmorillonite (after olivine), montmorillonite (after pyroxene) aggregates. Thoroughly montmorillonised matrix with disseminated martite-magnetite.	Relict, strongly porphyritic, medium-grained fabric. Faint pseudomorphed feldspar laths.	Minor traces chromiferous magnetite.	Relict fabric suggestive of a porphyritic minor intrusive. ?Deuteric alteration enhanced by weathering.
RR 2/MRL 12878 (T.S. 36517)	Uralitic Microgabbro. Variably saussurite-stained, albitised labradorite and marginally actinolite (trend hastingsite)-pseudomorphed pigeonite, disseminated leucoxenised opaques.	Weakly feldspar-porphyrific, doleritic (subophitic).	Sparse quartz-alkali feldspar mesostasis. Rare pyrite.	Minor or marginal intrusive fabric. Feldspar phenocrysts preferentially sericitised.

				Central Mineralogical Services
Sample No.	Classification - Composition	Fabric	Accessories	Comments
RR 3/MRL 12875 (T.S. 36518)	Dolomitic Pelite. Frequent leached, partly quartz-kaolin infilled carbonate rhombs in weathered quartz-sericite matrix with faint relict pelite, ?felsite clasts, ?abraded shards	Silty to sandy clastic fabric, pelitic matrix. Evenly disseminated de-graded carbonate rhombs.	Sparse clastic muscovite flakes, leucoxenised opaques, carbonaceous pelite clasts.	Problematical interpretation due to alteration/weathering, but evidently a dolomitic, reworked, tuffaceous sandy silty pelite.
RR 4/MRL 12880	Dolomite. Fine-grained to microgranular dolomite with patchy incipient clay staining.	Patchy relict faint bedding laminations. Mildly brecciated, dolomite-healed.	Rare, extremely fine-grained, oxidised pyrite.	Diagenetically mildly brecciated, partly recrystallized, incipiently argillaceous dolomite. Affinities with VIC 1.
RR 5/MRL 12881	"Chert Breccia". Abundant clasts crypto- to microcrystalline, weakly argillaceous chert; cherty, quartz-cemented, with disseminated late cavity fillings, slightly coarser quartz.	Random, millimetric-scale, ovoid to platy, massive to faintly laminated, pelletal clasts.	Traces carbonaceous matter (clasts). Frequent microscopic silicified carbonate rhombs.	?Syneresis brecciation of slightly impure (argillaceous, carbonaceous, dolomitic) chert.
TAY1/MRL 12882	Dolomitic Pelite. Frequent leached/partly infilled carbonate rhombs (+ pyrite, ?cordierite) in sericite/minor microcrystalline quartz matrix.	Faintly sub- to millimetric laminated/incipiently graded, with discordant weak slaty cleavage.	Traces carbonaceous matter. Sparse detrital muscovite, sericitised ?shard fragments.	Close affinities with RR 3, but relatively pelitic. Former presence of cordierite is speculative, but consistent with variations in shape of clots, cavities.
TAY2/MRL 12883	Degraded ?felsite. Fe-stained kaolin with evenly disseminated quartz, chloritic clots, subordinate, partly degraded phlogopite flakes, leucoxenised opaques.	Chloritised "phenocrysts", homogeneous, more or less structureless matrix.	Minor traces oxidised, very fine (secondary) carbonate.	Considered as altered/thoroughly weathered, igneous; probably felsic intermediate ?minor intrusive. Finer detail obliterated.
TAY3/MRL 12884	Sericitic Pelite. Weakly orientated sericite with subordinate to minor silt-sized relict clastic quartz, muscovite, splintery sericitic feldspar, sericitic microfelsite clasts.	Relict sub- to millimetric pelitic banding. Weak discordant slaty cleavage, minor late microfractures.	Conspicuous clastic leucoxenic semi-opaques.	Poorly resolved, reworked, tuffaceous features similar to RR 3, TAY 1. Fabric reflects sub-greenschist ("load or burial") metamorphism.
TAY4/MRL 12885 (T.S. 36524)	Carbonaceous, Pyritic Pelite. Fine silt-sized quartz and semi-sericitic white mica. Abundant ultrafine carbonaceous matter, pyrite. Sparse Stilbite veinlets.	Pelletal, soft-pebble conglomerate-like overprint on fine silty pelitic.	Frequent fine silt-sized clastic white mica flakes.	Fabric consistent with compacted (consolidated) slump breccia. Essentially unmetamorphosed. Conspicuous "syngenetic" pyrite.

074

LABORATORY REPORT

WOOLLDONGARBA . D 4182
Ph 87 3916799
TELEX ALSEV 42344

Batch No. D128-4 Client: BHP COMPANY LIMITED Area Contact: BR. R. MINE
Date Received 21/04/81 Address: P.O. BOX 559 Address: G.P.O. BOX 1140 L.
Date Completed 08/05/81 CAMBERWELL HOBART TAS. 700#
VIC
Order No. T678 - 000645 Sample Type: STR. SED. No. of Samples: 15

SAMPLE NO.	Bg	ELEMENTS
		UNITS
	XRF 1A	METHODS
T67-236A	100	
100 C	140 170	
101 C	220 240	
108 C	110 75	
111 C	120 45	
113 C	150 140	
115 C	200 230	
118 C	120 120	
120 C	240 140	
124 C	160 55	
181 C	60 120	
205 C	140 100	
206 C	110 100	
211 C	120 110	
218 C	180 120	

UNITS LEGEND ----- a - Parts per million b - Parts per billion % - percent

944074

334 000m E

145°10' E

350

South Forest

395 000

145°30' E

Detention

5 470 000m N

Irishtown

Mawbanna

460

41° 05' S

5 450 000 m N

ARTHUR RIVER

41° 10' S

5 430 000 m N

EXPLANATION

- AE0050 Gravel Sample Location
- AE0191 -40 mesh Stream Sample (667- prefix on field)
- AE0192 Pan-concentrate Sample
- AE0193 Rock-chip Sample
- AE0194 -40 mesh stream sample

SCALE 1:50 000

0 2 4 6 8 Km

5 cm

41° 20' S

420

THE BROKEN HILL PROPRIETARY CO. LTD. EXPLORATION DEPARTMENT

EL 18/80 ARTHUR RIVER, TAS

GEOCHEMICAL SAMPLE LOCATIONS

044075 81-1583

Revisions	Drawn	RH PS	Date	30 3 81	Centre:	HOBERT
	Traced		Project No	T 670	Drawing No	A2- 075
	Checked					