

DEPT. OF MINE  
7539/86

BILLITON AUSTRALIA  
The Metals Division of the Shell Company of Australia

EL 18/84 ROSSARDEN

Progress Report on Exploration  
For the Period 27/9/85 to 31/12/85

and Final Report

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Copy No.:

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1. Tasmanian Mines Department
  2. Billiton Australia Melbourne
  3. Billiton Australia Devonport

SUMMARY

Exploration Licence 18/84 Rossarden was taken up to explore the area's tin potential.

Regional mapping highlighted the granite (Mathinna Bed) contacts SW-S of Storey's Creek and N-NE of Gipps Creek as being highly specialised, however, no major systems with tin bearing potential were located adjacent to them within the tenement. Stream sediment sampling highlighted a number of areas shedding tin with anomalous assays falling in the range 60-2630 ppm. Follow up sampling, however, confined the source of the anomalies to workings/lodes of little economic significance.

No further work is recommended.

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4. WORK UNDERTAKEN

Summary

- Prior to the Final Report period:
- 1:25,000 scale Regional Mapping
  - Stream Sediment Sampling
  - Prospect Evaluation

During the Final Report period:

- Stream Sediment Follow up -  
     Tasmanian Creek  
     Gipps Creek

Discussion

4.1 Work Completed prior to the Final Report period

4.1.1 Stream Sediment Samplig (Fig. 3)

A stream sediment orientation programme carried out in conjunction with work on adjacent licences in which Billiton has an interest (EL's 30/84 and 7/78) concluded that -10# stream sampling was the most appropriate. Approximately 100 stream samples were initially collected. Analysis of the geochemical data gave a mean background value of 17 ppm Sn for granite with a lower threshold value of 60 ppm Sn. In practice, however, it was found that, for stream sediments of granite country, in the uppermost 0.5-0.75 km of drainages, assays of 60-80 ppm were generally sourced by a few small tin lodes of little economic significance.

High assays of tin were returned for streams in the Tasmania Creek area (132-1020 ppm Sn) and also the Gipps Creek area (58-216 ppm Sn). Streams draining the Mathinna Beds only gave generally poor Sn results with the best anomaly, 45 ppm Sn, for a small stream 3 km ESE of Rossarden.

Assays for As (1-27 ppm As), Cu (10-55 ppm Cu, one assay of 135 ppm Cu) and Pb (5-45 ppm) were generally low and of little

significance. Streams draining contact metasediments in the Vickory Creek area and upper Abortsford Creek-Barneys Road area have given generally high zinc assays (55-565 ppm Zn). The cause of the high zinc values is not known.

#### 4.1.2 Prospect Evaluation

##### Rex Hill Mine (Fig. 4, Location on Figs. 1 & 2)

The Rex Hill Mine was originally worked for silver-lead ore in the late 1800's, however, it was mined for tin from 1899 to 1934. The mineralization appears to be largely shear controlled but with some collapse breccia development. The mine is hosted by a porphyritic (feldspar, quartz) medium-coarse grained alkali granite (biotite <1%-5%) with two small bodies of fine grained alkali granite (biotite ~1%) cropping out near the workings.

Besides alteration of some plagioclase to sericite, little alteration is observed outside the confines of individual workings. The mine has produced something in the order of 850 tons of tin concentrate with the grade thought to be in the order of 1.4% Sn. Chip sampling of some of the breccia gave a best assay of 0.42% Sn, 0.57% Cu, 2.85% Pb, 3.90% Zn and 163 ppm Ag. Gold assays were all low, being 0.02 ppm or less. Although a number of small workings occur in close proximity (100 m) to the main open cut, the general small size and limited extent of associated alteration suggest that little potential exists in the prospect area. Assays of a number of rock samples are presented in Appendix 1.

##### North Republic-Great Republic Mines

Both the North Republic (Fig. 5) and Great Republic workings occur close to the fault bound eastern margin of the NW trending belt of granite in the Gipps Creek area. The main granite in the zone is a medium grained biotite granite, however most of the workings are hosted by porphyritic (feldspar and quartz) fine grained alkalic (biotite ~5%) phases. The workings dominantly expose quartz-sericite (+sulphides) lodes which form trends sub-parallel to the faulted granite margin. The workings indicate that mineralization

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is discontinuous along strike and that there are few sub-parallel lodes.

As the lodes are narrow and as there is little development of alteration surrounding or adjacent to the lodes, the prospects show little potential. (Assays of rock samples are presented in Appendix 1).

Historical production from the Great Republic is believed to be 200 t of Sn concentrates (Geological Survey Bulletin No. 46).

4.2 Work Completed during the Final Report Period

Stream Sediment Follow up

Some 35 additional samples were collected to follow up stream anomalies. In all cases, however, the assays suggest that the main sources of the anomalies are known workings which are believed to have little economic significance. The highest follow up assay was 1760 ppm Sn for a stream draining the North Republic Mine area with the next highest assays of 780 and 355 for tributaries of Gilligan Creek and Storey's Creek at Rossarden (all granite hosted) respectively.

5. CONCLUSIONS

Although geological mapping and prospect evaluation highlighted a couple of areas/mines to be of interest, ground detailing failed to generate targets requiring further testing. The stream sediment sampling produced only one weak Sn anomaly in the sediments (very close to the granite sediment contact SE of Rossarden) and quite a number within the granite. Follow up of the anomalies, however, located only small lodes of little economic significance. With no further work justified the licence has been recommended for relinquishment.

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003010

REFERENCES

Whitaker, A.J., 1985. EL 18/84 Progress Report on Exploration for the Period  
28/9/84 to 27/9/85. Shell unpubl. Rep. No. 08.2957

010

003011

APPENDIX 1

Rock Grab Assays



# SAMPLE RECORD

Sheet 1 of 1

011

METALS DIVISION

AMPLE TYPE: \_\_\_\_\_

LOCATION/PROJECT: ROSSARDEN  
L001

SAMPLER: \_\_\_\_\_

DATE: \_\_\_\_\_

MAP/PHOTO REF: \_\_\_\_\_

ASSAY LAB: ANALABS

SAMPLE DESPATCH \_\_\_\_\_

ASSAY REPORT NOS: \_\_\_\_\_

ORDER NO: \_\_\_\_\_

SAMPLE STORAGE: \_\_\_\_\_

SAMPLE NO.	LOCATION				ANALYSES								DESCRIPTION
					Sn	As	Cu	Pb	Zn	Ag	Au	Decrep.	
6920	500m	SE of	Rex Hill	mine	546	20	375	155	70	1.5	<0.003		2m chip Qtz-sericite lode
6921	"	"	"	"	733	<2	370	155	75	5.5	<0.008		Chip of dump lode material
6922	Rex Hill		mine		1390	150	9700	1.90%	4.40%	97	<0.008		2m chip in open cut
6923	"	"	"		4210	313	5700	2.85%	3.90%	163	<0.008		2m chip in open cut
6924	"	"	"		3370	1910	4450	5050	1.85%	384	0.02		2m chip in open cut
6925	"	"	"		203%	3	3300	3500	1.50%	10	<0.008		Streaky quartz lode + sulphide
6927	Gipps CK Rd	~1km	from	Rossarden Rd.	16	3	15	35	25	1.0	<0.008		Networked quartz veined granite
6928	Gipps CK	~200m	W of	Longvond mine	10	<2	10	15	15	0.5	<0.008		siliceous breccia
6929					8	31	10	10	10	0.5			Quartz breccia
6930	Vicov 4 CK		mine		579	1.5%	245	0.70%	4150	27			Sulphides in Fg. granite/folite
6931	North Republic				1690	43	345	350	9100	9			Sulphides in Fg. granite/folite
6940	"	"			84	18	45	130	55	2.5			Quartz-sericite lode
6938	Great Republic				651	23	180	<5	25	1.0			Siliceous lode
6939	"	"			18	<2	5	5	10	0.5			laminated quartz-tourmaline
6953	"	"			7150	<2	65	600	224%	15			Albite lode material
6972	BUFFALO BROOK				8	48	5	15	132	1.5			PYRITE BERRING QUARTZ (FAULT)
11836	UPPER TASMANIA CREEK				3320	3080	1380	465	2780	18			SULPHIDE BERRING QUARTZ-SERICITE LODE
6941	ROSSARDEN-FINGAL ROAD				<3	<2	10	16	15	<0.5	*		QUARTZ VEINS IN MATHUNGA BUTT
6942	HEC TRACK				<3	13	5	20	30	<0.5	*		QUARTZ VEINS IN SECTION SANDSING
6937	AVOCA-FINGAL ROAD				4	33	15	35	40	1.0			" " " " " "
6991	ABERFOYLE CREEK				<3	6	10	10	30	<0.5	*		" " " quartzite

REMARKS: \_\_\_\_\_

003012

560 000 E

580 000 E

003013

EL 59/83 WHEAL LUTWYCHE  
(STACPOOLE) 25km<sup>2</sup>

MAMMOTH MINE

STOREY'S CK.

BEN LOMOND  
MARSHES

ROSSARDEN

5 390 000 N

GIPPS CK.

GREAT REPUBLIC

REX HILL

EL 18/84 ROSSARDEN  
(SHELL) 171km<sup>2</sup>

AVOCA

EL 7/78 ROYAL GEORGE  
(CORNWALL/SHELL) 108km<sup>2</sup>

BROOKSTEAD

5 370 000 N

EL 30/84 AVOCA  
(SHELL) 216km<sup>2</sup>

ROY'S HILL



COLLUVIUM/ALLUVIUM/PERMAN SEDIMENTS



DEVONIAN GRANITE



MATHINNA BEDS



PROSPECT

--- E.L. BOUNDARY

N



0 5km

5 cm

**Billiton Australia**

Project **TASMANIA REGIONAL**

Title **LOCATION PLAN  
BEN LOMOND GRANITE**

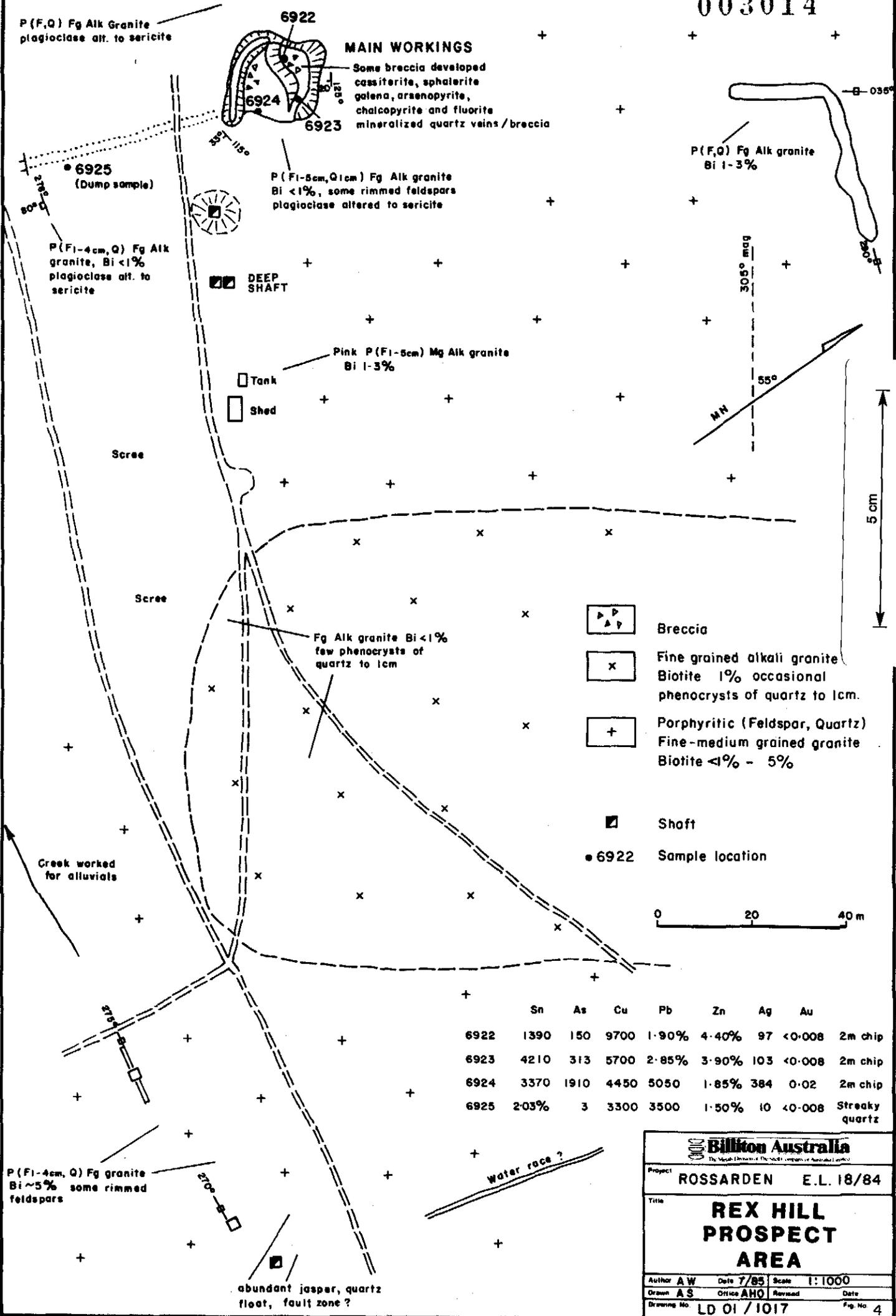
Author D.C. Date /85 Scale 1:250 000

Drawn J.B. Office AHO Revised Date

Drawing No **MT24 / 1085** Fig. No 1

013

003014



- P  
P  
A  
P Breccia
- x Fine grained alkali granite  
Biotite 1% occasional  
phenocrysts of quartz to 1cm.
- + Porphyritic (Feldspar, Quartz)  
Fine-medium grained granite  
Biotite <1% - 5%
- Shaft
- 6922 Sample location

	Sn	As	Cu	Pb	Zn	Ag	Au	
6922	1390	150	9700	1.90%	4.40%	97	<0.008	2m chip
6923	4210	313	5700	2.85%	3.90%	103	<0.008	2m chip
6924	3370	1910	4450	5050	1.85%	384	0.02	2m chip
6925	203%	3	3300	3500	1.50%	10	<0.008	Streaky quartz

**Billiton Australia**  
The World's Division of the Nickel Company of Australia Limited

Project **ROSSARDEN E.L. 18/84**

Title **REX HILL PROSPECT AREA**

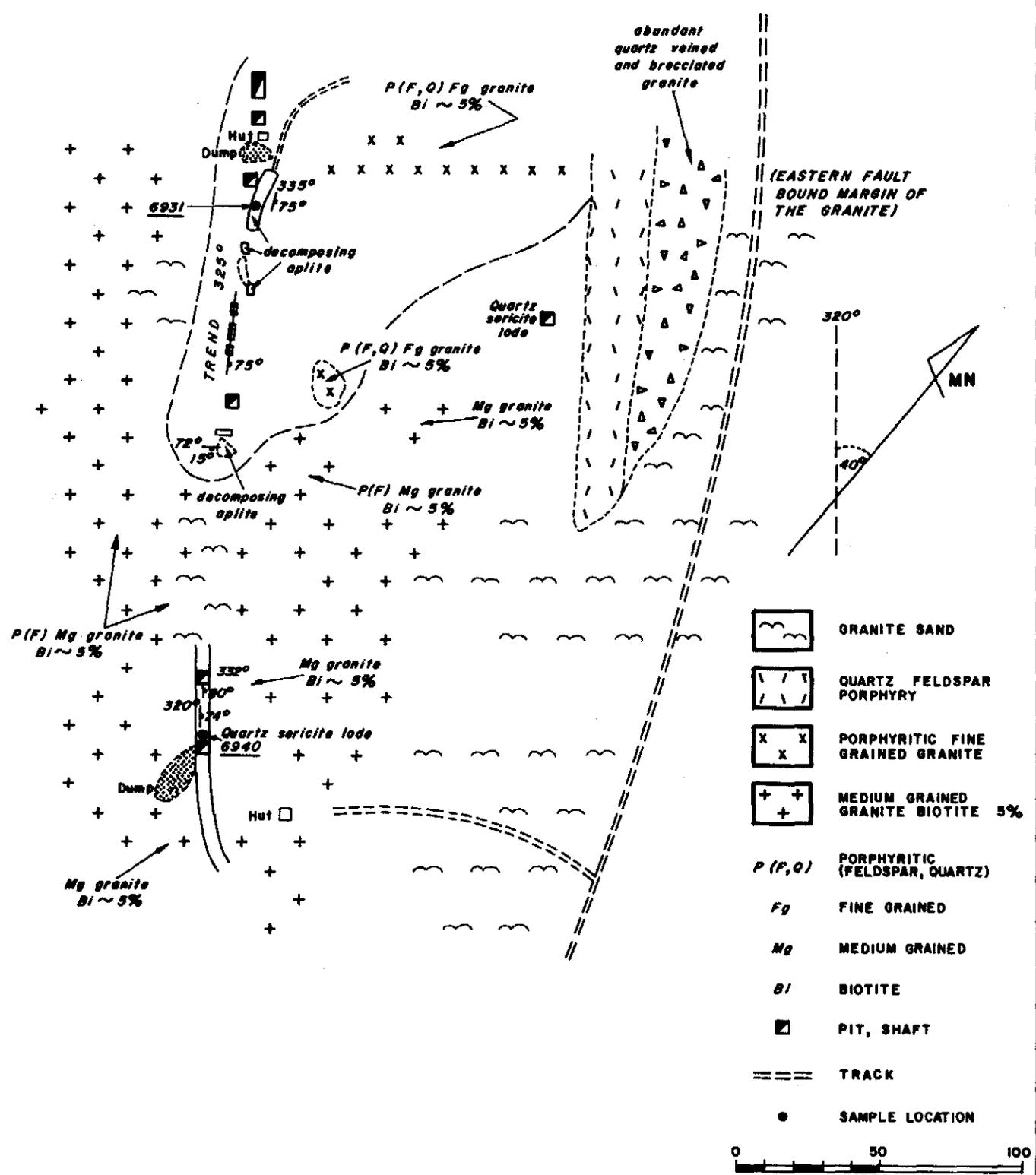
Author **AW** Date **7/85** Scale **1:1000**

Drawn **AS** Office **AHO** Revised \_\_\_\_\_ Date \_\_\_\_\_

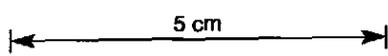
Drawing No. **LD 01/1017** Fig. No. **4**

014

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Sn	As	Cu	Pb	Zn	Ag	SAMPLE DESCRIPTION
6931	1680	43	345	350	9110	9 Sulphide bearing altered apilite
6940	84	18	45	130	55	2.5 Quartz sericite lode



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The World's Largest The Most Supportive of Agricultural Areas

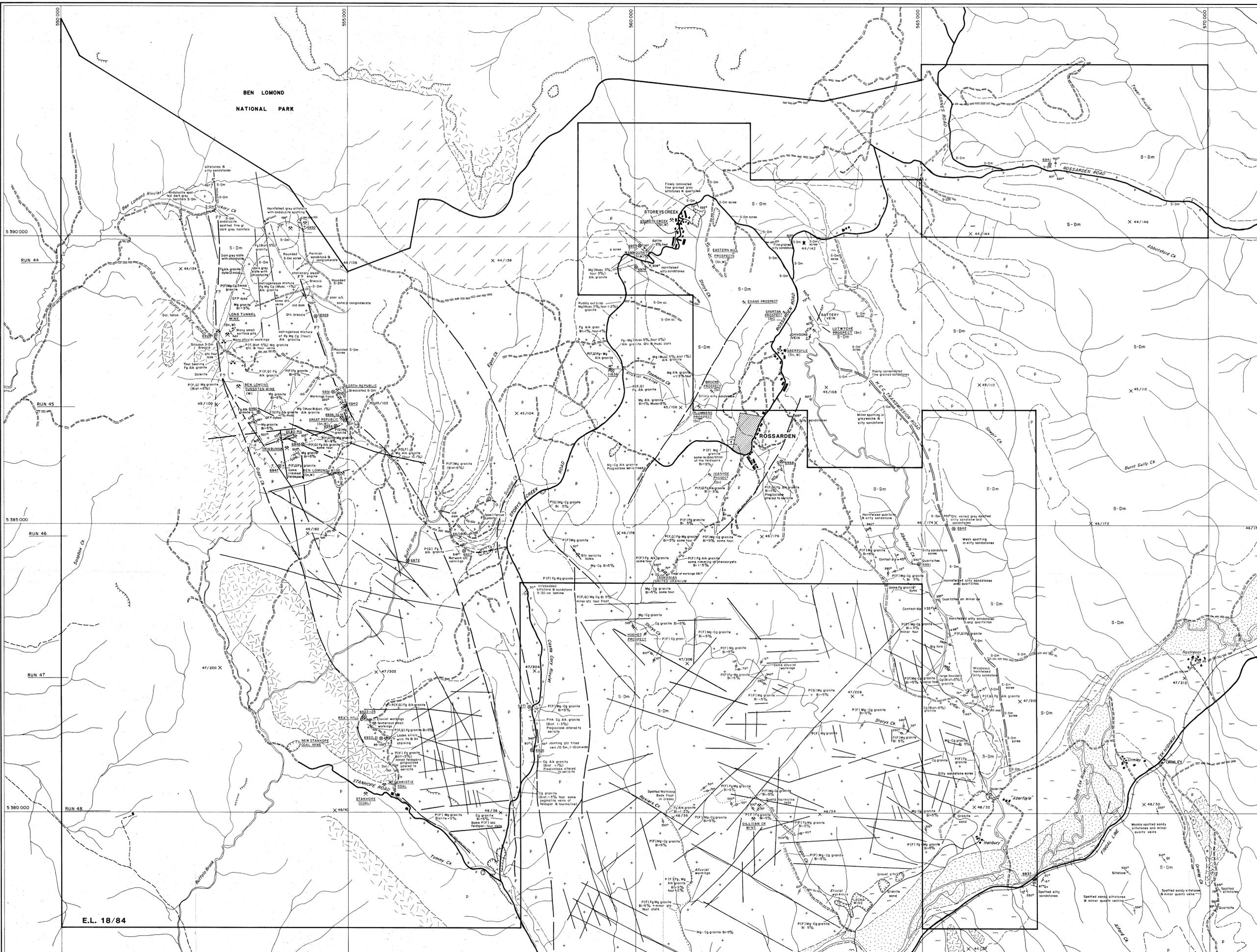
Project: **TASMANIA**  
**ROSSARDEN E.L. 18/84**

Title: **NORTH REPUBLIC WORKINGS**

Author: **A.J.W.** Date: **7/85** Scale: **1:2000**

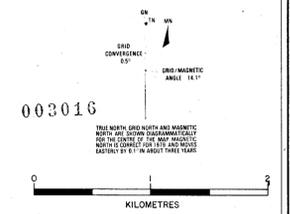
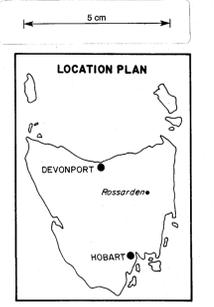
Drawn: **H.M.R.** Office: **AHO** Revised: \_\_\_\_\_ Date: \_\_\_\_\_

Drawing No: **L001/1018** Fig. No: **5**



- RECENT**  
River alluvium (South Esk River)  
Alluvium / colluvium
- TERTIARY**  
Basalt
- JURASSIC**  
Dolerite  
Dolerite / talus (All. Recent)
- UNDIFFERENTIATED TRIASSIC & PERMIAN**  
Sandstones, conglomerates, siltstones  
shale, coal measures
- CARBONIFEROUS - UPPER DEVONIAN**  
BEN LOMOND GRANITE  
P(F,G) Porphyritic (Feldspar and quartz porphyroblasts)  
Fg Mg Cg Fine grained, Medium grained, Coarse grained  
Bl, Tour, Musc. Biotite, tourmaline, muscovite accessories  
Alk granite Alkaline granite i.e. biotite content <5% per.1%  
atf: tour. clots Quartz ring with tourmaline cores
- SILURIAN - DEVONIAN**  
MATAINNA BEDS Sandstones, siltstones, siltstones  
Horstified in places by the Ben Lomond Granite

- Rock sample  
Air photo linear  
Jointing dip and strike (Bearings are magnetic)  
Cleavage dip and strike  
Bedding dip and strike  
Geological traverse in granite - road, foot  
Granite/sediment contact, apparent dip direction  
Fence, gate  
Pit workings  
Alluvial workings  
Airphoto centre, Run No./Photo No.



003016

The Shell Company of Australia Limited  
METALS DIVISION

TASMANIA  
ROSSARDEN E.L. 18/84

**GEOLOGY**  
3004

SCALE	1:25000	DATE	Oct 1985
AUTHOR	D. Carter	DRAWN	A.S.V.C.
OFFICE	Melbourne/AHO	REF. No.	
DRG. No.	L001/1013	FIG. No.	2

E.L. 18/84

