

000

978001

REPORT NO. KI 86/1

DEPT. OF MINE
10,831/86

ANNUAL REPORT TO THE MINES DEPARTMENT

E.L. 15/66

MICROFILMED

By

S. Grieve Brown

TOMAGO N.S.W.

OCTOBER 1986

001

CONTENTS

	<u>Page No.</u>
INTRODUCTION	1
SUMMARY	2
DISCUSSION	3
FUTURE WORK PROGRAMME	7
EXPENDITURE	8
REFERENCES	9

002

LIST OF FIGURESFigure

- 1 King Island Geological Map.
- 2 Company Exploration Licence - King Island.
- 3 EL 15/66 showing location of work carried out twelve months to 30/09/86.
- 4 Dolphin Mine Lower Wedge Stope -290m Zone.
- 5 Dolphin Mine - Southern Orebody, Exploration and Mine Development -250mRL.

PLAN (ATTACHED)Plan No.

KG2-06-250S Dolphin Mine Geological Level Plant -250mRL southern extension.

003

INTRODUCTION

Exploration Licence 15/66 is held by Warman Services Limited in respect of an area of 130 square kilometres in south-east King Island.

In October 1983, this licence was amalgamated with E.L. 21/78 and the combined area reduced by 30 sq km to the current size. The Licence covers the Bold Head Adamallite and Grassy Granite Contact Zones (Figures 1 and 2).

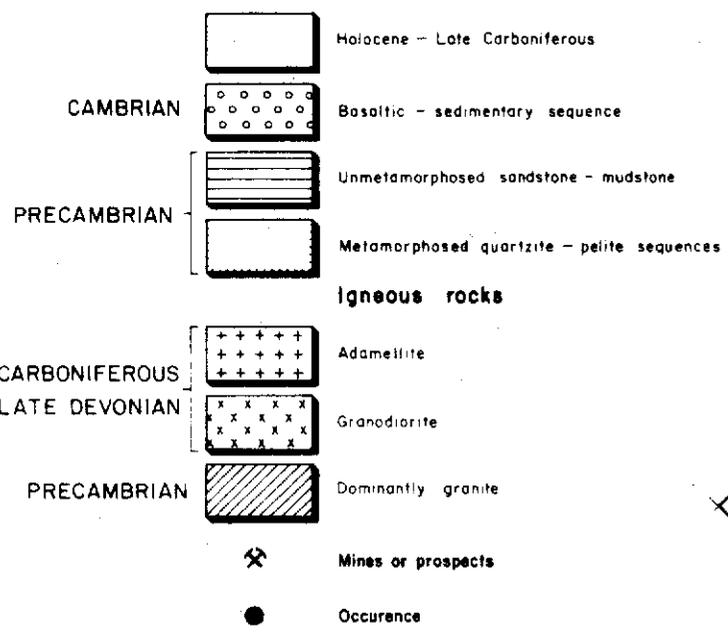
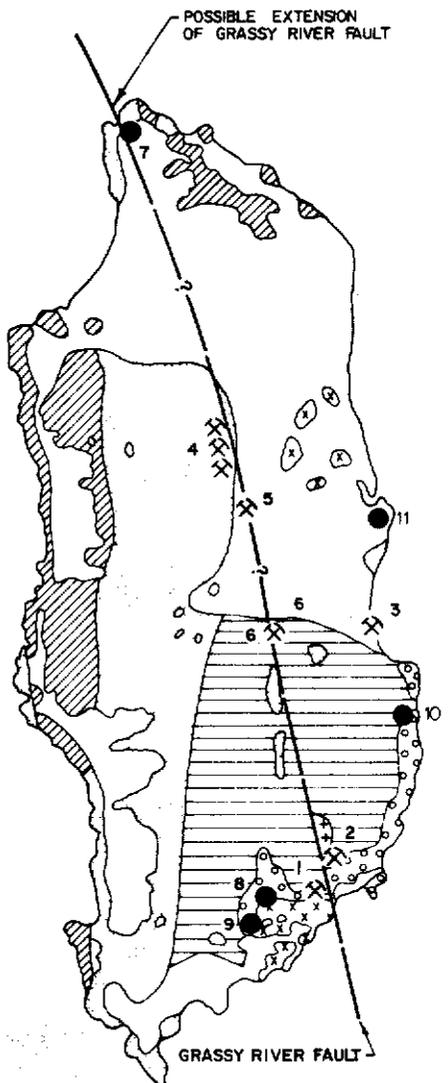
Mineral Lease 17M/79 with an area of 22.98 square kilometres, covering the Dolphin and Bold Head Mine areas is included within the boundaries of E.L. 15/66.

Exploration within E.L. 15/66 has been severely restricted due to the current economic situation.

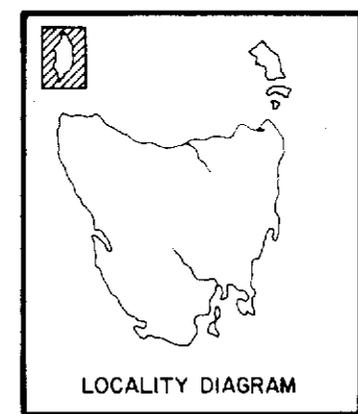
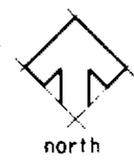
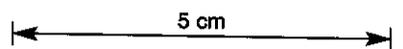
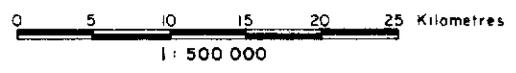
Exploration drivage of some 124.6m has been carried out in the Southern Orebody Area to test zones of geological potential with some success. The results of this work and its effect on the interpreted exploration potential are given.

For the sake of ease of reading, this report combines the results of the previous 12 months work which it has been hoped to follow up during the 12 months to October 1986. The continued depressed tungsten prices have prevented the originally proposed exploration work being undertaken. This work will be required once the financial situation allows.

00A



1. DOLPHIN / N^o1 OREBODY - W, Mo
2. BOLD HEAD - W, Mo
3. NARACOOPA - Beach Sands
4. REEKARA - W, Sn
5. HAWKES ALLUVIAL - Sn, W
6. FRASER RIVER - Au
7. VICTORIA COVE - W
8. LOOP ROAD - W, Mo
9. INVESTIGATOR 21 - W, Mo
10. BARRIER CREEK - Au, Ag, Pb, Cu, As
11. COWPER POINT - Beach Sands



KING ISLAND GEOLOGICAL MAP
FIGURE 1

978005

006

SUMMARY

Since the last report (Brown, September 1985) exploration work within EL 15/66 has been restricted to exploration drivage into areas peripheral to the Dolphin Mine block (Table 1).

Economic considerations and lack of experienced on-site operators precluded any diamond drilling work in the period to September 1986.

The main area tested by exploration drivage was the Southern Orebody area. Encouraging results were obtained and follow up work will be undertaken.

KING ISLAND SCHEELITE

TABLE 1

Exploration Development Financial Year 1985/86

Ore Body	Development Heading	Drivage Type	Metres Advanced	Purpose
SOUTHERN	S46 (C46)	Level Diesel	56.5 Ore	To determine Strike length intersection of Swan Orebody and location of Auk fault - determined
	S60	Level Diesel	17.1 Ore	To locate and fix the Hanging wall contact position - determined
	S54	Level Diesel	26.2 Ore	To locate and fix the Footwall hanging position - determined
	S52	Level Diesel (Hand)	24.4 Waste	To probe the Auk Orebody and establish dip and footwall contact - incomplete
TOTAL			124.2	

700

978008

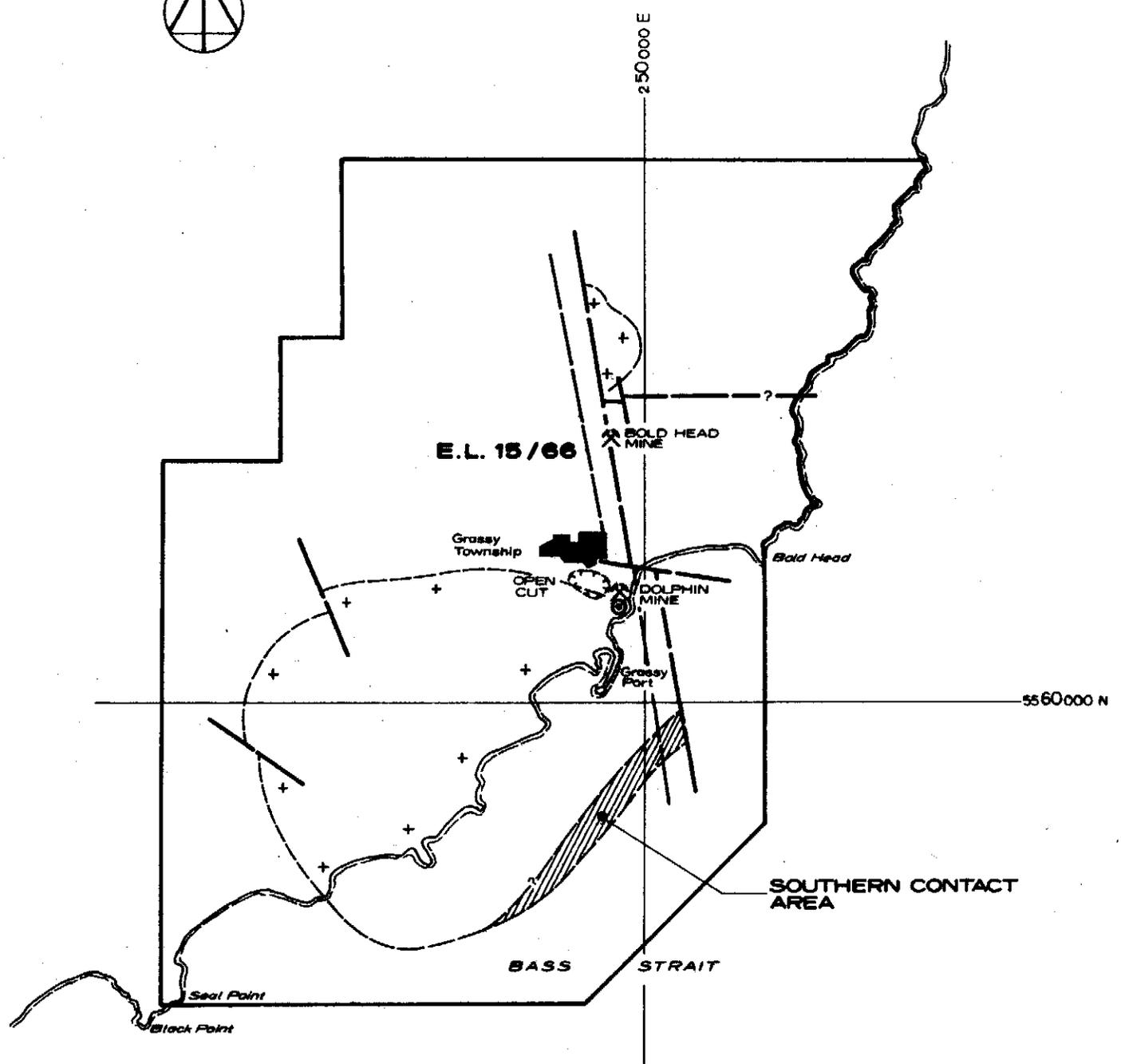


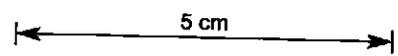
figure 3

Scale 1:100 000

LEGEND

⊙ - EXPLORATION DRIVAGE

EXPLORATION LICENCE 15/66
SHOWING LOCATION OF WORK
CARRIED OUT TWELVE MONTHS TO 30-9-66



DISCUSSION

The terminology used for the various areas has been defined in previous reports (Brown 1982 and 1984).

a) Grassy River Fault/Decline Prospect (Work carried out 84/85)

Work carried out prior to September 1984 indicated that the Grassy River Fault was located further east than had been assumed previously, thus increasing the spacing between the Decline Fault and the Grassy River Fault.

Such an increase in separation of these two faults significantly increased the potential for the presence of mine series rocks, and hence the potential for economic scheelite deposits in the Decline Prospect south of the Fulmar Fault (Figure 4).

Although inconclusive the two percussion drill holes drilled from the S8 Lower Wedge - 290m RL drive indicated that the Decline Fault Zone was not a major breccia zone and could possibly be driven through utilizing a small size opening. Rock chips obtained from east of the Decline Fault Zone indicated the presence of mine series type rocks.

A drive, the V6 Exploration Drive, was therefore commenced. The drive was completed in May 1985, some 34 metres past the Decline Fault. Ground conditions indicated the possible presence of a fault zone in advance of the face. Current interpretation would suggest that this is not the main Grassy River Fault but probably some subparallel structure.

Subsequent mapping of the V6 Drive confirmed the presence of mine series rocks (biotite hornfels) over the entire length of the drive. There is considerable difficulty in defining the exact position within the mine series sequence that this biotite hornfels horizon belongs to. The patchy zones of pyroxene hornfels and occasional grossularite garnet crystals, with associated trace scheelite, suggest we are proximal to B lens which is interpreted to be above the level of the drive.

It was intended to solve the stratigraphic problem by diamond drilling with two holes totalling 200m being drilled from the current level to test for B and C lens respectively.

010

978011

220 350 E

563 950 N

ad

bph

lv

gh (b)

DECLINE BLOCK

MYLONITE

bph

ZONE

V6 EXPLORATION DRIVE

563 900 N

S8 DRIVE

FAULT

SSPDH2

SSPDH1

80°

CENTRAL

SOUTHERN OREBODY

gh (b)

DECLINE

FAULT

gh (b)

REF PLAN

GEOLOGY

1:500 SCALE



KING ISLAND SCHEELITE
GRASSY KING ISLAND

SURVEY

PLANNING

ROCK.MEC.

GRADE CON.

DRAFTING

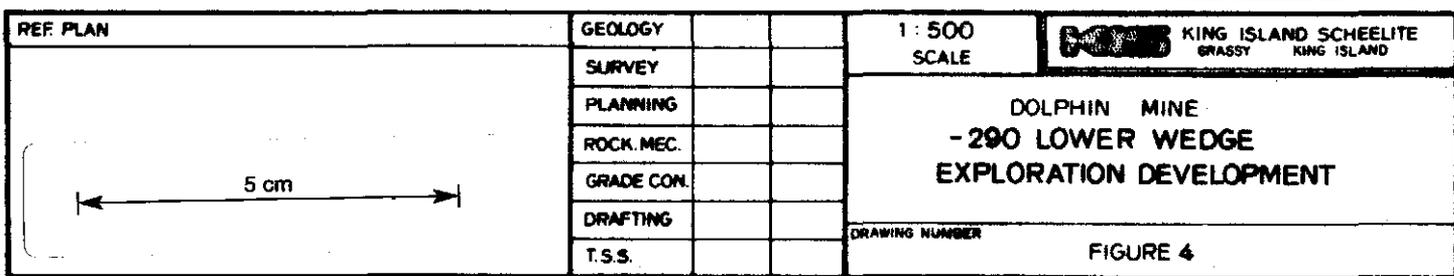
T.S.S.

DOLPHIN MINE
-290 LOWER WEDGE
EXPLORATION DEVELOPMENT

DRAWING NUMBER

FIGURE 4

5 cm



011

The continued slump in tungsten prices has meant that this was not carried out during the 12 months to September, 1986. Loss of access to the V6 drive will occur upon filling of this undercut area for the lower Wedge, however it is planned to drive a new cross cut into the area at a higher level once the financial situation improves.

The location of Mine Series rocks in the zone between the Decline and Grassy River Faults has significantly increased the chances of continuity between the known Mine Series rocks at Dolphin Mine and the Mine Series rocks inferred as present at the southern granite contact. Location of ore grade mineralization within this zone would significantly increase confidence in the overall interpretation of the economic potential of the Dolphin/Bold area.

b. Central Orebody

i) Mid Central Area (Work carried out 84/85)

Diamond drilling from the 150m level had indicated the presence of possible ore grade mineralization in the Mid Central area between -150mRL and -180mRL. These drill holes were however drilled almost horizontal due to the location of available openings and this together with the heavily disturbed nature of the structure in that area precluded any sensible estimate of the economic potential of the area being made.

When the Lower Pit stope reached the -185mRL an exploration drive, the S34 ramp, C62 drive was commenced to test the area. This drive allowed the relative positions of the Wedge and central Faults to be defined and also finally confirmed that the Wedge fault post dates, and offsets, the Central Fault. It is now considered that the Wedge fault is one of the largest premineral faults and probably also offsets the Swan Fault rather than the converse as previously interpreted.

Initial development within the Mid Central block proper showed the continuity of the sequence to be very poor however the heavy faulting of the rocks in this area prior to mineralization allowed the tungsten bearing fluids to permeate the area giving a reasonable overall grade to this zone. Further mining in this area has shown that the disturbed nature of the sequence in this area decreases upwards away from the fault junction.

012

c) Southern Orebody

Work carried out prior to September 1984 has shown the presence of the normal Mine Series sequence south of the Swan Fault. Surface exploration hole D300/8 had intersected B lens marble at a point some 230m south of the Swan Fault but available underground openings were poorly placed to enable effective oreblocking diamond drilling to be carried out.

The subdivisions within the Southern Orebody are shown on Figure (5) together with the major exploration development openings in the vicinity.

i) S46 Area (Work carried out 1985/86)

With the development of the Q10 Lower Central exploration drive it became possible to extend the S46 cross cut through the Swan Fault into the Southern Orebody (Swan Block). Figure 5. The drive had in September, 1986 progressed some 30m into the upper C lens horizon in the Swan ore block.

During 1985/86 the drive was progressed from that point a further 35m to encounter a major fault which is now interpreted as the Auk Fault. A small exploration drive was pushed through this fault into the Auk Orebody area but encountered only the pyroxene garnet hornfels unit overlying the main upper C lens horizon. (Plan No. KG2-06-250S).

The results of this work showed that the original interpretation of the faults, while basically correct in the overall sense, was significantly in error in the exact trends and locations of the major shear zones.

The mining of the Swan Orebody undercut has shown that a significant orebody does exist within the fault block bounded by the Swan, Auk, Central and Decline Faults. The down dip extension of this resource could contain significant tonnages of medium to high grade skarn.

The small exploration drive through the Auk Fault into the Auk Orebody has shown that the normal mine series sequence most probably exists in this block significantly upgrading its potential as a future ore source.

013

978014

CURRENT MINING BLOCK
POTENTIAL ESSENTIALLY DEFINED

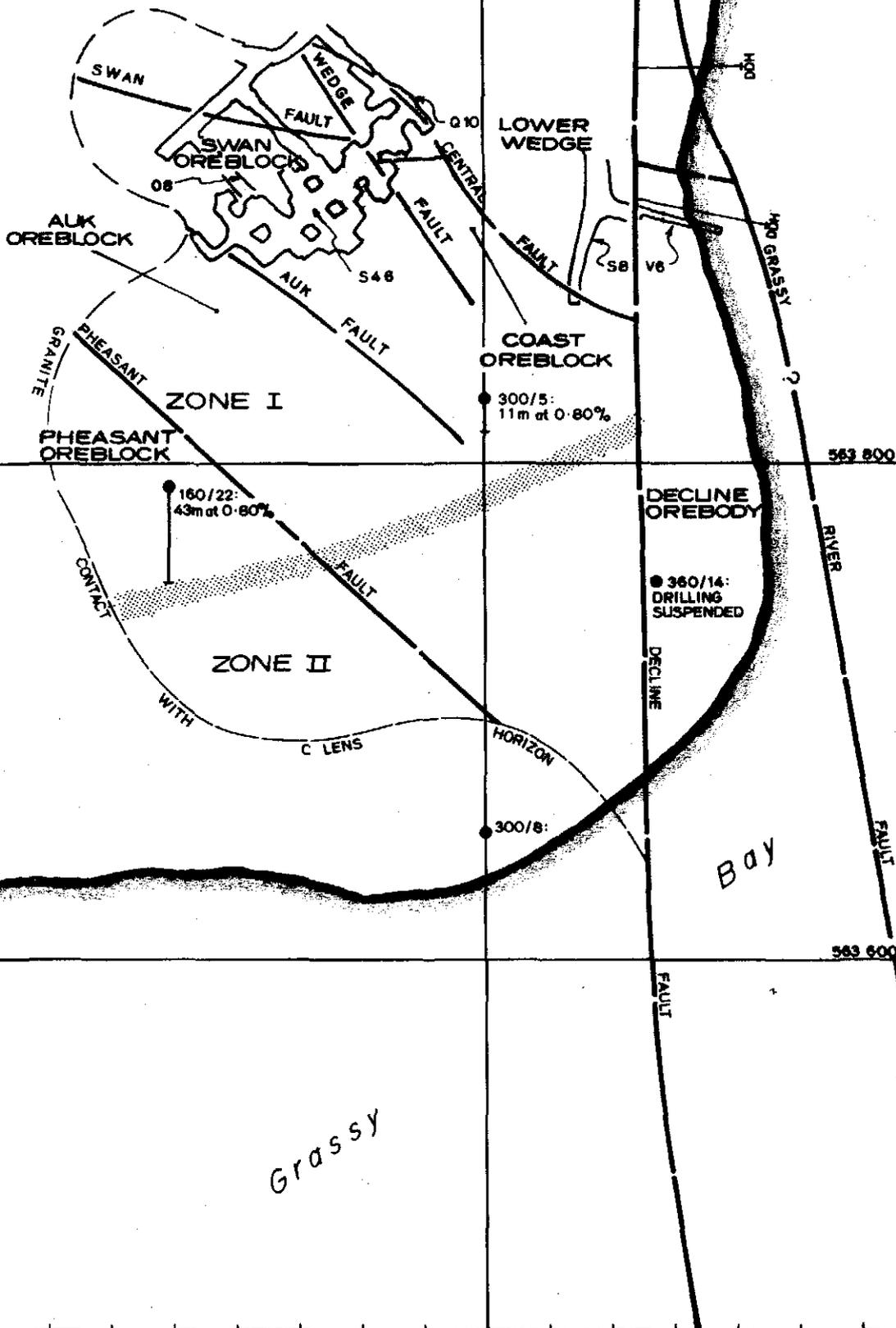
220 100 E

220 900 E

564 000 N

563 800 N

563 600 N



REF PLAN

GEOLOGY

1 : 2 500
SCALE



KING ISLAND SCHEELITE
GRASSY KING ISLAND

SURVEY

PLANNING

ROCK.MEC.

GRADE CON.

DRAFTING

T.S.S.

SOUTHERN OREBODY
SHOWING EXPLORATION DEVELOPMENT
- 250m RL

DRAWING NUMBER

FIGURE 5

5 cm



014

Due to the positive results achieved in the exploration development drive at the -250mRL in the Swan Orebody. Exploration drive has commenced with the 08 ramp to gain access to the -270m level of the Swan. It is intended to extend an exploration cross cut to the south west from the Swan oreblock at the -270m level through the Auk Fault to test the Auk and hopefully the Pheasant oreblocks on this level. A total of some 60m of exploration drive is included during the 1986/87. financial year.

ii) S8 Area (Work carried out 1984/85)

This ramp designed to provide access to the Lower Wedge zone at the -290m was extended 4.4m through broken ground to locate the position of the Central Fault and to test for the presence of B lens marble at this horizon.

The Central Fault was intersected as anticipated thus defining the northern limit of the Southern Orebody (Coast Block) in this area. 'B' lens marble was not encountered and a reinterpretation of the geology of this block was carried out.

d) Bold Head South Area/Investigator 1

No progress has been made on this project. The area is still considered a high priority one from the point of view of exploration and stratigraphic diamond drilling is proposed once economic conditions permit.

FUTURE WORK PROGRAMME

The actual work programme to be carried out will be dependent on the availability of funds. It is currently anticipated that only item 1 will be carried out during 1986/87.

The following items are currently planned:

1. Continue exploration development in the Southern Orebody (Swan block) to delineate the extent of the Upper and Lower 'C' lens horizons.
2. Diamond drill two stratigraphic drill holes from the V6 exploration drive to test the Mine Series rocks within the zone between the Decline Fault and the Grassy River Fault.

016

EXPENDITURE

Expenditure on Exploration Licence 15/66 for the twelve months to 30th June, 1986 was:

Geology	972.00
Draughting	288.00
Drilling	NIL
Licence Renewal	3,500.00
Geophysics	NIL
Field Expenses	330.00
Administration	356.00
Development Drivage	81,489.00
	<hr/>
	\$86,935.00
	<hr/> <hr/>

The exploration development drivage figure is based on that reported to the Mines Department for the 1985/86 by King Island Scheelite.

40% of geological time spent on King Island has been costed to exploration as the time estimated spent on control and investigation of the various development drives.



S. Grieve Brown

017

REFERENCES

- | | | |
|-------------|------|--|
| Brown, S.G. | 1982 | Annual Report EL 15/66 for the twelve months ended 24th October, 1982. Unpublished Company Report. |
| Brown, S.G. | 1982 | Annual Report to the Mines Department EL 21/78. Unpublished Company Report. |
| Brown, S.G. | 1982 | An assessment of the Overall Tungsten Potential of King Island. Unpublished Company Report. |
| Brown, S.G. | 1983 | Annual Report to the Mines Department EL 15/66. Unpublished Company Report. |
| Brown, S.G. | 1984 | Annual Report to the Mines Department EL 15/66. Unpublished Company Report. |
| Brown, S.G. | 1985 | Annual Report to the Mines Department EL 15/66. Unpublished Company Report. |

018

220 000 E

220 100 E

220 200 E

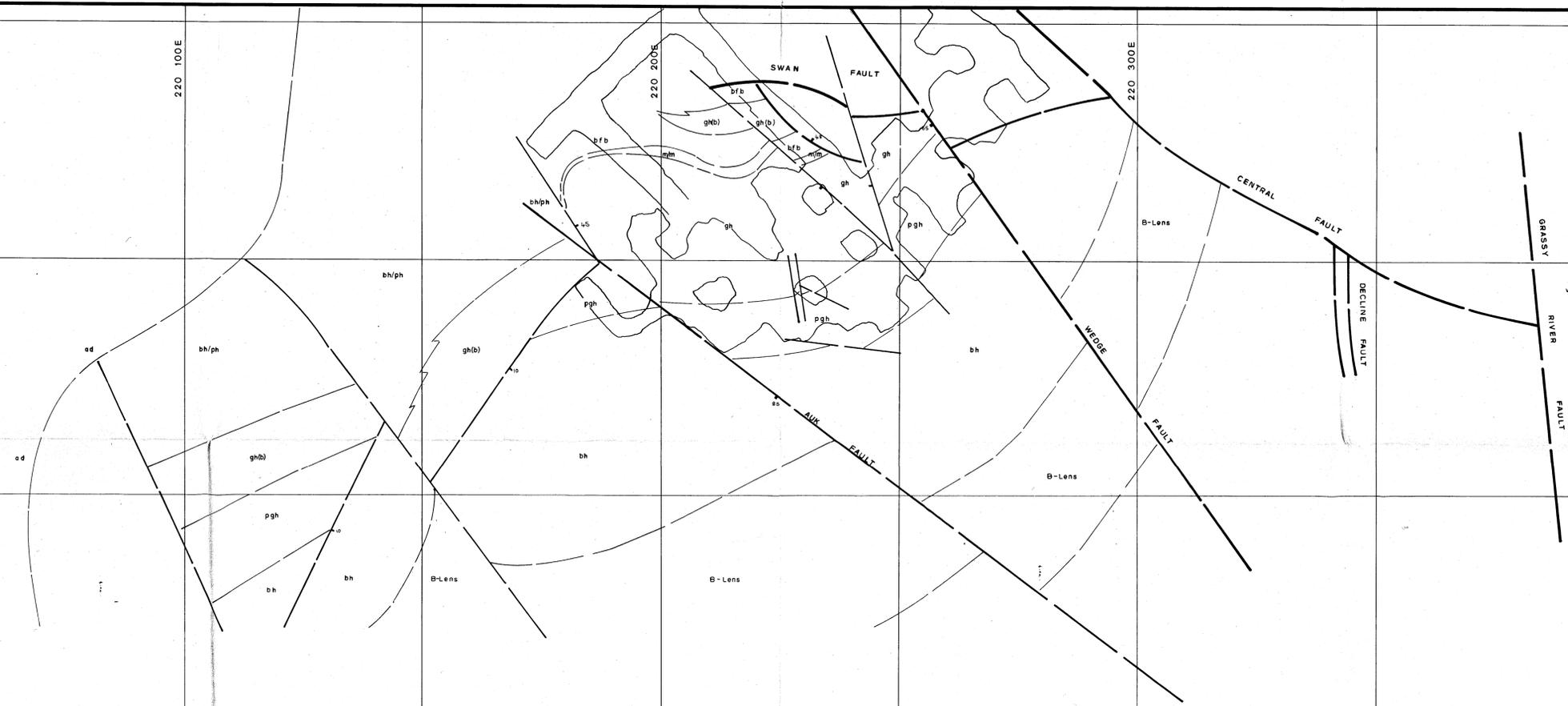
220 300 E

220 400 E

563 900 N

563 800 N

563 700 N



978019

	Upper metavolcanics		Bonded footwall beds		Strike and dip
	Banded hornfels		Biotite pyroxene hornfels		Joint, inclined
	Marble		Lower metavolcanics		Joint, vertical
	Biotite hornfels		Quartzite		Fault
	Pyroxene garnet hornfels		Aplite		Degree of uncertainty in fault position.
	Garnet hornfels		Adamellite		

DATE: 23-7-96
 GEOLOGIST:
 DRAWN: ADJ
 CHECKED:

KING ISLAND SCHEELITE
 No. KG2-06-250 S
 SCALE 1:500

DOLPHIN MINE
 GEOLOGICAL LEVEL PLAN
 -250 mRL
 SOUTHERN EXTENSION

86-2603