B. M. I. MINING PTY. LTD



# RESULTS OF EXPLORATION PROGRAMME
# CAPE BARREN ISLAND
# TASMANIA
# EL 18/70
# July, 1972

Dr. J.C. STANDARD
Consulting Geologist

AMG REFERENCE POINTS ADDED

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# TABLE OF CONTENTS

# RESULTS OF EXPLORATION PROGRAMME
# CAPE BARREN ISLAND
# TASMANIA
# EL 18/70

## INTRODUCTION

The exploration programme on Cape Barren Island was conducted along two lines:

1. The first was to conduct a detailed drilling programme over the area of known tin bearing alluvials at Rooks River and a reconnaissance drilling programme over known tin areas at Modder River.

Pending the results of this drilling, additional drilling would be undertaken along the Lee River where alluvial tin had been mined in the past and along other areas which drained tin bearing granite areas.

2. The second was to undertake a basic geological mapping programme of the entire island. It was anticipated that it would be possible to subdivide the granite of the island into "tin granite" and non tin granite". The alluvial areas which were derived from "tin granite" would have a much greater potential for the concentration of cassiterite. Alluvial areas derived from "non tin granite" could be eliminated as possible economic targets.

## ROOKS RIVER DRILLING PROGRAMME

In 1966 Utah Development Company conducted a drilling programme at Rooks River and the results of their drilling programme indicated that additional drilling was warranted.

Utah gave indicated reserves of 632,000 cubic yards of 7.54 oz cassiterite (70% Sn) and possible reserves of 4,110,000 cubic yards of 6.06 oz cassiterite (70% Sn) in the southern part of the Rooks River area and 3,760,000 cubic yards, grade not stated, in the northern part of the Rooks River area.

In their report No. 139 Utah state "Due initially to the light weight of the first drilling plant and subsequently to the very deep alluvial section encountered, no hole penetrated the base of the lead on any line, though bore 31 penetrated to 118 feet on line C.B. 3 (B.M.I. line 2) and had not reached basement at this depth". They also state "the volume calculations are unlikely to be greatly changed by further drilling, but the grade calculations might be considerably improved by further drilling".

The present drilling programme was a continuation and completion of the programme started by Utah.

A total of 33 percussion drill holes were completed at Rooks River for a total of 4,007 feet of drilling.

The 118 feet deep hole referred to above, which was located on the northern most line of drill hole nearest the ocean, was deepened and granite bottom was reached at a depth of 196 feet. The basal section contained no concentration of cassiterite.

In the southern part of the area the base of the lead was found to be 103 feet instead of 50 - 60 feet as had been estimated by Utah. The richest values of tin were most commonly found in the upper 50 feet of the drill hole and the bottom sections were usually barren.

The lithology of the sediments, the distribution of tin value, and the shape of the bedrock contours indicates that much of the sediments at Rooks River were deposited in a marine environment. Marine sediments are known to be present in other parts of Cape Barren Island up to an elevation of 135 feet above sea level. On Flinders Island marine sediments have been found up to 500 feet above sea level.

It was not possible to confirm the ore reserve stated by Utah. No additional reserves were found that had values which had sufficient continuation either horizontally or vertically to warrant mining or further exploration.

In view of the poor results of the drilling programme at Rooks River and the probable marine origin of much of the sediments it was considered unlikely that the unconsolidated sediments along the Lee River, or other low lying rivers would have economic concentrations of cassiterite.

Detailed results of the drilling programme are shown on Figure 3, Location of Drill Holes; Figure 4, Bedrock Contour Map; and Figure 5, Cross-Sections Showing Distribution of Tin Values.

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## MODDER RIVER DRILLING PROGRAMME

A total of 13 percussion holes were drilled along three lines near the old tin workings on Centre Creek near its junction with Modder River. Some favourable results were obtained in the southern line of drill holes but the values did not continue northward to the central line of drill holes. No values of interest were found in the central or northern line of drill holes. Figure 6 shows the location of drill holes and the whole of hole values.

In view of the unfavourable results obtained from the drilling programme at Rooks River and in the northern two lines at Modder River it was decided to terminate the exploration programme on Cape Barren Island.

## GEOLOGICAL MAPPING PROGRAMME

A geological mapping programme covering the entire island was conducted and the resulting maps, at the scale of 1 inch equals ~~3.8~~ 0.38 miles, are presented in Figures 7 and 8.

The mapping showed that two different "tin granites", Rooks River Granite and Hogans Hill Granite exist on Cape Barren Island. The Rooks River Granite covers a much larger area and outcrops over much of the central part of the island. The Hogan Hill Granite is restricted to one isolated outcrop in the south eastern part of the island.

A more detailed study was undertaken in the central part of the island in order to subdivide the rock types of the tin bearing Rooks River Granite. (Figure 9).

The mapping programme delineated large drainage areas of alluvial sediments derived from "non tin granite" that may be considered as having less economic potential than those derived from the "tin granites".

Details of the geological mapping programme are given in Appendix A and B and in Figures 7, 8 and 9.

Because of the unfavourable results of the Rooks River drilling programme no other streams draining tin bearing granites were tested.

Dr. J.C. Standard
Consulting Geologist
July, 1972

# APPENDIX A

# REPORT ON THE REGIONAL AND ECONOMIC GEOLOGY OF CAPE BARREN ISLAND

for B.M.I. Mining Pty. Ltd.

by J. D. Cocker B.Sc., Hons.

April 1971

CONTENTS

## 1. INTRODUCTION

This report on the regional and economic geology of Cape Barren Island is based on seven weeks field mapping. The short period in the field combined with the ruggedness and inaccessibility of much of the island emphasises that this work is only of a reconnaissance nature.

The main aim of the work was to distinguish tin granites from non-tin granites. It must be noted that the term "tin granites" is used in the sense that these granites have the greatest potential for carrying cassiterite compared with other granitoid rocks. This term gives no indication of the absolute cassiterite content of a rock type. The distinction of tin granites on Cape Barren Island was made by comparing these tin granites with other tin granites associated with primary and alluvial tin deposits in north eastern Tasmania. Further work on the major and trace element chemistry, especially the Sn content, is necessary to characterise these rocks.

The map accompanying this report is based on an aerial photo layout without any ground control. Consequently the scale is only approximate. Only the major granitoid rock types are shown on the map. Boundaries between alluvial and aeolin sediments and granitoid rocks are only approximate as they were estimated from aerial photographs.

## 2. PREVIOUS WORK

Scott (1927, 1928), Blake (1938, 1947), Keid (1948) and Coscombe (1965) are the main contributors to the geology of Cape Barren Island. These workers did not distinguish various granitoid types except Scott (1927, 1928) who suggested that tin granites occurred north of Mt. Munro and at Battery Bay. Blake (1938, 1947) mentioned tin bearing aplites in the Rooks River area.

## 3. GENERAL GEOLOGY

The oldest rocks of the island are the slightly metamorphosed spotted siltstones and sandstones of the Mathinna Beds. The Mathinna Beds are predominantly turbidite units of Siluro-Devonian age and were folded prior to the intrusion of Upper Devonian granitoid masses. Horizontal sections through folded sequences are well exposed along the north coast. The distribution of the Mathinna Beds has been mapped but the variation in rock type and structure has not been investigated. Structural analysis would be difficult as away from the coast the outcrop is very poor and sporadic.

At least eleven distinct masses and seven major masses of granitoid rocks have been established. Only part of an intrusive sequence has been distinguished with the two tin granites being younger than the surrounding rocks. Most of the granitoid rocks are adamellites and granites with one minor granodiorite body. Possibly associated with the intrusion of the granitoid rocks or Tertiary basalts are dolerite dykes and possibly lamprophyres (at least twenty dykes) up to 900 metres long.

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Cainozoic sediments of marine alluvial and aeolin origin outcrop over extensive plains and alluvial tracts. Transverse dune sands cover large areas of the plains and mask the extent of the alluvial and marine sediments. Basalt of probable Tertiary age outcrops below granule conglomerates at Lascar Point.

## 4. DEVONIAN GRANITOID ROCKS

Major macroscopic features of the eleven granitoid masses will be discussed. With microscopic studies and detailed field mapping probably several more rock types would be distinguished.. Modal analyses of these rock types have not been made and the masses are named using estimates only.

### a) Cape Sir John Granodiorite

This small mass outcrops in the south west end of Cape Barren Island and is clearly distinguished in the field by a high proportion of mafic enclaves and a prominent foliation (140-170°M). Quartz, plagioclase, K-feldspar and biotite are the main minerals. Mafic enclaves form "rafts" up to 30 metres long consisting of rounded enclaves (up to 1 metre in diameter) with a small proportion (less than 20%) of granodioritic matrix. The contact with the Corner Adamellite is not exposed, but a conformable Mathinna Bed contact is well exposed east of Cape Sir John.

### b) Modder River Adamellite

This large mass consists essentially of medium to coarse grained, grey, porphyritic adamellite. Fine grained porphyry as lens-

shaped masses up to several hundred metres long and wide (Big Grassy Hill) occur in the porphyritic adamellite. K-feldspar, quartz and biotite arethe main visible minerals, with minor muscovite. Biotite banding is common in some areas. Another rock type which can be distinguished within the Modder River Adamellite, although no contacts were found, outcrops on the southern coast from Thunder and Lightning Bay to just west of Lascar Point. This adamellite is coarse grained with large K-feldspar phenocrysts (up to 10 cm) aligned with mafic enclaves. An unusual accessory mineral is a red garnet. The main body of the porphyritic adamellite has been intruded by several biotite and muscovite bearing aplites, one of which has been explored with small pits (east of Home Hill).

c) Corner Adamellite

The Corner Adamellite is a medium grained grey rock with visible K-feldspar, plagioclase quartz, biotite and minor muscovite. Quartz-tourmaline nodules are common especially near the Corner settlement. Biotite banding is common and often associated with small pegmatitic patches. Layered aplitic-pegmatitic dykes with vertical to subhorizontal orientation are well exposed in coastal outcrop.

d) Dover River Adamellite

This rock type is a fine to medium grained, grey coloured and mildly porphyritic adamellite. K-feldspar, quartz, biotite and minor muscovite are the principle minerals. Commonly the phenocrysts (rarely longer than 1 cm) are aligned parallel to each other. The rock type in the Phils Hill area is coarser grained than exposures to the east.

e) Mt. Kerford Adamellite

The Mt. Kerford Adamellite, which is an equigranular, coarse grained grey coloured rock is exposed over a large area of the eastern part of Cape Barren Island. The main minerals are quartz, K-feldspar, biotite and minor muscovite and red garnet. Small circular and lens shaped segregations of up to 50% garnet are common.

f) Puncheon Point Adamellite

This rock type is a medium grained, mildly porphyritic, grey coloured rock with small K-feldspar phenocrysts. The exposures are surrounded by Mathinna Beds and near Puncheon Point the adamellite intermittently outcrops with Mathinna Beds, suggesting that only the upper surface of the mass is exposed.

g) Kent Bay Adamellite

Only two small exposures of this rock type were mapped on the eastern side of Kent Bay. This rock type is a medium grained, grey coloured adamellite with abundant mafic xenoliths and common aplitic and pegmatitic dykes.

h) Rice River Adamellite Porphyry

A restricted outcrop of this fine grained, grey coloured porphyry occurs at the mouth of the Rice River, and may be a large dyke parallel to the coast.

i) Thirsty Lagoons Adamellite

Restricted outcrops of this rock type, which is medium grained, grey coloured and muscovite rich, occur on the east coast of Cape Barren Island. This rock type may be a fine grained associated of the Mt. Kerford Adamellite.

j) Tin Granites

Two tin granite masses have been distinguished and are discussed together to emphasise their similar characteristics. These rocks are probably granites rather than adamellites by comparison with other tin granites in the north east of Tasmania. The Rooks River Granite outcrops over a large area from Rooks River to Battery Bay. The Hogans Hill Granite is a smaller body within the Mt. Kerford Adamellite. These granites are younger than the surrounding rocks as shown by chilled contacts and tin granite dykes in the surrounding rocks. Both masses are composite with medium to fine grained and equigranular to porphyry rock types. These rock types occur in different areas, but were not distinguished in this regional study. The limits of the Rooks River Granite in the Battery Bay area have not been distinguished accurately and part of the area may consist of the Modder River Adamellite.

In hand specimen three features distinguish these rock types. The rock is cream to pink in colour, reflecting the alteration of the feldspar which may be a form of deuteric alteration and is not related to weathering.

Muscovite is a significant mineral although it probably does not exceed 5%.

The textures of these rocks are comparable with other tin granites in north east Tasmania. The equigranular textures are comparable to textures in the Lottah Sheets and Mt. William Mass rock types and the porphyry textures are comparable to those of the Mt. Paris rock types.

Both the tin granite masses are best described as masses, as from the present work the shape of these bodies cannot be inferred. They do not have the sheet like form of the Lottah Sheets nor the roof like structure of the Mt. Paris Pluton. Only the southern contact of the Rooks River Granite is well exposed and this is steeply dipping. The Hogans Hill Granite is more complex with steep and shallowly dipping contacts. A possible remnant of the overlying Mt. Kerford Adamellite is exposed south of Hogans Hill. Also several large dykes (at least 30 metres wide and 100 metres long) intrude the Mt. Kerford Adamellite at the western edge of the tin granite mass. Internal structures in these masses have not been mapped, but further mapping of different rock types may distinguish a consistent pattern.

## 5. TERTIARY SEDIMENTS

Tertiary sediments were not examined in detail, but their approximate distribution has been mapped. The sediments both alluvial and marine are mainly described by Blake (1938, 1947) and Coscombe (1965).

Most alluvial and probably some marine sequences are masked by aeolin deposits. Transverse and less commonly parallel dunes, both stabilised and mobile, occur over extensive areas of the island. The distribution of the dunes shown on the map has been interpreted from aerial photographs.

Marine limestones occur extensively in the western part of Cape Barren Island. These are probably of Miocene age (Coscombe, 1965) and their restricted distribution is difficult to explain. This

problem suggests that the sediment sequences in Rooks River and Lee River valleys may be partly formed in marine or tidal marsh environments.

## 6. CASSITERITE MINERALIZATION

The distribution of tin granites which may carry relatively high proportions of cassiterite is the first guide to exploration for secondary alluvial deposits. That alluvial cassiterite has been mined at Rooks River is evidence supporting the distinction of the Rooks River Granite. Other major streams which drain the Rooks River Granite are Lee River, Ransome Creek, Battery Bay Creek and Dyas Corner River. Alluvial tracts associated with these streams should be explored for cassiterite concentrations.

Prospecting should also be carried out in streams which drain the Hogans Hill Granite. The distinction of this tin granite mass is supported by comments such as "tin in gravels" on Blake's 1935 map.

The source of cassiterite in the Modder River alluvial deposits is a problem, as much less than one square mile of the Rooks River Granite is drained by streams which flow into the Modder River valley. With a past topography, a greater area of the Rooks River Granite may have been drained by tributaries of the Modder River although there is no indication of this in the present drainage pattern.

From the present mapping no concentrations of cassiterite as lodes or greisens or in kaolinised granite were found. Disseminated cassiterite occurs in some of the tin granite rock types, especially fine grained dykes which also carry a high proportion of muscovite in numerous miarolitic cavities. The "tin lode" in Kent Bay marked

on Blake's 1935 map probably refers to a garnet bearing pegmatitic dyke in the Kent Bay Adamellite.

Economic concentrations of cassiterite may be associated with the transverse dune sands especially near the outcropping tin granites.

## 7. GOLD MINERALIZATION

Blake (1947) discussed minor gold mineralization in quartz veins in the Mathinna Beds at Apple Orchard Point. No granodioritic rocks which are thought to be the source of gold mineralization (Klominsky and Groves, 1970) are exposed in this area.

## 8. CONCLUSIONS AND RECOMMENDATIONS

Two tin granite masses have been distinguished on Cape Barren Island, effectively reducing the area of the island to several alluvial tracts which should be prospected. Dune sands which overlie the tin granite masses and which may have been derived from the tin granites should also be prospected.

The following exploration should be carried out.

a) Stream sampling of the following rivers and tributaries -

Rooks River Granite: Lee River, Ransom Creek, Dyas Corner River, Battery Bay Creek

Hogans Hill Granite: all streams flowing north and south from the granite.

b) Beach and dune sand sampling should be carried out for the whole island, possibly with a closer sampling pattern over the areas of tin granites and to the east of the tin granite masses. Dark mineral beach sand concentrations were noted in Munro Bay and east of Lascar Point.

c) More detailed geological mapping may be a further guide to types of tin granite with the best cassiterite potential. Chemical sampling for Sn content and cassiterite content may also be useful and could be carried out in conjunction with the detailed mapping.

d) Alluvial tracts with the highest cassiterite potential indicated by the mapping and sampling could then be tested with auger and percussion drilling.

Joshua D Cocker

28/4/1971

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# APPENDIX B

# REPORT ON DETAILED MAPPING OF THE ROOKS RIVER TIN GRANITE

for B.M.I. Mining Pty. Ltd.

by J.D. Cocker, B.Sc., Hons.

MAY, 1971.

CONTENTS:

## 1. INTRODUCTION.

During four weeks of field mapping the rock types and internal structure of the Rooks River Granite were distinguished. Although more detailed mapping could be carried out, the basic pattern of rock types has been distinguished and the economic implications of this pattern are dicussed in this report.

The map accompanying the Report on the Regional and Economic Geology of Cape Barren Island (April, 1970) has been corrected following the recent field work and used as a basis for the map presented with this report. The main correction involved was the reduction in the area of the Rooks River Granite east and west of Battery Bay.

Several locations of old, small alluvial mines were seen at the mouth of Lee River and mentioned by local inhabitants on the lower south-eastern slopes of Mt. Munro, north-east of Mt. Kerford and west of Big Stoney. There are no records concerning these mines.

## 2. ROCK TYPES

In terms of area two major rock types and three minor variations of these types have been distinguished within the Rooks River tin granite. The distribution of the two major types and two of the minor types is shown on the accompanying map.

One major type with two variations is a granite porphyry

with an equigranular or aplitic groundmass of about 0.5-1 mm. grainsize. The proportion of quartz and alkali feldspar phenocrysts vary as does the muscovite content (up to 5%). One of the variations of the porphyry which is shown on the map is rich in muscovite and has a low proportion of phenocrysts. The other variation (not distinguished on the map) is a porphyry with a finer groundmass (less than 0.5 mm) which occurs in the north-east of Mt. Munro on the Modder River Adamellite - Rooks River Granite contact. Occurring within the porphyry are about 20 fine grained, equigranular, muscovite-rich (up to 10%) granite dykes, up to 200 metres long and 15 metres wide. Common within these dykes are small lenses (1-2 cm. wide, up to 4 metres long) of coarser grained (up to 2.5 cm.) quartz, feldspar and muscovite. Disseminated in some of these lenses and associated microlitic cavities is dark brown cassiterite, up to 1 cm. in grainsize. One of these dykes has been explored with small pits on the western end of Lode Hill.

The other major rock type within the Rooks River Tin Granite is a medium-grained (4-7 mm) equigranular granite. A minor variation of this type is a porphyritic medium-grained (3-5 mm) granite which is shown on the map.

Primary mineralization associated with these rocks is restricted to the cassiterite-bearing dykes and small quartz veins (up to 2 cm. wide and 10 m. long) which occur in a set at 20-35° near the southern margin of the tin granite mass. One of these quartz veins on the northern slopes of Double Peak carries minor molybdenite flakes.

## 3. STRUCTURE

The Rooks River Granite has steeply dipping southern and south-eastern margins. Southern margin is irregular with several changes in strike direction and this is partly reflected in steep boundaries between rock types within the mass.

The Rooks River Granite is a wedge-shaped mass although two outcrops of porphyry occur to the east of Lee River. Dune sands may mask an east trending porphyry tin granite dyke which could be up to 4 kilometres long and 1 kilometre wide. Further mapping in this area may not give a much more accurate picture of this structure.

## 4. ECONOMIC IMPLICATIONS

Streams which drain or have drained areas of tin granites have developed alluvial tracks which have a higher potential for carrying cassiterite than streams which have drained non-tin granites. The aim of the present work was to distinguish the tin granite rock type in the Rooks River Granite with the highest potential for giving rise to cassiterite-bearing alluvial tracts, thus further reducing the number of alluvial targets for drilling.

Considering only the two major rock types, the granite porphyry has the highest potential for carrying cassiterite. This decision is based on the association between the granite porphyry and the cassiterite-bearing granite dykes. Also, the higher proportion of muscovite in the porphyry north of Battery

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Bay Hill may indicate minor greisenisation which may be accompanied by an increase in cassiterite content. There are no other factors of which I am aware, that could help in this decision beyond actually measuring the cassiterite content ($SnO_2$%) of the different rock types.

The aim of this work has not been fully realised, as the complex pattern of rock types within Rooks River Granite means that all tributaries of the Lee River have drained both porphyry and medium grained, equigranular granite areas. In the present landscape the greatest area of porphyry is exposed north and east of Battery Bay Hill. Also, the rock is the muscovite rich porphyry which may be slightly greisenised.

## 5. CONCLUSIONS AND RECOMMENDATIONS.

From this field work, a complex pattern of rock types has been distinguished and the granite porphyry may carry the highest cassiterite content. In the modern landscape sediments derived from the outcrop north and south of Battery Bay Hill may carry the highest cassiterite content. Sediments deeper in the sequence are likely to have been derived from both the porphyry and the equigranular granite.

The Hogans Hill Granite is a porphyry which is very similar to the porphyry of the Rooks River Granite. If the porphyry rock types have the highest cassiterite content the sediments surrounding Hogans Hill, form important targets for

exploration. These sediments occur in part as fans, almost certainly of alluvial origin compared to possible marine intercalations in the Rooks and Lee River deposits. Stream sampling and land boring could be carried out during the winter season in preparation for possible drilling in the summer, when the ground is not so waterlogged.

JOSHUA COCKER.

28/6/71.

| B.M.I. MINING PTY. LTD. | |
|---|---|
| GEOLOGICAL SKETCH MAP of CAPE BARREN ISLAND | |
| TR-872 | |
| FIG. 1 | BMI - M - |

1181

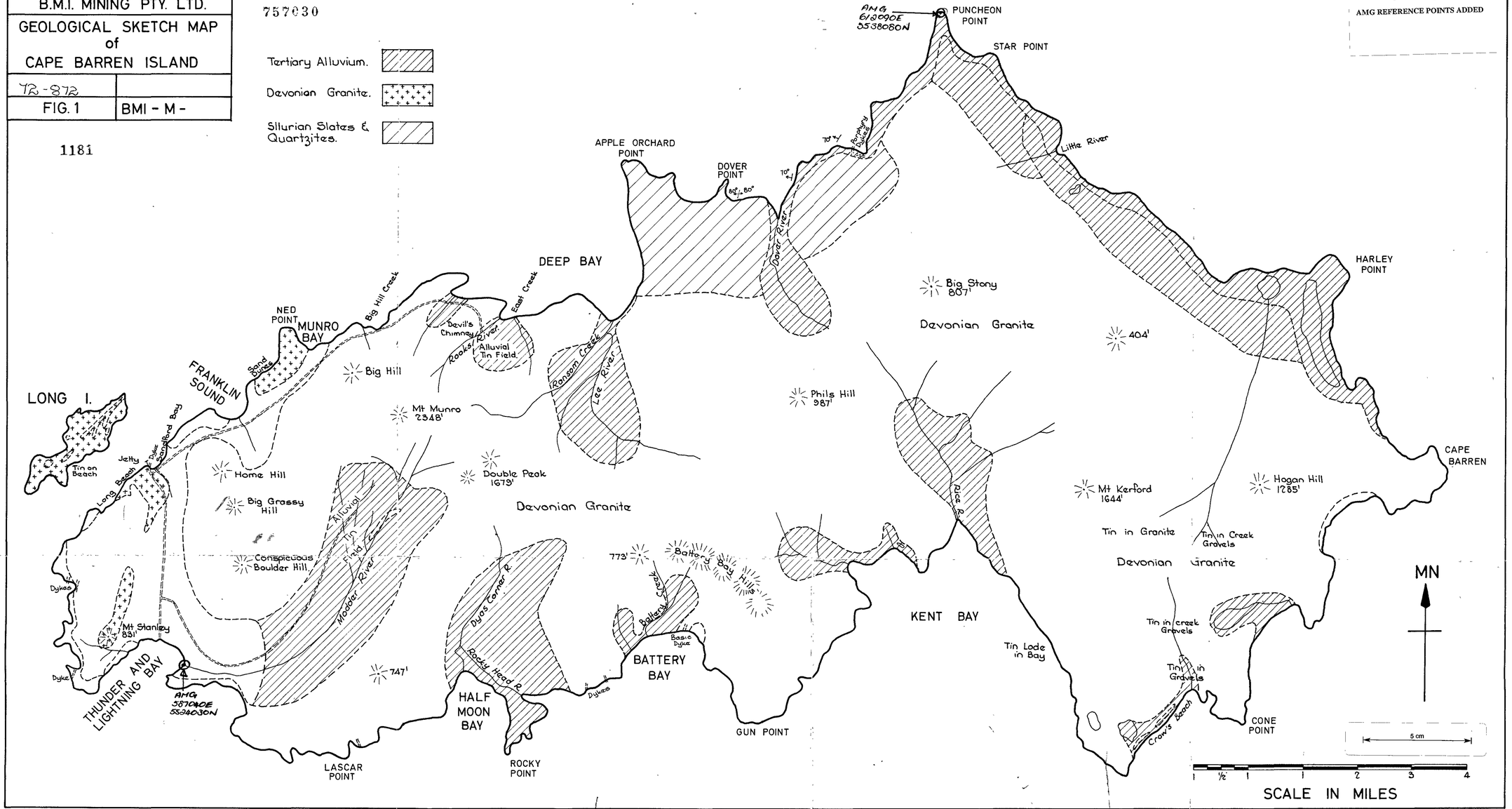
757630

Tertiary Alluvium.

Devonian Granite.

Silurian Slates & Quartzites.

AMG REFERENCE POINTS ADDED

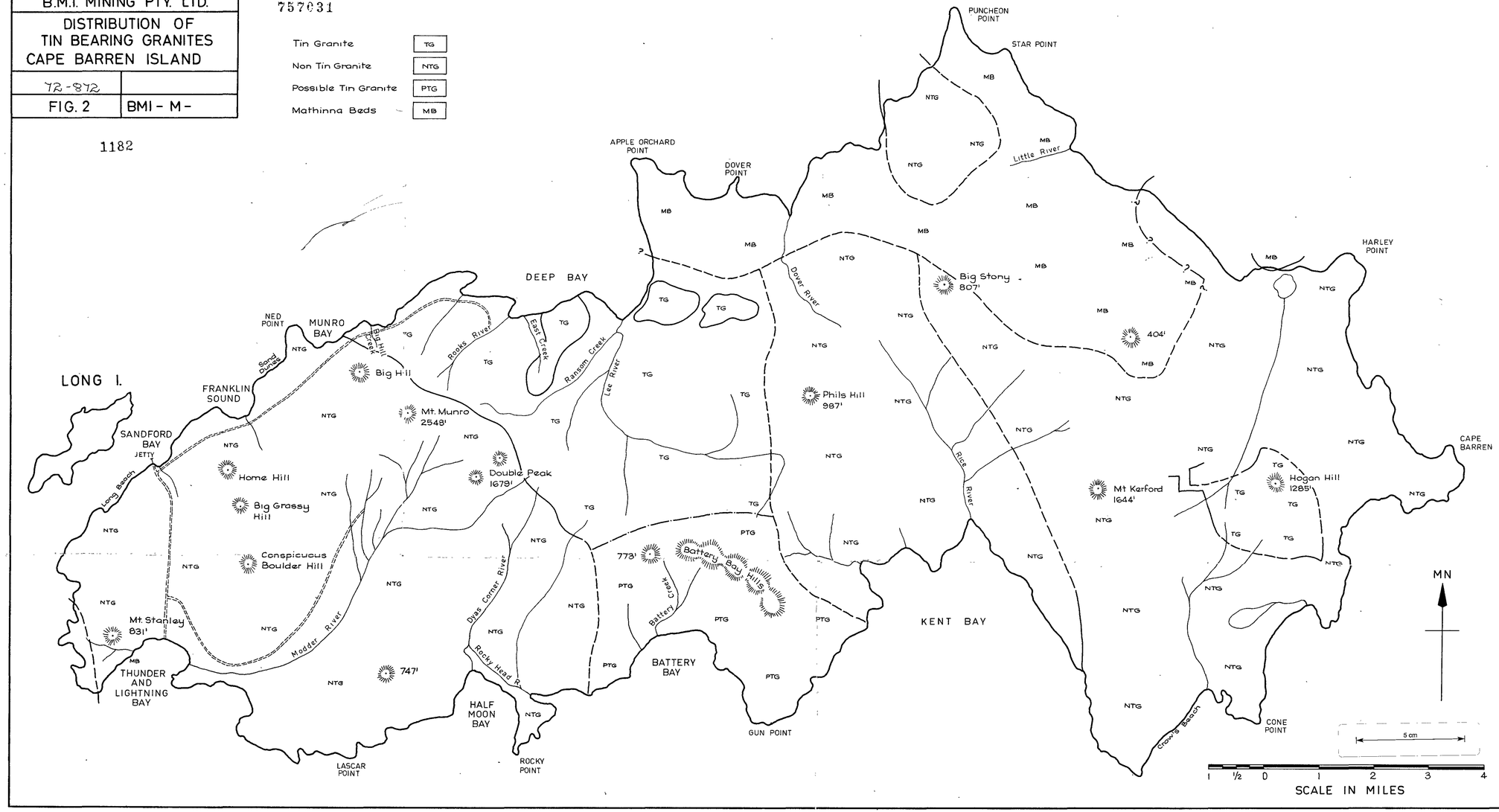


| B.M.I. MINING PTY. LTD. | |
|---|---|
| DISTRIBUTION OF TIN BEARING GRANITES CAPE BARREN ISLAND | |
| 72-872 | |
| FIG. 2 | BMI - M - |

757631

1182

| | |
|---|---|
| Tin Granite | TG |
| Non Tin Granite | NTG |
| Possible Tin Granite | PTG |
| Mathinna Beds | MB |



N

LINE 6

LINE 2

LINE 3

LINE 5

LINE 1

LINE 4

Basement 116'
Total Depth 175'

Basement 96'
Total Depth 113'

LEGEND

- Utah Bores
- B.M.I. Percussion Bores
- Granite

# B.M.I. MINING PTY. LTD.

# ROOKS RIVER
# CAPE BARREN ISLAND

## DRILLHOLE LOCATION MAP

1183

757032

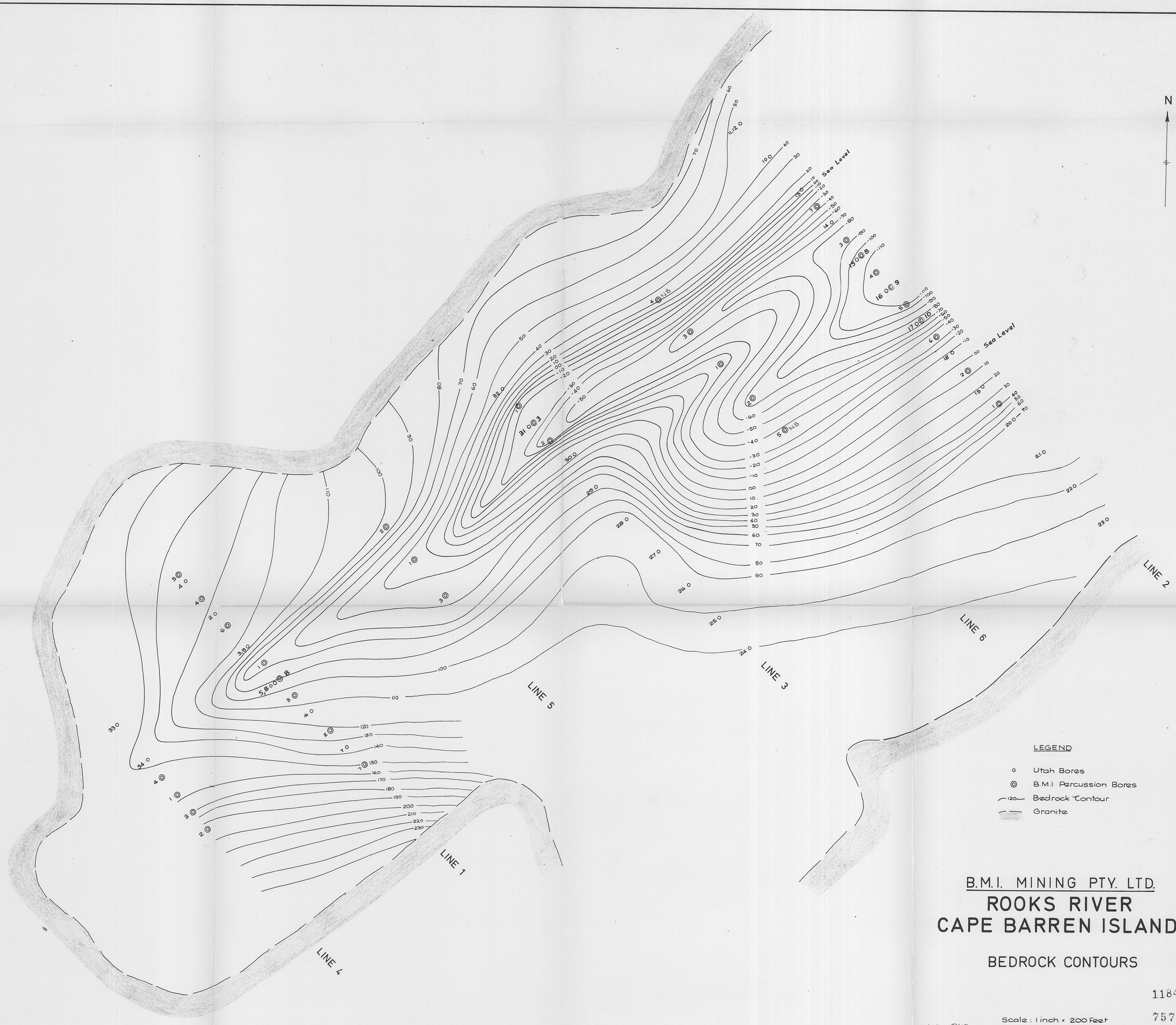
Scale: 1 inch = 200 feet

5 cm

Figure 3

72-872

1971




# B.M.I. MINING PTY. LTD.

# ROOKS RIVER
# CAPE BARREN ISLAND

## BEDROCK CONTOURS

1184

757033

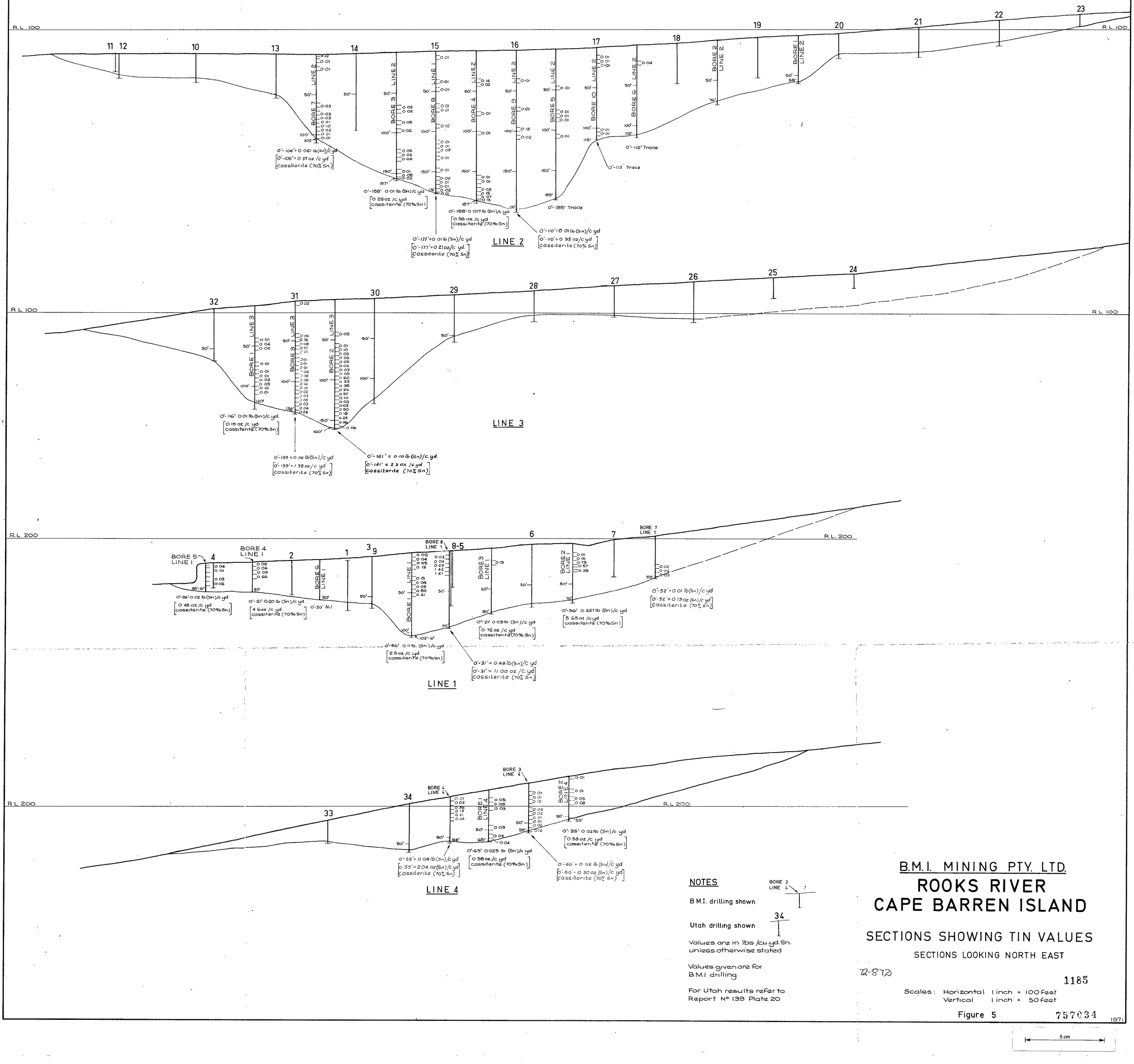
72-872

Scale : 1 inch = 200 feet

Figure 4

5 cm

1971




NOTES

B.M.I. drilling shown

Utah drilling shown

Values are in lbs /cu.yd.Sn. unless otherwise stated

Values given are for B.M.I drilling

For Utah results refer to Report No. 139 Plate 20

# B.M.I. MINING PTY. LTD.

# ROOKS RIVER
# CAPE BARREN ISLAND

## SECTIONS SHOWING TIN VALUES

SECTIONS LOOKING NORTH EAST

R-872

1185

Scales: Horizontal 1 inch = 100 feet
Vertical 1 inch = 50 feet

Figure 5 757034

1971

5 cm

N

CREEK

73 M

0·57 nil 0·35

2 3 1

25' 16' 10'

LINE 1

LOCATION OF HOLES
APPROXIMATE ONLY

NEW WORKINGS

0·45 3·61 nil 0·05

1 2 5 3 4

19' 34' 10' 10'

LINE 2

CENTRE

51 M

OLD WORKINGS

2·64 1·69 7·19 4·79 24·17 10·45

3 4 2 5 6 1

15' 22' 26' 19' 26' 24'

LINE 3

RIVER

MODDER

LEGEND

2·64 Whole of hole value oz. cassiterite (70% Sn.)

03 Percussion Hole Number

15' Depth to granite bedrock

5 cm

1186

72-842

B.M.I. MINING PTY. LTD.

# MODDER RIVER
# CAPE BARREN ISLAND
## DRILL HOLE LOCATION MAP

SCALE 1" = 200'

FIG. 6

757035 1971

1187

APPLE ORCHARD PT.

DOUGHBOY ISLAND

NED PT.

MUNRO BAY

DEEP BAY

LONG ISLAND

FRANKLIN INLET

WEBB

FISHERS

CLARKE & DAVIS

WATSON

ROOKS RIVER

LEE RIVER

BIG HILL
RUN HILL

SANDFORD BAY

CORNER

HOME HILL

MT. MUNRO
2348'

RANSOM CREEK

BIG GRASSY HILL

1679'
DOUBLE PEAK

NEW WORKINGS

OLD WORKINGS

MT. STANLEY
831'

CONSPICUOUS BOULDER HILL

40°25'

CAPE SIR JOHN

THUNDER AND LIGHTNING BAY

MODDER RIVER

747'

KEY ISLAND

DYASON'S CORNER RIVER

773'

901'

HALF MOON BAY

BATTERY BAY

901'

LASCAR PT.

WOMBAT PT.

BATTERY ISLAND

SLOPING PT.

PRESERVATION ISLAND

RUM ISLAND

T.N approx.

CAINOZOIC
- Alluvial sediments
- Dune sands
- Marine limestones and sandstones
- Basalt

DEVONIAN
- Rooks River Granite - Tin Granite
- Basic dykes
- Modder River Adamellite
- Corner Adamellite
- Cape Sir John Granodiorite

SILURO - DEVONIAN
- Mathinna Beds

- Fault
- Approximate geological boundary
- Road
- Marshy flood plain

# REGIONAL GEOLOGY OF CAPE BARREN ISLAND

## WESTERN SHEET

B.M.I. Mining Pty. Ltd.
Geology by J. D. Cocker, 1971

72 - 872

5 cm

1187

0 1 2 MILES APPROX.
1000 0 1000 2000 3000 YARDS

Map compiled from aerial photographs

148°15'

FIG. 7

757036

1188

# REGIONAL GEOLOGY OF CAPE BARREN ISLAND

## EASTERN SHEET

B.M.I. Mining Pty. Ltd.
Geology by J.D. Cocker, 1971

72-872

1188

0 1 2 MILES APPROX.
1000 0 1000 2000 3000 YARDS

757037

Map compiled from aerial photographs

FIG. 8

5 cm

PUNCHEON PT.

DOVER PT.

THIRSTY LAGOONS

DOVER RIVER

BIG STONEY 807'

T.N. approx.

PHILS HILL 987'

RICE RIVER

404

HARLEY PT.

KENT BAY

MT. KERFORD 1638'

HOGANS HILL 1285'

CAPE BARREN

GULL ISLAND

CONE PT.

40°25'

148°25'

5 cm

CAINOZOIC
- Alluvial sediments
- Dune sands

DEVONIAN
- Hogans Hill Granite - Tin Granite
- Rooks River Granite - Tin Granite
- Basic dykes
- Mt. Kerford Adamellite
- Dover River Adamellite
- Rice River Adamellite Porphyry
- Kent Bay Adamellite
- Puncheon Point Adamellite
- Thirsty Lagoons Adamellite

SILURO-DEVONIAN
- Mathinna Beds

Approximate geological boundary

Track

1188

APPLE ORCHARD PT.

DOVER PT.

MUNRO BAY

ROOKS RIVER

BIG HILL
RUN HILL

MT. MUNRO
2348'

LEE RIVER

RANSOM CREEK

1679'
DOUBLE PEAK

PHILS HILL
987'

BATTERY BAY
901'
HILL

773'

747'

DYAS CORNER RIVER

HALF MOON BAY

BATTERY BAY

901'

BATTERY ISLAND

WOMBAT PT.

SLOPING PT.

T.N. approx.

CAINOZOIC

- Alluvial Sediments
- Dune Sands

DEVONIAN

- Granite Porphyry
- Granite Porphyry (Muscovite Rich)
- Medium grained equigranular Granite
- Porphyritic medium grained equigranular Granite

} Rooks River Granite

- Basic Dykes
- Modder River Adamellite
- Dover River Adamellite

SILURO - DEVONIAN

- Mathinna Beds

- Fault
- Geological Bound
- Approximate Geological Boundary
- Possible Geological Boundary
- Road
- Track

# Central

1189

# CAPE BARREN ISLAND

B.M.I. MINING Pty. Ltd.

Geology by J.D. Cocker

757038

FIG. 9

72-872

5 cm

0 1 2 MILES approx.

0 1 2 3 KM