MINERALS PTY. LTD.

MT. FREELING TALC DEPOSIT
CENTRAL AUSTRALIA

CONTENTS

9th October, 1968

Kenneth McMahon & Partners Pty. Ltd.

INTRODUCTION

The talc deposit situated at Mt. Freeling in Central Australia was inspected for Minerals Pty. Ltd., during the period 13th-15th September, 1968.

Access to Mt. Freeling, which lies about 20 miles west of the Stuart Highway is by the Napperby Road, whose turn-off from the highway is approximately four miles south of Alleron (See Locality Plan).

In order to evaluate the deposit, a tape and compass survey of the area was undertaken and a number of random grab samples of the higher grade talc were taken from the lode.

GENERAL GEOLOGY

The geology of the area consists of Archaean metamorphics of the Arunta Complex comprising talc-schists, calc-silicate rocks and epidote marbles which have been intruded by the Napperby Granite. This is a grey-white medium to coarse grained porphyritic biotite granite whose main mass lies approximately 2000 feet south of the talc lode. Numerous small lenticular masses of the granite up to 30 feet long and 3 feet wide are intruded along the schistosity of the meta-sediments which strikes at approximately 250° and dips south-easterly at angles ranging from 25° to 65° (Plate II).

The talc lode is conformable with the schistosity of the meta-sediments and consists of massive schistose talc of generally good quality ranging from 90 feet to 2 feet in horizontal width. The lode can be traced over a strike length of approximately 3000 feet, however it attains interesting dimensions only in the vicinity of Mt. Freeling, towards the eastern extremity of the tape and compass survey (See Geological Plan), where it achieves a horizontal width of approximately 90 feet and thence rapidly diminishes to the east and west to less than 5 feet.

Approximately 1200 feet west of this point the lode again increases in width to 20 feet, but does not maintain this over any appreciable strike length and rapidly lenses down to 5 feet and less.

In both areas where the lode thickens, the talc is heavily invaded by quartz veins and contains included masses of the host talc-schists and calc-silicate and the thickening appears to be due to repetition of the lode by faulting (See Geological Plan).

The quartz gangue and included country rock would have a deleterious effect on bulk mining of the deposit.

CONCLUSIONS and RECOMMENDATIONS

1. The lode in general is too narrow to be economically exploited by open-cast methods.

2. It achieves interesting dimensions in the vicinity of Mt. Freeling where it averages approximately 80 feet in horizontal width over a strike length of 150 feet.

3. Within this area of thickening, the talc is heavily invaded by quartz veins and contains included masses of country rock, so that selective mining of the lode would have to be undertaken.

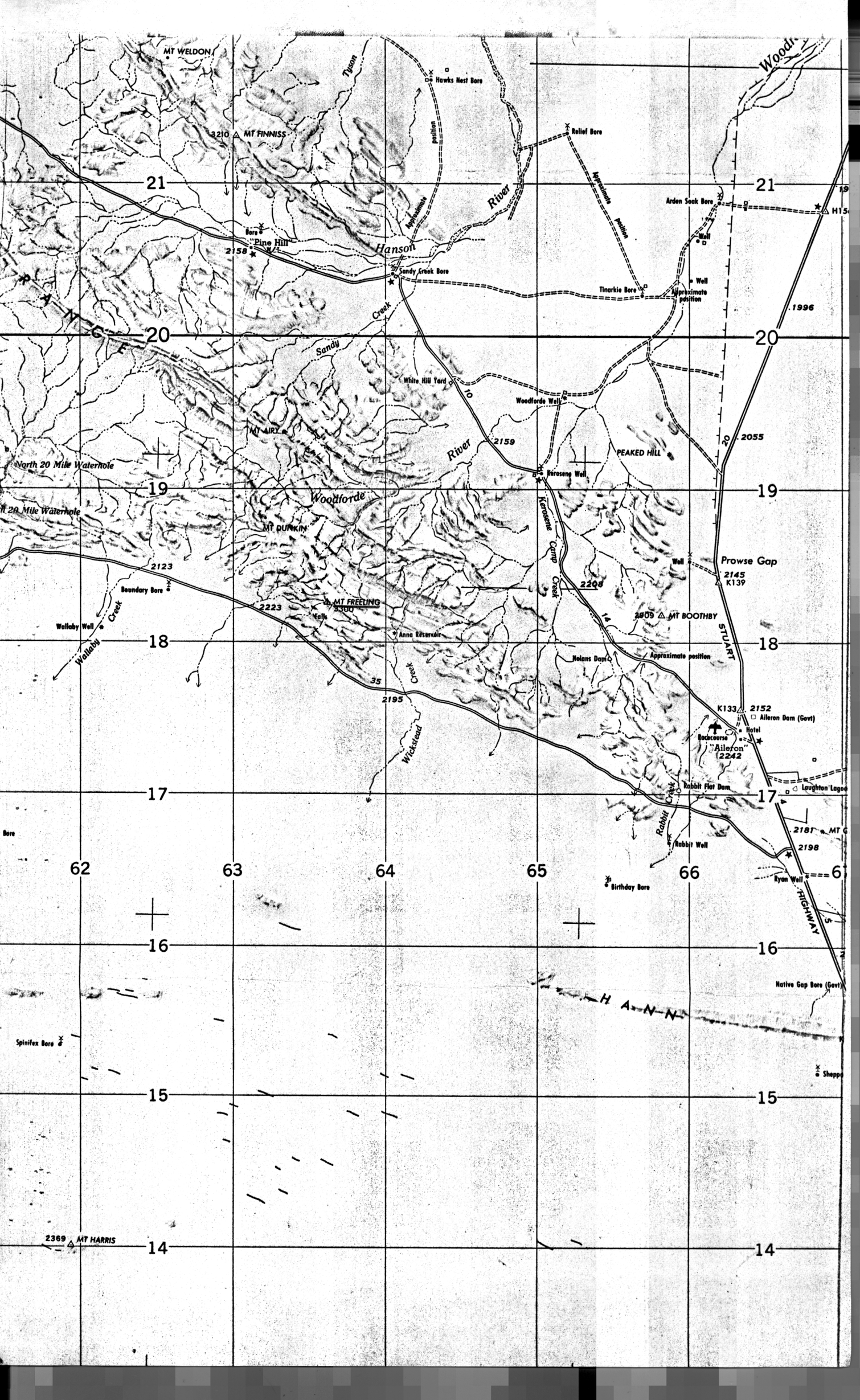
4. The increase in thickness is attributed to repetition of the talc bed by faulting.

5. The fault plane is dipping at a much steeper angle than the talc lode and the appreciable width at the surface can be expected to diminish rapidly with depth, and the lode to achieve its mean dimensions of 5-10 feet within a depth of 20-30 feet below the surface.

6. The low dip of the lode in this area, approximately 34° S.E. would not allow it to be exploited by open-cut methods.

7. The above factors would render the exploitation of the deposit a marginal operation even if it were located in close proximity to coastal markets and its remote location in Central Australia completely prohibits the economic utilisation of the deposit.

8. The deposit is uneconomic and no further work is recommended.


MT WELDON
Tyson
Hawks Nest Bore
3210 MT FINNISS
Relief Bore
Approximate position
Arden Soak Bore
Well
Bore
"Pine Hill"
W/L
2158
Hanson River
Sandy Creek Bore
Tinarkie Bore
Well
Approximate position
1996
Sandy Creek
White Hill Yard
Woodforde Well
MT AIRY
2159
PEAKED HILL
2055
North 20 Mile Waterhole
Kerosene Well
Woodforde
MT DUNKIN
Kerosene Camp Creek
2208
Well
Prowse Gap
2145
K139
2123
Boundary Bore
2223
MT FREELING
3300
Falls
Wallaby Well
Wallaby Creek
Anna Reservoir
2909 MT BOOTHBY
STUART HIGHWAY
Nolans Dam
Approximate position
35
2195
Wicksteed Creek
K133 2152
Aileron Dam (Govt)
Hotel
Racecourse
"Aileron"
2242
Rabbit Flat Dam
Rabbit Creek
Laughton Lagoon
2181
2198
Rabbit Well
Ryan Well
Birthday Bore
Native Gap Bore (Govt)
H A N N
Spinifex Bore
2369 MT HARRIS
62
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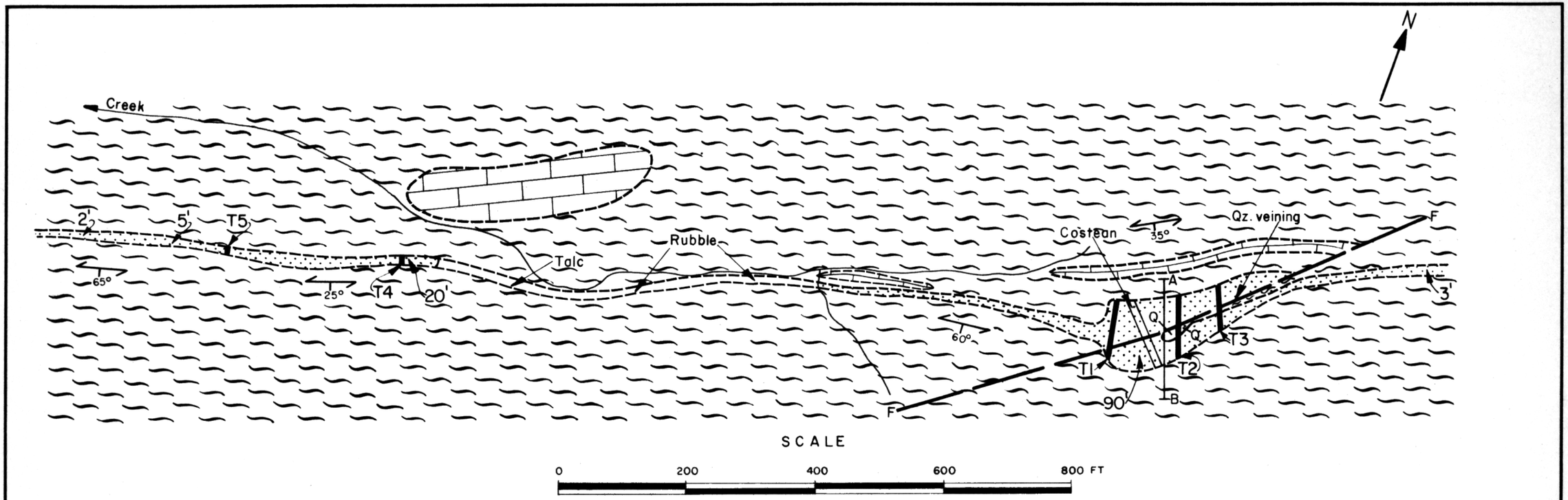
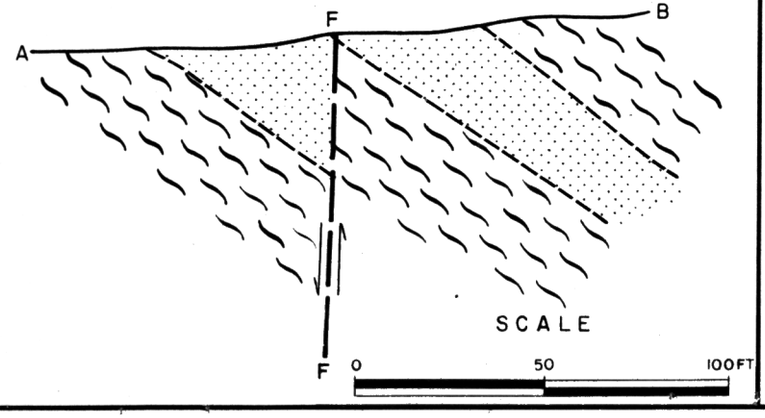


SECTION A-B



LEGEND

- Talc-schist, Calc-silicate rock
- Schistose talc
- Epidote-marble
- Q — Massive white quartz
- Strike, dip schistosity
- F—F Fault
- 20' etc. Horizontal width talc lode
- T4 etc. Random grab sample talc lode

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GEOLOGICAL PLAN & SECTION

MT FREELING TALC DEPOSIT

CENTRAL AUSTRALIA

Date

Scale

FIGURE

Kenneth Mc Mahon & Partners Pty Ltd.