SEDIMENTOLOGY OF THE LATE PRECAMBRIAN MUNDALLIO SUBGROUP : A CLASTIC-CARBONATE (DOLOMITE, MAGNESITE) SEQUENCE IN THE MT. LOFTY AND FLINDERS RANGES, SOUTH AUSTRALIA.

(VOLUME II)

by

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FIGURES, TABLES, PLATES AND APPENDICES

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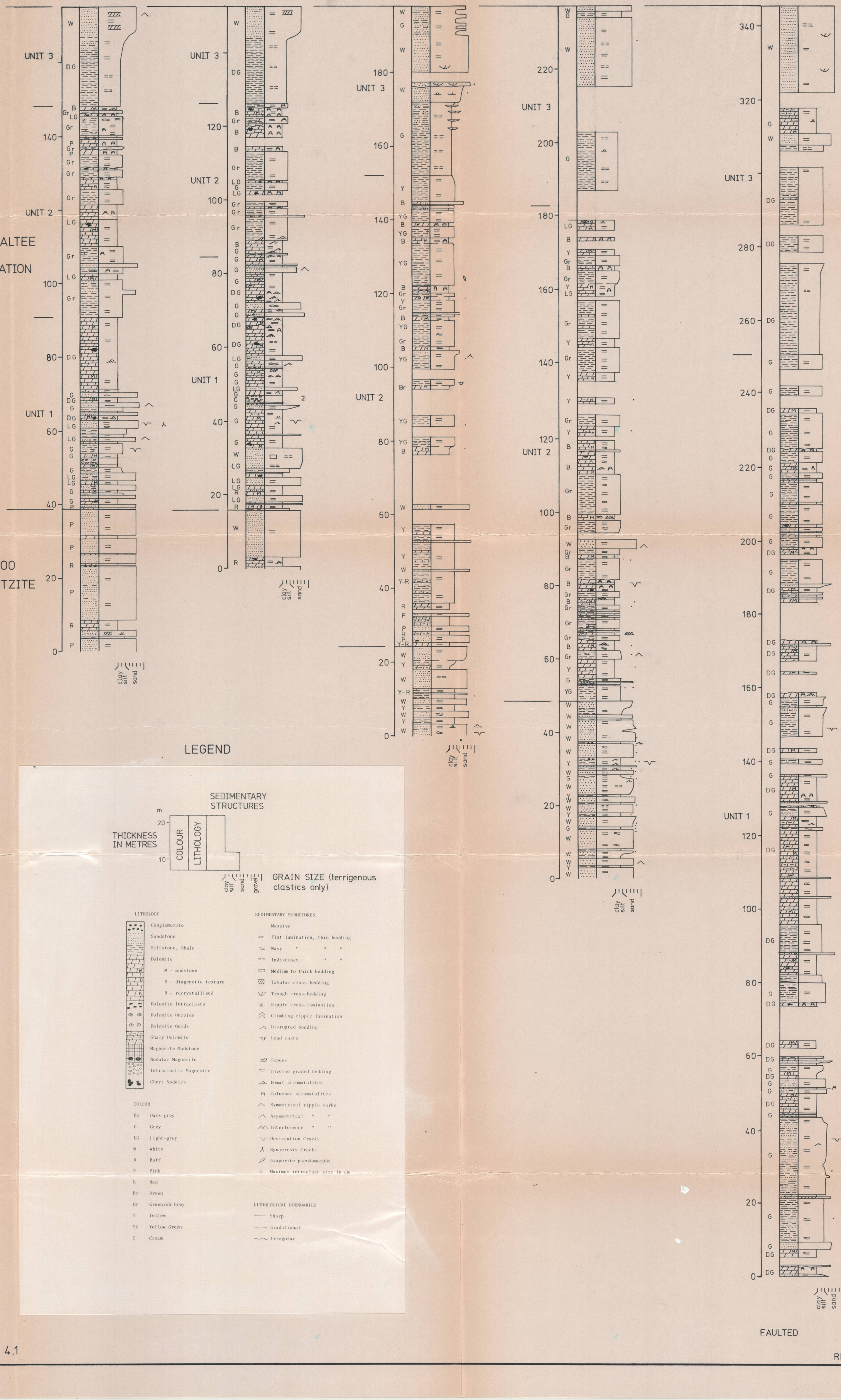


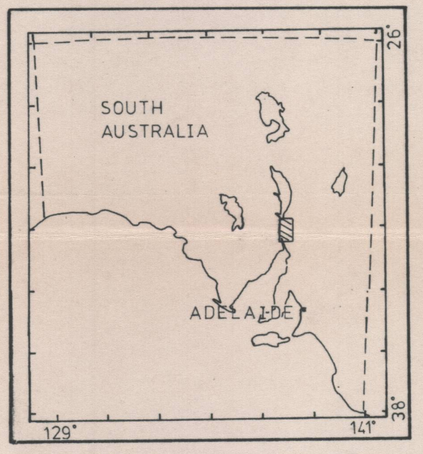
Figure 4.1

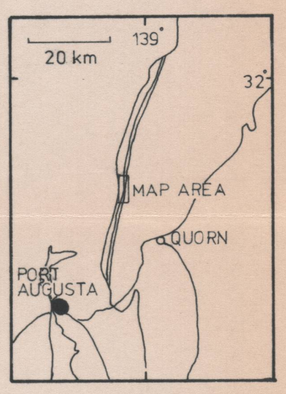
RKU79

GEOLOGICAL MAP

MUNDALLIO SUBGROUP

DEPOT CREEK AREA





REFERENCE

UMBERATANA GROUP

APPILA TILLITE — Massive pebbly mudstone

MUNDALLIO SUBGROUP

BURRA GROUP

UNDALYA QUARTZITE — Dolomitic sandstones, quartzites, minor siltstone and dolomite

YADLAMALKA FORMATION — Dark-grey dolomite mudstones and stromatolitic dolomites, light-grey dolomitic sandstones, cream intraclastic magnesite

NATHALTEE FORMATION
- UNIT 3 — Dark-grey massive shale overlain by white quartzite
- UNIT 2 — Green-grey shales, buff and pink stromatolitic dolomites and dolomite mudstones
- UNIT 1 — Grey dolomite mudstones and stromatolitic dolomites, grey siltstones, light-grey sandstones

EMEROO QUARTZITE — Quartzites, minor siltstones

TN MN

DC1 — Measured section

Geological boundary

Fault

29 — Dip and strike of bedding

Creek

Track

SCALE

200m 0 1km

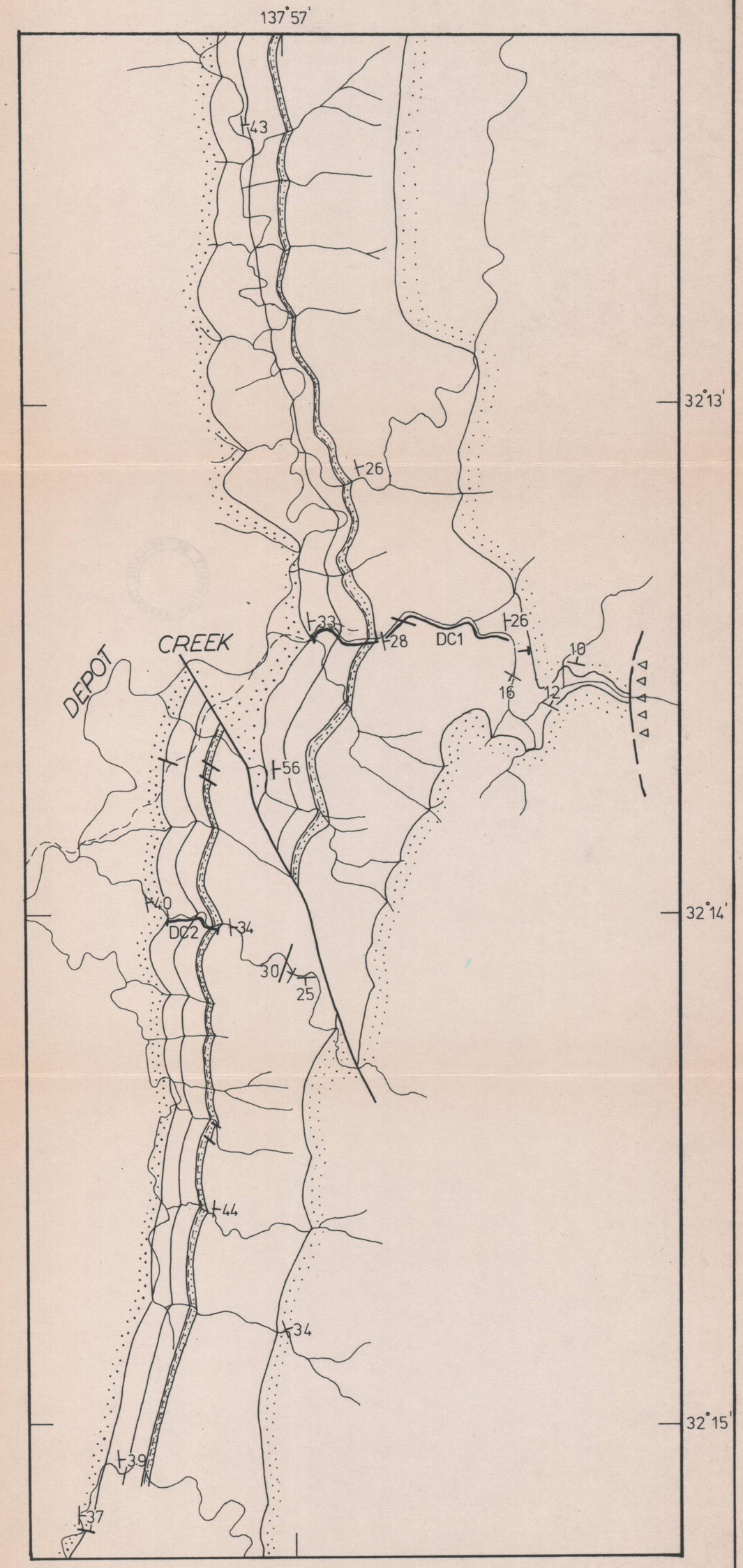
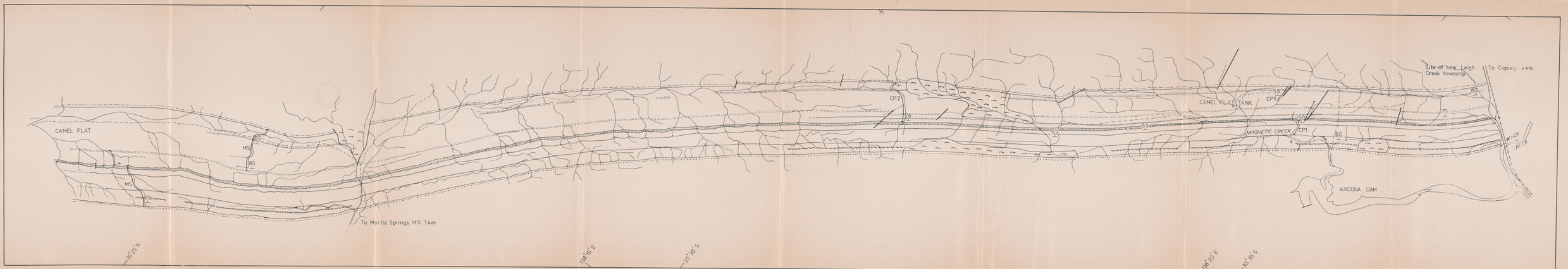


Figure 4.3

RKU 79



GEOLOGICAL MAP

MUNDALLIO SUBGROUP

COPLEY-MYRTLE SPRINGS AREA

REFERENCE

BURRA GROUP / MUNDALLIO SUBGROUP

- Gravels and alluvium
- MYRTLE SPRINGS FORMATION — Grey siltstones and sandstones, minor dolomites
- YADLAMALKA FORMATION — Stromatolite bioherms overlain by grey shale; Grey shale overlain by white quartzite; Massive stromatolite biostrome — Dark-grey dolomite mudstones, dolomitic sandstones and siltstones, cream intraclastic magnesite, and magnesite mudstones
- NANKABUNYANA FORMATION — UNIT 4: Massive grey-green shales overlain by sandstones; UNIT 3: White quartzite, grey dolomitic sandstones, grey-green shales; UNIT 2: Grey dolomitic sandstone, grey-green shales, brown and grey dolomite mudstones and stromatolitic dolomites; UNIT 1: Massive grey shale overlying dolomite — Weathered yellow shales, white quartzites
- COPLEY QUARTZITE — White quartzites

- Geological boundary
- Fault
- 60 Dip and strike of bedding
- Road / Track
- Railway line
- Creek
- CP1 Measured Section

MN / TN

SCALE 1:25 000

500m 0 2km

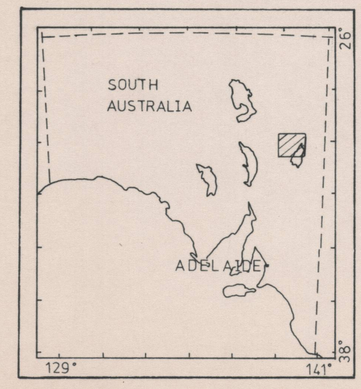
Figure 4.8

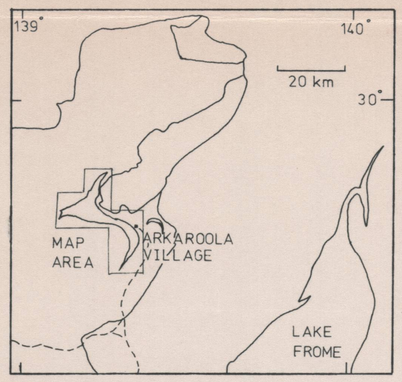
RKU79

GEOLOGICAL MAP

MUNDALLIO SUBGROUP

ARKAROOLA AREA





REFERENCE

UMBERATANA GROUP

- BOLLA BOLLANA FM. — Massive pebbly siltstones and sandstones
- MYRTLE SPRINGS FM. — Grey sandstones and siltstones
- YADLAMALKA FORMATION — Grey shale overlain by white quartzite

BURRA GROUP — MUNDALLIO SUBGROUP — NANKABUNYANA FORMATION

- UNIT 4 — Dark-grey dolomite mudstones, grey dolomitic sandstones and siltstones, cream intraclastic magnesite
- UNIT 3 — Massive grey shale overlain by sandstones and siltstones
- UNIT 2 — Grey dolomitic sandstones metamorphosed to calc-silicates in north, grey shales, white quartzites
- UNIT 1 — Brown and grey dolomites metamorphosed to white dolomite marbles north of Wywyana Creek, dolomitic sandstones metamorphosed to calc-silicates in north, grey shales, white quartzites

- WORTUPA QUARTZITE — Grey shales and sandstones, white quartzites, conglomerates in south
- OPAMINDA FORMATION — Quartzites, minor conglomerates and shales
- BLUE MINE CONGLOMERATE — Grey shales, dolomites, calc-silicates
- Conglomerates, sandstones

- Brecciated sediments
- Alkali granites in pipe-like bodies
- NH — Measured section
- Geological boundary
- Fault
- 60 — Dip and strike of bedding
- Track
- Creek

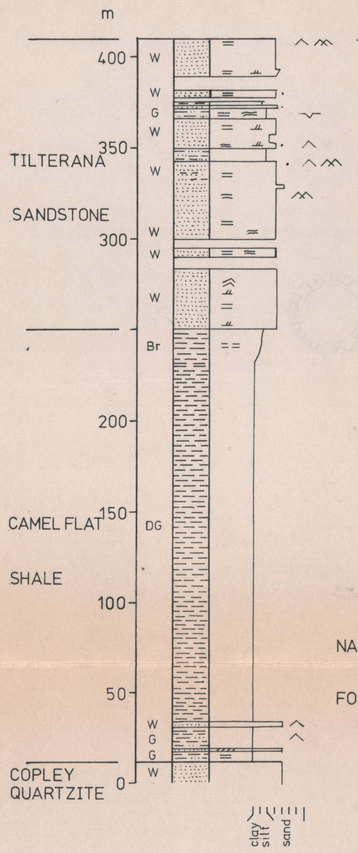
TN MN

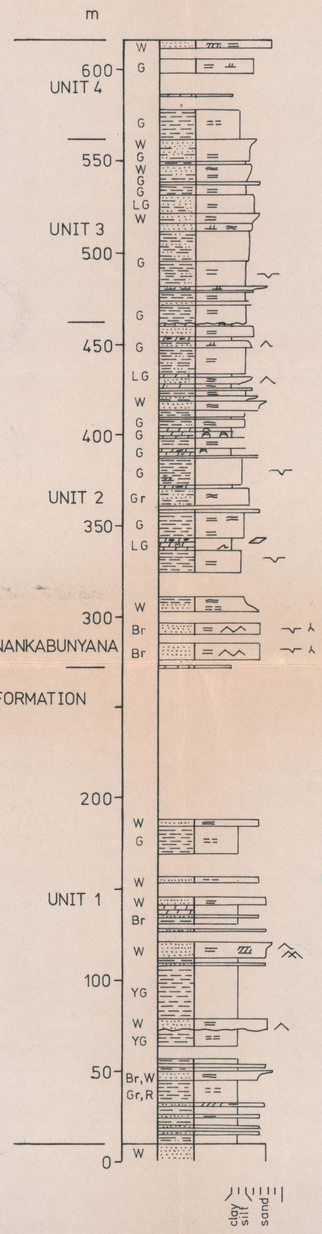
Scale 1 : 50 000

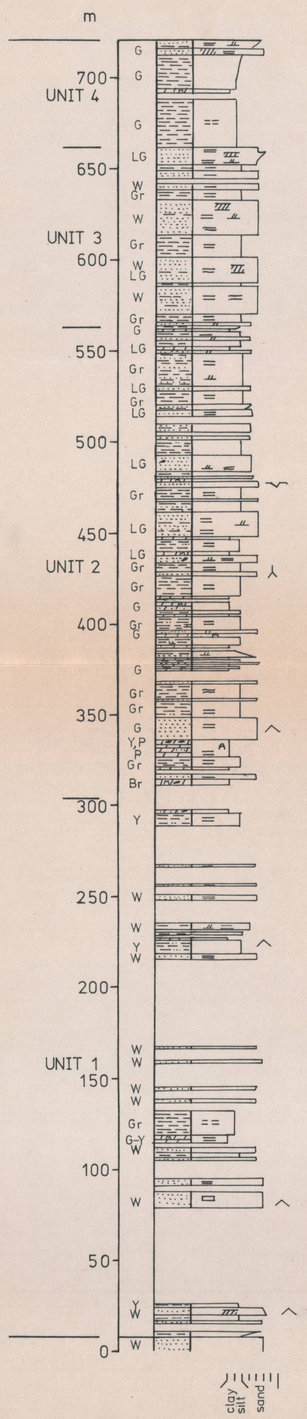
1000m 0 5km

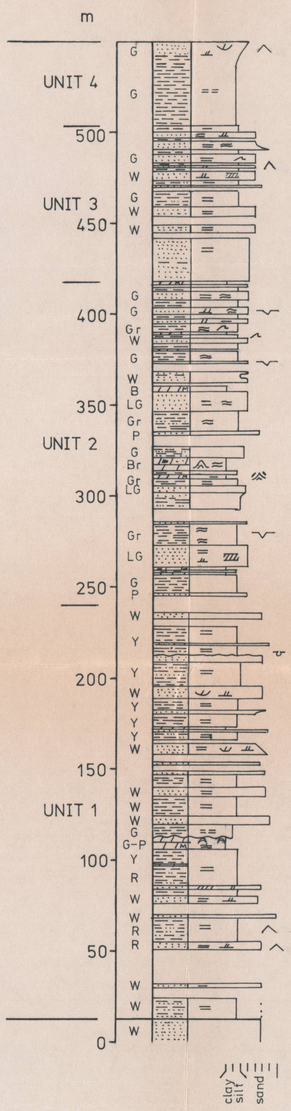
Figure 4.9

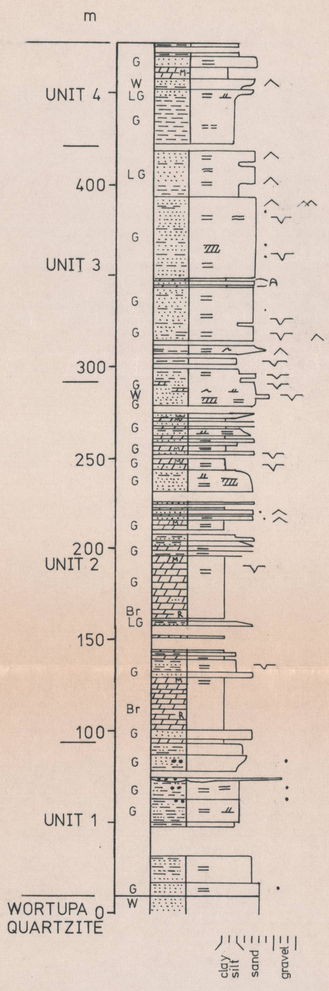
RKU79



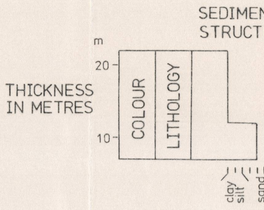




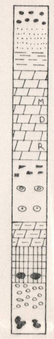




LEGEND



GRAIN SIZE (terrigenous clastics only)



LITHOLOGY

- Conglomerate
- Sandstone
- Siltstone, Shale
- Dolomite
  - M - mudstone
  - D - diagenetic texture
  - R - recrystallised
- Dolomite Intraclasts
- Dolomite Oncoids
- Dolomite Ooids
- Shaly Dolomite
- Magnesite Mudstone
- Nodular Magnesite
- Intraclastic Magnesite
- Chert Nodules

COLOUR

DG	Dark-grey
G	Grey
LG	Light-grey
W	White
B	Buff
P	Pink
R	Red
Br	Brown
Gr	Greenish Grey
Y	Yellow
YG	Yellow Green
C	Cream

SEDIMENTARY STRUCTURES

- Massive
- Flat lamination, thin bedding
- Wavy " " "
- Indistinct " "
- Medium to thick bedding
- Tabular cross-bedding
- Trough cross-bedding
- Ripple cross-lamination
- Climbing ripple lamination
- Disrupted bedding
- load casts
- Tepees
- Inverse graded bedding
- Domal stromatolites
- Columnar stromatolites
- Symmetrical ripple marks
- Asymmetrical " "
- Interference " "
- Desiccation Cracks
- Synaeresis Cracks
- Evaporite pseudomorphs
- 5 Maximum intraclast size in cm

LITHOLOGICAL BOUNDARIES

- Sharp
- Gradational
- Irregular

Figure 4.11

RKU79

A

B

m

Woolshed Flat Shale

180

160

140

120

100

80

60

40

20

0

Montacute

Dolomite

Castambul Formation

contorted

contorted

interbedded dolomite mudstone, sandy dolomite and dolomitic sandstones

m

30

20

10

0

weathered

phyllite

base not exposed

clay silt sand

Figure 6.3

RKU 79

MC (317m)

DC1 (258m)

PG

YE2 (790m)

YE1 (803m)

YT (186m)

J (306m)

YD (707m)

YDA (840m)

Undalya Qtzite equiv.

Undalya Quartzite

Auburn Dol. equiv.

not exposed

no outcrop

Yadlamalka Formation

Nathaltee Formation

Bungaree Quartzite

Yednalue Quartzite

Emeroo Quartzite

Sheared

clay silt sand

LEGEND

% Logs 0 % 100

Dolomite Facies

Magnesite Facies

Sandstones

Shales

Detailed Sections

SEDIMENTARY STRUCTURES

THICKNESS IN METRES

COLOUR

LITHOLOGY

clay silt sand gravel

GRAIN SIZE (terrigenous clastics only)

LITHOLOGY

- Conglomerate
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- Ripple cross-lamination
- Climbing ripple lamination
- Disrupted bedding
- Load casts
- Tepees
- Inverse graded bedding
- Domal stromatolites
- Columnar stromatolites
- Symmetrical ripple marks
- Asymmetrical " "
- Interference " "
- Desiccation Cracks
- Synaeresis Cracks
- Evaporite pseudomorphs
- S Maximum intraclast size in cm

LITHOLOGICAL BOUNDARIES

- Sharp
- Gradational
- Irregular

Figure 6.4

RKU79

WR

TM

MS

CP2

CP1

NH

WC

Myrtle Springs Formation

Yadlamalka Formation

Nankabunyana Fm.

Tilterana Sandstone

no outcrop

not measured

clay silt sand

LEGEND

% Logs

0 % 100

Dolomite Facies

Magnesite Facies

Sandstones, Coarse-grained Siltstones

Shales

Detailed Sections

SEDIMENTARY STRUCTURES

THICKNESS IN METRES

COLOUR

LITHOLOGY

clay silt sand gravel

GRAIN SIZE (terrigenous clastics only)

LITHOLOGY

- Conglomerate
- Sandstone
- Siltstone, Shale
- Dolomite
  - M - mudstone
  - D - diagenetic texture
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- Magnesite Mudstone
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- W White
- B Buff
- P Pink
- R Red
- Br Brown
- Gr Greenish Grey
- Y Yellow
- YG Yellow Green
- C Cream

SEDIMENTARY STRUCTURES

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- Columnar stromatolites
- Symmetrical ripple marks
- Asymmetrical " "
- Interference " "
- Desiccation Cracks
- Synaeresis Cracks
- Evaporite pseudomorphs
- S Maximum intraclast size in cm

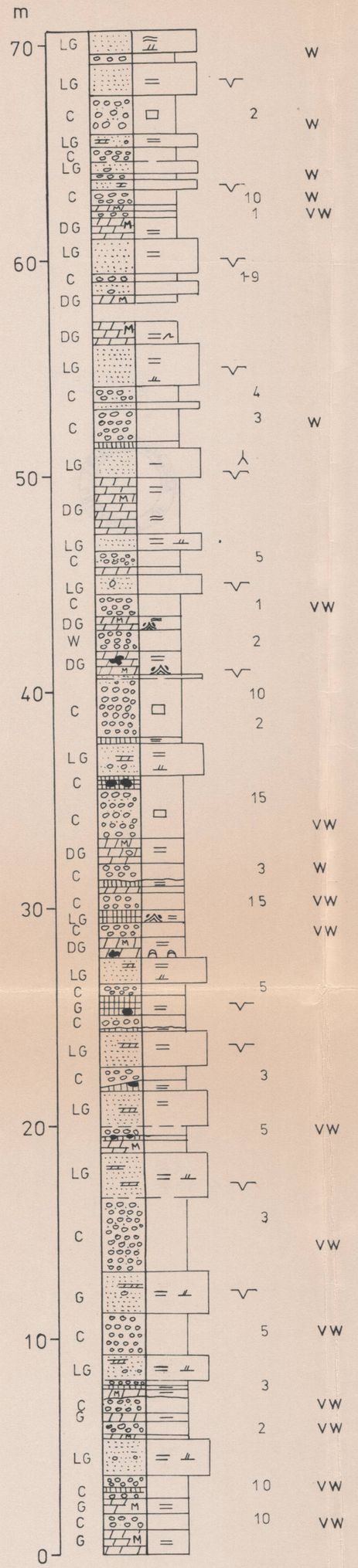
LITHOLOGICAL BOUNDARIES

- Sharp
- Gradational
- Irregular

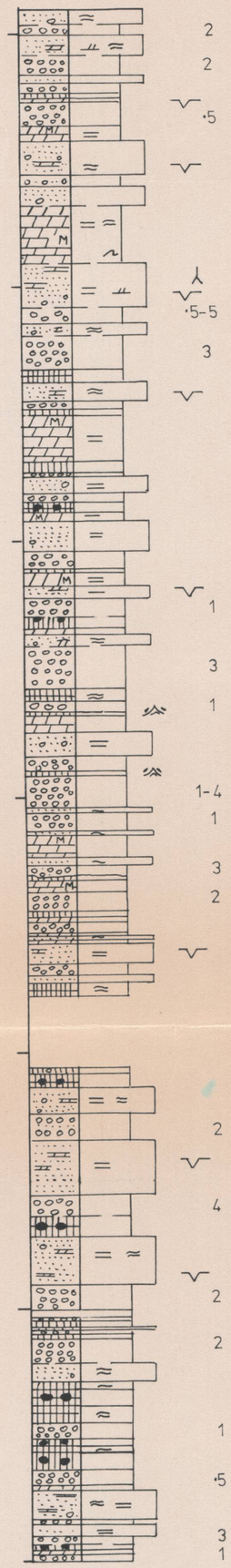
Figure 6.5

RKU 79

Surface Excavation

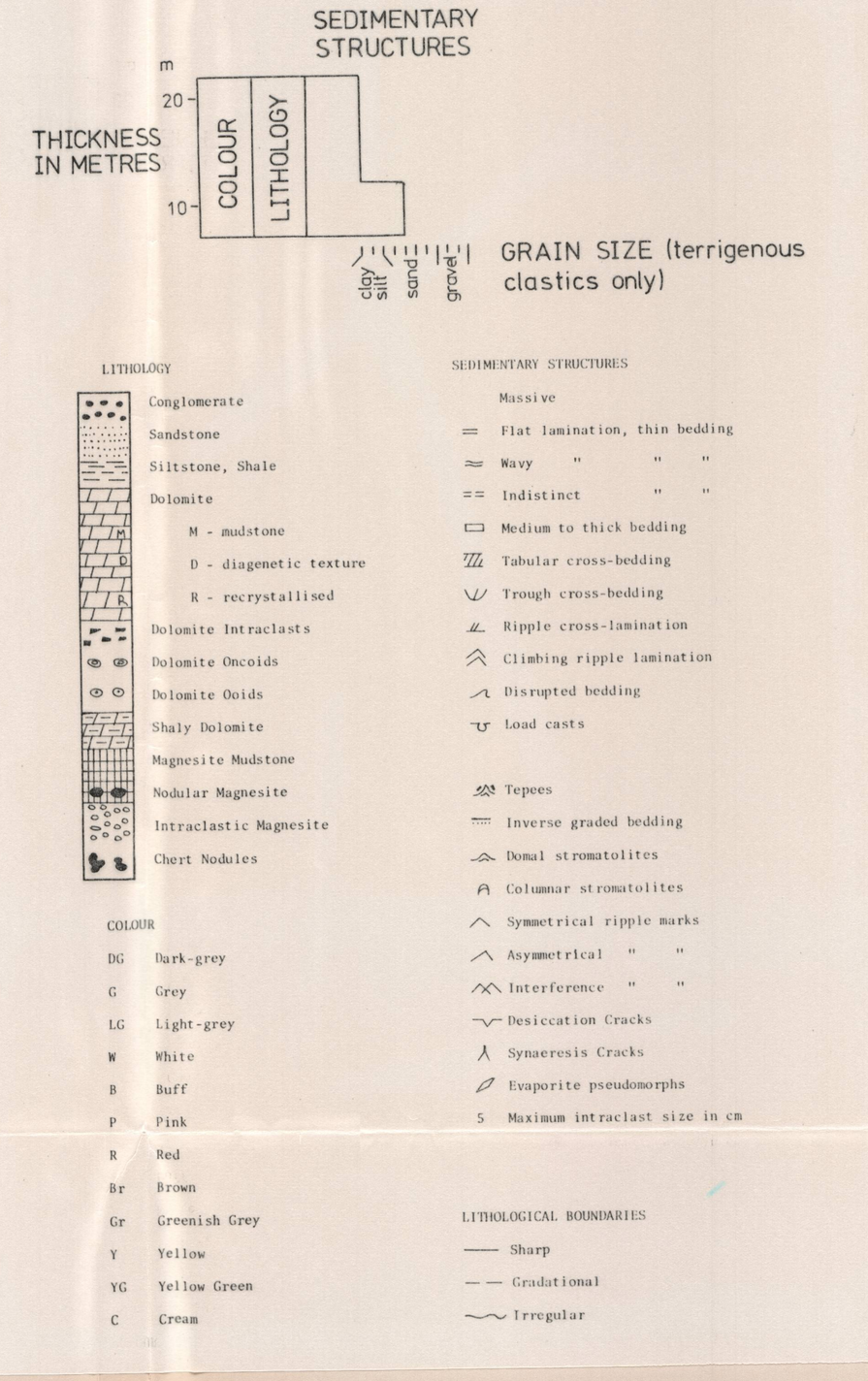


Copley Magnesite DDH 1



w weathered
vw very weathered

LEGEND



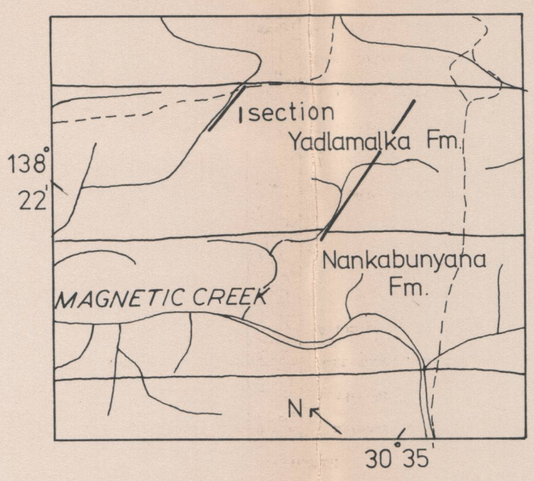


Figure 6.6

RKU79

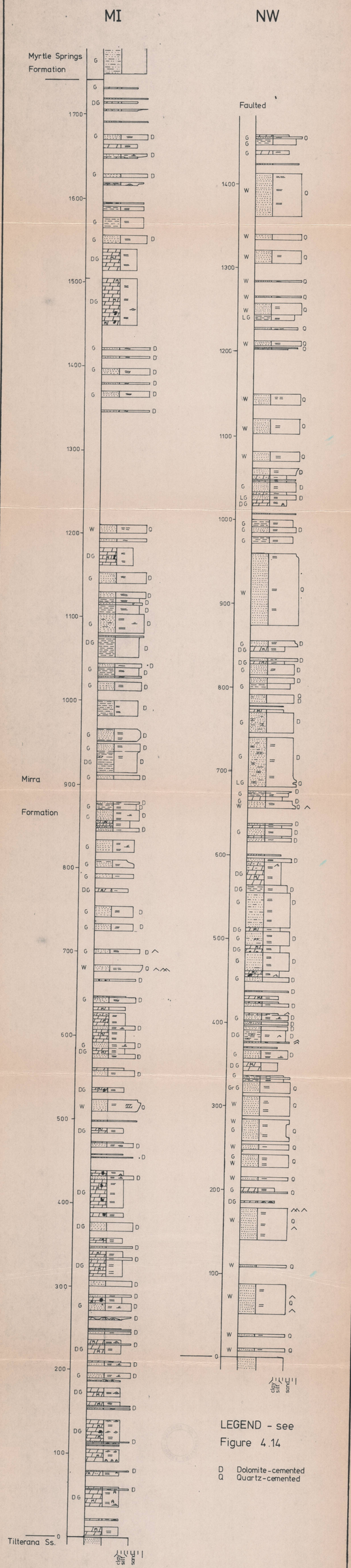


Figure 6.7

RKU79