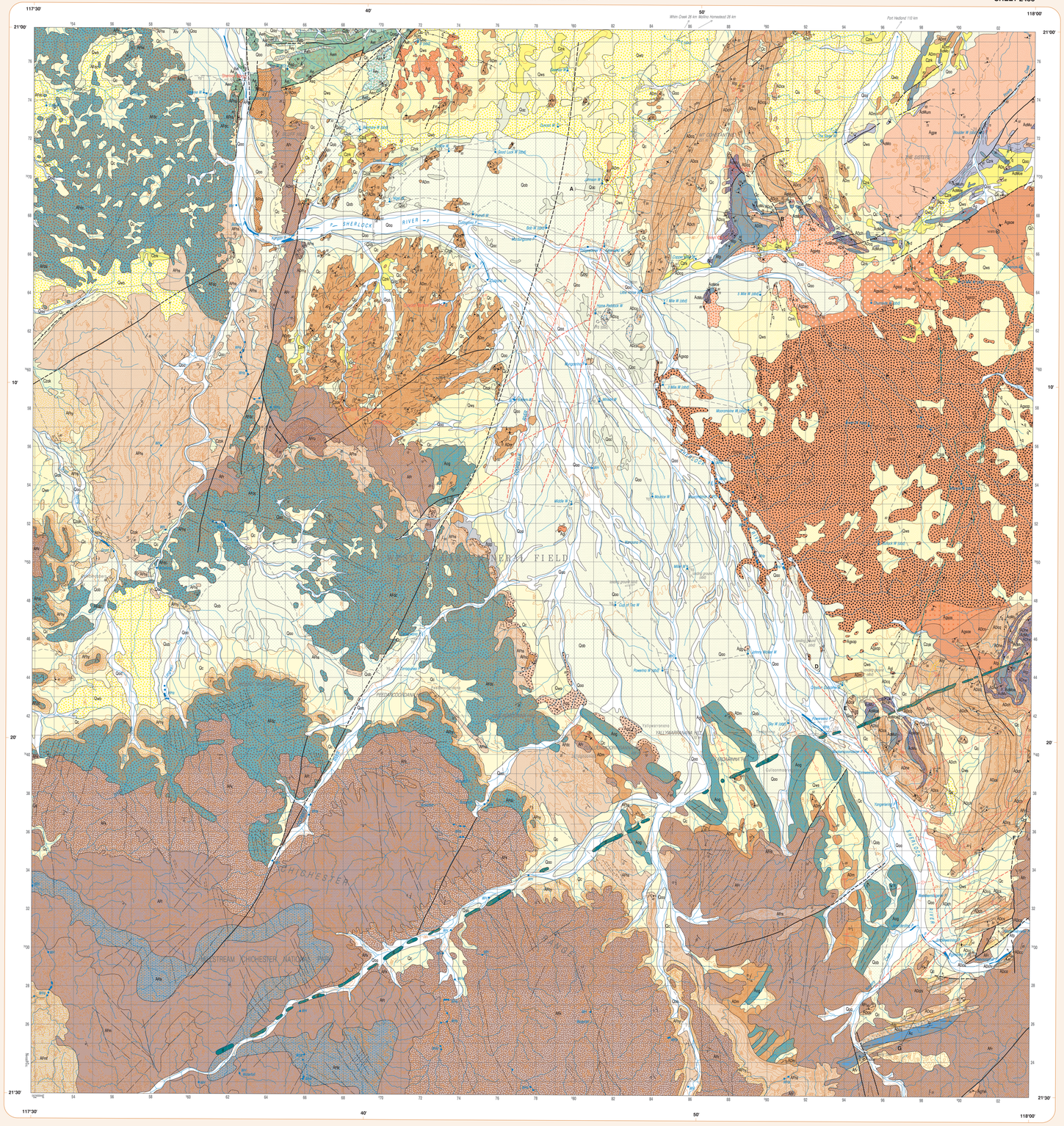
AUSTRALIA 1:100 000 GEOLOGICAL SERIES

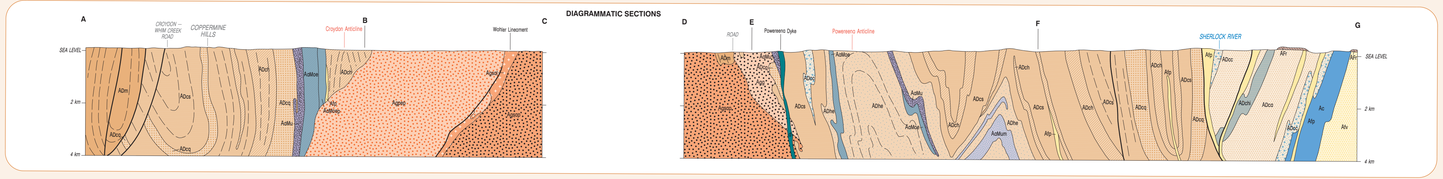
MOUNT WOHLER

GEOLOGICAL SURVEY OF WESTERN AUSTRALIA

SHEET 2455



DIAGRAMMATIC SECTIONS



PHANEROZOIC — CAINOZOIC — QUATERNARY

- Qco — Alluvium—sand and gravel in rivers and creeks; clay, silt, and sand in channels and on adjacent floodplains
- Qcc — Claypan deposits on floodplains
- Qpo — Alluvial sand, silt, and clay in floodplains
- Qcb — Alluvial sand, silt, and clay in floodplains, with gilgai surface in areas of expansive clay
- Qc — Colluvium—sand, silt, and gravel in outwash fans and scree
- Qs — Eolian sand—red-yellow, wind blown sand; locally forms ridges
- Qwb — Sheetwash—sand, silt, and clay in distal outwash fans, with gilgai surface in areas of expansive clay
- Qws — Sheetwash—quartzofeldspathic sand derived from sandstone and siltstone
- Czpk — Calcrete—massive, nodular, and cavernous limestone, variably silicified; alluvial origin
- Czrk — Calcrete—massive, nodular, and cavernous limestone, variably silicified; residual origin

- d — Dolerite dyke
- q — Quartz vein

ARCHAEAN — PILBARA CRATON

Mount Bruce Supergroup — Fortescue Group — Homestead Basin

- c. 2717 Ma — Afm — **MADONIA FORMATION:** massive, vesicular, brecciated, and amygdaloidal basalt, shidhanitic basalt and andesite; minor high-Mg basalt and felsic volcanic rock
- Afref — Andesite
- Afl — **TUMBIANA FORMATION:** mafic to intermediate volcanic sandstone, tuff, and fine-grained clastic sedimentary rock; minor basalt, chert, dolomite, and limestone
- Afhs — Dark-grey siliceous dolomite and limestone, stromatolitic dolomite, and carbonate-rich tuffaceous sedimentary rock
- Afk — **KYLENA FORMATION:** massive, vesicular, and amygdaloidal basalt and andesite
- Afdd — **COOYA POOYA DOLERITE:** fine- to medium-grained dolerite; includes rafts of quartzite derived from HARDEY FORMATION
- Afhy — Lyre Creek Member: felsic agglomerate and felsic tuff
- Afh — **HARDEY FORMATION:** undifferentiated sandstone and tuffaceous grit
- Afhs — Medium- to coarse-grained poorly sorted sandstone, well laminated siltstone, felsic tuff, and minor conglomerate
- Afhc — Conglomerate, polymictic
- Afr — **MOUNT ROE BASALT:** undifferentiated mafic volcanic and volcaniclastic rock, and tuffaceous sedimentary rock
- Afrb — Basaltic breccia
- Afrs — Well laminated mudstone and siltstone, fine- to medium-grained arkose, and fine-grained felsic tuff

- c. 2765 Ma — Ag — Leucogranite; medium- to coarse-grained; biotite- and tourmaline-bearing; cowcal with **Fortescue Group**
- Ag — Granite dyke

Pillara Supergroup

- Afv — **MOUNT NEGRI VOLCANICS:** voriolitic basalt; metamorphosed

- c. 2930 Ma — Agsiae, Agsioe, Agsio, Agsi — **SATIRIST GRANITE:** metamorphosed biotite(-hornblende) granite
  - Agsip — Porphyritic granite
  - Agsie — Equigranular granite
  - Agsio — Seriate granite
  - Agsil — Leucogranite
- Contact metamorphic rock; abundant porphyroblasts of andalusite, cordierite, and/or garnet; related to intrusions of **SATIRIST GRANITE** and **PERIAWAH GRANODIORITE**
- c. 2950 Ma — Agpe, Agpep — **PERIAWAH GRANODIORITE:** metamorphosed hornblende-biotite granodiorite and tonalite; mesocratic
  - Agpep — Porphyritic phase
  - Agp — Hornblende-biotite granodiorite; medium- to coarse-grained; metamorphosed

Millindinna Intrusion

- Aocg — Metagabbro; medium- to coarse-grained
- Alp — Feldspar porphyry; metamorphosed plagioclase-hornblende porphyry
- Aclilio — Gabbro; metamorphosed
- Aclilioe — Metamagnetite and pyroxenite; metamorphosed
- Aclilioep — Metamagnetite; plagioclase phenocrysts; metamorphosed
- Aclilu — Ultramafic schist; tremolite- and serpentine-rich schist; serpentinite after peridotite; includes minor metatcher, metasedimentary rock, and serpentinized high-Mg basalt
- Aclilum — Tremolite- and serpentine-rich schist mixed with locally abundant metatcher and metasedimentary rock
- Aclilut — Talc-carbonate schist; after peridotite

Pilbara Supergroup — > 2970 Ma

- Ae — **LOUDEN VOLCANICS:** undifferentiated metamorphosed basalt and high-Mg basalt; contemporaneous with part of the De Grey Group
- Ael — Pillowed basalt; local spinifex-textured pyroxene; metamorphosed
- Aev — Vesicular basalt; local abundant ophyric basalt and high-Mg basalt; metamorphosed
- Aeb — Aphyric basalt; metamorphosed
- Aet — Serpentine-chlorite schist and sheared metamorphosed high-Mg basalt
- Aem — High-Mg basalt; spinifex-textured pyroxene; metamorphosed
- Aeh — High-Mg basalt; acicular textures; metamorphosed
- Aeo — Peridotite; olivine cumulate texture; metamorphosed
- Aeq — Quartz arenite; medium- to coarse-grained; subangular clasts and pebbles of black chert; metamorphosed

De Grey Group

- < 3000 Ma — ADm, ADmf — **MALLINA FORMATION:** interbedded shale, siltstone, and medium- to fine-grained wacke; minor layers of chert; metamorphosed
- > 2992 Ma — ADmf — Shale, siltstone, and sandstone; includes layers of feldspar(-hornblende) porphyry; metamorphosed
- ADc — ADch, ADchi, ADcs, ADcc, ADcq, ADcc — **CONSTANTINE SANDSTONE:** undifferentiated coarse- to fine-grained clastic rocks; metamorphosed (Simplified Geology only)
  - ADch — Shale, commonly ferruginized and/or silicified; lesser interbeds of poorly sorted arkose; minor banded iron-formation; metamorphosed
  - ADchi — Ferruginized shale and banded iron-formation; metamorphosed
  - ADcs — Poorly sorted subarkose and wacke; lesser interbeds of shale; metamorphosed
  - ADcc — Poorly sorted litharenite; well developed graded units; abundant chert clasts; metamorphosed
  - ADcq — Poorly sorted subarkose; rare graded beds; metamorphosed
  - ADcc — Conglomerate; rounded to subangular chert clasts; metamorphosed
- ADs, ADhe — Metamorphosed fine-grained clastic sedimentary rock and abundant serpentine- and tremolite-rich schist; Metamorphosed ferruginous shale; locally abundant chert and mafic schist, and minor quartz-mica schist and metamorphosed banded iron-formation
- Ac — Banded grey and white chert, locally abundant ferruginous chert, and minor banded iron-formation and fine-grained clastic rocks; metamorphosed
- c. 3015 Ma — Afv — Felsic volcaniclastic rock, volcanic sandstone, and siltstone; metamorphosed
- Agfrel — **ELLAWARRINA MONZOGRANITE:** monzogranite; medium- to coarse-grained biotite-hornblende bearing; leucocratic; part of YULE GRANITOID COMPLEX

Shimadoi Suite

- Ad — Unassigned; shale, sandstone, and mafic schist

Geological boundary
- exposed
- concealed

Structural symbols are numbered according to the sequence of local deformation events, where known
- Pre-Fortescue Group
  - D_1
  - D_2
  - D_3

Fault
- exposed
- concealed
- concealed, interpreted from aeromagnetic data
- horizontal relative displacement

Fold, showing axial trace and generalized plunge direction
- anticline; exposed, concealed
- syncline; exposed, concealed
- overturned anticline; exposed, concealed
- overturned syncline; exposed, concealed

Small-scale fold axis showing trend and plunge
- S-vergence
- Z-vergence
- M-vergence

Bedding, showing strike and dip
- inclined
- vertical
- overturned
- strike and dip estimated from aerial photography
  - 5 - 15°
  - trend of bedding

Way-up indicator
- graded bedding

Metamorphic foliation, showing strike and dip
- inclined
- vertical

Cleavage, showing strike and dip
- inclined
- vertical

Anthropo lineament
- prominent trend, possible fault
- joint

Aeromagnetic lineament

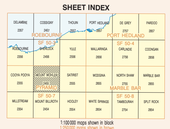
Isotopic age determination site with GSWA identification number ... years

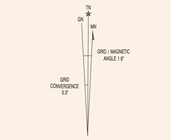
Road; unsealed
Track
Fence, generally with track
Locality ... Cumberoborro
Building
Yard
National park boundary
Breakaway
Contour line, 20 metre interval ... 250

Watercourse; pool
Waterhole, spring ... WV, E
Well ... W
Windpump ... S
Abandoned ... (abd)
Position doubtful ... (?)

Mining centre ... CROYDON
Mine (gold, unless otherwise indicated) ... Evelyn
Mine, abandoned (except for gold) ... Sn
Alluvial workings
Mineral occurrence
- Antimony ... Sb
- Copper ... Cu
- Uranium ... U

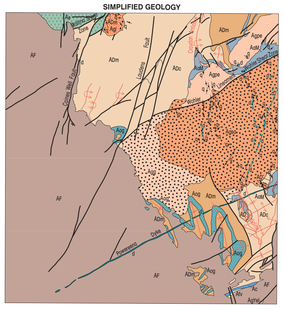
SHEET INDEX





True north, grid north and magnetic north are shown diagrammatically for the centre of the map. Magnetic north is correct for 1998 and moves easterly by about 0.1° in 2 years

SIMPLIFIED GEOLOGY



- d — Dolerite dyke
- q — Quartz vein
- Af — Fortescue Group
- Ag — Leucogranite
- Agsi — Satirist Granite
- Agpe, Agp — Periawah Granodiorite
- Agg — Granodiorite
- Aog — Gabbro
- Adil — Millindinna Intrusion
- Ae — Louden Volcanics
- De Grey Group
  - ADm — Mallina Formation
  - ADc — Constantine Sandstone
- Ac — Chert, minor banded iron-formation
- Afv — Felsic volcanic sandstone
- Agfrel — Ellawarrina Monzogranite of Yule Granitoid Complex
- Ad — Unassigned; shale, sandstone, and mafic schist

Shimadoi Suite — PILBARA CRATON

SCALE 1:500 000

0 5 10 15 20 Kilometre

GOVERNMENT OF WESTERN AUSTRALIA
HON. NORMAN MOORE, M.L.C.
MINISTER FOR MINES

DEPARTMENT OF MINERALS AND ENERGY
L. C. RAWFORD, DIRECTOR GENERAL

NGA
PRODUCT OF THE NATIONAL GEOSCIENCE AGREEMENT

GEOLOGICAL SURVEY OF WESTERN AUSTRALIA
DAVID BLIGHT, ACTING DIRECTOR

SCALE 1:100 000

1000 0 1 2 3 4 5 6 7 8 9 10
Metres — Kilometres

TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: AUSTRALIAN GEODETIC DATUM 1984
VERTICAL DATUM: AUSTRALIAN HEIGHT DATUM

Grid lines indicate 1000 metre interval of the Australian Map Grid Zone 50

Geology by R. H. Smithies 1996

Edited by N. Tetlow, C. Strong, and G. Loon

Cartography by S. Coldicutt and E. Green

Topography from the Department of Land Administration Sheet SF 50-7, 2455, with modifications from geological field survey

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This map is also available in digital form

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MOUNT WOHLER

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