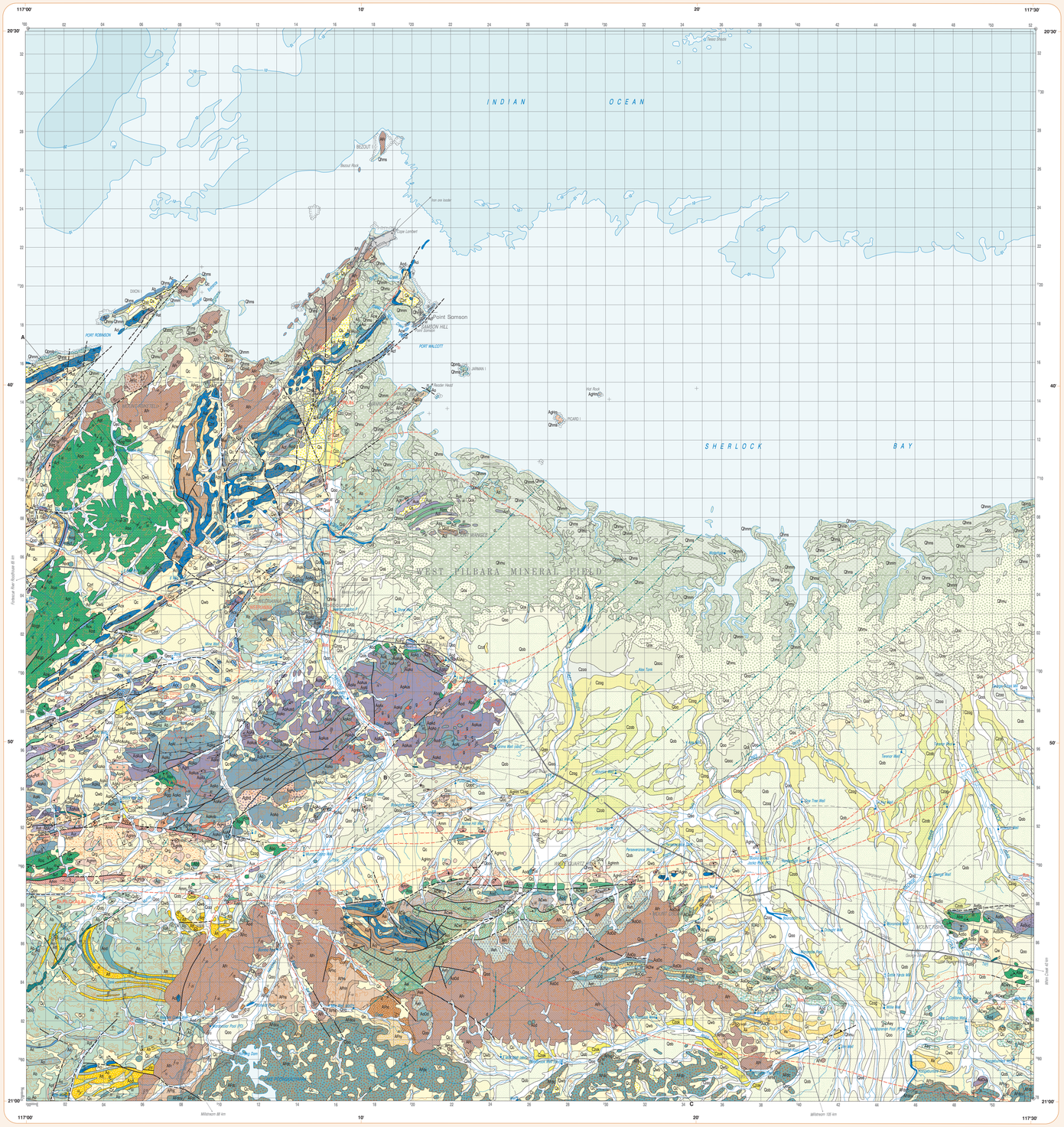
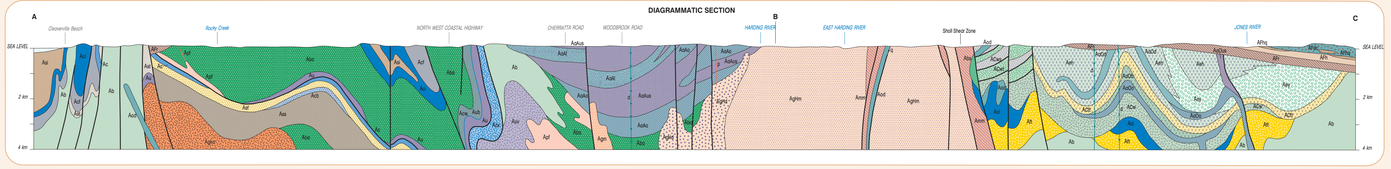
ROEBOURNE

GEOLOGICAL SURVEY OF WESTERN AUSTRALIA



DIAGRAMMATIC SECTION



PHANEROZOIC

CAINOZOIC — QUATERNARY

Qhmm, Qhms, Qhmu, Qtmb — Mixtone mud and silt, intertidal with mangroves; Shelly sand in coastal dunes and old beach deposits; contains *Anadara granosa*; Silt and mud in supratidal to intertidal flats and lagoons; Coastal limestone — lime-cemented shelly sand, dune sand, and beach conglomerate

Qzo, Qzl, Qzc, Qzo, Qzoc, Qzb, Qzs, Qw, Qwb, Qc, Qcq, Qrg, Qe — Alluvial sand and gravel in rivers and creeks; clay, silt, and sand in channels on floodplains; Alluvial sand and gravel in levees and sandbanks associated with deltas; Clay and silt in claypan and coastal lacustrine deposits; Overbank deposits: alluvial sand, silt, and clay on floodplains adjacent to main drainage channels; Alluvial sand, silt, and clay; mixed floodplains deposits (Qzo) characterised by numerous small claypans; Alluvial sand, silt, and clay in floodplains, with gilgai surface in areas of expansive clay; Coastal sand deposits of mixed alluvial and aeolian origin; Low-gradient sheetwash deposits — silt, sand, and pebbles in distal outwash fans; no defined drainage; Sand, silt, and clay in distal outwash fans, with gilgai surface in areas of expansive clay; Colluvium — sand, silt, and gravel in outwash fans; scree, talus; proximal mass-wasting deposits; Quartz debris adjacent to large quartz veins; Quartzite/eluvium; alluvial sand, with quartz and rock fragments; overlying and derived from greenbed rock; Eolian sand — red-yellow, wind-blown sand; local sand ridges

Czso, Czsb, Czsf, Czsg, Czsk, Czc, Czef — Consolidated alluvial sand, silt, and clay; dissected by present-day drainage; Variably consolidated alluvial sand, silt, and clay, with gilgai surface; in abandoned alluvial channels; locally dissected by present-day drainage; Pisolitic limonite deposits, developed along palaeodrainage lines; dissected by present-day drainage; Alluvial gravel deposits; unrelated to recent drainage; dissected; Dissected valley calcrete; massive, nodular, and cavernous limestone; variably silicified; Colluvium — dissected consolidated clay, silt, and sand, and gravel deposits; derived from adjacent rock outcrop; Ferricrete; includes ferruginous duricrust and pisolitic ironstone; residual origin; dissected by present-day drainage

PALAEOPROTEROZOIC — PILBARA CRATON

d — Dolerite dyke, interpreted beneath regolith from aeromagnetic data where dashed
q — Quartz vein
g — Granite vein
p — Pegmatite
fb — Fault breccia along or adjacent to faults; silicified

Mount Bruce Supergroup

Fortescue Group (c. 2760 Ma)

AFdc, AFdcu — **COOYA POOYA DOLERITE**: fine- to medium-grained dolerite; includes ultramafic layers; Ultramafic rock; fine-grained, silicified pyroxene-rich and commonly olivine-bearing rock with quartz xenocrysts

AFh, AFhc, AFhh, AFhq, AFhs, AFhy — **HARDEY FORMATION**: sandstone, conglomerate, siltstone, shale, and tuff (Section only); Polymictic conglomerate; Shale and siltstone; Quartzite; as rafts within COOYA POOYA DOLERITE; Medium- to coarse-grained poorly sorted sandstone, siltstone, and minor shale and conglomerate; local felsic tuff; Lyre Creek Member: basaltic to intermediate tuff and lapilli tuff, minor tuffaceous sandstone and conglomerate

AFr, AFrc, AFrs — **MOUNT ROE BASALT**: massive, vesiculor, and glomeroporphyritic basalt; Basaltic agglomerate; Polymictic conglomerate and sandstone; Sandstone and conglomerate; minor shale

Ao, Aod, Aog — Gabbro and diolerite; metamorphosed; Dolerite; metamorphosed; Gabbro; metamorphosed

Agrptz — Granophyric quartz diorite — Hamersley Basin

Amm, AuSs, AgHs — Mylonite and mylonitic gneiss; derived by extreme shearing of granitoid, gneiss, and a wide range of supracrustal rock types; chiefly in Shall Shear Zone; Plagioclase-hypersthene gneiss; derived by shearing and metamorphism of Sherlock Intrusion; Feldspar-quartz-diopside gneiss; derived by partial mylonitization of monzogranite of **HARDING GRANITOID COMPLEX**

AgHf, AgHs — **HARDING GRANITOID COMPLEX**: Pegmatitic granodiorite and diorite of **HARDING GRANITOID COMPLEX**; intrudes Andover Intrusion; metamorphosed; Pegmatitic muscovite-bearing granitoid; intrudes Andover Intrusion; probable late stage component of **HARDING GRANITOID COMPLEX**

Pilbara Supergroup

AsOb, AsOb, AsOd, AsOs — **Sherlock Intrusion**: Gabbro; metamorphosed; Gabbro and diolerite containing angular blocks of basalt; metamorphosed; Plagioclase-bearing olivine clinopyroxenite and olivine gabbro; cumulate texture; metamorphosed; Granophyre; weakly metamorphosed

AsOb, AsOc, AsOd, AsOus — **Opaline Well Intrusion**: Metabasalt, vesiculor; local ocelular pyroxene; Metagabbro; Metamorphosed dolerite and microgabbro; Serpentinite

AsAo, AsAob, AsAk, AsAd, AsAp, AsAr, AsAus, AsAy — **Andover Intrusion**: Gabbro and minor diolerite; local norite and anorthosite; metamorphosed; Gabbro and diolerite containing angular blocks of basalt; metamorphosed; Leucogabbro; metamorphosed; Dolerite and microgabbro; metamorphosed; Peridotite; partly serpentinized; metamorphosed; Pyroxenite; metamorphosed; Serpentinite; after peridotite; Granophyre and granophyric fine-grained monzogranite

Agrm, Agrmb, Agrmp — **HARDING GRANITOID COMPLEX**: Monzogranite and granodiorite; weakly foliated to banded; Hornblende-, diopside-, and biotite-rich monzogranite; foliated; Monzogranite and granodiorite containing greenstone enclaves

ARCHAEAN — PILBARA CRATON

Au — 2970 Ma — **KUIJRAH RHYOLITE**: porphyritic and flow-banded rhyolite and dacite; metamorphosed

Alv, Ae, Aes, Aev — **LOUDEN VOLCANICS**: High-Mg basalt; acicular textures; minor komatiite; characterized by olivine spinifex texture; metamorphosed; Pillowed basalt; locally pyroxene spinifex textured; metamorphosed; Sandstone; tuffaceous siltstone and shale; and calcite-cemented volcaniclastic sandstone; metamorphosed; Vesicular basalt; local abundant pyhric basalt and pyroxene spinifex textured basalt; metamorphosed

ACt, ACw — 3009 Ma — **WONS CLIFFS VOLCANICS**: Felsic volcanic and volcaniclastic rocks, tuffaceous; rhyolite and dacite; metamorphosed; Grey-white bonded chert; silicified tuffaceous siltstone and shale; metamorphosed

ACw, ACwh, ACws, ACwt, ACwx, ACwy — White Creek Group — **WARAWINE BASALT**: vesicular basalt; basaltic tuff, sandstone, and local polymictic conglomerate; metamorphosed; Pellitic schist; minor chert and metabasalt; Sandstone, conglomerate, and semipelitic sedimentary rocks; metamorphosed; Basaltic tuff and vesicular basalt; metamorphosed; Polymictic mafic conglomerate with fragmental matrix; metamorphosed; Basalt; vesicular and commonly pillowed; locally glomeroporphyritic; metamorphosed

Acf — 3015 Ma — Quartz-feldspar porphyry, rhyolite, and dacite; chiefly intrusive; metamorphosed

Agg, Agrm, Agrmp — c. 3270–3260 Ma — Granodiorite, local compositional banding; foliated; Monzogranite and granodiorite; foliated; **KARRATHA GRANODIORITE**: weakly foliated granodiorite and tonalite (Section only)

Pilbara Supergroup (no stratigraphic subdivision)

Ac, Acb, Acf, Ac, Acj, Acv, Acw, Ach — Ac: Chert, undivided; Acb: Black chert; Acf: Ferruginous chert; banded iron-formation, and metamorphosed intercalated fine-grained clastic sedimentary rocks; Acj: Banded iron-formation; minor ferruginous chert; Acj: Jasplite; Acw: Grey-white bonded chert, locally associated with quartzite; Ach: Brecciated chert and totally silicified mafic cataclastic rocks

As, Asc, Asf, Ass, Ass, Ass, Ast — As: Sedimentary rocks, undivided; metamorphosed; Asc: Metaconglomerate; Asf: Felsic volcaniclastic rock; metamorphosed; Ass: Ferruginous clastic sedimentary rocks, dominantly pelitic; includes minor chert beds; metamorphosed; Ass: Quartzite; Ass: Schistose metasandstone and metasiltstone; Ast: Sandstone; minor conglomerate and siltstone; metamorphosed

Af, Afa, Afr, Aft — Af: Felsic volcanic rock, undivided; chiefly clastic; metamorphosed; Afa: Felsic agglomerate; metamorphosed; Afr: Rhyolite; metamorphosed; Aft: Rhyolite and dacite tuff; metamorphosed

Ab, Abb, Abgb, Abm, Abs, Abt — Ab: Basaltic rock, undivided, generally metamorphosed to greenschist facies; Abb: Strongly foliated basalt; metamorphosed to amphibolite facies; Abgb: Foliated and sheared metabasalt with sheared veins and sheets of monzogranite and pegmatite; metamorphosed to amphibolite facies; Abm: High-Mg basalt; metamorphosed; Abs: Mafic schist; Abt: Basaltic tuff, well bedded; metamorphosed

Au, Aub, Auk, Aur, Aus, Aut, Aux, Auv — Au: Ultramafic rock, undivided; includes schist; local silicification; Aub: Intercalated ultramafic and mafic schist with thin chert units (silicified interflow sedimentary rocks); Auk: Komatiite; characterized by olivine spinifex textures; metamorphosed; Aur: Tremolite-chlorite schist; Aus: Serpentinite; replacing peridotite; Aut: Talc-chlorite schist; Auv: Ultramafic lava; fine-grained peridotite to high-Mg basalt; metamorphosed; Aux: Pyroxenite; commonly schistose; metamorphosed

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Geological boundary
- exposed
- concealed

Fault
- exposed
- concealed
- concealed, interpreted from aeromagnetic data; position uncertain
- mylonite
- horizontal relative displacement

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

Small-scale fold axis, showing trend and plunge
- S-vergence

Bedding, showing strike and dip
- inclined
- vertical
- overturned

Igneous layering, showing strike and dip
- inclined

Way-up indicator
- pillow structure
- sedimentary structure
- graded-bedding
- cross-bedding

Metamorphic foliation, showing strike and dip
- inclined
- vertical

Cleavage, showing strike and dip
- inclined

Shear-sense indicator
- sinistral

Lineation, showing trend and plunge
- inclined

Aeromagnetic lineament

Isotopic age determination site with identification number — 1730

Highway with national route marker; bridge — 1

Formed road

Major track

Track

Fence, generally with track

Railway

Powerline, generally with track

Townsite
- population between 1000 – 10 000 — WICKHAM
- population less than 1000 — Roebourne

Homestead

Building

Yard

Microwave repeater station

Horizontal control; major, minor

Contour line, 20 metre interval — 20

Watercourse with ephemeral pool or waterhole

Bathymetric contour (m); accurate, inferred — 0 / 10

Gas pipeline

Water pipeline

Bore, well — B / W

Windpump

Dam; tank — D / T

Rockhole; soak — Rockhole / Soak

Rock, exposed

Abandoned — abd

Position doubtful — (P)

Prominent submerged reef

Mining centre — WEERANNA

Mine (gold, unless otherwise indicated) — Fortune

Opencut

Quarry or pit

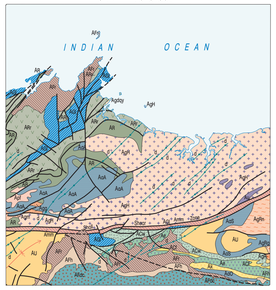
Prospect

Mode ground

Mining area
- ore stockpiles

Geochemical anomaly from grassroots survey (>1000 ppm, except for Mo and W >50 ppm; Bi, Ag >100 ppm; As >500 ppb)
- Mineral occurrence — +
- Arsenic — As
- Asbestos, chrysotile — Asbc
- Chromium — Cr
- Copper — Cu
- Corundum — Crn
- Gemstones — Gs
- Gold — Au
- Iron — Fe
- Lead — Pb
- Nickel — Ni
- Rood material — Rm
- Rock, crushed aggregate — Rc
- Sand — Sv
- Silver — Ag
- Titanium — Ti
- Vanadium — V
- Zinc — Zn

SIMPLIFIED GEOLOGY


INDIAN OCEAN
Afrg
AgH
Agptz
Aff
Ab
Au
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Aut
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