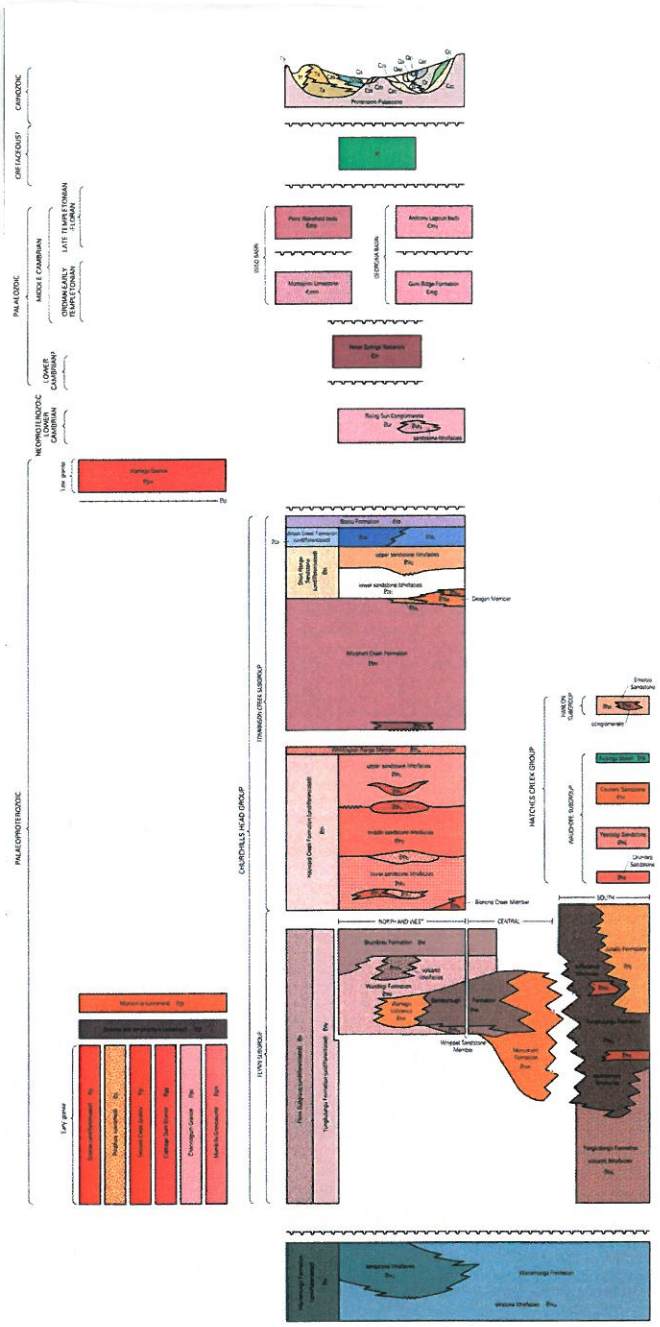


Ga Alluvial deposits in active channels and on floodplains
Qr Red earth soils; may have ferruginous pisolites
Qw Alluvial red soil plains
Qs Sheet and dune sand; sandy soil
Qsa Relict fluvial system; sand covered
Qc Calcium; scree
Qcs Quartz-rich colluvium and scree
Qs Clayey; clay soil in poorly drained depression
Cs Sheet sand or sandy soil on rise overlying subcrop
Cm Dissected colluvial fan deposits
Cas Quartz-rich dissected colluvial fan deposits
Cn Calcrete
Cp Black soil
Ts Silcrete silicified rock
Tf Ferricrete/ferruginised rock; laterite
Tz Deeply weathered rock

Ki Sandstone and interbedded siltstone; medium bedded and cross-laminated; plant macrofossils

Ene Brown and white claystone; red to white micaceous sandstone; red-brown and white micaceous siltstone and claystone; minor local conglomerate; fossiliferous

Enm Grey bioclast, stylolitic, oriented, mottled, ribbon and cryptomicrobial limestone and dolostone; minor maroon silicoclastic and yellow-grey calcareous mudstone; chert and evaporite nodules; local basal breccia; chertified at surface; fossiliferous

Ein Weathered vesicular basalt; minor felsic volcanic and volcaniclastic rocks; pebble conglomerate and lithic arenite

Eu Conglomerate and sandstone; micromictic and polymictic orthoconglomerate; channel cross-bedded; Quartz arenite predominantly medium bedded; parallel, or cross-bedded

Eu1 Quartz arenite; unfossiliferous

Ecm Chertified limestone or dolostone including oval and flat pebble moulded limestone, calcimudstone; quartz sandstone

Ecmg Chertified bioclast, oriented and cryptomicrobial limestone; many calcimudstone; minor silicoclastic mudstone, carbonate and evaporite nodules; basal maroon-purple sandstone and maroon-brown silicoclastic mudstone; fossiliferous

Epu Granite; Tourmaline, corundum-bearing, granite and granodiorite; coarse grained, equigranular, massive. Pegmatite segregations, greisenstone; quartz biotite metamorphic aureole

Eb Lamprophyre

Eb2 D2 Eb1 Quartz arenite and sublithic arenite; medium to coarse grained, parallel, or cross-bedded; thin to medium bedded; rippled. Siltstone, Ridge forming

Eb2 Undifferentiated; dolostone and limestone; siltstone, quartz arenite and sublithic arenite

Eb3 Dolostone and limestone; cryptomicrobial bioinstone and stromatolitic brokerites; cold and pisoid dolostone; laminated and cross-laminated sandy dolostone

Eb4 Siltstone and chert siltstone; cross-laminated quartz arenite; laminated mudstone

Eb5 Undifferentiated; quartz arenite; sublithic and lithic arenite; feldspathic subtitharenite; siltstone

Eb6 Quartz arenite; sublithic and lithic arenite; feldspathic subtitharenite; beds in thick to massive sets; trough cross bedding near base; predominantly planar; laterally persistent bedding; laminated and cross-laminated; minor ripples increasing in abundance towards top of unit

Eb7 Quartz arenite; sublithic arenite and feldspathic subtitharenite; siltstone. Thin to medium bedded; beds in medium sets; abundant ripples

Eb8 Quartz arenite and minor pebbly sandstone; planar; grain size laminated and bedded; tabular; abundant weathered out shale clasts

Eb9 Siltstone; thin bedded with subordinate interbedded sandstone

Eb10 Conglomerate; local, laterally persistent, pebble, cobble and boulder orthoconglomerate; predominantly monomictic; sandstone and rare black chert clasts. Coarse grained to granular, pebble-bearing quartz arenites

Eb11 Sublithic and lithic arenite; feldspathic litharenite; siltstone, dolostone and sandy dolostone. Arenite; coarse to fine grained; thin, medium and minor thick to massive beds; moderately sorted and rounded. Dolostone and siltstone thin bedded and laminated, including cryptomicrobial dolostone

Eb12 Conglomerate

Eb13 Interbedded leached white and pink calcareous shale and fine grained arenite; quartz arenite; green mudstone; chertified stromatolitic bioherms; deeply weathered volcanic rocks including vesicular lava. Predominantly laterised

Eb14 Sublithic arenite; fine to medium grained; well sorted and rounded; medium to thick bedded or massive; becoming thinner bedded towards top of unit; pebbly arenite; minor conglomerate; locally at base of unit; silicified, ridge forming; intermediate volcanic rocks; laterised and recessive

Eb15 Acid to intermediate volcanic rocks; deeply weathered and ferruginised; recessive

Eb16 Lithic and sublithic arenite; volcanic arenite; feldspathic subtitharenite; pebbly arenite. Medium to coarse grained; thin to medium bedded; planar; and shallow angle cross bedded; rippled; dissected and discontinuous ridges

Eb17 Shale and siltstone; thin; planar bedded; recessive

Eb18 Lithic to sublithic arenite; volcanic arenite; pebbly arenite. Fine to medium grained; medium to thick bedded; planar; and shallow angle, cross-beds. Ridge forming. Minor thin; planar bedded fine grained sandstone and siltstone (parallelite) at top of unit. Recessive

Eb19 Undifferentiated lithic and sublithic arenite; feldspathic subtitharenite; pebbly arenite; shale; deeply weathered; acid to intermediate volcanic rocks

Eb20 Polymictic orthoconglomerate; in local channels

Eb21 Undifferentiated; felsic ignimbrite, tuff, lapilli tuff, and lava; chert (silicified tuff?); lithic and sublithic arenite; lithic wacke; shale and mudstone; minor pebble beds; conglomerate and breccia

Eb22 Lithic and volcanic arenite; heavy mineral bearing quartz arenite; granule and pebble beds; felsic tuff. Arenite; fine to coarse grained; thin to medium bedded

Eb23 Sublithic and lithic arenite; siltstone; shale. Medium to thick bedded. Minor thin to medium bedded tuff; chert (silicified tuff?)

Eb24 Rhyolitic lava and ignimbrite; tuff and silicified tuff (chert)

Eb25 Chert (silicified tuff?); tuff; white weathering siltstone and shale; fine grained sublithic arenite; thin to medium bedded; laminated

Eb26 Felsic crystal-lithic tuff; ignimbrite; lapilli tuff; and lava (?); chert. Siltstone; shale and fine grained lithic arenite and wacke; thin bedded and laminated

Eb27 Lithic arenite; siltstone and shale; medium to coarse grained sandstone; pebble beds and granule conglomerate; thin to thick bedded or massive; heavy mineral-bearing laminae; cross-laminated or cross-bedded; trough cross-bedded; rippled

Eb28 Rhyolitic and rhyodacite lapilli; siliceous sandstone and siltstone; chert; shale. Thin to medium bedded; parallel, or cross-laminated

Eb29 Quartz arenite; lithic/feldspathic arenite

Eb30 Conglomerate

Eb31 Amygdaloidal massive basalt with minor interlayered arenite

Eb32 Quartz arenite; lithic/feldspathic arenite; minor siltstone

Eb33 Lithic/feldspathic/micaceous arenite; greywacke; siltstone

Eb34 Quartz arenite and lithic/feldspathic arenite; commonly pebbly

Eb35 Lithic arenite and volcanic arenite with interbedded laminated siltstone and mudstone; cross-bedded; thin to thick bedded. Rhyodacitic lava; crystal-lithic tuff and lapilli tuff; and ignimbrite. Volcanic breccia in drill core

Eb36 Undifferentiated; lithic arenite including volcanic arenite; siltstone and shale; felsic lava and minor tuff

Eb37 Quartz magnetite heavy mineral-bearing lithic to sublithic arenite and volcanic arenite; siltstone and shale; medium to coarse grained sandstone; pebble beds with rhyolitic clasts; thin to thick bedded or massive; magnetite laminae; cross-laminated and cross-bedded. Interbedded felsic tuff; siltstone and fine grained volcaniclastic rocks; thin to medium bedded; parallel and cross-laminated

Eb38 Welded and non-welded felsic crystal-lithic tuff and lapilli tuff; minor felsic volcanic lava and ignimbrite

Eb39 Felsic crystal-lithic tuff and lapilli tuff; Rhyolitic and rhyodacitic lava; foliated to massive and porphyritic. Felsic ignimbrite. Volcanic arenite with interbedded siltstone. Medium to thick bedded

Eg1 Monzonite and quartz monzonite intersected in drill core; quartz diorite forming small plutons or dykes

Eg2 Dolerite and minor lamprophyre

Eg3 Felsic porphyry; quartz and/or feldspar phenocrysts in a felsic aphanitic groundmass; massive to foliated

Eg4 Granite; Biotite-bearing; sensite porphyritic to equigranular; medium to coarse grained and massive. Rapakivi texture and blue-oval quartz. Foliated to sheared in part; locally greisen. Locally abundant porphyritic granite enclaves; minor metasediment, and dolerite xenoliths. Marginal alteration including silicification and tourmalinisation (minor tuxulitanite) and alkali metasomatism. (Eg., Tennant Creek Granite at Red Bluff)

Eg5 Granite; Biotite-bearing; sensite porphyritic to equigranular; medium to coarse grained and massive. Rapakivi texture. In drill core, foliated to sheared in part; locally greisen. Minor metasediment xenoliths

Eg6 Granite; Biotite bearing; sensite porphyritic to equigranular; medium to coarse grained and massive. Minor rapakivi texture. Minor metasediment and dolerite xenoliths; rare porphyritic enclaves. Alteration including silicification, albitisation and tourmalinisation (minor tuxulitanite)

Eg7 Granodiorite; ranges from tonalite to granite. Biotite-bearing; megacrystic; sensite porphyritic to equigranular; coarse very coarse grained and massive. Strongly foliated to sheared in part. Locally abundant porphyritic enclaves with rapakivi texture and blue-oval quartz. Abundant metasediment xenoliths. Localised alteration including silicification, albitisation and tourmalinisation

Eg8 Undifferentiated granite

D1 Eb1 Undifferentiated; lithic arenite including volcanic arenite (metagreywacke); siltstone, shale, slate and terrigenous mudstone. Haematite shale; minor phyllite; chert including jasper

Eb2 Lithic arenite including volcanic arenite (metagreywacke); coarse grained; medium to thick bedded or massive predominantly graded and parallel bedded. Subordinate fine grained sandstone; siltstone and terrigenous mudstone including "haematite shale"; slate; medium or thin bedded; parallel, or cross-laminated. Slate and ripple marks. Chert including jasper. Partial or complete Bouma sequences

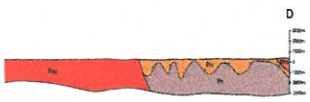
Eb3 Fine to medium grained lithic arenite including volcanic arenite (metagreywacke); siltstone, shale, slate and terrigenous mudstone; minor phyllite; red, green and purple weathering shale; pencil slate; thin to medium bedded; parallel or cross laminated. Lithic arenite subordinate or subequal to siltstone and shale. "Haematite shale". Partial Bouma sequences

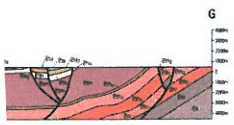
TOPOGRAPHICAL SYMBOLS

- Highway
- Sealed road
- Unsealed road
- Vehicular track
- Fence
- Built-up area
- Trigonometric station
- Spot Elevation
- Landing ground
- Yard
- Building/Homestead
- Pipeline
- Lake, mainly dry
- River, intermittent
- Creek, intermittent
- Waterhole
- Windsurfs
- Bore with windpump

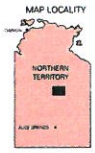
GEOLOGICAL SYMBOLS

- Geological boundary, position approximate
- Fault; solid line, observed; broken line, approximate; short dashes, concealed; overlaid, inferred (all concealed faults are inferred, to quartz infill)
- Thrust fault showing dip of fault plane recent earthquake scarps
- Fault showing relative horizontal displacement
- Strike and dip of strata
- Strike of vertical strata
- Strike and dip of inverted strata
- Horizontal strata
- Vein or dyke, predominantly quartz unless otherwise specified. Ep-felsic porphyry; Eb-dolerite; Ep-lamprophyre; spl-spilite
- Strike and dip of cleavage (slaty, crenulation or fracture cleavage)
- Strike of vertical cleavage
- Strike and dip of slaty alignment
- Strike and dip of foliation
- Strike of vertical foliation
- Strike and dip of strata, dip 5° to 15° (photo-interpreted bedding)
- Strike and dip of strata, dip greater than 45° (photo-interpreted bedding)
- Shearing showing latest stage of movement in map view
- Shear zone
- Anticline position accurate position approximate
- Syncline position accurate position approximate concealed
- Minor anticline showing plunge
- Minor syncline showing plunge
- Kink fold showing plunge
- Minor fold showing plunge and vergence to left (first folding episode or episode not specified)
- Minor fold showing plunge and vergence to left (second episode folding)
- Minor fold showing plunge and vergence to right (first folding episode or episode not specified)
- Minor fold showing plunge and vergence to right (second episode folding)
- Plant fossil locality, macrofossil locality and reference number, respectively
- Unconformity (legend only)
- Facies change (legend only)





MAP LOCALITY



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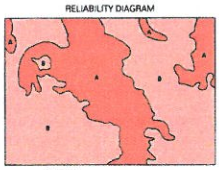
RELIABILITY DIAGRAM



A : Detailed traverses

B : Airphoto interpretation with limited traverses generally poor outcrop

Geology First edition: BMR
Second edition: NTGS
1989 N. Donnellan, K.J. Hussey, D.I. Scott
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C. A. Mulder, Director, Northern Territory Geological Survey

TENNANT CREEK

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