Tasmania
Explore the possibilities

Department of Infrastructure Energy and Resources

MINERAL RESOURCES TASMANIA

GEOLOGY OF NORTHWEST TASMANIA

SCALE 1:250000

0 5 10 15 20 25km

300000mE 350000mE 400000mE 450000mE

5600000mN 5550000mN 5500000mN 5450000mN 5400000mN

CENOZOIC

QUATERNARY – HOLOCENE

Qh — Sand, gravel, and mud of alluvial, lacustrine and littoral origin (Qh).

QUATERNARY – PLEISTOCENE

Q — Glacial, periglacial and fluvioglacial sediments including till and interglacial deposits (Qg); talus, vegetated and active (Qpr); glacial and glacigene deposits (Qpg); coastal sand and gravel (Qps); limestone (Qpl).

Erosional surface

PALEOGENE – NEOGENE

Tm, Ts, Tb — Dominantly non-marine sequences of sand and gravel, silt clay and regolith (Ts); marine limestone (Tm); ferricrete and laterite derived from basalt (Tf); basalt (tholeiitic to alkalic) and related volcaniclastic rocks (Tb).

Erosional surface.

MESOZOIC

TRIA. – JURASSIC

R — Undifferentiated fluviolacustrine sequences of sandstone, siltstone and mudstone (R).

PERM. – TRIASSIC

Pu, P — Upper glaciomarine sequences of pebbly mudstone, pebbly sandstone and limestone (Pu); Freshwater and paralic sandstone and mudstone with some coal measures (Pf).

CARBON. – PERMIAN

Pl, Pf — Lower glaciomarine sequences of mudstone, pebbly mudstone, pebbly sandstone, minor limestone and tasmanite oil shale (Pl); basal tillite (Pf).

LOWER – UPPER PARMEENER SUPERGROUP

Angular unconformity.

PALEOZOIC

DEVONIAN

SDb, SDl, SDs, SDc — Siltstone, shale and fine-grained sandstone (Bell Shale and correlates) (SDb). Shallow marine quartz sandstone (Florence Quartzite and correlates) (SDl). Siltstone, shale and minor quartz sandstone (Amber Slate, Keel Quartzite, Austral Creek Siltstone and correlates) (SDs). Shallow marine quartz sandstone and pebble conglomerate (Crotty Quartzite and correlates) (SDc).

ELDON GROUP

SILURIAN

Ol — Dominantly shallow marine limestone with minor siltstone and sandstone (Gordon Group) (Ol).

ORDOVICIAN

Ou — Undifferentiated or poorly constrained conglomerate–sandstone sequences of Furongian to Ordovician age (€O).

COo, COu, COm, COq — Shallow marine sandstone–mudstone +/– conglomerate +/– limestone. Ordovician fossils and trace fossils in places. Includes Moina Sandstone, Pioneer Beds (Oo). Unconformly on older rocks in places.

Shallow marine sandstone, typically pink, cross-bedded to thin–bedded, with some siltstone and minor conglomerate. Includes Upper Owen Sandstone (COu). Basalt lava (COb).

Mainly siliciclastic conglomerate with sandstone interbeds, shallow marine sandstone and siltstone. Includes Middle Owen Sandstone, Middle Owen Conglomerate, Dial Conglomerate, Roland Conglomerate (COc).

Marine sandstone–siltstone–conglomerate sequences, typically lithilitic, siliciclastic to polymict. Furongian fossils in places. Includes Newton Creek Sandstone, Middle Owen Sandstone, upper Dundas Group, much of Rossberry Group (COmq).

GORDON GROUP — OWEN GROUP — WARATAWINA SUPERGROUP

Diachronous contacts; angular unconformity in some areas, apparent conformity in others.

CAMBRIAN

FURONGIAN

Cm — Polymict conglomerate, lithicwacke, siltstone and mudstone with orange-weathering calcite (Scopus Formation) (€m).

Inferred disconformity

CAMBRIAN SERIES 3

Cds, Cdsu, Cdsv, Cds, Cdsq — Dominantly sedimentary sequences with minor volcanic and volcaniclastic units (€ds). Upper, sedimentary to intermediate volcaniclastic and volcanic units, sedimentary units, of Cambrian Series 3 age. Tyndall Group and correlates (€dt). Felsic lavas within Tyndall (€dtl).

Andesitic lavas, breccias and intrusive rocks. Includes Que–Hellyer Volcanics, Beulah andesite (€da).

Dominantly volcano–sedimentary sequences with some felsic to intermediate volcanic rocks; Cambrian Series 3 fossils in places. Western Volcano–Sedimentary sequences, Mt Charter Group, Gog Range Greywacke (€dsv).

Basaltic volcanics and minor intrusives(€db).

Felsic lavas within Western Volcano–Sedimentary sequence (€dsvl).

Dominantly felsic to intermediate volcanic rocks, typically massive, feldspar–phyric. Central Volcanic Complex (€dv).

Dominantly felsic volcanic, volcaniclastic and intrusive rocks, typically quartz–feldspar–phyric. Eastern Quartz–Phyric Sequence and correlates (€dq).

Siliciclastic sandstone–siltstone–conglomerate units of metamorphic derivation. Includes Slicht Range Beds, Animal Creek Greywacke (€dsq).

MT READ VOLCANICS

TYRENNIAN – CAMBRIAN SERIES 2

Cs, Cl, Cc — Layered peridotite, serpentinite and associated rocks (€s); tonalite and associated rocks (€t); undifferentiated low–Ti tholeiitic and boninitic lavas (€b). Structurally emplaced.

Cvw, Cvl, Cvc — Mafic volcaniclastic sandstone–siltstone–mudstone–chert–minor carbonate sequences, with intercalated tholeiitic basalt flows. Considered diachronous. Luina Group and correlates (€cw). Tholeiitic basalt and picrite units (€cwb). Chert–rich sequences, including Barrington Chert (€cwc).

NEOPROTEROZOIC

CRYOGENIAN – EDIACARAN

Pw, Pwd, Pwb, Pwc, Pwa, Pwu — Pale–weathering, thin bedded, laminated quartz siltstone with minor dolomite and tuffaceous tholeiite shale, commonly silicified (Sporran River Siltstone) (Pw).

Shallow marine dolomite and minor limestone (Smithton Dolomite and correlates) (Pwd).

Turbiditic mudstone, siltstone, lithilwacke and diamictite with dominantly mafic detritus (Pwb; Rocky Cape Group, Arthur Volcanics, Bernafai Volcanics and correlates) (Pwb).

Shallow marine dolomite, chert, shale and diamictite (Black River Dolomite, Savage Dolomite and correlates). Includes basal siliceous and carbonaceous sandstone (Forest Conglomerate and Quartzite, Donatayan Formation and correlates) (Pwc).

Low–angle unconformity or inferred disconformity.

TOUGAH GROUP, ARBERDS GROUP AND CORRELATES

Pqc, Pqm — Chloritic schist, with minor phyllite, dolomite and rhodonite (Pqc); amphibolite (Pqa).

Pqp — Phyllite with minor pelitic schist, foliated quartzite and dolomite, and rare conglomerate (Pqp).

Pqt — Quartz mica schist, quartzite, phyllite and rare dolomite (Keith Schist and correlates) (Pqt).

ARTHUR METAMORPHIC COMPLEX

Pv, Pvq, Pvd, Pvb — Turbiditic volcaniclastic and mafic volcanic rocks (Crimson Creek Formation and correlates) (Pvv).

Shallow marine quartz sandstone and dolomite (Pvq); dolomite and chert beds (Success Creek Group and correlates) (Pvb).

Angular unconformity.

Pvq, Pvd, Pvb — Quartzwacke turbidite sequences with minor dolomite (Pvq); quartzwacke of high–grade metamorphic provenance (Pvq). Dolomitic mudstone, siltstone and sandstone (Pvd). (Burnie and Oonah Formations and correlates). Alkali basalt and dolerite (within Burnie and Oonah Formations, includes Cooee Dolerite) (Pvb).

KING ISLAND

Pyv, Pys — Tholeiitic basalt and picrite (Skipworth Subgroup) (Pyv). Shale, siltstone, diamictite, minor carbonate and basaltic lava (Pys).

GRASSY GROUP

MESOPROTEROZOIC

Pr, Prs, Prq, Prd, Prc, Prs, Prl, Prp, Prs — Shallow marine to perilidal, well–bedded, cross–bedded orthoquartzite, pale quartzite and siltstone (Jacob Quartzite) (Pr).

Shallow marine laminated grey siltstone, mudstone and dolomite (Irby Siltstone) (Prl).

Shallow marine to perilidal, well–bedded, cross–bedded orthoquartzite and subordinate siltstone (Detention Subgroup) (Prd).

Dominantly dark, laminated, commonly pyritic, marine siltstone and mudstone (Cowrie Siltstone and correlates) (Prc).

Interbedded cross–bedded quartz sandstone and siliceous–carbonaceous siltstone, fining up to laminated chloritic siltstone (Balfour Subgroup) (Prs).

Parallel–to cross–bedded quartz sandstone with rare quartz–pebble conglomerate and shale (Lagoon River Quartzite) (Prr).

Interbedded to interlaminated siltstone and quartz siltstone–sandstone with erosional structures, grading and cross–lamination. (Pedder River Siltstone) (Prp).

Unassigned quartzite sequences (Prs).

ROCKY CAPE GROUP

TYENNAN AND SIMILAR REGIONS

Prs, Pl, Plp, Plpg, Plb — Undifferentiated metasedimentary sequences, with greenschist facies metamorphism (Pl). Dominantly quartzite sequences (Prs). Dominantly pelitic sequences, mainly phyllite (Plp). Garnetiferous pelitic schist (Plpg). Dominantly schistose conglomerate (Goat Island Conglomerate and correlates) (Plb).

Pt, Ptg — Micaceous quartzite, schist, phyllite and minor amphibolite (Pt); (Surprise Bay Formation), quartz siltstone and mudstone (Ptf) (Frazer Formation); garnetiferous metamorphic equivalents (Ptg).

Geological boundary.

Fault.

Wrench fault with relative displacement indicated.

Concealed fault.

(White line) Limit of mapping of sub–unit within undifferentiated rock unit.

Axial trace of major antiform.

Axial trace of major synform.

Axial trace of overturned major antiform.

Axial surface of overturned major synform.

Form lines.

Erosional surface.

Strike and dip of bedding: right way up; overturned; facing unknown; vertical with facing unknown; horizontal.

Strike and dip of cleavage: dipping; vertical.

Strike and dip of crenulation cleavage: dipping; vertical.

Strike and dip of schistosity or metamorphic foliation: dipping; vertical.

Direction and plunge of hinge line of minor fold: unspecified age; folding cleavage or schistosity.

Strike and dip of igneous mineral foliation: dipping; vertical; trend of foliation trace on horizontal surface.

Terrestrial cavern fillings (Eugenana Beds) (Qc).

Angular unconformity attributed to major polyphase orogeny.

SMITHTON – ROCKY CAPE REGION

TULLAH – DIAL RANGE – FOSSEY MOUNTAINS REGION

The geological data for this map were compiled by J.Pemberton B.Sc.(Hons) M.Sc., C.R.Calver B.Sc.(Hons)Ph.D., K.D.Corbett B.Sc. (Hons)Ph.D., J.L.Everard B.Sc.(Hons), B.A.Goscombe B.Sc.(Hons)Ph.D., D.B.Seymour B.Sc.(Hons)Ph.D., M.J.Vicary B.Sc.(Hons), from Tasmanian Geological Survey Geological Atlas 1:63 360 and 1:50 000 series maps and other sources.

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GDA94 – MGA Zone 55.

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IGNEOUS ROCKS

PALEOGENE – NEOGENE

Tb — Basalt (tholeiitic to alkalic) and related volcaniclastic rocks (Tb).

JURA–TRIASSIC

Jd — Dolerite (tholeiitic) with locally developed granophyre (Jd).

DEVONIAN – CARBONIFEROUS

LOWER DEVONIAN

Dgy, Dgbl, Dgsp, Dgb, Dgn — Undifferentiated granitic rocks (Dg); undifferentiated alkali–feldspar granite/granite/adamellite, I–type (Dgy); S–type (Dgsp); undifferentiated granite, I–type (Dgbl); S–type (Dgsp); dominantly adamellite/granite, I–type (Dgn); S–type (Dgsp).

Dgn — Dominantly granodiorite/adamellite, I–type (Dgn).

ORDOVICIAN

€Cdb — Tholeiitic basalt (Mt Tor area; upper Wilmot River) (€Cdb).

€Cde — Tholeiitic dolerite (Black Bluff Range) (€Cde).

CAMBRIAN SERIES 3 – FURONGIAN

€dtl — Felsic lavas within Tyndall Group (€dtl).

€dsvl — Felsic lavas within Western Volcano–Sedimentary Sequence (€dsvl).

€db — Basaltic volcanics and minor intrusives (including Hellyer basalt) (€db).

€ds — Andesitic lavas, breccias and intrusive rocks (€ds).

€dai — Major andesitic to dacitic intrusives, including Beulah Granite and Lobster Creek Intrusives (€dai).

€dv — Felsic to intermediate volcanic rocks (Central Volcanic Complex of Mt Read Volcanics) (€dv).

€dfp — Quartz feldspar porphyry (€dfp).

MT READ VOLCANICS (IN PART) AND ASSOCIATED INTRUSIVES

CAMBRIAN

€gr — Granite, (includes Dove Granite) (€gr).

€dol — Dolerite (Mt Charter area; upper Leven River); diorite (Wilmot and Rhona areas) and basalt (Gog Range area) (€dol).

€g — Gabbroic rocks (€g).

TYRRENNIAN – CAMBRIAN SERIES 2

€bo — Boninitic lavas (€bo).

€bt — Low–Ti tholeiitic lavas (€bt).

€t — Tonalite and associated rocks (€t).

€s, €sd, €sp — Layered peridotite, serpentinite and associated rocks (€s); dominantly serpentinised layered dunite and harzburgite ("LDH association") (€sd); dominantly layered pyroxenite and dunite ("LPD association") (€sp).

€cw — Tholeiitic basalt (within Luina Group and correlates; includes 'Walton Spilite') (€cwb).

€pb, €pyv — Tholeiitic basalt (Spinks Creek Volcanics, Bernafai Volcanics and correlates) (€pb); with picrite (Skipworth Subgroup) (€pyv).

€pyg — Subvolcanic andesitic intrusives (Grimes Intrusive Suite; on King Island) (€pyg).

€g — Granitic rocks (on King Island) (€g).

€dp — Tholeiitic dolerite dykes (Tayatea Dyke Swarm) (€dm).

€db — Alkali basalt and dolerite (within Burnie and Oonah Formations; includes Cooee Dolerite) (€db).

€ao — Amphibolite (€ao).

SOURCE MAPPING

- Geological Survey mapping (1:25,000 or more detailed scale).
- Geological Survey mapping (1:50,000 scale) and unpublished compilation Geological Survey mapping (1:10,000 –1:50,000 scale).
- Geological Survey mapping (1:63,360 scale) after 1965.
- Geological Survey mapping (1:63,360 scale) before 1965.
- Other mapping (1:63,360 or more detailed scale).
- Geological Survey mapping (1:100,000 scale)
- Reconnaissance scale mapping, and/or interpretation based on air photo and/or geophysical data without ground control from various sources.

SOURCES
Source information for this map is available as an additional sheet.

LOCATION DIAGRAM

NORTHWEST NORTHEAST SOUTHWEST SOUTHEAST

WARNING: INKS ARE LIGHT SENSITIVE

THIS MAP IS EDITION 2014.1
BASED ON A STATEWIDE DATASET
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