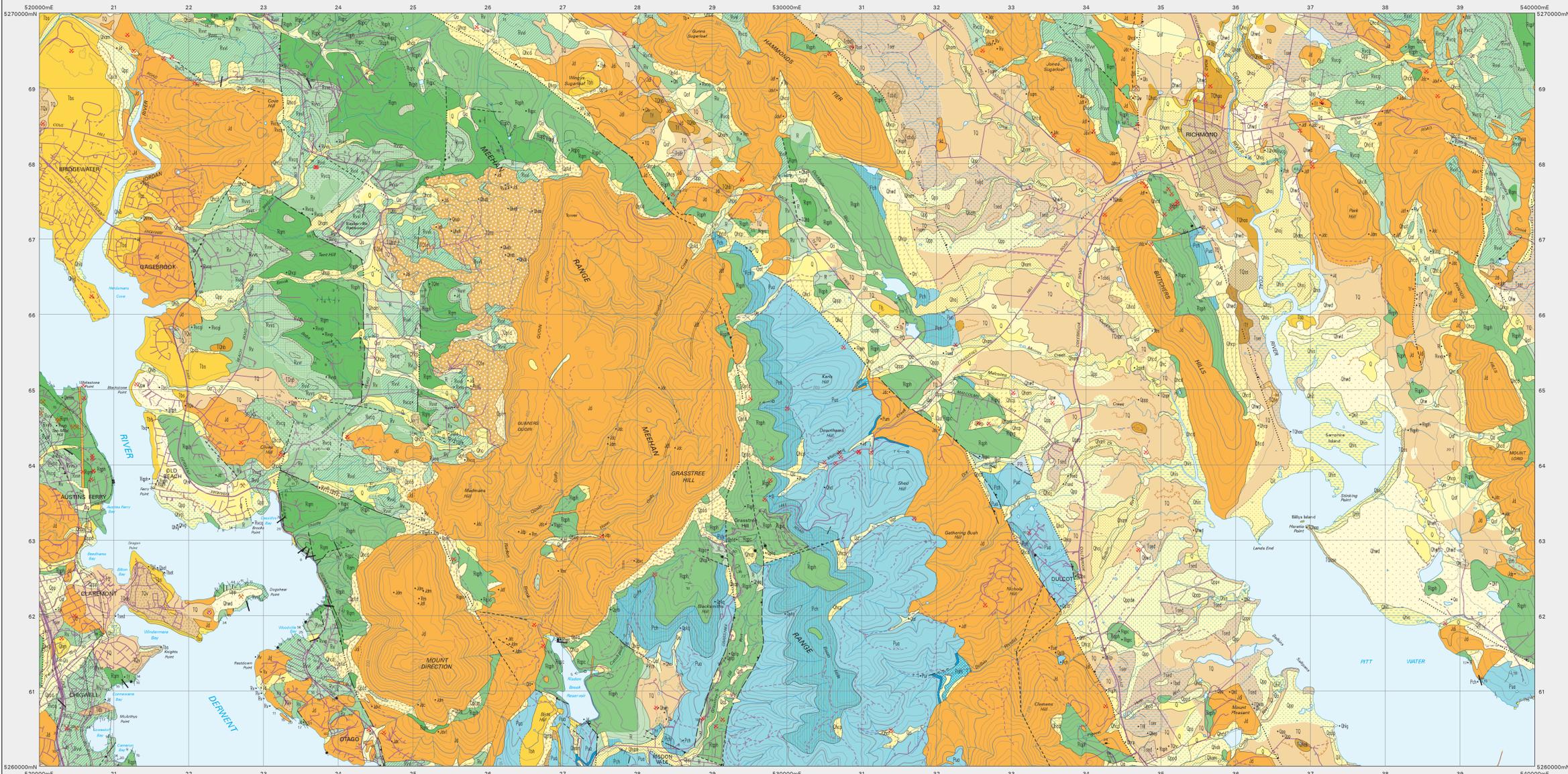


RICHMOND

Scale: 1:25 000



MINERAL RESOURCES TASMANIA
DIGITAL GEOLOGICAL ATLAS 1:25 000 SERIES
RICHMOND, SHEET 5226



QUATERNARY	DESCRIPTION
Qhm	Man made deposits (Qhm), selected mine tailings and man disturbed ground indicated (Qhm).
Qh	Paralic clay, silt, sand and minor gravel deposits (Qh), of modern salt marsh and associated tidal flats (Qh), of brackish salt marsh (Qh), of lagoons (Qh), predominantly coarse gravel with overlying marsh at places (Qh), low terrace sand overlying shaly sand (Qh).
Qit	Terrace deposits 5m ASL, of inferred estuarine origin, composed of sandy clay, silt, clayey sand and cross-bedded or planar laminated sand, clay or sand with charcoal at 0m ASL; and inter-fingering pebble gravel at places (Qit).
Ql	Lag deposit (Ql), after ferriterite (Qh), after Tertiary silicified rock (Qh).
Qw	Aeolian and locally derived sand (Qw), aeolian dune and sheet sand commonly with calcareous root casts at estuary shores (Qw); Holocene (Qw), Pleistocene generally with Holocene oxidized fringes and cover deposits (Qw).
Qd	Coluvium (Qd), clayey gravel derived from dolerite (Qd), sand, derived from Upper Parmener rocks (Qd), derived predominantly from Lower Parmener rocks (Qd).
Qsb	Swamp deposits (Qsb).
Qa	Alluvial gravel sand and clay (Qa), alluvial fans (Qa), Holocene alluvium (Qa), alluvial and marsh deposits of modern flood plains; of gravel, sand, silt and clay commonly with organic top layer (Qa); dominantly of gravel (Qa).
Qo	Probable Pleistocene low gradient alluvial fan and alluvial terrace deposits (Qo), clasts predominantly of granite (Qo), clasts predominantly of dolerite with thin (C10m) weathering rinds (Qo), clasts predominantly of Parmener rocks (Qo), clasts predominantly of Parmener rocks, dolerite clasts with thick (>40mm) clay weathering rinds (Qo).
Qr	Dolerite scree deposits of angular clasts and generally lacking matrix (Qr).
Qp	Talus and remobilised talus deposits (Qp), basalt talus (Qp), talus predominantly of Upper Parmener sandstone and sand (Qp), silty talus breccia derived from Lower Parmener rocks (Qp), talus of dolerite and subordinate Upper Parmener rocks (Qp), talus dominantly of dolerite boulders and in places subordinate Parmener rocks (Qp).
Qc	Carbonate spring deposits (Qc).
Qos	Dominantly sand, clayey sand and sandy clay and subordinate clay and gravel of probable modern alluvial and aeolian origin (Qos), of possible estuarine origin (Qos).
Qop	Partly consolidated granule sand (Qop), alluvial red brown friable sandstone with lenses of coarse-grained sandstone and granules (Qop).
Qo	Gravel deposits (Qo), late Cainozoic alluvial terrace deposits, of well-rounded gravel predominantly derived from Parmener and Tertiary white clays commonly of basalt and in places dolerite, deposits commonly overlie Tertiary basalt and pass up into sand and clay of alluvial/estuarine origin and are overlain by tributary dolerite gravel at places (Qo); of well rounded pebbles and cobbles preserved as isolated remnants of residual top (Qo) alluvial terraces (Qo); clayey cobble deposits dominantly of dolerite and Parmener rocks with notable silicified wood and horrefite clasts (Qo); deposit of extremely weathered dolerite and Parmener clasts to small boulder size and with clay matrix (Qo).
Qv	Supra-basalt moderately lithified conglomerate with interbedded sandstone at places, clasts of well rounded siliceous cobbles and pebbles, of tertiary derived siliceous and rarely of dolerite (Qv).
Qod	Poorly-consolidated to unconsolidated sand, clayey silt, silt and subordinate clay and fine-grained gravel includes deposits related to probable former course of Derwent River (Qod).

TI	DESCRIPTION
TI	Undifferentiated predominantly dolerite boulder talus and derived to locally Jurassic dolerite sheet base, with overlying alluvial gravel and fine-grained swamp deposits (TI).
TQv	Poorly-sorted clay to boulder deposit, variable proportion of clasts, predominantly Parmener and occasionally dolerite derived, matrix of clay, sandy clay or sand (TQv).
Tf	Ferriterite (Tf), laterite developed on Tertiary deposits (Tf).
Tb	Basalt (Tb).
Tsm	Siltstone developed on Tertiary or older rocks (Tsm).
Tbpt	Basaltic agglomerate, tuff and associated volcanoclastic rocks (Tbpt), coarse crystal tuff (Tbpt).
Tsb	Sub-basalt, very poorly-consolidated, well sorted sandstone, clayey sandstone and subordinate claystone (Tsb).
Tp	Poorly-sorted large boulder to pebble grade deposits (Tb), inferred dolerite boulder beds or Tertiary weathered Jurassic dolerite breccia (Tb).
Tm	Dominantly plastic poorly-consolidated light grey, green or tan coloured mudstone, siltstone and sandstone with some soft, friable sandstone (Tm).
Ts	Dominantly plastic poorly-consolidated light grey, green or brown mudstone, siltstone and sandstone with some friable sandstone, may include beds with granules and pebbles, common ferruginous cemented beds and laminae, but fossils at places (Ts), Erosional surface.
Tpcc	Upper Parmener rock contact metamorphosed by Jurassic dolerite (Tm), trace to thin-bedded volcanic tuff, sandstone, siltstone, mudstone and coal seams fossiliferous in some horizons (Newman Coal Measures (Tm)), inferred from lay of silicified wood, tuff and quartz porphyry clasts (Tm).
Tpcc	Intervened cross-bedded white quartzose sandstone, quartz-rich lithic sandstone, siltstone and mudstone; upper interval with common dark grey carbonaceous mudstone, occasional thin lenticular coal seams and fossil plants in places (Newman Coal Measures in part) (Tm).
Tpcc	Intervened yellow brown or grey carbonaceous siltstone, mudstone and thin to thick-bedded quartz-rich lithic, siliceous sandstone, some fossil plants, common siltstone passosols (Tm), inferred Rivi unit with most outcrops steeply dipping, brecciated, dissected or truncated, with associated Tertiary white bedded clay and quartz pebble lag deposits at places (Tm).
Tpcc	Predominantly fine-grained quartz sandstone, commonly partly silicified, uncommon horizons with quartz granules and very rare pebbles, interbedded with mudstone and lithic sandstone at places (Tm).
Tpcc	Predominantly brown, buff, grey carbonaceous and green siltstone and mudstone, interbedded with lithic sandstone, quartz sandstone and thin beds of silicified sandstone, horizons of cross-bedded burrows, siltstone passosols, and plant fossils at places (Tm).
Tpcc	Lenticular variable medium- to coarse-grained sandstone, generally containing quartz granules or pebbles, may contain coarse and conglomerate, crowded vertical burrows at places (Tm).
Tpcc	Intervened micaceous brown, red-purple, green and grey carbonaceous siltstone, shaly mudstone and planar bedded, ripple-laminated or cross-bedded sandstone and notable thin beds of silicified banded sandstone (Tm).
Tpcc	Freshwater predominantly cross-bedded quartzose to feldspathic sandstone commonly with overturned cross-bedding and subordinate micaceous siltstone with some red-purple beds, sparse plant and vertebrate fossils (Tm), - Kinlochity Formation (Tm) contact metamorphosed by Jurassic dolerite (Tm), intervene predominantly of siltstone, shale, mudstone and sandstone indicated (Tm), granule sandstone and pebbly sandstone indicated (Tm).
Tpcc	Freshwater cross-bedded argillaceous to quartzose sandstone and micaceous siltstone, lower interval with some granules or carbonaceous siltstone, large scale conglomerates in some areas, thin beds of quartz pebble conglomerate near base in many areas, upper interval less feldspathic (concrete in part of Cypselid Coal Measures) (Tm).

PERMANIAN	DESCRIPTION
Pu	Generally unfossiliferous, glaciomarine interbedded non-fossiliferous and fossiliferous siltstone and silty sandstone, common bioturbation, limestones; uppermost beds of argillaceous to massive siltstone with some thin beds of well-sorted sandstone (Abels Bay Formation) (Pu).
Pu	Clay family massive bioturbated to homogeneous, moderately well-sorted feldspathic quartz sandstone with thin pebbles and cobble-rich layers (Rison Sandstone) (Pu).
Pu	Generally poorly fossiliferous interbedded glaciomarine fine- to medium-grained sandstone and shale to non-fossiliferous siltstone with common limestones and pebble rich patches, top beds richly fossiliferous (Mabina Formation) (Pu).

LOWER PARMENER SUPERGROUP	DESCRIPTION
Tb	Basalt (Tb), olivine nephelinite (Tb), basaltic (Tb), alkali basalt (Tb), alkali olivine basalt (Tb), hawaiite (Tb), transitional olivine basalt (Tb), tholeiite (Tb), quartz tholeiite (Tb), olivine tholeiite (Tb).
Al	Dolerite (Al), with orthopyroxene (Al), granophyre and pegmatite indicated (Al), dolerite inferred beneath talus or glacial deposits (Al), basaltic of granitoid 0 - 0.7mm (Al), 0.7 - 1.5mm (Al), 1.5 - 3mm (Al), > 3mm (Al), > 6mm (Al) indicated.
Cr	Country rock metamorphosed by dolerite indicated by small cross overlap.

UPPER PARMENER SUPERGROUP	DESCRIPTION
Geological boundary - position accurate or approximate.	Geological boundary - inferred.
Geological boundary - transitional.	Intrusive boundary - position accurate or approximate.
Intrusive boundary - position accurate or approximate.	Slope break.
Slope break.	Scarp.
Photo Inset.	Limit of mapping of sub-unit within undifferentiated rock unit.
Limit of mapping of sub-unit within undifferentiated rock unit.	Fault - unspecified type, position accurate or approximate.
Fault - unspecified type, position accurate or approximate.	Fault - unspecified type, inferred.
Fault - unspecified type, inferred.	Fault - unspecified type, concealed.
Fault - unspecified type, concealed.	Fault - position accurate or approximate, downthrown side indicated.
Fault - position accurate or approximate, downthrown side indicated.	Fault - inferred, downthrown side indicated.
Fault - inferred, downthrown side indicated.	Fault - concealed, downthrown side indicated.
Fault - concealed, downthrown side indicated.	Small outcrop or lag occurrence.

SYMBOL	DESCRIPTION
+	Strike and dip of bedding, right way up.
+	Horizontal bedding.
+	Trend and plunge of lineation of unspecified type.
+	Strike of outcrop-scale fault, type unspecified; downthrown side indicated.
+	Strike and dip of outcrop-scale fault, type unspecified; thrust fault.
+	Trend and plunge of slickensides, movement sense unspecified.
+	Strike and dip of dominant joint set.
+	Trend of dominant joint set, vertical.
+	Trend of dyke or vein, rock type or mineral specified by WGS in Data Attributes Table.
+	Generalised paleocurrent direction, showing sense of movement.
+	Field station for adjacent readings on the map.
+	Mineral deposit location - hardrock
+	Mineral deposit location - alluvial
+	Construction materials location - Data derived from Mineral Resources Tasmania DEPOSITS data base. Date point position has not been verified in every case.

Geology by S.M. Forsyth, B.Sc.
Uses responsibility diagram.
A. 1:25000 scale maps: 1998-1999.
B. Legacy alpha interpretation.
C. Total file (1998-1999).
D. Data base.
J.L. Ewart, D.E. Leaman, J. McPherson, W.A. Moore, F.L. Sutherland.

