NORTH EAST TASMANIA GROUNDWATER RESOURCE PROJECT

MAP 1 GEOLOGY OF THE SCOTTSDALE SEDIMENTARY BASIN

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CARTOGRAPHY BY J. H. CLARKE

SCALE 1 : 60 000

REFERENCE

CAINOZOIC — QUATERNARY — HOLOCENE

- Qha — *Alluvium — stream and river sediments including swamp deposits.*
- Qhsc — *Younger aeolian dune sand, beach sand and gravel — some active and stabilised dune ridges indicated.*

QUATERNARY — PLEISTOCENE

- Qu — *Talus, scree and slope deposits — derived from Mathinna Beds.*
- Qps — *Older aeolian dune sand, sand sheets and small sheets of locally derived sand.*
- Qpm — *Sand with shells, silt, clay and organic material — coastal plain sediment — some dune sand ridges indicated.*

Erosional surface.

CAINOZOIC — TERTIARY

- Tb — *Basalt*
- Tf — *Ferricrete — ironstone blocks and ferruginous cemented quartz gravel.*
- Tq — *Silicified quartz sandstone and conglomerate (silcrete and greyhilly?)*
- Tbw — *Older basalt (North Scottsdale)*
- Tsr, Ts — *Sand, fine quartz gravel and clayey gravel interbedded with lenses and thick beds of sand, coarse gravel and kaolinitic clay.*
- Tcm — *Green or yellow soft micaceous clay (Tcm).*
- Tcg — *Coarse gravel and conglomerate of quartz and/or granite boulders (Tcg).* — *In boreholes only.*

Unconformity.

PALAEOZOIC — DEVONIAN — SILURIAN — ORDOVICIAN (?)

- SDs — *Quartzwacke turbidite sequence of siltstone, mudstone and fine sandstone.*
- SDsm — *Contact metamorphic zone of psammite and spotted pelite — quartz veining common.*

MATHINNA BEDS

IGNEOUS ROCKS

TERTIARY

- Tb — *Basalt — extremely weathered, generally red clay with basalt boulders, some layers of basalt rock.*

JURASSIC

- Jdl — *Dolerite*

MAJOR GRANITIC INTRUSIONS

DEVONIAN — CARBONIFEROUS

SCOTTSDALE BATHOLITH

- Dsau — *Undifferentiated adamellite — deeply weathered outcrops.*
- Dsau, Dsamc — *Medium to coarse-grained, white to pale green, biotite adamellite and muscovite granite — sparsely porphyritic. Aplite (Dsa), microgranite and fine-grained adamellite (Dmgd) dykes common. Few pegmatite veins.* — TREWALLA TYPE
- Dsafin — *Fine to medium-grained, equigranular pink adamellite. Veining uncommon.* — KAMONA TYPE
- Dsg — *Fine to medium-grained, equigranular biotite-hornblend granodiorite.* — WEST SCOTTSDALE TYPE

BLUE TIER BATHOLITH

- Dbapc — *Undifferentiated, porphyritic, coarse-grained biotite and biotite-minor muscovite granite/adamellite.*
- Dbas — *Fine to coarse-grained, equigranular biotite muscovite adamellite/granite.*

(Suffix w indicates deeply weathered and/or decomposed unit e.g. Tbw)

- *Geological boundary — position approximate.*
- *Geological boundary — transitional.*
- *Mine.*
- *Mine — abandoned.*
- *Alluvial workings.*
- *Alluvial workings — abandoned.*
- *Prospect — quarry or mine.*
- *Quarry — abandoned.*

Gold (Au), Tin (Sn), Kaolin (Ck), Gravel (Gr).

- *Borehole number with depth (in metres) of rock-type encountered.*
- *Cable-tool drill.*
- *Rotary drill.*
- *Down-hole hammer tool.*
- *Diamond drill.*
- *Auger drill (a) or spear bore (s)*

Type of borehole.

- *Highway.*
- *Road.*
- *Vehicular track.*
- *Railway*
- *H.E.C. power transmission line.*

SURFACE CONTOUR INTERVAL 20 METRES

GENERALISED AQUIFER-TYPE DISTRIBUTION

See MAP 2. HYDROGEOLOGY for detail.

COASTAL PLAIN

High coastal dunes of fine sands (Qhsc). Good water yields with low salinity.
Coastal plain sediments of sands, silts & clays (Qpm) underlain by Tertiary sediments. Low water yields and variable salinity.

SEDIMENTARY BASIN

Tertiary sediments (Ts) of fine gravels, sands and clays, frequently mixed. High water yields with low salinity.

FRACTURED & WEATHERED ROCK

HIGHLY FRACTURED *Mathinna Beds (SDs, SDsm) of tightly folded mudstones, siltstones and sandstones. Reliable aquifer with wide range of yields and variable salinity.*
SPARSELY FRACTURED *Adamellites and granites (Dsau, Dsamc, Dsafin). Yields generally low dependant on fracture frequency and localized joint concentrations. Generally low salinity.*
DEEPLY WEATHERED *Basalt (Tbl. — mainly clays with little rock present. Limited distribution. Low yields with low salinity.*

UNFRACTURED ROCK

Granodiorite (Dsg) and porphyritic granite/adamellite (Dbapc) with jointing widely spaced and tight. Generally no yield.

UNTESTED

Low coastal outcrops of dolerite (Jdl — Croppies Points).

DEPARTMENT OF MINES DRILLERS
Cable tool drilling by C. Nugent 1969-69; T. Johnson 1969-72;
J. Hammersley 1960-71; N. K. Harper 1970-75; M. J. Kerrison 1972-82.
Rotary and down hole hammer drilling by T. J. Green 1971-75;
K. M. Richardson 1972-80; R. Stevens 1981-88.
Diamond drilling by C. Locke 1970-71; G. W. Baker 1977-79.
PRIVATE CONTRACT DRILLERS
Cable tool drilling by H. J. Stacpoole 1973
Rotary and down hole hammer drilling by G. Spaulding 1974.

BASEMENT CONTOURS OF THE SCOTTSDALE SEDIMENTARY BASIN

Contours are of the top of the granite where overlain by Tertiary/Quaternary sediments and are interpreted from borehole data.

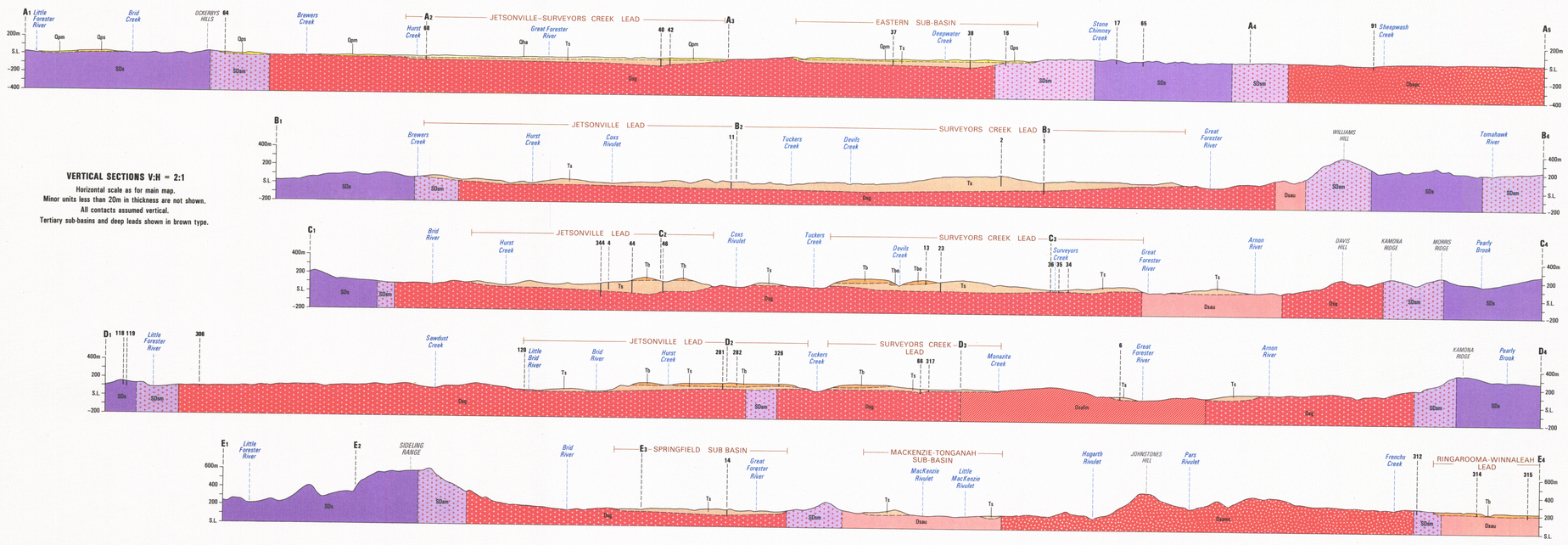
CONTOUR INTERVAL 10m.

- 10 — Contour above sea level
- 0 — Contour at sea level
- −10 — Contour below sea level

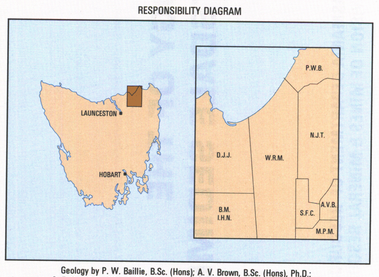
(Contours printed on reverse side — view with back lighting)

VERTICAL SECTIONS V:H = 2:1

Horizontal scale as for main map.
Minor units less than 20m in thickness are not shown.
All contacts assumed vertical.
Tertiary sub-basins and deep leads shown in brown type.



RESPONSIBILITY DIAGRAM



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