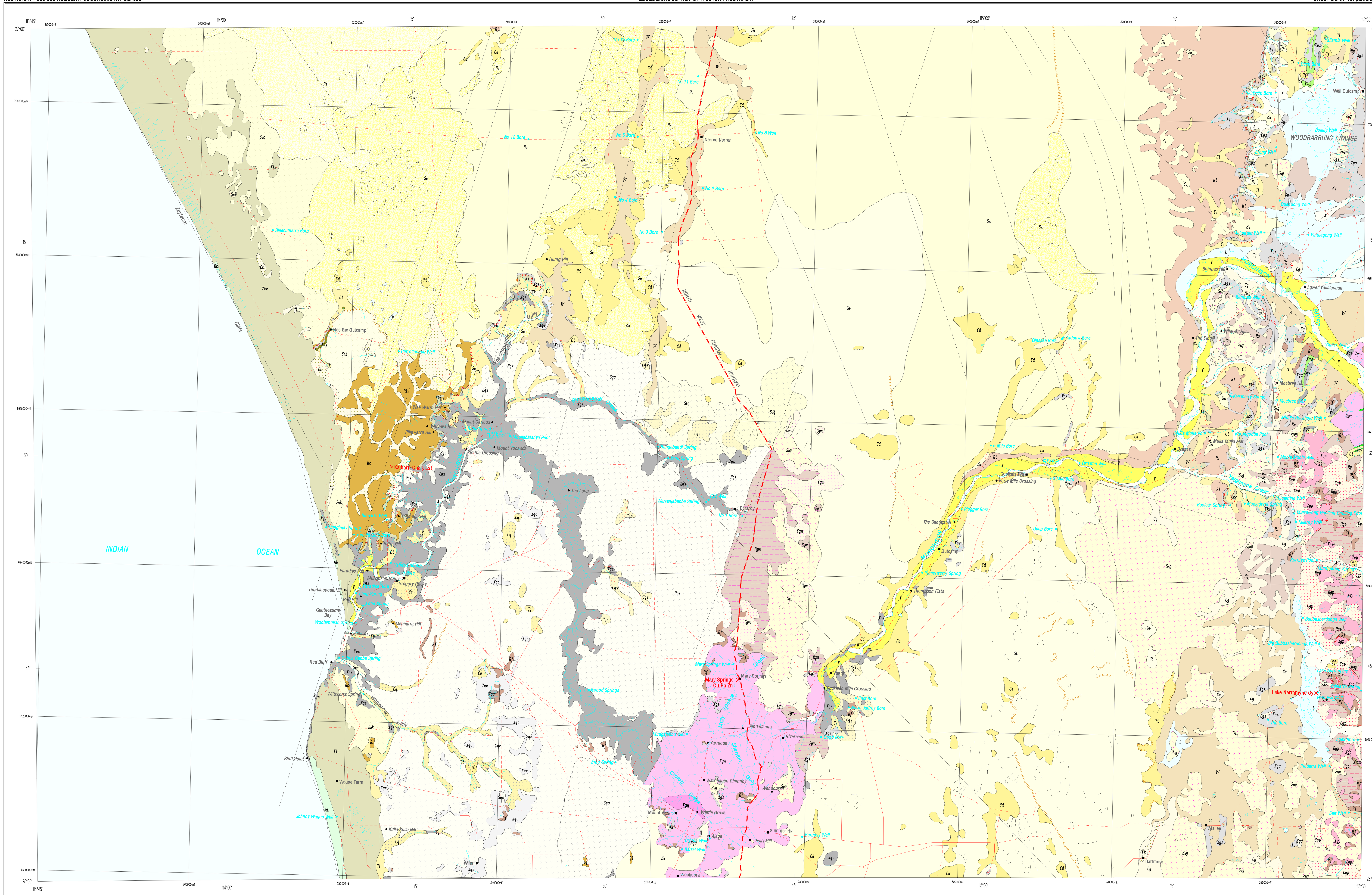
AJANA

GEOLOGICAL SURVEY OF WESTERN AUSTRALIA

AUSTRALIA 1:250 000 REGOLITH GEOCHEMISTRY SERIES

SHEET SG 50-13, part SG 49-16



REFERENCE

RESIDUAL (*R*) - Residual sand, duricrust, and proximal reworked material derived by in situ weathering

- *Rl* — derived from mixed rock types
- *Rf* — comprising mainly iron-rich material
- *Rg* — derived mainly from quartzofeldspathic rock
- *Rgm* — derived mainly from quartzofeldspathic metamorphic rock (garnet granulite, gneiss, pegmatite, and schist)
- *Rgp* — derived mainly from quartzofeldspathic plutonic rock (granite)
- *Rk* — comprising mainly carbonate-rich material (calcilutite and calcrete)

EXPOSED (*X*) - Outcrop of saprock, bedrock, and subcrop with locally derived sand, silt, clay, and rubble

- *Xcg* — derived from glauconitic clayey material (Alinga Formation)
- *Xgm* — derived from quartzofeldspathic metamorphic rock (garnet granulite, gneiss, pegmatite, and schist)
- *Xgp* — derived from quartzofeldspathic plutonic rock (granite)
- *Xgs* — derived from quartzofeldspathic siliciclastic sedimentary rock (sandstone, siltstone, and shale)
- *Xkc* — derived from carbonate-rich chemical sedimentary rock (calcilutite or limestone)
- *Xmm* — derived from ferromagnesian metamorphic rock (amphibolite)
- *Xmh* — derived from ferromagnesian hypabyssal rock (dolerite)
- *Xqc* — derived from quartz-rich biochemical sedimentary rock (Windalia Radiolarite)
- *Xqm* — derived from quartz-rich metamorphic rock (quartzite)
- *Xqs* — derived from quartz-rich siliciclastic sedimentary rock (sandstone)
- *Xku* — derived from dominantly carbonated ultramafic rock (magnesite)

COLLUVIAL (*C*) - Unconsolidated and semi-consolidated silt, sand, gravel, and rubble

- *Cd* — undivided
- *Cf* — comprising strongly ferruginized material
- *Cg* — derived mainly from quartzofeldspathic rock
- *Cgm* — derived mainly from quartzofeldspathic metamorphic rock (garnet granulite, gneiss, pegmatite, and schist)
- *Cgp* — derived mainly from quartzofeldspathic plutonic rock (granite)
- *Cgs* — derived mainly from quartzofeldspathic sedimentary rock (sandstone, siltstone, and shale)
- *Ck* — derived mainly from carbonate-rich material (calcilutite, calcrete, and limestone)
- *Cl* — derived from heterogeneous/mixed source
- *Cq* — derived mainly from quartz-rich rock (siltstone and sandstone)
- *Cqs* — derived mainly from quartz-rich siliciclastic sedimentary rock (sandstone)

DISTAL SHEETWASH (*W*)

- *W* — Sand- and clay-dominated colluvium or sheetwash with indistinct alluvial channels

ALLUVIAL (*A*)

- *A* — Cobbles, gravel, sand, silt, and clay in active alluvial channels

FLOODPLAIN (*F*)

- *F* — Overbank deposits, sand- or clay-rich alluvium and colluvium on floodplains; includes calcrete fragments

LACUSTRINE (*L*)

- *L* — Clay, silt, sand, and gravel in mixed playa and dune terrain

SANDPLAIN (*S*) - Residual and eolian sand

- *Su* — dominated by undulating sandplain and dunes
- *Sug* — derived in part from quartzofeldspathic rock (sandstone, siltstone, granite, and gneiss)
- *Suk* — derived in part from carbonate-rich rock (limestone)
- *Suq* — derived in part from quartz-rich rock (sandstone)
- *Sb* — dominated by dissected sandplain, hollows, and dunes
- *Sbk* — derived in part from carbonate-rich rock (limestone)
- *Sbq* — derived in part from quartz-rich rock (sandstone)
- *Sl* — dominated by longitudinal dunes over sandplain
- *Sn* — dominated by areas of net-like dunes, associated with depressions and drainage
- *Sqc* — dominated by residual sandplain, derived mainly from quartz-rich biochemical sedimentary rock (Windalia Radiolarite)
- *Sqs* — dominated by residual sandplain, derived mainly from quartz-rich siliciclastic sedimentary rock (sandstone)

BEACH (*B*) - Beach sand and beach dune

- *Bk* — containing carbonate-rich material

SYMBOLS

- Regolith boundary
- Breakaway
- Terrace
- Landsat lineament
- Sand dune
- Highway
- Formed road
- Track
- Watercourse
- Lake
- Yandi — Homestead
- Red Hill — Locality
- Mary Springs — Mine
- Kalbarri Chalk — Prospect
- Lake Nerramyne — Openpit
- Cy — Clay
- Cu — Copper
- Pb — Lead
- Lst — Limestone
- Zn — Zinc

DEPARTMENT OF MINERALS AND ENERGY
L. C. RANFORD, DIRECTOR GENERAL

GOVERNMENT OF WESTERN AUSTRALIA
HON. NORMAN MOORE, M.L.C.
MINISTER FOR MINES

GEOLOGICAL SURVEY OF WESTERN AUSTRALIA
DAVID BLIGHT, DIRECTOR

Edited by D. Ferdinando, K. Greenberg, and C. Brien

Cartography by M. Vicentic, and L. Kukuls

Topography from Australian Surveying and Land Information Group, and Department of Land Administration Sheet SG 50-13

This map was compiled and produced using a Geographic Information System (Arc/Info), and the data are available in digital form

Published by the Geological Survey of Western Australia. Copies of this map, or extracts of the data, are available from the Information Centre, Department of Minerals and Energy, 100 Plain Street, East Perth, W. A., 6004. Phone (08) 9222 3459, Fax (08) 9222 3444

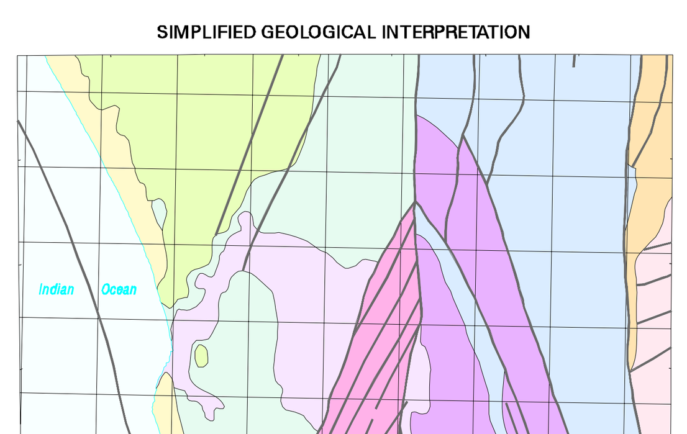
Compiled by A. J. Sanders 1999

Field observations 1998 by M. Fetherston, A. Franchitto, F. Irimies (from GSWA), and S. Baesjou, A. Lee, and S. McGuinness

Compiled using Landsat TM images (1986 data), 1995 black and white aerial photography, published Geological Survey of Western Australia Geological Series map, Ajana 1982, and field observations 1998

The recommended reference for this map is:
SANDERS. A. J., 2000, Regolith materials, Ajana, W.A. Sheet SG 50-13, part SG 49-16, *in* Geochemical mapping of the Ajana 1:250 000 sheet *by* A. J. SANDERS and S. A. McGUINNESS: Western Australia Geological Survey, 1:250 000 Regolith Geochemistry Series Explanatory Notes, Plate 2

SIMPLIFIED GEOLOGICAL INTERPRETATION



Geological interpretation by Myers and Hocking (1998)

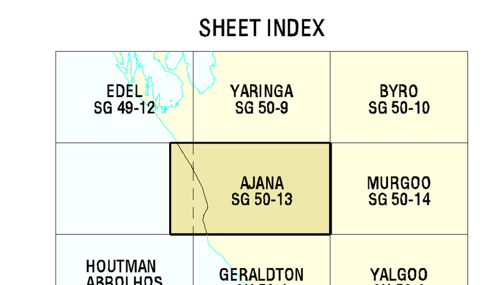
- PHANEROZOIC — QUATERNARY — TAMALA LIMESTONE: shoreline and coastal eolian deposits; carbonate-rich sedimentary rock
- CRETACEOUS — TOOLONGA CALCILUTITE: marine limestone, chalk, marl, and greensand; dominantly calcareous pelagic deposits
- Winning Group — Marine and coastal shale, siltstone, greensand, and radiolarite; dominantly siliceous pelagic deposits, and basal sandstone
- UPPER CARBONIFEROUS - LOWER PERMIAN — Lyons Group / NANGETTY FORMATION — Marine and continental siltstone, shale, sandstone, and limestone; glacially influenced
- ORDOVICIAN - DEVONIAN — Continental to marine sandstone and minor conglomerate; TUMBLAGOODA SANDSTONE: continental and coastal sandstone
- PROTEROZOIC — Northampton Complex — Garnet granulite, quartz-feldspar gneiss, amphibolite, and schist
- Badgeradda Group and NILLING FORMATION — Siltstone, shale, sandstone, and dolomite
- ARCHAEAN — Yilgarn Craton — Granite and gneiss with local amphibolite and ultramafic rock
- Geological boundary
- Fault

SCALE 1:250 000

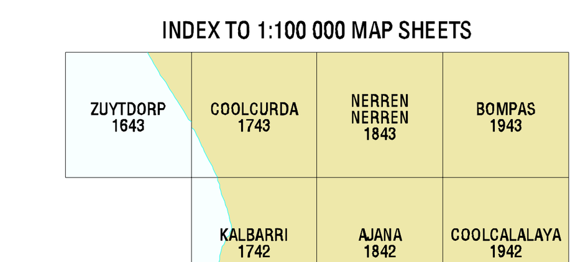
5000 METRES 0 5 10 15 20 25 30 KILOMETRES

TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: AUSTRALIAN GEODETIC DATUM 1984
VERTICAL DATUM: AUSTRALIAN HEIGHT DATUM
Grid lines indicate 20 000 metre interval of the Australian Map Grid Zone 50

SHEET INDEX



INDEX TO 1:100 000 MAP SHEETS



REGOLITH MATERIALS

REGOLITH GEOCHEMISTRY SERIES

AJANA

SHEET SG 50-13, part SG 49-16
FIRST EDITION 2000

WARNING: Inks are water soluble and will fade with prolonged exposure to light