

# WINNING POOL - MINILYA

GEOLOGICAL SURVEY OF WESTERN AUSTRALIA

SHEET SF 50-13, part SF 49-16

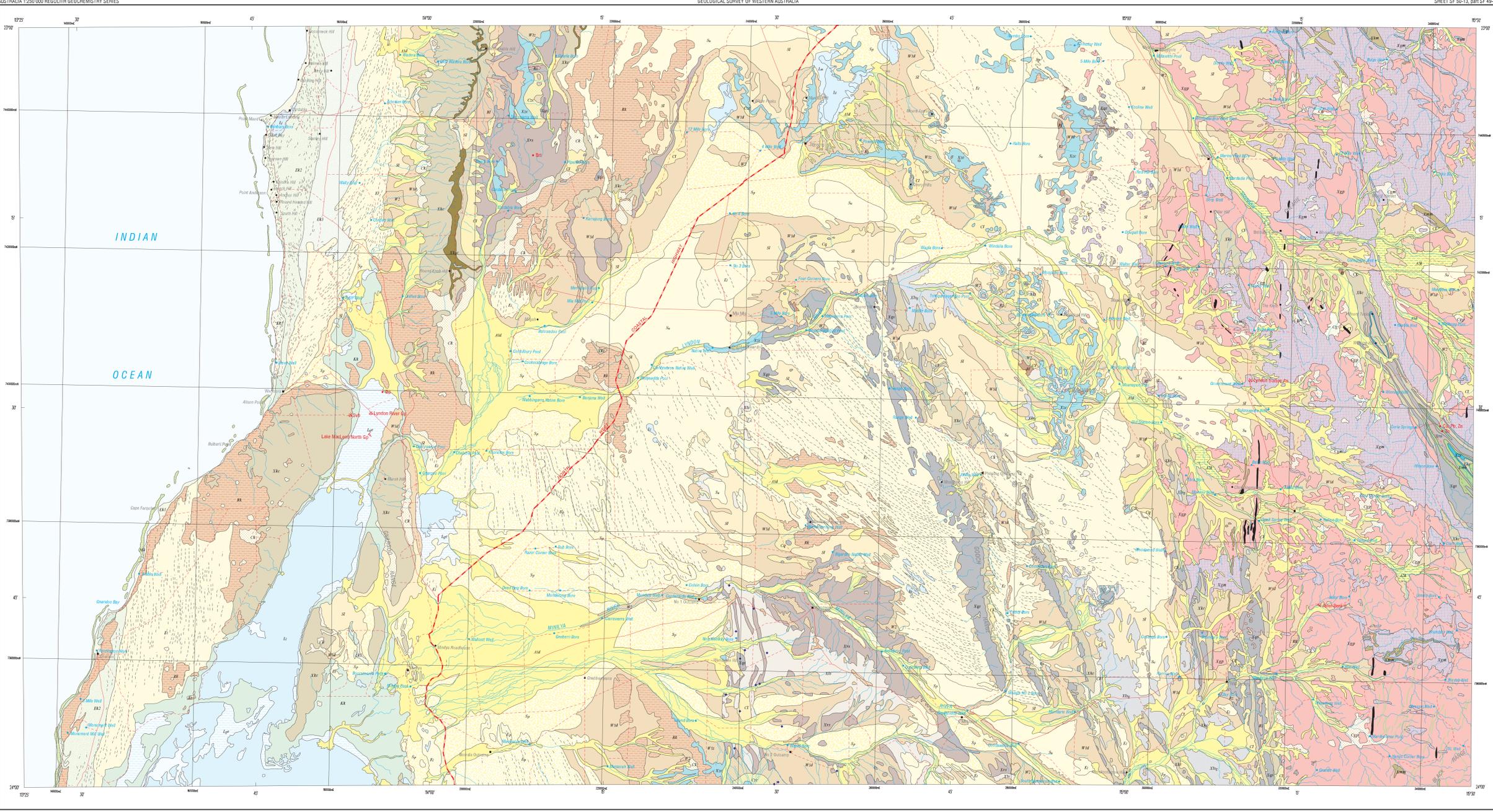
## REGOLITH MATERIALS

### REFERENCE

- RESIDUAL (R)** - Residual sand, siltstone, and gravel derived from weathering in situ
  - R1 comprising mainly iron-rich material (hematite)
  - R2 comprising mainly carbonate-rich material (authigenic limestone and calcareous nodules)
  - R3 comprising mainly mixed material (gabbro and quartzite)
  - R4 comprising mainly alkali-rich material (gabbro)
- EXPOSED (E)** - Outcrop of rock, bedrock, and outcrop with locally derived sand, silt, clay, and rubble
  - E1g derived from quartzofeldspathic metamorphic rock (migmatite, schist, phyllite, and gneiss)
  - E2g derived from quartzofeldspathic plutonic rock (granite, monzonite, gabbro, and tonalite)
  - E3g derived from carbonate-rich sedimentary rock (Ordovician Proterozoic and Phanerozoic limestones, fossiliferous and quartzite in part)
  - E4g derived from carbonate-rich, glauconitic bioclastic sedimentary rock (lower Cambrian Calcareous)
  - E5g derived from carbonate-rich metamorphic rock (metamorphosed dolomite and marble)
  - E6g derived from heterogeneous sedimentary rock (quartz wacke, siltstone, shale, limestone, green sand, and carbonaceous siltstone)
  - E7g derived from heterogeneous siliclastic glauconitic sedimentary rock (Eyre Group)
  - E8g derived from ferromagnesian hypabyssal rock (andesite)
  - E9g derived from ferromagnesian metamorphic rock (marble, schist, amphibolite and quartz-magnetite rock, and metamorphosed dolomite, and gabbro)
  - E10g derived from quartz-rich rock (quartz vein)
  - E11g derived from quartz-rich metamorphic rock (quartzite and thin calc-silicate rock)
  - E12g derived from quartz-rich siliclastic sedimentary rock (sandstone, siltstone, conglomerate, and wacke)
  - E13g derived from carbonaceous siliclastic sedimentary rock (black shale, siltstone, wacke, chert, and carbonaceous deep-sea volcaniclastic tuffite, turbidite, and silt)
  - E14g derived from siliclastic bioclastic sedimentary rock (Widduke Radiolite)
  - E15g derived from siliclastic sedimentary rock (Discovery Formation of the Edmund Group)
- COLLUVIAL (C)** - Unconsolidated and semi-consolidated silt, sand, gravel, and rubble
  - C1 comprising mainly iron-rich material
  - C2 derived mainly from quartzofeldspathic rock
  - C3g derived mainly from quartzofeldspathic metamorphic rock (migmatite, schist, phyllite, and gneiss)
  - C4g derived mainly from quartzofeldspathic plutonic rock (granite, monzonite, gabbro, and tonalite)
  - C5g derived mainly from carbonate-rich rock (gabbro and limestone)
  - C6g derived from mixed rock types
  - C7g derived mainly from quartz-rich rock (siltstone, sandstone, conglomerate, and wacke)
  - C8g derived mainly from alkali-rich rock (Widduke Radiolite)
- LOW-GRADIENT SLOPE (W)** - Sand- and clay-dominated colluvium and sheetwash
  - W1 undisturbed
  - W2 containing abundant alkali-rich material, ferruginous in part (commonly above shallow slopes of Widduke Radiolite)
  - W3 consolidated and incised in part (silicified, calcareous)
- ALLUVIAL (A)** - Cobbles, gravel, sand, silt, and clay in alluvial channels and floodplains
  - A1 undisturbed
  - A2 dominated by valley calcareous, silicified and incised in part
- LACUSTRINE (L)** - Clay, silt, sand, gravel, and evaporitic material
  - L1 in lakes and large playas
  - L2 in mixed dunes and playas terrain
  - L3 in fringing bedded deposits, gypsum, anhydrite, and halite
- SANDPLAIN (S)** - Eolian and residual sand
  - S1 in undulating sandhills, dunes locally developed
  - S2 in mixed sandhills, sheetwash, and playa terrain; dunes locally developed
  - S3 in mixed sandhills and colluvium and sheetwash
- EOLIAN (E)** - Eolian sand
  - E1 in extensive longitudinal dune terrain
  - E2 in mixed longitudinal dunes, sheetwash, and playa terrain
  - E3 in recent coastal dunes, beaches, and beach ridges, derived in part from carbonate-rich material
  - E4 in degraded coastal dunes, derived in part from carbonate-rich material (Calcareous)
  - E5 in degraded coastal dunes, derived in part from carbonate-rich material (partly Bundara Calcareous)
- COASTAL (K)** - Old wave- and tide-dominated coastal, and marine deposits
  - K1 derived mainly from carbonate-rich material (calcareous, calcareous, and coralline reefs, Bundara Calcareous)
- MARINE (M)** - Offshore marine deposits
  - M1 derived mainly from carbonate-rich material (coralline reefs - Ningaloo Reef tract)

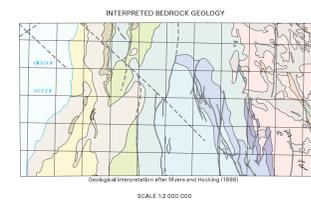
### SYMBOLS

- Regolith boundary
- Sand dune
- Highway
- Formed road
- Track
- Watercourse
- Permanent water
- Pool, spring, bore, well
- Winding
- Localities
- Diastrophes and intrusions
- Open-cut
- Jacob Bore
- Prospect
- Mineral occurrence
- Barite
- Copper
- Gold
- Gypsum
- Lead
- Sand
- Uranium
- Zinc



Edited by N. Tait, K. Greenberg, and G. Loan  
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 This map was compiled and produced using Geographic Information System (GIS) software, 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, 150 Plain Street, East Perth, W.A. 6004. Phone (08) 9222 3468. Fax (08) 9222 3444

Compiled by A. J. Sanders 2000  
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 Compiled using Landsat TM Images (1982 and 1985 data), 1976 black and white aerial photography published Geological Survey of Western Australia Geological Series map, Winning Pool - Minilya 1984, and field observations 1989  
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 SANDERS, A. J., 2001. Regolith materials, Winning Pool - Minilya, W.A. Sheet SF 50-13 and part sheet SF 49-16. In: Geological map of the Winning Pool - Minilya 1:250 000, sheet SF 50-13, by A. J. SANDERS and S. A. MCGUINNESS. Western Australia Geological Survey, 1:250 000 Regolith Geochemistry Series Explanatory Notes, Plate 3



- PALEOZOIC CONTINENTAL**
  - SUNDARA CALCARENITE: shiverite, marine, and coastal urban deposits; includes coastal lake deposits, concretion calcareous and gypsiferous
  - LAMONT SANDSTONE and TRELIA LIMESTONE: marine limestone, and minor marine and continental sandstone
  - CARDABA CALCARENITE, GRALIA CALCARENITE, and MERULINBROOK SANDSTONE: Marine limestone and sandstone, with minor alluvium and basal greenstone
  - FROM ONGA CALCARENITE, NOROLON CALCARENITE, and MINIMA FORMATION: Marine limestone, chert, marl, and greenstone; dominantly calcareous pelagic deposits
  - Winding Group
  - Woolwood Group, Bare Group, and Kennedy Group
- PROTEROZOIC**
  - Yvone Group and CALLYTHARRA FORMATION
  - Marine and continental siltstone, shale, and sandstone
  - Marine and continental limestone, dolomite, sandstone, and limestone; gabbro-influenced
  - Marine to continental limestone, dolomite, sandstone, siltstone, shale, and conglomerate
  - Ordovician silt
  - Edmund Group
  - Sandstone, siltstone, shale, dolomite, and chert; intruded by diabase dykes and sills
  - Gossamine Complex
  - Granodiorite, monzonite, granite, and pegmatite; includes minor dolomite and gabbro
  - Schist, migmatite, gneiss, phyllite, quartzite, and minor calc-silicate rock, marble, and amphibolite (Woolwood Metamorphic Suite)
- Geological boundary**
- Fault, exposed**
- Fault, concealed or inferred**

SCALE 1:250 000

UNIVERSAL TRANSVERSE MERCATOR PROJECTION  
 HORIZONTAL DATUM: GEOCENTRIC DATUM OF AUSTRALIA 1994  
 VERTICAL DATUM: AUSTRALIAN HEIGHT DATUM  
 Grid lines indicate 20 000 metre interval of the Map Grid of Australia, Zone 50  
 The Map Grid of Australia (MGA) is based on the Geocentric Datum of Australia 1994 (GDA94). GDA94 positions are compatible within one metre of the datum WGS84 positions



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REGOLITH MATERIALS  
 REGOLITH GEOCHEMISTRY SERIES  
 WINNING POOL - MINILYA  
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