AUSTRALIA 1:100 000 REGOLITH-LANDFORM SERIES SHEET 8631 TRANSPORTED REGOLITH 58 59 660 61 62 63 64 65 66 67 68 69 670 71 72 73 74 75 76 77 78 79 680 81 82 83 84 85 86 **149°00′** A Alluvial sediments Alluvial landforms Aa1, Alluvium over basalt; along entrenched course of Mandagery Creek superimposed across north trending fold limb ridges Flood plains Aaf1, Present floodplains with some terraces in upper river reaches Aer3, Extensive quartzose alluvial sands and localised rounded polymict cobbles on plateau; high level palaeoalluvium Aer4, Ferruginous alluvial sands on plateau; high level palaeoalluvium Aer5, Scattered areas of ferruginous sands on granitic saprolite C Colluvial sediments Cfc1, Coalescing fans off north trending ridges, rises of saprolite Pediments Cei1, Includes very highly weathered rises; flanking limbs of folds and north trending ranges along western edge of map Cei2, Colluvial pediments on possible remnant weathered basalt; core of fold complex Cei3, Ferruginous colluvium derived from ferruginous sandstone; ramps sloping down towards southeast from Canobolas Drainage Divide in the northwest CH Sheet flow deposit CHei1, Sheet flow deposits on saprolite; long low angle slopes adjacent to Nyrang and Toms Waterholes Creeks CHei2, Shallow valleys with medium angle slopes and narrow alluvial flats, forming dendritic pattern; western slopes adjacent to and below plateau to east CHer1, Colluvial deposits derived from and overlying highly weathered bedrock, saprolite rises pierce colluvium in places CHer2, Sheet flow deposits overlying deeply weathered bedrock, alluvium in places, reworking of sediments due to occasional flooding; short pediment slopes at base of rises along lower reaches of Lachlan and Belubula Rivers; minor gully and rill erosion CHer3, Underlying saprolite, occasional crests of rises penetrate colluvial cover; associated with upper reaches IN-SITU REGOLITH RC Residual clay Erosional plains RCep1, Residual clay remanence of prior lava plain on saprolite; some marshy lower lying areas s Saprolite Ser2, Variably weathered bedrock partly exhumed from lava plain, some intervening alluvial sediments; broad rises on partly eroded lava plain Sel1, Sub-basaltic weathering along inverted palaeodrainage lines, variably weathered depending on bedrock lithology, some colluvium with basalt goulies; flat-topped low hills to hills, gentle to steep slopes, narrow valleys; erosion potential on steeper slopes due to clearing SvI1, Variably weathered to fresh multiple basalt flows with some peat interbeds; plain with low rises Lava plateaus Svp1, Inverted relief lava flows; often multiple flows with underlying alluvial sediments and intervening variably weathered basalt or trachyte, silcrete in places sv Very highly weathered bedrock Rises SVer1, Deep saprolite with deep red soils and ferruginous induration, clay in drainage lines; some remanence of basalt weathering north of Orange; conical rises with long slopes; part of extensive plateau with steep escarpments towards the south SVer3, Colluvium on slopes; footslopes to fold limbs SVel1, Deep saprolite, mainly metasedimentary bedrock, with areas of granite weathered to residual clay and corestones, some ferricrete and ferruginous nodules; broad conical low hills with long gentle slopes; part of extensive plateau with steep escarpments towards the south SVel7, Sub-lava weathering; erosion potential SVel8, Includes area of residual clay and limestone outcrop near Canamodine Creek; closely spaced rounded low hills; minor soil erosion potential SH Highly weathered bedrock SHei1, Trunk streams with palaeosols and terraces; north-south aligned valleys SHer2, Alluvium and palaeosols in underfit trunk streams, lower colluvial slopes; north-northwest trending structurally controlled wide u-shaped valleys SHer3, Remnant basalt on scattered crests, bedrock close to surface in places; rounded crests SHer6, Erosion amphitheatres with rises ramping down from, and including some, lava remnants Residual rises SHeu1, Weathered north trending ridge exhumed from eroding deeply weathered plateau to west SHel2, Stripping of regolith from upper slopes, deeper regolith downslope; duplex soils, some granite corestones and tors; sub-rounded to sub-angular crests SHel5, Conical low hills with sub-rounded crests and minor colluvial slopes SHel9, Includes moderately weathered interbeds with colluvium on lower slopes, alluvium in channels and flats; rounded dome-like low hills to rises with smooth long even slopes SHeh4, Colluvium downslope, some remnant sub-basaltic weathering; rounded crests, steep sides; below drainage escarpments SM Moderately weathered bedrock Erosional plains SMep3, Weathered trachyte; inclined plain on Mt Canobolas core; last remnant of volcanic cone surface SMer2, Lower colluvial slopes; north trending rises to low hills with sub-rounded crests Residual rises SMeu1, Flanking colluvium, some crests moderately weathered; north to north-northwest trending elongated and arcuate ridges SMel19, Colluvial slopes and highly weathered bedrock in places, minor alluvium in drainage lines; sub-rounded to rounded crests, western slopes SMel22, Varies to slightly weathered, minor colluvium and alluvium; north-northeast trending ridges, flat topped in places SMel24,Basalt remanence in places (soil, floaters, bedrock); rounded to flat broad crests; exhumed surface from beneath Mt Canobolas volcanic pile; stripping of soil and gullying due to clearing SMel25,Basalt remanence in places; slightly weathered hog-back ridges trending north-south; parts exhumed from beneath Mt Canobolas volcanic pile SMel26,Lava flow remnants on flat crests in places; broad crests where not exhumed, angular north-northeast trending ridges especially to west where exhumed from Mt Canobolas volcanic pile SMel 27, Sediments in some larger valleys; broad open low granite hills with sub-angular crests; prior high level palaeoalluvium SMel 28, North-northwest to north-northeast trending linear and arcuate ridges with sub-angular crests SMel29, High plateau remnants, often sloping, on top of ranges (Nangar and Mandagery Ridges, and Hervey Range State Forest) SMel30,Sediments on lower slopes and in valleys; closely spaced low hills with sub-rounded crests; core of fold complex SMel36,Scattered weathered basalt remnants, minor colluvium and alluvium and fresh north trending limestone ridges; sub-rounded low hills to rises associated with incision of Bell River and Molong Creek SMel39,Rounded ferruginous sandstone rises and ferruginous colluvial slopes and pediments SMeh20\$lightly weathered on crests, some colluvial slope wash; form varies from steep sides with broad crests to steep sides with subangular crests ss Slightly weathered bedrock SSel 2, Some colluvium at base of slopes; north-west oriented low hills to hills, sharp ridges and closely spaced drainage lines on steep slopes SSel8, North striking ridges (limbs of folds) with colluvial fan deposits on footslopes SSeh5, Skeletal soils, more highly weathered footslopes with colluvium; north trending cuesta ridges with dense drainage lines in places; exhumed from beneath Mt Canobolas volcanic pile SSeh6, North-northwest to north-northeast bedrock banding, sub-rounded to sub-angular ridge crests, moderately steep slopes SSeh9, Unweathered bedrock in places; north trending cuesta ridges with sheer drops facing west without drainage lines; exhumed from prior lava flows and incised by Belubula River SSem4, Weathered remnants of Mt Canobolas trachytic volcanic core, moderately weathered in places; steep mountains and radiating spurs with sharp crests BU Unweathered bedrock BUel2, Limestone pavements with intervening strips of deep terra rossa soils and residual clay, adjacent slightly weathered bedrock, minor alluvial flats; open low hills with rounded to sub-angular crests BUeh1, Stony scree soils at base of slopes, slightly weathered bedrock and skeletal soils in places, minor areas of remnant soils on flat ridges; very steep hills and mountains, a few remnant flat-topped ridges on higher terrain; part of metamorphic aureole around Bathurst Granite BUeh2, Precipitous slopes and razor crests of limbs of fold complex (Nangar and Mandagery Ridges) **INDURATION** Notable occurrences (not necessarily widespread) Ferruginous induration Multiple weathering profiles associated with lava flows LANDFORMS DEPOSITIONAL LANDFORMS 640000mE 41 42 43 44 45 46 47 48 49 650 51 52 53 54 55 56 57 58 59 660 61 62 63 64 65 66 67 68 69 670 71 72 73 74 75 76 77 78 79 680 81 82 83 84 85 149°00′
148°30′
148°30′
148°30′ Flood plains Terraced land Alluvial swamp Colluvial fans For definitions of regolith types, landform types, induration and geomorphic features refer to: Pain, C., Chan, R., Craig, M., Hazell, M., Kamprad, J., and Wilford, J. (1991). RTMAP: BMR Regolith database field handbook. BMR Record 1991/29 pd *Depositional plains* EROSIONAL LANDFORMS UNIVERSAL GRID REFERENCE GRID ZONE DESIGNATION

55H

TO GIVE A STANDARD REFERENCE ON THIS SHEET TO NEAREST 100 METRES | SOUARE IDENTIFICATION | SAMPLE POINT: \(\triangle MOUNT CANOBOLAS \) | 1 Read letters identifying 100 000 metre collars in which the point lies: Low hills DIGITAL DATA square In which the point lies:

2 Locate first VERTICAL grid line to
LEFT of point and read LARGE figures
labelling the line either in the top or
bottom margin, or on the line itself: em *Mountains* The digital data for this map were compiled SCALE 1:100 000 on the AGSO Arc/Info System and may be suitable for transfer to other digital systems. IGNORE the SMALLER flgures of any grid number; these are for finding the full co ordinates. Use ONLY the LARGER figures of the grid number; example:

| 640 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 VOLCANIC LANDFORMS Watercourse 1 0 1 2 3 4 5 6 7 8 9 10 Kilometres Information on formats, release conditions, vl *Lava plains* Lake and costs, can be obtained from the AGSO vp *Lava plateaus* Erosional scarp, palaeosurface boundary ----- Main road UNIVERSAL TRANSVERSE MERCATOR PROJECTION $\frac{\Lambda}{\Lambda}$ Erosional scarp, unrelated to palaeosurface boundary ----- Minor road LATITUDE OF ORIGIN: 0°. LONGITUDE OF ORIGIN: 129° Structural scarp This map shows the type and distribution of regolith-landform units and indicates their dominant regolith-landform associations. These units are distinct patterns of recurring _______ Metamorphic aureole scarp MOLONG Town Fault line scarp Grey numbered lines are 1000 metre intervals of the Australian Map Grid, Zone 55. Grid values are shown in full only at the Trigonometrical station Geomorphic symbols indicate the location and type of geomorphic activity. This map presents a systematic analysis and interpretation of 1:89 000 scale RC9 aerial photography, 1:100 000 scale topographic maps (AUSLIG), and field mapping data. High resolution (250m line spacing) Erosional and structural scarp, palaeosurface boundary southwest corner of the map Erosional and metamorphic aureole scarp, palaeosurface boundary Erosional and fault line scarp, palaeosurface boundary airborne gamma-ray spectrometry and magnetics (Geoterrex) were used where applicable It is recommended that this map be referred to as: Chan, R.A., Flemming, C., 1995 - Molong Regolith-Landforms: 1:100 000 scale map. Australian **NGMA** ----- Major drainage divide — — — — Minor drainage divide Geological Survey Organisation, Canberra \Longrightarrow Entrenched superimposed drainage, indicating direction Copies of this map may be obtained from: AGSO Sales Centre, GPO Box 378, Canberra City, ACT, 2601; Ph (06) 249 9519, Fax (06) 249 9982 Product of the National Geoscience Mapping Accord Entrenched superimposed drainage between upstream and downstream limits, indicating direction Site and direction of beheaded stream where no wind gap Regolith and geomorphology interpreted and compiled 1992-1994 by R.A. Chan, AGSO, INDEX TO ADJOINING SHEETS MAP LOCALITY **⊗** → C Site and direction of river capture 147°00′ 1:250 000 maps shown in blue 150°00′ 150°00′ **⊗**→>R Site and direction of river reversal Cartography by N. Corby, T. Brennan, G. Scott, Cartographic Services Unit, AGSO \equiv Wind gap TOTTENHAM DANDALOO NARROMINE DUBBO COBBORA GULGONG | NABROMINE | Sissistic | Siss MINERAL DEPOSITS Knick point Magnetic declination information for 1995 supplied by Geomagnetic Section, AGSO NEW SOUTH WALES Armidale Bathurst Mineral Deposit Database, Topographic base map compiled from digital data supplied by Australian Surveying and Land Information Group, © AUSLIG 1994, with modifications — — > Palaeodrainage, indicating trend Department of Mineral Resources, NSW. Inverted palaeodrainage, indicating direction Published by the Australian Geological Survey Organisation, Department of Primary Industries and Energy, Canberra. Issued under the authority of the Minister for Primary Industries and Energy, Canberra Polymetallic Inverted palaeodrainage, indicating trend Cu and Au Fe and Mn Major lava flow direction © Commonwealth of Australia 1995 **≭ V** Major volcanic centre **MOLONG** This work is copyright. Apart from any fair dealings for the purposes Pyrite Cu ×∨ Volcanic plug residual of study, research, criticism or review, as permitted under the 34°00′ 8330 8430 8530 8630 8750 8830 34°00′ 147°00′ MACHETIC DECLINATION 150°00′ Copyright Act, no part may be reproduced by any process without Eroded volcanic plug written permission. Copyright is the responsibility of the Executive Director, Australian Geological Survey Organisation. Inquiries should be directed to the Principal Information Officer, Australian Geological Survey Organisation, GPO Box 378, **REGOLITH-LANDFORMS** Sn, W, Mo ×В Basalt capped residual hill MAGNETIC DECLINATION Blue lines show magnetic declination for epoch 1995.0 derived from 1990 AGRF model. Annual change is 2'4" **SHEET 8631** Coal and Oil Ag and (Au) × R Residual hill per year easterly at the centre of the map. Information is current to 1995 The Commonwealth does not warrant that this map is definitive, PRELIMINARY EDITION 1995 Ag and (Gems) Industrial nor free of error and does not accept liability for loss caused or arising from reliance upon information provided herein WARNING: Colours will fade with prolonged exposure to light. SUBJECT TO AMENDMENT Gems