

Aeolian sediments

Colluvial sediments

Alluvial sediments

TRANSPORTED REGOLITH Alluvial sediments Lithic and quartzose sands and gravels with abundant clays on low relief areas flanking channel systems associated with valleys. Surface lag is dominated by red-brown sands with occasional lithic gravels. Colonised by chenopod shrublands dominated by Atriplex vesicaria with minor Maireana spp. and minor Alectryon oleifolius trees. Quartzose sands and silts with minor lithic sands, within ephemeral, swampy channels. Surface lags are dominated by quartzose sands and silty clays. Colonised by mixed shrublands dominated by Maireana pyramidata and Acacia victoriae and occasional Eucalyptus camaldulensis. Quartzose and lithic sands and minor gravels associated with outwash and numerous channel systems in a low relief area. Surface lags are dominated by quartzose and lithic sands. Colonised by sparse, mixed shrublands with Maireana pyramidata. Lithic and quartzose sands and gravels in low relief areas constrained by valley systems with minor channels. Surface lags are dominated by quartzose sands, lithic gravels and red-brown sands. Colonised by chenopod shrublands dominated by Atriplex vesicaria and Maireana spp.. Quartzose and lithic silts and sands within ephemerally swampy depressions. Surface lags are dominated by quartzose sands and silts. Colonised by chenopod shrublands dominated by Maireana pyramidata. Clays and minor silts within rounded depressions and pans that hold ephemeral standing water. Surface lags are dominated by clays typically with desiccation cracks. Vegetation is typically absent. Quartzose and lithic gravels and sands with minor red-brown sands within open elongate depressions grading into drainage depressions. Surface lags consist of quartzose and lithic pebbles with red-brown sands. Colonised by chenopod shrublands dominated by Atriplex vesicaria and Maireana spp.. Quartzose sands and gravels with minor clayey silts indurated by microcrystalline quartz and minor anatase, in areas of slight topographic relief. Surface lags are dominated by clasts of microcrystalline quartz-indurated quartzose sediment with some ferruginous variants, minor red-brown sand. Colonised by chenopod shrubland dominated by Atriplex vesicaria and minor Maireana spp..

Quartzose sands and gravels with minor clayey silts indurated by iron-oxides, in areas of slight topographic relief. Surface lags are dominated by clasts of ferruginised quartzose sediment with minor red-brown sand. Colonised by chenopod shrubland dominated by Atriplex vesicaria and minor Quartzose and lithic sands, gravels and silty clays within ephemeral outwash fans and channels, downstream of intersection points between channels and adjacent plains. Surface lags are dominated by quartzose and lithic sands. Colonised by mixed shrublands dominated by Maireana pyramidata, Codonocarpus cotinifolius, and various exotic species including Xanthium spp.. Quartzose and lithic sands, gravels and silty clays within broad composite fans. Surface lags are dominated by quartzose and lithic gravels and sands. Colonised by mixed shrublands typically dominated by Maireana pyramidata and Atriplex vesicaria. Quartzose and lithic sands and minor gravels in areas of low relief dominated by outwash. Surface lag includes quartzose sands with minor lithic gravels. Colonised by chenopod shrublands with Atriplex vesicaria and grasslands. Lithic and quartzose sands and gravels in ephemerally swampy areas of low topographic relief associated with channel outwash. Surface lag is dominated by quartzose sands and minor lithic sands. Colonised by shrublands with Maireana pyramidata, Acacia victoriae and various exotic species including Xanthium spp.. Quartzose and lithic sands, gravels and silts on low relief surfaces boardering ephemeral channel systems. Surface lags are dominated by quartzose gravels and red-brown sands with minor lithic gravels. Colonised by chenopod shrublands dominated by Atriplex vesicaria and Maireana spp.. Quartzose and lithic sands, silts and minor gravels in low relief areas flanking major ephemeral channel systems. Surface lags are dominated by quartzose sands with a distinctive surface pattern of circular, ephemerally swampy depressions. Colonised by chenopod shrublands dominated by

Quartzose and lithic sands, silts and minor gravels in low relief areas flanking major ephemeral channel systems. Surface lags are dominated by quartz sands with a distinctive surface pattern of circular, ephemerally swampy depressions. Colonised by chenopod shrublands dominated by Quartzose and lithic sands and gravels within broad, ephemeral, incised channels. Surface lag is mostly lithic gravels and quartzose and lithic sands. Colonised by Eucalyptus camaldulensis woodland. Quartzose and lithic sands and gravels within an ephemeral channel. Surface lag is mostly lithic gravels with quartzose and lithic sands. Colonised by dense shrublands dominated by Acacia victoriae. Silts, clays and sands within sinuous, meandering depressions cut off from contemporary channels. Surface lags consist of silty clays. Colonised by dense shrublands dominated by Acacia victoriae and Myoporum montanum.

Red-brown quartzose sands and minor clays in hummocky dunes. Surface lags are dominated by red-brown quartzose sand. Colonised by chenopod shrublands

Sheet flow deposit Quartzose and lithic gravels and sands with minor red-brown sands within open, elongate depressions grading into drainage systems. Surface lags consist of a pronounced alternation of fine bands dominated by quartzose and lithic pebbles, and bands dominated by red-brown sands and silty sands. Colonised by chenopod shrublands dominated by Atriplex vesicaria.

CHfs1

CHfs3

IN-SITU REGOLITH

Saprolith

Lithic and quartzose gravels and sands in areas of slight topographic relief. Surface lags consist of a pronounced alternation of fine bands dominated by quartzose and lithic pebbles and bands dominated by red-brown sands. Colonised by chenopod shrublands dominated by Atriplex vesicaria. Lithic and quartzose gravels and sands in areas with slight topographic relief. Surface lags are dominated by quartzose and lithic pebbles and red-brown sands with fragments of regolith carbonate accumulations. Colonised by chenopod shrublands dominated by Maireana spp. and Atriplex vesicaria. Lithic gravels and minor quartzose gravels and lithic sands, broadly deposited along footslopes. Surface lags are dominated by angular lithic and minor rounded quartzose pebbles and red-brown sand. Colonised by chenopod shrublands dominated by Atriplex vesicaria and minor Maireana spp.. Quartzose gravels with minor lithic and ferruginised gravels and red-brown sands, in broad, lobe-shaped fans. Surface lags consist of a pronounced alternation of bands dominated by quartzose pebbles and bands dominated by red-brown sands and silty sands. Colonised by chenopod shrublands with Atriplex vesicaria and grasslands dominated by Astrebla spp.. Quartzose gravels with red-brown sands and minor ferruginous pebbles, in broad outwash areas. Surface lags consist of a pronounced alternation of bands dominated by quartzose pebbles and bands dominated by red-brown sands and silty sands, with widespread circular, swampy depressions. Colonised by chenopod shrublands with Atriplex vesicaria and grasslands dominated by Astrebla spp.. Sands and clays with minor lithic gravels, in low relief areas typically on the margins of alluvial outwashes and plains. Surface lag is dominated by broad bands of lithic pebbles separated by bands of red-brown, quartzose and micaceous sands. Colonised by chenopod shrublands dominated by Atriplex vesicaria and grasslands. Quartzose and lithic sands and gravels with minor clays in broad areas of low topographic relief. Surface lags are dominated by broad banding with sandy gravels separated by areas of red-brown silty sands. Colonised by grasslands and chenopod shrublands including Atriplex vesicaria. Quartzose sands and minor clayey silts in swampy, low relief areas. Surface lags are broadly banded with areas of sands separated by areas of red-brown, sandy silts. Colonised by chenopod shrublands dominated by Maireana pyramidata and Atriplex vesicaria. Quartzose sands and clayey silts on a low relief surface. Surface lags are dominated by quartzose sands and red-brown fine sands. Colonised by chenopod shrublands dominated by Atriplex vesicaria with minor Maireana pyramidata. Lithic and quartzose sands and gravels in low relief areas along footslopes. Surface lags are dominated by lithic and quartzose gravels and red-brown sands. Colonised by chenopod shrublands dominated by Atriplex vesicaria.

Urban area with paved and landscaped areas, and the immediate surround of major mines. Surface lags are highly variable. Vegetation is highly variable

Bedrock exposure with thin surficial weathering, slight ferruginous staining and prominent fractures, in areas of prominent topographic relief. Surface lags include lithic gravels and red-brown sand. Colonised by open woodlands dominated by Acacia aneura with occasional Casuarina pauper trees and a mixed understorey including Solanum ellipticum, Sida petrophila and occasional chenopod shrubs.

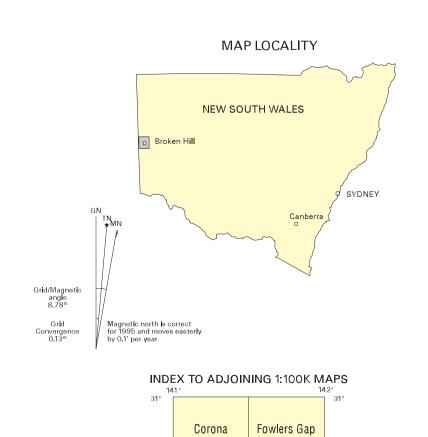
Bedrock exposure with thin surficial weathering, slight ferruginous staining and prominent fractures, and very prominent topographic relief. Surface lags include lithic fragments and red-brown sand. Colonised by an open woodland dominated by Acacia aneura with occasional Casuarina pauper trees, and a mixed understorey including Solanum ellipticum, Sida petrophila, and occasional chenopod shrubs.

Bedrock exposure with thin surficial weathering, slight ferruginous staining, prominent fractures, in areas of slight topographic relief. Surface lag includes lithic fragments and red-brown sand. Colonised by an open woodland dominated by Acacia aneura with occasional Casuarina pauper trees and a mixed understory with Solanum ellipticum, Sida petrophila, and occasional chenopod shrubs.

Quartzose and minor lithic sands and gravels in low relief areas. Surface lags are dominated by quartzose and red-brown sands. Colonised by chenopod shrublands dominated by Atriplex vesicaria. Lacustrine sediments Lacustrine sediments Major valley system mostly flooded by standing water due to anthropogenic construction. Periodically exposed surface lags consist of red-brown silts and clays. Vegetation is typically absent. Lm1

and includes an abundance of exotic species.

Highly weathered bedrock Kaolinitic saprolite with locally extensive ferruginous induration, and occasional angular quartz clasts and veins, within slight topographic highs. Surface lags are dominated by quartzose clasts and ferruginised saprolite clasts with minor ferruginised sediment clasts. Colonised by chenopod shrublands dominated by Atriplex vesicaria and minor Maireana spp. shrubs and occasional Casuarina pauper and Alectryon oleifolius trees. Moderately weathered bedrock Bedrock exposure which has been extensively replaced by secondary minerals, with strong ferruginous staining and extensive fractures, in areas of slight topographic relief. Surface lag includes quartzose and lithic fragments and red-brown sand. Colonised by an open woodland with Casuarina pauper and occasional Acacia aneura trees and a mixed understorey dominated by chenopod shrubs including Atriplex vesicaria and Maireana spp..



7135 7235

BROKEN HILL

Broken Hill Taltingan

REGOLITH-LANDFORM UNITS

Thackaringa

7133

7134 7234

LANDFORMS

DEPOSITIONAL LANDFORMS

fa Alluvial fan

ps Sand plain pd Depositional plain

fs sheet-flood fan

EROSIONAL LANDFORMS

em Mountains

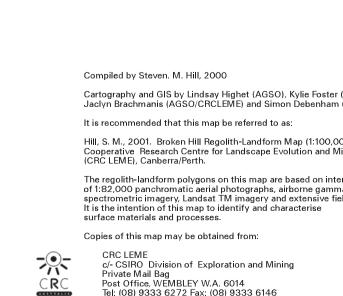
er Rises

m Made land

ed Drainage depression

a Alluvial landforms ap Alluvial plain aw Alluvial swamp

7233



Cartography and GIS by Lindsay Highet (AGSO), Kylie Foster (AGSO/CRCLEME), Jaclyn Brachmanis (AGSO/CRCLEME) and Simon Debenham (AGSO/CRCLEME). Hill, S. M., 2001. Broken Hill Regolith-Landform Map (1:100,000 scale). Cooperative Research Centre for Landscape Evolution and Mineral Exploration (CRC LEME), Canberra/Perth. The regolith-landform polygons on this map are based on interpretation of 1:82,000 panchromatic aerial photographs, airborne gamma-ray spectrometric imagery, Landsat TM imagery and extensive field mapping. It is the intention of this map to identify and characterise surface materials and processes. CRC LEME c/- CSIRO Division of Exploration and Mining Private Mail Bag Post Office, WEMBLEY W.A. 6014 Tel: (08) 9333 6272 Fax: (08) 9333 6146 http://leme.anu.edu.au/ © CRC LEME 2001
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Australian Geological Survey Organisation and CSIRO
Exploration and Mining, established and supported under the
Australian Government's Cooperative Research Centres Program Cooperative Research Centre for Landscape Evolution & Mineral Exploration ____M_MINERAL Business Manager CRC LEME c/- CSIRO Division of Exploration and Mining Private Mail Bag Post Office, WEMBLEY W.A. 6014 Tel: (08) 9333 6272 Fax: (08) 9333 6146. RESOURCES Geological Survey of New South Wales

SCALE 1:100 000 1 0 1 2 3 4 5 6 7 8 9 10

> Kilometres UNIVERSAL TRANSVERSE MERCATOR PROJECTION

> > Latitude of Origin: 0° Longitude of Origin: 141′°

Datum AGD66 AMG grid zone 54

Regolith-landform unit boundary Minor roads and tracks

BROKEN HILL REGOLITH-LANDFORMS **SHEETS 7135, 7235** 7134, 7234, 7133 & 7233 FIRST EDITION 2001 **SUBJECT TO REVISION**

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Cultural features and drainage coverages from the BHEI Geoscientific GIS (1997) by D. Maidment and M. Peljo (AGSO), K. Capnerhurst (NSWDMR), G. Nichols and G. Jenkins (MESA).

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