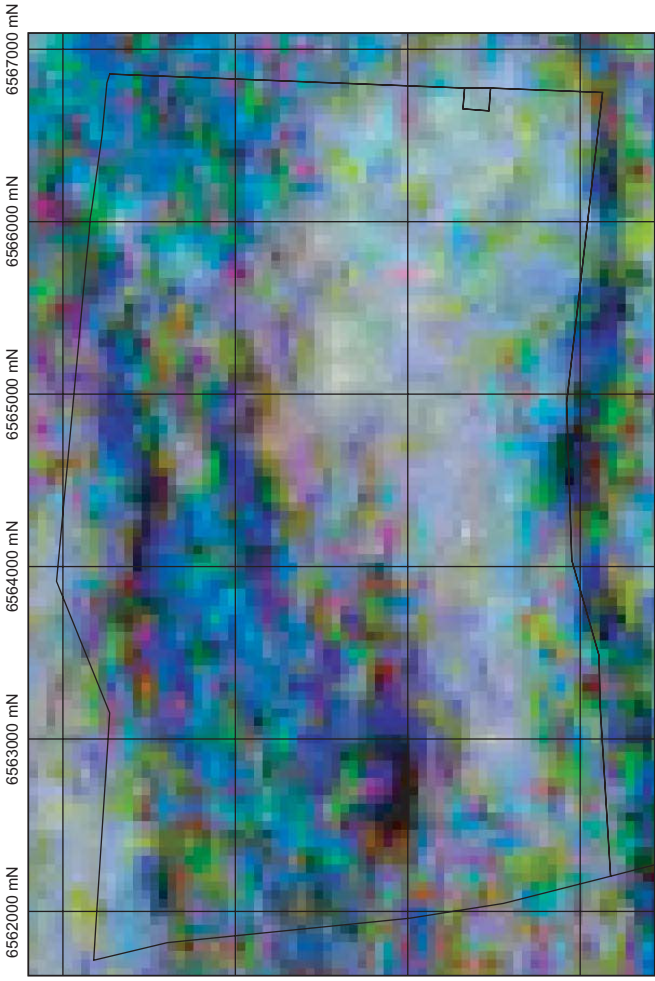


Aerial orthophoto mosaic of the South Sandstone Paddock compiled from 1:50,000 scale colour aerial photographs of the Bancannia (acquired 16.08.99) and Fowlers Gap (acquired 11.08.1999 and 03.09.1995) 1:100,000 sheets by the New South Wales Department of Lands. Photographs were orthorectified using camera parameters, the SRTM DEM and ground control points collected using hand-held GPS receivers during field work. The final ground pixel resolution of the orthophoto mosaic is approximately 3 m.



Gamma-ray spectrometric (airborne radiometric) image of the South Sandstone Paddock from the Broken Hill Exploration Initiative 2nd edition (BHEI-2) dataset of the Geological Survey, NSW Department of Primary Industries. Potassium (K), Thorium (eTh) and Uranium (eU) are displayed as red, green and blue respectively. This image highlights the Neoproterozoic rocks that dominate the map sheet and indurated Cretaceous sediments that are found within the northwest. A prominent, low-emissivity quartzite ridge of the Faraway Hills Quartzite strikes north-south in the east of the area. The central area along Homestead Creek, and the far west, display relatively high emissivity signifying slightly to moderately weathered Sturts Meadows Siltstone at surface or buried under thin, discontinuous colluvial cover. Rocks in the lower and central western portion comprise variably to highly weathered and ferruginised Sturts Meadows Siltstone with thin, discontinuous colluvial cover, displaying a range of emissions from K-rich (pinks) to eTh- (greens) and eU-rich (blues) where heavily ferruginised. Indurated Cretaceous sediments in the northwest are moderately ferruginised and have moderate eTh emissivity.

#### South Sandstone Paddock 1:12,500 regolith-landform map

Regolith-landform units compiled by I.C. Roach (CRC LEME/Australian National University) and S.M. Hill (CRC LEME, University of Adelaide), cartography and images compiled by I.C. Roach.

It is recommended that this map be referred to as:

Roach I.C. & Hill S.M. 2007. South Sandstone Paddock 1:12,500 Regolith-Landform map. Cooperative Research Centre for Landscape Environments and Mineral Exploration, Perth, WA.

The regolith-landform polygons on this map are based on an interpretation of 1:10,000 scale aerial photographs, airborne geophysical imagery (gamma-ray spectrometrics and magnetics) and extensive field mapping. The intent is to identify and characterise surface materials and landforms for the purposes of landscape evolution studies, natural resource management and mineral exploration.

CRC LEME acknowledges the support of Dr David Croft, Director, University of New South Wales' Fowlers Gap Arid Zone Research Station, in the production of this map. Shuttle Radar Topography Mission Digital Elevation Model (SRTM DEM) courtesy of NASA. Geophysical images courtesy of the Geological Survey, NSW Department of Primary Industries.

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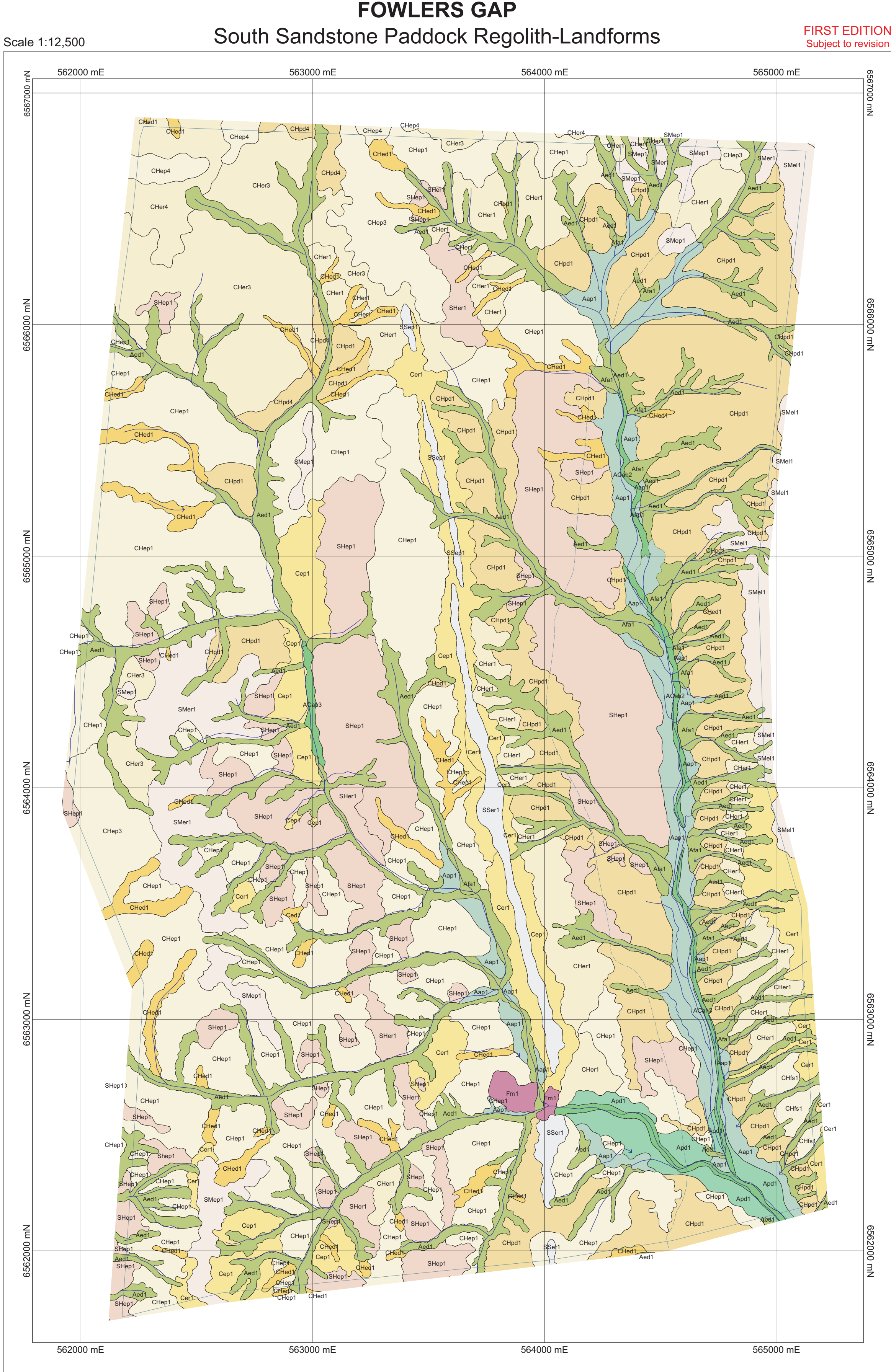
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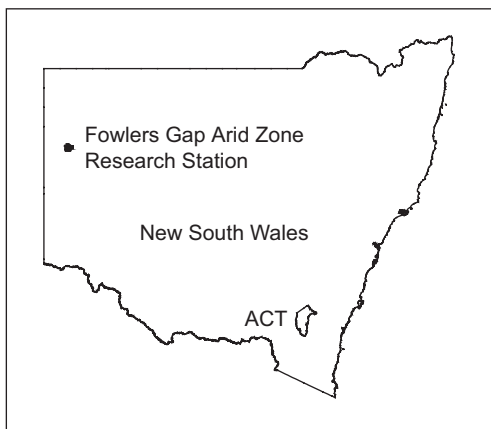
Most information is digitised from 1:10,000 scale aerial photographs or is taken directly from digital track logs of hand-held GPS devices. A small proportion of information is taken from the New South Wales Department of Primary Industry's BHEI-2 Geophysical Dataset.

CRC LEME is an unincorporated joint venture between the Australian National University, The University of Adelaide, The Curtin University of Technology, CSIRO Exploration and Mining, CSIRO Land and Water, Primary Industries and Resources South Australia, The New South Wales Department of Primary Industry and the Minerals Council of Australia, established and supported under the Australian Government's Cooperative Research Centres Program.

Copies of this map may be obtained from:  
CRC LEME  
c/o CSIRO Division of Exploration and Mining  
PO Box 1130  
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<http://crlme.org.au/>



**Publications related to this map:**  
Pain C., Chan R., Craig M., Gibson D., Kilgour P. & Wilford J. 2007. RTMAP regolith database field book and users guide. Canberra. CRC LEME Report No. 231. 101 p.  
Hill S.M. & Roach I. C. 2003. The regolith-landforms of Sandstone Paddock, Fowlers Gap, western NSW. In: Roach I.C. ed. *Advances in Regolith*. CRC LEME, pp. 193-200.  
Hill S.M. & Roach I.C. 2005. Regolith-landforms of northern Lake Paddock, Fowlers Gap Arid Zone Research Station, Western NSW. In: Roach I.C. ed. *Regolith 2005 - Ten Years of CRC LEME*. CRC LEME, pp. 139-145.



#### TRANSPORTED REGOLITH

##### Alluvial sediments

- Aap1** Red-brown, rounded to angular lithic and quartzose sand, gravel and silt. Low relief (< 9 m) landforms containing a mixture of incised channels and overbank deposits, typically associated with local decapocentres and floodouts of alluvial channels and drainage depressions. Chenopod shrubland dominated by *Atriplex vesicaria* and *Myoporum montanum*.
- Aed1** Rounded to minor angular gravel, sand and silt composed of vein quartz and lithic fragments with minor silicified sediment clasts and some weathered bedrock exposures. Incised channels and gullies and flanking valley-sides. Chenopod shrubland dominated by *Atriplex* spp. and *Maireana* spp. with riparian shrubland of *Acacia victoriae*, *Myoporum montanum*, *Haakea leucoptera*, *Xanthium* spp. and grasses including *Cymbopogon ambiguus*.
- ACa2** Rounded and angular lithic and quartzose sand, gravel and minor silt. Sandy meandering and braided channels. Riparian woodland dominated by *Acacia victoriae* and *Myoporum montanum* small trees and shrubs.
- ACa3** Rounded and angular lithic and quartzose sand, gravel and minor silt. Sandy meandering and braided channels. Riparian woodland dominated by *Casuarina pauper* trees.
- Afa1** Rounded to minor angular gravel, sand and silt composed of vein quartz and lithic fragments with minor silicified sediment clasts and some weathered bedrock exposures. Low to slight topographic relief (< 9 m) fan including distributary channels and sheetflow outwash downstream of intersection points. Chenopod shrublands dominated by *Maireana* spp., *Atriplex* spp., *Sclerolaena* spp. and *Xanthium* spp.
- Apd1** Red-brown sub-rounded to sub-angular quartzose and lithic sand, gravel and silt. Smooth, low relief (< 9 m) landforms typically associated with intersection point floodouts of alluvial channels and drainage depressions. Chenopod shrublands dominated by *Maireana* spp., *Atriplex* spp., *Sclerolaena* spp. and *Xanthium* spp.

##### Colluvial sediments

- Ced1** Angular gravel of highly ferruginised bedrock clasts with red-brown quartzose sand and silt and some weathered bedrock exposures. Incised channels and gullies and flanking valley-sides. Chenopod shrubland dominated by *Atriplex* spp. and *Maireana* spp. with riparian shrubland of *Acacia victoriae*, *Myoporum montanum* and *Xanthium* spp. and grasses including *Cymbopogon ambiguus*.
- Cep1** Angular gravel of variably kaolinitic and ferruginised weathered bedrock clasts, minor regolith carbonates and vein quartz with red-brown quartzose sand and silt. Highly friable when not indurated. Low to slight topographic relief (< 9 m), locally shedding sediment into flanking channels and drainage depressions. Sparse chenopod shrubland dominated by *Atriplex vesicaria* and *Sclerolaena* spp.
- Cer1** Angular, lithic (mostly quartzite clasts but also variably kaolinitised and ferruginised bedrock clasts) and quartzose gravel with red-brown quartzose sand and silt. Slight topographic relief (9-30 m). Chenopod shrubland dominated by *Atriplex vesicaria* and *Sclerolaena* spp.
- CHed1** Angular lithic (dominantly quartzite clasts) and quartzose gravel and red-brown quartzose sand and silt. Shallow bedrock subcrop. Moderate relief (9-30 m), locally shedding sediment. Chenopod shrubland dominated by *Atriplex vesicaria*, *Maireana* spp. and *Sclerolaena* spp.
- CHep1** Angular lithic (dominantly quartzite clasts) and quartzose gravel and red-brown quartzose sand and silt. Shallow bedrock subcrop. Low-relief (< 9 m), low gradient, locally shedding sediment. Chenopod shrubland dominated by *Atriplex vesicaria*, *Maireana* spp. and grasses.
- CHep3** Rounded to sub-angular gravel and sand of quartzose and silicified sediment clasts with muscovite. Minor red-brown quartzose sand and silt. Low-relief (< 9 m), low gradient, locally shedding sediment. Chenopod shrubland dominated by *Atriplex vesicaria*, *Maireana* spp. and scattered *Casuarina pauper* trees.
- CHep4** Rounded and angular gravel and sand of quartzose, silicified sediment and ferruginised sediment and saprolite clasts with muscovite. Minor red-brown quartzose sand and silt. Low-relief (< 9 m), low gradient, locally shedding sediment. Chenopod shrubland dominated by *Atriplex vesicaria* and *Maireana* spp.
- CHer1** Angular lithic (dominantly quartzite clasts) and quartzose gravel and red-brown quartzose sand and silt. Shallow bedrock subcrop. Moderate relief (9-30 m), locally shedding sediment. Chenopod shrubland dominated by *Atriplex vesicaria*, *Maireana* spp. and *Sclerolaena* spp.
- CHer3** Rounded to sub-angular gravel and sand of quartzose and silicified sediment clast gravel with muscovite. Minor red-brown quartzose sand and silt. Moderate relief (9-30 m), locally shedding sediment. Chenopod shrubland dominated by *Atriplex vesicaria*, *Maireana* spp. and scattered *Casuarina pauper* trees.
- CHer4** Rounded and angular gravel and sand of quartzose, silicified sediment and ferruginised sediment and saprolite clast gravel with muscovite. Minor red-brown quartzose sand and silt. Moderate relief (9-30 m), locally shedding sediment. Chenopod shrubland dominated by *Atriplex vesicaria* and *Maireana* spp.
- CHf1** Angular lithic (dominantly quartzite clasts) and quartzose gravel and red-brown quartzose sand and silt. Low relief (< 9 m) broad fan with 'contour band' surface lag pattern. Chenopod shrubland dominated by *Atriplex vesicaria*, *Maireana* spp. and *Sclerolaena* spp.
- CHpd1** Angular lithic (dominantly quartzite clasts) and quartzose gravel and red-brown quartzose sand and silt. Shallow bedrock subcrop. Low-relief (< 9 m), with surficial contour band patterns and receiving sediment. Chenopod shrubland dominated by *Atriplex vesicaria*, *Maireana* spp. and *Sclerolaena* spp.
- CHpd4** Rounded and angular, quartzose, silicified sediment and ferruginised sediment and saprolite clast gravel and sand with muscovite. Minor red-brown quartzose sand and silt. Low-relief (< 9 m), with surficial contour band patterns and receiving sediment. Chenopod shrubland dominated by *Atriplex vesicaria*, *Maireana* spp. and *Sclerolaena* spp.

##### Fill

- Fm1** Regolith disturbed by machinery and construction. Irregular landforms. Sparse vegetation, often introduced weed species, to barren.

#### IN-SITU REGOLITH

##### Saprolite

- SSEP1** Hard, quartzose, slightly weathered bedrock. Prominent conchoidal fractures and tight joint sets. Low-relief (< 9 m), low gradient, locally shedding sediment. Chenopod shrublands dominated by *Atriplex vesicaria*, *Sclerolaena* spp. with scattered *Acacia aneura* trees.
- SSEr1** Hard, quartzose, slightly weathered bedrock. Prominent conchoidal fractures and tight joint sets. Moderate relief (9-30 m), locally shedding sediment. Chenopod shrublands dominated by *Atriplex vesicaria* and *Sclerolaena* spp. with sparse *Acacia aneura* trees.
- SMe1** Variably kaolinitic and ferruginised weathered bedrock with prominent bedding planes and minor regolith carbonates and quartz veins. Highly friable when not indurated. Moderate-relief (30-90 m), high gradient, locally shedding sediment. Sparse chenopod shrubland dominated by *Atriplex vesicaria*, *Maireana* spp. and *Sclerolaena* spp. with scattered *Casuarina pauper* trees.
- SMep1** Kaolinitic and micaceous weathered bedrock with prominent cleavage planes and minor quartz veins. Moderate relief (9-30 m), locally shedding sediment. Chenopod shrublands dominated by *Atriplex vesicaria* and *Sclerolaena* spp. with scattered *Casuarina pauper* trees.
- SMer1** Variably kaolinitic and ferruginised weathered bedrock with or without prominent cleavage planes. Highly friable where not indurated. Minor regolith carbonates and quartz veins. Low-relief (< 9 m), low gradient, locally shedding sediment. Sparse chenopod shrubland dominated by *Atriplex vesicaria* and *Sclerolaena* spp. with scattered *Casuarina pauper* trees.
- SHep1** Variably kaolinitic and ferruginised weathered bedrock with or without prominent cleavage planes. Highly friable where not indurated. Minor regolith carbonates and quartz veins. Moderate relief (9-30 m), locally shedding sediment. Sparse chenopod shrubland dominated by *Atriplex vesicaria* and *Sclerolaena* spp. and scattered *Casuarina pauper* trees.
- SHer1** Variably kaolinitic and ferruginised weathered bedrock with or without prominent cleavage planes. Highly friable where not indurated. Minor regolith carbonates and quartz veins. Moderate relief (9-30 m), locally shedding sediment. Sparse chenopod shrubland dominated by *Atriplex vesicaria* and *Sclerolaena* spp. and scattered *Casuarina pauper* trees.

- Drainage line from 1:25,000 topographic sheet
- Track
- Fence

#### RLU key descriptions for the South Sandstone Regolith-Landform map

The Regolith-Landform Unit (RLU) polygon codes provide a framework to present the regolith materials and associated landforms on the map sheet across the area. They are designed to first list the regolith lithology in capital letter codes, then landform in lower case codes. The modifier number following each RLU code allows for discrimination of variations within broader regolith-landform assemblages (typically due to differences in composition, vegetation assemblages or other attributes). The RLU codes are largely based upon interpretation of the dominant regolith-landform process responsible for their formation (i.e., genetic process), following the scheme of Pain *et al.* (2000). Lithological and other RLU attributes are described in the map legend descriptions and accompanying map report.

RLU codes for regolith materials used here are:

- A Alluvial sediments
- AC Alluvial channel sediments
- C Colluvial sediments
- CH Sheetflow sediments
- F Fill
- SS Slightly weathered bedrock (saprock)
- SM Moderately weathered bedrock (saprolite)
- SH Highly weathered bedrock (saprolite)

RLU codes for landforms used here are:

- ah alluvial channel
- ap alluvial plain
- ed drainage depression
- ep erosional plain (0-9 m relief)
- er erosional rise (9-30 m relief)
- el erosional low hill (30-90 m relief)
- fa alluvial fan
- fs sheetflood fan
- m man-made
- pd depositional plain (0-9 m relief)

