

SANDY LOAM OVER RED SANDY CLAY

General Description: Sand to light sandy loam over a red sandy clay loam to sandy clay, calcareous with depth

Landform: Dunefields of closely spaced low to moderate parallel sandhills.

Substrate: Massive medium to coarse textured sediments (Parilla Sand equivalent).

Vegetation: Mallee



Type Site:	Site No.:	MM142	1:50,000 mapsheet:	6928-1 (Caliph)
	Hundred:	Allen	Easting:	445870
	Section:	2	Northing:	6164100
	Sampling date:	23/02/1999	Annual rainfall:	280 mm average

Dune slope. Loose surface, no stones.

Soil Description:

Depth (cm)	Description
0-7	Brown soft single grain light sandy loam. Abrupt to:
7-14	Yellowish red soft single grain light sandy loam. Sharp to:
14-25	Red very hard sandy medium clay with coarse columnar structure. Clear to:
25-70	Orange hard massive very highly calcareous fine sandy light clay. Gradual to:
70-110	Reddish yellow friable massive highly calcareous sandy light clay with 2-10% calcrete fragments (20-60 mm). Gradual to:
110-165	Reddish yellow friable massive moderately calcareous light sandy clay loam.



Classification: Calcic, Mesonatric, Red Sodosol; medium, non-gravelly, loamy / clayey, deep



Summary of Properties

- Drainage:** Moderately well drained. Water perches on the dense clayey subsoil for up to a week following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is low, as indicated by the exchangeable cation data. Phosphorus deficiencies are usual (low at sampling site). Nitrogen levels depend on cropping history and legume status of pastures. Zinc and copper are occasionally deficient (zinc levels are low at sampling site). Organic carbon levels are also sub-optimal.
- pH:** Neutral at the surface, strongly alkaline with depth.
- Rooting depth:** Not recorded. Estimate 25 cm in pit, with some roots to 70 cm.
- Barriers to root growth:**
- Physical:** The dense clayey subsoil restricts roots to surfaces of aggregates.
 - Chemical:** High pH and sodicity from 25 cm impede deeper root growth.
- Waterholding capacity:** Approximately 45 mm in potential rootzone.
- Seedling emergence:** Satisfactory.
- Workability:** Soft to loose surface is easily worked.
- Erosion Potential:**
- Water:** Low.
 - Wind:** Moderately low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO ₄ mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	6.9	6.5	-	0.07	1.0	0.54	11	323	-	0.8	0.2	-	4.3	0.2	4.4	2.6	0.8	< 0.1	0.45	2.2
0-7	7.4	7.4	< 0.1	0.06	0.9	0.40	7	225	-	0.8	0.3	-	2.9	0.2	4.5	3.0	0.82	< 0.1	0.52	2.2
7-14	7.0	6.7	< 0.1	0.04	0.5	0.30	2	91	-	0.5	0.6	-	1.1	0.2	3.2	1.8	0.63	< 0.1	0.18	3.1
14-25	8.7	7.7	0.3	0.14	1.3	0.27	1	93	-	3.0	0.2	-	0.2	0.1	14.0	4.2	5.6	2.2	0.32	15.7
25-70	9.3	8.2	15	0.58	5.5	0.11	1	115	-	8.2	0.8	-	0.3	0.1	8.4	2.8	4.8	2.7	0.32	32.1
70-110	9.1	8.2	5.9	0.55	3.6	0.07	2	124	-	6.6	0.5	-	0.5	0.2	6.5	1.8	3.7	1.9	0.36	29.2
110-165	9.2	8.3	1.4	0.58	8.1	0.05	1	162	-	7.6	0.3	-	0.2	0.1	5.7	1.4	3.1	3.1	0.38	54.4

- Note:** Paddock sample bulked from cores (0-10 cm) taken around the pit.
CEC (cation exchange capacity) is a measure of the soil's capacity to store and release major nutrient elements.
ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the CEC.

Further information: [DEWNR Soil and Land Program](#)

