

SHALLOW CALCAREOUS SANDY LOAM ON CALCRETE

General Description: *Calcareous sandy loam to sandy clay loam with variable rubble, overlying calcrete at shallow depth*

Landform: Gently inclined slopes and outwash fans

Substrate: Highly calcareous sandy clay loam with variable rubble, capped by sheet (Ripon) calcrete.

Vegetation: Mallee



Type Site:	Site No.:	MM064	1:50,000 mapsheet:	6827-2 (Buccleuch)
	Hundred:	Peake	Easting:	405800
	Section:	19	Northing:	6085250
	Sampling date:	27/08/1992	Annual rainfall:	380 mm average

Gentle slope. Firm surface with 2-10% calcrete stone.

Soil Description:

Depth (cm)	Description
0-10	Reddish brown soft moderately calcareous sandy loam with 10-20% carbonate nodules (60-200 mm). Clear to:
10-25	Brown massive firm very highly calcareous light sandy clay loam with more than 50% carbonate nodules (200-600 mm). Sharp to:
25-70	Sheet calcrete. Clear to:
70-120	Reddish yellow massive very highly calcareous sandy clay loam with 20-50% carbonate nodules (6-60 mm). Diffuse to:
120-180	Reddish yellow massive very highly calcareous sandy clay loam with 2-10% carbonate nodules (6-60 mm). Diffuse to:
180-310	Orange massive highly calcareous light sandy clay loam with 20-50% carbonate nodules (20-60 mm).



Classification: Epihypersodic, Petrocalcic, Lithocalcic Calcarosol; medium, gravelly, loamy / loamy, shallow



Summary of Properties

- Drainage:** Well drained. Soil never remains saturated for more than a few days.
- Fertility:** Inherent fertility is moderately low, as indicated by the exchangeable cation data. Deficiencies of phosphorus, nitrogen, zinc, copper and manganese are all likely.
- pH:** Alkaline at the surface, strongly alkaline with depth.
- Rooting depth:** 25 cm in pit.
- Barriers to root growth:**
- Physical:** Calcrete at shallow depth severely restricts further root development.
 - Chemical:** Even where roots penetrate the calcrete, high pH, salinity, boron concentrations and sodicity prevent roots growing any deeper.
- Waterholding capacity:** 15 mm in rootzone.
- Seedling emergence:** Slight limitations due to stoniness.
- Workability:** Firm surface is easily worked, but stones can interfere with and abrade tillage implements.
- Erosion Potential:**
- Water:** Low.
 - Wind:** 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	Boron mg/kg	Trace Elements mg/kg (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
										Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-10	8.9	8.1	1	0.13	0.97	0.7	3	200	1.3	0.1	-	2.4	0.54	7.9	6.98	2.19	0.26	0.53	3.3
10-25	9.4	8.3	4	0.48	4.78	0.7	4	270	5.5	0.13	-	2.4	1.7	9.5	5.60	2.85	1.62	0.70	17.0
25-70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
70-120	9.5	8.7	44	2.67	30.2	0.1	<2	470	19	0.25	-	0.64	0.11	6.0	1.74	2.90	3.71	1.22	41.2
120-180	9.4	8.6	39	2.33	26.6	0.1	<2	350	12	0.15	-	0.65	0.37	3.7	1.62	2.20	2.14	0.81	57.8
180-310	9.3	8.5	15	1.78	23.3	<0.1	<2	270	10	0.15	-	0.51	0.32	3.2	1.55	1.85	1.51	0.61	47.2

Note: 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](#)

