

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 sheet:	6827-2 (Buccleuch)	Hundred:	Peake
Annual rainfall:	400 mm	Sampling date:	27/08/92
Landform:	Gentle slope		
Surface:	Firm with 2-10% calcrete stone		

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
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.
Water holding capacity	15 mm in root zone.
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	
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.