

SHALLOW SAND OVER CALCRETE

General Description: *Loose sand with a bleached A2 layer over a brown more clayey subsoil, abruptly overlying sheet or rubbly calcrete grading to soft coarse grained highly calcareous sediments*

Landform: Undulating rises.

Substrate: Tertiary deposits capped by sheet or rubbly calcrete.

Vegetation: Mallee scrub.



Type Site:	Site No.:	MM149	1:50,000 mapsheet:	6828-3 (Caurnamont)
	Hundred:	Younghusband	Easting:	364800
	Section:	101	Northing:	6136300
	Sampling date:	03/10/2001	Annual rainfall:	335 mm average

Upper slope of an undulating rise, 5% slope. Loose surface with no stones.

Soil Description:

Depth (cm)	Description
0-10	Dark reddish brown soft single grain loamy sand. Clear to:
10-28	Reddish yellow soft single grain sand. Abrupt to:
28-32	Pink (bleached) soft single grain sand. Sharp to:
32-43	Yellowish red and brownish yellow friable clayey sand with weak very coarse columnar structure. Clear to:
43-52	Strong brown friable massive very highly calcareous sandy loam with 10-20% fine carbonate segregations. Sharp to:
52-85	Strongly cemented massive calcrete pan. Gradual to:
85-100	Yellow firm massive very highly calcareous sandy loam.



Classification: Calcareous, Petrocalcic, Bleached-Orthic Tenosol; medium, non-gravelly, sandy / loamy, moderate



Summary of Properties

Drainage:	Rapidly drained. The soil is unlikely to remain wet for more than a few hours.
Fertility:	Inherent fertility is low due to low clay content of surface soil. The low nutrient retention capacity is exacerbated by low organic carbon levels. Trace element and sulphur deficiencies are likely. Maintaining adequate concentrations of phosphorus and nitrogen is difficult.
pH:	Alkaline to the calcrete, strongly alkaline below the calcrete.
Rooting depth:	52 cm (to the calcrete) in the pit.
Barriers to root growth:	
Physical:	The calcrete is a major barrier to root growth, although less so where it is rubbly.
Chemical:	Low nutrient retention capacity is the main chemical limitation. There are no toxic concentrations above the calcrete.
Waterholding capacity:	Approximately 50 mm in the rootzone.
Seedling emergence:	Satisfactory, although water repellence may be a problem in some seasons.
Workability:	The loose surface is easily worked.
Erosion Potential:	
Water:	Low.
Wind:	Moderate.

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	
0-10	8.4	7.9	0.2	0.07	-	0.45	15	202	2.3	1.0	-	-	-	-	6.2	4.91	0.72	0.06	0.54	1.0
10-28	8.6	7.9	0.1	0.06	-	0.17	2	110	1.4	0.7	-	-	-	-	4.9	3.95	0.56	0.05	0.31	1.0
28-32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32-43	8.7	8.1	1.0	0.09	-	0.14	2	224	1.4	1.2	-	-	-	-	9.8	7.12	2.04	0.10	0.57	1.0
43-52	8.9	8.1	7.1	0.10	-	0.21	2	248	1.8	1.5	-	-	-	-	11.1	7.76	2.55	0.15	0.64	1.4
52-85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
85-100	9.6	8.5	20.4	0.24	-	0.17	2	398	2.6	4.2	-	-	-	-	11.5	6.47	2.17	1.81	1.01	15.8

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](#)

