

# SHALLOW CALCAREOUS SANDY LOAM ON CALCRETE

**General Description:** *Calcareous sandy loam with variable rubble over calcrete at shallow depth*

**Landform:** Gently undulating rises.

**Substrate:** Calcrete capped highly calcareous coarse to medium grained sediments

**Vegetation:** Mallee



**Type Site:** Site No.: MP007

1:50,000 sheet: 6728-2 (Mannum)      Hundred: Finniss

Annual rainfall: 300 mm      Sampling date: 04/08/92

Landform: Upper slope of gently undulating rise, 2% slope

Surface: Soft with 20-50% surface calcrete

**Soil Description:**

Depth (cm)	Description
0-5	Brown loose sandy loam. Abrupt to:
5-13	Brown slightly calcareous fine sandy loam. Sharp to:
13-60	Brown highly calcareous fine sandy loam with more than 50% carbonate nodules, most larger than 60 mm. Sharp to:
60-80	Calcrete pan. Clear to:
80-170	Pale brown highly calcareous loamy coarse sand with more than 50% carbonate nodules. Gradual to:
170-230	Pink highly calcareous sandy loam with 20-50% carbonate nodules.



**Classification:** Epibasic, Petrocalcic, Lithocalcic Calcarosol; medium, moderately gravelly, loamy / loamy, moderate

## Summary of Properties

<b>Drainage</b>	Rapidly drained. The soil is unlikely to remain wet for more than a few hours following heavy or prolonged rainfall.
<b>Fertility</b>	Natural fertility is moderately low due to low clay content, although levels of all measured nutrient elements except phosphorus are satisfactory. Organic carbon concentration is good.
<b>pH</b>	Alkaline throughout.
<b>Rooting depth</b>	60 cm in pit.
<b>Barriers to root growth</b>	
<b>Physical:</b>	The calcrete is a major physical barrier, but at 60 cm depth still allows reasonable root growth.
<b>Chemical:</b>	There are no chemical barriers above the calcrete.
<b>Water holding capacity</b>	Approximately 40 mm above the calcrete.
<b>Seedling emergence:</b>	Good.
<b>Workability:</b>	Good, although surface calcrete interferes with implement operation.
<b>Erosion Potential</b>	
<b>Water:</b>	Low
<b>Wind:</b>	Moderately low. The surface is sandy, but the stone provides some protection.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	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	
Paddock	8.0	7.6	<0.1	0.13	0.82	1.38	13	460	1.7	0.2	4.8	3.8	0.6	7.9	6.4	0.9	0.19	0.84	2.4
0-5	8.1	7.7	0.3	0.15	0.63	1.22	21	510	1.5	0.2	5.5	4.3	1.2	7.8	6.3	0.9	0.18	0.99	2.3
5-13	8.4	8.0	1.0	0.17	0.81	2.06	17	560	2.9	0.3	6.4	4.1	0.6	13.9	11.4	1.7	0.21	1.20	1.5
13-60	8.9	8.4	17.2	0.30	1.90	1.33	<5	350	4.9	0.5	3.6	1.4	0.4	9.0	7.1	3.3	0.82	0.55	9.1
60-80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80-170	9.1	8.6	61.7	1.16	9.50	0.33	<5	510	5.7	0.3	0.4	0.1	0.3	4.3	1.5	1.5	1.92	1.14	44.7
170-230	9.1	8.6	48.5	1.40	13.23	0.27	<5	630	7.0	0.3	0.6	0.1	0.4	5.0	0.7	2.1	2.16	1.49	43.2

**Note:** Paddock sample bulked from 20 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