

## SHALLOW SANDY LOAM OVER CALCRETE

**General Description:** *Sandy loam to sandy clay loam with variable carbonate rubble, shallow over calcrete*

**Landform:** Gently undulating plains.

**Substrate:** Calcreted calcarenite (Bridgewater Formation).

**Vegetation:** Mallee scrub (*Euc. porosa*, *Euc. foecunda*, *Melaleuca lanceolata*)



**Type Site:** Site No.: MM077

1:50,000 sheet: 6826-1 (Coonalpyn)      Hundred: Kirkpatrick

Annual rainfall: 425 mm      Sampling date: 12/10/92

Landform: Rise on gently undulating plain

Surface: Firm with 20-50% calcrete stone (60-200 mm)

**Soil Description:**

Depth (cm)	Description
0-8	Brown friable massive heavy sandy loam with 20-50% carbonate nodules (20-60 mm). Abrupt to:
8-18	Yellowish red friable massive heavy sandy clay loam with 20-50% carbonate nodules (20-60 mm). Sharp to:
18-35	Laminar calcrete. Abrupt to:
35-80	Laminar calcrete. Clear to:
80-120	Yellow and yellowish brown very highly calcareous heavy sandy clay loam with more than 50% carbonate nodules (20-60 mm). Clear to:
120-170	Orange and light grey very highly calcareous massive light sandy clay with 20-50% carbonate nodules (20-60 mm) and 20-50% fine carbonate segregations.



**Classification:** Haplic, Petrocalcic, Red Kandosol; medium, moderately gravelly, loamy / clay loamy, very shallow

### Summary of Properties

<b>Drainage</b>	Well drained. Soil rarely remains saturated for more than a few days.
<b>Fertility</b>	Inherent fertility is moderately low, as indicated by the exchangeable cation data. Phosphorus and nitrogen applications are needed regularly. Zinc and copper deficiencies occasionally show up - concentrations of both are low at sampling site. Manganese may be required on cereals. Organic carbon levels are slightly low.
<b>pH</b>	Alkaline throughout.
<b>Rooting depth</b>	18 cm in pit.
<b>Barriers to root growth</b>	
<b>Physical:</b>	The calcrete imposes a severe restriction on root growth, so depth is critical.
<b>Chemical:</b>	There are no chemical limitations above the calcrete.
<b>Water holding capacity</b>	15 mm in root zone.
<b>Seedling emergence:</b>	Satisfactory. Can be reduced by stones.
<b>Workability:</b>	Firm surface is easily worked, but stone can interfere with and abrade equipment.
<b>Erosion Potential</b>	
<b>Water:</b>	Low.
<b>Wind:</b>	Low.

### 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	8.4	7.6	<1	0.11	0.61	1.1	33	260	1.1	0.07	9.4	3.9	0.26	9.3	9.19	0.61	0.04	0.58	0.4
0-8	8.3	7.6	1	0.09	0.59	1.1	24	170	1.1	0.08	11	4.1	0.29	9.8	9.42	0.60	0.04	0.45	0.4
8-18	8.3	7.6	<1	0.08	0.45	0.6	7	130	0.9	0.06	10	1	0.1	11.8	10.78	0.63	0.10	0.37	0.8
18-80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80-120	9.2	8.2	54	0.13	0.61	0.1	<2	140	0.65	0.11	2.0	0.35	0.35	7.9	4.17	4.52	0.19	0.35	2.4
120-170	9.4	8.2	38	0.15	0.68	<0.1	<2	190	1	0.08	3.4	0.43	0.15	7.6	2.99	5.36	0.59	0.46	7.8

**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.