

## SANDY LOAM OVER POORLY STRUCTURED BROWN CLAY

**General Description:** *Sandy loam over coarsely structured dispersive brown mottled clay, calcareous with depth*

**Landform:** Gently undulating plains.

**Substrate:** Hard coarsely structured clay of Pleistocene age (Blanchetown equivalent).

**Vegetation:** Mallee



<b>Type Site:</b>	Site No.:	MM041	1:50,000 mapsheet:	6927-2 (Parrakie)
	Hundred:	Allenby	Easting:	448200
	Section:	30	Northing:	6079400
	Sampling date:	29/11/1991	Annual rainfall:	380 mm average

Flat, firm surface, no stones.

### Soil Description:

Depth (cm)	Description
0-8	Dark brown firm sandy loam. Abrupt to:
8-15	Light brown firm loamy sand. Sharp to:
15-35	Brown and pale brown mottled sandy clay with coarse columnar structure. Diffuse to:
35-80	Reddish yellow massive very highly calcareous light clay. Diffuse to:
80-120	Light brownish grey very highly calcareous medium clay with weak coarse angular blocky structure. Diffuse to:
120-175	Pale brown highly calcareous medium clay with moderate coarse angular blocky structure. Diffuse to:
175-190	Brown and olive grey mottled medium heavy clay with moderate coarse angular blocky structure.



**Classification:** Hypercalic, Mottled-Hypernatric, Brown Sodosol; medium, non-gravelly, loamy / clayey, deep



## Summary of Properties

<b>Drainage:</b>	Imperfectly drained. Water perches on the clayey subsoil for up to several weeks following heavy or prolonged rainfall.
<b>Fertility:</b>	Inherent fertility is moderately low as indicated by the exchangeable cation data. Deficiencies of phosphorus, nitrogen, zinc and copper can be expected - the latter two are marginally deficient at the sampling site. Increased organic matter will improve nutrient retention capacity - organic carbon level is low at sampling site.
<b>pH:</b>	Acidic at the surface, strongly alkaline at depth.
<b>Rooting depth:</b>	60 cm in pit.
<b>Barriers to root growth:</b>	
<b>Physical:</b>	The dense dispersive subsoil restricts root growth and reduces water use efficiency.
<b>Chemical:</b>	High pH, boron and sodicity levels from 15 cm impede root growth.
<b>Waterholding capacity:</b>	90 mm in rootzone.
<b>Seedling emergence:</b>	Slight limitation due to poor surface structure and waterlogging in wet seasons.
<b>Workability:</b>	Fair. Restricted moisture range over which soil can be safely worked.
<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	6.6	6.4	<0.1	0.13	1.73	0.82	32	300	2.0	0.21	29	5.1	0.47	4.6	3.98	1.44	0.36	0.59	7.8
0-8	5.8	5.4	0.7	0.09	1.04	0.85	26	260	1.7	0.24	60	6.5	0.49	4.0	3.22	0.92	0.17	0.53	4.3
8-15	6.4	5.9	<0.1	0.06	0.66	0.19	6.7	80	1.7	0.09	16	1.6	0.13	2.1	1.45	0.54	0.27	0.14	na
15-35	9.3	7.8	1.3	0.44	2.46	0.21	2.8	500	21	0.36	24	0.68	0.10	14.7	3.89	7.43	4.87	1.18	33.1
35-60	9.5	8.3	13	1.02	5.94	0.18	<2.0	670	27	1.2	18	0.82	0.11	20.9	3.93	7.83	10.79	1.81	51.6
60-80	9.5	8.3	21	1.16	8.44	0.15	<2.0	570	19	0.88	15	0.59	0.11	20.3	3.22	5.54	9.52	1.36	46.9
80-120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120-175	9.3	8.3	19	1.47	11.09	0.10	<2.0	620	21	0.89	15	0.80	0.11	16.2	2.92	7.77	10.49	1.54	64.8

**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.

**Further information:** [DEWNR Soil and Land Program](#)

