

## SAND OVER DISPERSIVE RED CLAY

**General Description:** *Medium thickness sand with a bleached A2 layer, abruptly overlying a coarsely structured dispersive red clay, calcareous with depth*

**Landform:** Flats between very gently sloping rises.

**Substrate:** Pleistocene age heavy clay (Blanchetown Clay equivalent).

**Vegetation:** Mallee



<b>Type Site:</b>	Site No.:	MM035	1:50,000 mapsheet:	7027-4 (Karte)
	Hundred:	Bews	Easting:	455400
	Section:	10	Northing:	6101700
	Sampling date:	20/11/1991	Annual rainfall:	340 mm average

Flat, loose to soft surface, no stones.

### Soil Description:

Depth (cm)	Description
0-9	Dark greyish brown soft loamy sand. Abrupt to:
9-18	Brown soft loamy sand. Clear to:
18-23	Bleached soft sand. Sharp to:
23-38	Yellowish red and yellowish brown hard sandy clay with coarse columnar structure. Gradual to:
38-54	Red and yellowish brown hard medium clay with coarse columnar structure and minor fine carbonate. Gradual to:
54-135	Yellowish red and brownish yellow massive calcareous sandy clay with 10-20% carbonate nodules. Diffuse to:
135-165	Red and pale brown heavy clay with coarse prismatic structure. Diffuse to:
165-190	Red and pale brown heavy clay with coarse prismatic structure.



**Classification:** Hypercalcic, Mottled-Hypernatric, Red Sodosol; medium, non-gravelly, sandy / clayey, deep



## Summary of Properties

<b>Drainage:</b>	Moderately well drained. Water perches on the clayey subsoil for a week or so following heavy or prolonged rain.
<b>Fertility:</b>	Inherent fertility is low, as indicated by the exchangeable cation data. Although the subsoil has high nutrient retention capacity, the sandy surface soil does not, and deficiencies of phosphorus, nitrogen, zinc, copper and occasionally manganese are likely without regular fertilizer application. Organic matter levels are satisfactory.
<b>pH:</b>	Slightly acidic at the surface, strongly alkaline with depth.
<b>Rooting depth:</b>	75 cm in pit, but few roots below 54 cm.
<b>Barriers to root growth:</b>	
<b>Physical:</b>	The dispersive clayey subsoil impedes uniform root development.
<b>Chemical:</b>	High pH, sodicity and boron at shallow depth restrict root growth.
<b>Waterholding capacity:</b>	100 mm in rootzone.
<b>Seedling emergence:</b>	Satisfactory, but can be reduced by water repellence in dry years.
<b>Workability:</b>	Loose / soft surface is easily worked.
<b>Erosion Potential:</b>	
<b>Water:</b>	Low.
<b>Wind:</b>	Moderate.

## 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	6.1	6.1	<0.1	0.09	0.71	1.0	23	210	1.6	0.11	31	4.6	1.1	3.0	2.8	0.83	0.16	0.38	na
0-9	6.2	6.0	<0.1	0.09	0.69	0.84	24	270	1.7	0.13	25	3.5	1.4	2.7	2.5	0.87	0.22	0.28	na
9-18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-23	6.7	6.1	<0.1	0.06	0.63	0.19	5.1	170	0.8	0.05	8.9	0.21	0.09	1.7	0.90	0.39	0.22	0.13	na
23-38	8.8	7.2	1.5	0.22	1.83	0.29	2.8	470	7.7	0.16	22	0.16	0.09	13.2	3.7	7.28	4.5	1.0	34.1
38-54	9.3	8.1	4.9	0.78	4.20	0.26	2.4	640	20	0.42	8.9	0.22	0.11	28.6	4.6	10.4	9.7	1.9	33.9
54-90	9.6	8.2	32	0.95	6.22	0.17	<2.0	450	17	0.40	3.7	0.11	0.07	18.8	2.9	6.4	7.6	1.3	40.4
90-135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
135-165	7.9	7.2	1.3	1.3	7.81	0.10	<2.0	480	12	0.65	8.6	0.18	0.07	18.4	1.1	9.3	10.1	1.2	54.9

**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](#)

