

## SAND OVER RED SANDY CLAY

**General Description:** *Thick sand to loamy sand over a red sandy clay loam to sandy clay, calcareous with depth*

**Landform:** Flats between sandhills

**Substrate:** Tertiary sandy clay to clayey sand.

**Vegetation:** Mallee



**Type Site:** Site No.: MM032

1:50,000 sheet: 7027-4 (Karte)

Hundred: Kingsford

Annual rainfall: 340 mm

Sampling date: 15/11/91

Landform: Flat

Surface: Soft with no stones

### Soil Description:

Depth (cm)	Description
0-12	Dark brown soft loamy sand. Abrupt to:
12-33	Brown soft loamy sand. Abrupt to:
33-35	Reddish yellow soft sand with 2-10% ironstone gravel. Sharp to:
35-53	Red firm sandy clay with coarse columnar structure. Gradual to:
53-72	Red and brownish yellow firm sandy clay with coarse columnar structure and minor fine carbonate. Diffuse to:
72-110	Yellowish red and yellowish brown firm sandy clay loam with minor fine carbonate. Diffuse to:
110-200	Yellowish brown and light brown massive clayey sand with minor fine carbonate.



**Classification:** Haplic, Calcic, Red Chromosol; thick, non-gravelly, sandy / clayey, deep

## Summary of Properties

<b>Drainage</b>	Well drained. Soil never remains saturated for more than a few days.
<b>Fertility</b>	Inherent fertility is moderately low, as indicated by the exchangeable cation data. Phosphorus, nitrogen, zinc and copper deficiencies are all likely. Manganese may also be required for lupins. Organic carbon levels are good for this environment.
<b>pH</b>	Neutral at the surface, strongly alkaline with depth.
<b>Rooting depth</b>	53 cm in pit.
<b>Barriers to root growth</b>	
<b>Physical:</b>	The clayey subsoil restricts root growth to some extent and prevents uniform root distribution patterns.
<b>Chemical:</b>	High pH at depth, but low fertility is a more significant impediment to root growth.
<b>Water holding capacity</b>	55 mm in root zone.
<b>Seedling emergence:</b>	Satisfactory, but can be reduced by water repellence in dry years.
<b>Workability:</b>	Loose to 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	7.1	6.9	1	0.09	0.62	1.0	13	210	0.81	0.08	13	8.3	0.44	3.2	2.3	0.60	<0.10	0.50	3.1
0-12	7.3	6.8	1	0.04	0.31	0.8	9	140	0.52	0.08	12	7.2	0.21	2.8	1.9	0.66	<0.10	0.43	na
12-33	8.8	7.9	2	0.07	0.29	0.3	3	93	0.32	<0.05	4.3	3.5	<0.06	1.4	0.7	0.37	<0.10	0.35	na
33-35	8.1	7.3	1	0.02	0.21	0.1	2	41	1.2	<0.05	3.7	0.92	<0.06	1.2	0.5	0.37	<0.10	0.36	na
35-53	8.8	7.9	2	0.10	0.31	0.2	3	180	2.4	0.16	5.8	0.69	<0.06	7.8	4.3	3.6	0.14	0.61	1.8
53-72	8.9	8.0	2	0.11	0.27	0.2	3	200	3.4	0.21	4.2	0.34	<0.06	10.0	5.5	4.7	0.23	0.58	2.3
72-110	9.2	8.2	3	0.12	0.30	0.1	2	160	2.5	0.22	3.3	0.13	<0.06	6.9	1.1	5.6	0.37	0.55	5.4
110-150	9.6	8.3	2	0.13	0.39	<0.1	<2	100	1.6	0.16	2.9	0.11	<0.06	3.0	0.4	2.8	0.33	0.36	na
150-200	9.6	8.3	2	0.13	0.47	<0.1	<2	110	3.0	0.08	2.3	0.067	<0.06	1.4	<0.1	1.6	0.26	0.32	na

\* Estimated values

**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.