

# SAND OVER RED SANDY CLAY LOAM

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

**Landform:** Flats of very gently undulating plains and dunefields

**Substrate:** Tertiary clayey sand.

**Vegetation:** Mallee



**Type Site:** Site No.: MM002

1:50,000 sheet: 6928-3 (Halidon)

Hundred: McPherson

Annual rainfall: 310 mm

Sampling date: 04/09/91

Landform: Sandy flat

Surface: Loose with no stones

## Soil Description:

Depth (cm)	Description
0-12	Reddish brown loose sand. Abrupt to:
12-25	Brown loose sand. Gradual to:
25-70	Brown loose sand, bleached at base. Sharp to:
70-85	Yellowish red hard sandy clay loam with strong very coarse columnar structure. Gradual to:
85-95	Yellowish red and yellowish brown sandy clay with weak coarse prismatic structure and patchy fine calcareous segregations. Gradual to:
95-135	Yellowish red and yellowish brown very highly calcareous massive light sandy clay loam. Diffuse to:
135-180	Orange and yellowish brown massive clayey sand with minor fine calcareous segregations. Diffuse to:
180-200	Yellowish brown loamy sand.



**Classification:** Hypocalcic, Subnatric, Red Sodosol; very thick, non-gravelly, sandy / clay loamy, deep

## Summary of Properties

<b>Drainage</b>	Well drained. Although water will perch on the subsoil clay after sufficient rain or irrigation, the profile is rarely saturated for more than a few days.
<b>Fertility</b>	Inherent fertility is low as indicated by the exchangeable cation data. At the sampling site, phosphorus, copper and zinc are all deficient. Organic carbon levels are adequate, given the low rainfall and sandy surface texture.
<b>pH</b>	Slightly acidic at the surface, alkaline with depth.
<b>Rooting depth</b>	180 cm in pit, but few roots below 95 cm.
<b>Barriers to root growth</b>	
<b>Physical:</b>	Coarsely structured and dispersive clay prevents optimum root distribution.
<b>Chemical:</b>	No apparent chemical barriers, apart from low nutrient status.
<b>Water holding capacity</b>	80 mm in root zone.
<b>Seedling emergence:</b>	Satisfactory, although affected by water repellence.
<b>Workability:</b>	Good - loose to soft surface.
<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	6.2	5.6	<0.1	0.04	0.55	0.56	3.7	94	0.5	0.11	8.2	2.93	0.15	3.1	2.60	0.63	0.12	0.20	3.9
0-12	6.2	5.9	<0.1	0.03	0.27	0.56	3	70	0.6	0.09	8.4	2.93	0.24	3.1	2.71	0.54	0.12	0.20	3.9
12-25	6.5	6.1	0.4	0.01	0.14	0.13	2	39	<0.5	0.16	3.8	0.10	0.25	1.0	1.03	0.31	0.11	0.07	na
25-70	7.1	6.1	<0.1	0.01	0.19	0.10	2.5	86	<0.5	0.05	2.7	0.07	0.15	1.1	0.83	0.32	0.11	0.06	na
70-85	8.1	6.5	0.2	0.08	0.74	0.22	1.3	160	1.9	0.17	14.5	0.014	0.41	10.9	4.93	5.17	1.15	0.54	10.6
85-95	8.4	6.9	0.4	0.12	1.58	0.21	1.6	260	4.5	0.14	14.0	0.05	0.58	14.3	5.92	6.28	1.90	0.64	13.3
95-135	9.0	8.0	3.0	0.43	4.09	0.15	2	190	4.3	0.36	6.9	0.13	0.68	11.4	6.01	5.27	1.80	0.43	15.8
135-180	9.0	7.9	<0.1	0.47	5.76	0.10	1.6	220	3.4	0.34	5.4	0.10	0.33	8.7	4.88	5.68	1.21	0.43	13.9

**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.