

## HARD LOAMY SAND OVER RED CLAY

**General Description:** *Hard medium thickness loamy sand over a coarsely structured red clay, calcareous with depth*

**Landform:** Gently undulating plains with sandhills.

**Substrate:** Very highly calcareous sediments (Woorinen Formation) capping Tertiary deposits.

**Vegetation:** Mallee.



**Type Site:** Site No.: CM074

1:50,000 sheet: 6530-3 (Lochiel)

Hundred: Wiltunga

Annual rainfall: 350 mm

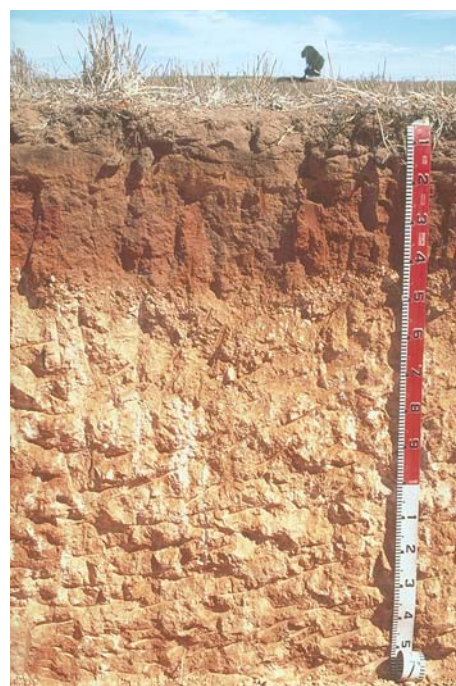
Sampling date: 12/03/96

Landform: Lower dune slope

Surface: Firm with no stones

### Soil Description:

Depth (cm)	Description
0-11	Brown cloddy loamy sand. Abrupt to:
11-17	Yellowish red firm massive light sandy loam. Abrupt to:
17-40	Red very hard sandy medium clay with coarse prismatic structure. Clear to:
40-62	Yellowish red firm massive very highly calcareous sandy light medium clay with more than 50% hard carbonate fragments (6-20 mm). Clear to:
62-115	Yellowish red friable massive very highly calcareous sandy clay loam with more than 50% fine carbonate segregations. Gradual to:
115-160	Yellowish red friable massive very highly calcareous sandy clay loam with 20-50% fine carbonate segregations.



**Classification:** Sodic, Lithocalcic, Red Chromosol; medium, non-gravelly, sandy / clayey, deep

## Summary of Properties

<b>Drainage</b>	Moderately well drained. Soil rarely remains wet for more than a week following heavy or prolonged rainfall.
<b>Fertility</b>	Inherent fertility is low, as indicated by the exchangeable cation data. Surface soil has low nutrient retention capacity and relies on organic matter - organic carbon levels are low at sampling site. Phosphorus applications are regularly needed - levels are satisfactory. Trace element tests indicate satisfactory levels in the soil, but tissue tests are needed for confirmation. Very high phosphorus levels in the top three layers of the pit indicate this spot was used as a fertiliser dump in the past.
<b>pH</b>	Acidic at the surface, alkaline with depth.
<b>Rooting depth</b>	80 cm in pit.
<b>Barriers to root growth</b>	
<b>Physical:</b>	Cloddy surface structure & hard prismatic structure from 17 to 40 cm create a sub-optimal environment for root growth.
<b>Chemical:</b>	There are no chemical restrictions
<b>Water holding capacity</b>	Approximately 80 cm (moderate) in rootzone.
<b>Seedling emergence:</b>	Good to fair - tendency of surface soil to set hard reduces emergence percentages.
<b>Workability:</b>	Good.
<b>Erosion Potential</b>	
<b>Water:</b>	Low.
<b>Wind:</b>	Moderately low. Surface cover needs to be maintained to prevent erosion.

## 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	SO <sub>4</sub> -S 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	6.3	5.9	0	0.10	1.07	1.0	26	278	6	1.5	0.32	23	10.5	0.82	6.4	4.54	1.11	0.12	0.53	1.9
0-11	5.6	5.2	0	0.16	1.66	0.7	154	207	10	0.6	-	-	-	-	4.4	2.92	0.63	0.06	0.42	1.5
11-17	6.3	5.9	0	0.19	1.99	0.4	232	142	8	0.4	-	-	-	-	4.0	2.63	0.71	0.08	0.26	1.9
17-40	6.5	6.2	0	0.22	1.48	0.2	323	175	25	0.9	-	-	-	-	13.4	11.2	2.50	0.19	0.43	1.4
40-62	8.7	8.0	23.8	0.10	0.40	0.4	4	73	8	1.2	-	-	-	-	9.4	8.77	1.41	0.20	0.21	2.2
62-115	8.8	8.1	22.2	0.10	0.56	<0.1	5	75	14	1.0	-	-	-	-	7.2	5.77	2.34	0.24	0.16	3.3
115-160	9.1	8.4	10.5	0.15	0.99	0.1	<4	110	27	1.9	-	-	-	-	6.0	3.19	3.33	0.50	0.26	8.4

**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.