

## GRADATIONAL RED SANDY LOAM

**General Description:** *Red sandy loam becoming more clayey with depth, grading to a calcareous sandy clay*

**Landform:** Plains.

**Substrate:** Pleistocene / Tertiary age clay mantled by fine carbonate

**Vegetation:** Mallee



**Type Site:** Site No.: MM047

1:50,000 sheet: 7029-3 (Loxton)

Hundred: Gordon

Annual rainfall: 250 mm

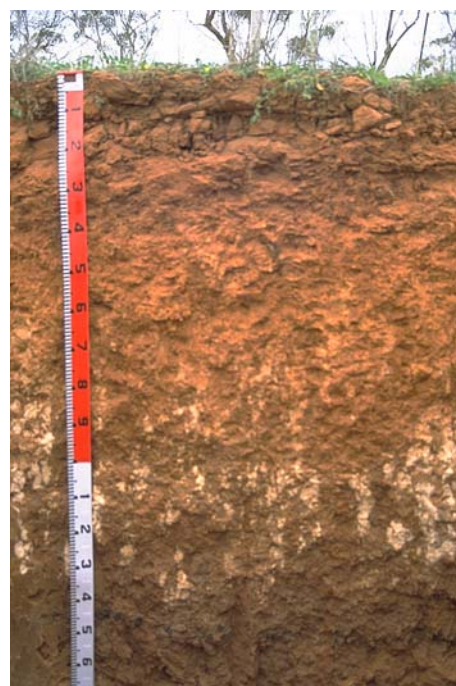
Sampling date: 28/07/92

Landform: Flat

Surface: Firm with no stones

### Soil Description:

Depth (cm)	Description
0-10	Reddish brown soft sandy loam. Clear to:
10-21	Red soft sandy clay loam. Abrupt to:
21-34	Red soft clay loam with moderate coarse polyhedral structure. Clear to:
34-65	Red and orange highly calcareous sandy clay loam with coarse blocky structure. Clear to:
65-100	Red, pink and light grey highly calcareous fine sandy light clay with coarse prismatic structure and minor calcrete fragments. Gradual to:
100-140	Reddish brown, pink and light grey highly calcareous light clay with coarse prismatic structure and minor calcrete fragments. Gradual to:
140-150	Reddish brown and grey light clay with strong coarse prismatic structure and 10-20% manganese segregations. Clear to:
150-170	Reddish brown, light grey and yellow coarsely prismatic medium clay.



**Classification:** Mottled-Sodic, Calcic, Red Kandosol; medium, non-gravelly, loamy / clay loamy, deep

## Summary of Properties

**Drainage** Moderately well drained. Soil rarely remains wet for more than a week following heavy or prolonged rainfall.

**Fertility** Inherent fertility is moderately low, as indicated by the exchangeable cation data. Phosphorus, zinc and manganese are deficient at the sampling site. Nitrogen and copper deficiencies are also likely. Organic carbon levels are low.

**pH** Alkaline at the surface, strongly alkaline with depth.

**Rooting depth** 65 cm in pit.

### Barriers to root growth

**Physical:** The clayey subsoil impedes root growth to a minor extent.

**Chemical:** High pH and sodicity from 34 cm, and high boron and salinity from 65 cm limit root growth.

**Water holding capacity** Approximately 75 mm in root zone.

**Seedling emergence:** No restrictions.

**Workability:** Firm surface is easily worked.

### Erosion Potential

**Water:** Low.

**Wind:** Moderately 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	7.6	7.2	0.1	0.07	0.37	0.48	16	426	1.0	0.2	0.1	<0.1	0.1	6.6	3.91	1.06	0.12	0.94	1.8
0-10	7.9	7.5	0.1	0.09	0.45	0.63	18	546	1.2	0.3	2.9	4.9	0.5	8.0	4.94	1.36	0.12	1.20	1.5
10-21	8.3	7.5	0.1	0.05	0.20	0.19	5	422	1.0	0.7	1.7	3.3	0.1	11.4	6.40	2.63	0.40	1.19	3.5
21-34	9.0	8.3	1.5	0.18	0.49	0.26	<5	378	1.6	0.9	2.1	1.9	0.2	17.8	8.17	4.67	1.70	1.08	9.6
34-65	9.8	8.7	19.2	0.82	5.21	0.15	<5	355	6.9	0.9	1.9	1.4	0.1	14.9	3.05	4.71	6.41	1.15	43.0
65-100	9.7	8.7	13.2	1.19	8.00	0.10	<5	413	13.9	0.6	2.4	0.8	0.2	12.9	2.29	4.29	5.79	1.16	44.9
100-140	9.6	8.7	8.7	1.41	6.56	0.03	<5	445	15.5	0.2	0.1	<0.1	0.1	16.2	2.15	5.30	7.25	1.25	44.8
140-150	9.6	8.5	0.1	1.30	6.42	0.07	<5	474	18.4	0.5	3.2	1.0	0.2	18.1	2.00	5.85	8.76	1.33	48.4
150-170	8.1	7.4	<0.1	1.41	6.26	0.05	<5	504	21.5	0.4	2.1	0.1	0.2	21.0	1.75	5.80	9.21	1.26	44.0

**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.