LOAMY SAND OVER RED CLAY

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

Landform: Gently undulating plain with low stony rises and extensive sandhills.

Substrate: Coarse grained sediments (Parilla Sand equivalent).

Vegetation: Mallee

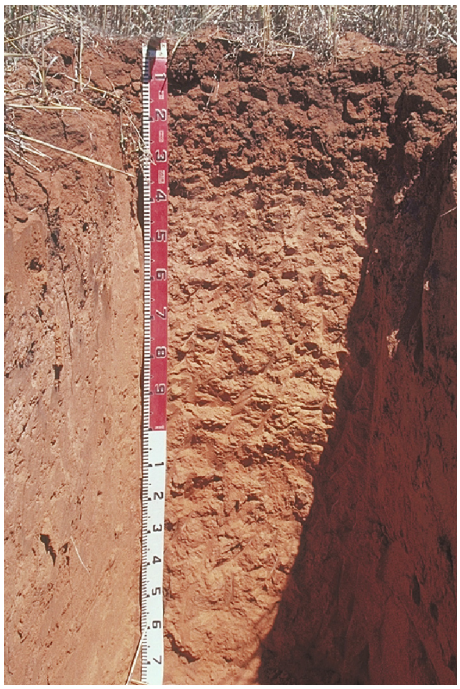
Type Site:

Site No.:	MM141	1:50,000 mapsheet:	6928-2 (Nobah)
Hundred:	Mindarie	Easting:	435000
Section:	14	Northing:	6143950
Sampling date:	2/02/1999	Annual rainfall:	300 mm average

Flat. Soft surface with no stones.

Soil Description:

Depth (cm)	*Description*
0-15	Reddish brown soft loamy sand. Clear to:
15-34	Reddish brown hard light clay with moderate coarse subangular blocky structure. Clear to:
34-65	Yellowish red hard massive highly calcareous sandy clay loam. Clear to:
65-175	Brown friable massive sandy loam.



Classification: Calcic, Subnatric, Red Sodosol; medium, non-gravelly, sandy / clayey, moderate

Summary of Properties

Drainage: 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.

Fertility: Inherent fertility is moderately low as indicated by the exchangeable cation data. Phosphorus is usually deficient (as at the sampling site), but nitrogen levels depend on cropping history and legume status of pastures. Zinc and copper are occasionally deficient, but levels are satisfactory at this site. Organic carbon levels are high, given the rainfall and sandy surface texture.

pH: Neutral at the surface, strongly alkaline with depth.

Rooting depth: Not recorded. Estimate 34 cm in pit, with some roots extending to 65 cm.

Barriers to root growth:

Physical: Coarsely structured and dispersive clay prevents optimum root distribution.

Chemical: High pH and sodicity from 34 cm impede root growth.

Waterholding capacity: Approximately 40 mm in rootzone.

Seedling emergence: Satisfactory, although may be affected by water repellence.

Workability: Good - loose to soft surface is easily worked.

Erosion Potential:

Water: Low.

Wind: Moderate.

Laboratory Data

Depth cm	pH H_2O	pH $CaCl_2$	CO_3 %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO_4 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	6.7	6.5	-	0.10	0.9	1.33	7	399	-	1.3	0.4	-	10.0	0.6	14.8	8.5	3.6	0.13	1.0	0.9
0-15	7.2	7.4	< 0.1	0.11	1.1	0.98	6	433	-	1.4	0.4	-	6.9	0.6	10.8	6.3	2.7	< 0.1	1.0	0.9
15-34	9.1	8.2	0.5	0.38	3.6	0.51	1	159	-	3.6	0.8	-	0.3	0.1	25.2	10.5	10.1	3.4	0.59	13.5
34-65	9.3	8.5	3.8	0.59	5.6	0.23	1	161	-	7.2	1.0	-	0.8	0.1	13.6	4.8	6.6	3.5	0.53	25.7
65-175	9.2	8.5	0.2	0.52	7.3	0.07	1	186	-	9.6	0.4	-	0.4	0.2	7.6	1.3	3.8	1.6	0.46	21.1

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