SAND OVER RED SANDY CLAY LOAM

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

Landform: Plain with low sandhills

Substrate: Molineaux Sand over Tertiary sandy clay.

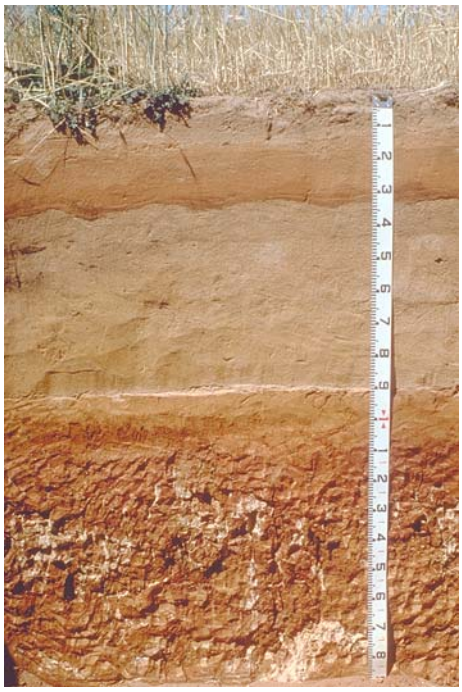
Vegetation: Mallee

Type Site: Site No.: MM038

1:50,000 sheet:	7027-1 (Prinpun Bore)	Hundred:	Pinnaroo
Annual rainfall:	340 mm	Sampling date:	21/11/91
Landform:	Crest of low sandhill		
Surface:	Loose with no stones		

Soil Description:

Depth (cm)	*Description*
0-9	Brown sand (recent drift). Sharp to:
9-17	Yellowish red sand (recent drift). Abrupt to:
17-31	Yellowish red loamy sand (recent drift). Sharp to:
31-43	Brown loose loamy sand. Abrupt to:
43-87	Orange loose sand. Abrupt to:
87-91	Yellowish red loose sand. Clear to:
91-106	Red massive sandy clay loam. Gradual to:
106-125	Red and yellowish brown calcareous sandy light clay with weak prismatic structure. Gradual to:
125-160	Red and yellowish brown sandy medium clay with strong coarse prismatic structure and minor fine carbonate segregations. Diffuse to:
160-190	Sandy medium clay as above, but with weak structure.



Classification: Hypocalcic, Mesonatric, Red Sodosol; thick, non-gravelly, sandy / clayey, deep

Summary of Properties

Drainage Rapidly drained. Soil never remains saturated for more than a few hours.

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

pH Slightly acidic at the surface, alkaline with depth.

Rooting depth 91 cm in pit (including surface drift layers), but few roots below 43 cm.

Barriers to root growth

Physical: No physical barriers.

Chemical: High sodicity at depth, but low fertility is the major reason for lack of root depth.

Water holding capacity 25 mm in root zone.

Seedling emergence: Can be affected in dry years by water repellence.

Workability: Loose to soft surface is easily worked.

Erosion Potential

Water: Low.

Wind: Moderately high.

Laboratory Data

Depth cm	pH H_2O	pH $CaC1_2$	CO_3 %	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	5.7	<0.1	0.08	0.75	0.34	18	140	1.4	0.07	13	2.4	0.80	2.7	1.82	0.47	0.09	0.41	na
0-9	6.1	5.8	<0.1	0.07	0.35	0.43	27	210	1.1	0.10	14	2.2	1.9	2.3	1.86	0.50	0.07	0.39	na
9-17	6.2	5.6	<0.1	0.05	0.30	0.15	9.7	140	1.3	0.07	9.8	1.7	0.13	2.1	1.34	0.35	0.07	0.37	na
17-31	6.5	6.0	<0.1	0.05	0.25	0.17	7.2	130	1.4	0.11	5.2	2.5	0.19	2.9	2.37	0.63	0.12	0.39	na
31-43	6.7	6.3	<0.1	0.06	0.38	0.42	2.1	130	2.3	0.19	7.5	6.0	0.15	5.1	5.70	1.52	0.17	0.36	3.3
43-87	6.5	6.2	0.2	0.04	0.15	0.16	<2.0	80	1.1	0.09	4.8	1.4	0.20	1.9	0.79	0.46	0.12	0.16	na
87-91	6.6	6.5	<0.1	0.05	0.17	0.13	<2.0	50	1.1	0.05	7.0	0.45	0.12	2.1	1.75	0.36	0.05	0.07	na
91-106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
106-125	8.3	7.1	0.6	0.08	0.56	0.12	<2.0	140	2.6	0.11	9.2	0.05	0.12	7.4	4.11	4.16	1.21	0.34	16.4
125-160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
160-190	9.1	7.6	1.3	0.32	1.0	0.14	<2.0	240	12	0.20	5.7	1.9	0.19	13.6	4.62	8.69	3.48	0.60	25.6

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.