GRADATIONAL RED SANDY LOAM

General Description: *Sandy loam becoming more clayey and calcareous at shallow depth, grading to a red sandy clay loam with Class III carbonates*

Landform: Flats and low rises on very gently undulating plains.

Substrate: Tertiary sandy clays and sands, capped by fine or rubbly carbonates.

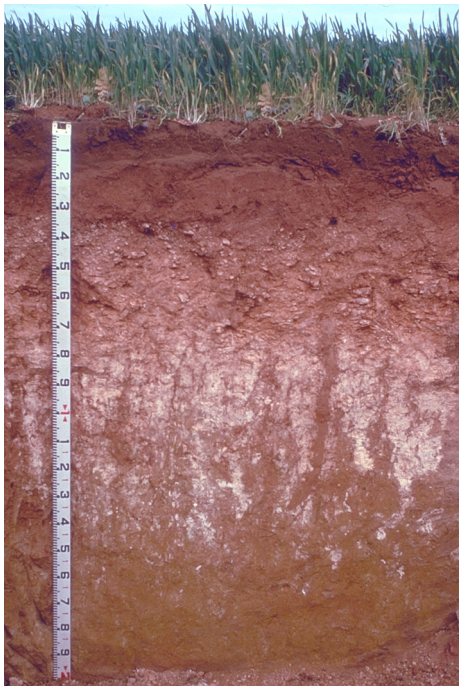
Vegetation: Mallee

Type Site:

Site No.:	MM009	1:50,000 mapsheet:	6927-4 (Marama)
Hundred:	Wilson	Easting:	411600
Section:	130	Northing:	6118550
Sampling date:	12/09/1991	Annual rainfall:	330 mm average

Low rise with a soft surface and no stone.

Soil Description:



Depth (cm)	*Description*
0-14	Reddish brown soft sandy loam. Abrupt to:
14-30	Reddish brown firm highly calcareous light sandy clay loam. Clear to:
30-48	Red firm very highly calcareous sandy clay loam with 20-50% calcareous nodules. Gradual to:
48-68	Red firm highly calcareous sandy clay loam with 10-20% calcareous nodules. Gradual to:
68-108	Yellowish red and brown very highly calcareous sandy clay loam. Diffuse to:
108-162	Orange and olive mottled sandy clay loam with 20-50% fine calcareous segregations. Diffuse to:
162-200	Reddish yellow and olive mottled light sandy clay loam.

Classification: Epibasic, Regolithic, Supracalcic Calcarosol; thick, non-gravelly, loamy / clay loamy, deep

Summary of Properties

Drainage: Well drained. Soil is rarely saturated for more than a few days.

Fertility: Inherent fertility is moderate, as indicated by the exchangeable cation data. Organic carbon levels are high, helping nutrient retention capacity. Phosphorus is the only measured nutrient element which is deficient.

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

Rooting depth: 68 cm in pit, but few roots below 48 cm.

Barriers to root growth:

Physical: No apparent barriers, other than rubble which reduces waterholding capacity.

Chemical: High pH, salinity, sodicity and boron from 68 cm limit root growth.

Waterholding capacity: Approximately 50 mm.

Seedling emergence: Satisfactory, although sandier types are water repellent.

Workability: Soft to firm surface is easily worked.

Erosion Potential:

Water: Low.

Wind: Low to moderately low.

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	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	8.7	7.5	1.4	0.15	1.1	1.27	11	520	2.4	0.29	4.6	8.7	0.83	10.5	9.9	1.6	0.09	1.5	0.9
0-14	8.4	7.3	0.2	0.11	0.5	1.10	16	830	1.7	0.20	5.3	20.8	1.2	10.8	7.8	1.4	0.08	1.5	0.7
14-30	8.8	7.7	4.3	0.11	0.5	0.76	3.3	660	2.3	0.40	6.9	5.9	0.77	13.5	12.1	2.0	0.18	1.7	1.3
30-48	9.1	7.9	17.7	0.16	0.8	0.44	4	200	4.0	0.46	4.4	4.1	0.14	11.2	7.2	3.9	0.89	0.81	7.9
48-68	-	-	-		-	-	-	-	-	-		-	-	-	-	-	-	-	
68-108	9.8	8.5	28.8	1.06	13.5	0.16	1.6	430	22	0.41	4.7	0.58	0.37	8.5	1.3	2.4	4.8	0.97	56.5
108-162	9.7	8.4	9.6	0.92	8.7	0.11	2.1	360	19	0.44	4.7	0.52	0.23	9.9	1.4	3.3	6.1	0.80	61.6
162-200	-	-	-		-	-	-	-	-	-		-	-	-	-	-	-	-	

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