

HIGHLY CALCAREOUS SANDY LOAM (Magarey soil)

General Description: *Highly calcareous soft sandy loam to light sandy clay loam grading to very highly calcareous light sandy clay loam with variable rubble content*

Landform: Gently undulating rises.

Substrate: Very highly calcareous sandy clay loam with bands of laminar calcrete.

Vegetation: Mallee - tea tree



Type Site: Site No.: EF018

1:50,000 sheet: 5533-1 (Charra)

Hundred: Bartlett

Annual rainfall: 310 mm

Sampling date: 22/01/92

Landform: Midslope of gently undulating rise, 2% slope

Surface: Loose with no stones

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Dark brown soft very highly calcareous sandy loam. Clear to:
10-34	Brown friable very highly calcareous sandy loam. Abrupt to:
34-45	Semi hard laminar carbonate. Clear to:
45-90	Orange soft very highly calcareous light sandy clay loam with 10-20% carbonate nodules. Diffuse to:
90-140	Reddish yellow friable very highly calcareous sandy clay loam with 20-50% carbonate nodules. Gradual to:
140-	Calcreted calcarenite.



Classification: Supravescent, Regolithic, Lithocalcic Calcarosol; thick, non-gravelly, loamy / clay loamy, deep

Summary of Properties

Drainage	Rapidly drained. The soil never remains wet for more than a few hours.
Fertility	Inherent fertility is low as indicated by the exchangeable cation data and high carbonate content. Induced deficiencies of phosphorus, copper, zinc and manganese are likely, even though data suggest that levels are satisfactory.
pH	Alkaline at the surface, strongly alkaline with depth.
Rooting depth	70 cm in pit.
Barriers to root growth	
Physical:	The semi hard carbonate at 34 cm restricts root growth to some extent.
Chemical:	High sodicity, pH and boron concentrations from 45 cm impede root growth.
Water holding capacity	Approximately 60 mm in the root zone.
Seedling emergence:	Satisfactory.
Workability:	Loose to soft surface is easily worked.
Erosion Potential	
Water:	Low.
Wind:	Moderate.

Laboratory Data

Depth cm	pH H ₂ O	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	
0-10	8.2	7.6	45	0.2	1.1	1.6	35	540	-	3.6	0.26	3.4	8.0	0.27	10.6	10.7	2.0	0.35	1.71	3
10-34	9.2	8.1	52	0.3	1.5	0.6	4	400	-	6.8	0.29	1.1	2.3	0.10	8.1	4.8	3.5	2.25	1.39	28
34-45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45-90	9.5	8.4	65	1.1	12.8	-	-	-	-	19.3	0.21	1.7	0.74	0.11	5.5	1.4	3.4	3.42	1.55	62
90-140	9.3	8.2	74	1.2	17.1	-	-	-	-	15.7	0.15	1.4	0.68	0.12	4.0	1.5	2.2	2.89	1.19	72
140+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: 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