

SHALLOW CALCAREOUS SANDY LOAM

General Description: *Calcareous loamy sand to light sandy clay loam with variable rubble, shallow over calcrete*

Landform: Undulating to rolling rises and low hills partly covered by sandhills.

Substrate: Calcreted calcarenite (Bridgewater Formation).

Vegetation: Mallee



Type Site: Site No.: MM095
 1:50,000 sheet: 6726-2 (Magrath Flat) Hundred: Glyde
 Annual rainfall: 475 mm Sampling date: 1992
 Landform: Upper slope of undulating low hill, 9% slope
 Surface: Soft with 10-20% calcrete stone (200-600 mm)

Soil Description:

Depth (cm)	Description
0-10	Dark brown calcareous soft loamy sand. Abrupt to:
10-35	Laminar calcrete. Clear to:
35-70	Very pale brown massive firm very highly calcareous shelly loamy sand. Diffuse to:
70-120	Very pale brown massive soft very highly calcareous shelly loamy sand. Diffuse to:
120-160	Very pale brown massive soft very highly calcareous shelly loamy sand.



Classification: Ceteric, Petrocalcic, Supracalcic Calcarosol; medium, moderately gravelly, sandy / sandy, very shallow

Summary of Properties

Drainage	Well drained. Soil never remains saturated for more than a few days.
Fertility	Inherent fertility is low, as indicated by the exchangeable cation data. Regular phosphorus applications are required (phosphate fixing soil), and nitrogen levels depend on legume content of pastures. Occasional copper and zinc deficiencies can be expected, and manganese may be needed on cereal and lupin crops. Organic carbon levels are high at sampling site.
pH	Alkaline at the surface, strongly alkaline with depth.
Rooting depth	70 cm in pit.
Barriers to root growth	
Physical:	The calcrete impedes root development.
Chemical:	Very low nutrient availability below calcrete restricts root growth.
Water holding capacity	10 mm in root zone.
Seedling emergence:	Satisfactory, but reduced where stone cover is heavy.
Workability:	Soft surface is easily worked, but stones interfere with and abrade equipment.
Erosion Potential	
Water:	Moderately low.
Wind:	Low to moderately low,

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	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	8.3	7.5	4	0.10	0.63	1.5	44	83	<0.40	0.21	-	1.6	1	5.1	7.10	0.56	0.10	0.21	2.0
10-35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35-70	9.5	8.1	44	0.06	0.35	<0.1	<2	48	0.50	<0.05	-	0.4	0.1	0.9	1.35	0.13	0.07	0.09	na
70-120	9.3	8.1	41	0.06	0.37	<0.1	<2	41	0.61	<0.05	-	0.43	<0.06	1.0	1.15	0.15	0.10	0.07	na
120-160	9.3	8.1	38	0.07	0.36	<0.1	<2	41	<0.40	<0.05	-	0.37	<0.06	1.2	0.29	0.21	0.10	0.07	na

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.