CALCAREOUS SANDY LOAM

General Description: *Calcareous loamy sand to sandy loam becoming more clayey and calcareous with depth, grading to a light clay*

Landform: Gently undulating plain with low sandhills

Substrate: Highly calcareous medium to fine grained wind blown material (Woorinen Formation).

Vegetation: Mallee.

Type Site:

Site No.:	CM073	1:50,000 mapsheet:	6530-3 (Lochiel)
Hundred:	Kulpara	Easting:	225663
Section:	113	Northing:	6234670
Sampling date:	11/3/96	Annual rainfall:	395 mm average

Dune slope of 4%. Loose surface with no stones.

Soil Description:

Depth (cm)	*Description*
0-5	Dark brown loose moderately calcareous heavy loamy sand. Abrupt to:
5-16	Brown firm massive very highly calcareous sandy clay loam. Abrupt to:
16-36	Orange firm massive very highly calcareous fine sandy clay loam. Clear to:
36-140	Orange friable massive very highly calcareous clay loam with 20-50% fine carbonate segregations. Gradual to:
140-180	Yellowish red friable massive very highly calcareous sandy clay loam. Gradual to:
180-220	Orange friable massive very highly calcareous light clay.

Classification: Ceteric, Regolithic, Hypercalcic Calcarosol; thick, non-gravelly, sandy / clay loamy, deep

Summary of Properties

Drainage: Well drained. Soil never remains wet for more than a few days.

Fertility: Inherent fertility is moderately low as indicated by the exchangeable cation data. Phosphorus applications are needed regularly (levels are marginal at sampling site). Organic carbon is needed to provide nutrient retention capacity in the light textured surface, but concentrations are low. Copper and zinc are marginal and periodic applications are required. Fine earth carbonates throughout tie up trace elements and phosphorus.

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

Rooting depth: Not recorded. Estimate between 100 and 140 cm in pit.

Barriers to root growth:

Physical: There are no physical barriers.

Chemical: Conditions for root growth deteriorate below 100 cm, where the pH and sodicity rise to levels which will impact on root function.

Waterholding capacity: Approximately 130 mm (high) in top 100 cm.

Seedling emergence: Good.

Workability: 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	Exch Al mg/kg
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K		
Paddock	8.7	7.9	-	0.12	0.64	0.56	19	257	257	0.9	0.28	3	2.75	0.48	-	10.4	0.93	0.06	0.77	0.5	1.23
0-5	8.6	7.7	-	0.11	0.61	0.79	43	314	314	0.8	-	-	-	-	-	9.54	0.96	0.09	0.80	0.8	0.93
5-16	8.7	7.9	-	0.11	0.44	0.58	10	315	315	1.0	-	-	-	-	-	11.4	0.93	0.04	0.64	0.3	1.36
16-36	-	-	-	-	0.37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36-140	9.2	8.2	-	0.16	0.52	0.17	2	230	230	3.8	-	-	-	-	-	6.81	5.95	0.90	0.61	6.3	1.84
140-180	10.0	8.2	-	0.39	0.58	0.10	2	329	329	8.8	-	-	-	-	-	5.94	4.30	4.07	0.96	26.7	1.69
180-220	10.0	8.1	-	0.47	1.00	0.14	2	320	320	9.6	-	-	-	-	-	6.85	3.87	4.80	1.00	29.1	1.95

Note: Paddock sample taken from 20 soil cores (0-10 cm) from around pit.
ESP is estimated by dividing the exchangeable sodium value by the sum of the exchangeable cations (in the absence of a CEC analysis).

Further information: DEWNR Soil and Land Program