DEEP CALCAREOUS LOAMY SAND

General Description: *Calcareous loamy sand grading to a very highly calcareous light sandy clay loam with depth over alluvial sediments below 150 cm*

Landform: Very gently undulating plains.

Substrate: Medium textured alluvium mantled by windblown sands and carbonates.

Vegetation: Mallee

Type Site:

Site No.:	CU071	1:50,000 mapsheet:	6531-3 (Crystal Brook)
Hundred:	Wandearah	Easting:	227600
Section:	62	Northing:	6300850
Sampling date:	10/02/2005	Annual rainfall:	365 mm average

Very gently undulating flat. Soft surface with no stones.

Soil Description:

Depth (cm)	*Description*
0-15	Dark brown soft moderately calcareous loamy sand with a weak plough pan at 15 cm. Clear to:
15-35	Dark brown friable highly calcareous light sandy loam. Gradual to:
35-65	Brown friable very highly calcareous sandy loam. Diffuse to:
65-105	Strong brown friable very highly calcareous heavy sandy loam with 2-10% calcrete nodules. Diffuse to:
105-170	Strong brown friable very highly calcareous light sandy clay loam with 10-20% calcrete nodules. Diffuse to:
170-215	Strong brown firm highly calcareous clay loam to light clay with weak subangular blocky structure and 10-20% soft carbonate segregations.

Classification: Endohypersodic, Regolithic, Calcic Calcarosol; very thick, non-gravelly, sandy / loamy, very deep

Summary of Properties

Drainage: Rapidly drained. The soil rarely remains wet for more than a few hours following heavy or prolonged rainfall.

Fertility: Inherent fertility is moderately low, as indicated by the exchangeable cation data. Laboratory data indicate marginal levels of phosphorus. Concentrations of other tested elements appear satisfactory, but for trace elements, tissue testing is required to make fertilizer recommendations.

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

Rooting depth: 130 cm in sampling pit.

Barriers to root growth:

Physical: There are no apparent barriers.

Chemical: High pH and sodicity from 105 cm restrict root growth.

Waterholding capacity: Approximately 130 mm in the potential rootzone.

Seedling emergence: Satisfactory.

Workability: Calcareous loamy sands are easily worked over a range of moisture conditions, but light sandy surface is at risk of wind erosion.

Erosion Potential:

Water: Low.

Wind: Moderately low to moderate due to low clay content of surface.

Laboratory Data

Depth cm	pH H_2O	pH $CaCl_2$	CO_3 %	EC 1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	Cl mg/kg	SO_4 mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				Est. ESP
												Cu	Fe	Zn	Mn		Ca	Mg	Na	K	
Paddock	8.6	8.0	1.4	0.14	0.9	0.92	23	450	21	8.1	1.0	1.40	14	4.40	55.8	13.1	10.6	1.21	0.15	1.12	1.1
0-15	8.6	7.9	1.8	0.11	0.7	0.79	11	424	17	5.1	0.8	1.25	8.5	4.05	24.7	14.6	12.5	0.96	0.08	0.97	0.5
15-35	8.8	8.1	5.1	0.12	0.5	0.71	2	339	16	3.7	1.0	0.82	1.8	1.99	3.89	16.3	14.1	1.24	0.09	0.81	0.6
35-65	8.9	8.0	7.8	0.11	0.5	0.40	2	130	13	5.7	1.0	0.80	4.0	2.22	2.97	15.6	13.0	2.17	0.13	0.34	0.8
65-105	9.2	8.2	15.0	0.14	0.7	0.22	2	92	34	6.0	1.8	0.72	4.8	1.83	2.06	14.7	9.46	4.75	0.28	0.23	1.9
105-170	9.8	8.2	37.1	0.67	5.4	0.14	2	148	375	75	6.3	0.86	4.5	2.00	1.66	15.5	7.33	4.18	3.60	0.39	23.2
170-215	9.6	8.3	37.5	1.02	7.2	0.11	2	218	812	183	10.4	0.65	6.5	2.54	1.59	20.5	7.78	5.94	6.16	0.58	30.1

Note: Paddock sample bulked from cores (0-10 cm) taken around the pit.
Sum of cations, in a neutral to alkaline soil, approximates the CEC (cation exchange capacity), 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, in this case estimated by the sum of cations.

Further information: DEWNR Soil and Land Program