CALCAREOUS SANDY LOAM OVER CLAY

General Description: *Calcareous sandy loam grading to a very highly calcareous clay loam over Tertiary or Quaternary clay*

Landform: Undulating low hills.

Substrate: Quaternary clay (Blanchetown Clay equivalent) mantled by windblown carbonate.

Vegetation: Mallee.

Type Site: Site No.: MO054

1:50,000 sheet:	6727-4 (Monarto)	Hundred:	Brinkley
Annual rainfall:	350 mm	Sampling date:	1976
Landform:	Lower slope of 2%		
Surface:	Firm with no stones		

Soil Description:

Depth (cm)	*Description*
0-7	Dark brown soft massive moderately calcareous sandy loam. Clear to:
7-17	Brown soft massive moderately calcareous sandy loam. Clear to:
17-30	Brown firm massive highly calcareous sandy loam. Diffuse to:
30-60	Very pale brown massive firm very highly calcareous clay loam with more than 50% fine carbonate segregations. Diffuse to:
60-80	Dark brown and yellowish red hard sandy clay loam with strong prismatic structure and 20-50% fine carbonate segregations. Diffuse to:
80-130	Reddish brown hard medium clay with strong coarse prismatic breaking to angular blocky structure and 2-10% fine carbonate segregations. Diffuse to:
130-170	As above.

Classification: Endohypersodic, Regolithic, Hypercalcic Calcarosol; thick, non-gravelly, loamy / clay loamy, moderate

Summary of Properties

Drainage: Moderately well drained. Soil may remain wet for up to a week following heavy or prolonged rainfall. Drainage is influenced by the depth to underlying clay.

Fertility: Inherent fertility is moderately high as indicated by the exchangeable cation data. Clay content is sufficiently high throughout to provide adequate nutrient retention capacity, but alkaline pH and free carbonate tend to fix phosphate, zinc, manganese, copper and iron.

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

Rooting depth: Not recorded. Estimate 60 cm in pit, but few roots below 30 cm.

Barriers to root growth:

Physical: The substrate clay from about 60 cm presents a barrier to uniform root distribution.

Chemical: High pH, sodicity, salinity (and possibly boron concentration - no data) prevent deep root growth.

Water holding capacity: Approximately 50 mm in the potential root zone.

Seedling emergence: Satisfactory.

Workability: Satisfactory. Calcareous sandy loams are easy to work over a wide range of moisture conditions.

Erosion Potential

Water: Moderately low.

Wind: Moderately low.

Laboratory Data

Depth cm	Coarse sand %	Fine sand %	Silt %	Clay %	pH H_2O	CO_3 %	EC 1:5 dS/m	Cl mg/kg	CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
										Ca	Mg	Na	K	
0-7	35	47	3	12	8.5	1.5	0.21	136	14	11.2	2.8	0.39	1.0	3
7-17	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-30	30	43	3	16	9.1	5.8	0.26	340	17	10.9	4.2	1.1	1.5	7
30-60	21	22	4	22	9.9	27	1.48	2000	13	7.9	3.4	1.3	1.2	10
60-80	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80-130	-	-	-	-	-	-	-	-	-	-	-	-	-	-
130-170	23	22	6	41	9.4	4.3	2.13	3310	19	1.6	6.7	6.9	2.3	36

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.