SANDY LOAM OVER POORLY STRUCTURED BROWN CLAY

General Description: *Hard grey sandy loam with a strongly bleached A2 horizon over a brown and grey mottled coarsely structured clay*

Landform: Lower slopes and outwash fans.

Substrate: Fine grained alluvium

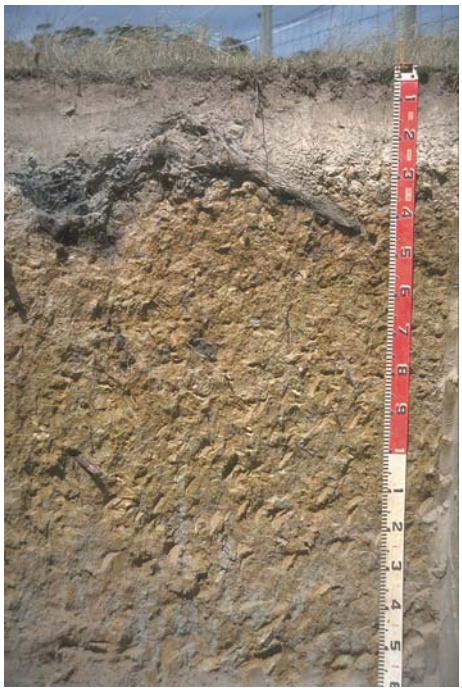
Vegetation: Red and blue gum woodland.

Type Site: Site No.: CH113

1:50,000 sheet:	6627-1 (Echunga)	Hundred:	Macclesfield
Annual rainfall:	750 mm	Sampling date:	04/03/97
Landform:	Fan abutting an undulating rise, 3% slope		
Surface:	Firm with no stone		

Soil Description:

Depth (cm)	*Description*
0-13	Dark greyish brown massive loamy fine sand. Clear to:
13-25	Greyish brown (white when dry), massive hard loamy fine sand. Sharp to:
25-45	Yellowish brown, brown and red mottled very hard medium clay with strong coarse prismatic structure. Gradual to:
45-80	Yellowish brown, grey and red mottled medium heavy clay with weak prismatic breaking to strong polyhedral structure. Diffuse to:
80-110	Olive, yellowish brown and red mottled medium heavy clay with weak coarse prismatic structure. Diffuse to:
110-170	Grey and orange mottled medium clay with weak coarse prismatic structure.



Classification: Eutrophic, Mottled-Subnatric, Brown Sodosol; medium, non-gravelly, sandy / clayey, very deep

Summary of Properties

Drainage Imperfectly drained. Water will "perch" in the bleached layer for weeks after prolonged rain.

Fertility Natural fertility is moderate. Tests indicate that phosphorus and manganese are deficient, and that potassium, copper and sulphur are marginal. Organic carbon levels are high. Calcium : magnesium ratios are slightly high.

pH Acidic at the surface, neutral with depth. Dolomitic lime is needed for correction.

Rooting depth 110 cm in pit but few roots below 80 cm.

Barriers to root growth

Physical: Tight clay subsoil prevents good proliferation. The dense, infertile sub-surface layer restricts good near-surface root development.

Chemical: None.

Water holding capacity Approximately 80 mm in root zone.

Seedling emergence: Fair. Surface prone to compaction.

Workability: Fair. Surface soil has a narrow moisture range for effective working.

Erosion Potential

Water: Moderately low.

Wind: Moderately low.

Laboratory Data

Depth cm	pH H_2O	pH $CaC1_2$	CO_3 %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO_4-S mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	5.7	4.8	0	0.06	-	3.4	11	88	6.0	0.7	0.7	453	11	2.0	8.5	4.1	0.9	0.19	0.19	2.2
0-13	5.3	4.5	0	0.10	-	3.3	16	41	4.9	0.5	0.7	658	8.2	2.2	7.0	1.9	0.6	0.23	0.07	3.3
13-25	5.2	4.3	0	0.04	-	0.5	3	22	2.6	0.3	0.2	141	2.3	0.4	2.6	0.3	0.2	0.15	0.07	5.8
25-45	5.7	4.7	0	0.13	-	0.7	2	122	7.7	1.0	0.6	159	16	1.1	16.5	4.9	5.3	1.21	0.31	7.3
45-80	6.1	5.6	0	0.36	-	0.3	2	117	59	0.8	0.5	40	1.9	1.0	17.6	4.8	6.1	2.28	0.28	13.0
80-110	6.7	6.0	0	0.37	-	0.2	2	92	73	0.9	0.4	36	1.2	0.9	16.4	4.8	5.9	3.47	0.21	25.9
110-170	6.0	5.2	0	0.40	-	0.1	2	70	67	0.7	0.5	60	1.9	0.7	13.7	3.5	4.7	3.65	0.14	26.6

Note: Paddock sample bulked from 20 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.