LOAM OVER DARK CLAY

General Description: *Dark grey loamy sand to sandy clay loam overlying a black clay with coarse prismatic structure, calcareous at base, grading to buried sandy soil at moderately shallow depth*

Landform: Low lying near coastal plains exposed following recent falls in sea level.

Substrate: Coastal calcareous sand or buried sand over clay soil

Vegetation:

Type Site: Site No.: CH085

1:50,000 sheet:	6626-1 (Goolwa)	Hundred:	Nangkita
Annual rainfall:	450 mm	Sampling date:	02/06/95
Landform:	Level plain, elevation 2m		
Surface:	Firm with no stones		

Soil Description:

Depth (cm)	*Description*
0-8	Very dark grey loam with moderate granular structure. Abrupt to:
8-16	Black slightly calcareous medium clay with moderate coarse blocky structure. Clear to:
16-30	Greyish brown and black mottled highly calcareous medium clay with strong coarse prismatic structure and 2-10% soft carbonate segregations. Clear to:
30-45	Light brownish grey very highly calcareous sandy clay loam with weak very coarse prismatic structure, 10-20% soft carbonate segregations and 2-10% shell fragments. Gradual to:
45-100	Grey and orange mottled soft highly calcareous sand with 2-10% shell fragments. Gradual to:
100-165	White, olive and orange mottled soft highly calcareous sand with 2-10% shell fragments. Abrupt to:
165-180	Greenish grey soft highly calcareous sand with a water table.

Classification: Sodic, Calcic, Black Chromosol; thin, non-gravelly, loamy/clayey, shallow

Summary of Properties

Drainage Moderate. The clayey subsoil will "perch" water for a week or so after heavy rain, but the sandy deep subsoil allows free drainage, provided the ground water table is not near the surface.

Fertility The natural fertility of the soil is high. High organic carbon levels indicate good reserves of nitrogen. Phosphorus is marginal and magnesium, although not low, is out of balance with calcium and potassium. Copper and iron may be deficient. Other elements appear to be in adequate supply.

pH Alkaline at the surface, strongly alkaline with depth.

Rooting depth 100 cm in pit.

Barriers to root growth

Physical: There are no physical barriers.

Chemical: The deep subsoil sand is moderately saline. At this site salinity levels are becoming high from 165 cm (not a problem), but depth to saline layers is likely to be variable.

Water holding capacity Approximately 100 mm in the root zone.

Seedling emergence Good

Workability Good to fair. Surface may become sticky after rain.

Erosion Potential

Water: Low

Wind: 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	7.9	7.7	1.9	0.15	0.81	2.9	17	516	10.7	2.7	1.31	25.9	43.0	3.44	18.2	15.50	1.93	0.29	1.66	1.6
											*0.4		*5.9	*1.3						
0-8	7.8	7.6	1.4	0.16	0.85	3.1	20	558	10.4	2.9	-	-	-	-	19.5	16.13	2.15	0.33	1.80	1.7
8-16	8.1	7.9	0.7	0.15	0.67	1.7	7	491	9.7	2.3	-	-	-	-	17.3	15.10	1.92	0.35	1.44	2.0
16-30	8.4	8.1	5.0	0.15	0.55	0.5	<4	322	6.3	2.5	-	-	-	-	14.3	11.60	2.83	0.57	0.75	4.0
30-45	8.8	8.4	22.6	0.15	0.68	0.4	<4	153	9.5	1.6	-	-	-	-	6.1	5.10	1.82	0.47	0.34	7.7
45-100	8.2	8.8	37.2	0.17	1.10	0.1	<4	31	10.3	1.0	-	-	-	-	1.3	1.47	0.66	0.43	0.16	na
100-165	9.1	8.7	39.8	0.56	3.81	0.1	<4	24	45.9	1.0	-	-	-	-	0.7	0.73	0.56	0.30	0.11	na
165-180	8.9	8.6	41.6	0.98	5.68	0.1	<4	49	167	1.2	-	-	-	-	0.5	0.93	0.55	0.25	0.15	na

Note: Paddock sample bulked from 20 cores (0-10 cm) taken around the pit.

* DTPA trace element analyses for "paddock" sample.

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.