

SILTY LOAM OVER RED CLAY ON ROCK

General Description: *Medium thickness reddish brown sandy loam to sandy clay loam with a paler coloured gravelly A2 horizon, overlying a blocky red clay with ferruginous rock fragments throughout*

Landform: Ridges in the eastern Mt. Lofty Ranges

Substrate: Ferruginous and pyritic schists of the Tappanappa Formation and associated Nairne Pyrite

Vegetation: Blue gum and sheoak

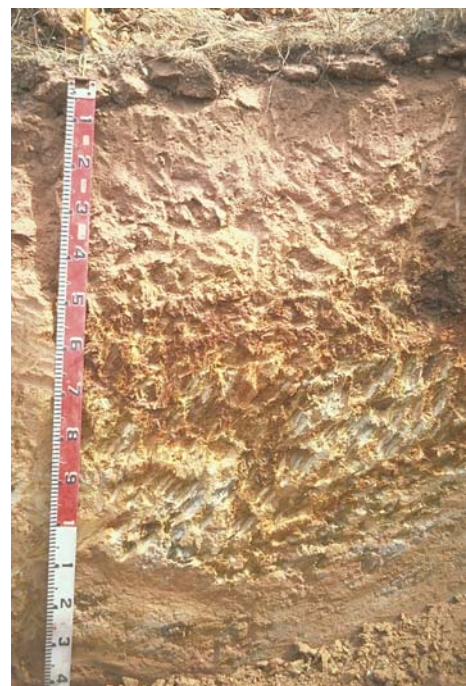


Type Site: Site No.: CH089

1:50,000 sheet:	6628-2 (Onkaparinga)	Hundred:	Kanmantoo
Annual rainfall:	600 mm	Sampling date:	19/01/96
Landform:	Lower slope of steep ridge, 20% slope		
Surface:	Firm with no stones		

Soil Description:

Depth (cm)	Description
0-10	Reddish brown massive silty loam. Clear to:
10-25	Light reddish brown massive silty loam. Gradual to:
25-50	Red heavy silty loam with moderate polyhedral structure and 10-20% schist fragments. Abrupt to:
50-70	Dark reddish brown light clay with strong polyhedral structure and 20-50% schist fragments. Clear to:
70-140	Weathering ferruginous schist.



Classification: Haplic, Eutrophic, Red Chromosol; thick, non-gravelly, silty / clayey, moderate

Summary of Properties

Drainage	The soil is moderately well drained. It may remain wet for a week or so following rain.
Fertility	The natural fertility of the soil is moderately high as indicated by the CEC values. Leaching associated with acidification has caused cation losses, and calcium and magnesium are low. However the naturally high potassium levels have caused an imbalance in the cation ratios so that hypomagnesia is a likely problem. All trace elements are very high, reflecting the high degree of mineralization of the parent rock. Phosphate fixation due to extreme iron levels is likely. Organic carbon levels are very high.
pH	Acidic at the surface, neutral with depth. Dolomitic lime is needed for pH correction.
Rooting depth	70 cm in pit.
Barriers to root growth	
Physical:	Nil
Chemical:	Acidity and possible associated aluminium and manganese toxicity.
Water holding capacity	Approximately 80 mm in pit.
Seedling emergence	Good.
Workability	Good.
Erosion Potential	
Water:	Moderately high to high due to the slope of the land and the potential for substantial run on from upslope.
Wind:	Low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl 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	5.5	4.9	0	0.28	1.53	4.2	43	670	29	1.2	9.1	2300	160	31	11.7	5.19	1.62	0.24	1.48	2.0
0-10	5.3	4.4	0	0.13	0.73	3.0	9	501	16	0.7	-	-	-	-	8.4	2.95	0.71	0.21	0.84	2.5
10-25	5.4	4.4	0	0.03	0.19	1.3	4	308	9	0.5	-	-	-	-	6.4	2.53	0.63	0.13	0.26	2.1
25-50	6.3	5.2	0	0.02	0.16	0.4	<4	253	9	0.3	-	-	-	-	4.5	2.83	0.87	0.15	0.19	3.3
50-70	6.6	5.5	0	0.04	0.16	0.5	<4	532	13	1.5	-	-	-	-	14.2	5.60	6.40	0.39	0.64	2.8
70-140	6.7	5.7	0	0.05	0.24	0.2	<4	462	19	0.8	-	-	-	-	6.6	1.26	3.29	0.36	0.26	5.5

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.